Document Title: Date of Document: January 13, 2012 Topock (M -3 Combined Fourth Quarter 2011 Monitoring Report, Jul-Dec 2011 Seminannual, and Jan-Dec 2011 Annual Operation and Maintenance Report Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) Document and Maintenance Report Document of the Interior and Regional Water Quality Control Board PG&E Submitting Agency/Authored by: U.S. Department of the Interior and Regional Water Quality Control Board Document ID Number: PGE201201138 Final Document: IHGH MED LOW Action Required: Minformation Only Review & Comment By Date: Other / Explain: Information only Review & Comment By Date: Other / Explain: Information Presistin CP Massessment (RA) Sessment (RA) Micuding Risk Assessment (PA) Ist is a Regulatory Requirement? Massessment (RA) Sessment (RA) Micuding Risk Assessment (PA) No Honowitzer Conservation and Recovery Act (RCA) Facility Assessment (RA) No Carretive Measures Injointemation (CMI)/Remedial Action Carretive	Topock Project Executive Abstract			
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	Other requirements of this information? None.			



Version 9



Curt Russell Topock Site Manager GT&D Remediation Topock Compressor Station 145453 National Trails Hwy Needles, CA 92363

Mailing Address P.O. Box 337 Needles, CA 92363

760.326.5582 Fax: 760.326.5542 Email: gcr4@pge.com

January 13, 2012

Pamela S. Innis Topock Remedial Project Manager U.S. Department of the Interior Office of Environmental Policy and Compliance P.O Box 2507 (D-108) Denver Federal Center, Building 56 Denver, CO 80225-0007

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 Fourth Quarter 2011 Monitoring and Semiannual July – December 2011 / Annual January – December 2011 Operation and Maintenance Report PG&E Topock Compressor Station, Needles, California Interim Measure No. 3 Groundwater Treatment System (Document ID: PGE20120113B)

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Combined Fourth Quarter 2011 Monitoring and Semiannual July – December 2011 / Annual January – December 2011 Operation and Maintenance Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 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

Ms. Pamela S. Innis/DOI and Mr. Robert Perdue/Regional Water Board January 13, 2012 Page 2

August 18, 2011 from DOI to the Regional Water Board. Quarterly monitoring reports are required to be submitted by the fifteenth day of the month following the end of the quarter.

Since initial operation in July 2005, the IM-3 groundwater treatment system has treated approximately 459,000,000 gallons of water through December 31, 2011.

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 Fourth Quarter 2011 Monitoring and Semiannual July – December 2011 / Annual January – December 2011 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 Fourth Quarter 2011 Monitoring and Semiannual July – December 2011 / Annual January – December 2011 Operation and Maintenance Report

Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20120113B

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

January 13, 2012

CH2NHILL 155 Grand Avenue, Suite 800 Oakland, CA 94612

Combined Fourth Quarter 2011 Monitoring and Semiannual July – December 2011/ Annual January – December 2011 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

January 13, 2012

This report was prepared under the supervision of a California Categories and the supervision of a California Categories and the supervision of th

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TP-PR-10-10-03	Extraction Wells - Influent Metering Locations
TP-PR-10-10-11	Injection Wells - Effluent Metering Locations

Appendixes

- A Semiannual Operations and Maintenance Log, July 1, 2011 through December 31, 2011
- B Daily Volumes of Groundwater Treated
- C Flowmeter Calibration Records
- D Fourth Quarter 2011 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	Truesdail Laboratories, Inc.
WDR	Waste Discharge Requirements

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

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

PG&E is currently 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). The WDR Order No. R7-2006-0060 expired on September 20, 2011 and was replaced by DOI enforcement of the 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 the IM-3 groundwater treatment system monitoring activities during the Fourth Quarter 2011; the operation and maintenance activities during the July 1, 2011 to December 31, 2011 semiannual period (Third and Fourth Quarters 2011); and (by reference; see Section 3.0) the operation and maintenance activities during the January 1, 2011 to June 30, 2011 semiannual period (First and Second Quarters 2011). 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.

Table 1 lists the locations of sampling stations. 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 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 459,000,000 gallons of water and removed 5,039 pounds of total chromium through December 31, 2011.

This report describes Fourth Quarter 2011 monitoring activities and the July 1, 2011 through December 31, 2011 (Third and Fourth Quarters) operation and maintenance activities related to the IM-3 groundwater treatment system. IM-3 monitoring activities from January 1, 2011 through September 30, 2011 (First, Second, and Third Quarter monitoring) were presented in the following monitoring reports:

- *IM No. 3 First Quarter 2011 Monitoring Report for Groundwater Treatment System Waste Discharge Requirements Order No. R7-2006-0060,* submitted to the Regional Water Board April 15, 2011.
- IM No. 3 Second Quarter 2011 Monitoring / Semiannual January 1- June 30, 2011 Operation and Maintenance Report for Groundwater Treatment System Waste Discharge Requirements Order No. R7-2006-0060, submitted to the Regional Water Board July 15, 2011.
- *IM-3 Third Quarter 2011 Monitoring Report,* submitted to the DOI and Regional Water Board October 14, 2011.

The IM-3 operation and maintenance activities from January 1, 2011 through June 30, 2011 (First and Second Quarter 2011 operation and maintenance) were reported in the Second Quarter 2011 Monitoring/Semiannual Operation and Maintenance Report listed above; these operation and maintenance data are incorporated in the present report by reference. The present report therefore also serves as the annual January through December 2011 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 Fourth Quarter 2011

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 2.5 percent downtime during Fourth Quarter 2011) 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 July 2011 – September 2011 are reported in the *IM-3 Third Quarter 2011 Monitoring Report, PG&E Topock Compressor Station, Needles, CA*, published October 14, 2011 and are provided 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 Fourth Quarter 2011, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during Fourth Quarter 2011. Extraction well TW-2D was operated for a short period during December 2011. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 97.6 percent during October 2011
- 97.1 percent during November 2011
- 97.9 percent during December 2011

The Fourth Quarter 2011 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 17,387,128 gallons of extracted groundwater during Fourth Quarter 2011.

In addition to extracted groundwater, during Fourth Quarter 2011 the IM-3 facility treated 35,535 gallons of water generated from the groundwater monitoring program and 28,000 gallons of injection well development water.

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 17,135,933 gallons of treatment system effluent during Fourth Quarter 2011. 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 249,538 gallons of RO concentrate during Fourth Quarter 2011. 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. Five sludge containers were shipped offsite from the IM-3 facility during Fourth Quarter 2011. 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 Fourth Quarter 2011, 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 Fourth Quarter 2011sample 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, 2011 and June 30, 2011 were included in the First Quarter and Second Quarter Monitoring Reports submitted to the Regional Water Board. The analytical results and laboratory report between July 1, 2011 and September 30, 2011 were included in Third Quarter Monitoring Reports submitted to the DOI and Regional Water Board (see Section 3.0 for a complete listing of reports).

Laboratory reports for samples collected in Fourth Quarter 2011 were prepared by certified analytical laboratories, and are presented in Appendix D. The Fourth Quarter 2011 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 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.

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 July 1, 2011 through December 31, 2011. The IM-3 operation and maintenance activities for January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

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:

^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.

5.2 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated between July 1, 2011 and December 31, 2011 are provided in Appendix B. The daily volumes of groundwater treated from January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

Approximately 34,085,405 gallons of groundwater were extracted and treated between July 1, 2011 and December 31, 2011. Treatment of this water at the IM-3 facility is being performed in accordance with the conditions of ARARs.

Additionally, approximately 38,060 gallons of well purge water (generated during well development, monitoring well sampling, and/or aquifer testing) and 48,700 gallons of injection well re-development water were treated at the IM-3 facility during the July 1, 2011 through December 31, 2011 semiannual period.

A total of approximately 33,451,064 gallons of treated groundwater was injected back into the Alluvial Aquifer between July 1, 2011 and December 31, 2011.

5.3 Residual Solids Generated (Sludge)

During the July 1, 2011 through December 31, 2011 reporting period, nine containers of sludge were shipped offsite for disposal. The containers of sludge shipped offsite for disposal from January 1, 2011 through June 30, 2011 were reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011. The sludge was shipped to U.S. Ecology in Beatty, Nevada for disposal. A listing of each shipment during the July 1, 2011 through December 31, 2011 reporting period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests (cubic yards)	Approximate Wet Weight (Ibs)	Type of Shipment
8/3/2011	8	16,020	non-RCRA hazardous waste
8/15/2011	8	13,640	non-RCRA hazardous waste
9/6/2011	8	10,380	non-RCRA hazardous waste
9/6/2011	8	10,360	non-RCRA hazardous waste
10/6/2011	8	20,360	non-RCRA hazardous waste
10/26/2011	8	14,380	non-RCRA hazardous waste
10/26/2011	8	15,140	non-RCRA hazardous waste
11/30/2011	8	10,380	non-RCRA hazardous waste
11/30/2011	8	14,420	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 July 1, 2011 through December 31, 2011, approximately 525,628 gallons of RO concentrate were transported to Liquid Environmental Solutions in Phoenix, Arizona for disposal. The daily volumes of RO concentrate generated from January 1, 2011 through June 30, 2011 were reported in the Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

5.5 Summary of ARARs Compliance

No ARARs violations were identified during the July 1, 2011 through December 31, 2011 semiannual reporting period, nor during the January 1, 2011 through December 31, 2011 annual reporting period.

5.6 Operation and Maintenance – Required Shutdowns

Records of routine maintenance are kept onsite. The summary of operation or maintenance issues that required the groundwater extraction system to be shut down during the January 1, 2011 through June 30, 2011 period was reported in the Second Quarter 2011 Monitoring and Semiannual January 1- June 30, 2011 Operation and Maintenance Report, submitted July 15, 2011.

Appendix A contains a summary of the operation or maintenance issues that required the groundwater extraction system to be shut down during the July 1, 2011 through December 31, 2011 semiannual reporting period.

Activities during the Third Quarter 2011 included one extended shutdown. The extraction system downtime was 3 days and 11 hours, and occurred August 15 – 18, 2011, due to a planned plant outage for maintenance.

No extended shutdowns of the IM-3 extraction system occurred during the Fourth Quarter 2011.

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, 2011 through December 31, 2011 annual 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, or 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:	behumn
Name:	Curt Russell
Company: _	Pacific Gas and Electric Company
Title:	Topock Site Manager
Date:	January 13, 2012

Tables

TABLE 1

Sampling Station Descriptions

Fourth Quarter 2011 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

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^b (gpm)
October 2011 Average Monthly Flowrate	131.4	128.8	1.8
November 2011 Average Monthly Flowrate	131.5	129.7	1.8
December 2011 Average Monthly Flowrate	130.9	129.6	2.1

Fourth Quarter 2011 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Notes:

gpm: gallons per minute

^a Extraction wells TW-3D and PE-1 were operated during the Fourth Quarter 2011. Extraction wells TW-2D and TW-2S were not operated during the Fourth Quarter 2011.

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Fourth Quarter 2011 is approximately 0.6 percent.
Parameter	Sample Collection Dates	Results
Influent	October 4, 2011	See Table 4
	November 1, 2011	
	December 6, 2011	
Effluent	October 4 , 2011	See Table 5
	October 11, 2011	
	October 18, 2011	
	October 26, 2011	
	November 1, 2011	
	November 8, 2011	
	November 16, 2011	
	November 22, 2011	
	November 28, 2011	
	December 6, 2011	
	December 13, 2011	
	December 20, 2011	
	December 27, 2011	
Reverse Osmosis Concentrate	October 11, 2011	See Table 6
Sludge ^a	October 11, 2011	See Table 7

Sample Collection Dates

Fourth Quarter 2011 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Notes:

^a Sludge samples analysis is required quarterly by composite.

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

Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequence	у									Мо	onthly												
Analytes	TDS	Turbidity	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluorid	e Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
	mg/L	NIU	µmnos/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
Sample ID Date	0.400	0.0140	0.0380		0.0980	1.40	2.80	0.0012	0.110	0.250	0.180	0.0015	0.110	0.0250	0.0980	0.250	0.270	0.0670	0.0550	0.00036	0.500	1.30	3.90
SC-100B-WDR-329 10/4/2011	4580	ND (0.100)	7850	7.2	887	847	ND (50.0)	ND (0.500)	ND (10.0)	4.60	26.9	1.07 I	ND (5.00)	2.45	ND (10.0)	7.60	20.8	ND (10.0)	3.11	ND (0.0050	554	ND (20.0)	ND (10.0)
RL	125	0.100	2.00		1.00	10.5	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-333 11/1/2011	4460	0.169	7510	7.2	871	897	ND (50.0)	1.26	ND (10.0)	4.30	28.6	1.04 I	ND (5.00)	1.81	ND (10.0)	7.20	22.2	ND (10.0)	3.28	ND (0.0050	595	ND (20.0)	ND (10.0)
RL	125	0.100	2.00		1.00	21.0	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	12.5	20.0	10.0
SC-100B-WDR-338 12/6/2011	4390	0.178	7750	7.2	920	910	ND (50.0)	ND (0.500)	ND (10.0)	3.70	28.0	1.08 I	ND (5.00)	1.50	ND (10.0)	7.20	20.0	ND (10.0)	3.35	ND (0.0050	528	ND (20.0)	ND (10.0)
RL	250	0.100	2.00		1.00	21.0	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	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

 $\mu g/L = micrograms per liter$

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.

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

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
Sampling Frequency	/		Weekly	y											Monthly								
Analytes Units ^c	5 TDS	Turbidity NTU	Specific Conductan umhos/cm	Field ⁶ ce pH pH units	e Chromium ua/L	Hexavalent Chromium ua/L	Aluminium ua/L	Ammonia (as N) ma/L	Antimony ug/L	Arsenic ua/L	Barium ua/L	Boron ma/L	Copper ug/L	Fluoride ma/L	E Lead N	langanese	Molybdenum ua/L	Nickel ua/L	Nitrate (as N) mg/L	Nitrite (as N) mg/L	Sulfate	lron ua/L	Zinc ua/L
	0.400	0.0140	. 0.0380	· 	0.0980	0.0270	2.80	0.0012	0.110	0.250	0.180	0.0015	0.110	0.0250	0.0980	0.230	0.270	0.0670	0.0550	0.00036	1.00	1.30	3.90
Sample ID Date																							
SC-700B-WDR-329 10/4/2011	4260	ND (0.100)	7480	7.00	ND (1.00)	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	10.9	1.04	ND (5.00)	2.09	ND (10.0)	3.00	18.6	ND (10.0)	2.92	ND (0.0050)	501	ND (20.0)	ND (10.0)
RL	125	0.100	2.00		1.00	1.00	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-330 10/11/2011	4360	0.110	7630	7.00	1.30	ND (1.00)										2.00							
RL	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-331 10/18/2011	4300	ND (0.100)	7540	7.10	ND (1.00)	ND (1.00)										9.60							
RL	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-332 10/25/2011	4230	ND (0.100)	7390	7.00	ND (1.00)	ND (1.00)										7.90							
RL	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-333 11/1/2011	4340	ND (0.100)	7110	7.10	ND (1.00)	ND (1.00)	ND (50.0)	1.14	ND (10.0)	ND (1.00)	14.3	1.01	ND (5.00)) 1.50	ND (10.0)	9.80	17.1	ND (10.0)	3.03	ND (0.0050)	519	ND (20.0)	35.3
	125	0.100	2.00		1.00	1.00	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-700B-WDR-334 11/8/2011	4400	ND (0.100)	7250	7.00	ND (1.00)	ND (1.00)										6.50							
	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-335 11/15/2011	4150	0.100	2.00	7.10	1 00	1 00										1.0							
	120	0.100	2.00		ND (1 00)	ND (1 00)										1.00							
RI	125	0 100	2 00		1 00	1 00										2.00							
SC-700B-WDR-337 11/29/2011	4180	ND (0 100)	7120	7 00	ND (1 00)	ND (1 00)										12 9							
RL	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-338 12/6/2011	5120	ND (0.100)	7130	7.20	1.10	ND (1.00)	ND (50.0)	ND (0.500)	ND (10.0)	ND (1.00)	15.4	1.06	ND (5.00)	1.32	ND (10.0)	9.90	18.1	ND (10.0)	4.74	ND (0.0050)	477	ND (20.0)	ND (10.0)
RL	250	0.100	2.00		1.00	1.00	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-339 12/13/2011	4150	ND (0.100)	6990	7.00	ND (1.00)	ND (0.200)										7.50							
RL	125	0.100	2.00		1.00	0.200										1.00							
SC-700B-WDR-340 12/20/2011	4280	ND (0.100)	7120	7.10	ND (1.00)	ND (1.00)										6.50							
RL	125	0.100	2.00		1.00	1.00										1.00							
SC-700B-WDR-341 12/27/2011	4240	ND (0.100)	7160	7.10	ND (1.00)	ND (1.00)										5.70							
RL	125	0.100	2.00		1.00	1.00										1.00							

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Effluent Monitoring Results^a *Fourth Quarter 2011 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.
- $^{\rm c}\,$ Units reported in this table are those units required in the ARARs.
- ^d MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.
- ^e Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Reverse Osmosis Concentrate Monitoring Results ^a *Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Sampling 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 [®]	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 Date MDL	0.400	0.0380		0.00011	0.00027	0.00012	0.00028	0.0022	0.00018	0.00047	0.00048	0.00012	0.0250	0.00011	0.0040	0.000075	0.000075	0.00034	0.00018	0.00012	0.00037	0.0013
SC-701-WDR-330 10/11/2011	24800	36700	7.0	0.00320	0.00210	ND (0.0100)	0.00110	0.0744	ND (0.0010)J	ND (0.0030)	ND (0.00	50)ND (0.0050) 13.2	ND (0.0100) 0.105	ND (0.0010)	ND (0.0100)	0.0188	ND (0.005	0) ND (0.001	0) ND (0.0050)	0.0110
RL	500	2.00		0.0010	0.0021	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

 $\mu g/L = micrograms per liter$

µmhos/cm = micromhos per centimeter

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

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

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

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Sludge Monitoring Results^a Fourth Quarter 2011 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampli	ng Frequency										Qu	arterly								
Sample ID	Analytes Units ^b MDL Date	Chromium mg/kg 0.0117	Hexavalent Chromium mg/kg 0.230	Antimony mg/kg 0.0146	Arsenic mg/kg 0.0196	Barium mg/kg 0.0112	Beryllium mg/kg 0.0040	Cadmium mg/kg 0.0136	Cobalt mg/kg 0.0133	Copper mg/kg 0.0138	Fluoride mg/kg 0.0050	Lead mg/kg 0.0236	Molybdenum mg/kg 0.0201	Mercury mg/kg 0.00015	Nickel mg/kg 0.0128	Selenium mg/kg 0.0161	Silver mg/kg 0.0111	Thallium mg/kg 0.0067	Vanadium mg/kg 0.0088	Zinc mg/kg 0.0194
SC-Sludge-WDR-3: RL	30 10/11/2011	4720 9.62	39.4 7.93	79.9 4.81	ND (4.81) 4.81	58.3 4.81	ND (1.92) 1.92	11.6 4.81	9.38 4.81	111 4.81	25.8 3.97	8.93 4.81	9.46 4.81	ND (0.196) 0.196	39.8 4.81	ND (4.81) 4.81	ND (4.81) 4.81	ND (4.81) 4.81	133 4.81	57.8 4.81

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.

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-329	Ron Phelps	10/4/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/7/2011	Gautam Savani
					TLI	EPA 200.7	AL	10/12/2011	Ethel Suico
					TLI	EPA 200.7	В	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FE	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FETD	10/12/2011	Ethel Suico
					TLI	EPA 200.7	ZN	10/12/2011	Ethel Suico
					TLI	EPA 200.8	AS	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MND	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/5/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	10/5/2011	Giawad Ghenniwa
					FIELD	HACH	PH	10/4/2011	Ron Phelps
					TLI	SM 2320B	ALKB	10/11/2011	Kim Luck
					TLI	SM 2320B	ALKC	10/11/2011	Kim Luck
					TLI	SM2130B	TRB	10/5/2011	Gautam Savani
					TLI	SM2540C	TDS	10/6/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	10/5/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	10/5/2011	Jenny Tankunakorn
SC-100B	SC-100B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 120.1	SC	11/2/2011	Gautam Savani
					TLI	EPA 200.7	AL	11/11/2011	Ethel Suico
					TLI	EPA 200.7	В	11/15/2011	Ethel Suico
					TLI	EPA 200.7	FE	11/11/2011	Ethel Suico
					TLI	EPA 200.7	FETD	11/11/2011	Ethel Suico
					TLI	EPA 200.7	ZN	11/15/2011	Ethel Suico
					TLI	EPA 200.8	AS	11/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	11/17/2011	Katia Kiarashpoor

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 200.8	CU	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MND	11/19/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/2/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	11/3/2011	Giawad Ghenniwa
					FIELD	HACH	PH	11/1/2011	Ron Phelps
					TLI	SM 2320B	ALKB	11/8/2011	Kim Luck
					TLI	SM 2320B	ALKC	11/8/2011	Kim Luck
					TLI	SM2130B	TRB	11/2/2011	Gautam Savani
					TLI	SM2540C	TDS	11/2/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	11/3/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	11/2/2011	Jenny Tankunakorn
SC-100B	SC-100B-WDR-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/8/2011	Gautam Savani
					TLI	EPA 200.7	AL	12/13/2011	Ethel Suico
					TLI	EPA 200.7	В	12/16/2011	Ethel Suico
					TLI	EPA 200.7	FE	12/13/2011	Ethel Suico
					TLI	EPA 200.7	FETD	12/13/2011	Ethel Suico
					TLI	EPA 200.7	NI	12/13/2011	Ethel Suico
					TLI	EPA 200.7	ZN	12/13/2011	Ethel Suico
					TLI	EPA 200.8	AS	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	1/9/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/7/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MND	1/9/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MO	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	12/31/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	1/9/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/8/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	12/7/2011	Giawad Ghenniwa

Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Monitoring Information Fourth Quarter 2011 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-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 300.0	NO3N	12/7/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	12/7/2011	Giawad Ghenniwa
					FIELD	HACH	PH	12/6/2011	Ron Phelps
					TLI	SM 2320B	ALKB	12/7/2011	Kim Luck
					TLI	SM 2320B	ALKC	12/7/2011	Kim Luck
					TLI	SM2130B	TRB	12/7/2011	Gautam Savani
					TLI	SM2540C	TDS	12/8/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	12/7/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	12/7/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-329	Ron Phelps	10/4/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/7/2011	Gautam Savani
					TLI	EPA 200.7	AL	10/12/2011	Ethel Suico
					TLI	EPA 200.7	В	10/12/2011	Ethel Suico
					TLI	EPA 200.7	FE	10/12/2011	Ethel Suico
					TLI	EPA 200.7	ZN	10/12/2011	Ethel Suico
					TLI	EPA 200.8	AS	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/10/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/5/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/5/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	10/5/2011	Giawad Ghenniwa
					FIELD	HACH	PH	10/4/2011	Ron Phelps
					TLI	SM2130B	TRB	10/5/2011	Gautam Savani
					TLI	SM2540C	TDS	10/6/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	10/5/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	10/5/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-330	Ron Phelps	10/11/2011	1:00:00 PM	TLI	EPA 120.1	SC	10/12/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/13/2011	Maksim Gorbunov
					TLI	EPA 200.8	MN	10/13/2011	Maksim Gorbunov
					TLI	EPA 218.6	CR6	10/12/2011	Sonya Bersudsky

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-330	Ron Phelps	10/11/2011	1:00:00 PM	FIELD	HACH	PH	10/11/2011	Ron Phelps
					TLI	SM2130B	TRB	10/12/2011	Gautam Savani
					TLI	SM2540C	TDS	10/14/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-331	Ron Phelps	10/18/2011	1:30:00 PM	TLI	EPA 120.1	SC	10/21/2011	Gautam Savani
					TLI	EPA 200.8	CR	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	10/26/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/19/2011	Maksim Gorbunov
					FIELD	HACH	PH	10/18/2011	Ron Phelps
					TLI	SM2130B	TRB	10/19/2011	Gautam Savani
					TLI	SM2540C	TDS	10/19/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-332	Ron Phelps	10/25/2011	10:00:00 AM	TLI	EPA 120.1	SC	10/26/2011	Gautam Savani
					TLI	EPA 200.8	CR	11/9/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/9/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/27/2011	Maksim Gorbunov
					FIELD	HACH	PH	10/25/2011	Ron Phelps
					TLI	SM2130B	TRB	10/26/2011	Gautam Savani
					TLI	SM2540C	TDS	10/27/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	TLI	EPA 120.1	SC	11/2/2011	Gautam Savani
					TLI	EPA 200.7	AL	11/11/2011	Ethel Suico
					TLI	EPA 200.7	В	11/15/2011	Ethel Suico
					TLI	EPA 200.7	FE	11/11/2011	Ethel Suico
					TLI	EPA 200.7	ZN	11/15/2011	Ethel Suico
					TLI	EPA 200.8	AS	11/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BA	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	11/17/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MO	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	11/12/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/2/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	11/2/2011	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	11/3/2011	Giawad Ghenniwa

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-333	Ron Phelps	11/1/2011	12:00:00 PM	FIELD	HACH	PH	11/1/2011	Ron Phelps
					TLI	SM2130B	TRB	11/2/2011	Gautam Savani
					TLI	SM2540C	TDS	11/2/2011	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	11/3/2011	Maria Mangarova
					TLI	SM4500NO2B	NO2N	11/2/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-334	Ron Phelps	11/8/2011	11:00:00 AM	TLI	EPA 120.1	SC	11/11/2011	Gautam Savani
					TLI	EPA 200.8	CR	11/22/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	11/22/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/11/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/8/2011	Ron Phelps
					TLI	SM2130B	TRB	11/9/2011	Gautam Savani
					TLI	SM2540C	TDS	11/14/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-335	Ron Phelps	11/15/2011	10:00:00 AM	TLI	EPA 120.1	SC	11/16/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/28/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/28/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/16/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/15/2011	Ron Phelps
					TLI	SM2130B	TRB	11/16/2011	Gautam Savani
					TLI	SM2540C	TDS	11/17/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-336	Ron Phelps	11/22/2011	10:30:00 AM	TLI	EPA 120.1	SC	11/23/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/4/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/4/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/23/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/22/2011	Ron Phelps
					TLI	SM2130B	TRB	11/23/2011	Gautam Savani
					TLI	SM2540C	TDS	11/22/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-337	Ron Phelps	11/29/2011	10:00:00 AM	TLI	EPA 120.1	SC	11/30/2011	Gautam Savani
					TLI	EPA 200.8	CR	12/16/2011	Katia Kiarashpoor
					TLI	EPA 200.8	MN	12/16/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	11/30/2011	Maksim Gorbunov
					FIELD	HACH	PH	11/29/2011	Ron Phelps
					TLI	SM2130B	TRB	11/30/2011	Gautam Savani
					TLI	SM2540C	TDS	11/30/2011	Jenny Tankunakorn
SC-700B	SC-700B-WDR-338	Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/8/2011	Gautam Savani

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SC-700B SC-700B-WDR-338 Ron Phelps 12/6/2011 1:30:00 PM TLI EPA 200.7 AL 12/13/2011 Ethel Suico TLI EPA 200.7 B 12/16/2011 Ethel Suico	SC-700B		ample ID Name	Date	Time	Lab	Method	Parameter	Date	Technician
TLI EPA 200.7 B 12/16/2011 Ethel Suico TLI EPA 200.7 B 12/16/2011 Ethel Suico		SC-700B-WDR-338	B-WDR-338 Ron Phelps	12/6/2011	1:30:00 PM	TLI	EPA 200.7	AL	12/13/2011	Ethel Suico
						TLI	EPA 200.7	В	12/16/2011	Ethel Suico
ILI EPA 200.7 FE 12/13/2011 Ethel Suico						TLI	EPA 200.7	FE	12/13/2011	Ethel Suico
TLI EPA 200.7 NI 12/13/2011 Ethel Suico						TLI	EPA 200.7	NI	12/13/2011	Ethel Suico
TLI EPA 200.7 ZN 12/13/2011 Ethel Suico						TLI	EPA 200.7	ZN	12/13/2011	Ethel Suico
TLI EPA 200.8 AS 12/31/2011 Katia Kiarashpoor						TLI	EPA 200.8	AS	12/31/2011	Katia Kiarashpoor
TLI EPA 200.8 BA 12/31/2011 Katia Kiarashpoor						TLI	EPA 200.8	BA	12/31/2011	Katia Kiarashpoor
TLI EPA 200.8 CR 12/31/2011 Katia Kiarashpoor						TLI	EPA 200.8	CR	12/31/2011	Katia Kiarashpoor
TLI EPA 200.8 CU 1/9/2012 Katia Kiarashpoor						TLI	EPA 200.8	CU	1/9/2012	Katia Kiarashpoor
TLI EPA 200.8 MN 1/7/2012 Katia Kiarashpoor						TLI	EPA 200.8	MN	1/7/2012	Katia Kiarashpoor
TLI EPA 200.8 MO 12/31/2011 Katia Kiarashpoor						TLI	EPA 200.8	MO	12/31/2011	Katia Kiarashpoor
TLI EPA 200.8 PB 12/31/2011 Katia Kiarashpoor						TLI	EPA 200.8	PB	12/31/2011	Katia Kiarashpoor
TLI EPA 200.8 SB 1/9/2012 Katia Kiarashpoor						TLI	EPA 200.8	SB	1/9/2012	Katia Kiarashpoor
TLI EPA 218.6 CR6 12/8/2011 Maksim Gorbunov						TLI	EPA 218.6	CR6	12/8/2011	Maksim Gorbunov
TLI EPA 300.0 FL 12/7/2011 Giawad Ghenniwa						TLI	EPA 300.0	FL	12/7/2011	Giawad Ghenniwa
TLI EPA 300.0 NO3N 12/7/2011 Giawad Ghenniwa						TLI	EPA 300.0	NO3N	12/7/2011	Giawad Ghenniwa
TLI EPA 300.0 SO4 12/7/2011 Giawad Ghenniwa						TLI	EPA 300.0	SO4	12/7/2011	Giawad Ghenniwa
FIELD HACH PH 12/6/2011 Ron Phelps						FIELD	HACH	PH	12/6/2011	Ron Phelps
TLI SM2130B TRB 12/7/2011 Gautam Savani						TLI	SM2130B	TRB	12/7/2011	Gautam Savani
TLI SM2540C TDS 12/8/2011 Jenny Tankunakorn						TLI	SM2540C	TDS	12/8/2011	Jenny Tankunakorn
TLI SM4500NH3D NH3N 12/7/2011 Maria Mangarova						TLI	SM4500NH3D	NH3N	12/7/2011	Maria Mangarova
TLI SM4500NO2B NO2N 12/7/2011 Jenny Tankunakorn						TLI	SM4500NO2B	NO2N	12/7/2011	Jenny Tankunakorn
SC-700B SC-700B-WDR-339 Ron Phelps 12/13/2011 1:30:00 PM TLI EPA 120.1 SC 12/14/2011 Gautam Savani	SC-700B	SC-700B-WDR-339	B-WDR-339 Ron Phelps	12/13/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/14/2011	Gautam Savani
TLI EPA 200.8 CR 1/4/2012 Katia Kiarashpoor						TLI	EPA 200.8	CR	1/4/2012	Katia Kiarashpoor
TLI EPA 200.8 MN 12/30/2011 Katia Kiarashpoor						TLI	EPA 200.8	MN	12/30/2011	Katia Kiarashpoor
TLI EPA 218.6 CR6 12/16/2011 Maksim Gorbunov						TLI	EPA 218.6	CR6	12/16/2011	Maksim Gorbunov
FIELD HACH PH 12/13/2011 Ron Phelps						FIELD	HACH	PH	12/13/2011	Ron Phelps
TLI SM2130B TRB 12/14/2011 Gautam Savani						TLI	SM2130B	TRB	12/14/2011	Gautam Savani
TLI SM2540C TDS 12/16/2011 Jenny Tankunakorn						TLI	SM2540C	TDS	12/16/2011	Jenny Tankunakorn
SC-700B SC-700B-WDR-340 Ron Phelps 12/20/2011 1:30:00 PM TLI EPA 120.1 SC 12/28/2011 Gautam Savani	SC-700B	SC-700B-WDR-340	B-WDR-340 Ron Phelps	12/20/2011	1:30:00 PM	TLI	EPA 120.1	SC	12/28/2011	Gautam Savani
TLI EPA 200.8 CR 1/8/2012 Katia Kiarashpoor						TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
TLI EPA 200.8 MN 1/8/2012 Katia Kiarashpoor						TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
TLI EPA 218.6 CR6 12/22/2011 Maksim Gorbunov						TLI	EPA 218.6	CR6	12/22/2011	Maksim Gorbunov
FIELD HACH PH 12/20/2011 Ron Phelps						FIELD	HACH	PH	12/20/2011	Ron Phelps
TLI SM2130B TRB 12/21/2011 Gautam Savani						TLI	SM2130B	TRB	12/21/2011	Gautam Savani
TLI SM2540C TDS 12/22/2011 Jenny Tankunakorn						TLI	SM2540C	TDS	12/22/2011	Jenny Tankunakorn

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-341	Ron Phelps	12/27/2011	10:30:00 AM	TLI	EPA 120.1	SC	12/28/2011	Mark Kotani
					TLI	EPA 200.8	CR	1/8/2012	Katia Kiarashpoor
					TLI	EPA 200.8	MN	1/8/2012	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	12/28/2011	Maksim Gorbunov
					FIELD	HACH	PH	12/27/2011	Ron Phelps
					TLI	SM2130B	TRB	12/29/2011	Kim Luck
					TLI	SM2540C	TDS	12/28/2011	Jenny Tankunakorn
SC-701	SC-701-WDR-330	Ron Phelps	10/11/2011	3:00:00 PM	TLI	EPA 120.1	SC	10/14/2011	Gautam Savani
					TLI	EPA 200.7	BA	10/25/2011	Ethel Suico
					TLI	EPA 200.7	MN	10/25/2011	Ethel Suico
					TLI	EPA 200.7	MO	10/24/2011	Ethel Suico
					TLI	EPA 200.8	AG	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	AS	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	BE	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CD	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	СО	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CR	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	CU	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	HG	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	NI	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	PB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SB	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	SE	10/14/2011	Katia Kiarashpoor
					TLI	EPA 200.8	TL	10/24/2011	Katia Kiarashpoor
					TLI	EPA 200.8	V	10/26/2011	Katia Kiarashpoor
					TLI	EPA 200.8	ZN	10/24/2011	Katia Kiarashpoor
					TLI	EPA 218.6	CR6	10/13/2011	Maksim Gorbunov
					TLI	EPA 300.0	FL	10/11/2011	Giawad Ghenniwa
					FIELD	HACH	PH	10/11/2011	Ron Phelps
					TLI	SM2540C	TDS	10/14/2011	Jenny Tankunakorn
Phase Separator	SC-Sludge-WDR-330	Ron Phelps	10/11/2011	3:20:00 PM	TLI	EPA 300.0	FL	10/11/2011	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	10/11/2011	Giawad Ghenniwa
					TLI	EPA 6010B	AG	10/20/2011	Ethel Suico
					TLI	EPA 6010B	AS	10/20/2011	Ethel Suico
					TLI	EPA 6010B	BA	10/20/2011	Ethel Suico

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

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
Phase Separator	SC-Sludge-WDR-330	Ron Phelps	10/11/2011	3:20:00 PM	TLI	EPA 6010B	BE	10/19/2011	Ethel Suico
					TLI	EPA 6010B	CD	10/20/2011	Ethel Suico
					TLI	EPA 6010B	СО	10/20/2011	Ethel Suico
					TLI	EPA 6010B	CR	10/20/2011	Ethel Suico
					TLI	EPA 6010B	CU	10/20/2011	Ethel Suico
					TLI	EPA 6010B	MN	10/20/2011	Ethel Suico
					TLI	EPA 6010B	MO	10/20/2011	Ethel Suico
					TLI	EPA 6010B	NI	10/20/2011	Ethel Suico
					TLI	EPA 6010B	PB	10/20/2011	Ethel Suico
					TLI	EPA 6010B	SB	10/20/2011	Ethel Suico
					TLI	EPA 6010B	SE	10/20/2011	Ethel Suico
					TLI	EPA 6010B	TL	10/20/2011	Ethel Suico
					TLI	EPA 6010B	V	10/20/2011	Ethel Suico
					TLI	EPA 6010B	ZN	10/20/2011	Ethel Suico
					TLI	SM2540B	MOIST	10/17/2011	Gautam Savani
					TLI	SW 6020A	HG	11/8/2011	Katia Kiarashpoor
					TLI	SW 7199	CR6	10/24/2011	David Blackbum

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

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NOTES:

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

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

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

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

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

Figures















Appendix A Semiannual Operations and Maintenance Log, July 1, 2011 through December 31, 2011

APPENDIX A Semiannual Operations and Maintenance Log, July 1, 2011 through December 31, 2011

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.

July 2011

- **July 3, 2011 (unplanned):** The extraction well system was offline from 9:40 p.m. to 9:52 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 12 minutes.
- July 4, 2011 (planned): The extraction well system was offline from 5:08 a.m. to 5:12 a.m. due to changing back to City of Needles power from generator power. Extraction system downtime was 4 minutes.
- **July 5, 2011 (unplanned):** The extraction well system was offline from 11:08 p.m. to 11:14 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 6 minutes.
- **July 6, 2011 (planned):** The extraction well system was offline from 8:04 a.m. to 11:26 a.m. and from 11:28 a.m. to 11:50 a.m. due to changing back to City of Needles power from generator power and monthly scheduled oxidation tank maintenance. Extraction system downtime was 3 hours and 44 minutes.
- July 7, 2011 (planned): The extraction well system was offline from 10:24 a.m. to 10:26 a.m. and from 10:46 a.m. to 10:48 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 4 minutes.
- July 13-14, 2011 (unplanned): The extraction well system was offline from 11:44 p.m. on July 13th to 12:10 a.m. on July 14th and from 12:12 a.m. to 12:58 a.m. on July 14th due to reduced microfilter performance. Extraction system downtime was 1 hour and 12 minutes.
- July 14, 2011 (planned): The extraction well system was offline from 10:00 a.m. to 12:32 p.m. due to scheduled maintenance on sludge control valve 410. Extraction system downtime was 2 hours and 32 minutes.
- July 27-28, 2011 (planned): The extraction well system was offline from 4:12 a.m. to 5:28 a.m. on July 27th and from 7:14 a.m. on July 27th to 12:46 p.m. on July 28th for monthly schedule maintenance. Extraction system downtime was 1 day and 6 hours and 48 minutes.

• **July 28, 2011 (unplanned):** The extraction well system was offline from 6:16 p.m. to 6:24 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 8 minutes.

August 2011

- August 1, 2011 (unplanned): The extraction well system was offline from 6:28 a.m. to 6:32 a.m. due to computer rebooting to clear alarms. Extraction system downtime was 4 minutes.
- August 2, 2011 (planned): The extraction well system was offline from 10:38 a.m. to 11:42 a.m. due to tank management to control tank levels. Extraction system downtime was 1 hour and 4 minutes.
- August 3, 2011 (planned): The extraction well system was offline from 12:32 p.m. to 12:34 p.m., 12:36 p.m. to 12:38 p.m., and 12:54 p.m. to 12:58 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 8 minutes.
- August 3, 2011 (unplanned): The extraction well system was offline from 7:26 p.m. to 8:18 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 52 minutes.
- August 6, 2011 (unplanned): The extraction well system was offline from 5:32 p.m. to 6:20 p.m. due to microfilter repair. Extraction system downtime was 48 minutes.
- August 11, 2011 (unplanned): The extraction well system was offline from 8:32 a.m. to 10:18 a.m. reduced microfilter performance. Extraction system downtime was 1 hour and 46 minutes.
- August 15, 2011 (planned): The extraction well system was offline from 3:26 a.m. to 3:54 a.m. due to tank level management in preparation for monthly schedule maintenance. Extraction system downtime was 28 minutes.
- August 15-18, 2011 (planned): The extraction well system was offline from 5:22 a.m. on August 15th to 12:38 p.m. on August 18th, from 12:48 p.m. to 1:34 p.m. on August 18th, and from 4:18 p.m. to 7:16 p.m. on August 18th for monthly scheduled maintenance. Extraction system downtime was 3 days and 11 hours.
- August 22, 2011 (planned): The extraction well system was offline from 8:32 a.m. to 10:44 a.m. and from 10:58 a.m. to 11:00 a.m. due to chemical mixing pump maintenance. Extraction system downtime was 2 hours and 14 minutes.
- August 30, 2011 (planned): The extraction well system was offline from 8:52 a.m. to 11:02 a.m. due to primary reverse osmosis system maintenance. Extraction system downtime was 2 hours and 10 minutes.

September 2011

- **September 2, 2011 (unplanned):** The extraction well system was offline from 7:52 a.m. to 9:00 a.m. due to microfilter maintenance. Extraction system downtime was 1 hour and 8 minutes.
- **September 3, 2011 (unplanned):** The extraction well system was offline from 11:00 a.m. to 11:28 a.m., 2:46 p.m. to 3:14 p.m., and 3:16 p.m. to 4:30 p.m. due to microfilter strainer fouling and microfilter maintenance after microfilter shutdown due to high system pressure. Extraction system downtime was 2 hours and 10 minutes.
- September 7, 2011 (planned): The extraction well system was offline from 10:18 a.m. to 10:22 a.m., 10:24 a.m. to 10:28 a.m., 10:50 a.m. to 10:52 a.m., 10:58 a.m. to 11:00 a.m., and 11:18 a.m. to 11:20 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 14 minutes.
- September 13, 2011 (unplanned): The extraction well system was offline from 4:18 a.m. to 4:26 a.m. due City of Needles power imbalance that shut down extraction wells and from 11:52 a.m. to 11:58 a.m. due to return to City of Needles power from generator power once City of Needles power was restored. Extraction system downtime was 14 minutes.
- **September 13, 2011 (planned):** The extraction well system was offline from 5:14 a.m. to 5:16 a.m. due to testing of leak detection system after City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- September 14, 2011 (planned): The extraction well system was offline from 7:32 a.m. to 7:34 a.m., 7:42 a.m. to 7:44 a.m., 7:52 a.m. to 7:54 a.m., 8:02 a.m. to 8:04 a.m., and 8:20 a.m. to 8:22 a.m. due to testing of leak detection system. Extraction system downtime was 10 minutes.
- September 21, 2011 (planned): The extraction well system was offline from 1:54 p.m. to 2:02 p.m. due to testing of plant instrumentation and controls updates. Extraction system downtime was 8 minutes.
- **September 28, 2011 (planned):** The extraction well system was offline from 12:22 p.m. to 12:44 p.m. due to primary reverse osmosis system maintenance. Extraction system downtime was 22 minutes.

October 2011

- October 5, 2011 (planned): The extraction well system was offline from 8:56 a.m. to 8:58 a.m., 9:10 a.m. to 9:12 a.m., 9:14 a.m. to 9:16 a.m., 9:58 a.m. to 10:00 a.m., and 10:36 a.m. to 10:38 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 10 minutes.
- October 14, 2011 (unplanned): The extraction well system was offline from 2:16 a.m. to 1:16 p.m., 1:26 p.m. to 3:54 p.m., and 4:10 p.m. to 4:14 p.m. due to polymer system maintenance. Extraction system downtime was 13 hours and 32 minutes.

- October 14, 2011 (unplanned): The extraction well system was offline from 5:26 p.m. to 6:38 p.m. due to decreased microfilter performance. Extraction system downtime was 1 hour and 12 minutes.
- October 15, 2011 (planned): The extraction well system was offline from 11:20 a.m. to 11:58 a.m. due to high water level in the raw water storage tank from receiving offsite water. Extraction system downtime was 38 minutes.
- October 18, 2011 (planned): The extraction well system was offline from 6:30 a.m. to 6:52 a.m. when City of Needles power utility adjusted power feed to plant. Extraction system downtime was 22 minutes.
- October 25, 2011 (unplanned): The extraction well system was offline from 12:52 p.m. to 2:28 p.m. due to reduced microfilter performance. Extraction system downtime was 1 hour and 36 minutes.
- October 31, 2011 (unplanned): The extraction well system was offline from 9:46 p.m. to 9:58 a.m. due to reduced microfilter performance. Extraction system downtime was 12 minutes.

November 2011

- November 1, 2011 (planned): The extraction well system was offline from 11:22 a.m. to 3:34 p.m. due to plant maintenance. Extraction system downtime was 4 hours and 12 minutes.
- **November 2, 2011 (planned):** The extraction well system was offline from 12:54 p.m. to 2:04 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 1 hour and 10 minutes.
- November 4, 2011 (planned): The extraction well system was offline from 5:20 p.m. to 5:52 p.m. due to well maintenance. Extraction system downtime was 32 minutes.
- November 9, 2011 (planned): The extraction well system was offline from 10:20 a.m. to 2:54 p.m. due to reverse osmosis system maintenance. Extraction system downtime was 4 hours and 34 minutes.
- November 14, 2011 (unplanned): The extraction well system was offline from 4:48 p.m. to 5:46 p.m. due to blower malfunction. Extraction system downtime was 58 minutes.
- November 16, 2011 (planned): The extraction well system was offline from 10:10 a.m. to 12:40 p.m. due to cleaning of an iron oxidation tank. Extraction system downtime was 2 hours and 30 minutes.
- November 18, 2011 (unplanned): The extraction well system was offline from 5:24 a.m. to 8:26 a.m. and 8:44 a.m. to 9:24 a.m. due to a ferrous chloride pumping system malfunction causing low ferrous chloride flow alarms that shut down extraction wells. Extraction system downtime was 3 hours and 42 minutes.

- November 20, 2011 (unplanned): The extraction well system was offline from 3:14 p.m. to 3:18 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 4 minutes.
- November 30, 2011 (unplanned): The extraction well system was offline from 6:50 p.m. to 9:44 p.m. due to a microfilter valve failure. Extraction system downtime was 2 hours and 54 minutes.

December 2011

- **December 1, 2011 (unplanned):** The extraction well system was offline from 12:52 p.m. to 1:08 p.m. due to reduced microfilter performance. Extraction system downtime 16 minutes.
- **December 2, 2011 (planned):** The extraction well system was offline from 2:44 p.m. to 4:32 p.m. due to microfilter flow valve replacement. Extraction system downtime was 1 hour and 48 minutes.
- **December 2, 2011 (planned):** The extraction well system was offline from 10:46 p.m. to 10:52 p.m. due to cleaning of the raw water storage tank strainer. Extraction system downtime was 6 minutes.
- **December 7, 2011 (planned):** The extraction well system was offline from 2:38 p.m. to 3:14 p.m. due to critical alarm and leak detection system testing. Extraction system downtime was 36 minutes.
- **December 8, 2011 (unplanned):** The extraction well system was offline from 6:58 a.m. to 7:04 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 6 minutes.
- **December 9, 2011 (unplanned):** The extraction well system was offline from 6:58 a.m. to 7:00 a.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- **December 12, 2011 (unplanned):** The extraction well system was offline from 3:48 p.m. to 3:52 p.m. due to groundwater sampling of extraction wells TW-2D and TW-2S. Extraction system downtime was 4 minutes.
- **December 14, 2011 (planned):** The extraction well system was offline from 12:20 p.m. to 3:10 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 2 hours and 50 minutes.
- **December 16, 2011 (unplanned):** The extraction well system was offline from 7:46 a.m. to 7:48 p.m. due to City of Needles power imbalance that shut down extraction wells. Extraction system downtime was 2 minutes.
- **December 19, 2011 (planned):** The extraction well system was offline from 11:38 a.m. to 2:02 p.m. due to maintenance of an iron oxidation tank. Extraction system downtime was 2 hours and 24 minutes.

• **December 28, 2011 (planned):** The extraction well system was offline from 7:40 a.m. to 9:40 a.m. and 9:42 a.m. to 2:52 p.m. due to monthly scheduled plant maintenance. Extraction system downtime was 7 hours and 10 minutes.

Appendix B Daily Volumes of Groundwater Treated
July 2011 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)
July	1	2011			155,544	39,407	194,951	13,219	186,692	199,911	3,035
July	2	2011			155,832	38,927	194,759	4,701	182,844	187,546	3,200
July	3	2011			154,348	37,881	192,229	0	191,998	191,998	6,531
July	4	2011			155,638	38,210	193,848	0	182,453	182,453	3,013
July	5	2011			154,808	38,976	193,785	5,509	183,702	189,212	3,277
July	6	2011			130,077	33,645	163,723	4	159,114	159,118	3,043
July	7	2011			153,636	37,634	191,270	1,905	187,242	189,147	3,274
July	8	2011			156,069	38,105	194,174	2	185,789	185,791	3,058
July	9	2011			155,961	38,169	194,130	6	190,563	190,569	3,168
July	10	2011			156,457	37,504	193,961	2	187,687	187,689	3,170
July	11	2011			156,169	37,884	194,053	4	187,963	187,966	6,200
July	12	2011			156,126	37,997	194,124	9,605	180,517	190,122	121
July	13	2011			154,211	37,825	192,036	56,430	133,471	189,901	3,036
July	14	2011			132,187	33,171	165,358	119,203	50,157	169,360	3,156
July	15	2011			155,884	38,704	194,588	189,122	363	189,485	3,164
July	16	2011			156,375	38,092	194,466	188,464	24	188,488	3,162
July	17	2011			156,322	38,213	194,535	191,135	24	191,159	3,036
July	18	2011			156,618	38,118	194,736	190,840	24	190,864	1,550
July	19	2011			157,129	37,403	194,532	188,128	29	188,157	4,608
July	20	2011			156,948	37,760	194,708	185,440	24	185,464	1
July	21	2011			157,007	37,782	194,789	184,611	28	184,639	2,891
July	22	2011			156,585	38,448	195,033	186,148	26	186,175	3,029
July	23	2011			157,034	37,705	194,739	195,362	29	195,391	3,030
July	24	2011			156,958	37,878	194,836	195,137	27	195,164	3,025
July	25	2011			156,789	38,098	194,887	190,667	26	190,693	3,282
July	26	2011			156,700	38,252	194,952	187,181	35	187,217	3,169
July	27	2011			38,172	9,775	47,947	44,798	31	44,828	2
July	28	2011			72,184	17,465	89,649	96,514	33	96,546	2
July	29	2011			156,491	38,270	194,761	188,348	29	188,377	3,040
July	30	2011			156,936	37,581	194,518	187,613	33	187,646	2,995
July	31	2011			156,955	37,691	194,645	189,069	34	189,103	3,040
Total Monthly	/ Volumes	s (gal)	0	0	4,588,151	1,122,571	5,710,722	3,189,168	2,391,010	5,580,178	90,308
Average Pum	p/Injectio	n Rates (gpm) 0.0	0.0	102.8	25.1	127.9	71.4	53.6	125.0	2.0

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during July 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 July 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 July 2011 is approximately 0.70 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.

August 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extrac	tion Well Sys	tem	Inje	RO Brine			
	_		TW-2S	TW-2D	TW-3D	PE-1	Total	IW-02	IW-03	Total	
Month	Day	Year	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
August	1	2011			156,439	37,622	194,062	189,102	31	189,133	2
August	2	2011			149,351	36,218	185,569	188,058	28	188,087	3,174
August	3	2011			149,451	36,648	186,100	104,097	83,466	187,563	3,025
August	4	2011			156,234	38,885	195,119	19	182,121	182,140	2,891
August	5	2011			155,718	39,714	195,432	18	191,767	191,785	3,029
August	6	2011			150,354	38,125	188,480	1	179,380	179,382	3,151
August	7	2011			156,770	38,228	194,998	2	195,680	195,682	5,937
August	8	2011			156,890	38,049	194,939	26	188,821	188,847	3,030
August	9	2011			156,747	38,232	194,979	0	183,344	183,344	6,604
August	10	2011			156,981	37,960	194,941	104,152	85,285	189,437	3,418
August	11	2011			144,801	35,365	180,165	187,827	24	187,852	3,168
August	12	2011			156,652	38,181	194,833	188,897	22	188,919	3,165
August	13	2011			156,642	38,317	194,958	189,855	23	189,877	3,175
August	14	2011			156,106	39,042	195,149	83,810	95,977	179,787	6,088
August	15	2011			31,493	7,965	39,458	12	45,339	45,352	4
August	16	2011			5	6	11	3	22	24	3
August	17	2011			6	4	10	3	25	28	2
August	18	2011			40,519	12,702	53,221	305	32,994	33,299	3,320
August	19	2011			155,750	38,720	194,470	0	195,981	195,981	2,902
August	20	2011			155,445	39,061	194,506	3	189,776	189,779	5,981
August	21	2011			154,938	39,758	194,696	11	189,725	189,736	2,606
August	22	2011			140,617	35,321	175,938	0	170,803	170,803	2,892
August	23	2011			156,071	38,431	194,502	1	188,447	188,448	5,853
August	24	2011			156,442	37,943	194,385	41,459	147,613	189,072	3,557
August	25	2011			155,479	37,962	193,441	5	188,501	188,506	3,035
August	26	2011			155,202	37,516	192,718	0	186,897	186,897	5,972
August	27	2011			155,487	37,148	192,635	0	187,199	187,199	3,026
August	28	2011			155,317	37,421	192,737	0	188,143	188,143	5,565
August	29	2011			155,084	37,682	192,766	2	191,239	191,241	3,175
August	30	2011			140,174	34,943	175,117	101,151	69,062	170,213	3,163
August	31	2011			154,678	38,287	192,965	83,305	100,411	183,716	3,143
Total Monthly	Volumes	s (gal)	0	0	4,221,841	1,041,457	5,263,298	1,462,125	3,658,145	5,120,270	104,056
Average Pum	p/Injectio	n Rates (gpm) 0.0	0.0	94.6	23.3	117.9	32.8	81.9	114.7	2.3

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during August 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 August 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 August 2011 is approximately 0.74 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.

September 2011 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)
September	1	2011			154,661	38,383	193,044	1	192,973	192,974	3,163
September	2	2011			147,698	35,448	183,146	0	169,843	169,843	3,087
September	3	2011			140,401	33,725	174,126	9	175,713	175,722	6,221
September	4	2011			155,034	37,628	192,662	0	187,456	187,456	2,895
September	5	2011			154,886	37,948	192,834	0	186,980	186,980	3,058
September	6	2011			154,643	38,052	192,694	0	191,970	191,970	4
September	7	2011			149,741	37,552	187,292	4	183,943	183,947	2,942
September	8	2011			154,220	38,315	192,535	129	187,531	187,660	3,173
September	9	2011			154,417	38,129	192,546	3	187,971	187,973	2,905
September	10	2011			154,121	38,496	192,617	5	187,236	187,242	3,026
September	11	2011			154,410	38,180	192,590	174,485	18,296	192,781	5
September	12	2011			154,344	38,251	192,595	179,703	18	179,721	2,923
September	13	2011			151,510	38,666	190,176	191,170	10	191,179	3,063
September	14	2011			152,569	38,058	190,626	186,361	16	186,378	6,141
September	15	2011			154,345	37,904	192,248	191,142	21	191,163	2,910
September	16	2011			154,678	37,311	191,989	188,753	25	188,778	3,058
September	17	2011			154,390	37,739	192,129	191,373	17	191,390	3,068
September	18	2011			154,028	38,265	192,293	190,287	18	190,305	5
September	19	2011			154,600	37,419	192,019	190,483	26	190,509	3,052
September	20	2011			153,680	37,615	191,295	185,096	20	185,115	3,011
September	21	2011			151,597	37,262	188,859	187,650	22	187,672	2,912
September	22	2011			154,336	37,579	191,915	105,680	84,180	189,859	4
September	23	2011			153,921	38,093	192,014	2	185,895	185,897	2,914
September	24	2011			154,150	37,739	191,888	0	188,636	188,636	2,908
September	25	2011			153,830	38,276	192,106	0	184,799	184,799	3,186
September	26	2011			154,223	37,717	191,940	7	187,833	187,840	2,914
September	27	2011			153,530	38,720	192,251	0	189,981	189,981	1,735
September	28	2011			150,809	37,611	188,420	0	189,105	189,105	1,189
September	29	2011			154,177	37,679	191,856	4	185,644	185,648	3,316
September	30	2011			154,217	37,586	191,803	15	186,144	186,159	2,936
Total Monthly	Volumes	s (gal)	0	0	4,593,164	1,131,346	5,724,510	2,162,363	3,452,321	5,614,683	81,726
Average Pump	/Injectio	on Rates (gpm)) 0.0	0.0	106.3	26.2	132.5	50.1	79.9	130.0	1.9

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during September 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 September 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 September 2011 is approximately 0.49 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.

October 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extrac	tion Well Sys	tem		Inje	RO Brine		
	D		TW-2S	TW-2D	TW-3D	PE-1	Total	IW-02	IW-03	Total	<i>.</i>
Month	Day	Year	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
October	1	2011			154,209	37,688	191,897	1	188,455	188,456	3,040
October	2	2011			154,298	37,512	191,810	3	185,357	185,359	2,900
October	3	2011			153,904	38,130	192,034	1	187,921	187,922	2,899
October	4	2011			154,382	37,728	192,110	15	186,624	186,639	3,319
October	5	2011			149,803	38,016	187,819	27,520	161,169	188,689	6
October	6	2011			154,979	37,857	192,835	137,112	53,495	190,606	3,752
October	7	2011			155,730	38,325	194,055	189,940	14	189,954	2,220
October	8	2011			156,133	37,844	193,978	188,507	12	188,519	3,054
October	9	2011			156,621	37,218	193,839	188,359	15	188,374	7
October	10	2011			156,514	37,400	193,914	111,992	78,628	190,620	3,050
October	11	2011			156,642	37,290	193,932	0	189,643	189,643	2,908
October	12	2011			156,891	36,909	193,800	1,451	187,792	189,243	3,177
October	13	2011			156,041	37,658	193,699	13	191,608	191,621	3,069
October	14	2011			58,637	14,710	73,347	42,064	22,103	64,167	1,554
October	15	2011			153,041	33,943	186,984	120,559	70,425	190,984	3,045
October	16	2011			154,845	38,646	193,492	17	193,467	193,484	4
October	17	2011			155,939	38,251	194,190	0	192,430	192,430	3,065
October	18	2011			154,292	37,234	191,526	1	184,331	184,332	3,176
October	19	2011			162,978	29,524	192,502	1,287	189,626	190,913	3,146
October	20	2011			157,413	37,549	194,962	5	190,369	190,373	3,159
October	21	2011			157,537	37,427	194,964	28	190,359	190,386	3,161
October	22	2011			157,729	37,220	194,949	31	188,737	188,768	3,029
October	23	2011			157,565	37,530	195,095	35	188,561	188,596	3,190
October	24	2011			157,821	37,176	194,997	31,329	159,630	190,959	6
October	25	2011			146,462	35,248	181,710	21,768	164,788	186,557	3,272
October	26	2011			157,260	37,895	195,156	11,288	173,097	184,386	3,173
October	27	2011			157,720	37,222	194,941	104,399	91,293	195,692	3,053
October	28	2011			157,801	37,234	195,035	191,343	13	191,356	9
October	29	2011			157,666	37,557	195,223	190,332	18	190.350	3,189
October	30	2011			157,406	38,199	195,605	191,575	17	191,592	2,917
October	31	2011			155,872	37,651	193.523	187,127	25	187.152	3,156
Total Monthly	Volumes	s (gal)	0	0	4,734,132	1,129,789	5,863,921	1,938,099	3,810,021	5,748,120	78,704
Average Pum	p/Injectio	on Rates (gpm)) 0.0	0.0	106.1	25.3	131.4	43.4	85.3	128.8	1.8

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during October 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 October 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 October 2011 is approximately 0.63 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.

November 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extract	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)
November	1	2011			129,567	31,143	160,710	163,717	16	163,733	2,919
November	2	2011			149,487	36,062	185,549	186,391	1,903	188,293	10
November	3	2011			156,443	37,852	194,295	188,413	763	189,176	3,084
November	4	2011			153,619	37,051	190,670	116,113	71,055	187,168	2,912
November	5	2011			157,515	37,714	195,229	190,858	21	190,879	2,921
November	6	2011			157,794	37,235	195,029	195,938	21	195,958	2,918
November	7	2011			157,795	37,171	194,966	190,853	22	190,875	13
November	8	2011			157,709	37,475	195,184	197,956	14	197,970	3,009
November	9	2011			127,284	30,331	157,615	156,312	11	156,323	3,323
November	10	2011			157,472	37,739	195,211	192,594	17	192,611	2,866
November	11	2011			157,749	37,201	194,950	191,950	14	191,964	3,019
November	12	2011			157,897	37,193	195,090	191,808	11	191,819	710
November	13	2011			157,619	37,705	195,324	191,608	11	191,619	2,301
November	14	2011			150,900	35,980	186,880	185,664	19	185,683	3,011
November	15	2011			157,547	37,671	195,219	185,466	17	185,483	3,177
November	16	2011			140,721	33,791	174,512	173,779	9	173,788	3,154
November	17	2011			157,712	37,308	195,020	192,659	19	192,677	2,903
November	18	2011			132,282	32,149	164,431	154,847	11	154,858	3,206
November	19	2011			157,503	37,655	195,158	199,166	16	199,182	3,018
November	20	2011			157,172	37,323	194,495	189,560	13	189,573	3,042
November	21	2011			157,696	37,209	194,906	190,117	18	190,135	3,031
November	22	2011			157,546	37,423	194,969	191,106	16	191,122	2,880
November	23	2011			157,831	36,937	194,768	171,161	19,151	190,312	2,968
November	24	2011			157,911	36,833	194,744	190,051	14	190,065	2,903
November	25	2011			157,341	38,039	195,380	196,131	13	196,144	3,190
November	26	2011			157,548	37,662	195,210	188,445	26	188,471	247
November	27	2011			157,753	37,404	195,158	193,382	10	193,392	2,799
November	28	2011			157,875	37,073	194,949	187,737	12	187,749	3,047
November	29	2011			158,169	36,740	194,909	191,245	15	191,259	3,041
November	30	2011			137,873	33,593	171,465	140,333	34,877	175,210	3,100
Total Monthly	Volumes	s (gal)	0	0	4,589,331	1,092,661	5,681,992	5,475,360	128,132	5,603,492	78,721
Average Pump	o/Injectio	n Rates (gpr	n) 0.0	0.0	106.2	25.3	131.5	126.7	3.0	129.7	1.8

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW 3D and PE 1 were operated during November 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 November 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 November 2011 is approximately 0.00 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.

December 2011 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles, California

				Extrac	tion Well Sys	tem	Inje	RO Brine			
			TW-2S	TW-2D	TW-3D	PE-1	Total	IW-02	IW-03	Total	
Month	Day	Year	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
December	1	2011			155,445	37,039	192,484	176,400	17	176,417	3,147
December	2	2011			144,561	34,370	178,931	188,143	17	188,159	2,919
December	3	2011			157,138	37,818	194,956	190,143	18	190,161	3,047
December	4	2011			157,592	37,171	194,763	189,589	13	189,602	3,153
December	5	2011			157,325	37,623	194,948	187,956	8	187,964	3,157
December	6	2011			157,573	37,110	194,684	192,759	8	192,766	3,152
December	7	2011			153,111	36,175	189,286	192,625	12	192,638	3,102
December	8	2011			153,959	36,918	190,877	185,103	1,327	186,431	3,151
December	9	2011			156,946	37,364	194,310	173,671	12,746	186,416	3,173
December	10	2011			157,204	37,298	194,502	197,184	16	197,201	2,901
December	11	2011			157,456	36,909	194,366	189,891	17	189,908	3,044
December	12	2011		8,740	141,673	33,599	184,013	181,587	30	181,616	3,037
December	13	2011		7,496	141,921	37,358	186,775	188,715	12	188,727	3,157
December	14	2011			136,328	32,780	169,108	171,991	382	172,374	3,295
December	15	2011			155,126	36,955	192,081	167,991	20,129	188,119	3,166
December	16	2011			155,123	36,372	191,496	191,669	17	191,687	2,955
December	17	2011			155,355	36,563	191,918	190,095	12	190,107	2,895
December	18	2011			155,499	36,456	191,956	194,193	11	194,205	2,901
December	19	2011			139,459	32,870	172,329	174,290	14	174,304	3,024
December	20	2011			155,411	36,478	191,890	186,226	16	186,242	2,911
December	21	2011			155,227	36,896	192,123	187,186	261	187,447	3,181
December	22	2011			155,446	36,428	191,874	192,420	11	192,431	3,027
December	23	2011			155,709	36,046	191,755	191,514	10	191,524	10
December	24	2011			155,788	36,043	191,831	189,744	13	189,756	3,037
December	25	2011			155,286	36,961	192,248	190,505	9	190,514	3,037
December	26	2011			155,294	36,977	192,271	190,072	12	190,084	3,009
December	27	2011			155,437	36,750	192,188	190,175	9	190,184	3,015
December	28	2011			108,352	25,714	134,066	131,178	16	131,194	3,145
December	29	2011			155,274	36,900	192,174	187,833	13	187,846	3,116
December	30	2011			155,013	37,447	192,460	198,247	14	198,261	3,095
December	31	2011			155,045	37,257	192,302	190,022	16	190,038	3,156
Total Monthly	Volumes	s (gal)	0	16,237	4,706,076	1,118,649	5,840,962	5,749,116	35,206	5,784,322	92,113
Average Pump	/Injectio	n Rates (gpm)) 0.0	0.4	105.4	25.1	130.8	128.8	0.8	129.6	2.1

NOTES: gal: gallons gpm: gallons per minute RO: Reverse Osmosis

a. Extraction wells TW-3D and PE-1 were operated during December 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 December 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 December 2011 is approximately 0.61 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.

Appendix C Flowmeter Calibration Records

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30201334-1304708

WWRA-008929F

Furchase order number

US-465002381-20 / Endress+Hauser Flowtec

Order Nº/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037216000

Serial N°

Tag N°

Flow [%]	Flow [:15.gal/min]	Duration [^{8]}	V target jus.gal)	V mezs. (us.galj	∆ o.r.* [%]	Ou tp.** mA
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
-	-	-	-	-	-	-
-	-	-	÷ -	-	-	-
-	· _	-	-	-	-	-
-	-		-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
o no of ma				•		•

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	

Water temperature



**Calculated 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.

 $\label{eq:entropy} Endress \div Hauser Flowtec operates ISO/IEC 17025 accredited calibration facilities in Reinach (CH), Cernay (FR), Greenwood (USA), Aurangabad (IN) and Suzhou (CN).$

07-15-2011 Date of calibration

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

mhu

Leonard McGee Operator

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

Page 171

Endress+Hauser

People for Process Automation

Flow Calibration without Adjustment

30201330-1304708

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 N°

Tag N°

Flow [%]	Flow [us.gal/min]	Duration (si	V target uz.gal	V meas. [us.gal]	∆ o.r.* [%]	Outp.** [mA]	
9.9	15.4	30.2	7.7490	2.8501	1.31	5.60	
39.3	61.1	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	147.7	30.2	74.312	74.944	0.85	19.31	
-		-	-	-	-	_ [
-		-	-		-	·-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
	-	-	-	-	-	- '	
-	-	-	-		•	-	
o.r.: of rate				•			

**Calculated 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 Operator

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

 FCP-6.F

 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



(≙ 100%)

flow

Flow Calibration with Adjustment

30201528-1304707

WWRA008929F	FCP-6.F
Furchase order number	Calibration rig
US-465002380-10 / Endress+Hauser Flowtec	155.6102 us.gal/min
Order Nº/Manufacturer	Calibrated full scale
23P50-AL1A1AA022AW	Current 4-20 mA
Order code	Calibrated output
PROMAG 23 P 2"	0.9106
Transmitter/Sensor	Calibration factor
6C037116000	0
Serial N°	Zero point
	75.4 °F
Tag N°	Water temperature

	Flow	Flow	Duration	V target	V meas.	Δ ο.τ.*	Outp.**	Measured error % o.r.
	1	[us.gal/min]	5,	[us_gal	jus-gal	172	,ICA	I SIE 2. COLINIA. TO. SHO OA. T ZOL SHOULY
	9.9	15.4	30.2	7.7531	7.7639	0.14	5.59	1.5-
	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	0.5-
	-	-	-	-	-	-	-	
	-	-	· _	-	-	-		
l	-	-	i -	-	-	-	-	-0.5-
	-	- 1	-	-	-	- ·	-	
	-	-	-	-	-	-	-	
	-	-	- 1	-	-	-	l _	-1.5-
*;	o.r.: of rate	I		I				0 10 20 30 40 50 60 70 80 90 100 [%]

** Calculated value (4 - 20 πA)

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

m'Su

Leonard McGee

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

Page 1 / 1

Endress+Hauser

People for Process Automation

Flow Calibration without Adjustment

30201327-1304707

Purchase crder number

US-465002380-10 / Endress+Hauser Flowtec

Orde: Nº/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037116000

Serial N°

Tag N^e

Flow Ki	Flow [us.gal/min]	Duration s	V target. [us.gal]	V meas. [us.gal]	∆ ол.* [%]	O∟tp.** 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	
-	-	-	-	-	-	-	
-	-	_ !	-	i -	-	-	
-	-	– I	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-	-	-	
-	-	-	-	-		- '	

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

Water temperature



*o.r.: of rate **Calculated 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

Leonand M. M. See

Leonard McGee

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

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30092171-1385272

WWRA	-0009	23-F					FCP-6.F					
Purchase o	rder numt	ber					Calibration rig					
US-190 Order Nº/)50353 Manufactu	8-20 / Er	idress+Ha	auser Flow		155.6102 GPM (\triangleq 100%) Calibrated full scale						
23P50- Order code	ALIAI	AA022A	W				Current 4 – 20 mA					
PROM. Transmitte	AG 23 r. Sensor	P 2"					0.9289 Calibration factor					
7700F:	216000)	· · · · · · · · · · · · · · · · · · ·				0					
Serial Nº	T-1	Enstall 53	ed at	TW-2	D 7/	6/11	Zero point 74.9 °F					
Tag N°					-00		Water temperature					
Flow Pd	Flow	Duration (sec)	V target (US GAU)	V meas. (US GAL)	Δ cr.* [5]	Outp.**	Measured error % o.r.					
10.0 40.5	15.5 62.9	30.1 30.1	7.7642	7.7895	0.33	5.60 10.47	2 Tolerance Lmit					
40.5	155.1	30.1	77.735	77.718	-0.02	10.47	1					
	-	8		8	1	θe ² π	o de la constante de la cara esta esta esta esta esta esta esta est					
1947	120	1	-	-	-	-						
-	-			-	*	• [×] .	-1 -					
			17 7 5			×						
NATE:	877 E 1970 -		10 7 0		20. 12.		-2-					
*e.r.: cf rate	-	n - 1	-		-		0 10 20 30 40 50 60 70 80 90 Few %					

**Calculated 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.

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-Nº 030502.2

Flow Calibration with Adjustment

30057870-1275191

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec Order Nº/Manufacturer

23P50-AL1A1RA022AW

Order Code

Flow

[%]

10.0

40.0

40.1

100.2

22

PROMAG 23 P 2"

Transmitter/Sensor

6A022016000

Flow

[GPM]

15.6

62.3

62.4

155.9

Duration

[sec]

30.0

30.0

30.0

30.0

-

4

Serial Nº TW-25/ installed 7/28/05 FIT-101 Tag №

V target

US GAL

7.7910

31.157

31.229

78.017

FCP-6.C	
Calibration rig	
155.6102 GPM	(≙ 100%)
Calibrated full scale	an a sharanna dan akada da baran ya sakaran na karan ya sakaran karan ya sakaran sakaran sakaran sakaran sakar
Current 4 - 20 mA	
Calibrated output	
0.9207	
Calibration factor	· · · · · · · · · · · · · · · · · · ·
0	
Zero point	
74.1 °F	

Water temperature

Measured error % o.r.



to r of rate (4 - 20 mA) **Calculated value

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

V meas.

[US GAL]

7.8318

31.160

31.229

77.856

Outp.**

(mA)

5.61

-

-

-

Δ o.r.*

[%]

0.52

0.01

0.00

-0.21

-

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 Smit

Tim Swick Operator

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-Nº 030502.2

Endress+Hauser People for Process Automation

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 N°

Tag N°

Flow [%]	Flow [us.gal/min]	Duration [s]	V target [us.gal]	V meas. [us.gal]	∆ о.г.* [%]	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	
-	-	-	-	~	-	-	
-	-	-	-	-	-	-	
-	-	-	-	~	-	-	
-	-	-	-	-	-	-	
-		-	-	~	-	-	
-	-	-	-	-	-	-	

*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

nhu Davis

John Davis Operator

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-Nº 030502.2

FCP-6.F Calibration rig 155.6102 us.gal/min (\triangleq 100%) Calibrated full scale Current 4 - 20 mA Calibrated output 0.9101 Calibration factor

-34

Zero point

78.7 °F

Water temperature





People for Process Automation

Flow Calibration with Adjustment

30171217-1275192

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 Nº

Tag Nº

Flow	Flow	Duration	V target	V meas.	∆ o.r.*	Outp.**
[%]	[us.gal/min]	[s]	[us.gal]	[us.gal]	[%]	[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
-	-	-	-	-	-	-
	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	<u> </u>	- '	-	-
*o.r.: of rate	•					

**Calculated 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).

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.-Nº 030502.2

Page 1 / 1

FCP-6.F

Calibration rig

155.6102 us.gal/min

·

 $(\triangleq 100\%)$

Current 4 - 20 mA Calibrated output

0.9092

Calibration factor

0

Zero point

79.6 °F

Water temperature





Flow

People for Process Automation

Flow Calibration without Adjustment

30171214-1275192

WWRA Purchase of	-00693 rder numbe	<u>1-F</u>	<u> </u>				FCP-6.F Calibration rig
US-190	IS-19068473-20 / Endress+Hauser Flowtec						155.6102 us.gal/min ($\triangleq 100\%$)
Order Nº/I	Manufactur	er					Calibrated full scale
23P50-	AL1A1	RA022A	W				Current 4 – 20 mA
Order code	2						Calibrated output
PROM	AG 23 F	2"					0.9111
Transmitte	r/Sensor						Calibration factor
6A022	116000						0
Serial N°							Zero point
							79.2 °F
Tag Nº							Water temperature
0							κ.
Flow	Flow	Duration	V target	V meas.	∆ o.r.*	Outp.**	Measured error % o.r. Tolerance limit: ±0.5% o.r. ⁺ ± Zero stability
10.0	15.5	30.2	7.8089	7.7928	-0.21	5.59	1.5-
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	
_	_	_	-	-	· -	-	
-	-	-	-	-	-	-	-0.5 -
-	-	-	-	-	-	-	-1-
-			-	-	-	_	-15
*o.r.: of rate	-	1 -	-	Į –			0 10 20 30 40 50 60 70 80 90 100 [9

**Calculated 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).

08-06-2010 Date of calibration

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

yavis

John Davis Operator

Certified acc. to MIL-STD-45662A ISO 9001, Reg.-Nº 030502.2

Page 1/1

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

30202337-: 385113

WWRA008929F		FCP-7.1.B
Purchase order number		Calibration rig
US-465002382-30 / Endr	ress+Hauser Flowtec	$398.3621 \text{ us.gal/min}$ ($\triangleq 100\%$)
Crder N ² /Manufacturer		Calibrated full scale
23P80-AL1A1AA022AW		Current 4-20 mA
Order code		Calibrated output
DDOMAC 23 P 3"		1.1670
Transmitter (Sensor		Calibration factor
77002636000		35
77000010000		Zero point
Senai N		82 3 °F
-	-	Water temperature
Tag Nº	· .	
Fow Flow Duration V	target V mess. Δ our.* Outp.**	Measured error % o.r. Tolerance limit: = $0.5\% c.1.^{\circ} \pm Zero stability$
שן (a) [usugal/mim] [א] סני בסי בסי ביסי ביסי ב	s.galj jus.gal ≈ juus.j	
10.1 + 40.0 = 60.1 + 40	0.332 160.322 -0.01 10.43	
40.2 160.2 60.1 160	0.400 160.424 0.01 10.44	
101.4 404.0 60.1 404	4.438 405.041 0.15 20.25	0,5
		0
		-0.5-
· i -		-1.5
*o.r.z of rate		0 10 20 30 4C 50 60 20 8C 9C 100 9 Flaw

**Calculated 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), Autangabad (IN) and Suzhou (CN).

07-25-2011 Date of calibration

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

n He 10

Taylor Shepard Operator

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

Page 1/1

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Par

Endress+Hauser

People for Process Automation

Flow Calibration with Adjustment

20132407-1304709

WWR4	4-00432	9-F			FCP-6.C				
Furchase o	Furchase order number						Calibration rig		
US-190	US-19061453-10 / Endress+Hauser Flowtec						155.6102 GPM (≙ 100%)		
Order Nº!	Marufactu	er					Califorated full scale		
23P50-	-ALIAI	AAC22A	W				Current 4 - 20 mA		
Order cod	e						Calibrated output		
PROM	AG 23 I	P 2"					0.9146		
Transmitte	er/Sensor						Calibration factor		
6C037	316000)					0		
Serial Nº	Ť	staller	dat Ro	Concer	trate	4/1/2011	Zero point		
FIT-2	15 I	TT-	1202	TI	1-0	200	76.2 °F		
Tag Nº					<u> </u>	AB	Water temperature		
2000 - 00000									
Bow	Flow	Duration	Vinte	V Deas	A at."	Outo.**	Measured error % o.r.		
A	CPA	N	ILS CALL	ILS GAL	\$;	5A	Tole"ance limit: ±0.5% out." ± Zero stability		
10.0	15.5	30.1	7.7933	7.7939	C.01	5.60	13-1		
40.2	62.5	30.1	31.394	3:.422	0.09	10.43			
40.2	62.5	30.1	3:.416	31.448	0.10	10.44			
99.8	155.3	30.1	78.006	77.928	-0.10	19.95	05		
	-	2.0	1	1 040 B	-	-			
-	-		-	-	÷	-			
172	1 -	11 - E	(m)	-	8		45 j		
-	12	, ²	19 4	3 4 3		1 - 1			
	2		0.77		-				
			1	1 - 1	-	- 1	- 95 - C. L.		
"o,r.: of mire							0 to 20 3C 40 50 60 7C 80 CO 100		

"Ca calated value (4 - 20 (pA)

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 Flowted 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.

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

2

William Darnell Operato:

Certied acc. to MIL-STD-45362A ISO 9001, Reg -- 1º 030502.2

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Appendix D Fourth Quarter 2011 Laboratory Analytical Reports

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

November 3, 2011

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

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

Dear Mr. Duffy:

SUBJECT: REVISED CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-187, GROUNDWATER MONITORING PROJECT, TLI NO.: 997603

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-187 groundwatermonitoring 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 October 4, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to analyst error, the results for Total Dissolved Solids by SM 2540C were reported incorrectly. It was determined that the analyst inadvertently switched the sample I.D.s during the analysis. The sample I.D.s and results have been corrected and the revised report pages and raw data are attached.

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

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

Respectfully Submitted, TRUESDAIL LABORATORIES, INC.

45 - Mona Nassimi Manager, Analytical Services

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Michael Ngo Quality Assurance/Quality Control Officer

Client: E2 Consulti 155 Grand / Oakland, C/ Attention: Shawn Duff				,	(714)) 730-6239 · FA	aX (714) 730-6462 ·	IRNIA 92780-700 www.truesdail.co
	ng Engineers, Inc. Ave. Suite 1000 A 94612 Y				Labo	oratory No.	: 997603	3
Project Name: PG&E Topo Project No.: 424973.01.I P.O. No.: 424973.01.I	ock Project DM DM				Dat	e Received Revision 1	I: October 4, 20	2011
		Anal	vtical	<u>Results</u>	Summary			
Lab Sample ID Field ID	Analysis Method	Extraction Method	Sample Date	Sample Tin	ie Parameter	Result	Units	RL
997603-001 PE-01-187 997603-001 PE-01-187	E120.1 E200.8	NONE LABFLT	10/4/2011 10/4/2011	12:30 12:30	EC Chromium	4930 10.1	umhos/cm ug/L	2.00 1.0
997603-001 PE-01-187	E218.6	LABFLT	10/4/2011	12:30	Chromium, hexavalent	11.1	ng/L	0.20
997603-001 PE-01-187	SM2540C	NONE	10/4/2011	12:30	Total Dissolved Solids	2900	mg/L	125
997603-002 IW-03D-18 997603-002 TW-03D-18	3/ E120.1 37 E200.8	NONE LABFLT	10/4/2011	12:22	Chromium	0420 1010	ummosrcm ug/L	4.0
997603-002 TW-03D-18	37 SM2540C	NONE	10/4/2011	12:22	Total Dissolved Solids	5040 001	mg/L	125
99/603-002 I W-03D-18		LABFLI	10/4/2011	77.71		-	2	2
ND: Non Detected (be	elow reporting limit)							
Note: The following "Si Results below 0.0 Result above or e Quality Control d	ignificant Figures' rule has been a 01 will have two (2) significant figu equal to 0.01 will have three (3) si lata will always have three (3) sign	applied to all results: ures. ignificant figures. nificant figures.						

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REPORT

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

Printed 11/2/2011

Laboratory No. 997603

Client: 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

Samples Received on 10/4/2011 9:30:00 PM

Field ID				Lab ID	Col	lected	Matr	ix
PE-01-187 TW-03D-187	PE-01-187 TW-03D-187			997603-001 997603-002	10/04/ 10/04/	/2011 12:30 /2011 12:22	Water Water	
Specific Conductivity - E	PA 120.1		Batcl	h 10EC11B		a de transforma de la composición de la Composición de la composición de la comp	10/7/201	1
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
997603-001 Specific Conduct	ivity	umhos/c	m 10/0 ⁻	7/2011	1.00	0.0380	2.00	4930
997603-002 Specific Conduct	ivity	umhos/c	m 10/0	7/2011	1.00	0.0380	2.00	8420
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	997603-001
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 4940	Expected 4930	F	RPD 0.203	Accepta 0 - 10	ance Range
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7330	Expected 7340	F	RPD 0.136	Accepta 0 - 10	ance Range
Parameter Specific Conductivity Lab Control Sample D	Unit umhos uplicate	DF 1.00	Result 702	Expected 706	F	Recovery 99.4	Accepta 90 - 110	ance Range)
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 704	Expected 706	F	Recovery 99.7	Accepta 90 - 11(ance Range)
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 707	Expected 706	F	tecovery 100.	Accepta 90 - 110	ance Range)

Report Continued

Client: E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjectPage 3 of 8Project Number:424973.01.DMPrinted 11/2/2011

Chrome VI by EPA 218.6	2		Batch	10CrH11H				
Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
997603-001 Chromium, Hexa	valent	ug/L	10/10	V2011 09:05 1.	05 0	.0400	0.20	11.1
Method Blank								
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND				۰.	
Duplicate							Lab ID =	997603-001
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 11.2	Expected 11.1	RPE 0.8) 835	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.93	Expected 5.00	Rec 98	overy 8.6	Accepta 90 - 110 Lab ID =	ince Range) 997603-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 27.8	Expected/Addeo 27.0(15.9)	d Rec 10	overy 15.	Accepta 90 - 110 Lab ID =	ince Range) 997604-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 4.69	Expected/Adden 5.25(5.25)	d Rec 89	overy 9.3	Accepta 90 - 110 Lab ID =	ince Range) 997604-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 0.00	Expected/Addec 1.06(1.06)	d Rec 0.0	overy DO	Accepta 90 - 110 Lab ID =	ince Range) 997604-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 137.	Expected/Addeo 136.(78.8)	d Rec 10	overy 2.	Accepta 90 - 110 Lab ID =	ince Range) 997604-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 0.00	Expected/Addec 1.06(1.06)	d Rec 0.0	overy DO	Accepta 90 - 110 Lab ID =	ince Range) 997604-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 0.00	Expected/Addeo 1.06(1.06)	d Rec 0.0	overy D0	Accepta 90 - 110 Lab ID =	ince Range) 997604-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 4.68	Expected/Addeo 5.25(5.25)	d Rec 89	overy .2	Accepta 90 - 110	ince Range

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 6 of 8 Printed 11/3/2011 Revised

Chromium, Hexavalent b	y SM 350)0-Cr B	Batch	10CrH11A				
Parameter	an Charles 	Unit	Ana	lyzed I	DF	MDL	RL	Result
997603-002 Chromium, Hexa	valent	ug/L	10/07	7/2011 19:04 1	0.0	43.5	100.	991.
Method Blank								
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND					
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 25.0	Result 2870	Expected 2840	R	PD 1.12	Lab ID = Accepta 0 - 20	997746-001 ince Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 91.9	Expected 100.	R	ecovery 91.9	Accepta 90 - 110 Lab ID =	nce Range 997746-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 25.0	Result 5260	Expected/Adde 5340(2500)	d Re	ecovery 97.0	Accepta 85 - 115	nce Range
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 54.3	Expected 60.0	Re	ecovery 90.5	Accepta 90 - 110	nce Range
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 56.7	Expected 60.0	Re	ecovery 94.5	Accepta 90 - 110	nce Range

Total Dissolved Solids I	oy SM 254	0 C	Batch	10TDS11A			10/6/201	1
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
997603-001 Total Dissolved	Solids	mg/L	10/06	5/2011	1.00	0.400	125	2900
997603-002 Total Dissolved	Solids	mg/L	10/06	5/2011	1.00	0.400	125	5040
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	997645-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 124	Expected 127	R	RPD 2.39	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 484	Expected 500.	R	ecovery 96.8	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjectPage 7 of 8Project Number: 424973.01.DMPrinted 11/2/2011

Metals by EPA 200.8, Dise	solved		Batch	101011A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
997603-001 Chromium		ug/L	10/10)/2011 16:27 5.0	0.110	1.0	10.1
997603-002 Chromium		ug/L	10/10	/2011 16:34 20	.0 0.440	4.0	1010
Method Blank							
Parameter Chromium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	997604-004
Parameter Chromium Lab Control Sample	Unit ug/L	DF 5.00	Result ND	Expected 0.00	RPD 0	Accepta 0 - 20	nce Range
Parameter Chromium Matrix Spike	Unit ug/L	DF 1.00	Result 51.3	Expected 50.0	Recovery 102.	Accepta 85 - 115 Lab ID =	nce Range 997604-004
Parameter Chromium Matrix Spike Duplicate	Unit ug/L	DF 5.00	Result 235.	Expected/Added 250.(250.)	Recovery 94.2	Accepta 75 - 125 Lab ID =	nce Range 997604-004
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 242.	Expected/Added 250.(250.)	Recovery 97.0	Accepta 75 - 125	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 51.9	Expected 50.0	Recovery 104.	Accepta 90 - 110	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 50.1	Expected 50.0	Recovery 100.	Accepta 90 - 110	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 52.4	Expected 50.0	Recovery 105.	Accepta 90 - 110	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 52.6	Expected 50.0	Recovery 105.	Accepta 90 - 110	nce Range
Parameter Chromium	Unit ug/L	DF 1.00	Result 50.1	Expected 50.0	Recovery 100.	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Er	igineers, Inc	s. F	⊃roject Name: ⊃roject Number:	PG&E Topock I 424973.01.DM	Project	Page 8 of 8 Printed 11/2/2011
Interference Check S	tandard A					
Parameter Chromium	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Interference Check S	tandard A					
Parameter Chromium	Unit ug/L	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range
Interference Check S	tandard AB					
Parameter Chromium Interference Check S	Unit ug/L tandard AB	DF 1.00	Result 53.5	Expected 50.0	Recovery 107.	Acceptance Range 80 - 120
Parameter	Unit	DE	Result	Expected	Recovery	Acceptance Range
Chromium	ug/L	1.00	49.0	50.0	98.0	80 - 120
Serial Dilution						Lab ID = 997603-002
Parameter Chromium	Unit ug/L	DF 100	Result 955.	Expected 1010	RPD 5.62	Acceptance Range 0 - 10

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Fu - Mona Nassimi Manager, Analytical Services

Total Dissolved Solids by SM 2540 C

Calculations

Ressed 11/3/11 Batch: 10TDS11A

Date Calculated: 10/7/11

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	74.2342	74.2344	74.2344	0.0000	No	0.0002	2.0	25.0	ND	1
997551	20	50.6110	50.6726	50.6726	0.0000	No	0.0616	3080.0	125.0	3080.0	1
997556-1	480	105.3572	105.3594	105.3592	0.0002	No	0.0020	4.2	5.2	ND	1
997556-2	480	105.2916	105.2926	105.2926	0.0000	No	0.0010	2.1	5.2	ND	1
997577-16	50	51.0895	51.1261	51.1261	0.0000	No	0.0366	732.0	50.0	732.0	1
997577-23	100	76.5274	76.5586	76.5586	0.0000	No	0.0312	312.0	25.0	312.0	1
997602-1	20	75.3063	75.3915	75.3915	0.0000	No	0.0852	4260.0	125.0	4260.0	1
997602-2	20	49.4177	49,5093	49.5093	0.0000	No	0.0916	4580.0	125.0	4580.0	1
997603-2	20	47.0085	47.1092	47.1092	0.0000	No	0.1007	5035.0	125.0	5035.0	1
997603-1	20	51.1310	51.1891	51.1891	0.0000	No	0.0581	2905.0	125.0	2905.0	1
997645-1	100	72.4709	72.4836	72.4836	0.0000	No	0.0127	127.0	25.0	127.0	1
997645-1D	100	67.7381	67.7505	67.7505	0.0000	No	0.0124	124.0	25.0	124.0	1
LCS	100	67.2182	67.2666	67.2666	0.0000	No	0.0484	484.0	25.0	484.0	1
LCSD											1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

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ND = not detected (below the reporting limit)

Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Revised 11/2/11 Batch: 10TDS11A

Date Calculated: 10/7/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
997551	5460	0.56	3549	0.87
997556-1	15.1	ND	9.815	ND
997556-2	0.65	ND	0.4225	ND
997577-16	1327	0.55	862.55	0.85
997577-23	571	0.55	371.15	0.84
997602-1	7490	0.57	4868.5	0.88
997602-2	7820	0.59	5083	0.90
997603-2	8520	0.59	5538	0.91
997603-1	5010	0.58	3256.5	0.89
997645-1	254	0.50	165.1	0.77
997645-1D	254	0.49	165.1	0.75
LCS				
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Date/ Time

Company/ Agency

Printed Name

Signature (Received)

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab	Number	Initia	l pH	Buffer A	Added (mL)	Fina	ll pH	Time	Buffered	Iniți	als
10-5-201	997	1594-7	٩	5	N	IA	NI	14	N	'IA	C	~
	<u>ا</u>	-8								1	I I	
		~9										
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		-11				¥.		Î		1		r
1-1-2-11	997	595-1	<u> ۹</u>	5	Λ	//A	NI	'A		1/A	<u>(</u>]	1
		-2				<u> </u>						
		-3					1					
		-4					•					
		5										
		-6			·							
		~7										
		-8										
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		- 10	\square									
		17										
		-12										
	<u> </u>	1 -13				1		ł.		V	1	,
10/05/11	99-	7602		0		5.0ml	9	5	10)=10a.m	AL	i i
10/5/11	99-	6-3-1	٦,	v	5.	omL	9.	5	0:	10 Am	<u>_C</u>	
		<u> </u>	<u>٦</u> -	0	<u> </u>	smL	<u> </u>	-5	10:1	• Am	<u> </u>	
10/5/11	997	604-1	<u>م. '</u>	<u>}</u>	N	IA	N [A	N	IA AI	<u> </u>	<u> </u>
		-2						·	<u>}</u>			
		- 3										
		- 5										
		- 6										
		7										
		-3										
		-9										
		/ə						R				
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C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

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Turbidity/pH Check

Sample Number	Turbidity	ъH	Date	Analyst	Need Digest	Adjusted to
99770811.6.511-10	L1	12	10/07/1	M.LI	Ves	
00 Y ING 11256 1.00	41 1			de de	193-	
9974519 (1.4)	DENT 12	12	10/05/11	KK	NIG	VAR
99744104-11-01	Nent >2	<u></u>	1010510	KK_	NO	285
9977631 1-101	<1 <1	12	Introlu	MAL	Ven	
997603 (1-7)	4	22	101010	KK.	10	NJ
997654/1-11	4	41.	Ilbrial	V/b_	1 Nž	Na
497000	21	72		FC	6 In	1112 2 1:00 00
997 421	J	J.	- por parto	 		ges a troping
GOTTAS total + dissingl	(1,2) < 1	42	10/13/11	KK.	No	No
9977410		42	10/13/11	KK	NO	NA
9971051	21	42	10/13/11	KK	No	Ltn
a97(53(1-12)	41	<u> </u>	10/3/11	KK-	NIO	No
99125211-4	1 -1	c2	10/13/11	u.M.	Yes	No
497829111	SINDE		10/13/11	M.M.	Ur.	TTLC
94 116 (1-21	Sork		10/13/11	MA	Yes	
907861	1/	-	U.		V	
9971049 (1-2)	plant	->2	10/12/11	<u>Kk</u>	NIO	VPE
991912	Solia	_	10/10/4	MM	Nes	STLC
997871	21	22	10/14/14	MM	Yes	No
997877			1711	1		
997875				i		<u> </u>
997876						†
997880						
997881						
997874	Ι.			1		
997893						
991920	Solid		10/14/11	mn	Yes	TTLC
097987	< 1	ć2	10/19/11	Min	Yes	-10
199801911-11	21	<u> </u>	10/20111	MM	Yex	Va
997956	>1	62	ſ	1 1 -		
99 7958	1	1				
998008						
99801611-21	71			V		
99803911-51	<1	22	10/21/11	u.M.	Yes	NO
997948	1	フマ	18/2/11	ts	Na	440 3:0P.M
698095	>/	<i>L</i> 2	10125111	M.M	Yes	-
998060	ľ					
991126						
998077		V		i	J J	
998036	Solid	-	1	1	Yes	TTLC
998093				K	V	
99711011-191	<1 <1	2,2	10/26/11	M.M	Kes	
998111						-
998112 (1-71						
99811311-81				1	1	
998/14/1-81	<u> </u>			Ι	1	
998115 11-11			,			
997824 (1-(2)	plant	12	10/17/11	KK-	NO	ves on 10/17/1

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ALERTIT Level III QO Sample Integrity & Analysis Discrepancy Form

Clien	t: <u>E2</u>	Lab # <u>4976</u> 03
Date	Delivered: <u>10/04</u> /11 Time: <u>2130</u> By: □Mail AF	ield Service
1.	Was a Chain of Custody received and signed?	Yes DNo DN/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No QN/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>42°C</u>	Yes INO IN/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Yes INO IN/A
8.	Were sample custody seals intact?	□Yes
9.	Does the number of samples received agree with COC?	Yes INO IN/A
10.	Did sample labels correspond with the client ID's?	AYes INO IN/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No \$N/A
12.	Were samples pH checked? pH = <u>Sfl. C</u> -O · C	Yes INO IN/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): I RUSH A Std	¥Yes □No □N/A
15.	Sample Matrix: Liquid Drinking Water Ground	Vater
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

November 10, 2011

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-330 PROJECT, SLUDGE MONITORING, TLI NO.: 997829

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 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 October 11, 2011, 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.

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.

⁴υ – Mona Nassimi Manager, Analytical Services

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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) Soil Sample Project Name: PG&E Topock Project Project No.: 424973.01.DM

Laboratory No.: 997829 Date: November 10, 2011 Collected: October 11, 2011 Received: October 11, 2011

ANALYST LIST

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

Estabilished 1931	14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008 (714) 730-6239 · FAX (714) 730-6462 · www.tuesdail.com	Laboratory No.: 997829 Date Received: October 11, 2011			iary	SM 2540 B % Moisture	% 49.6					titical or similar products. As a mutual protection to clients, the public, ition that it is not to be used, in whole or in part, in any advertising or
					Results Summ	0 EPA 300.0 Nitrate as N	mg/kg 23.2					or condition of apparently iden addressed and upon the condi
					alytical F	EPA 300.0 Fluoride	mg/kg 25.8					ative of the quality o lient to whom it is a
r					An	<mark>SW 7199</mark> Hexavalent Chromium	mg/kg 39.4					ot necessarily indica clusive use of the cl tories.
ATORIES, INC.		ers, Inc. 1000				Sample Time	3-330 15:20		been applied to all results:) significant figures ave three (3) significant figures, ee (3) significant figures.			samples, investigated and is n mitted and accepted for the ex rization from Truesdail Labora
AIL LABOR		2 Consulting Engine 5 Grand Ave. Suite Ikland, CA 94612	iawn Duffy	S&E Topock Project 4973.01.DM 4973.01.DM		Sample I.D.	SC-Sludge-WDF	l (below reporting limit) r liter.	"Significant Figures" rule has ow 0.01pprn will have two (2) we or equal to 0.01pprn will h trol data will always have thn			only to the sample, or ries, this report is subr rout prior written autho.
TRUESD/ Excellence in IN		Client: E2 15 0a	Attention: Sh	Project Name: PC Project No.: 42 P.O. No.: 42		<u>Lab I.D.</u>	997829	ND: Non Detected mg/L: Milligrams per	Note: The following Results bei Result abov Result abov Quality Con		005	This report applies and these laborato publicity matter witt

EXCEL	ENCE IN INDEPE	NDENT TESTING				·				Éstabli	shed 1931	
									14201 FRAN (714) 730-6	<pre></pre>	USTIN, CALIFORN } 730-6462 · ww	A 92780-7008 v.truesdail.com
	Client:	: E2 Consulting Enç 155 Grand Ave. S Oakland, CA 9461	jineers, Inc. uite 1000 2				Lat Da	ooratory No te Received	.: 997829 d: October 1	11, 2011		
ď	Attention: oject Name: Project No.: P.O. No.:	: Shawn Duffy PG&E Topock Prc 424973.01.DM 424973.01.DM)ject									
				Analy	/tical R	<u>esults</u>	Summ	ary				
METALS A	NALYSIS:	Total Metal Analyses	as Requested									
		Date of Analysis:		Antimony SW 6010B 10/20/11	Arsenic SW 6010B 10/20/11	Barium SW 6010B 10/20/11	Beryllium SW 6010B 10/19/11	Cadmium SW 6010B 10/20/11	Chromium SW 6010B 10/20/11	Cobalt SW 6010B 10/20/11	Copper SW 6010B 10/20/11	Lead SW 6010B 10/20/11
Lab I.D.	Sample ID	Time Coll.		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
997829	SC-Sludge-V	VDR-330 15:20		79.9	ND	58.3	Q	11.6	4720	9.38	4mm 4mm 4mm	8.93
Lab I.D.	Sample ID	Date of Analysis: Time Coll.	Manganese SW 6010B 10/20/11 mg/kg	Mercury SW 6020 11/08/11 mg/kg	Molybdenum SW 6010B 10/20/11 mg/kg	Nickel SW 6010B 10/20/11 mg/kg	Selenium SW 6010B 10/20/11 mg/kg	Silver SW 6010B 10/20/11 mg/kg	Thallium SW 6010B 10/20/11 mg/kg	Vanadium SW 6010B 10/20/11 mg/kg	Zinc SW 6010B 10/20/11 mg/kg	
997829	SC-Sludge-V	VDR-330 15:20 _	455	QN	9.46	39.8	QN	Q	Q	133	57.8	
NOTES:	-											

TRUESDAIL LABORATORIES, INC.

ND: Not detected, or below limit of detection

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

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REPORT

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

Laboratory No.: 997829

Collected: October 11, 2011

Received: October 11, 2011

Prep/ Analyzed: October 24, 2011

Analytical Batch: 11CrH11J

Date: November 10, 2011

Established 1931

Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612 Attention: Shawn Duffy Sample: One (1) Soil Sample Project Name: PG&E Topock Project Project No.: 424973.01.DM P.O. No.: 424973.01.DM Prep. Batch: 11CrH11J

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	Field I.D.	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	DF	RL	<u>Results</u>
997829	SC-Sludge-WDR-33) 15:20	14:39	mg/kg	10.0	7.93	39.4

QA/QC Summarv

		D I.D.		Labor Nun	ratory 1ber	Sample Concentra	e ation	Dup Conce	ntration	F F Di	Relative Percent ifference	Acc I	eptance imits	QC Within Control	
QC Std I.D.	Lab Number	Con unsp san	ic.of biked nple	Dilut	оzэ ion Factor	Added Spike Conc.	Ar	MS nount	Measured Conc. of spiked sample		Theoretical Conc. of spiked sample	l Re	VIS% covery	Acceptance limits	QC Within Control
MS	997829	39).4		10.0	15.9		159	193		198	9	6.8%	75-125%	Yes
IMS	997829	39),4		50.0	40.9	2	2044	1990		2083	g	5.5%	75-125%	Yes
PDMS	997829	39).4		25.0	12.7	[317	373	Т	357		05%	85-115%	Yes
		Q	C Std	I.D.	Меа Сопсе	sured ntration	Tł Cor	neoretical ncentratic	l Perce on Recov	ent ery	Acceptar Limits	ice	QC With Control	n	
			Blan	k	1	١D		<0.400			<0.400		Yes		
			MRCO	CS	2	.11	1	2.00	105%	6	90% - 11)%	Yes		
		N		S#1	2	<u>na</u>		2 00	1040	6	0/1% 11/	איר	Voc		

2.00

104%

ND: Below the reporting limit (Not Detected). DF: Dilution Factor.

LCS

2.08

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Yes

F-- Mona Nassimi, Manager Analytical Services

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.



Received: October 11, 2011 Prep/ Analyzed: October 17, 2011 Analytical Batch: 10SOLID11E

Investigation:

Project No.: 424973.01.DM

P.O. No.: 424973.01.DM

Total Solids by SM 2540 B

Analytical Results % Moisture

<u>TLI I.D.</u>	Field I.D.	Sample Time	<u>Units</u>	<u>Results</u>
997829	SC-Sludge-WDR-330	15:20	%	49.6

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	997829	49.6	49.7	0.23%	<u><</u> 20%	Yes

ND: Below the reporting limit (Not Detected). **DF:** Dilution Factor

> Respectfully submitted, TRUESDAIL LABORATORIES, INC.

🖅 Mona Nassimi, Manager Analytical Services

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REPORT

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

Laboratory No.: 997829 Date: November 10, 2011 Collected: October 11, 2011 Received: October 11, 2011 Prep/ Analyzed: October 11, 2011 Analytical Batch: 10AN11J

Investigation:

Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

<u>TLI I.D.</u>	<u>Field I.D.</u>	Sample Time	<u>Run Time</u>	<u>Units</u>	DF	RL	<u>Results</u>
997829	SC-Sludge-WDR-330	15:20	13:21	mg/kg	1.00	3.97	25.8

QA/QC Summary

		QC ST) I.D.	La	aborat Numb	tory er	Concentra	ition	Duj Conce	olica entr	ate ation	R P Dif	lelative Percent fference	Acceptance limits		Q	C Within Control	
		Duplic	ate	9	97833	3-1	1.50		-	1.49		(0.53%	<	20%		Yes	
	QC Std I.D.	Lab Number	Cor unsj san	nc.of piked nple	Dilı Fa	ution ctor	Added Spike Conc.	Ап	MS nount	Mi C s	easured onc. of spiked ample	T	heoretical Conc. of spiked sample	r Re	/IS% covery	Ac	cceptance limits	QC Within Control
	MS	997833-1	1.	.50	1	.00	2.00	2	2.00		3.41		3.50	9	5.6%	8	85-115%	Yes
1			Q	C Std	I.D.	Me Conc	easured	Th Con	eoretica icentratio	l on	Percei Recove	nt əry	Acceptan Limits	ICO	QC With Contro	nin ol		
				Blan	k		ND		<0.500				<0.500		Yes			
				MRCO	:s		4.11		4.00		103%	5	90% - 110)%	Yes			
			A	MRCV	S#1		3.13		3.00		104%	5	90% - 11()%	Yes			
			Ν	NRCV	5#2		3,12		3.00		104%	5	90% - 110)%	Yes			
				LCS	5		4.10		4.00		103%	5	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



Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612 Attention: Shawn Duffy Sample: One (1) Soil Sample Project Name: PG&E Topock Project Project No.: 424973.01.DM P.O. No.: 424973.01.DM

Laboratory No.: 997829 Date: November 10, 2011 Collected: October 11, 2011 Received: October 11, 2011 Prep/ Analyzed: October 11, 2011 Analytical Batch: 10AN11J

Nitrate as N by Ion Chromatography using EPA 300.0

Analytical Results Nitrate as N

<u>TLI I.D.</u>	Field I.D.	Sample Time	<u>Run Time</u>	<u>Units</u>	DF	RL	<u>Results</u>
997829	SC-Sludge-WDR-330	1 5 :20	13:21	mg/kg	1.00	7.93	23.2

QA/QC Summary

	QC ST) I.D.	L	abora Numb	tory er	Concentra	ition	Du Conce	olica entra	ate ation	Re Pe Diffe	lative rcent erence	Acc I	eptance imits	QC Within Control	
	Duplic	ate	Ş	9767	3-1	22.7			22.7		0.	10%		20%	Yes	
QC Std I,D.	Lab Number	Con unsp san	nc.of biked nple	Dil Fa	ution Ictor	Added Spike Conc.	Ar	MS nount	Ma C S	easured onc. of spiked ample	Th C	eoretical Conc. of spiked sample	Re	MS% covery	Acceptance limits	QC Within Control
MS	997673-1	22	2.7	1	0.0	4.00		40.0		65.3		62.7		106%	85-115%	Yes
		Q	C Std	I.D.	Me Cond	easured	TI Cor	neoretica ncentrati	il o n	Percer Recove	nt ery	Acceptar Limits	ncë i	QC With Contro	nin M	
			Blan	k		ND		<0.500				<0.500)	Yes		
			MRC	CS		3.96		4.00		99.1%	5	90% - 11	0%	Yes		
		Ν	/RCV	S#1		3.00		3.00		100%	,	90% - 11	0%	Yes		
		N	ARCV	S#2		2.99		3.00		99.6%	6	90% - 11	0%	Yes		
		N	IRCV	S#3	Γ	2.99		3.00		99.6%	6	90% - 11	0%	Yes		
			LCS	3		3.96		4.00		99,1%	6	90% - 110%		Yes		

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Investigation:

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

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🖅 Mona Nassimi, Manager Analytical Services

EXCELLENCE IN INDEPENDENT TESTING

REPORT

Established 1931

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

Laboratory No.: 997829 Reported: November 10, 2011 Collected: October 11, 2011 Received: October 11, 2011 Analyzed: See Below

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

Attention: Shawn Duffy

Samples: One (1) Soil Sample Project Name: PG&E Topock Project Project No.: 424973.01.DM P.O. No.: 424973.01.DM

Investigation: Total Metal Analyses as Requested

Analytical Results

SC-Sludge-WDR-330	Time Col	lected: 1	5:20		LAB I	D: 997829	
	Reported				······································	Date	Time
Method	Value	DF	Units	RL	Batch	Analyzed	Analyzed
SW 6010B	79.9	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	58,3	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	ND	2.00	mg/kg	1,92	101911A	10/19/11	12:07
SW 6010B	11.6	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	4720	10.0	mg/kg	9.62	102011A	10/20/11	13:37
SW 6010B	9.38	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	111	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	8.93	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	455	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6020	ND	10.0	mg/kg	0.196	110711C	11/08/11	07:35
SW 6010B	9.46	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	39.8	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	ND	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	133	5.00	mg/kg	4.81	102011A	10/20/11	13:37
SW 6010B	57.8	5.00	mg/kg	4.81	102011A	10/20/11	13:37
	SC-Sludge-WDR-330 Method SW 6010B SW 6010B	SC-Sludge-WDR-330 Time Col Reported Name SW 6010B 79.9 SW 6010B ND SW 6010B S8.3 SW 6010B ND SW 6010B 11.6 SW 6010B 4720 SW 6010B 9.38 SW 6010B 9.38 SW 6010B 8.93 SW 6010B 455 SW 6010B 455 SW 6010B 9.46 SW 6010B 39.8 SW 6010B ND SW 6010B 133 SW 6010B 57.8	SC-Sludge-WDR-330 Time Collected: 1 Reported DF SW 6010B 79.9 5.00 SW 6010B ND 5.00 SW 6010B ND 5.00 SW 6010B ND 2.00 SW 6010B ND 2.00 SW 6010B 11.6 5.00 SW 6010B 4720 10.0 SW 6010B 9.38 5.00 SW 6010B 11.1 5.00 SW 6010B 455 5.00 SW 6010B 455 5.00 SW 6010B 9.46 5.00 SW 6010B 39.8 5.00 SW 6010B ND 5.00 SW 6010B<	SC-Sludge-WDR-330 Time Collected: 15:20 Reported DF Units SW 6010B 79.9 5.00 mg/kg SW 6010B ND 5.00 mg/kg SW 6010B S8.3 5.00 mg/kg SW 6010B S8.3 5.00 mg/kg SW 6010B ND 2.00 mg/kg SW 6010B 11.6 5.00 mg/kg SW 6010B 11.6 5.00 mg/kg SW 6010B 4720 10.0 mg/kg SW 6010B 9.38 5.00 mg/kg SW 6010B 111 5.00 mg/kg SW 6010B 455 5.00 mg/kg SW 6010B 455 5.00 mg/kg SW 6010B 9.46 5.00 mg/kg SW 6010B 9.46 5.00 mg/kg SW 6010B ND 5.00 mg/kg SW 6010B ND 5.00 mg/kg SW 6010B ND <t< td=""><td>SC-Sludge-WDR-330 Time Collected: 15:20 Reported DF Units RL SW 6010B 79.9 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg/kg 4.81 SW 6010B 58.3 5.00 mg/kg 4.81 SW 6010B ND 2.00 mg/kg 4.81 SW 6010B 11.6 5.00 mg/kg 4.81 SW 6010B 4720 10.0 mg/kg 4.81 SW 6010B 9.38 5.00 mg/kg 4.81 SW 6010B 111 5.00 mg/kg 4.81 SW 6010B 8.93 5.00 mg/kg 4.81 SW 6010B 8.93 5.00 mg/kg 4.81 SW 6010B 9.46 5.00 mg/kg 4.81 SW 6010B 9.46 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg</td><td>SC-Sludge-WDR-330 Time Collected: 15:20 LAB I Reported Value DF Units RL Batch SW 6010B 79.9 5.00 mg/kg 4.81 102011A SW 6010B ND 5.00 mg/kg 4.81 102011A SW 6010B ND 5.00 mg/kg 4.81 102011A SW 6010B ND 2.00 mg/kg 4.81 102011A SW 6010B ND 2.00 mg/kg 4.81 102011A SW 6010B 11.6 5.00 mg/kg 4.81 102011A SW 6010B 4720 10.0 mg/kg 4.81 102011A SW 6010B 9.38 5.00 mg/kg 4.81 102011A SW 6010B 8.93 5.00 mg/kg 4.81 102011A SW 6010B 8.93 5.00 mg/kg 4.81 102011A SW 6010B 9.46 5.00 mg/kg 4.81 102011A</td><td>SC-Sludge-WDR-330 Time Collected: 15:20 LAB ID: 997829 Reported Reported RL Batch Analyzed Method Value DF Units RL Batch Analyzed SW 6010B 79.9 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 2.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 2.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 11.6 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 4720 10.0 mg/kg 4.81 102011A 10/20/11 SW 6010B 9.38 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 8.93 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 8.93 5.00 mg</td></t<>	SC-Sludge-WDR-330 Time Collected: 15:20 Reported DF Units RL SW 6010B 79.9 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg/kg 4.81 SW 6010B 58.3 5.00 mg/kg 4.81 SW 6010B ND 2.00 mg/kg 4.81 SW 6010B 11.6 5.00 mg/kg 4.81 SW 6010B 4720 10.0 mg/kg 4.81 SW 6010B 9.38 5.00 mg/kg 4.81 SW 6010B 111 5.00 mg/kg 4.81 SW 6010B 8.93 5.00 mg/kg 4.81 SW 6010B 8.93 5.00 mg/kg 4.81 SW 6010B 9.46 5.00 mg/kg 4.81 SW 6010B 9.46 5.00 mg/kg 4.81 SW 6010B ND 5.00 mg	SC-Sludge-WDR-330 Time Collected: 15:20 LAB I Reported Value DF Units RL Batch SW 6010B 79.9 5.00 mg/kg 4.81 102011A SW 6010B ND 5.00 mg/kg 4.81 102011A SW 6010B ND 5.00 mg/kg 4.81 102011A SW 6010B ND 2.00 mg/kg 4.81 102011A SW 6010B ND 2.00 mg/kg 4.81 102011A SW 6010B 11.6 5.00 mg/kg 4.81 102011A SW 6010B 4720 10.0 mg/kg 4.81 102011A SW 6010B 9.38 5.00 mg/kg 4.81 102011A SW 6010B 8.93 5.00 mg/kg 4.81 102011A SW 6010B 8.93 5.00 mg/kg 4.81 102011A SW 6010B 9.46 5.00 mg/kg 4.81 102011A	SC-Sludge-WDR-330 Time Collected: 15:20 LAB ID: 997829 Reported Reported RL Batch Analyzed Method Value DF Units RL Batch Analyzed SW 6010B 79.9 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 2.00 mg/kg 4.81 102011A 10/20/11 SW 6010B ND 2.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 11.6 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 4720 10.0 mg/kg 4.81 102011A 10/20/11 SW 6010B 9.38 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 8.93 5.00 mg/kg 4.81 102011A 10/20/11 SW 6010B 8.93 5.00 mg

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.

for Mona Nassimi, Manager

Analytical Services

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Report Continued

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TRUESDAIL LABORATORIES, INC.

		INTEREE	SENCE CHEC	K STANDARD	10CS A+B #1		INTERFEREN	ICE CHECK S	TANDARD	ICS A+B #2)	
	Mathod	linite	SOL	SO	%	Control	ICS	ICS	%	Controi	
ianalite.ip.i	DOMONIU	5	obs.	Theo.	Rec.	Limits	Obs.	Theo.	Rec.	Limits	
Accesso	CIVI E010E	uo/ko	1 R.R	2.00	94.2%	80-120%	1.84	2.00	92.2%	80-120%	
Alselic			60 1	2 00	96.7%	80-120%	1.91	2.00	95.6%	80-120%	a sea a sua da sua da sua da sua desta de sea d
Cadmium		mg/Kg	00 F	2000	03.7%	80-120%	1.90	2.00	95.2%	80-120%	
Chromium	SW 6010B		00.1	0.0	20.20	80_120%	188	2.00	94.1%	80-120%	
Cobalt	SW 6010B	mg/kg	1.90		0/ 7.02	8 53 - O			05 J0/		
Conner	SW 6010B	ma/kg	1.93	2.00	96.5%	80-120%	1.91	z.00	%, C.A	00-120/10	and a second
	CIAL BOLOD	04/00	1 80	2 00	94.7%	80-120%	1.85	2.00	92.4%	80-120%	
Manganese				0.0000	100%	80-120%	0.00203	0.00200	101%	80-120%	a and a second a second s
Mercury		Ry/fill	0.0000	0.0100	04 60	80-12/0%	0.0361	0.0400	90.3%	80-120%	
Mołybdenum	SW 6010B	mg/kg	0.0360	0,0400	er:				70 007		
Nickol	SVV 6010B	ma/ka	1.90	2.00	95.2%	80-120%	1.88	z.uu	87°.8		the second s
Citizer	SW/ R010B	ma/kn	1 72	2.00	85.9%	80-120%	1.67	2.00	83.3%	80-120%	
08/461		2			10105	RD-120%	2.00	2.00	99.8%	80-120%	2
Zinc	SW 6010B	mg/kg		7.00	2 0						

Parameter Method Units LCs k_{ec} Control SAMPLE SAMPLE DUP k_{e} Control Aratimony Oss Thao. Res. Limits DD RESULT RESULT RESULT ReD Limits Control Artimony SW 6010B mg/kg 100 111% 65-115% 997829 79.9 00.3 Control 200 <th>Parameter Method Units LCS % Control SAMPLE SAMPLE DUP % Parameter Obs. Theo. Rec. Limits Lip RESULT RESULT</th> <th></th> <th></th> <th></th> <th>LABORATO</th> <th>RY CONTROL</th> <th>SAMPLES</th> <th></th> <th>SAMPLE DUPLIC</th> <th>CATES</th> <th></th> <th></th> <th>Precision</th>	Parameter Method Units LCS % Control SAMPLE SAMPLE DUP % Parameter Obs. Theo. Rec. Limits Lip RESULT				LABORATO	RY CONTROL	SAMPLES		SAMPLE DUPLIC	CATES			Precision
Parameter Monto Outs Two Res Limits FSULT RESULT RESULT RPD Limits Attitimeny Sw 60106 mg/kg 111.1 100 111% 65-115% 997829 75-9 80.3 0.50% ~ 220 Attitimeny Sw 60106 mg/kg 100 102% 65-115% 997829 75-9 80.3 0.50% ~ 220 Ansimu Sw 60108 mg/kg 102 100 102% 65-115% 997829 50.3 65.9 13.7% ~ 220 Cadmium Sw 60108 mg/kg 106 100 102% 65-115% 997829 53.9 57.6 23.4% ~ 220 23.4%	Parameter Merror Co. Tao. Res. Limits D RESULT			- 11 - 11	90 -	2	4	Control	SAMPLE	SAMPLE	DUP	%	Control
Antimeny SW 6010B mg/kg 111 100 111% 85-115% 997628 73-3 80.3 0.50% 520 Antimeny SW 6010B mg/kg 100 106% 65-115% 997829 ND ND 000% 520 Barlum SW 6010B mg/kg 102 100 102% 65-115% 997829 ND ND 000% 520 Barlum SW 6010B mg/kg 102 100 102% 65-115% 997829 ND 00 00% 520 520 520 520 520 520 520 520 520 520 520 520 520 521 520 521 520 521 520 521	Antimony SW 6010B mg/kg 111 100 111% 65-115% 997629 73-9 80.3 0.050% Antimony SW 6010B mg/kg 102 100% 65-115% 997629 ND ND 000% Bahum SW 6010B mg/kg 102 100 102% 65-115% 997629 ND ND 000% Bahum SW 6010B mg/kg 102 100 102% 65-115% 997829 83.3 66.9 137.3 Cadmium SW 6010B mg/kg 100 105% 65-115% 997829 ND ND 00 947 Cadmium SW 6010B mg/kg 104 100 104% 65-115% 997829 4720 4790 1473 Cadmium SW 6010B mg/kg 104 100 104% 65-115% 997829 4720 4720 4720 442 215 Mangamee SW 6010B mg/kg 100 104%	Parameter	DOULEIN	5100	Che C	Theo	Rec.	Limits	Q	RESULT	RESULT	RPD	Limits %
Attimory Sworldb mg/kg 111 100 103% $6^{5}-115\%$ 997829 ND ND ND 000% 520 520 ND ND 000% 520 533 66.9 13.7% 520 533 66.9 13.7% 520 533 66.9 13.7% 520 531 550 550 100 102% 65-115% 597829 56.3 66.9 13.7% 520 540 550 105 mg/kg 102 100 102% 65-115% 997829 56.3 66.9 13.7% 520 540 550 550 10 0.00% 520 550 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.4% 520 550 11.5% 520 550 11.5% 520 550 11.4% 520 550 11.5\% 520 550 11.5\% 520 550 11.5	Antimory SW 6010B mg/kg 1111 100 102% 65-115% 99723 ND ND 000% Barlium SW 6010B mg/kg 102 100 102% 65-115% 99723 58.3 66.9 137% Barlium SW 6010B mg/kg 102 100 102% 65-115% 99723 58.3 66.9 137% Barlium SW 6010B mg/kg 102 100 102% 65-115% 99723 58.3 66.9 137% Cadmium SW 6010B mg/kg 106 100 99.0% 65-115% 99723 4720 4790 147 Cobalt SW 6010B mg/kg 104 100 104% 85-115% 99723 4720 4720 4790 147 147 147 147 147 147 147 147 147 147 147 147 147 141 141 141 141 141 141 141 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>11106</td><td>85-115%</td><td>997829</td><td>6.67</td><td>80.3</td><td>0.50%</td><td>\$20</td></t<>						11106	85-115%	997829	6.67	80.3	0.50%	\$20
Arsenic SW 6010B mgkg 102 100 102/3 65-115% 997829 56.3 66.9 13.7% 20 Banlum SW 6010B mg/kg 102 100 102% 65-115% 997829 56.3 66.9 13.7% 20 Banlum SW 6010B mg/kg 102 100 102% 65-115% 997829 11.6 11.5 0.34% 22 Chriomium SW 6010B mg/kg 106 100 90.0% 85-115% 997829 4720 4790 14.7% 23 Choatt SW 6010B mg/kg 104 100 109% 85-115% 997829 4720 4720 4730 14.7% 23 Cobat SW 6010B mg/kg 101 101 101% 85-115% 997829 432 15,3% 24 Cobat SW 6010B mg/kg 101 101% 85-115% 997829 45 42 296% 216% 29785 <	Arsenic Sw 6010B mg/kg 102 1001 102/kg 66.9 13.7% Beryllium Sw 6010B mg/kg 102 100 102% 85-115% 997829 58.3 66.9 13.7% Beryllium Sw 6010B mg/kg 102 100 102% 85-115% 997829 58.3 66.9 14.7% Cadmium Sw 6010B mg/kg 102 100 106% 85-115% 997829 58.3 66.9 14.7% Chomium Sw 6010B mg/kg 104 100 106% 85-115% 997829 4720 4790 14.7% Cobert Sw 6010B mg/kg 104 100 108% 85-115% 997829 83.95 15.3% Cobert Sw 6010B mg/kg 104 100 108% 85-115% 997829 8.975 15.3% Cobert Sw 6010B mg/kg 101 100 108% 85-115% 997829 8.975 15.3%	Antimony	SW 6010B	mg/kg	111.1		70001	85.115%	997829	Q	Q	0.00%	\$20
Bartum SW 6010B mg/kg 1U2 100 102.7 00105% 65-115% 997829 ND ND 0006 20 Beryllum SW 6010B mg/kg 102 100 102% 65-115% 997829 11.6 11.5 0.84% 520 Cadmlum SW 6010B mg/kg 90 100 100% 85-115% 997829 4730 4790 1.47% 520 Cadmlum SW 6010B mg/kg 104 100 104% 85-115% 997829 8.38 9.73 3.4% 52 15.3% 52 Cobalt SW 6010B mg/kg 101 100 101% 85-115% 997829 8.33 7.91 12.1% 52 Mangamese SW 6010B mg/kg 101 100 101% 85-115% 997829 8.93 7.91 12.1% 52 Mangamese SW 6010B mg/kg 100 101% 85-115% 997829 ND ND	Bartum SW 6010B mg/kg 1U2 100 102% 69715% 997829 ND ND ND 00 000 Beryllium SW 6010B mg/kg 102 100 102% 85-115% 997829 11.6 11.5 0.849 Cadamium SW 6010B mg/kg 96.0 100 106% 85-115% 997829 11.6 11.5 0.849 Cabint SW 6010B mg/kg 104 100 102% 85-115% 997829 9.33 9.759 1.479 1.473 Cober SW 6010B mg/kg 101 100 103% 85-115% 997829 9.33 7.91 12.13 Lead SW 6010B mg/kg 101 100 101% 85-115% 997829 9.46 9.75 12.13 12.13 Manganese SW 6010B mg/kg 101 100 103% 85-115% 997829 9.46 9.73 12.13 3.049 Molyoberum	Arsenic	SW 6010B	тд/кд	801	00		0.0-11.0.0 06-11.6%	997829	58.3	66,9	13.7%	<u>0</u>
Beryllum SW 66/10B mg/kg 102 100 106/x 65-115% 997829 11.6 11.5 0.84% 520 Cadmium SW 60/10B mg/kg 106 100 106% 55-115% 997829 11.6 11.5 0.84% 520 Chromium SW 60/10B mg/kg 106 100 99.0% 55-115% 997829 4720 4790 1.47% 52 Cobalt SW 60/10B mg/kg 101 100 99.7% 53-15% 997829 4720 4790 1.47% 52 Cobalt SW 60/10B mg/kg 101 101 101% 85-115% 997829 475 442 236 52 Cobalt SW 60/10B mg/kg 100 101% 85-115% 997829 ND ND 20 206 52 53 54 52 54 52 56 53 56 53 56 53 56 53 56 53 <td>Beryllium SW 6010B mg/kg 102 100 102% 0347 Cadmium SW 6010B mg/kg 102 100 106% 85-115% 997829 11.6 11.5 0.847 Cadmium SW 6010B mg/kg 106 100 106% 85-115% 997829 9.780 9.750 1479 1.473 Cobalt SW 6010B mg/kg 106 100 108% 85-115% 997829 9.38 9.75 3.849 Copper SW 6010B mg/kg 106 100 108% 85-115% 997829 9.75 3.847 Copper SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.397 Manganese SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.393 Manganese SW 6010B mg/kg 101 100 103% 85-115% 997829 400</td> <td>Banum</td> <td>SW 6010B</td> <td>mg/kg</td> <td>201</td> <td>0</td> <td>0/ 70 I</td> <td>00-110 M</td> <td>997829</td> <td>QN</td> <td>QN</td> <td>0.00%</td> <td><u>_</u>20</td>	Beryllium SW 6010B mg/kg 102 100 102% 0347 Cadmium SW 6010B mg/kg 102 100 106% 85-115% 997829 11.6 11.5 0.847 Cadmium SW 6010B mg/kg 106 100 106% 85-115% 997829 9.780 9.750 1479 1.473 Cobalt SW 6010B mg/kg 106 100 108% 85-115% 997829 9.38 9.75 3.849 Copper SW 6010B mg/kg 106 100 108% 85-115% 997829 9.75 3.847 Copper SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.397 Manganese SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.393 Manganese SW 6010B mg/kg 101 100 103% 85-115% 997829 400	Banum	SW 6010B	mg/kg	201	0	0/ 70 I	00-110 M	997829	QN	QN	0.00%	<u>_</u> 20
Cadmiun SW 6010B mg/kg 105 100 106% 55-115% 597823 4720 4790 147% 20 Chomium SW 6010B mg/kg 104 100 104% 55-115% 997829 9.3.8 9.75 3.84% 22 Chomium SW 6010B mg/kg 104 100 104% 55-115% 997829 9.3.8 9.75 3.84% 22 Cobalt SW 6010B mg/kg 104 100 104% 55-115% 997829 9.3.3 7.91 12.1% 22 Copper SW 6010B mg/kg 101 100 101% 55-115% 997829 455 345% 22 Manganese SW 6010B mg/kg 101 100 101% 65-115% 997829 455 42 236% 24 Manganese SW 6010B mg/kg 101 100 101% 65-115% 997829 46 978 24 24 24 2	Cadmium SW 6010B mg/kg 106 100 106/k 85-115/k 997829 4720 4730 1473 Chomium SW 6010B mg/kg 104 100 104/k 85-115/k 997829 4720 4790 1.473 Chomium SW 6010B mg/kg 104 100 104/k 85-115/k 997829 4.720 4720 4.75 3.843 Copper SW 6010B mg/kg 104 100 101/k 85-115/k 997829 8.93 7.91 12.19 Lead SW 6010B mg/kg 101 100 101/k 85-115/k 997829 8.93 7.91 12.19 Manganese SW 6010B mg/kg 104 100 101/k 85-115/k 997829 8.93 7.91 12.19 2.299 Manganese SW 6010B mg/kg 104 100 101/k 85-115/k 997829 8.945 7.91 2.19 2.097 2.00 0003 <tr< td=""><td>Beryllium</td><td>SW 6010B</td><td>mg/kg</td><td>102</td><td>100</td><td>e.701</td><td></td><td>001000</td><td>11 6</td><td>115</td><td>0.84%</td><td>≤20</td></tr<>	Beryllium	SW 6010B	mg/kg	102	100	e.701		001000	11 6	115	0.84%	≤20
Chromium SW 6010B mg/kg 980 100 100% 85-115% 99/829 47.20 7.91 11.73 52.5 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6 3.84% 52.6	Chromium SW 6010B mg/kg 99.0 100 90.0% 85-115% 997829 9.720 9.730 13.34 Cobalit SW 6010B mg/kg 104 100 104% 85-115% 997829 9.33 9.75 3.84 Cobalit SW 6010B mg/kg 104 100 104% 85-115% 997829 9.33 7.91 12.19 Copper SW 6010B mg/kg 101 100 108% 85-115% 997829 9.33 7.91 12.19 Lead SW 6010B mg/kg 101 100 101% 85-115% 997829 8.93 7.91 12.19 Manganese SW 6010B mg/kg 101 100 101% 85-115% 997829 8.93 3.42 Manganese SW 6010B mg/kg 104 100 104% 85-115% 997829 8.42 4.42 2.89 Mercury SW 6010B mg/kg 104 100 104%	Cadmium	SW 6010B	mg/kg	106	100	106%	%C11-C2	20100 C		0024	1 47%	420
Cobalt SW 6010B mg/kg 104 100 104% 85-115% 897829 9.38 9.7.0 5.54 5.54 5.54 5.54 2.04.8 2.0 Copper SW 6010B mg/kg 108 100 108% 85-115% 997829 9.38 9.7.51 15.3% 2.0 Lead SW 6010B mg/kg 101 100 101% 85-115% 997829 8.93 7.91 12.1% 20 Manganese SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.96% 21 Manganese SW 6010B mg/kg 110 100 101% 85-115% 997829 4.10 0.00% 21 Mickel SW 6010B mg/kg 110 100 104% 85-115% 997829 47.0 30 24 24 26 24 26 24 26 26 26 26 26 26 26 <td< td=""><td>Cobalt SW 6010B mg/kg 104 100 104% 85-115% 997829 9.38 9.75 15.39 Copper SW 6010B mg/kg 106 100 108% 85-115% 997829 9.13 7.91 12.19 Lead SW 6010B mg/kg 101 100 108% 85-115% 997829 8.93 7.91 12.19 Lead SW 6010B mg/kg 101 100 103% 85-115% 997829 8.93 7.91 12.19 Manganese SW 6010B mg/kg 101 100 103% 85-115% 997829 8.9.79 3.9.79 Meruly SW 6010B mg/kg 103 100 103% 85-115% 997829 8.79 3.043 Nickel SW 6010B mg/kg 104 100 104% 85-115% 997829 8.76 3.043 Nickel SW 6010B mg/kg 104 100 100% 85-115% 997829 <</td><td>Chromium</td><td>SW 6010B</td><td>mg/kg</td><td>99.0</td><td>100</td><td>%0.66</td><td>85-115%</td><td>667829</td><td>4/2U</td><td>4/30</td><td></td><td></td></td<>	Cobalt SW 6010B mg/kg 104 100 104% 85-115% 997829 9.38 9.75 15.39 Copper SW 6010B mg/kg 106 100 108% 85-115% 997829 9.13 7.91 12.19 Lead SW 6010B mg/kg 101 100 108% 85-115% 997829 8.93 7.91 12.19 Lead SW 6010B mg/kg 101 100 103% 85-115% 997829 8.93 7.91 12.19 Manganese SW 6010B mg/kg 101 100 103% 85-115% 997829 8.9.79 3.9.79 Meruly SW 6010B mg/kg 103 100 103% 85-115% 997829 8.79 3.043 Nickel SW 6010B mg/kg 104 100 104% 85-115% 997829 8.76 3.043 Nickel SW 6010B mg/kg 104 100 100% 85-115% 997829 <	Chromium	SW 6010B	mg/kg	99.0	100	%0.66	85-115%	667829	4/2U	4/30		
Copper SW 6010B mg/kg 100 100k	Copper Sw 6010B mg/kg 108 100 108% 85-115% 997829 111 95.5 113.3 Lead Sw 6010B mg/kg 93.2 100 93.2% 85-115% 997829 8.93 7.91 12.1% Lead Sw 6010B mg/kg 101 100 101% 85-115% 997829 8.93 7.91 12.1% Manganese Sw 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.969 Mercury Sw 6010B mg/kg 100 101% 85-115% 997829 9.46 9.79 3.42% Nickel Sw 6010B mg/kg 110 100 104% 85-115% 997829 9.46 9.79 3.42% Nickel Sw 6010B mg/kg 110 100 104% 85-115% 997829 ND ND 0.00% Sw 6010B mg/kg 110 100 100% 85-115% 99782	Cohalt	SW 6010B	ma/ka	104	100	104%	85-115%	997829	9.38	c/.6	3.0470	00
Opper Copper 7.91 12.1% 20 Lead SW 6010B mg/kg 93.2 100 101* 100 93.2% 85-115% 997829 8.53 7.91 12.1% 20 Mangamese SW 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.96% 2.0 Marcury SW 6010B mg/kg 108 100 101% 85-115% 997829 9.46 9.79 2.96% 2.0 Mercury SW 6010B mg/kg 104 100 108% 85-115% 997829 9.46 9.79 3.42% 2.4 Nickel SW 6010B mg/kg 110 100 100% 85-115% 997829 ND ND 0.00% 2.4 Nickel SW 6010B mg/kg 110 100 100% 85-115% 997829 ND ND 0.00% 5.4 Selenium SW 6010B mg/kg 106 <td< td=""><td>Outper Say 6010B mg/kg 93.2 100 93.2% 85-115% 997829 8.93 7.91 12.1% Lead Sw 6010B mg/kg 101 101% 85-115% 997829 4.55 4.42 2.693 Manganese Sw 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.693 Mercury Sw 6010B mg/kg 103 100 103% 85-115% 997829 9.46 9.79 3.423 Mercury Sw 6010B mg/kg 104 100 104% 85-115% 997829 9.46 9.79 3.423 Molybderum Sw 6010B mg/kg 110 100 100% 85-115% 997829 ND ND ND 0.005 Selenium Sw 6010B mg/kg 100 100% 85-115% 997829 ND ND ND 0.005 Selenium Sw 6010B mg/kg 100 100% <td< td=""><td>Contact</td><td>SW/ 6010B</td><td>ma/ka</td><td>108</td><td>100</td><td>108%</td><td>85-115%</td><td>997829</td><td>111</td><td>95.5</td><td>15.3%</td><td>075</td></td<></td></td<>	Outper Say 6010B mg/kg 93.2 100 93.2% 85-115% 997829 8.93 7.91 12.1% Lead Sw 6010B mg/kg 101 101% 85-115% 997829 4.55 4.42 2.693 Manganese Sw 6010B mg/kg 101 100 101% 85-115% 997829 4.55 4.42 2.693 Mercury Sw 6010B mg/kg 103 100 103% 85-115% 997829 9.46 9.79 3.423 Mercury Sw 6010B mg/kg 104 100 104% 85-115% 997829 9.46 9.79 3.423 Molybderum Sw 6010B mg/kg 110 100 100% 85-115% 997829 ND ND ND 0.005 Selenium Sw 6010B mg/kg 100 100% 85-115% 997829 ND ND ND 0.005 Selenium Sw 6010B mg/kg 100 100% <td< td=""><td>Contact</td><td>SW/ 6010B</td><td>ma/ka</td><td>108</td><td>100</td><td>108%</td><td>85-115%</td><td>997829</td><td>111</td><td>95.5</td><td>15.3%</td><td>075</td></td<>	Contact	SW/ 6010B	ma/ka	108	100	108%	85-115%	997829	111	95.5	15.3%	075
Lead Swootub mg/kg 101 100 101/k 65-115/k 997829 455 442 2.96% 526 Marganese SW 6010B mg/kg 101 100 101/k 65-115/k 997829 455 442 2.96% 526 Marcury SW 6010B mg/kg 101 100 103% 85-115/k 997829 9.46 9.79 3.42% 52 Mercury SW 6010B mg/kg 104 100 103/k 85-115/k 997829 39.8 41.0 3.04% 52 Nolybdenum SW 6010B mg/kg 104 100 104/k 85-115/k 997829 39.8 41.0 3.04% 52 Selenium SW 6010B mg/kg 100 100/k 85-115/k 997829 ND ND ND 0.00% 52 Selenium SW 6010B mg/kg 106 106/k 85-115/k 997829 ND ND ND 0.00% 52	Lead SW 6010B mg/kg 101 100 101/k 85-115% 997829 455 442 2.969 Manganese SW 6010B mg/kg 101 100 113% 85-115% 997829 455 442 2.969 Mercury SW 6010B mg/kg 103 100 103% 85-115% 997829 9.46 9.79 3.42' Mercury SW 6010B mg/kg 104 100 104% 85-115% 997829 9.46 9.79 3.42' Nickel SW 6010B mg/kg 100 100 85-115% 997829 ND ND 0.00' Sw 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.00' Anadium SW 6010B mg/kg 106 100 106% 85-115% 997829 ND ND 0.00' Anadium SW 6010B mg/kg 106 100 106% 85-115% 997829				03.7	100	93.2%	85-115%	997829	8.93	7,91	12.1%	230
Manganese Sw but up May Mail	Manganese SW 6010B mg/kg 0.225 0.200 113% 85-115% 997829 ND ND 0.003 Mercury SW 6020 mg/kg 0.225 0.200 103% 85-115% 997829 9.46 9.79 3.423 Mercury SW 6010B mg/kg 108 100 108% 85-115% 997829 9.46 9.79 3.423 Nickel SW 6010B mg/kg 110 100 104% 85-115% 997829 ND ND 0.00 Selenium SW 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.00 Selenium SW 6010B mg/kg 106 100 910% 85-115% 997829 ND ND 0.00 Anatium SW 6010B mg/kg 106 100 910% 85-115% 997829 ND ND ND 000 Anatium SW 6010B mg/kg 111 100	Lead		64/611	1.50		101%	R5-115%	997829	455	442	2.96%	≤20
Mercury Sw buzu mg/kg U.225 U.229 U.246 9.78 9.46 9.79 3.42% 2.42 Molybdenum Sw 6010B mg/kg 108 85-115% 997829 9.46 9.79 3.42% 231 Nickel Sw 6010B mg/kg 104 100 104% 85-115% 997829 39.46 0.70% 521 Nickel Sw 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.00% 521 Selenium Sw 6010B mg/kg 100 100 100% 85-115% 997829 ND ND ND 0.00% 521 Selenium Sw 6010B mg/kg 106 106% 85-115% 997829 ND ND ND 0.00% 521 Jatitium Sw 6010B mg/kg 106 106% 85-115% 997829 133 136 2.15% 52 Vanadium Sw 6010B mg/kg	Mercury Sw buzu mg/kg 0.425 0.455 0.455 0.997829 9.46 9.79 0.479 0.405 0.479 0.405 0.410 0.005 0.410 0.005 0.410 0.005	Manganese		5y/fu			71267	85-115%	997829	S	Q	0.00%	\$20
Molybdenum SW 6010B mg/kg 100 108% 85-115% 937829 39.3 41.0 3.04% 520 Nickel SW 6010B mg/kg 104 100 104% 85-115% 997829 39.3 41.0 3.04% 520 Nickel SW 6010B mg/kg 110 100 110% 85-115% 997829 39.3 41.0 3.04% 520 Selenium SW 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.00% 520 Jaiver SW 6010B mg/kg 106 85-115% 997829 ND ND 0.00% 520 Jaitium SW 6010B mg/kg 106 85-115% 997829 133 136 2.15% 52 Vanadium SW 6010B mg/kg 100 106% 85-115% 997829 133 136 2.15% 52 Vanadium SW 6010B mg/kg 111 100	Molybdenum SW 6010B mg/kg 108 100 108% 85-115% 997829 39.8 41.0 3.04% Nickel SW 6010B mg/kg 104 100 104% 85-115% 997829 39.8 41.0 3.04% Nickel SW 6010B mg/kg 110 100 110% 85-115% 997829 39.8 41.0 0.005 Selenium SW 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.005 Jaiver SW 6010B mg/kg 106 100 106% 85-115% 997829 ND ND 0.005 Anadium SW 6010B mg/kg 11 100 106% 85-115% 997829 ND ND 0.005 Xinc SW 6010B mg/kg 11 100 106% 85-115% 997829 133 136 216 Zinc SW 6010B mg/kg 11 100 111% <t< td=""><td>Mercury</td><td>SW 6UZU</td><td>mg/kg</td><td>C77'A</td><td></td><td></td><td></td><td>007820</td><td>0.46</td><td>9.79</td><td>3.42%</td><td>≤20</td></t<>	Mercury	SW 6UZU	mg/kg	C77'A				007820	0.46	9.79	3.42%	≤20
Nickel SW 60108 mg/kg 104 100 104% 85-115% 997829 39.8 41.0 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.47.8 5.41.0 5.04.8 5.41.0 5.04.8 5.41.0 5.04.8 5.41.0 5.04.8 5.41.0 5.04.8 5.41.0 0.00% 5.24.8 5.41.6 997829 ND ND ND 0.00% 5.24.8 5.41.6 5.04.8<	Nickel Sw 60108 mg/kg 104 100 104% 85-115% 997829 39.8 41.0 0.003 Selenium SW 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.003 Analitum SW 6010B mg/kg 100 100 100 106% 85-115% 997829 ND ND 0.003 Analitum SW 6010B mg/kg 106 100 93.0% 85-115% 997829 ND ND ND 0.003 Analitum SW 6010B mg/kg 105 100 93.0% 85-115% 997829 ND ND ND 0.003 Analitum SW 6010B mg/kg 111 100 91.15% 997829 133 136 59.8 3.403 Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.403 Zinc SW 6010B mg/kg	Molybdenum	SW 6010B	mg/kg	108	100	108%	85-115%	670/66			7010 0	~~U
Selenium Sw 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.00% 54 Selenium Sw 6010B mg/kg 91.2 100 98.2% 85-115% 997829 ND ND 0.00% 52.4 Jiver Sw 6010B mg/kg 98.2 100 106% 85-115% 997829 ND ND 0.00% 52.4 Jatitum Sw 6010B mg/kg 100 106% 85-115% 997829 ND ND 0.00% 52.4 Variadium Sw 6010B mg/kg 11 100 111% 85-115% 997829 133 136 2.15% 52.8 Vinc Sw 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40% 52.8 57.8 59.8 3.40% 50.8 50.8 50.8 50.8 50.8 50.8 50.8 50.8 50.8 50.8 50.8 50.	Selenium SW 6010B mg/kg 110 100 110% 85-115% 997829 ND ND 0.009 Selenium SW 6010B mg/kg 98.2 100 98.2% 85-115% 997829 ND ND 0.009 Mailium SW 6010B mg/kg 105 100 93.2% 85-115% 997829 ND ND 0.009 Mailium SW 6010B mg/kg 105 100 93.0% 85-115% 997829 ND ND 0.009 Mailium SW 6010B mg/kg 111 100 93.0% 85-115% 997829 133 136 2.15° Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40° Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40° Zinc SW 6010B mg/kg 111 100 111%	Nickal	SW 6010B	ma/ka	104	100	104%	85-115%	997829	39.8	41.0	5.U478	
Outcom Section Section Section Direct Section ND ND 0.00% Section Section <thsection< th=""> Section Section</thsection<>	Outset term Outset term <thoutset term<="" th=""> <thoutset term<="" th=""></thoutset></thoutset>	Colonium	SW/ 6010B	ma/kn	110	100	110%	85-115%	997829	9	Q	0.00%	220
Maillum SW 6010B mg/kg 106 106% 85-115% 997829 ND ND 0.00% 24 Vanadium SW 6010B mg/kg 93.0 100 93.0% 85-115% 997829 133 136 2.15% 52 Vanadium SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40% 52	Thailum SW 6010B mg/kg 105 100 106% 85-115% 997829 ND ND ND 0.00° Vanadium SW 6010B mg/kg 105 100 93.0% 85-115% 997829 133 136 2.15° Vanadium SW 6010B mg/kg 111 100 93.0% 85-115% 997829 133 136 2.40° Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40° Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40° Zinc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40° Zinc This report applies only to the samples, investigated and is not necessarily indicative of the quality or condition of apparentized or similar products. As a mutual print these labrationes, 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 prepar		SW 6010B	ma/ka	98.2	100	98.2%	85-115%	997829	9	Q	0.00%	<u></u>
Valadium SW 6010B mg/kg 93.0 100 93.0% 85-115% 997829 133 136 2.15% ≤2 Zhnc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 59.8 3.40% ≤2	Vanadium SW 6010B mg/kg 93.0 100 93.0% 85-115% 997829 133 136 2.15% 2.45% 297829 133 136 2.45% 2.45% 2.15% 2		SW 6010B	mn/kn	106	100	106%	85-115%	997829	9	Q	0.00%	\$20
Valiauulii 2000 1908 59.8 3.40% 520 57.8 59.8 3.40% 520 77.0 71nc 85-115% 997829 57.8 59.8 3.40% 520	Valiauuli 2000 57.8 59.8 3.40° 2inc SW 6010B mg/kg 111 100 111% 85-115% 997829 57.8 597.8 597.8 59.8 3.40° Zinc SW 6010B mg/kg 111 100 111% 85-115% This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual pr 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		SW/ ED100	mo/kn	93.0	100	93.0%	85-115%	997829	133	136	2.15%	≤20
	This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual pr and these labrrationes, 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	Zinc	SW 6010B	mg/kg	111	100	111%	85-115%	997829	57.8	59.8	3.40%	\$20
		and these le	thoratories, this rel	port is submit	tted and acce	pted for the ex pedail abora	tories tories	of the client to whom .	it is addressed and upor	the condition that	It is not to be used	, in whole of in part	, in any auven

Report Continuted

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SOIKE

Accuracy

MATRIX SPI	IKE					Sniko	Total Amt.	Theo.	SM	%	Control
			•	Sample	30	l evel	of Snike	Value	Obs.	Rec.	Limits %
Samole ID	Parameter	Method	Units	Kesun			064	1041	998 1	95.5%	75-125%
0000000	Antimonv	SW 6010B	by/bu	79.9	5,00	761.	305	064	0U3	93.9%	75-125%
22107A		SW AD10B	ma/ka	0.00	5.00	192	106		222		70 1050/
997829	Arsenic			58.3	5 00	192	961	1020	960	93.0%	
997829	Barium	SW 6010B				06.1	192	192	215	112%	75-125%
997829	Beryllium	SW 6010B	mg/kg	n.uu	7.uu	102	961	973	901	92.5%	75-125%
997829	Cadmium	SW 6010B	mg/kg	11.6	00.6	192	1923	6643	6445	89.7%	75-125%
997829	Chromium	SW 6010B	mg/kg	4/2U	0.0	, et	961	971	006	92.6%	75-125%
997829	Cobalt	SW 6010B	mg/kg	9.30	00.0	101	961	1073	1000	92.4%	75-125%
997829	Copper	SW 6010B	mg/kg	111	nn.c	100	061	970	190	81.2%	75-125%
997829	Lead	SW 6010B	mg/kg	8.93	5.UU	781	061	1417	1302	88.1%	75-125%
997829	Manganese	SW 6010B	mg/kg	455	2.00 1.0	132		0.556	0.551	98.5%	75-125%
997829	Mercury	SW 6020	mg/kg	0.166	0'01 	0.0390	961	971	921	94.8%	75-125%
997829	Molybdenum	SW 6010B	mg/kg	9.46	00.0	701 C01	001 061	1001	923	91.9%	75-125%
997829	Nickel	SW 6010B	mg/kg	39.8	0.00 2	192	961	961	896	93.2%	75-125%
997829	Selenium	SW 6010B	- mg/kg	00.0		191	961	961	864	89.9%	75-125%
997829	Silver	SW 6010B	mg/kg	0.00 0		102	961	961	902	93.8%	75-125%
997829	Thailium	SW 6010B	mg/kg	0.UU	0.00	101	961	1095	972	87.2%	75-125%
997829	Vanadium	SW 6010B	mg/kg	133	0.00 	701 CO1	a61	1019	1012	99.2%	75-125%
997829	Zinc	SW 6010B	mg/kg	57.8	nn:c	701		-			

ND: Not detected, or below limit of detection. DF: Dilution Factor

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Respectfully submitted, TRUESDAIL LABORATORIES, INC.

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 $\mathcal{F}_{\mathcal{L}}$, Mona Nassimi, Manager Analytical Services -ر م

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

Date Calculated: 11/10/2011

	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	13 036		19.6	25 8533	25.8	2 00	3.07
Nitrate as N	11.690		49.6	23.1839	23.2	4.00	7.93
Hexavalent Chromium	19.8686		49.6	39.4038	39.4	4.00	7.93
Hexavalent Chromium - Dup	20.0673		49.6	39.7979	39.8	4.00	7.93
Hexavalent Chromium - MS	97.3202		49.6	193.007	193	4.00	7.93
Hexavalent Chromium - IMS	1005.659		49.6	1994.445	1990	20.0	39.7
Hexavalent Chromium - PDMS	187.9424	unea .	49.6	372.731	373	10.0	19.8
Antimony	40.29	5.00	49.6	79,9040	79.9	2,426	4.81
Arsenic	ND	5.00	49.6	ND	ND	2.426	4.81
Barium	29,41	5.00	49.6	58.3266	58.3	2,426	4,81
Bervllium	0.6659	2.00	49,6	1.3206	ND	0.9706	1.92
Cadmium	5.834	5.00	49.6	11.5701	11.6	2.426	4.81
Chromium	2380	10.0	49.6	4720.07	4720	4.853	9.62
Cobalt	4.729	5.00	49.6	9.3787	9,38	2,426	4.81
Copper	56.16	5.00	49.6	111.3777	111	2.426	4.81
Lead	4.501	5.00	49.6	8.9265	8.93	2.426	4.81
Manganese	229.5	5.00	49,6	455.1494	455	2.426	4.81
Mercury	0.08396	10.00	49.6	0.16651	ND	0.0988	0.196
Molybdenum	4.771	5.00	49.6	9.4620	9.46	2.426	4.81
Nickel	20.07	5.00	49.6	39.8033	39.8	2.426	4.81
Selenium	ND	5.00	49.6	ND	ND	2.426	4.81
Silver	ND	5.00	49.6	ND	ND	2,426	4.81
Thallium	ND	5.00	49.6	ND	ND	2.426	4.81
Vanadium	67.20	5.00	49.6	133.273	133	2,426	4.81
Zinc	29.16	5.00	49.6	57.8308	57.8	2.426	4.81

Dry Weight Calculations

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

where:

Sampleww = Sample result in wet weight

Oven Temp, °C:

Analytical Batch: 10SOLID11E

105

TRUESD	AIL L	ABORAT	ORIES,	INC.

144

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TOTAL SOLIDS BY SM 2540 B

10/17/11 Date of Analysis:

•								
Lab No.	Dìsh 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
997829	1	1.2715	2.0685	3.3400	2.3145	1.0430	50.423	49.577
997829D	2	1.2743	2.0907	3.3650	2.3261	1.0518	50,309	49.691
		1						
······································	1	1						
د								
	1							

	Relati	ve Percent Difference	
Sample ID	Sample	Sample Dup	RPD
997829	49.577	49.691	0.2

% Total Solids =

<u>(A-B)*100</u> C-B =

Weight of dried residue x 100 Weight of wet sample

Where:

A = Weight of dried Residue + Dish, g

Analyst Signature

B = Weight of dish, g

C = Weight of wet sample + Dish, g

Analyst Name

Reviewer Signature

TS_%M_10A10/18/11







Sample Integrity & Analysis Discrepancy Form

Client:	CH2M HILL	Lab # * 997 8
Date D	elivered: <u>10</u> 1 <u>11</u> 111 Time: <u>21:3</u> 0 By: □Mail ØF	ield Service
1.	Was a Chain of Custody received and signed?	Salves ⊡No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No QN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No \QŃ/A
i .	If a letter was sent with the COC, does it match the COC?	□Yes □No \$\$\$\$\/A
5.	Were all requested analyses understood and acceptable?	Ì⊈Yes □No □N/A
5.	Were samples received in a chilled condition? Temperature (if yes)? <u> ²/ ° C</u>	baYes ⊡No ⊡N/A
7 .	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Yes ONO ONA
3.	Were sample custody seals intact?	□Yes □No \$\N/A
).	Does the number of samples received agree with COC?	Yes INO IN/A
0.	Did sample labels correspond with the client ID's?	Ìqiyes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No 卤N/A
2.	Were samples pH checked? pH = <u>See_</u> COC	□Yes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	,¤Yes □No □N/A
'4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): D RUSH Std	¢áýes ⊡No ⊡N/A
15.	<u>Sample Matrix:</u> □Liquid □Drinking Water □Ground ØSludge □Soil □Wipe □Paint □Solid □	Water DWaste Water
16.	Comments:	
17	Sample Check-In completed by Truesdail Loa-In/Receivina:	Alex

EXCELLENCE IN INDEPENDENT TESTING

Established 1931 14201 FRANKLIN AVENUE TUSTIN, CALIFORNIA 92780-7008 (714) 730-6239 · FAX (714) 730-6462 www.truesdail.com

November 7, 2011

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-330 PROJECT, GROUNDWATER MONITORING, TLI NO.: 997830

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 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 October 11, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or 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.

Suca

Fo - Mona Nassimi Manager, Analytical Services

Alichael Algo

Michael Ngo Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612 Attention: Shawn Duffy Sample: One (1) Groundwater Project Name: PG&E Topock Project Project No.: 424973.01.DM

Laboratory No.: 997830 Date: November 7, 2011 Collected: October 11, 2011 Received: October 11, 2011

ANALYST LIST

	PARAMETER	ANALYST
	Specific Conductivity	Gautam Savani
EPA 120.1	Total Dissolved Solids	Jenny Tankunakorn
SM 2040C	Anions	Giawad Ghenniwa
EPA 300.0	Metals by ICP	Ethel Suico
EPA 200.7	Metals by ICP/MS	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

Client: E				_/	$\left \right\rangle$	1420 (712	11 FRANKLIN AVEN 1) 730-6239 · FA	JUE - TUSTIN, CALIF X (714) 730-6462 -	DRNIA 92780-7 www.truesdail.r
U	22 Consulting Engineers 55 Grand Ave. Suite 10: Dakland, CA 94612	, Inc.				Lab	oratory No.: te Received:	997830 0000000 11 20	Ţ
Attention: S	shawn Duffy					2	nananan n	October 11, 20	=
Project Name: F Project No.: 4 P.O. No.: 4	PG&E Topock Project 24973.01.DM 24973.01.DM								
		An	alytical	Result	s Sum	mary			
Lab Sample ID Fi	ield ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	tint.	ã
997830-001 St	C-701-WDR-330	E120.1	NONE	10/11/2011	15:00	EC	36700	umhos/cm	2 00
99/830-001 St	C-701-WDR-330	E200.7	NONE	10/11/2011	15:00	Banium	74.4	ua/l	10.0
	C-701-WDR-330	E200.7	NONE	10/11/2011	15:00	Manganese	28.1	ug/L	10.0
	C-/UI-WUK-330	E200.7	NONE	10/11/2011	15:00	Molybdenum	105	ug/L	10.0
007830-001 01	C-/UI-WUR-330	E200.8	NONE	10/11/2011	15:00	Antimony	Q	ng/L	10.0
	C-/U1-WUK-330	E200.8	NONE	10/11/2011	15:00	Arsenic	1.1	ug/L	1.0
	C-/U1-WUR-330	E200.8	NONE	10/11/2011	15:00	Beryllium	QN	ua/L	1.0
	C-/01-WDR-330	E200.8	NONE	10/11/2011	15:00	Cadmium	QN	ua/L	9 C 8
	C-701-WDR-330	E200.8	NONE	10/11/2011	15:00	Chromium	3.2	ua/L	0 T
	C-/U1-WDR-330	E200.8	NONE	10/11/2011	15:00	Cobalt	QN	ua/L	5.0
	C-/U1-WDR-330	E200.8	NONE	10/11/2011	15:00	Copper	QN	ua/L	50
	0-/01-WDR-330	E200.8	NONE	10/11/2011	15:00	Lead	QN	ua/L	10.0
	0-/01-WDR-330	E200.8	NONE	10/11/2011	15:00	Mercury	QN	ng/L	2.0 2.0
	0-/01-WDR-330	E200.8	NONE	10/11/2011	15:00	Nickel	QN	ua/L	10.0
	0-701-VVDR-330	E200.8	NONE	10/11/2011	15:00	Selenium	18.8	ng/L	10.0
	/UI-VUR-330	E200.8	NONE	10/11/2011	15:00	Silver	QN	ng/L	5.0
	701 -VVUR-330	EZ00.8	NONE	10/11/2011	15:00	Thallium	Ŋ	ng/L	1.0
			NONE	10/11/2011	15:00	Vanadium	QN	ng/L	5.0
	701 WUR-330	E200.8	NONE	10/11/2011	15:00	Zinc	11.0	ug/L	10.0
	7-/ U 1-VVUR-33U	E218.6	LABFLT	10/11/2011	15:00	Chromium, hexavalent	2.1	ng/L	2.1
	701 - VVUR-330	E300	NONE	10/11/2011	15:00	Fluoride	13.2	mg/L	0.500
	~~/ U1-VVDR-330	SM2540C	NONE	10/11/2011	15:00	Total Dissolved Solids	24800	mg/L	500
ND: NOI MB/L: MBB	 Detected (below reporting limit) Igrams per liter. 								
Note: The	following "Significant Figures" rule	has been applied to all	results:						
Res Res	utts below 0.01ppm will have two (ult above or equal to 0.01ppm will	 significant figures. nave three (3) significant 	ไหนรอง						

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



REPORT

Client: E2 Consulting Engineers, Inc. 155 Grand Avenue, Suite 800 Oakland, CA 94612 Attention: Shawn Duffy Project Name: PG&E Topock Project

Laboratory No. 997830 Page 1 of 28 Printed 11/7/2011

Samples Received on 10/11/2011 9:30:00 PM

Field ID				Lab ID	Collected	Matrix	
SC-701-WDR-330				997830-001 1	0/11/2011 15:00	D Water	
Anions By I.C EPA 300	.0		Batch	10AN11J			
Parameter		Unit	Ana	lyzed	OF MDL	RL F	Result
997830-001 Fluoride		mg/L	10/11	/2011 10:35 5	.00 0.0250	0.500 4	13.2
Method Blank							
Parameter Fluoride	Unit mg/L	DF 1.00	Result ND				
Duplicate						Lab ID = 997	'833-001
Parameter Fluoride	Unit mg/L	DF 1.00	Result 1.49	Expected 1.50	RPD 0.401	Acceptance 0 - 20	e Range
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance	e Range
Matrix Spike	mg/L	1.00	4.10	4.00	103.	90 - 110 Lab ID = 997	'833-001
Parameter Fluoride MRCCS - Secondary	Unit mg/L	DF 1.00	Result 3.41	Expected/Adde 3.50(2.00)	d Recovery 95.7	Acceptance 85 - 115	e Range
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result 4.11	Expected 4.00	Recovery 103.	Acceptance 90 - 110	Range
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.13	Expected 3.00	Recovery 104.	Acceptance 90 - 110	e Range
Parameter Fluoride	Unit mg/L	DF 1.00	Result 3.12	Expected 3.00	Recovery 104.	Acceptance 90 - 110	Range

Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Specific Conductivity - El	PA 120.1	Batch 10EC11K				10/14/2011		1
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
997830-001 Specific Conducti	vity	umhos/	umhos/cm 10/14/2011		1.00	0.0380	2.00	36700
Method Blank								
Parameter	Unit	DF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	997830-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Specific Conductivity	umhos	1.00	37000	36700		0.814	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Specific Conductivity	umhos	1.00	693	706	98.2 90 - 110		90 - 110)
Lab Control Sample Du	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Specific Conductivity	umhos	1.00	692	706		98.0	90 - 110)
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Specific Conductivity	umhos	1.00	697	706		98.7	90 - 110)
MRCVS - Primary								
Parameter	Unit	ĎF	Result	Expected	F	Recovery	Accepta	ince Range
Specific Conductivity	umhos	1.00	965	997		96.8	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Specific Conductivity	umhos	1.00	952	997		95.5	90 - 110)

Report Continued

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 10CrH11N						
Parameter Unit		Ana	lyzed	DF	MDL	RL	Result	
997830-001 Chromium, Hexa	valent	ug/L	10/13/2011 16:22		10.5	0.273	2.1	2.1
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				lah ID =	997745-005
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 5.25	Result 9.55	Expected 9.39	R	PD 1.70	Acceptance Rang 0 - 20	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.97	Expected 5.00	Recovery 99.4		Acceptance Range 90 - 110 Lab ID = 997745-001	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 7.78	Expected/Adde 7.34(5.25)	ed Recovery 108.		Acceptance Rang 90 - 110 Lab ID = 997745-00	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 6.28	Expected/Adde 6.45(5.25)	ed R	ecovery 96.8	Accepta 90 - 11 Lab ID =	ance Range 0 • 997745-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 8.76	Expected/Add 8.35(5.25)	ed F	Recovery 108.	Accepta 90 - 11 Lab ID =	ance Range 0 : 997745-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 6.42	Expected/Adde 6.21(5.25)	ed F	Recovery 104.	Accepta 90 - 11 Lab ID =	ance Range 0 • 997745-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 35.2	Expected/Add 35.6(26.2)	ed Recovery 98.4		Accepta 90 - 11 Lab ID =	ance Range 0 • 997745-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 38.1	Expected/Add 36.8(26.2)	ed F	Recovery 105.	Accept 90 - 11 Lab ID =	ance Range 0 • 997745-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 37.8	Expected/Add 37.0(26.2)	ed F	Recovery 103.	Accept 90 - 11	ance Range 0

Report Continued

Client: E2 Consulting Engineers, Inc.			Project Name: Project Number:	PG&E Topock Pro 424973.01.DM	Page 4 of 28 Printed 11/7/2011	
Matrix Spike						Lab ID = 997830-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result ND	Expected/Added 1.06(1.06)	Recovery	Acceptance Range 90 - 110 Lab ID = 997830-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 3.05	Expected/Added 6.59(5.25)	Recovery 32.6	Acceptance Range 90 - 110 Lab ID = 997830-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 10.5	Result 12.5	Expected/Added 12.6(10.5)	Recovery 98.6	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.98	Expected 5.00	Recovery 99.6	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.4	Expected 10.0	Recovery 104.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.5	Expected 10.0	Recovery 105.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.64	Expected 10.0	Recovery 96.4	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Metals by EPA 200.7, Total			Batch	102411A			
Parameter		Unit	Analyzed		DF MDL	RL	Result
997830-001 Molybdenum		ug/L	10/24	1/2011 11:48 1	.00 4.02	10.0	105.
Method Blank							
Parameter Molybdenum	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	997602-001
Parameter Mołybdenum Lab Control Sample	Unit ug/L	DF 1.00	Result 17.0	Expected 16.7	RPD 1.78	Accepta 0 - 20	ance Range
Parameter Molybdenum Matrix Spike	Unit ug/L	DF 1.00	Result 4900	Expected 5000	Recovery 98.1	Accepta 85 - 115 Lab ID =	ance Range 5 997602-001
Parameter Molybdenum MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1960	Expected/Adde 2020(2000)	d Recovery 97.2	Accepta 75 - 125	ance Range 5
Parameter Molybdenum MRCVS - Primary	Unit ug/L	DF 1.00	Result 4860	Expected 5000	Recovery 97.1	Accepta 90 - 110	ance Range)
Parameter Molybdenum MRCVS - Primary	Unit ug/L	DF 1.00	Result 5340	Expected 5000	Recovery 107.	Accepta 90 - 110	ance Range)
Parameter Molybdenum MRCVS - Primary	Unit ug/L	DF 1.00	Result 5320	Expected 5000	Recovery 106.	Accepta 90 - 110	ance Range)
Parameter Molybdenum Interference Check S	Unit ug/L tandard A	DF 1.00	Result 5150	Expected 5000	Recovery 103.	Accepta 90 - 110	ance Range)
Parameter Molybdenum Interference Check S	Unit ug/L tandard A	DF 1.00	Result 40.6	Expected 40.0	Recovery 102.	Accepta 80 - 120	ance Range)
Parameter Molybdenum	Unit ug/L	DF 1.00	Result 43.9	Expected 40.0	Recovery 110.	Accepta 80 - 120	ance Range)

Report Continued

Client: E2 Consulting Eng	Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM				
Metals by EPA 200.7, Tot	al		Batch	102511A				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
997830-001 Barium		ug/L	10/25/	/2011 14:18	.00	2.25	10.0	74.4
Manganese		ug/L	10/25	/2011 14:18	.00	3.23	10.0	28.1
Method Blank								
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	997830-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Barium	ug/L	1.00	75.9	74.4		2.00	0 - 20	•
Manganese	ug/L	1.00	28.4	28.1		1.06	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	1.00	5220	5000		104.	85 - 115	5
Manganese	ug/L	1.00	5150	5000		103.	85 - 115	5
Matrix Spike							Lab ID =	997830-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accepta	ance Range
Barium	ug/L	1.00	2320	2070(2000)		112.	75 - 128	5
Manganese	ug/L	1.00	1960	2030(2000)		96.4	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	1.00	5130	5000		102.	90 - 110	כ
Manganese	ug/L	1.00	5090	5000		102.	90 - 11(C
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	1.00	5370	5000		107.	90 - 11(C
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	1.00	5490	5000		110.	90 - 110	D
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	1.00	5300	5000		106.	90 - 110	D
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Manganese	ug/L	1.00	5010	5000		100.	90 - 110	5



Report Continued

Client: E2 Consulting I	Engineers, In	eers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM						Page 9 of 28 Printed 11/7/2011	
Metals by EPA 200.8, ⁻	Total		Batch	101311A					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result	
997830-001 Arsenic		ug/L	10/14	1/2011 00:05	5.00	0.285	1.0	1.1	
Chromium		ug/L	10/14	1/2011 00:05	5.00	0.110	1.0	3.2	
Copper		ug/L	10/14	/2011 00:05	5.00	0,125	5.0	ND	
Mercury		ug/L	10/14	/2011 00:05	5.00	0.0750	1.0	ND	
Nickel		ug/L	10/14	/2011 00:05	5.00	0.0750	10.0	ND	
Selenium		ug/L	10/14	/2011 00:05	5.00	0.340	10.0	18.8	
Method Blank		<u>~</u>		<u></u>					
Parameter	Unit	DE	Result						
Aluminum	ug/L	1.00	ND						
Arsenic	ug/L	1.00	ND						
Chromium	ug/L	1.00	ND						
Mercury	ug/L	1.00	ND						
Nickel	ug/L	1.00	ND						
Selenium	ug/L	1.00	ND						
Copper	ug/L	1.00	ND						
Manganese	ug/L	1.00	ND						
Duplicate							Lab ID =	997831-001	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range	
Aluminum	ug/L	5.00	ND	0.00		0	0 - 20	Ŭ	
Arsenic	ug/L	5.00	ND	0.00		0	0 - 20		
Chromium	ug/L	5.00	1.10	1.27		14.1	0 - 20		
Mercury	ug/L	5.00	ND	0.00		0	0 - 20		
Nickel	ug/L	5.00	ND	0.00		0	0 - 20		
Selenium	ug/L	5.00	ND	0.00		0	0 - 20		
Copper	ug/L	5.00	ND	0.00		0	0 - 20		
Manganese	ug/L	5.00	1.97	1.98		0.303	0 - 20		

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

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Report Continued

Client: E2 Consulting Engineers, Inc.		Proj Proj	ect Name: ect Number:	ject	Page 10 of 28 Printed 11/7/2011	
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	51.9	50.0	104.	85 - 115
Arsenic	ug/L	1.00	45.1	50.0	90.2	85 - 115
Chromium	ug/L	1.00	47.4	50.0	94.8	85 - 115
Mercury	ug/L	1.00	2.16	2.00	108.	85 - 115
Nickel	ug/L	1.00	47.3	50.0	94.6	85 - 115
Selenium	ug/L	1.00	52.7	50.0	105.	85 - 115
Copper	ug/L	1.00	48.0	50.0	96.1	85 - 115
Manganese	ug/L	1.00	47.6	50.0	95.3	85 - 115
Matrix Spike						Lab ID = 997831-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	231	250.(250.)	92.4	75 - 125
Arsenic	ug/L	5.00	219.	250.(250.)	87.8	75 - 125
Chromium	ug/L	5.00	232.	251.(250.)	92.4	75 - 125
Mercury	ug/L	5.00	10.1	10.0(10.0)	101.	75 - 125
Nickel	ug/L	5.00	220.	250.(250.)	88.0	75 - 125
Selenium	ug/L	5.00	226.	250.(250.)	90.5	75 - 125
Copper	ug/L	5.00	220.	250.(250.)	87.8	75 - 125
Manganese	ug/L	5.00	230.	252.(250.)	91.2	75 - 125
Matrix Spike Duplicate						Lab ID = 997831-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	5.00	226.	250.(250.)	90.3	75 - 125
Arsenic	ug/L	5.00	218.	250.(250.)	87.0	75 - 12 5
Chromium	ug/L	5.00	230.	251.(250.)	91.6	75 - 1 25
Mercury	ug/L	5.00	10.4	10.0(10.0)	104.	75 - 125
Nickel	ug/L	5.00	221.	250.(250.)	88.5	75 - 125
Selenium	ug/L	5.00	241.	250.(250.)	96.4	75 - 125
Copper	ug/L	5.00	220.	250.(250.)	88.1	75 - 125
Manganese	ug/L	5.00	228.	252.(250.)	90.4	75 - 125

Report Continued

Client: E2 Consulting En	lient: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM							Page 17 of 28 Printed 11/7/2011	
Metals by EPA 200.8, To	tal		Batch	102611A					
Parameter	entre transformer en de la composition antes en la composition de la compositio antes en la composition de la compositio	Unit	Ana	lyzed	DF	MDL	RL	Result	
997830-001 Bervllium		ua/L	10/26/2011 13:28 5.00 0.18		0.180	1.0	ND		
Vanadium		ua/L	10/26	/2011 13:28 5	5.00	0.370	5.0	ND	
Method Blank		-3							
Parameter	Unit	DE	Result						
Barium	ua/L	1.00	ND						
Bervllium	ua/L	1.00	ND						
Chromium	ua/L	1.00	ND						
Vanadium	ug/L	1.00	ND						
Manganese	ug/L	1.00	ND						
Duplicate	-						Lab ID =	997602-002	
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range	
Barium	ug/L	5.00	27.0	26.9		0.297	0 - 20	Ŭ	
Beryllium	ug/L	5.00	ND	0.00		0	0 - 20		
Chromium	ug/L	5.00	829.	822		0.896	0 - 20		
Vanadium	ug/L	5.00	8.45	8.48		0.378	0 - 20		
Manganese	ug/L	5.00	7.56	7.49		0.864	0 - 20		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range	
Barium	ug/L	1.00	50.0	50.0		99.9	85 - 11	5	
Beryllium	ug/L	1.00	49.8	50.0		99.5	85 - 11	5	
Chromium	ug/L	1.00	49.3	50.0		98.6	85 - 11	5	
Vanadium	ug/L	1.00	48.8	50.0		97.5	85 - 11	5	
Manganese	ug/L	1.00	49.9	50.0		99.8	85 - 11	5	
Matrix Spike							Lab ID =	997602-002	
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range	
Barium	ug/L	5.00	266.	277.(250.)		95.8	75 - 12	5	
Beryllium	ug/L	5.00	246.	250.(250.)		98.4	75 - 12	5	
Chromium	ug/L	5.00	1090	1070(250.)		108.	75 - 12	5	
Vanadium	ug/L	5.00	266.	258.(250.)		103.	75 - 12	5	
Manganese	ug/L	5.00	245.	257.(250.)		94.8	75 - 12	5	



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 Client: E2 Consulting Engineers, Inc.
 Project Name:
 PG&E Topock Project
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 Project Number:
 424973.01.DM
 Printed 11/7/2011

 Metals by EPA 200.8, Total
 Batch 102411A

 Parameter
 Unit
 Analyzed
 DF
 MDL
 RL
 Result

		Unit	Ana	iyzea L	JF MDL	RL	Result
997830-001 Antimony		ug/L	10/24	/2011 17:52 5	.00 0.120	10.0	ND
Cadmium		ug/L	10/24	/2011 17:52 5	.00 0.470	3.0	ND
Cobalt		ug/L	10/24	/2011 17:52 5	.00 0.485	5.0	ND
Lead		ug/L	10/24	/2011 17:52 5	.00 0.110	10.0	ND
Silver		ug/L	10/24	/2011 17:52 5	.00 0,175	5.0	ND
Thallium		ug/L	10/24	/2011 17:52 5	.00 0.125	1.0	ND
Zinc		ug/L	10/24	/2011 17:52 5	.00 1.26	10.0	11.0
Method Blank							
Parameter	Unit	DF	Result				
Cadmium	ug/L	1.00	ND				
Cobalt	ug/L	1.00	ND				
Zinc	ug/L	1.00	ND				
Antimony	ug/L	1.00	ND				
Lead	ug/L	1.00	ND				
Silver	ug/L	1.00	ND				
Thallium	ug/L	1.00	ND				
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptar	ice Rande
Cadmium	ug/L	1.00	50.0	50.0	99.9	85 - 115	J
Cobalt	ug/L	1.00	48.3	50.0	96.5	85 - 115	
Zinc	ug/L	1.00	49.0	50.0	98.1	85 - 115	
Antimony	ug/L	1.00	46.9	50.0	93.9	85 - 115	
Lead	ug/L	1.00	49.8	50.0	99.6	85 - 115	
Silver	ug/L	1.00	49.0	50,0	98.0	85 - 115	
Thallium	ug/L	1.00	51.1	50.0	102.	85 - 115	
Matrix Spike						Lab ID = 9	97830-001
Parameter	Unit	DF	Result	Expected/Adde	d Recovery	Acceptar	nce Range
Cadmium	ug/L	5.00	383.	500.(500.)	76.6	75 - 125	
Cobalt	ug/L	5.00	462.	500.(500.)	92.5	75 - 125	
Zinc	ug/L	5.00	476.	511(500.)	92,9	75 - 125	
Antimony	ug/L	5.00	524	500.(500.)	105.	75 - 125	
Lead	ug/L	5.00	415.	500.(500.)	82.9	75 - 125	
Silver	ug/L	5.00	384.	500.(500.)	76.8	75 - 125	
Thallium	ug/L	5.00	432.	500.(500.)	86.3	75 - 125	

Report Continued

Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM			Page 23 of 28 Printed 11/7/2011	
Matrix Spike Duplicate						Lab ID = 997830-001	
Parameter Cadmium	Unit ua/L	DF 5.00	Result 386	Expected/Added	Recovery	Acceptance Range	
Cobalt	ua/L	5.00	463	500 (500)	92.5	75 - 125	
Zinc	ua/L	5.00	475	511(500)	92.0	75 - 125	
Antimony	ua/L	5.00	517.	500 (500.)	103	75 - 125	
Lead	ua/L	5.00	417	500 (500.)	83.3	75 - 125	
Silver	<u>-</u>	5.00	386	500 (500.)	77 1	75 - 125	
Thallium	ug/L	5.00	434	500 (500.)	86.8	75 - 125	
MRCCS - Secondary	99° -	0.00	101.	000.(000.)	00.0	10-120	
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance Range	
Cadmium	ug/L	1.00	50.9	50.0	102.	90 - 110	
Cobalt	ug/L	1.00	48.4	50.0	96.8	90 - 110	
Zinc	ug/L	1.00	50.2	50.0	100.	90 - 110	
Antimony	ug/L	1.00	47.4	50.0	94.7	90 - 110	
Lead	ug/L	1.00	50.4	50.0	101	90 - 110	
Silver	ua/L	1.00	50.0	50.0	99.9	90 - 110	
Thallium	ua/L	1.00	51.6	50.0	103	90 - 110	
MRCVS - Primary	Ũ				100.	55 115	
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance Range	
Cadmium	ug/L	1.00	49.7	50.0	99.5 [°]	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Cadmium	ug/L	1.00	49.5	50.0	99.0	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Cadmium	ug/L	1.00	50.4	50.0	101.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Cadmium	ug/L	1.00	49.9	50.0	99.7	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Cobalt	ug/L	1.00	48.5	50.0	96.9	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Cobalt	ug/L	1.00	47.4	50.0	94.8	90 - 110	

Report Continued

Client: E2 Consulting En	igineers, In	c. Pr Pr	oject Name: oject Numbe	PG&E Topo r: 424973.01.E	ck Projec)M	Page 28 of 28 Printed 11/7/2011		
Total Dissolved Solids I	oy SM 254	0 C	Batch 10TDS11C			10/14/2011		
Parameter		Unit	Analyzed		DF	MDL	RL	Result
997830-001 Total Dissolved Solids mg		mg/L	10/14	/2011	1.00	0.400	500.	24800
Method Blank								
Parameter	Unit	DF	Result					
Duplicate	mg/∟	1.00	UN				Lab ID =	997830-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 25900	Expected 24800	R	PD 4.34	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 480.	Expected 500.	R	ecovery 96.0	Accepta 90 - 110	ince Range

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Ser (

F.- Mona Nassimi Manager, Analytical Services

EZ Condon

Total Dissolved Solids by SM 2540 C

Calculations

Batch:	10TDS11C
Date Calculated:	10/19/11

Laboratory Number	Sample volume, ml	lnitiai 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	112.3117	112.3118	112.3118	0,0000	No	0.0001	1.0	25.0	ND	1
997830	5	50.3847	50.5093	50.5089	0.0004	No	0.1242	24840.0	500.0	24840.0	1
997831	20	51.0765	51.164	51,1636	0.00 0 4	No	0.0871	4355.0	125.0	4355.0	1
997833-1	100	72,8250	72.8817	72.8817	0.0000	No	0.0567	567.0	25,0	567.0	1
997833-2	100	65.9508	66.005	66.0046	0.0004	No	0.0538	538.0	25.0	538.0	1
997833-3	100	68.2231	68.2786	68.2786	0.0000	No	0.0555	555.0	25.0	555.0	1
997833-4	100	73.1403	73.1989	73.1985	0.0004	No	0.0582	582.0	25.0	582.0	1
997809	200	108.6910	108.7117	108.7115	0.0002	No	0.0205	102.5	.12.5	102.5	1
997793	840	100.6872	100,6899	100.6899	0.0000	No	0.0027	3.2	3.0	3.2	1
997830D	5	50.1294	50.2589	50.2589	0.0000	No	0.1295	25900.0	500.0	25900.0	1
Leff	100	111.6511	111.6991	111.6991	0.0000	No	0.0480	480.0	25.0	480.0	1
LCSD										[1

Calculation as follows:

ž.,,,

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

lijst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11C Date Calculated: 10/19/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
007020	20700	0.00	000055	4.04
997030	00106	0.57	23000	1.04
99/031	7030	0.57	4939.5	0.88
997833-1	967	0.59	628.55	0.90
997833-2	960	0.56	624	0.85
997833-3	940	0.59	014.25	0.90
997833-4	1014	0.57	659.1	0.88
997809	179	0.57	116.35	0.88
997793	5.6	0.57	3.64	0.88
997830D	36700	0.71	23855	1.09





Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

	Date	Lab Number Initial pH		Buffer Added (mL)	Final pH	Time Buffered	Igitials
	10/10/11	997763-1	9.5	NIA	NIA	MA	725
		-2					T
		-3					
		-4					
		-6			-		
		-7					
		-8					
		1-9			<u> </u>		
	V	V -10	V	N N	.V		
	0/12/11	997830	7.0	5.0.ml	9.5	8:20 a.m.	ALI"
	10/12/11.	99783	7.0	Siont	9.5	8:30 a.m	AG
4	10/1/#	997-709-	•				
	101911	997987-1	9.5	NA	NIA	NIA	frind
		-2	9.5				
ļ			9.5			<u> </u>	-
-	Lohah 1	997988.	6.0	5 ml	9.5	8:20 Am	GG
Ļ	10/2/11	918019-1	9-5	NIA	NIA	NIA	Qu
		-2	9.5	NA	MA	NA	G
Ļ	10/20/11	998029-1	7.0	5.0m	Q.S	12:15 pm	Gu
			7.0	5.0 ml	9.5	12, 15pm	and
		····				·	
						· · · · · · · · · · · · · · · · · · ·	
Ļ							
-		·····					
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NKA

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

Turbidity/pH Check

11/2

13

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						Adjusted to
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
997 708 11.49:11-20	21	<u> </u>	10/07/11	M.LI	yes	No
9977091135,61,10p	16/ 1/	-k	Ľ –	l	- U	
9974589 (1.6)	phint 22	75	10/05/11	FK-	NO	<u>294</u>
99-1440-(1-0)	plant >2	>2	10/05/10	<u>ke</u>	NO	yes
997763(4-10]	14	22	10/10/11	Mike	Yes	T
997603 (12)	4	22	10[9]])	fR-	1/NQ	1/0
997654(1-11)	4	41	10718/11	10k	NO	NO
<u>997870 '</u>	21	72	10/12/11	ΕŚ	No	418 a 4:00 pm
997 871		<u> </u>		+	L '	
997745 total+dissilied	(1-7) 21	22	10/13/11	FK.	No	No
997746	41	22	10/13/11	KK	NO	NO
997652	21	42	10/13/11	KK_	No	NO
997(53(1-12)	41	<2	10/3/11	KK-	No	No
997-852(1-4	71	e /	[0] 3[4	MAR	Tes	NO
997829111	Studfe		10 (13/4	M.M.	Yes	1TLC
99 416 (1-2/	Sork		10/13/4	M-M	Yes	4
94 4865	V				V	
997649 (1-2)	plant	~2	10/12/11	KK	No	Yes
947917-	Solig	-	10/14/4	MM	Yes	STLC
497871		∠≯_	10/14/1	MM	1.es	No
997872			· ·		{	
99484S						
997870			ļ			
997880					<i>I</i>	
99,788/			ļļ			
957879	\/	<i> </i> /	ļ			,
997895		V .	10/14		V.	
49 1920	Jour	. 9	10/14/11	ma	125	116
12774987-	< 1	Ed	10/19/11	MM	yes	- 10
199801911-1	2	22	10/20/11	MIM	-yes	M3
994956	<u> > 1</u>	<u> </u>		<u> </u>		
99 7958	<u>├</u>					
998000 0000011 11 01	-V	1				
998010 1-21			1010110	UA M	0	
00203911-51		24	10/21/0	bi	yes	140 2 00
99 1988		12	10 00 111	L S M M	No	950 5109-10
998095			10125/11	<u> </u>	193	
998000 Go (my 6	-		<u> </u>		+	
440 070		+				
1900 FT	S.P.J	<u>v</u>	+¥		Vas	TTIC
9910 56	Saya	-			100	
aazin 11-rai		19	10/26/11	M.M	Vas	
00211			10/00/11	<u> </u>	143	
66211711.71	, <u> </u>		+	+		
06811211-81	<u> </u>]	├ ──	+	+	+ + +	
99811411_21		├			+	
1998115-11-11						
1007804 (1-1-)	Mant	12	10/17/11	1 UL	Nia	VES ONINHAL
MINORI (1. A)	TKIAMI.				INU	





Sample Integrity & Analysis Discrepancy Form

Clie	nt: CH2M HILL	Lab # 997 8 31
Date	e Delivered: <u>10/11</u> / 11 Time: <u>21:3</u> ∂ By: □Mail ØF	ield Service
1.	Was a Chain of Custody received and signed?	QYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No \$\N/A
З.	Are there any special requirements or notes on the COC?	□Yes □No QŃ/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?	XYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>4° C</u>	βά⊻es □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	βaίχes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ☑N/A
9.	Does the number of samples received agree with COC?	Q(Yes □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: □ Truesdail □Client	□Yes □No XN/A
12.	Were samples pH checked? pH = <u>See_C</u> OC	□Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Yes No N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH Ø Std	ÌXÝes □No □N/A
15.	Sample Matrix: Liquid Drinking Water Ground Sludge Soil Wipe Paint Solid M	Water □Waste Water (Other <u>Watev</u>
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving: _	Alex
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14201 FRANKLIN AVENUE TUSTIN, CALIFORNIA 92780-7008 (714) 730-6239 · FAX (714) 730-6462 www.truesdail.com

October 24, 2011

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-330 PROJECT, GROUNDWATER MONITORING, TLI NO.: 997831

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-330 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 October 11, 2011, 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 the

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.: 997831 Date: October 24, 2011 Collected: October 11, 2011 Received: October 11, 2011

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	Maksim Gorbunov
EPA 218.6	Hexavalent Chromium	Sonya Bersudsky

Cline: E2 Consulting Engineers, Inc. 156 Stand Xve Sults 1000 Oaktanic CA Sais12 Autonicon: Shawn Dufy Polet Name: CA Sais12 Autonicon: Shawn Dufy Polet Name: CA Sais12 Autonicon: Stawn Dufy Polet Name: CA Sais12 Autonicon Sais12							14201 FI		Ished 1931 TUSTIN, CALIFORNIA	92780-7008
Project Name: Folder Topok Project Project Name: Folder:	Clie Attentic	nt: E2 Consulting Engin 155 Grand Ave. Suit Oakland, CA 94612 m: Shawn Duffy	ers, Inc. e 1000			\rangle		aboratory No.	4) / 30-0402 · www. : 997831 : October 11, 2	1011
Image: Color Section Sect	Project Nan Project N P.O. M	1e: PG&E Tapock Projec 0.: 424973.01.DM 0.: 424973.01.DM	×							
Lab Analysis Extraction Method Sample Time Analysis Extraction Method Sample Initial Main Mai				An	alytical R	<u>tesults</u>	s Summary			
997831-001 SC-700B-WDR-330 E120.1 NONE 10/11/2011 13:00 EC 7630 umhos/cm 200 997831-001 SC-700B-WDR-330 E200.8 NONE 10/11/2011 13:00 Chromium 13 ug/L 10 997831-001 SC-700B-WDR-330 E200.8 NONE 10/11/2011 13:00 Chromium 13 ug/L 10 997831-001 SC-700B-WDR-330 E210.8 NONE 10/11/2011 13:00 Chromium 13 ug/L 10 997831-001 SC-700B-WDR-330 SM2130B NONE 10/11/2011 13:00 Chromium, hexavlent 10 00 997831-001 SC-700B-WDR-330 SM2130B NONE 10/11/2011 13:00 Turbidity 13:00 Turbidity 100 100 997831-001 SC-700B-WDR-330 SM2540C NONE 10/11/2011 13:00 Turbidity 13:00 Turbidity 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Lab Sample I	D Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
997831-001 SC-700B-WDR-330 E200.8 NONE 10/11/2011 13:00 Manganese 2.0 ug/L 10 997831-001 SC-700B-WDR-330 E218.6 LABELT 10/11/2011 13:00 Chromium, hexavalent ND ug/L 10 997831-001 SC-700B-WDR-330 SM2540C NONE 10/11/2011 13:00 Tubidity 997831-001 SC-700B-WDR-330 SM2540C NONE 10/11/2011 13:00 Tubidity 0.110 UT MC. No Patected (below reporting im) mg/L Milgrams per lint. Net: The following "Significant Figures" tub has been applied to al results Read abover organic of an will aways have three (3) significant figures. Cuefly Control data will aways have three (3) significant figures.	997831-001 997831-001	SC-700B-WDR-330 SC-700B-WDR-330	E120.1 E200.8	NONE NONE	10/11/2011 10/11/2011	13:00 13:00	EC Chromium	7630 1.3	umhos/cm ug/L	2.00 1.0
997831-001 SC-700B-WDR-330 SM2540C NONE 10/1/2011 13:00 Turbidity 0.10 997831-001 SC-700B-WDR-330 SM2540C NONE 10/1/2011 13:00 Turbidity 0.10 MCL Milgame recting imi) mg/L Milgame recting imi) mg/L Milgame recting imi) mg/L Milgame recting imi) mg/L Milgame recting imi) use: The following "Significant figures: Rectit blow of 10 pm will have the (2) significant figures. Rectit blow of tigm will have the (3) significant figures. Confront data will always have three (3) significant figures.	997831-001 997831-001	SC-700B-WDR-330 SC-700B-WDR-330	E200.8 E218.6	NONE LABFLT	10/11/2011 10/11/2011	13:00 13:00	Manganese Chromium, hexavalent	2.0 UN	ng/L	 0, 0
ND: Non Detacted (pelow reporting limit) mg/L. Miligrams per liter. Drat: The following "Spinfacant Eguess" rule has been applied to all results. Results below of Orippm will have three (3) significant figures. Result below of Orippm will have three (3) significant figures. Usafity Control data will akways have three (3) significant figures.	997831-001 997831-001	SC-700B-WDR-330 SC-700B-WDR-330	SM2130B SM2540C	NONE	10/11/2011 10/11/2011	13:00 13:00	Turbidity Total Dissolved Solids	0.110 4360	NTU mg/L	0.100 125
	2 Ĕ 2	 VD: Non Detected (below reporting a/L: Miligrams per liter. Me: The following "Significant Figul Results below 0.01ppm will have Result above or equal to 0.01p Quality Control data will aways 	limit) es" rule has been applied t te two (2) significant figures pm will have three (3) significant t have three (3) significant	o all results: s. ficant figures. igures.						

upon the condition that it is not to be used, in whole or in part, in any advertising or ⊇ Ē Client to whom it is addressed 2 5 5 and these laboratories, this report is submitted and accepted for the exclusive use publicity matter without prior written authorization from Truesdail Laboratories.

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Laboratory No. 997831

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Page 1 of 9

Printed 10/24/2011

REPORT

Client: 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

Samples Received on 10/11/2011 9:30:00 PM

Field ID				Lab ID	Col	lected	Matr	ix
SC-700B-WDR-330			· · · · · · · · · · · · · · · · · · ·	997831-001	10/11	/2011 13:00	Wat	ər
Specific Conductivity - E	PA 120.1		Batch	10EC11I			10/12/201	1
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
997831-001 Specific Conducti	ivity	umhos/	cm 10/12	2/2011	1.00	0.0380	2.00	7630
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Dupicale	14 14						Lab ID =	997831-001
Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7650	Expected 7630	R	PD 0.262	Accepta 0 - 10	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 705	Expected 706	R	ecovery 99.8	Accepta 90 - 110	nce Range
	uplicate			_				
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 705	Expected 706	R	ecovery 99.8	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 710.	Expected 706	R	ecovery 100.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umho៖	DF 1.00	Result 1010	Expected 998	R	ecovery 102.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1010	Expected 998	R	ecovery 101.	Acceptar 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 3 of 9 Printed 10/24/2011

Chrome VI by EPA 218.6			Batch	10CrH11K				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
997831-001 Chromium, Hexa	valent	ug/L	10/12	/2011 09:35	5.25	0.136	1.0	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	997653-005
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 15.8	Expected 15.7		RPD 0.504	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.96	Expected 5.00		Recovery 99.2	Accepta 90 - 11(Lab ID =	ance Range) 997650-018
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.41	Expected/Ac 7.03(5.30)	ded	Recovery 107.	Accepta 90 - 110 Lab ID =	ance Range) 997650-019
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.49	Expected/Ac 7.15(5.30)	ded	Recovery 106.	Accepta 90 - 11(Lab ID =	ance Range) 997650-020
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.05	Expected/Ac 1.06(1.06)	ded	Recovery 98.8	Accepta 90 - 110 Lab ID =	ance Range) 997650-021
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 8.80	Expected/Ac 8.47(5.30)	dded	Recovery 106.	Accepta 90 - 11(Lab ID =	ance Range 0 997653-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.08	Result 38.5	Expected/Ac 37.3(21.6)	bebb	Recovery 105.	Accepta 90 - 110 Lab ID =	ance Range 0 997653-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5,25	Result 5.89	Expected/Ac 6.18(5.25)	ded	Recovery 94.4	Accepta 90 - 11 Lab ID =	ance Range 0 997653-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 28.6	Expected/Ac 27.8(26.2)	dded	Recovery 103.	Accepta 90 - 11	ance Range 0

Report Continued

Client: E2 Consulting Engineers, Inc.		Project Name: PG&E Topock Project Project Number: 424973.01.DM				Page 4 of 9 Printed 10/24/2011
Matrix Spike						Lab ID = 997653-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 85.4	Expected/Added 83.3(52.5)	Recovery 104.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 997653-009
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 6.26	Expected/Added 6.08(5.25)	Recovery 103.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 997653-010
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 6.54	Expected/Added 6.20(5.25)	Recovery 106.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 997653-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.11	Result 51.3	Expected/Added 48.8(26.5)	Recovery 110.	Acceptance Range 90 - 110 Lab ID = 997653-012
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 6.62	Expected/Added 6.14(5.25)	Recovery 109.	Acceptance Range 90 - 110 Lab ID = 997831-001
Parameter	Linit	DE.	Result	Expected/Added	Recovery	Acceptance Range
Chromium, Hexavalent Matrix Spike	ug/L	1.06	1.36	1.34(1.06)	102.	90 - 110 Lab ID = 997831-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 5.25	Result 6.07	Expected/Added 6.00(5.25)	Recovery 101.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.83	Expected 5.00	Recovery 96.7	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.3	Expected 10.0	Recovery 103.	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 MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.82	Expected 10.0	Recovery 98.2	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.83	Expected 10.0	Recovery 98.3	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjectPage 6 of 9Project Number: 424973.01.DMPrinted 10/24/2011

Metals by EPA 200.8, Tota	al		Batch	101311A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
997831-001 Chromium		ug/L	10/13	0/2011 23:35 5.0	0.110	1.0	1.3
Manganese		ug/L	10/13	/2011 23:35 5.0	0 0.285	1.0	2.0
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	997831-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium	ug/L	5.00	1.10	1.27	14.1	0 - 20	
Manganese	ug/L	5.00	1.97	1.98	0.303	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	47.4	50.0	94.8	85 - 115	5
Manganese	ug/L	1.00	47.6	50.0	95.3	85 - 118	5
Matrix Spike						Lab ID =	997831-001
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	232.	251.(250.)	92.4	75 - 128	5
Manganese	ug/L	5.00	230.	252 (250.)	91.2	75 - 128	5
Matrix Spike Duplicate						Lab ID =	997831-001
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	230.	251.(250.)	91.6	75 - 128	5
Manganese	ug/L	5.00	228.	252.(250.)	90.4	75 - 128	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	48.8	50.0	97.6	90 - 110)
Manganese	ug/L	1.00	46.1	50.0	92.2	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	47.0	50.0	93.9	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	46.4	50.0	92.9	90 - 110)

Report Continued

Client: E2 Consulting En	gineers, Inc	s. Pr Pr	oject Name: oject Numbe	PG&E Topo r: 424973.01.E	ck Proje)M	ct	P Printed 1	age 8 of 9 0/24/2011
Interference Check S	tandard AB							
Parameter Manganese Interference Check S	Unit ug/L tandard AB	DF 1.00	Result 45.5	Expected 50.0	F	Recovery 91.1	Accepta 80 - 120	ince Range)
Parameter Manganese	Unit ug/L	DF 1.00	Result 45.9	Expected 50.0	F	Recovery	Accepta 80 - 120	ince Range)
Total Dissolved Solids I	oy SM 2540) C	Batch	10TDS11C			10/14/201	11
Parameter	-	Unit	Anal	yzed	DF	MDL	RL	Result
997831-001 Total Dissolved	Solids	mg/L	10/14	/2011	1.00	0.400	125	4360
Method Blank						***************************************		
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	997830-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 25900	Expected 24800	F	RPD 4.34	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 480.	Expected 500.	F	Recovery 96.0	Accepta 90 - 110	ince Range)
Turbidity by SM 2130 B			Batch	10TUC11G			10/12/201	11
Parameter		Unit	Anal	lyzed	DF	MDL	RL	Result
997831-001 Turbidity		NTU	10/12	/2011	1.00	0.0140	0.100	0.110
Method Blank								
Parameter Turbidity	Unit NTU	DF 1,00	Result ND					
Duplicate							Lab ID =	997831-001
Parameter Turbidity	Unit NTU	DF 1.00	Result 0.111	Expected 0.110	F	RPD 0.905	Accepta 0 - 20	ince Range
Lab Control Sample								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.33	Expected 8.00	F	Recovery 104.	Accepta 90 - 110	ince Range)
Lab Control Sample I	Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.05	Expected 8.00	F	Recovery 101.	Accepta 90 - 110	ance Range)



Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 9 of 9 Printed 10/24/2011

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

For - Mona Nassimi

Manager, Analytical Services

E2 Condon

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 10TDS11C Date Calculated: 10/19/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, 9	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3117	112.3118	112.3118	0.0000	No	0.0001	1.0	25.0	ND	1
997830	5	50.3847	50.5093	50.5089	0.0004	No	0.1242	24840.0	500.0	24840.0	1
997831	20	51.0765	51.164	51.1636	0.0004	No	0.0871	4355.0	125.0	4355.0	1
997833-1	100	72,8250	72.8817	72.8817	0.0000	No	0.0567	567.0	25.0	567.0	1
997833-2	100 .	65.9508	66.005	² 66.0046	0.0004	No	0.0538	538.0	25.0	538.0	1
997833-3	100	68.2231	68.2786	68.2786	0.0000	No	0.0555	555.0	25.0	555.0	1
997833-4	100	73.1403	73.1989	73,1985	0.0004	No	0.0582	582.0	25.0	582.0	1
997809	200	108.6910	108.7117	108.7115	0.0002	No	0.0205	102.5	12.5	102.5	1
997793	840	100.6872	100.6899	100.6899	0.0000	No	0.0027	3.2	3.0	3.2	1
997830D	5	50.1294	50.2589	50.2589	0.0000	No	0.1295	25900.0	500.0	25900.0	1
tepie	100	111.6511	111.6991	111.6991	0.0000	No	0.0480	480.0	25.0	480.0	1
LCSD											1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

RL= reporting limit.

ND = not detected (below the reporting limit)

yst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11C

Date Calculated: 10/19/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
997830	36700	0.68	23855	1.04
997831	7630	0.57	4959.5	0.88
997833-1	967	0.59	628.55	0.90
997833-2	960	0.56	624	0.86
997833-3	945	0.59	614.25	0.90
997833-4	1014	0.57	659.1	0.88
997809	179	0.57	116.35	0.88
997793	5.6	0.57	3.64	0.88
997830D	36700	0.71	23855	1,09
LCD				
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Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	NIA	NIA	MA	کېږ)
	-2			<u> </u>	1	Ī
	4					
	-5					
	6					
	-7					
	-8					
	1 -9					
\downarrow V	<u>V-10</u>	V	- V	V	N. N	er
10/12/11	997830	7.0	5.0ml	9.5	8:20 a.m.	AL1º
10/12/11.	99783	7.0	Siont	9.5	8:30 a.m.	AL
10/4	-9 97-709-			-		
101911	997987-1	9.5	NA	NA	NA	(m
	-2	9.5				
	3	9.5			<u> </u>	-
10ham	997988.	6.0	5 ml	9.5	8:20 Am	GG
1-2-11	998219-1	<u>a.s</u>	NIA	NIA	NIA	ليلي
L.J.	-2	9.5	NA	MA	NA	G
10/20/11	998029-1	7.0	5.0m	9.5	12:15 pm	Gui
	-2	7.0	Soul	9.5	12. 15pm	(In)
10/2/11	998039-1		<u>N A</u>	NIA	//A '_	(Le
	<u> </u>					
	3		· · ·			
	-5		<u> </u>	<u>-~</u>		
				-		

NA

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

Turbidity/pH Check

						Adjusted to
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
997 +0811.4-9-11-20	<u>~1</u>	<u> 22</u>	10/07/11	M.M.	yes_	No
99770971,35,61,100	46 <u>/</u> /	-K	V.	- U	- V	
<u>4474564 (1.6)</u>	Plant 12	75	10/05/11	FK-	NO	Ves
99 1446 (1-6)	plant >2	22	10/05/0	<u>ye</u>	NO	ves
997165(9-101	<u>'<{</u>	22	10/10/11	Mith	Yes	
411003 (12)		CL	10/9/17		1/NQ	No
497654(1-11-)	4	<u>L'L</u>	101)8/1	10R	NO	NO
997 100		72	10/12/11	E\$	No	418 a 4:00 pm
911801		2	ialiah:	- ku		- V
(191192 tatal + dissined	(1-7) 21	-1	10/13/11	PK-	No	No
997146	21	22	10/13/11	KK.	NO	NO
997052/1 12	21	~2	10/13/11	KK-	No	No
941673(1-14)		<2	10/2/11	PA-	NO	No
99770 X 11-9	71	Ch.	[0]19[1]	Mad	123	No
99 + 829111	Hugh		10/13/4	M.M.	yes_	TTLC
99 H/0 (1-2/	SOTA		10/13/11	M-M	yes_	<u> </u>
997008			h h h		V	
06Y C.	plant	<u>~~~~</u>	10/12/11	<u>E¥</u>	NO	Yes
DBT 841	sourg		10/14/4	MA	yes	STZC
944001	$-\gamma$	<u> </u>	10/14/4	<u> </u>	Yes	No
GGIRYS					[
007045						
997880						
0167081						
067074				<u> </u>		
997097	/					
047000	Silled	<u> </u>	10/11/10	1	Vor	TTLC
391601	Jour	1 3	10/14/11	mn	12S	1120
ROCKDIG II 1	<u> </u>	<u> </u>	10/1 9/11	M.M	Yes	- 10
061951	<u> </u>	79	10/20/11	<u> </u>	1945	- No
9977756 004058		61				
048008	1					
990000	7.1	1				
19802911-51		<u> </u>	10/91/11	LIA M	V	
GATAIN	<u> </u>	ショ	121211	br.	yez_	111 2 2 00
99 19 88		<u> </u>	10 10 1 (11	<u> </u>	No	ysa sing a
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Sample Integrity & Analysis Discrepancy Form

Clier	nt: CH2M HILL	<i>Lab</i> #99 78 3
Date	Delivered: <u>//</u> //11 Time: <u>?/`3</u> 0 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 ¤Ń/A
З.	Are there any special requirements or notes on the COC?	□Yes □No QNVA
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ,@tht/A
5.	Were all requested analyses understood and acceptable?	∕∕QYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u> </u>	, ¤tives ⊡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 ¤(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?	©QYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No ¤ŃA
12.	Were samples pH checked? pH = <u>See</u> COC	□Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	¢Yes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): D RUSH Std	,Øtves □No □N/A
15.	Sample Matrix: Liquid Drinking Water Ground	l Water □Waste Water ⊉Other_ <i>Wates</i>
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Alex

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

November 1, 2011

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-331 PROJECT, GROUNDWATER MONITORING, TLI NO.: 997988

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-331 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 October 18, 2011, 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.

Horr 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.: 997988 Date: November 1, 2011 Collected: October 18, 2011 Received: October 18, 2011

ANALYST LIST

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

						14201 F (714)	Estab RANKLIN AVENUE	ilished 1931 TUSTIN, CALIFORNIA 4) 730-6462 · www.1	92780-7008 ruesdail.com
Client Attention	:: E2 Consulting Engine 155 Grand Ave. Suite Oakland, CA 94612 :: Shawn Duffy	eers, Inc. 9 1000				30	aboratory No.: bate Received:	997988 October 18, 20	1
Project Name Project No. P.O. No.	e: PG&E Topock Projec .: 424973.01.DM .: 424973.01.DM	Ŧ							
			Ana	alytical R	tesults Sur	nmary			
Lab Sample IC) Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time Paran	leter	Result	Units	RL
997988-001 997988-001 997988-001 997988-001 997988-001 997988-001	SC-700B-WDR-331 SC-700B-WDR-331 SC-700B-WDR-331 SC-700B-WDR-331 SC-700B-WDR-331 SC-700B-WDR-331	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C	NONE NONE NONE LABFLT NONE NONE	10/18/2011 10/18/2011 10/18/2011 10/18/2011 10/18/2011	13:30 EC 13:30 Chrom 13:30 Manga 13:30 Chrom 13:30 Turbid 13:30 Total I	nium anese nium, hexavalent ity Dissolved Solids	7540 ND 9.6 ND 4300	umhos/cm ug/L NTU MTU mg/L	2.0 1.0 1.0 0.100 0.100
Ζ ຫຼັວ Ĕ Ż	 ID: Non Detected (below reportin /L: Miligrams per litter. te: The following "Significant Fig Results below 0.01ppm will th Result above or equal to 0.01 Quality Control data will alway 	ıg limit) ures" rule has been applied to ave two (2) significant figures Ippm will have three (3) significant f	o all results: s. ficant figures. igures.						
በበና									
This report applies or and these laboratoric publicity matter witho	 If to the sample, or samples this report is submitted ar ut prior written authorization. 	s, investigated and is not nd accepted for the exclu from Truesdail Laborator	necessarily indi usive use of the ies.	cative of the quality client to whom it is a	or condition of apparent addressed and upon the	ly identical or similar pro e condition that it is not t	ducts. As a mutua o be used, in whole	Il protection to client e or in part, in any c	s, the public, idvertising or

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EXCELLENCE IN INDEPENDENT TESTING

REPORT

Established 1931

Page 1 of 8

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

Printed 11/1/2011

Laboratory No. 997988

Client: 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

Samples Received on 10/18/2011 8:30:00 AM

Field ID				Lab ID	Col	lected	Matr	ix
SC-700B-WDR-331				997988-001	10/18/	/2011 13:30	Wat	ег
Specific Conductivity - E	PA 120.1		Batch	10EC11M			10/21/201	11
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
997988-001 Specific Conducti	vity	umhos/	cm 10/21	/2011	1.00	0.0380	2.00	7540
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	997988-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7570	Expected 7540	R	PD 0.397	Accepta 0 - 10	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 714	Expected 706	R	ecovery 101.	Accepta 90 - 110	nce Range
	aplicate							
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 716	Expected 706	R	ecovery 101.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 710.	Expected 706	R	ecovery 100.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhoะ	DF 1.00	Result 986	Expected 997	R	ecovery 98.9	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 910.	Expected 997	R	ecovery 91.3	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 3 of 8 Printed 11/1/2011

Chrome VI by EPA 218.6			Batch	n 10CrH11Q		
Parameter		Unit	Ana	alyzed DI	F MDL	RL Result
997988-001 Chromium, Hexav	valent	ug/L	10/19	9/2011 09:39 5.2	.5 0.136	1.0 ND
Method Blank					······································	·····
Parameter Chromium, Hexavalent Dunlicate	Unit ug/L	DF 1.00	Result ND			
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 0.996	Expected 1.02	RPD 2.38	Acceptance Range 0 - 20
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.01	Expected 5.00	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 997987-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.62	Expected/Added 6.69(5.30)	Recovery 98.6	Acceptance Range 90 - 110 Lab ID = 997987-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.23	Expected/Added 6.32(5.30)	Recovery 98.2	Acceptance Range 90 - 110 Lab ID = 997987-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.55	Expected/Added 1.54(1.06)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 997988-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.24	Expected/Added 1.22(1.06)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 997988-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 5.25	Result 5.51	Expected/Added 5.51(5.25)	Recovery 100.0	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.01	Expected 5.00	Recovery 100.	Acceptance Range 90 - 110
Parameter Chromíum, Hexavalent	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 5 of 8 Printed 11/1/2011

Metals by EPA 200.8, Tot	al		Batch	102611A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
997988-001 Chromium		ug/L	10/26	5/2011 15:08 5.	00 0,110	1.0	ND
Manganese		ug/L	10/26	5/2011 15:08 5.	00 0.285	1.0	9.6
Method Blank							·····
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	997602-002
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Rande
Chromium	ug/L	5.00	829.	822	0.896	0 - 20	
Manganese	ug/L	5.00	7.56	7.49	0.864	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recoverv	Accepta	ince Rande
Chromium	ug/L	1.00	49.3	50.0	98.6	85 - 115	j
Manganese	ug/L	1.00	49.9	50.0	99.8	85 - 115	5
Matrix Spike						Lab ID =	997602-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	1090	1070(250.)	108.	75 - 125	i
Manganese	ug/L	5.00	245.	257.(250.)	94.8	75 - 125	i
Matrix Spike Duplicate						Lab ID =	997602-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	1060	1070(250.)	95.6	75 - 125	
Manganese	ug/L	5.00	245.	257.(250.)	95.1	75 - 125	i i
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	49.5	50.0	98.9	90 - 110	Ŭ
Manganese	ug/L	1.00	50.6	50.0	101.	90 - 110	
MRCVS - Primary				、			
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	47.2	50.0	94.3	90 - 110	Ŭ
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	47.9	50.0	95.8	90 - 110	V -

Report Continued

Client: E2 Consulting En	igineers, In	с. Рі Рі	roject Name: roject Numbe	PG&E Topo r: 424973.01.[ck Proje DM	ct	P Printed 1	age 7 of 8 1/1/2011
Serial Dilution							Lab ID =	997602-002
Parameter Chromium	Unit ug/L	DF 25.0	Result 846.	Expected 822	F	RPD 2.89	Accepta 0 - 10	nce Range
Total Dissolved Solids I	oy SM 254	0 C	Batch	10TDS11D			10/19/201	1
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
997988-001 Total Dissolved	Solids	mg/L	10/19	/2011	1.00	0.400	125	4300
Method Blank					<u></u>			
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	997988-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4480	Expected 4300	F	RPD 3.99	Accepta 0 - 5	nce Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 490.	Expected 500.	F	Recovery 98.0	Accepta 90 - 110	nce Range
Turbidity by SM 2130 B Parameter		Unit	Batch Ana	10TUC11L	DF	MDL	10/19/201 RL	1 Result
997988-001 Turbidity		NTU	10/19	/2011	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	997988-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	(PD 0	Accepta 0 - 20	nce Range
Parameter Turbidity Lab Control Sample F	Unit NTU Suplicate	DF 1.00	Result 7.78	Expected 8.00	F	Recovery 97.2	Accepta 90 - 110	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.70	Expected 8.00	F	lecovery 96.2	Accepta 90 - 110	nce Range



Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 8 of 8 Printed 11/1/2011

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Ez Condon

Total Dissolved Solids by SM 2540 C

Calculations

Batch:	10TDS11D
Date Calculated:	10/22/11

Laboratory Number	Sample volume, ml	lnitial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL , ppm	Reported Value, ppm	DF
BLANK	100	70.3204	70,3206	70.3206	0.0000	No	0.0002	2.0	25.0	ND	1
997934-2	200	109.4413	109.4625	109.4625	0.0000	No	0.0212	106.0	12.5	106.0	1
997934-4	100	105.6284	105.6578	105.6575	0.0003	No	0.0291	291.0	25.0	291.0	1
997953	500	111.1874	111.1883	111.1882	0.0001	No	0.0008	1.6	5.0	ND	1
997988	20	51.5087	51.595	51.5947	0.0003	Na	0.0860	4300.0	125.0	4300.0	1
997988D	20	47.9636	48.0535	48.0531	0.0004	Na	0.0895	4475,0	125.0	4475.0	1
LCS	100	78.3848	78.4339	78,4338	0.0001	No	0.0490	490.0	25.0	490.0	1
				<u> </u>							

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Printed Name

Analyşt Signature

Reviewer Printed Name

Reviewer Signature

WelChem TDS_0810.xis

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Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 10TDS11D

Date Calculated: 10/22/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
			_	3
997934-2	183	0.58	118.95	0.89
997934-4	530	0.55	344.5	0.84
997953	9.64	ND	6,266	ND
997988	7570	0,57	4920.5	0.87
997988D	7570	0.59	4920.5	0.91
LCS				Ļ
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·

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			· · · · · · · · · · · · · · · · · · ·	





Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
10/10/11	997763-1	9.5	NIA	NIA	MA-	125
	-2			ſ		1
	-3					
	_4					
	-5					
	-6					
	-7				· · ·	
	-8					
	1-9					
\bigvee	V -10	V	an waa b	V	N I	
10/12/11	997830	7.0	5.0ml	9.5	8:20 a.m.	ALI"
10/12/11.	99783/	7.0	Siont	9.5	8:30 a.m	AU
-10/4/	997-209-	•				
1019/11	997987-1	٩.٢	NA	NA	NIA	1 mil
	-2	9.5		1	1	
	-3	۹.۶				1
loham	997988.	6.0	5 ml	9.5	8:20 Am	GA
	• • •					
						· ·
-			······································			
		_			······································	
					·····	
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					·····	

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

NKA

040

Turbidity/pH Check

	_					Adjusted to
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
997 708 11.4-9, 11-20	<u> </u>	<u> </u>	10/07/11	M.M	yes	No
997709713561,104	46) /	V	L.	- U		L
4974569 (1.4)	phant 12	<u> </u>	10/05/11	FF	NO	Yes
94 1446-(1-0)	plant >2	>2	10/05/11	YK.	NO	ves
997163(1-10]	14	22	10/10/11	MAL	Yes	
197603 (12)		<u>CL</u>	10[9]])	fR	1/N0	No
997654(1-11-)		<u> </u>	10718/11	10k	NO	No
997870 1	41	72	10/12/11	ES	No	us 24:00 pm
9978201		<u>k</u>	U	+	L'	
79145 tatal + dissilind	(1.7) 21	22	10/13/11	PK-	No	No
997746	21	22	10/13/11	KK	NO	NO
997652	21	<u> </u>	10/13/11	KK	No	No
997(53(1-12)	<u> </u>	<2	10/3/11	KK-	No	No
997-852(1-4)	71	e /	(0/13/11	Made	Tes	No
99782911	Studge		10 (13/4	M.M.	yes	TTLC
44 H/6 (1-2/	SOR		10/18/11	MM	Yes	4
44 4104	<u> </u>	<u> </u>				L V
19 1049 (1-2)	plant		10/12/11	<u> </u>	No	Yes
997917	solig		10/14/9	MM	Yes	'S76C
494871		<u> </u>	10/14/1	M.M	Yes	No
997872					<u> </u>	
994842		l. 				
997870						
997880			ļ			
997881					<u> </u>	·
997879	·····	/				
997893	<u> </u>		L		v	V
99 1920	Solid		10/14/11	mn	Yes	TTLC
997987	< 1	<u>Cd</u>	10/19/11	MM	Yes	-10
49901911-21	<u> </u>	<u> </u>	10/20/11	MIM	yes_	Na
994956	>1	<u> </u>		<u>f</u>		
99 7958	 					
998008	V		· · · · · · · · · · · · · · · · · · ·		ļ/	· · · · · · · · · · · · · · · · · · ·
998016 11-21	<u>Z-1</u>		¥	V	<u>ملن</u>	
19803911-51	≤ 1	22	10/21/11	m.m	Jes	No
997988		12	10 2 (11	ES	No	450 3:0P.M
998095	<u>></u>	<u> </u>	10 12 5/11	M.M	Xes S	
998060					ļ /	
498076				,	<i></i>	·
9980 F F	V	<u> </u>	¥	i/	<u> </u>	
998036	Solid	_			yes	TTLC
778093		~	in last in	-N.	- V	
<u>y y 10 (1-1, 9)</u>		2,2	10/26/11	My	1 res	
44×111			·			
148 112 11- 11					 	
770 11 5 [1-0]					├	
06811-11-8						<u>-</u>
<u>770[15][1-17]</u>	V	V V	John Las			in provident
441884 (1-6)	Mant	<u> </u>	$ v \tau $	FF	IN 0	VRJ ~1011+



Sample Integrity & Analysis Discrepancy Form

Clie	nt: E2	Lab # _ <u>99793</u> 3
Date	e Delivered: <u>/0</u> / <u>/8</u> /11 Time: <u>&/.`30</u> By: □Mail X0F	ield Service
1.	Was a Chain of Custody received and signed?	⊠ayes ⊡No ⊡N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No 💆N/A
3.	Are there any special requirements or notes on the COC?	□Yes □No ¤N/A
1.	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?	ØYes □No □N/A
ð.	Were samples received in a chilled condition? Temperature (if yes)? <u>4. fo</u>	X∮Yes ⊡No ⊡N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Â(Yes □No □N/A
•	Were sample custody seals intact?	> 🛛 Yes 🗆 No 🕺 N/A
r •	Does the number of samples received agree with COC?	¤QYes ⊡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 ⊠ÍN/A
2.	Were samples pH checked? pH = <u>Sel</u> C.O.C.	drYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	¢qYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): I RUSH Q Std	⊠a(Yes ⊡No ⊡N/A
'5.	<u>Sample Matrix:</u> □Liquid □Drinking Water □Ground W □Sludge □Soil □Wipe □Paint □Solid 2	Vater □Waste Water Other
6.	Comments:	<u> </u>
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda Juak

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

November 10, 2011

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-332 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998107

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-332 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 October 25, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

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

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

Respectfully Submitted, TRUESDAIL LABORATORIES, INC.

for Mona Nassimi Manager, Analytical Services

Michael

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

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Laboratory No.: 998107 Date: November 10, 2011 Collected: October 25, 2011 Received: October 25, 2011

ANALYST LIST

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

TRUESD/ Excellence in Ini	AIL LABORATC	RIES, INC.					Estab	lished 1931	
						14201 F (714) 7	RANKLIN AVENUE - 30-6239 - FAX (71	TUSTIN, CALIFORNIA 4) 730-6462 · www.fr	92780-7008 Vesdail.com
Clier Attentio	 tt: E2 Consulting Engine 155 Grand Ave. Suite Oakland, CA 94612 nt: Shawn Duffy 	eers, Inc. e 1000					aboratory No)ate Received	: 998107 : October 25, 20	11
Project Nam Project Nc P.O. Nc	e: PG&E Topock Projec .: 424973.01.DM .: 424973.01.DM	ħ							
			And	alytical R	<u>tesults</u>	s Summary			
- Shore		Analysis Method	Extraction	Samola Data	Sample Time	Daramater	Roci It	- 	ā
Lab Sample I		INIELIDOD	Mernoa	sample uate	IIIIe	rarameter	Result	CUIRS	۲ ۲
998107-001 998107-001	SC-700B-WDR-332 SC-700B-WDR-332	E120.1 E200.8	NONE	10/25/2011 10/25/2011	10:00 10:00	EC Chromium	7390 ND	umhos/cm ug/L	2.00 1.0
998107-001 998107-001	SC-700B-WDR-332	E200.8 E218 e		10/25/2011	10:00	Manganese Chromium hevevalent	7.9 CIN	ng/L	0 C
998107-001 998107-001	SC-700B-WDR-332	C2 10.0 SM2130B	NONE	10/25/2011	10:00	Turbidity	ŻŻ	NTU NTU	0.100
998107-001	SC-700B-WDR-332	SM2540C	NONE	10/25/2011	10:00	Total Dissolved Solids	4230	mg/L	125
- ξ Ζ	 Non Detected (below reporting yL: Milligrams per liter. The following "Significant Figu te: The following "Significant Pigu Results below 0.01 ppm will ha Result above or equal to 0.011 Quality Control data will alway 	g limit) ures" rule has been applied ve two (2) significant figure ppm will have three (3) significant 's have three (3) significant	to all results: ss. figures.						
005									
This report applies (and these laborator publicity matter with	nly to the sample, or samples ies, this report is submitted al out prior written authorization	s, investigated and is no nd accepted for the exc from Truesdail Laborat	ot necessarily ind clusive use of the ories.	icative of the quality client to whom it is	or condition o addressed an	f apparently identical or similar pro id upon the condition that it is not t	ducts. As a mutua o be used, in who	al protection to client le or in part, in any a	ts, the public, tdvertising or

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EXCELLENCE IN INDEPENDENT TESTING

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

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Established 1931

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

Client: E2 Consulting Engineers, Inc. 155 Grand Avenue, Suite 800 Oakland, CA 94612 Attention: Shawn Duffy Project Name: PG&E Topock Project

Laboratory No. 998107 Page 1 of 7 Printed 11/10/2011

Samples Received on 10/25/2011 9:30:00 PM

REPORT

Field ID				Lab ID	Col	lected	Matr	ix
SC-700B-WDR-332			1	998107-001	10/25/2011 10:00		Water	
Specific Conductivity - E	PA 120.1		Batch 10EC11N				10/26/201	11
Parameter		Unit	Ar	alyzed	DF	MDL	RL	Result
998107-001 Specific Conduct	ivity	umhos/o	cm 10/2	26/2011	1.00	0.0380	2.00	7390
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	998107-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7400	Expected 7390	F	RPD Acceptance 0.135 0 - 10		ance Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 712	Expected 706	F	Recovery 101.	Accepta 90 - 110	nce Range)
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 710.	Expected 706	F	Recovery 100.	Accepta 90 - 110	ance Range)
Parameter Specific Conductivity	Unit umhoร	DF 1.00	Result 992	Expected 997	F	Recovery 99.5	Accepta 90 - 110	ince Range)

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 2 of 7 Project Number: 424973.01.DM Printed 11/10/2011 Batch 10CrH11V Chrome VI by EPA 218.6 Parameter Unit Analyzed DF MDL RL Result 5.25 0.210 1.0 ND 998107-001 Chromium, Hexavalent ug/L 10/27/2011 10:30 Method Blank Parameter Unit DF Result ug/L Chromium, Hexavalent 1.00 ND Lab ID = 997604-002 Duplicate RPD Unit DF Expected Acceptance Range Parameter Result Chromium, Hexavalent ug/L 10.5 43.3 48.0 10.3 0 - 20 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range 4.84 5.00 96.7 90 - 110 Chromium. Hexavalent ug/L 1.00 Lab ID = 997604-001 Matrix Spike Parameter Unit DF Result Expected/Added Acceptance Range Recovery Chromium, Hexavalent ug/L 5.25 5.20 5.25(5.25) 99.0 90 - 110 Lab ID = 997604-002 Matrix Spike Parameter Unit DF Result Expected/Added Recovery Acceptance Range Chromium, Hexavalent ug/L 1.06 105. 100.(52.5) 108. 90 - 110 Lab ID = 997604-003 Matrix Spike Parameter Unit DF Result Expected/Added Acceptance Range Recovery 90 - 110 Chromium, Hexavalent ug/L 10.5 10.3 10.5(10.5) 98.2 Lab ID = 997604-003 Matrix Spike DF Parameter Unit Result Expected/Added Recovery Acceptance Range Chromium, Hexavalent ug/L 5.25 3.97 5.25(5.25) 75.7 90 - 110 Lab ID = 997604-007 Matrix Spike DF Parameter Unit Result Expected/Added Recovery Acceptance Range Chromium, Hexavalent 10.5 9.87 10.5(10.5) 94.0 90 - 110 ug/L Matrix Spike Lab ID = 997604-007 DF Parameter Unit Result Expected/Added Recovery Acceptance Range Chromium, Hexavalent 5.25 4.59 5.25(5.25) 87.5 90 - 110 ug/L Matrix Spike Lab ID = 997604-009 Parameter Unit DF Result Expected/Added Recovery Acceptance Range 5.25 36.1 36.6(26.2) 98.1 90 - 110 Chromium, Hexavalent ug/L

Report Continued

Client: E2 Consulting Engineers, Inc.			с. Р Р	roject Name: roject Number	Page 3 of 7 Printed 11/10/2011		
	Matrix Spike						Lab ID = 998107-001
Paran Chron	neter nium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.68	Expected/Added 5.65(5.25)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 998107-001
Paran Chron	neter nium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.26	Expected/Added 1.21(1.06)	Recovery 105.	Acceptance Range 90 - 110 Lab ID = 998152-001
Paran Chron	neter nìum, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.30	Expected/Added 1.27(1.06)	Recovery 103.	Acceptance Range 90 - 110 Lab ID = 998152-002
Paran Chron	neter nium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.06	Result 1.20	Expected/Added 1.21(1.06)	Recovery 99.3	Acceptance Range 90 - 110
Param Chron	neter nium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.76	Expected 5.00	Recovery 95.2	Acceptance Range 90 - 110
Param Chron	neter nium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.52	Expected 10.0	Recovery 95.2	Acceptance Range 95 - 105
Param Chron	neter nium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.3	Expected 10.0	Recovery 103.	Acceptance Range 95 - 105
Param Chrom	neter nium, Hexavalent	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc. Metals by EPA 200.8, Total		Pr Pr	oject Name: oject Numbei	Page 4 of 7 Printed 11/10/2011				
		Batch 110911A					1997 - A.	
Parameter		Unit Analyze		yzed C	F	MDL	RL	Result
998107-001 Chromium		ug/L	11/09/	2011 13:30 5.	00	0.110	1.0	ND
Manganese		ug/L	11/09/	2011 13:30 5.	00	0.285	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 =	998107-001
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	7.82	7.92		1.30	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	52.5	50.0		105	85 - 119	5
Manganese	ug/L	1.00	51.4	50.0		103.	85 - 118	5
Matrix Spike							Lab ID =	998107-001
Parameter	Unit	DF	Result	Expected/Addec	d Re	ecovery	Accepta	ance Range
Chromium	ug/L	5.00	247.	250.(250.)		98.8	75 - 128	5
Manganese	ug/L	5.00	264.	258.(250.)		102.	75 - 128	5
Matrix Spike Duplicate							Lab ID =	998107-001
Parameter	Unit	DF	Result	Expected/Addec	d Re	ecovery	Accepta	ance Range
Chromium	ug/L	5.00	255.	250.(250.)		102.	75 - 128	5
Manganese	ug/L	5.00	245.	258.(250.)	1	94.7	75 - 128	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	52.9	50.0		106.	90 - 110)
Manganese	ug/L	1.00	49.1	50.0		98.1	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	53.4	50.0		107.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ance Range
Chromium	ug/L	1.00	52.1	50.0		104.	90 - 110)

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

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Report Continued

Client: E2 Consulting E	ngineers, In	с. Р Р	roject Name: roject Numbe	PG&E Topo r: 424973.01.E	ck Proje M	ct	F Printed 1	Page 6 of 7 1/10/2011
Interference Check	Standard AB							
Parameter Chromium	Unit ug/L	DF 1.00	Result 48.6	Expected 50.0	F	Recovery 97.2	Accepta 80 - 120	ance Range)
Interference Check	Standard AB							
Parameter Chromium	Unit ug/L	DF 1.00	Result 52.9	Expected 50.0	F	Recovery 106.	Accepta 80 - 120	ance Range D
, Interference Check	Standard AB							
Parameter Manganese	Unit ug/L	DF 1.00	Result 48.5	Expected 50.0	F	Recovery 97.0	Accepta 80 - 120	ance Range D
Interference Check	Standard AB							
Parameter Manganese	Unit ug/L	DF 1.00	Result 52.5	Expected 50.0	F	Recovery 105.	Accepta 80 - 120	ance Range)
Total Dissolved Solids	by SM 254	0 C	Batch	10TDS11G			10/27/20	11
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
. 998107-001 Total Dissolved	I Solids	mg/L	10/27	//2011	1.00	0.400	125	4230
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					000454 002
Duplicate							Lau ID -	990104-003
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 3930	Expected 3890	F	RPD 1.02	Accepta 0 - 5	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 517	Expected 500.	F	Recovery 103.	Accepta 90 - 110	ance Range)

Report Continued

Client: E2 Consulting En	igineers, In	c. F F	Project Name: Project Numbe	PG&E Topo er: 424973.01.[ck Proje 0M	ct	P Printed 1	age 7 of 7 1/10/2011
Turbidity by SM 2130 B	an ta ta constante da se		Batch	10TUC11P			10/26/201	1
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998107-001 Turbidity		NTU	10/26	6/2011	1.00	0.0140	0.100	ND
Method Blank			· · · · · · · · · · · · · · · · · · ·					
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	998107-001
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 8.10	Expected 8.00	F	Recovery 101.	Accepta 90 - 110	nce Range
Lab Control Sample D	Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.03	Expected 8.00	F	ecovery 100.	Accepta 90 - 110	nce Range

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

for Mona Nassimi Manager, Analytical Services

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

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EZ Conton

Total Dissolved Solids by SM 2540 C

Calculations

Batch:	10TDS11G
Date Calculated:	11/1/11

Laboratory Number	Sample volume, ml	initiai weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	66.7196	66.7212	66.7212	0.0000	No	0.0016	16.0	25.0	ND	1
998107	20	49.4184	49.5031	49.503	0.0001	No	0.0846	4230.0	125.0	4230.0	1
998153-2	50	51.2670	51.3026.	51.3022	0.0004	No	0.0352	704.0	50.0	704.0	1
998153-3	50	51.0892	51,1276	51.1276	0.0000	No	0.0384	768.0	50.0	768,0	1
998153-4	50	75.3061	75.3568	75.3564	0.0004	No	0.0503	1006.0	50.0	1006.0	1
998153-5	50	51.1308	51.1832	51.1828	0.0004	No	0.0520	1040.0	50.0	1040.0	1
998153-6	50	47.0076	47.0646	47.0646	0.0000	No	0.0570	1140.0	50.0	1140.0	1
998153-7	50	50.7016	50.7592	50.759	0.0002	No	0.0574	1148.0	50.0	1148.0	1
998154-1	50	49.2639	49.3246	49.3244	0.0002	No	0.0605	1210.0	50.0	1210.0	1
998154-2	50	50.6101	50.734	50.734	0.0000	No	0.1239	2478.0	50.0	2478.0	1
998154-3	20	66.8090	66.8868	66.8868	0.0000	No	0.0778	3890.0	125.0	3890.0	1
998154-3D	20	51.1379	51.2165	51.2165	0.0000	No	0.0786	3930.0	125.0	3930.0	1
LCS	100	68.8830	68.9348	68.9347	0.0001	No	0.0517	517.0	25.0	517.0	1
998154-4	50	50.9454	51.0506	51.0503	0.0003	No	0.1049	2098.0	50.0	2098.0	1
998154-5	50	49.3779	49.4787	49.4783	0.0004	No	0.1004	2008.0	50.0	2008.0	1
998154-6	20	49.4757	49.5386	49.5385	0.0001	No	0.0628	3140.0	125.0	3140.0	1
998154-7	50	49.6971	49.7343	49.7341	0.0002	No	0.0370	740.0	50.0	740.0	1
998154-8	50	49.2934	49.3774	49.3773	0.0001	No	0.0839	1678.0	50.0	1678.0	1
998154-9	50	50.1270	50.2109	50.2106	0.0003	No	0.0836	1672.0	50.0	1672.0	1
998154-10	50	50.5266	50.6287	50.6285	0.0002	No	0.1019	2038.0	50.0	2038.0	1
998154-11	50	51.0073	51.0888	51.0887	0.0001	No	0.0814	1628.0	50.0	1628.0	1
998154-12	50	51.0740	51,1358	51.1356	0.0002	No	0.0616	1232.0	50.0	1232.0	1
998154-13	50	47.9067	47.9395	47.9394	0.0001	No	0.0327	654.0	50.0	654.0	1
LCSD											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)

Anal Printed Na

Analyst Signat іге

Reviewer Printed Name

Reviewer Signature

TDS/EC CHECK

Batch: 10TDS11G Date Calculated: 11/1/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998107	7390	0.57	4803.5	0.88
998153-2	1160	0.61	754	0.93
998153-3	1310	0.59	851.5	0.90
998153-4	1590	0.63	1033.5	0.97
998153-5	1650	0.63	1072.5	0.97
998153-6	1710	0.67	1111.5	1.03
998153-7	1680	0.68	1092	1.05
998154-1	1760	0.69	1144	1.06
998154-2	3440	0.72	2236	1.11
998154-3	5220	0.75	3393	1.15
998154-3D	5220	0.75	3393	1.16
LCS				
998154-4	3000	0.70	1950	1.08
998154-5	2680	0.75	1742	1.15
998154-6	4240	0.74	2756	1.14
998154-7	1120	0.66	728	1.02
998154-8	2390	0.70	1553.5	1.08
998154-9	2370	0.71	1540.5	1.09
998154-10	2820	0.72	1833	1.11
998154-11	2310	0.70	1501.5	1.08
998154-12	1780	0.69	1157	1.06
998154-13	981	0.67	637.65	1.03



Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

	Date	Lab Numbe	r Initial pH	Buffer Added (mL) Final pH	Time Buffered	Initiala
	10/10/	11 997763-1	9.5	NIA	NIA	MA	
			2		1 [1	
			4				
		6					
	<u> </u>						
		-8	<u> </u>				
		1 1 -9	╞──┝╭┤		· .		
	V	<u> </u>	V		V		
	10/12/11	1997830	7.0	5.0.ml	9.5	8:20 a.m.	ALI
Ml	10/12/1	99783	7.0	Siont	9.5	8:30 Acm	ALT
רייאוין	-10/5/11	997-799-	•				
	10/14/1	997987-1	9.5	NIA	NA	NA	Tim
	·	-2	<u> </u>				
	2.1.1	-3	9.5				-
	1 aVd/1)	997988	6.0	5 ml	9.5	8:20 Am	GB
ŀ	7-12-11	918-19-1	2.9	NIA	NA	NIA	Qu
ŀ	Val2ali	-2	<u>q.s</u>	NA	MA	NA	G
·	10120/11	-2	<u> </u>	<u>S.om</u>	Q.S	12:15 pm	Gu
F	alili	00 8070 -1	0.6	1/10 ml	9.5	12: 15pm	Qui
ŀ	t <u>et vitu</u>	11001-1	-102	/ IA	NIA	NIA '	G
						····	
F		-4				— <u><u></u></u>	
ſ		5			-{		
•	0/2/12/1	998107	6				X
li	0/26/201	998110-1	9.5	VIA	4.5	8:20 am	Gu
					<u> ~/A</u>	NIA	
		-3					
	Y	1 -4					
,	· · · <u>· · · · · · · · · · · · · · · · </u>	. <u></u> , <u></u> , <u></u> , <u></u> ,	l <u>a</u> l <u>a</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
F		·					al

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

040

		Tur	bidity/pH C	heck			
Sample Number	Turbidity	Hq	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)	
DO YUZI Z	detal	>2	10/21/11	- FF	NO	Ves	
9900-1 (-0	parte	19	0191/11	MM	Yes	0	
99815013-81			10/00 01		1	-	
998 151 (1-8/							
998 152 (1-2/		<u>├──</u>					
<u>998 53 (1-8/</u>	<u> </u>					~	
998154 [1-13]	<u> </u>	↓ <i>V</i>	10 60 10			101 Q 130m	
448181(1-2)		>2	10/28/11			VALO INVILL	\sim
998107	21	<u> ~ 2</u>	10/28/11	<u> C/V-</u>	140	426 10 121	m
998168 11-61	61	62	10 23/11	MIN	Les_		
9981691124	//						
06917011-31	/ _]				<u> </u>		ł
9101 71 11-J)						-
008142 11-01					_ <u></u>	ļ	-
16P1 7 7 11-6	, - 						4
MGDIIU IL	#-+	+					-
10/981 47 (1-3)	4			V	V		4
199010 11-2	4 71	C9	10198/11	MM	y15		1
<u>998183 (1-4)</u>			10/3/14	MM	Ves	· ·	
998 198		- 25	10/311	1	1-1	-	
99819911-3	/ _		+		+	<u> </u>	
998200 1-51		+ $-$		+ b		-	1
29819+11-				1 1/1	VPS		-
998219	21	$ = \lambda $	11/ 2/11	1			1
998221211-8	2/			+		-	1
998221 11-1	5/			┼──┼─			-
0198222 (13.5	-71			<u></u>			-{
99222211-0	71			<u></u>			
908241 /1-2				<u> </u>			-
6 GP 969 11. 7					_ <u>`</u> V		4
VIAX BUSIL 2		1 1				<u> </u>	4
1-10 x 10 /1-	7 					<u> </u>	4
0000111-2							_
997 × 7 + ()	$\frac{1}{1}$					<u> </u>	
1982 11-5	bit					-	
9082 901-1				1			
998250 11.6			_+_₩				
198251 (J-6	2/1-1/		11 InTo	1 VAC	NG	VRS @ 5300	M
49212(112+	1)				1 Ves		
99827911-	<u>21 c.'</u>	<u></u>			-+		
99828011-	4/				_ 	-	
199828111-	4/						
098282 1-	11						-
998213					_ 		
09821411-	8/ /		//	//	//		-
99821511-	8)	V		<u> </u>	V		-
10000	×/						
						·	
1	1	I					

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Sample Integrity & Analysis Discrepancy Form

Clien	nt: <u> </u>	Lab ‡	<u> </u>	8107
Date	Delivered: 10 / 25/11 Time: 21:30 By: 🗆 Mail 🖄 Field	l Servi	ce C	Client
1.	Was a Chain of Custody received and signed?	Ø(Yes	□No	
2.	Does Customer require an acknowledgement of the COC?	□Yes	□No	ØN/A
З.	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
5.	Were all requested analyses understood and acceptable?	🔊 Yes	□No	□N/A
6.	Were samples received in a chilled condition? Temperature (if yes)?4 <u>. 6 ° C</u>	🛛 Yes	□No	⊡ <i>N/A</i>
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	🛛 Yes	□No	□ <i>N/A</i>
8.	Were sample custody seals intact?	🗆 Yes	□No	ฒิ์ 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?	Pes	□No	□N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: Truesdail C lient	□ Yes	□No	, SIN/A
12.	Were samples pH checked? pH = <u>See </u> C. O. C.	対 <i>Yes</i>	□No	
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	₫Yes	□No	<i>□N/A</i>
14.	Have Project due dates been checked and accepted?	ရပ် Yes ၊	□No	DN/A
15.	Sample Matrix: Liquid Drinking Water Ground Wate	эг 🗆 эг <u> W</u>	Waste a Le	e Water R∕
16.	Comments:			
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Sug	евиі	uiud

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Analytical Bench Log Book

WDR pH Results

ę		i Cor							wuk pri kesi	SIIN
If the on site labora	Date	It for T-700 Time) tank is less Date	than pH 6	.6 or greater than pl	I 8.3 the Injec Date	tion well sho Time	uld be shut Slope	t down until the problem is	; fixed.
	sampling	sampling	analysis	analysis	See cover Sheet for Serial Number	Calibrated	Calibrated	of the Curve	(for the pH result)	Result
8-7008	10-4-11	1300	10-4-11	1304	METCR#1	10-4-11	00!	-55.4	Bauty JSIDE	1.1
A utes;									1.000	
S-100B	10-4-11	006	10-4-11	1308	1414141	10-4-11	1:00		hall here in	<i>?</i> 7
N 0(0 \$;									9612381 and	1.4
SUM-D	10-11-11	1300	10-11-11	120/	1015150 #1					
Notes:				000	meren	11-12-01	1.00	2.40	Prov THELDS	2.0
			•	a.						
1.5 <u>7</u> -7.01 -	10-11-11	DUCI DUCI	10-11-11	1305	METERN	10-11-11	1:00	547	How fille	0.1
	-								1	
achoop	10-18-11	1380	10-18-11	1336	NETER#1	11-8-11	00%	-55,01	have here las	1.1
ivotes:									10000	
C-700B	12-11	000	10-0	10/2-		1-16-11		}	-	
rutes:		1			TOPPO CACT 1	000	1.00		Flow MARCUS	7.0
oles:								-		
		Remi	nder: WDR	Required	bH Range for the F	fillient /SC-7				
				nalinhav	PH Kange for the E	attluent (SC-7	00B) is: 6.5	- 8,4		

EXCELLENCE IN INDEPENDENT TESTING

January 2, 2012

Established 1931

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

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-EW-188, GROUNDWATER MONITORING PROJECT, TLI NO.: 998241

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-188 groundwatermonitoring 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 November 1, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to the discrepancy between the Total Dissolved Chromium (447 ug/L) and Hexavalent Chromium (1060 ug/L) results for sample TW-03D-188, Mr. Shawn Duffy of CH2M Hill was notified. Mr. Duffy requested that sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers be digested and analyzed for Total Dissolved Chromium. The results were 1070 and 1080 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 945 ug/L. After discussing the results with Mr. Duffy, the result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result. The discrepancy was most likely a result of analyst error during sample preparation for the original run.

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

Midnel Z

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.: 998241 Date: January 2, 2012 Collected: November 1, 2011 Received: November 1, 2011

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

TRUESC Excellence in	AIL LABORA INDEPENDENT TESTING	atories, In	<u>.</u>				Est	ablished 1931	
						14201 FF (714) 75	RANKLIN AVENUE 30-6239 - FAX (7	- TUSTIN, CALIFORNI 714) 730-6462 - www	A 92780-7008 .truesdail.com
Cli Attent	ent: E2 Consulting I 155 Grand Ave Oakland, CA 9 ion: Shawn Duffy	Engineers, Inc. : Suite 1000 4612				Lab Lab	oratory No.: • Descrived	998241 November 1	100
Project Na Project I P.O. I	me: PG&E Topock No.: 424973.01.DM No.: 424973.01.DM	Project				2			
			Analy	<u>tical F</u>	<u> Results</u>	Summary			
Lab Sample	e ID Field ID	Analysis Method	Extraction Method	Sample Date	Sample Tin	le Parameter	Result	Units	RL
998241-001 998241-001	РЕ-01-188 РЕ-01-188	E120.1 F200.8	NONE 1 ABFI T-dinested	11/1/2011	11:11 11:11	EC Chromium	4960 10.3	umhos/cm ua/L	2.00 1.0
998241-001	PE-01-188	E218.6		11/1/2011		Chromium, hexavalent	10.3	ng/L	0.20
998241-001 998241-002	PE-01-188 TW-03D-188	SM2540C E120.1	NONE	11/1/2011 11/1/2011		FC EC	2/3U 8610	mg/L umhos/cm	2:00
998241-002	TW-03D-188	E200.8	LABFLT-digested	11/1/2011	11:11	Chromium Total Dissolved Solids	1070 4880	ug/L ma/l	2.0 125
998241-002 998241-002	TW-03D-188	SM3500-CrB	LABFLT	11/1/2011		Chromium, hexavalent	1060	ug/L	100
	ND: Non Detected (below Note: The following "Signific Results below 0.01 wi Rasult above or equal Quality Control data w	reporting limit) cant Figures" rule has beei iil have two (2) significant t i to 0.01 will have three (3) s vill atways have three (3) s	n applied to all results: ligures. significant figures. ignificant figures.						
005									

EXCELLENCE IN INDEPENDENT TESTING

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



REPORT

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

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800 Oakland, CA 94612 Attention: Shawn Duffy Project Name: PG&E Topock Project

Laboratory No. 998241 Page 1 of 9 Printed 1/2/2012

Samples Received on 11/1/2011 8:30:00 PM

Field ID					Lab ID	Col	lected	Matrix	
PE-01-188 TW-03D-188					998241-001 998241-002	11/01, 11/01,	/2011 11:11 /2011 11:11	Water Water	
Specific Conductivity - E	PA 120.1			Batch	11EC11A			11/2/2011	
Parameter	-	Unit		Ana	lyzed	DF	MDL	RL	Result
998241-001 Specific Conduct	ivity	umhos/	cm	11/02	2/2011	1.00	0.0950	2.00	4960
998241-002 Specific Conduct	ivity	umhos/	cm	11/02	2/2011	1.00	0.0950	2.00	8610
Method Blank									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Re N	esult D					
Duplicate								Lab ID = 9	98241-002
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Re 80	sult 510	Expected 8610	F	RPD 0.00	Acceptan 0 - 10	ce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Re 70	esult 05	Expected 706	F	Recovery 99.8	Acceptan 90 - 110	ce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Re 70	esult 05	Expected 706	F	Recovery 99.8	Acceptan 90 - 110	ce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Re 9	esult 79	Expected 997	F	ecovery 98.2	Acceptan 90 - 110	ce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

TRUESDAIL LABORATORIES, INC.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 2 of 9 Printed 1/2/2012

Chrome VI by EPA 218.6			Batch	11CrH11F			ne protector La protector	ta Bas
Parameter		Unit	Апа	lyzed	DF	MDL	RL	Result
998241-001 Chromium, Hexa	valent	ug/L	11/08	3/2011 14:28	1.05	0.0260	0.20	10.3
Method Blank								
Parameter Chromium, Hexavalent Dunlicate	Unit ug/L	DF 1.00	Result ND				l ah ID =	998315-004
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 5.38	Expected 5.44		RPD 1.06	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.87	Expected 5.00		Recovery 97.5	Accepta 90 - 11(Lab ID =	ance Range) 998241-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 25.5	Expected/Add 26.2(15.9)	ded	Recovery 95.4	Accepta 90 - 11(Lab ID =	ance Range) 998314-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.94	Expected/Add 8.01(5.30)	ded	Recovery 98.7	Accepta 90 - 11(Lab ID =	ance Range) 998314-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.51	Expected/Add 6.48(5.30)	led	Recovery 101.	Accepta 90 - 11(Lab ID =	ance Range) 998314-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.53	Expected/Add 6.53(5.30)	ded	Recovery 100.	Accepta 90 - 11(Lab ID =	ance Range 0 998314-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.33	Expected/Add 6.42(5.30)	ded	Recovery 98.3	Accepta 90 - 110 Lab ID =	ance Range 0 998314-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.54	Expected/Add 7.62(5.30)	ded	Recovery 98.6	Accepta 90 - 110 Lab ID =	ance Range 0 998315-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.09	Expected/Add 1.11(1.06)	ded	Recovery 97.9	Accepta 90 - 11(ance Range D

Report Continued

Client: E2 Consulting Engineers, Inc.			roject Name: roject Numbe	Page 4 of 9 Printed 1/2/2012		
MRCVS - Primary						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.0	Expected 10.0	Recovery 100.	Acceptance Range 95 - 105
Chromium, Hexavalent b	y SM 350	0-Cr B	Batch	11CrH11A		
Parameter	••••••••••••••••••••••••••••••••••••••	Unit	Ana	lyzed D	F MDL	RL Result
998241-002 Chromium, Hexa	valent	ug/L	11/08	/2011 13:33 10).0 43.5	100. 1060
Method Blank						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND			
Duplicate						Lab ID = 998241-002
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 10.0	Result 1070	Expected 1060	RPD 0.724	Acceptance Range 0 - 20
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 108.	Expected 100.	Recovery 108.	Acceptance Range 90 - 110 Lab ID = 998241-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 10.0	Result 2140	Expected/Addeo 2060(1000)	d Recovery 108.	Acceptance Range 85 - 115
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 58.9	Expected 60.0	Recovery 98.2	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 58.9	Expected 60.0	Recovery 98.2	Acceptance Range 90 - 110

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 5 of 9 Project Number: 424973.01.DM Printed 1/2/2012 Total Dissolved Solids by SM 2540 C Batch 11TDS11A 11/2/2011 Parameter Unit Analyzed DF MDL RL Result 998241-001 Total Dissolved Solids mg/L 11/02/2011 1.00 0.400 125 2790 998241-002 Total Dissolved Solids mg/L 11/02/2011 1.00 0.400 125 4880 Method Blank Parameter Unit DF Result **Total Dissolved Solids** mg/L 1.00 ND Duplicate Lab ID = 998208-001 Parameter Unit DF Result Expected RPD Acceptance Range **Total Dissolved Solids** 1.00 308 304 mg/L 1.31 0 - 5 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Total Dissolved Solids 1.00 470. 500. mg/L 94.0 90 - 110

Report Continued

Client: E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjectPage 6 of 9Project Number:424973.01.DMPrinted 1/2/2012

Metals by EPA 200.8, Diss	olved		Batch	112011B			
Parameter	1 	Unit	Anal	yzed [DF MDL	RL	Result
998241-001 Chromium		ug/L	11/21	/2011 03:20 4	.44 0.0977	1.0	10.3
Method Blank							
Parameter Chromium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	998222-007
Parameter Chromium	Unit ug/L	DF 4.44	Result ND	Expected 0.00	RPD 0	Accepta 0 - 20	ance Range
Low Level Calibration V	erification						
Parameter Chromium Lab Control Sample	Unit ug/L	DF 1.00	Result 0.174	Expected 0.200	Recovery 87.2	Accepta 70 - 130	ance Range D
Parameter Chromium	Unit ug/L plicate	DF 5.00	Result 103	Expected 100.	Recovery 103	Accepta 85 - 11	ance Range 5
Parameter	Linit	DE	Result	Expected	Recovery	Accent	ance Range
Chromium	ua/L	5.00	103.	100.	103.	85 - 11	5
Matrix Spike	U					Lab ID =	998222-007
Parameter Chromium	Unit ug/L	DF 4.44	Result 108.	Expected/Adde 111(111)	d Recovery 97.2	Accepta 75 - 12	ance Range 5
Matrix Spike Duplicate						Lab ID =	998222-007
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 4.44	Result 114.	Expected/Adde	d Recovery 102.	Accept 75 - 12	ance Range 5
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 49.3	Expected 50.0	Recovery 98.6	Accept 90 - 11	ance Range 0
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 51.3	Expected 50.0	Recovery 102.	Accept 90 - 11	ance Range 0
Parameter Chromium	Unit ug/L	DF 1.00	Result 51.1	Expected 50.0	Recovery 102.	Accept 90 - 11	ance Range 0

Report Continued

Client: E2 Consulting Engineers, Inc.			Project Name: Project Number:	PG&E Topock Project 424973.01.DM		Page 7 of 9 Printed 1/2/2012	
MRCVS - Primary							
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 50.7	Expected 50.0	Recovery 101.	Acceptance Range 90 - 110	
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 50.1	Expected 50.0	Recovery 100.	Acceptance Range 90 - 110	
Parameter Chromium Interference Check Stan	Unit ug/L idard A	DF 1.00	Result 50.5	Expected 50.0	Recovery 101.	Acceptance Range 90 - 110	
Parameter Chromium Interference Check Star	Unit ug/L idard A	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check Stan	Unit ug/L idard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check Stan	Unit ug/L idard AB	DF 1.00	Result 50.6	Expected 50.0	Recovery 101.	Acceptance Range 80 - 120	
Parameter Chromium Serial Dilution	Unit ug/L	DF 1.00	Result 51.8	Expected 50.0	Recovery 104.	Acceptance Range 80 - 120 Lab ID = 998241-002	
Parameter Chromium	Unit ug/L	DF 22.22	Result 452.	Expected 447	RPD 1.20	Acceptance Range 0 - 10	

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 8 of 9 Printed 1/2/2012

Metals by EPA 200.8, Dissolved			Batch	122711A			
Parameter	•	Unit	Ana	lyzed D	F MDL	RL	Result
998241-002 Chromium		ug/L	12/27	/2011 18:55 10	.0 0.220	2.0	1070
Method Blank							
Parameter Chromium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	998661-001
Parameter Chromium	Unit ug/L	DF 5.00	Result 2.29	Expected 1.94	RPD 16.5	Accepta 0 - 20	ance Range
Low Level Calibration V	erification						
Parameter Chromium	Unit ug/L	DF 1.00	Result 0.235	Expected 0.200	Recovery 117.	Accepta 70 - 13	ance Range)
Lab Control Sample		55			_		5
Parameter Chromium	Unit ug/L	D⊢ 5.00	Result 100.	Expected 100.	Recovery 100.	Accepta 85 - 11	ance Range 5
Lab Control Sample Du	plicate						
Parameter Chromium	Unit ug/L	DF 5.00	Result 101.	Expected 100.	Recovery 101.	Accepta 85 - 11	ance Range 5
Matrix Spike						Lab ID =	998661-001
Parameter Chromium	Unit ug/L	DF 5.00	Result 102.	Expected/Addec 102.(100.)	Recovery 99.6	Accept 75 - 12	ance Range 5
Matrix Spike Duplicate						Lab ID =	998661-001
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 106.	Expected/Addec 102.(100.)	I Recovery 104.	Accept 75 - 12	ance Range 5
Baramotor	Linit		Pocult	Expected	Recovery	Accent	anco Pango
Chromium MRCVS - Primary	ug/L	1.00	9,96	10.0	99.6	90 - 11	0
Parameter	Unit	DF	Result	Expected	Recovery	Accept	ance Range
Chromium MRCVS - Primary	ug/L	1.00	9.62	10.0	96.2	90 - 11	0
Parameter	Unit	DF	Result	Expected	Recoverv	Accept	ance Rance
Chromium	ug/L	1.00	9.68	10.0	96.8	90 - 11	0

Report Continued

Client: E2 Consulting Engineers, Inc.		. P P	Project Name: PG&E Topock Project Project Number: 424973.01.DM		Project I	Page 9 of 9 Printed 1/2/2012	
MRCVS - Primary							
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.78	Expected 10.0	Recovery 97.8	Acceptance Range 90 - 110	
Parameter Chromium Interference Check S	Unit ug/L tandard A	DF 1.00	Result 9.51	Expected 10.0	Recovery 95.1	Acceptance Range 90 - 110	
Parameter Chromium Interference Check S	Unit ug/L tandard A	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check S	Unit ug/L tandard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check S	Unit ug/L tandard AB	DF 1.00	Result 9.70	Expected 10.0	Recovery 97.0	Acceptance Range 80 - 120	
Parameter Chromium Serial Dilution	Unit ug/L	DF 1.00	Result 9.60	Expected 10.0	Recovery 96.0	Acceptance Range 80 - 120 Lab ID = 998241-002	
Parameter Chromium	Unit ug/L	DF 50.0	Result 1040	Expected 1070	RPD 3.04	Acceptance Range 0 - 10	

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

for-Mona Nassimi Manager, Analytical Services

EZ London

Total Dissolved Solids by SM 2540 C

Calculations

	Batch:	11TDS11A
Date	Calculated;	11/4/11

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	112.3586	112.3589	112.3588	0.0001	No	0.0002	2.0	25.0	ND	1
998196	100	68.5199	68,5769	68,5766	0.0003	No	0.0567	567.0	25.0	567.0	1
998212-2	200	115.2462	115.2667	115.2667	0.0000	No	0.0205	102.5	12.5	102.5	1
998212-4	100	74.7542	74.7784	74.7784	0.0000	No	0.0242	242.0	25.0	242.0	1
998221-1	100	76.5597	76,5899	76.5896	0.0003	No	0.0299	299.0	25.0	299.0	1
998221-2	100	65.5707	65.6025	65.6021	0.0004	No	0.0314	314.0	25.0	314.0	1
998241-1	20	67.7920	67.8481	67.8478	0.0003	No	0.0558	2790.0	125.0	2790.0	1
998241-2	20	76.5523	76.6504	76.65	0.0004	No	0.0977	4885.0	125.0	4885.0	1
998242-1	20	67.7447	67.8316	67.8315	0.0001	No	0.0868	4340.0	125.0	4340,0	1
998242-2	20	72.8111	72.9005	72.9004	0.0001	No	0.0893	4465.0	125.0	4465.0	1
998208	100	73.5020	73.5324	73.5324	0.0000	No	0.0304	304.0	25.0	304.0	1
998208D	100	68.5758	68.6066	68.6066	0.0000	No	0.0308	308.0	25.0	308.0	1
LCS	100	71.1001	71.1471	71.1471	0.0000	No	0.0470	470.0	25.0	470.0	1
998268-5	100	69.2216	69.2468	69.2468	0.0000	No	0.0252	252.0	25.0	252.0	1
998273-1	100	75.9776	75.994	75.994	0.0000	No	0.0164	164.0	25.0	164.0	1
				```````````````````````````````````````							
ICSD					······································	·····					

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Printed Name

Analyst Signature

Reviewer Printed Name

#### TDS/EC CHECK

#### Batch: 11TDS11A

#### Date Calculated: 11/4/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
998196	977	0.58	635.05	0.89
998212-2	209	0.49	135.85	0.75
998212-4	459	0.53	298.35	0.81
998221-1	517	0.58	336.05	0.89
998221-2	515	0.61	334.75	0.94
998241-1	4960	0.56	3224	0.87
998241-2	8610	0.57	5596.5	0.87
998242-1	7110	0.61	4621.5	0.94
998242-2	7510	0.59	4881.5	0.91
998208	546	0.56	354.9	0.86
998208D	546	0.56	354.9	0,87
LCS				
998268-5	462	0.55	300.3	0.84
998273-1	281	0.58	182.65	0.90
			ii	
		*****		



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### **Hexavalent Chromium** Method EPA 218.6 and SW 7199 Sample pH Log



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

#### Turbidity/pH Check

Sample Number	Turbidity	pН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)	
998021 (.1)	Plant	<u>&gt;2</u>	10/21/11	A-K-	NO	1 Ves	
99815012-81	11	62	10/21/11	MM	Yes	<u> </u>	
098 15 11-x1					/ 1	-	
998 152 11-21							
09815211-81							
99815411-121						~	
Gra 2121/1-7	21		10 10 10	KAC.	Nin	100 0 0 39	
a98107	21	> 7	10/2-2/10	RA4	Na	VAL PLOTAT	く
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069142 1101					<u> </u>		
0681 73 11-61					· · · · ·		
06012411-51							
098125-1191					<u> </u>		
000189 11 VI	71	e 9	wala 8/11	11 hr	VICO		
497010 1-11 498198	el	- 1	10/2014	<u> </u>	1/28		
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9828D11-41		<u> </u>	11/01/1			<u> </u>	
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098282 1-111						~	
998212							
0198816 11-81				//		~~~	
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998 331	$  \downarrow \downarrow \rangle$	1/		11/	1		
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# Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>El</u>	Lab # <u>_998 24 1</u>
Dat	e Delivered: <u>//</u> ///11 Time: <u>८०:'५</u> 0 By: □Mail 成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 🛒N/A
<b>).</b>	Are there any special requirements or notes on the COC?	□Yes □No pîN/A
	If a letter was sent with the COC, does it match the COC?	□Yes □No QN/A
	Were all requested analyses understood and acceptable?	ØqYes □No □N/A
	Were samples received in a chilled condition? Temperature (if yes)? ² · <u>0°C</u>	J⊄IYes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ŹiYes ⊡No □N/A
	Were sample custody seals intact?	□Yes □No ¤{N/A
	Does the number of samples received agree with COC?	≶ a Yes ⊡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: A <b>Truesdail</b> Client	⊠qYes ⊡No ⊡N/A
2.	Were samples pH checked? $pH = \underline{fl} \mathcal{C} \mathcal{O} \mathcal{O} \mathcal{C}$	ØYes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Øa(Yes ⊡No □N/A
1.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>RUSH K</b> \$td	atves ⊡No □N/A
5.	Sample Matrix: Liquid Drinking Water	Nater QWaste Water
	□Sludge □Soil □Wipe □Paint □Solid □	Other
). ).	Comments:	
,	Sample Check-In completed by Truesdail Log-In/Passiving	L. Straburn

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

November 21, 2011

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-333 PROJECT, GROUNDWATER MONITORING,

TLI NO.: 998242

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-333 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 November 1, 2011, intact and in chilled condition. The samples will he kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or 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

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

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

Laboratory No.: 998242 Date: November 21, 2011 Collected: November 1, 2011 Received: November 1, 2011

#### ANALYST LIST

METHOD	PARAMETER	ANALYST		
EPA 120.1	Specific Conductivity	Gautam Savani		
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn		
SM 2320B	Total Alkalinity	Kim Luck		
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	Maksim Gorbunov		

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				₹∕	<u>ה</u>	1420: (714,	1 FRANKLIN AVENUE - T 730-6239 - FAX (712	USTIN, CALIFORNIA 1) 730-6462 - www.tn	92780-7008 uesdail.com
Clien	:: E2 Consulting Engine 155 Grand Ave. Suite Oakland, CA 94612	ers, inc. 1000					Laboratory No.: Date Received:	998242 November 1, 2	011
Attention	። Shawn Duffy								
Project Name Project No. P.O. No.	:: PG&E Topock Project :: 424973.01.DM :: 424973.01.DM								
		<b>V</b>	nalytical	Results	Sum	mary			
Lab Sample ID	Field ID	Analysis Method	. Extraction Method	Sample Date	· Sample Time	Parameter	Result	Units	٦. ۲
998242-001	SC-700B-WDR-333	E120.1	NONE	11/1/2011	12:00	EC	7110	umhos/cm	2.00
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Aluminum	QN	ng/L	50.0
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	BORON	1010	ng/L	200
998242-001	SC-700B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	lron Z	Q	ng/L	20,0
998242-001 0001101	SC-/00B-WDR-333	EZUU./	NUNE-digested	11/1/2011	12:00		35.3	ug/L	10.0
998242-001 998242-001	SC-700B-WDR-333 SC-700B-WDR-333	EZUU.8 F2DD 8	NONE-digested	11/1/2011	12:00 00:21	Antimony Arsenic		ug/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Barium	14.3	ua/L	10.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Chromium	QN	ng/L	1.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Copper	QN	ng/L	5.0
998242-001	SC-700B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Lead	Q Ü	ng/L	10.0
998242-UU1 998242-001	SC-/00B-WUR-333 SC-700B-W/DE-333	E200.8 E200.8	NUNE-digested	11/1/2011	12:00 12:00	Manganese Mahadaarum	80. 7 7 10 7	ug/L	0. t 0 c
998242-001	SC-700B-WDR-333	E200.8	NONF-digested	11/1/2011	12-DD	Nickel		ug/L	10.0
998242-001	SC-700B-WDR-333	E218.6	LABFLT	11/1/2011	12:00	Chromium, hexavals	ant ND	ug/r ua/l:	0.1
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Fluoride	1.50	mg/L	0.500
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Nitrate as N	3.03	mg/L	1.00
998242-001	SC-700B-WDR-333	E300	NONE	11/1/2011	12:00	Sulfate	519	mg/L	50.0
998242-001	SC-700B-WDR-333	SM2130B	NONE	11/1/2011	12:00	Turbidity	Q 2	NTU	0.100
998242-001 998242-001	SC-700B-WDR-333 SC-700B-WDR-333	SM4500NH3D	NONE	11/1/2011	12:00	I otal Dissolved Soli Ammonia-N	ds 4340	mg/L	125
					22.1			11 <u>9</u> 1	0.000

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and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

		Analysis	Extraction	Sample	Sample				
Lab Sample ID	Field ID	Method	Method	Date	Time	Parameter	Result	Units	RL
998242-002	SC-100B-WDR-333	E120.1	NONE	11/1/2011	12:00	EC	7510	umhos/cm	2 00
998242~002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Aluminum	G	10/1	50 U
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	BORON	1040	101	2000
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Iron		- 1/DE	20.0
998242-002	SC-100B-WDR-333	E200.7	ABFLT-digester	11/1/2011	12:00	Iron	Q	- a, -	20.0
998242-002	SC-100B-WDR-333	E200.7	NONE-digested	11/1/2011	12:00	Zinc	Q	- 10/I	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Antimonv	C Z	יומ/ן	
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Arsenic	4 4	а <u>ф</u> г 10/1	10.0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Barium	28.6	ua/L	10.0
998242-002	SC-100B-WDR-333	E200.8	<b>NONE-digested</b>	11/1/2011	12:00	Chromium	871	ua/L	0.1
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Copper	QN	ua/L	50
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Lead	QN	na/l.	10.0
998242-002	SC-100B-WDR-333	`E200.8	NONE-digested	11/1/2011	12:00	Manganese	7.2	- na/L	1.0
998242-002	SC-100B-WDR-333	E200.8	.ABFLT-digester	11/1/2011	12:00	Manganese	7.2	ua/L	0
998242-002	SC-100B-WDR-333	E200.8	NONE-digested	11/1/2011	12:00	Molybdenum	22.2	- d/bu	10.01
998242-002	SC-100B-WDR-333	E200.8	<b>NONE-digested</b>	11/1/2011	12:00	Nickel	QN	- S	10.01
998242-002	SC-100B-WDR-333	E218.6	LABFLT	11/1/2011	12:00	Chromium, hexavalent	897	na/L	21.0
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Fluoride	1.81	-S-	0.500
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Nitrate as N	3.28	ma/L	1 00
998242-002	SC-100B-WDR-333	E300	NONE	11/1/2011	12:00	Sulfate	595	ma/L	12.5
998242-002	SC-100B-WDR-333	SM2130B	NONE	11/1/2011	12:00	Turbidity	0.169	NTU	0.100
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Alkalinity	150	ma/l.	5 00
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Bicarbonate	150	ma/L	5.00
998242-002	SC-100B-WDR-333	SM2320B	NONE	11/1/2011	12:00	Carbonate	QN	ma/L	5.00
998242-002	SC-100B-WDR-333	SM2540C	NONE	11/1/2011	12:00	Total Dissolved Solids	4460	ma/l	125
998242-002	SC-100B-WDR-333	SM4500NH3D	NONE	11/1/2011	12:00	Ammonia-N	1.26	ma/L	0.500
998242-002	SC-100B-WDR-333	SM4500NO2B	NONE	11/1/2011	12:00	Nitrite as N	DN	ma/l	0 0050
998242-002	SC-100B-WDR-333	SM4500-PB_E	NONE	11/1/2011	12:00	Total Phosphorous-P	DN	ma/l	0.0200
<b>398242-002</b>	SC-100B-WDR-333	SM4500SI	NONE	11/1/2011	12:00	Soluble Silica	21.0	- l'am	1 00
998242-002	SC-100B-WDR-333	SM5310C	NONE	11/1/2011	12:00	Total Organic Carbon	ND	mg/L	0.300

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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. Ouality 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.

Report Continued

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EXCELLENCE IN INDEPENDENT TESTING



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REPORT

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

Printed 11/21/2011

Laboratory No. 998242

#### Client: 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

#### Samples Received on 11/1/2011 8:30:00 PM

Field ID			•	Lab ID	Col	llected	Matr	ix
SC-700B-WDR-333 SC-100B-WDR-333				998242-001 998242-002	11/01 11/01	/2011 12:00 /2011 12:00	Wate Wate	er er
Anions By I.C EPA 3	00.0	÷.,	Batch	11AN11B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998242-001 Fluoride		mg/L	11/02	2/2011 11:57	5.00	0.0250	0.500	1.50
Nitrate as Nitro	gen	mg/L	11/02	2/2011 <b>1</b> 1:57	5.00	0.0550	1.00	3.03
998242-002 Fluoride		mg/L	11/02	2/2011 12:07	5.00	0.0250	0.500	1.81
Nitrate as Nitro	gen	mg/L	11/02	2/2011 12:07	5.00	0.0550	1.00	3.28
Method Blank								
Parameter Eluoride	Unit ma/l	DF 1.00	Result					
Nitrate as Nitrogen	ma/L	1.00	ND					
Duplicate			,				Lab ID = 9	998242-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Fluoride	mg/L	5.00	1.71	1.50		13.2	0 - 20	5
Nitrate as Nitrogen	mg/L	5.00	3.33	3.03		9.46	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Fluoride	mg/L	1.00	4.05	4.00		101.	90 - 110	-
Nitrate as Nitrogen	mg/L	1.00	3.95	4.00		98.8	90 - 110	
Matrix Spike							Lab ID = §	98242-001
Parameter	Unit	DF	Result	Expected/Add	ed R	lecovery	Acceptar	nce Range
Fluoride	mg/L	5.00	22.9	21.5(20.0)		107.	85 - 115	2
Nitrate as Nitrogen	mg/L	5.00	· 25.6	23.0(20.0)		113	85 - 115	

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#### Report Continued

Client: E2 Consulting En	gineers, Ind	C.	Project Name: Project Number:	PG&E Topock Pro 424973.01.DM	oject	Page 2 of 33 Printed 11/21/2011
Matrix Spike Duplicate	•		,			Lab ID = 998242-001
Parameter Fluoride Nitrate as Nitrogen MRCCS - Secondary	Unit mg/L mg/L	DF 5.00 5.00	Result 23.0 25.7	Expected/Added 21.5(20.0) 23.0(20.0)	Recovery 108. 113.	Acceptance Range 85 - 115 85 - 115
Parameter Fluoride Nitrate as Nitrogen MRCVS - Primary	Unit mg/L mg/L	DF 1.00 1.00	Result 4.04 3.96	Expected 4.00 4.00	Recovery 101. 99.1	Acceptance Range 90 - 110 90 - 110
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.03	Expected 3.00	Recovery 101.	Acceptance Range 90 - 110
Parameter Fluoride MRCVS - Primary	Unit mg/L	DF 1.00	Result . 3.03	Expected 3.00	Recovery 101.	Acceptance Range 90 - 110
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.97	Expected 3.00	Recovery 98.9	Acceptance Range 90 - 110
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 2.96	Expected 3.00	Recovery 98.5	Acceptance Range 90 - 110
Parameter Nitrate as Nitrogen	Unit mg/L	DF 1.00	Result 2.96	Expected 3.00	Recovery 98.7	Acceptance Range 90 - 110

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 3 of 33 Printed 11/21/2011

Anions By I.C EPA 300.	.0		Batch	11AN11D				
Parameter		Unit	Ana	lyzed E	F	MDL	RL	Result
998242-001 Sulfate		mg/L	11/03	/2011 10:37 10	0	2.00	50.0	519.
998242-002 Sulfate		mg/L	<u>,</u> 11/03	/2011 11:08 25	5.0	0.500	12.5	595.
Method Blank								
Parameter	Unit	DF	Result					
Sulfate	mg/L	1.00	ND					
Duplicate							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected	RF	D	Accepta	nce Range
Sulfate	mg/L	100	515.	519	C	).726	0 - 20	5
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	nce Range
Sulfate	mg/L	1.00	19.8	20.0	g	98.9	90 - 110	0
Matrix Spike							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected/Addec	l Re	covery	Accepta	nce Range
Sulfate	mg/L	100	1580	1520(1000)	1	06.	85 - 115	U
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	nce Range
Sulfate	mg/L	1.00	19.8	20.0	9	9.0	90 - 110	J
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	nce Range
Sulfate	mg/L	1.00	14.8	15.0	9	8.5	90 - 110	U
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	covery	Accepta	nce Range
Sulfate	mg/L	1.00	15.0	15.0	9	9.8	90 - 110	_

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#### Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Nitrite SM 4500-NO2 B	-1		Batch	11NO211C				
Parameter		Unit	Anal	iyzed I	DF	MDL	RL	Result
998242-001 Nitrite as Nitrogen		mg/L	11/02	/2011 15:48 1	.00	0.000360	0.0050	ND
998242-002 Nitrite as Nitrogen		mg/L	11/02	/2011 15:49 1	.00	0.000360	0.0050	ND
Method Blank							·····	
Parameter	Unit	DF	Result					
Nitrite as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 9	98242-001
Parameter	Unit	ĎF	Result	Expected	F	RPD	Acceptan	ce Range
Nitrite as Nitrogen	mg/L	1.00	ND	0.00		0	0 - 20	U U
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	lecovery	Acceptan	ce Range
Nitrite as Nitrogen	mg/L	1.00	0.0387	0.0400		96.8	90 - 110	
Matrix Spike							Lab ID = 9	98242-001
Parameter	Unit	DF	Result	Expected/Adde	d R	lecovery	Acceptan	ce Range
Nitrite as Nitrogen	mg/L	1.00	0.0191	0.0200(0.0200)		95.5	85 - 115	Ū
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Acceptan	ce Range
Nitrite as Nitrogen	m <b>g</b> /L	1.00	, 0.0197	0.0200	•	98.5	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	ecovery	Acceptan	ce Range
Nitrite as Nitrogen	mg/L	1.00	0.0208	0.0200		104	90 - 110	5-

, Report Continued

Client: E2 Consulting E	ngineers, Inc	. Pr	roject Name:	PG&E Topock	Ргоје	ct	Р	age 5 of 33
		Pi	roject Numbe	r: 424973.01.DM			Printed 1	1/21/2011
Alkalinity by SM 2320B			Batch	11ALK11B			11/8/2011	1
Parameter		Unit	Anal	lyzed	DF	MDL	RL	Result
998242-002 Alkalinity as Ca	aCO3	mg/L	11/08	/2011 *	1.00	1.68	5.00	150.
Bicarbonate (C	alculated)	mg/L	11/08	/2011 ^	1.00	1.68	5.00	150.
Carbonate (Ca	lculated)	mg/L	11/08	/2011 *	1.00	1.68	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1,00	ND					
Duplicate							Lab ID =	998392-016
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	75.0	75.0		0.00	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.		99.0	90 - 110	)
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100.		99.0	90 - 110	)
Matrix Spike							Lab ID =	998242-002
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range
Alkalinity as CaCO3	mg/L	1.00	236	250.(100.)		86.0	75 - 125	,

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Report Continued

Client: E2 Consulting En	gineers, Ind	2. P. P.	roject roject	Name: Numbe	PG&E Topo er: 424973.01.[	ck Proje DM	ct	F Printed 1	age 6 of 33 1/21/2011
Specific Conductivity - E	EPA 120.1			Batch	11EC11A			11/2/201	1
Parameter		Unit		Ana	lyzed	DF	MDL	RL	Result
998242-001 Specific Conduc	tivity	umhos	/cm	11/02	2/2011	1.00	0.0380	2.00	7110
998242-002 Specific Conduc	tivity	umhos	/cm	11/02	2/2011	1.00	0.0380	2.00	7510
Method Blank									
Parameter Specific Conductivity	Unit umhos	DF 1.00	R	esult ID					
Duplicate								Lab ID =	998241-002
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Ri 8	esult 610	Expected 8610	F	RPD Acce 0.00 0 - 10		ince Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Re 7	esult 05	Expected 706	F	Recovery 99.8	Accepta 90 - 110	ince Range )
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Re 7	esult 05	Expected 706	F	lecovery 99.8	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Re 9	esult 79	Expected 997	ਸ	lecovery 98.2	Accepta 90 - 110	nce Range
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Client: E2 Consulting Engineers, Inc.

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

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Chrome VI by EPA 218.6			Batch	11CrH11C				
Parameter	i e e l'i e	Unit	Ana	lyzed	DF	MDL	RL	Result
	avalent	ug/L	11/02	/2011 14:51	5.25	0.136	1.0	ND
998242-002 Chromium, Hex	avalent	ug/L	11/02	/2011 14:30	105	2.73	21.0	897,
Method Blank			Ŧ	·····				
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate					Lab ID = 998172-001			
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.05	1.41	1.41		0.0709	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	4.96	5,00		99.2	90 - 110	)
Matrix Spike							Lab ID =	998172-001
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1,06	6.29	6.71(5.30)		92.0	90 - 110	)
Matrix Spike							Lab ID =	998172-002
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	6.63	6.74(5.30)		97.9	90 - 110	)
Matrix Spike							Lab ID =	998172-003
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	· 7.92	8.11(5.30)		96.5	90 - 110	)
Matrix Spike							Lab ID =	998172-004
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	6.69	6.77(5.30)		98.4	90 - 110	)
Matrix Spike							Lab ID =	998172-005
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	7.28	7.39(5.30)		98.0	90 - 110	)
Matrix Spike							Lab ID =	998172-006
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	1.18	1.22(1.06)		95.7	90 - 110	)
Matrix Spike							Lab ID =	998172-007
Parameter	Unit	DF	Result	Expected/Add	ded	Recovery	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.06	7.92	8.10(5.30)		96.7	90 - 110	)

### Report Continued

Client: E2 Consulting Engineers, Inc.		Project Name: Project Number:		PG&E Topock Project 424973.01.DM		Page 8 of 33 Printed 11/21/2011
Matrix Spike						Lab ID = 998172-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 6.70	Expected/Added 6.84(5.30)	Recovery 97.5	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1,16	Expected/Added 1.18(1.06)	Recovery 98.2	Acceptance Range 90 - 110 Lab ID = 998172-010
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.13	Expected/Added 1.19(1.06)	Recovery 94.2	Acceptance Range 90 - 110 Lab ID = 998173-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.81	Expected/Added 6.90(5.30)	Recovery 98.2	Acceptance Range 90 - 110 Lab ID = 998173-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.31	Expected/Added 7.46(5.30)	Recovery 97.2	Acceptance Range 90 - 110 Lab ID = 998173-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.15	Expected/Added 1.18(1.06)	Recovery 97.3	Acceptance Range 90 - 110 Lab ID = 998173-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.95	Expected/Added 8.04(5.30)	Recovery 98.3	Acceptance Range 90 - 110 Lab ID = 998173-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.14	Expected/Added 1.19(1.06)	Recovery 95.3	Acceptance Range 90 - 110 Lab ID = 998219-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result . 7.09	Expected/Added 7.16(5.30)	Recovery 98.8	Acceptance Range 90 - 110 Lab ID = 998242-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.32	Expected/Added 1.31(1.06)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 998242-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.71	Expected/Added 5.71(5.25)	Recovery 99.9	Acceptance Range 90 - 110 Lab ID = 998242-002
Parameter Chromium, Hexavalent	Unit ug/L	DF 105	Result 1920	Expected/Added 1950(1050)	Recovery 97.5	Acceptance Range 90 - 110

#### Report Continued

Client: E2 Consulting En	gineers, Ir	ic. Pi Pi	roject Name: roject Numbe	ect	Page 10 of 33 Printed 11/21/2011			
Metals by EPA 200.7, To	tal		Batch	111511A				
Parameter		Unit	Ana	llyzed	DF	MDL	RL	Result
998242-001 Boron		ug/L	11/15	5/2011 13:44	1.00	1.50	200.	1010
Zinc		ug/L	. 11/15	5/2011 13:44	1.00	3.89	10.0	35.3
998242-002 Boron		ug/L	11/15	5/2011 14:15	1.00	1.50	200,	1040
Zinc		ug/L	11/15	5/2011 14:15	1.00	3.89	10.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected	I	RPD	Accepta	ince Range
Zinc	ug/L	1.00	35.0	35.3		0.853	0 - 20	
Boron	ug/L	1.00	<b>99</b> 7.	1010		1.26	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Zinc	ug/L	1.00	. 102.	100.		102.	85 - 115	5
Boron	ug/L	1.00	90.8	100.		90.8	85 - 115	5
Matrix Spike							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	ince Range
Zinc	ug/L	1.00	120.	135.(100.)		84.6	75 - 125	; Ŭ
Boron	ug/L	1.00	'1110	1110(100.)		97.0	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Zinc	ug/L	1.00	5140	5000		103,	90 - 110	)
Boron	ug/L	1.00	4770	5000		95.4	90 - 110	)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Zinc	ug/L	1.00	5110	5000		102.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	лсе Range
Zinc	ug/L	1.00	5130	5000		102.	90 - 110	5
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Zinc	ug/L	1.00	5170	5000		103,	90 - 110	Ū
Boron	ug/L	1.00	[.] 4600	5000		92.1	90 - 110	

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Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM						ect	Page 12 of 33 Printed 11/21/2011	
Metals by EPA 200.7, To	tal		Batch					
Parameter		Unit	Analyzed		DF	MDL	RL	Result
998242-001 Aluminum		ug/L	· 11/11	/2011 09:43	1.00	2.83	50.0	ND
Iron		ug/L	11/11	/2011 09:43	1.00	1.34	20.0	ND
998242-002 Aluminum		ug/L	11/11	/2011 10:27	1.00	2.83	50.0	ND
Iron		ug/L	11/11	/2011 10:27	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					
Duplicate							Lab ID =	998242-001
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	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	[·] 103.	100.		103.	85 - 115	j
Iron	ug/L	1.00	106.	100.		106.	85 - 115	
Matrix Spike							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	84.5	100.(100.)		84.5	75 - 125	J
Iron	ug/L	1.00	109.	100.(100.)		109.	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	, 5140	5000		103.	90 - 110	5
Iron	ug/L	1.00	5170	5000		103.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	5330	5000		107.	90 - 110	5
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	5300	5000		106.	90 - 110	J-
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Rande
Iron	ug/L	1.00	5470	5000		109.	90 - 110	

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Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 14 of 33 Printed 11/21/2011

Metals b	y EPA 200.8, To	DO.8, Total Batch 111111C							
Parameter	retre de laterie per élipse, d'un F		Unit	Ana	lyzed	DF MDL		RL	Result
998242-00	1 Antimony		ug/L	11/12	2/2011 05:27	4.44	0.106	10.0	ND
,	Copper		ug/L	11/12	2/2011 05:27	4.44	0.11 <b>1</b>	5.0	ND
	Lead		ug/L	11/12	2/2011 05:27	4.44	0.0977	10.0	ND
	Manganese		ug/L	. 11/12	2/2011 05:27	4.44	0.253	1.0	9.8
	Molybdenum		ug/L	11/12	2/2011 05:27	4.44	2.40	10.0	17.1
	Nickel		ug/L	11/12	2/2011 05:27	4.44	0.0666	10.0	ND
998242-00	2 Antimony		ug/L	11/12	2/2011 06:30	4.44	0.106	10.0	ND
	Copper		ug/L	11/12	2/2011 06:30	4.44	0.111	5.0	ND
	Lead		ug/L	11/12	2/2011 06:30	4.44	0.0977	10.0	ND
•	Manganese		ug/L	· 11/12	2/2011 06:30	4.44	0.253	1.0	7.2
	Molybdenum		ug/L	11/12	2/2011 06:30	4.44	2.40	10.0	22.2
	Nickel		ug/L	11/12	2/2011 06:30	4.44	0.0666	10.0	ND
Me	thod Blank								
Paramete	er	Unit	DF	Result					
Nickel		ug/L	1.00	ND					
Antimony	f.	ug/L	1.00	ND					
Copper		ug/L	1.00	ND					
Lead		ug/L	1.00	' ND					
Mangane	se	ug/L	1.00	ND					
Molybder	านกา	ug/L	1.00	ND					
Dup	plicate							Lab ID =	998242-001
Paramete	er	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Nickel		ug/L	4.44	ND	0.00		0	0 - 20	
Antimony	,	ug/L	4.44	[,] ND	0.00		0	0 - 20	
Copper		ug/L	4.44	ND	0.00		0	0 - 20	
Lead		ug/L	4.44	ND	0.00		0	0 - 20	
Manga⊓e	se	ug/L	4.44	9.86	9.83		0.264	0 - 20	
Molvbder	ามกา	ua/l	4 4 4	16.8	17 1		1 53	0 - 20	

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Client: E2 Consulting E	ngineers, In	<b>с.</b> Р Р	roject Name: roject Numbe	Page 15 of 33 Printed 11/21/2011		
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	· 99.3	100.	99.3	85 - 115
Antimony	ug/L	5.00	98.6	100.	98.6	85 - 115
Copper	ug/L	5.00	99.2	100.	99.2	85 - 115
Lead	ug/L	5.00	95.1	100.	95.1	85 - 115
Manganese	ug/L	5.00	95.4	100.	95.4	85 - 115
Molybdenum	ug/L	5.00	88.9	100.	88.9	85 - 115
Lab Control Sample	Duplicate					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Nickel	ug/L	5.00	95.3	100.	95.3	85 - 115
Antimony	ug/L	5.00	94.6	100.	94.6	85 - 115
Copper	ug/L	5,00	95.3	100.	95.3	85 - 115
Lead	ug/L	5.00	92.2	100.	92.2	85 - 115
Manganese	ug/L	5.00	94.0	100.	94.0	85 - 115
Molybdenum	ug/L	5.00	87.9	100.	87.9	85 - 115
Matrix Spike						Lab ID = 998242-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	4.44	208.	222(222)	93.5	75 - 125
Antimony	ug/L	4.44	171.	222(222)	77.2	75 - 125
Copper	ug/L	4.44	204.	222(222)	91.9	75 - 125
Lead	ug/L	4.44	180.	222(222)	80.9	75 - 125
Manganese	ug/L	4.44	225.	232.(222)	96.8	75 - 125
Molybdenum	ug/L	4.44	213.	239.(222)	88.4	75 - 125
Matrix Spike Duplica	te		•			Lab ID = 998242-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Nickel	ug/L	4.44	212.	222(222)	95.7	75 - 125
Antimony	ug/L	4.44	182.	222(222)	82.1	75 - 125
Copper	ug/L	4.44	210.	222(222)	94.4	75 - 125
Lead	ug/L	4.44	187.	222(222)	84.1	75 - 125
Manganese	ug/L	4.44	233.	232.(222)	100.	75 - 125
Molybdenum	ug/L	4.44	224.	239.(222)	93.0	75 - 125

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Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM				ect	Page 20 of 33 Printed 11/21/2011			
Metals by EPA 200.8, Tota	al		Batch	111611A				
Parameter		Unit	Analyzed		DF	MDL	RL	Result
998242-001 Barium		ug/L	11/17	/2011 00:17	4.44	0.178	10.0	14.3
Chromium		ug/L	· 11/17	/2011 00:17	4.44	0.0977	1.0	ND
998242-002 Barium		ug/L	11/17	/2011 01:07	4.44	0.178	10.0	28.6
Chromium		ug/L	11/17/	/2011 01:07	4.44	0.0977	0.0977 1.0 871	
Method Blank			······································		·			
Parameter	Unit	DF	Result					
Barium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Duplicate							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Barium	ug/L	4.44	15.6	14.3		8.38	0 - 20	
Chromium	ug/L	4.44	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	5.00	105.	100.		105.	85 - 118	5
Chromium	ug/L	5.00	102.	100.		102.	85 - 118	5
Lab Control Sample Du	Iplicate							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Barium	ug/L	5.00	104.	100.		104,	85 - 118	5
Chromium	ug/L	5.00	98.6	100.		98.6	85 - 11	5
Matrix Spike							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Range
Barium	ug/L	4.44	· 236.	236.(222)		100.0	75 - 128	5
Chromium	ug/L	4.44	218.	222(222)		98.2	75 - 128	5
Matrix Spike Duplicate							Lab (D =	998242-001
Parameter	Unit	DF	Result	Expected/Ado	led	Recovery	Accepta	ance Range
Barium	ug/L	4.44	239.	236.(222)		101.	75 - 128	5
Chromium	ug/L	4.44	224.	222(222)		101.	75 - 128	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Barium	ug/L	1.00	47.2	50.0		94.5	90 - 110	)
Chromium	ug/L	1.00	48.0	50.0		95.9	90 - 110	)

Report	Continued
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Client: E2 Consulting Engineers, Inc.		<b>:.</b> Pri Pri	oject Name: oject Number:	PG&E Topock 424973.01.DN	x Project 1	Page 23 of 33 Printed 11/21/2011
Serial Dilution						Lab ID = 998242-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	22.22	, 26.5	28.6	7.70	0 - 10
Chromium	ug/L	22.22	843.	871	3.26	0 - 10

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Client: E2 Consulting Eng	Pi Pi	roject Name: roject Numbe	Page 24 of 33 Printed 11/21/2011					
Metals by EPA 200.8, Tot	al		Batch	111511B				
Parameter	·	Unit	Ana	lyzed	DF	MDL	RL	Result
998242-001 Arsenic		ug/L	11/16	/2011 02:56	4.44	0.253	1.0	ND
998242-002 Arsenic		ug/L	11/16	/2011 03:45	4.44	0.253	1.0	4.3
Method Blank								
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Duplicate							Lab ID =	998242-001
Parameter	Unit	DF	Result	Result Expected RPD		RPD	Accepta	ance Range
Arsenic	ug/L	4.44	ND	0.00	0.00 0		0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	l	Recovery	Acceptance Range	
Arsenic	ug/L	5.00	110.	100.		110.	85 - 115	5
Lab Control Sample Do	uplicate							
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ince Range
Arsenic	ug/L	5.00	112.	100.		112.	85 - 115	5
Matrix Spike							Lab ID ≃	998242-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	Accepta	ince Range
Arsenic	ug/L	4.44	242.	222(222)		109.	75 - 125	i
Matrix Spike Duplicate							Lab ID =	998242-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	Accepta	nce Range
Arsenic	ug/L	4.44	255.	222(222)		115.	75 - 125	)
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
	ug/L	1.00	47.4	50.0		94.7	90 - 110	)
· MIRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
MPCV/2 Defectory	ug/L	1.00	53.9	50.0		108.	90 - 110	
wirkevs - Phinary		_						
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
MRCV/9 Primany	ug/L	1.00	53.U	50.0		106	90 - 110	
windvo • Fullidiy		<b>D</b> -						
Parameter Arșenic	Unit ug/L	DF 1.00	Result . 50.6	Expected 50.0	F	Recovery 101.	Accepta 90 - 110	nce Range

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Client: E2 Consulting Engineers, Inc.

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

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Parameter         Unit         Analyzed         DF         MDL         RL         Result           998242-002 Silica         mg/L         11/03/2011         25.0         0.532         1.00         21.0           Method Blank         Parameter         Unit         DF         Result         Silica         mg/L         1.00         ND           Duplicate         Lab ID = 998260-001         Result         Expected         RPD         Acceptance Range           Silica         mg/L         1.00         ND         0.00         0         0 - 20           Lab Control Sample         .         .         .         Parameter         Unit         DF         Result         Expected/Added         Recovery         Acceptance Range           Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110         Lab ID = 998260-001           Matrix Spike	<b>Reactive Silica by SM4</b>	500-Si D		Batch	11Si11A			11/3/2011	
998242-002 Silica         mg/L         11/03/2011         25.0         0.532         1.00         21.0           Method Blank         Parameter         Unit         DF         Result         ND         ND         ND         ND         ND         Duplicate         Lab ID = 998260-001         ND         0.00         0         0 - 20         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected         RPD         Acceptance Range         Silica         mg/L         1.00         ND         0.00         0         0 - 20         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range         Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110         Lab ID = 998260-001           Matrix Spike          mg/L         1.00         0.420         0.40(0.400)         105         75 - 125         MRCCS - Secondary           Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range         Silica         mg/L         1.00         0.387         0.400         96.8         90 - 110         ND         Matrix	Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
Method Blank           Parameter         Unit         DF         Result           Stiica         mg/L         1.00         ND           Duplicate         Lab ID = 998260-001         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected         RPD         Acceptance Range           Silica         mg/L         1.00         ND         0.00         0         0 - 20           Lab Control Sample         .         .         .         .         .           Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range           Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110           Matrix Spike         Lab ID = 998260-001         Lab ID = 998260-001         Lab ID = 998260-001         .           Parameter         Unit         DF         Result         Expected/Added         Recovery         Acceptance Range           Silica         mg/L         1.00         0.420         0.400(0.400)         105.         75 - 125           MRCVS - Primary         Parameter         Unit         DF         Result         Expected         Recovery	998242-002 Silica		mg/L	11/03	3/2011	25.0	0.532	1.00	21.0
Parameter SilicaUnit mg/LDF 1.00Result NDLab ID = 998260-001Parameter SilicaUnit mg/LDF NDResultExpected NDRPD 0.000Acceptance Range 0.00Silica Lab Control SampleMIDF NDResultExpected 2.20Recovery 91.2Acceptance Range 90 - 110Parameter Silica Matrix SpikeUnit Unit NDDF NDResultExpected 2.20Recovery 91.2Acceptance Range 90 - 110Parameter Silica MRCCS - SecondaryUnit Unit NDDF NDResultExpected/Added NDRecovery 93.9Acceptance Range 75 - 125Parameter Silica MRCCS - SecondaryUnit Unit NDDF NDResultExpected NDRecovery 93.9Acceptance Range 90 - 110Parameter Silica MRCVS - PrimaryUnit NDDF NBResult NBExpected NDRecovery 96.8Acceptance Range 90 - 110Parameter Silica MRCVS - DrimaryDF NDResult NDState ND11/2/2011Parameter Silica MRCVS - DrimaryUnit MIDF AnalyzedBetch 11TDS11A11/2/2011Parameter Silica Method BlankUnit Method BlankAcceptance Range Method BlankMDL RL ResultRL ResultResult StateParameter Total Dissolved Solids Mg/L1.00 NDNDND1254340Deplicate Lab ID = S98208-001NDLab ID = 998208-001Recovery <br< td=""><td>Method Blank</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></br<>	Method Blank								
Silica         mg/L         1.00         ND           Duplicate         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected         RPD         Acceptance Range           Silica         mg/L         1.00         ND         0.00         0         0 - 20           Lab Control Sample         .         .         .         .         .           Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range           Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110           Matrix Spike         Lab ID = 988260-001         Lab ID = 988260-001         .         .         .           Parameter         Unit         DF         Result         Expected/Added         Recovery         Acceptance Range           Silica         mg/L         1.00         0.400         0.400(0.400)         105.         75 - 125           Silica         mg/L         1.00         0.103         0.110         93.9         90 - 110           MRCVS - Primary         Parameter         Unit         DF         Result         Expected         Recovery         Acceptan	Parameter	Unit	DF	Result					
Duplicate         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected         RPD         Acceptance Range           Silica         mg/L         1.00         ND         0.00         0         0 - 20           Lab Control Sample         .         .         .         .         .         .           Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range           Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110           Matrix Spike         Lab ID = 998260-001          Lab ID = 998260-001            Parameter         Unit         DF         Result         Expected/Added         Recovery         Acceptance Range           Silica         mg/L         1.00         0.420         0.400(0.400)         105.         75 - 125           MRCVS - Secondary          MRCVS         Parameter         Unit         DF         Result         Expected         Recovery         Acceptance Range           Silica         mg/L         1.00         0.387         0.400         96.8         90 - 110           Parameter	Silica	mg/L	1.00	ND					
Parameter Silica       Unit mg/L       DF 1.00       Result ND       Expected 0.00       RPD 0       Acceptance Range 020         Parameter       Unit Silica       DF mg/L       Result 1.00       Expected 0.201       Recovery 91.2       Acceptance Range 90 - 110         Matrix Spike       mg/L       1.00       0.201       0.220       91.2       90 - 110         Parameter       Unit       DF       Result       Expected/Added Recovery       Acceptance Range Acceptance Range         Silica       mg/L       1.00       0.420       0.400(0.400)       105.       75 - 125         MRCCS - Secondary        MRCVS - Primary       Acceptance Range       838.9       90 - 110         MRCVS - Primary        DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary         1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch 11TDS11A       11/2/2011       1.00       0.400       125       4340         298242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400<	Duplicate							Lab ID =	998260-001
Silica     mg/L     1.00     ND     0.00     0     0 - 20       Lab Control Sample     Parameter     Unit     DF     Result     Expected     Recovery     Acceptance Range       Silica     mg/L     1.00     0.201     0.220     91.2     90 - 110       Matrix Spike     Lab ID = 998260-001     Lab ID = 998260-001     Lab ID = 998260-001       Parameter     Unit     DF     Result     Expected/Added     Recovery     Acceptance Range       Silica     mg/L     1.00     0.420     0.400(0.400)     105.     75 - 125       MRCCS - Secondary      MRCCS - Primary     Acceptance Range       Silica     mg/L     1.00     0.103     0.110     93.9     90 - 110       MRCVS - Primary      MRCVS - Primary     Acceptance Range       Silica     mg/L     1.00     0.387     0.400     96.8     90 - 110       Total Dissolved Solids by SM 2540 C     Batch 11TDS11A     11/2/2011       Parameter     Unit     Analyzed     DF     MDL     RL     Result       298242-001 Total Dissolved Solids     mg/L     11/02/2011     1.00     0.400     125     4340       298242-002 Total Dissolved Solids     mg/L     1.00     ND	Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Range
Lab Control Sample         Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.201       0.220       91.2       90 - 110         Matrix Spike       Lab ID = 998260-001       Lab ID = 998260-001       Image: Constraint of the spectral of the	Silica	mg/L	1.00	ND	0,00		0	0 - 20	
Parameter     Unit     DF     Result     Expected     Recovery     Acceptance Range       Silica     mg/L     1.00     0.201     0.220     91.2     90 - 110       Matrix Spike     Lab ID = 998260-001     Lab ID = 998260-001     Image: Constraint of the spected/Added     Recovery     Acceptance Range       Silica     mg/L     1.00     0.420     0.400(0.400)     105.     75 - 125       MRCCS - Secondary       Parameter     Unit     DF     Result     Expected     Recovery     Acceptance Range       Silica     mg/L     1.00     0.420     0.400(0.400)     105.     75 - 125       MRCVS - Secondary       Acceptance Range     90 - 110     93.9     90 - 110       MRCVS - Primary        NRCVS - Primary     Acceptance Range       Parameter     Unit     DF     Result     Expected     Recovery     Acceptance Range       Silica     mg/L     1.00     0.387     0.400     96.8     90 - 110       Total Dissolved Solids by SM 2540 C     Eatch     11TDS11A     11/2/2011       Parameter     Unit     Analyzed     DF     MDL     RL       Parameter     Unit     DF     Result     11/02/20	Lab Control Sample			•					
Silica         mg/L         1.00         0.201         0.220         91.2         90 - 110           Matrix Spike         Lab ID = 998260-001         Lab ID = 998260-001         Lab ID = 998260-001           Parameter         Unit         DF         Result         Expected/Added         Recovery         Acceptance Range           Silica         mg/L         1.00         0.420         0.400(0.400)         105.         75 - 125           MRCCS - Secondary           0.420         0.400(0.400)         105.         75 - 125           MRCVS - Primary           0.103         0.110         93.9         90 - 110           MRCVS - Primary            Acceptance Range         96.8         90 - 110           Total Dissolved Solids by SM 2540 C         Batch 11TDS11A         11/2/2011         11/2/2011         100         0.400         125         4340           98242-001 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4340           98242-002 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4460           Method Blank           Para	Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Matrix Spike       Lab ID = 998260-001         Parameter       Unit       DF       Result       Expected/Added       Recovery       Acceptance Range         Silica       mg/L       1.00       0.420       0.400(0.400)       105.       75 - 125         MRCCS - Secondary           75 - 125          Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary               Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch       11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         298242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         298242-002 Total Dissolved Solids       mg/L<	Silica	mg/L	1.00	0.201	0.220		91.2	90 - 110	) -
Parameter       Unit       DF       Result       Expected/Added       Recovery       Acceptance Range         Silica       mg/L       1.00       0.420       0.400(0.400)       105.       75 - 125         MRCCS - Secondary           75 - 125         MRCCS - Secondary           Acceptance Range         Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary            Acceptance Range         Silica       mg/L       1.00       0.133       0.110       93.9       90 - 110         MRCVS - Primary            Acceptance Range         Silica       mg/L       1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch 11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         398242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         398242-002 Total Dissolved Solids	Matrix Spike							Lab ID =	998260-001
Silica mg/L 1.00 0.420 0.400(0.400) 105. 75 - 125 MRCCS - Secondary Parameter Unit DF Result Expected Recovery Acceptance Range Silica mg/L 1.00 0.103 0.110 93.9 90 - 110 MRCVS - Primary Parameter Unit DF Result Expected Recovery Acceptance Range Silica mg/L 1.00 0.387 0.400 96.8 90 - 110 Total Dissolved Solids by SM 2540 C Batch 11TDS11A 11/2/2011 Parameter Unit Analyzed DF MDL RL Result 398242-001 Total Dissolved Solids mg/L 11/02/2011 1.00 0.400 125 4340 398242-002 Total Dissolved Solids mg/L 11/02/2011 1.00 0.400 125 4460 Method Blank Parameter Unit DF Result Total Dissolved Solids mg/L 1.00 ND Duplicate Lab ID = 998208-001 Parameter Unit DF Result Total Dissolved Solids mg/L 1.00 ND Duplicate Lab ID = 998208-001 Parameter Unit DF Result Total Dissolved Solids mg/L 1.00 ND Duplicate Lab ID = 998208-001 Parameter Unit DF Result Expected RPD Acceptance Range Total Dissolved Solids mg/L 1.00 308 304 1.31 0 - 5 Lab Control Sample	Parameter	Unit	DF	Result	Expected/A	dded	Recovery	Accepta	ance Range
MRCCS - Secondary         Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary        MRCVS - Primary       Acceptance Range       90 - 110         Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch       11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         998242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Duplicate       Lab	Silica	mg/L	1.00	0.420	0.400(0.40	0)	105.	75 - 125	5
Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary	MRCCS - Secondary	,							
Silica       mg/L       1.00       0.103       0.110       93.9       90 - 110         MRCVS - Primary       Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range         Silica       mg/L       1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch       11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         998242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Duplicate       Lab ID = 998208-001       1.31       0 - 5       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/	Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
MRCVS - Primary       Parameter       Unit       DF       Result       Expected       Recovery       Acceptance Range       90 - 110         Silica       mg/L       1.00       0.387       0.400       96.8       90 - 110         Total Dissolved Solids by SM 2540 C       Batch 11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         398242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         398242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         La	Silica	mg/L	1.00	0.103	0.110		93.9	90 - 110	)
Parameter SilicaUnit mg/LDF 1.00Result 0.387Expected 0.400Recovery 96.8Acceptance Range 90 - 110Total Dissolved Solids by SM 2540 CBatch 11TDS11A11/2/2011ParameterUnitAnalyzedDFMDLRLResult998242-001 Total Dissolved Solidsmg/L11/02/20111.000.4001254340998242-002 Total Dissolved Solidsmg/L11/02/20111.000.4001254460Method BlankParameterUnitDFResultTotal Dissolved Solidsmg/L1.00NDLab ID = 998208-001ParameterUnitDFResultTotal Dissolved Solidsmg/L1.00NDParameterUnitDFResultExpectedRPDAcceptance RangeTotal Dissolved Solidsmg/L1.003083041.310 - 5Lab Control SampleExpectedRecoveryAcceptance Range	MRCVS - Primary								
Silica         mg/L         1.00         0.387         0.400         96.8         90 - 110           Total Dissolved Solids by SM 2540 C         Batch 11TDS11A         11/2/2011           Parameter         Unit         Analyzed         DF         MDL         RL         Result           998242-001 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4340           998242-002 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4340           998242-002 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4460           Method Blank         Parameter         Unit         DF         Result	Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ince Range
Total Dissolved Solids by SM 2540 C       Batch 11TDS11A       11/2/2011         Parameter       Unit       Analyzed       DF       MDL       RL       Result         998242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Wethod Blank       Parameter       Unit       DF       Result       resu	Sílica	mg/L	1.00	0.387	0.400		96.8	90 - 110	)
Parameter       Unit       Analyzed       DF       MDL       RL       Result         998242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result	abilde haviossia	by SM 254	n c	Batch	11TDS11A			11/2/2014	ſ
Parameter       Onit       Analyzed       Dr       MDL       RL       Result         998242-001 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4340         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result       Result       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	Parameter	0.y. 0111 204	Unit	Ano	luzod				
998242-001 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4340           998242-002 Total Dissolved Solids         mg/L         11/02/2011         1.00         0.400         125         4460           Method Blank         Method Blank         Parameter         Unit         DF         Result         Result         1.00         0.400         125         4460           Data         Dissolved Solids         mg/L         1.00         ND         1.00         ND         1.00         ND         1.00         Description         Lab ID = 998208-001           Parameter         Unit         DF         Result         Expected         RPD         Acceptance Range           Total Dissolved Solids         mg/L         1.00         308         304         1.31         0 - 5           Lab Control Sample         DF         Result         Expected         Recovery         Acceptance Range				Alla	iyzeu	Ur	IVIDL	rt L	Result
998242-002 Total Dissolved Solids       mg/L       11/02/2011       1.00       0.400       125       4460         Method Blank       Parameter       Unit       DF       Result       Result       Image: Control Dissolved Solids       mg/L       1.00       ND         Total Dissolved Solids       mg/L       1.00       ND       Image: Control Dissolved Solids       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	998242-001 Total Dissolved	Solids	mg/L	11/02	/2011	1.00	0.400	125	4340
Method Blank       Parameter       Unit       DF       Result         Total Dissolved Solids       mg/L       1.00       ND       Lab ID = 998208-001         Duplicate       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	998242-002 Total Dissolved	Solids	mg/L	11/02	/2011	1.00	0.400	125	4460
Parameter       Unit       DF       Result         Total Dissolved Solids       mg/L       1.00       ND         Duplicate       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	Method Blank								
Total Dissolved Solids       mg/L       1.00       ND         Duplicate       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	Parameter	Unit	DF	Result					
Duplicate       Lab ID = 998208-001         Parameter       Unit       DF       Result       Expected       RPD       Acceptance Range         Total Dissolved Solids       mg/L       1.00       308       304       1.31       0 - 5         Lab Control Sample       Unit       DF       Result       Expected       Recovery       Acceptance Range	Total Dissolved Solids	mg/L	1.00	ND					
Parameter     Unit     DF     Result     Expected     RPD     Acceptance Range       Total Dissolved Solids     mg/L     1.00     308     304     1.31     0 - 5       Lab Control Sample     Unit     DF     Result     Expected     Recovery     Acceptance Range	Duplicate							Lab ID =	998208-001
Total Dissolved Solids     mg/L     1.00     308     304     1.31     0 - 5       Lab Control Sample     Parameter     Unit     DE     Result     Expected     Recovery     Accentance Range	Parameter	Unit	DF	Result	Expected		RPD	Accepta	nce Range
Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range	Total Dissolved Solids	mg/L	1.00	308	304		1.31	0 - 5	_
Parameter Unit DF Result Expected Recovery Accentance Range	Lab Control Sample								
	Parameter	Unit	DF	Result	Expected		Recovery	Accepta	nce Range
Total Dissolved Solids mg/L 1.00 470. 500. 94.0 90 - 110	Total Dissolved Solids	mg/L	1.00	470.	500.		94.0	90 - 110	0-

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Client: E2 Consulting Engineers, Inc.

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

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Total Organic Carbon (T/DOC) SM 5310 C Batch 11TOC11B										
Parameter		Unit	Ала	lyzed D	ΡF	MDL	RL	Result		
998242-002 Total Organic Car	bon	mg/L	11/04	/2011 12:08 1.	00 (	0.0103	0.300	ND		
Method Blank										
Parameter	Unit	DF	Result							
Total Organic Carbon	mg/L	1.00	ND							
Duplicate							Lab ID = 9	998189-002		
Parameter	Unit	DF	Result	Expected	RPI	C	Accepta	nce Range		
Total Organic Carbon	mg/L	5.00	59.1	59.0	0.	186	0 - 20			
Lab Control Sample										
Parameter	Unit	DF	Result	Expected	Rec	overy	Accepta	nce Range		
Total Organic Carbon	mg/L	1.00	3.12	3.33	93	3.5	90 - 110			
Matrix Spike							Lab ID = §	98260-001		
Parameter	Unit	DF	.Result	Expected/Added	d Rec	overy	Acceptar	nce Range		
Total Organic Carbon	mg/L	1.00	9.49	10.0(10.0)	94	4.9	75 - 125			
MRCCS - Secondary										
Parameter	Unit	DF	Result	Expected	Rec	overy	Acceptar	nce Range		
Total Organic Carbon	mg/L	1.00	3.15	3.33	94	1.6	90 - 1 <b>1</b> 0			
MRCVS - Primary			•							
Parameter	Unit	DF	Result	Expected	Rec	overy	Acceptar	nce Range		
Total Organic Carbon	mg/L	1.00	9.27	10.0	92	2.7	90 - 110			
MRCVS - Primary										
Parameter	Unit	DF	Result	Expected	Rec	overy	Acceptar	nce Range		
Total Organic Carbon	mg/L	1.00	9,24	10.0	92	2.4	90 - 110			

Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Total Phosphate, SM 4500-PB,E			Batch	11TP11A	11/7/2011				
Parameter		Unit	Anal	lyzed I	)F	MDL	RL	Result	
998242-002 Phosphate, Tota	l As P	mg/L	11/07	/2011 1	.00	0.00530	0.0200	ND	
Method Blank							·····		
Parameter Phosphate, Total As P	Unit ma/l	DF 1.00	.Result						
Duplicate	Ing/L	1.00	ND				Lab (D = 9	98242-002	
Parameter Phosphate, Total As P Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0.00	R	PD 0	Acceptar 0 - 20	ice Range	
Parameter Phosphate, Total As P Matrix Spike	Unit mg/L	DF 1.00	Result 0.108	Expected 0.100	R	ecovery 108	Acceptar 90 - 110 Lab ID = 9	ice Range 98242-002	
Parameter Phosphate, Total As P MRCCS - Secondary	Unit mg/L	DF 1.00	Result 0.0645	Expected/Adde 0.0650(0.0650)	d Re	ecovery 99.2	Acceptar 75 - 125	ice Range	
Parameter Phosphate, Total As P MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.0632	Expected 0.0600	Re	ecovery 105.	Acceptan 90 - 110	ce Range	
Parameter Phosphate, Total As P	Unit mg/L	DF 1.00	Result 0.0599	Expected 0.0650	Re	ecovery 92.2	Acceptan 90 - 110	ce Range	

Report Continued

Client: E2 Consulting Engi	Client: E2 Consulting Engineers, Inc.			Project Name: PG&E Topock Project Project Number: 424973.01.DM								
Ammonia Nitrogen by SM	4500-NH	13D	Batch	11NH3-E11A			11/3/2011					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result				
998242-001 Ammonia as N		mg/L	11/03	3/2011 1	.00	0.00200	0.500	1.14				
998242-002 Ammonia as N		mg/L	11/03	/2011 1	.00	0.00200	0.500	1.26				
Method Blank												
Parameter	Unit	DF	Result									
Ammonia as N	mg/L	1.00	ND									
Duplicate							Lab ID =	998242-002				
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range				
Ammonia as N	mg/L	1.00	[·] 1.16	1.26		8.35	0 - 20					
Lab Control Sample												
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range				
Ammonia as N	mg/L	1.00	10.4	10.0		104.	90 - 110					
Matrix Spike			•				Lab ID = 9	998242-002				
Parameter	Unit	DF	Result	Expected/Adde	ed f	Recovery	Accepta	nce Range				
Ammonia as N	mg/L	1.00	6.93	7.26(6.00)		94.6	75 - 125					
Matrix Spike Duplicate							Lab ID = 9	998242-002				
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	nce Range				
Ammonia as N	mg/L	1.00	7.42	7.26(6.00)		103.	75 - 125					
MRCCS - Secondary												
Parameter	Unit	DF	Result	Expected	Í	Recovery	Accepta	nce Range				
Ammonia as N	mg/L	1.00	6.27	6.00		104.	90 - 110					
MRCVS - Primary												
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	nce Range				
Ammonia as N	mg/L	1.00	6.56	6.00		109.	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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Metals by EPA 200.8, Di	ssolved		Batch	n 111811B			
Parameter	ielie e secto bregori	Unit	Ana	alyzed D	F MDL	RL	Result
998242-002 Manganese		ug/L	11/19	9/2011 05:03 4.4	4 0.253	1.0	7.2
Method Blank							
Parameter Manganese	Unit ug/L	DF 1.00	Result ND				
Dupicate						Lab ID =	998222-007
Parameter Manganese Lab Control Sample	Unit ug/L	DF 4.44	Result 365.	Expected 375	RPD 2.65	Accepta 0 - 20	ince Range
Parameter Manganese Lab Control Sample D	Unit ug/L )uplicate	DF 5.00	Result 96.2	Expected 100.	Recovery 96.2	Accepta 85 - 115	nce Range
Parameter Manganese Matrix Spike	Unit ug/L	DF 5.00	Result 96.2	Expected 100.	Recovery 96.2	Accepta 85 - 115 Lab ID =	nce Range 998222-007
Parameter Manganese MRCCS - Secondary	Unit ug/L	DF 4.44	Result 473.	Expected/Added 486(111)	Recovery 88.6	Accepta 75 - 125	nce Range
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 4.44	Result 48.2	Expected 50.0	Recovery 96.4	Accepta 90 - 110	nce Range
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 45.4	Expected 50.0	Recovery 90.7	Accepta 90 - 110	nce Range
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 46.6	Expected 50.0	Recovery 93.2	Accepta 90 - 110	nce Range
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 48.1	Expected 50.0	Recovery 96.2	Accepta 90 - 110	nce Range
Parameter Manganese	Unit ug/L	DF 1.00	Result 45.1	Expected 50.0	Recovery 90.2	Acceptai 90 - 110	nce Range

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Client: E2 Consulting Engineers, Inc.

TRUESDAIL LABORATORIES, INC.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 32 of 33 Printed 11/21/2011

Metals by 200.7, Dissolved		ed		Batch	111111A				
Parameter	•	•	Unit	Ana	lyzed l	DF	MDL	RL	Result
998242-00	2 Iron		ug/L	11/11	/2011 10:33 1	.00	1.34	20.0	ND
Me	thod Blank								
Paramete	er	Unit	DF	Result					
Iron		ug/L	1.00	ND					
Dup	olicate							Lab ID =	998242-002
Paramete	er	Unit	DF	Result	Expected	RI	PD.	Accepta	ince Range
Iron		ug/L	1.00	ND	0.00	(	D	0 - 20	
Lab	Control Sample								
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	, <b>106</b> .	100.		106.	85 - 115	i
Mat	rix Spike							Lab ID =	998242-002
Paramete	er	Unit	ÐF	Result	Expected/Adde	d Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	108.	100.(100.)		108.	75 - 125	
MR	CCS - Secondary								
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	5170	5000		103.	90 - 110	-
MR	CVS - Primary								
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	5470	5000	,	109.	90 - 110	)
MR	CVS - Primary								
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1,00	5360	5000		107.	90 - 110	
Inte	rference Check Sta	andard A							
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	2200	2000		110.	80 - 120	
Inte	rference Check Sta	andard A							
Paramete	er	Unit	DF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	2330	2000		117.	80 - 120	
Inte	rference Check Sta	andard AB							
Paramete	er	Unit	ÐF	Result	Expected	Re	ecovery	Accepta	nce Range
Iron		ug/L	1.00	2220	2000		111	80 - 120	, j

Report Continued

Client: E2 Consulting En	gineers, In	c. Pr Pr	oject Name: oject Numbe	PG&E Topo r: 424973.01.E	ck Proje M	ot	Printed 11	age 33 of 33 1/21/2011
Interference Check S	tandard AB							
Parameter Iron	Unit ug/L	DF 1.00	Result · 2360	Expected 2000	F	Recovery 118,	Accepta 80 - 120	nce Range
Turbidity by SM 2130 B			Batch	11TUC11B			11/2/2011	
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998242-001 Turbidity		NTU	11/02	/2011	1.00	0.0140	0.100	ND
998242-002 Turbidity		NTU	11/02	/2011	1.00	0.0140	0.100	0.169
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	998242-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	0.170	0.169		0.590	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	lecovery	Accepta	nce Range
Turbidity	NTU	1.00	8.29	8.00		104.	90 - 110	_
Lab Control Sample D	Duplicate							
Parameter	Unit	DF	Result	Expected	F	lecovery	Accepta	nce Range
Turbidity	NTU	1.00	8.07	8.00		101.	90 - 110	

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

x

far Mona Nassimi Manager, Analytical Services

# EZ Condin

## Total Dissolved Solids by SM 2540 C

## Calculations

Batch:	11TDS11A
Date Calculated:	11/4/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, 9	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	112.3586	112.3589	112.3588	0.0001	No	0.0002	2.0	25.0	ND	1
998196	100	68.5199	68.5769	68.5766	0.0003	No	0.0567	567.0	25.0	567.0	1
998212-2	200	115.2462	115.2667	115.2667	0.0000	No	0.0205	102.5	12.5	102.5	1
998212-4	100	74.7542	74.7784	74.7784	0.0000	No	0.0242	242.0	25.0	242,0	1
998221-1	100	76.5597	76,5899	76.5896	0.0003	No	0.0299	299.0	25.0	299.0	1
998221-2	100	65.5707	65.6025	65.6021	0.0004	No	0.0314	314.0	25.0	314.0	1
998241-1	20	67.7920	67.8481	67.8478	0.0003	No	0.0558	2790.0	125.0	2790.0	1
998241-2	20	76.5523	76.6504	76.65	0.0004	No	0.0977	4885.0	125.0	4885.0	1
998242-1	20	67.7447	67.8316	67.8315	0.0001	No	0.0868	4340.0	125.0	4340.0	1
998242-2	20	72.8111	72.9005	72.9004	0.0001	No	0.0893	4465.0	125.0	4465.0	1
998208	100	73.5020	73.5324	73.5324	0.0000	No	0.0304	304.0	25.0	304.0	1
998208D	100	68.5758	68,6066	68.6066	0.0000	No	0.0308	308.0	25.0	308.0	1
LCS	100	71.1001	71.1471	71.1471	0.0000	No	0.0470	470.0	25.0	470.0	1
998268-5	100	69.2216	69.2468	69.2468	0.0000	No	0.0252	252.0	25.0	252.0	1
998273-1	100	75.9776	75.994	75.994	0.0000	No	0.0164	164.0	25.0	164.0	1
					•			1			
LCSD	-		1				1				1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Printed ame

Analyst Signature

Reviewer Printed Name

Reviewer Signature

## Total Dissolved Solids by SM 2540 C

1

# TDS/EC CHECK

### Batch: 11TDS11A

## Date Calculated: 11/4/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998196	977	0.58	635.05	0.89
998212-2	209	0.49	135.85	0,75
998212-4	459	0.53	298.35	0.81
998221-1	517	0.58	336.05	0.89
998221-2	515	0.61	334.75	0.94
998241-1	4960	0.56	3224	0.87
998241-2	8610	0.57	5596.5	0.87
998242-1	7110	0.61	4621.5	0.94
998242-2	7510	0.59	4881.5	0.91
998208	546	0.56	354.9	0.86
998208D	546	0.56	354.9	0.87
LCS				
998268-5	462	0.55	300.3	0.84
998273-1	281	0.58	182.65	0.90
		······		
		·- <u>-</u> -		
		·		



		ty Low Alkalinity as CaCO ₃																And a second and a second se				0					
	1ALK11B Water 11/8/11	OH Alkalini as CaCO, (ppm)	QN	QN	QN	QN	Q	QN	QN	QN	QN	QN	QN		-					QN	QN	<u>  x N x 5000</u> sample	2- James -	H 1 3 unit fower			
Sonton	Batch: Matrix: ulated:	CO3 Alkalinity as CaCO ₃ (ppm)	QN	QN	DN	QN	QN	QN	QN	QN	QN	QN	80							88	88	(2 × B - C) mL		o first recorded pl ant to reach nH C	f standard acid	A	Contraction Classes
EZ (	Analytical Date Calc	HCO3 Alkalinity as CaCO ₃ (ppm)	QN	150.0	75.0	74.0	186.0	347.0	350.0	223.0	35.0	75.0	156.0							11.0	11.0	kalinity: = L CaCO3	) ) ) 1	B = mL titraint to C = total mL titr	N = normality of		
		Total Alkalinity Reported Value	QN	150.0	75.0	74.0	186.0	347.0	350.0	223.0	35.0	75.0	236.0							99.0	<u>99.0</u>	Low Al as mo/	)   	Where:			
OB		RL, ppm	5	5	5	ង	5	5	5	£	5	5	ю							5	ŝ					1 m	イン・ナイ
SM 232	ខ	Total Alkalinity as CaCO3	0.9	150.0	75.0	74.0	186.0	347.0	350.0	223.0	35.0	75.0	236.0							99.0	0.66		`	JVE			
, by S	ulation	Total mL titrant to reach pH 0.3 unlt lower																				V x 5000 sample	D3/L	y, mg CaCO	в		
alinity.	Calc	Titrant Volume to reach pH 4.5	0.05	7.50	3.75	3.70	9.30	17.35	17.50	11.15	1 75	3 75	11.80							4.95	4 95	$\left(\frac{Tm}{x + F}\right)$	lity, mg CaCC	atein Aikalinity d acid used	f standard aci		
AIK		P Alkalinity as CaCO3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0							44.0	44.0	T or P =	T = Total Alkalir	P = Phenolphth: A = ml_standar	N = normality of		
		Titrant Volume to reach pH 8.3											20							22	22	WS:	here:			4	5
ថ្ន		N of HCL	0.02	0.02	0.02	0.02	0,02	0 02	0.02	0.02	0.02	0.02	0.02							0.02	0.02	s follo	3				ļ
rries, in	8/11	Sample Volume (ml)	50	50	50	50	50	50	50	50	50	50	50							50	50	ttions a	ting limit)	ate of the second se			
<b>ABORATO</b>		Sample pH	56 9	7.49	7.11	7.68	6.55	6969	6.59	6.89	7 38	7 15	8.91							10.30	10.25	Calcula	low the repor	ol Standard		Alicate	
	Date of Analysis: Start of Analysis: Date Sampled:	Lab ID	BLANK	998242.2	938392-16	998392.21	998250-1	998250-2	<u>998250.3</u>	998250-5	998242-1	998392-16D	998242-2MS							LCS1	LCS2		ND: Not Detected (bei	LCS: Laboratory Contra CED: 1 aboratory Contra	MS: Matrix Spike	MSD: Matrix Spike Uup	
	٠			-04 <u>8</u> 93																				-	(	059	<b>)</b>

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Alk_10c11/8/11, by HT



# 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
1/1/1	1 998221-1	9.5	NIA	NA	WIA	Que
1	1 -2				· N	
	-3					
	-1 -1					
ļ	-5					
	67			Ţ		
11/1/11	998222-1	9.5	NIA	NIA	NIA	7
1	-1		1		I I	- <u>-</u>
	-1					
	-2	·				
	3					·
<b>_</b>	-4					
<b> </b>	-5					
<u> ·</u>	6		-			
	↓7	<u> </u>	V	Y	y .	
alla	998227-1	9.5	NA	NIA	NIA	$\int $
<u> </u>	A -2	· · · · · · · · · · · · · · · · · · ·		1		
	- 2					
	-5					
·	(					
¥	V -8	V	V .	V		
1/2/11	998241	-1	5 mL	9.5	9.35 Am	$\gamma$
<u>t[2/11</u>	998241	27	5mL	9.5	10:30 Am	A
	998-242-1					Y
						$t \rightarrow$
¥	998246	9.5	N/A	NIA	NIA D	*
U12/11	998249-1	9.5	NIA	NIA	NIAT	5
		i				T
- t	-3		<u>v</u>	<u> </u>		↓(

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

all

Turbidity/pH Check

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$\begin{array}{c c c c c c c c c c c c c c c c c c c $	O-male Number	Turbidity	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
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991214 99826 - 1107/11 M.M. Yes - 998244 998244 998244 99826	99831511-	8) V	<u> </u>	¥	<u> </u>	C TICK	01
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998 316 11 1/ 1/	7.98200						
	908 211						
	498 22V		1/	W.	$ \downarrow \downarrow \downarrow$	<u> </u>	

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# Sample Integrity & Analysis Discrepancy Form

Clien	nt: <u>E&amp;</u>	Lab #_ <u>998242</u>
Date	Delivered: <u>//</u> / / 11 Time: <u>𝔐: 𝔐</u> By: □Mail 🖄	Field Service DClient
1.	Was a Chain of Custody received and signed?	KayYes ⊡No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ĦN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No ZN/A
1.	If a letter was sent with the COC, does it match the COC?	
<b>j</b> .	Were all requested analyses understood and acceptable?	ŞaYes ⊡No ⊡N/A
5.	Were samples received in a chilled condition? Temperature (if yes)?3 <mark>3 ° C</mark>	QYes ONO ON/A
•	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Ø¥es □No □N/A
•	Were sample custody seals intact?	□Yes □No XiN/A
	Does the number of samples received agree with COC?	XYes □No □N/A
).	Did sample labels correspond with the client ID's?	XYes DNo DN/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: ATruesdail Client	ØYes □No □N/A
2	Were samples pH checked? pH = <u>Sel</u> C. O. C.	¢Yes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	αą́Yes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>D RUSH</b>	Qa Yes ⊡No ⊡N/A
5.	Sample Matrix: Liquid Drinking Water defended	Water UWaste Water
	□Sludge □Soil □Wipe □Paint □Solid □	Other
5. I	Comments:	
7	Sample Check-In completed by <b>Truesdail</b> Log-In/Receiving:	L. Shabun

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

November 27, 2011

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

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

Dear Mr. Duffy:

## SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-334 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998411

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-334 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 November 8, 2011, 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.

2 m (to - Mona Nassimi

Mona Nassimi Manager, Analytical Services

Alechaer

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.: 998411 Date: November 27, 2011 Collected: November 8, 2011 Received: November 8, 2011

# ANALYST LIST

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

	TRUESD, Excellence in In Clie	AIL LABORAT UDEPENDENT TESTING UDEPENDENT TESTING IS5 Grand Ave. Sui 155 Grand Ave. Sui Oakland, CA 94612 Dat: Shawn Duffy	ORIES, INC neers, Inc. ite 1000				14201	Esta FRANKLIN AVENUE 730-6239 · FAX (7 Laboratory No Date Received	blished 1931 TUSTIN, CALIFORNI 14] 730-6462 · www <b>: 998411</b> 1: November 8,	A 92780-7008 truesdail.com 2011
	Project Narr Project N P.O. N	ne: PG&E Topock Proje o.: 424973.01.DM o.: 424973.01.DM	act							
				An	alytical F	<u>Results</u>	s Summary			
	Lab Sample II	D Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter		:	
	998411-001	SC-700B-WDR-334	E100 4					Result	Units	R
	998411-001 998411-001 998411-001 998411-001 998411-001 998411-001	SC-700B-WDR-334 SC-700B-WDR-334 SC-700B-WDR-334 SC-700B-WDR-334 SC-700B-WDR-334 SC-700B-WDR-334	E200.8 E200.8 E218.6 SM2130B SM2540C	NONE NONE LABFLT NONE NONE	11/8/2011 11/8/2011 11/8/2011 11/8/2011 11/8/2011 11/8/2011	11:00 11:00 11:00 11:00 11:00	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7250 ND 6.5 ND ND ND ND	umhos/cm ug/L ug/L NTU MTU mg/L	2.00 1.0 1.0 0.100 0.100
	N Mg/l Note	<ol> <li>Non Detected (below reporting L. Milligrams per liter.</li> <li>The following "Significant Figur Results below 0.01ppm will hav Result above or equal to 0.01pp Quality Control data will aways</li> </ol>	limit) ras" rule has been applied res" rule has been applied the two (2) significant figur pm will have three (3) significant have three (3) significant	l to all results: es. nificant figures. t figures.						
0										

EXCELLENCE IN INDEPENDENT TESTING

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

14201 FRANKLIN AVENUE

007

Established 1931

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

## Client: E2 Consulting Engineers, Inc. 155 Grand Avenue, Suite 800 Oakland, CA 94612 Attention: Shawn Duffy Project Name: PG&E Topock Project

Laboratory No. 998411 Page 1 of 9 Printed 11/27/2011

Samples Received on 11/8/2011 9:30:00 PM

Field ID	Field ID			Lab ID	Co	llected	Matr	iv
SC-700B-WDR-334				998411-001	11/08	/2011 11:00	Wat	er
Specific Conductivity - I Parameter	EPA 120.1	Unit	Batc	h 11EC11F	DF	MDI	11/11/201	1 Door #
998411-001 Specific Conduc	tivity	umhos	s/cm 11/1	1/2011	1.00	0.0280		Result
Method Blank		· · · · · · · · · · · · · · · · · · ·			1.00	0.0360	2.00	7250
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND					
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7290	Expected 7250	R	PD 0.550	Lab ID = { Acceptar 0 - 10	998411-001 1ce Range
Parameter Specific Conductivity Lab Control Sample D	Unit umhos uplicate	DF 1.00	Result 675	Expected 706	R	ecovery 95.6	Acceptar 90 - 110	ice Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 676	Expected 706	R	ecovery 95.8	Acceptar 90 - 110	ice Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 675	Expected 706	R	ecovery 95.6	Acceptar 90 - 110	ce Range
Parameter Specific Conductivity MRCVS - Primary	Unit นฑhoะ	DF 1.00	Result 943	Expected 997	Re	ecovery 94.6	Acceptan 90 - 110	ce Range
Parameter Specific Conductivity	Unit umho៖	DF 1.00	Result 943	Expected 997	Re	ecovery 94.6	Acceptan 90 - 110	ce Range

#### Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 3 of 9 Printed 11/27/2011

Chrome VI by EPA 218. Parameter	6	Unit	Bate	ch 11CrH11K			n an an an Arith An Anna Arith
998411-001 Chromium, Hex	avalent	ua/l	11/1			- <u>RL</u>	Result
Method Blank			1.17	1//2011 10.40 5	.25 0.136	1.0	ND
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 1.63	Expected 1.66	RPD 1.80	Lab ID = Accepta 0 - 20	998442-002 nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.82	Expected 5.00	Recovery 96.4	Acceptar 90 - 110	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 7.32	Expected/Added 7.80(5.25)	Recovery 90.9	Lab ID = 9 Acceptar 90 - 110	998374-012 Ice Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.19	Expected/Added 1.06(1.06)	Recovery 112.	Lab ID = 9 Acceptan 90 - 110	98411-001 ce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.50	Expected/Added 5.25(5.25)	Recovery 105.	Lab ID = 9 Acceptan 90 - 110	98411-001 ce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.07	Expected/Added 1.06(1.06)	Recovery 101.	Lab ID = 9 Acceptan 90 - 110	98413-001 ce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.09	Expected/Added 1.06(1.06)	Recovery 102.	Lab ID = 99 Acceptand 90 - 110	98413-002 ce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.09	Expected/Added 1.06(1.06)	Recovery 103.	Lab ID = 99 Acceptanc 90 - 110	8413-003 ce Range
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 7.18	Expected/Added 7.61(5.30)	Recovery 91.8	Lab ID = 99 Acceptanc 90 - 110	8413-004 e Range

### Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 6 of 9 Printed 11/27/2011

Metals by EPA 200.8, To	otal	e Na esta	Bato	⊳h 112111B		
Parameter		Unit	An	alyzed	DE MOI	DI Desuit
998411-001 Chromium		ug/L	11/2			<u> </u>
Manganese		ug/L	11/2	2/2011 01:35		1.0 ND
Method Blank		<u>-</u>			0.00 0.265	1.0 6.5
Parameter	Unit	DF	Result			
Chromium	ug/L	1.00	ND			
Manganese	ug/L	1.00	ND			
Duplicate						
Parameter	Unit	DF	Result	Exposted		Lab ID = 998411-001
Chromium	ug/L	5.00	ND		RPD 0	Acceptance Range
Manganese	ug/L	5.00	6.48	649	0 102	0 - 20
Lab Control Sample	2		0,10	0.40	0.123	0 - 20
Parameter	Unit	DE	Result	Evocated	-	
Chromium	ug/L	5.00	105		Recovery	Acceptance Range
Manganese	ug/L	5.00	99.7	100,	105.	85 - 115
Matrix Spike	v		00.1	100.	99.7	85 - 115
Parameter	Unit	DE	Popult			Lab ID = 998411-001
Chromium	ug/L	5.00	107		Recovery	Acceptance Range
Manganese	ug/L	5.00	101	117 (111)	96.1	75 - 125
MRCCS - Secondary	Ũ		101.	117.(111)	84.8	75 - 125
Parameter	Unit	DE	Result	Evented	5	
Chromium	ug/L	1.00	52.2		Recovery	Acceptance Range
Manganese	ug/L	1.00	49.9	50.0	104.	90 - 110
MRCVS - Primary	-		1010	00.0	99.7	90 - 110
Parameter	Unit	DF	Result	Exposted		
Chromium	ug/L	1.00	52.2		Recovery	Acceptance Range
MRCVS - Primary					104.	90 - 110
Parameter	Unit	DF	Result	Expected	Deerve	
Chromium	ug/L	1.00	48.9	50.0		Acceptance Range
MRCVS - Primary					57.5	90 - 110
Parameter	Unit	DF	Result	Expected	Deee	
Chromium	ug/L	1.00	51.8		Recovery	Acceptance Range
MRCVS - Primary	-			30.0	104.	90 - 110
Parameter	Unit	DF	Result	Exposted	<b>D</b>	
Manganese	ug/L	1.00	48,2	50.0	Recovery 96.5	Acceptance Range 90 - 110

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### Report Continued

Client: E2 Consulting E	ingineers, l	nc. F P	Project Name Project Numb	e: PG&E Topo er: 424973.01.	ock Proje DM	ect	F Printed 1	Page 8 of 9 1/27/2011
<b>Total Dissolved Solids</b>	by SM 254	40 C	Bato	h 11TDS11E			11/14/20	11
Parameter		Unit	An	alyzed	DF	MDI	FI	Pocult
998411-001 Total Dissolved	Solids	mg/L	11/1	4/2011	1.00	0 400	125	4400
Method Blank						0.100	125	4400
Parameter Total Dissolved Solids Dunlicate	Unit mg/L	DF 1.00	Result ND					
Parameter	11-:4	5-					Lab ID =	998392-016
Total Dissolved Solids Lab Control Sample	mg/L	DF 1.00	Result 620.	Expected 608	F	(PD 1.95	Accepta 0 - 5	nce Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 499	Expected 500.	R	ecovery 99.8	Accepta 90 - 110	nce Range
Turbidity by SM 2130 B			Batch	11TUC11E			11/0/20/44	
Parameter		Unit	Ana	lyzed	DF	MDI	DI	Doouit
998411-001 Turbidity		NTU	11/09	9/2011	1 00	0.0140	0.100	ND
Method Blank					1.00	0.0140	0.100	ND
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID = 9	98411-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	R	PD 0	Acceptar 0 - 20	ice Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.35	Expected 8.00	Re	∋covery 104.	Acceptan 90 - 110	ce Range
Lab Control Sample D	uplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.15	Expected 8.00	Re	ecovery 102.	Acceptan 90 - 110	ce 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.



Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 9 of 9 Printed 11/27/2011

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

for-

Mona Nassimi Manager, Analytical Services

EZ Condon

## Total Dissolved Solids by SM 2540 C

## Calculations

Batch:	11TDS11E
Date Calculated:	11/16/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, 9	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	67.7812	67.7814	67.7812	0.0002	No	0.0000	0.0	25.0	ND	1
998392-16	50	67.2592	67.2899	67.2896	0.0003	No	0.0304	608.0	50.0	608.0	1
998396-1	50	75.4502	75.5076	75.5072	0.0004	No	0.0570	1140.0	50.0	1140.0	1
998396-2	100	111.188	111.2377	111.2377	0.0000	No	0.0497	497.0	25.0	497.0	1
998396-3	50	68.884	68.9263	68.9261	0.0002	No	0.0421	842.0	50.0	842.0	1
998396-4	50	74.2332	74.2672	74.2672	0.0000	No	0.0340	680.0	50.0	680.0	1
998396-5	100	102.7239	102.7758	102.7757	0.0001	No	0.0518	518.0	25.0	518.0	1
998396-6	100	110.4318	110.4827	110.4826	0.0001	No	0.0508	508.0	25.0	508.0	1
998396-7	50	66.8102	66.8788	66.8784	0.0004	No	0.0682	1364.0	50.0	1364.0	i  1
998396-8	50	68.1669	68.2255	68.2253	0.0002	No	0,0584	1168.0	50.0	1168.0	1
998396-9	50	70.8997	70.9591	70.959	0.0001	No	0.0593	1186.0	50.0	1186.0	1
998392-16D	50	69.7504	69,7814	69.7814	0.0000	No	0.0310	620.0	50.0	620.0	1
LCS	100	68.6053	68.6556	68.6552	0.0004	No	0.0499	499.0	25.0	499.0	1
998396-10	50	67.2147	67.2585	67.2583	0.0002	No	0.0436	872.0	50.0	872.0	1
998404-1	50	67.7363	67.7897	67.7894	0,0003	No	0.0531	1062.0	50.0	1062.0	
998404-2	100	104.8910	104.9487	104.9485	0.0002	No	0.0575	575.0	25.0	575.0	
998404-3	100	103.4165	103.4757	103.4754	0.0003	No	0.0589	589.0	25.0	589 n	1
998404-4	100	108.6880	108.7407	108.7403	0.0004	No	0.0523	523.0	25.0	523.0	1
998411	20	50.3841	50.4725	50.4722	0.0003	No	0.0881	4405.0	125.0	4405.0	1
998443-5	100	111.5177	111.5583	111.5582	0.0001	No	0.0405	405.0	25.0	405.0	1
998486-3	100	109.0730	109.1079	109.1075	0.0004	No	0.0345	345.0	25.0	345.0	1
998486-5	50	51.0000	51.0416	51.0416	0.0000	No	0.0416	832.0	50.0	832.0	1
998486-6	100	105.3536	105.3892	105.3889	0.0003	No	0.0353	353.0	25.0	353.0	
											· · · · ·
LCSD								i	1		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)

Analys Printed Name

Analyst Signature

* Coc-Signed

Reviewer Printed Name

019

Reviewer Signature

WetChem TDS_0810_xis

## Total Dissolved Solids by SM 2540 C

## TDS/EC CHECK

### Batch: 11TDS11E

### Date Calculated: 11/16/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Caic TDS <1.3
				1
998392-16	1045	0.58	679.25	0.90
998396-1	1660	0.69	1079	1.06
998396-2	836	0.59	543.4	0.91
998396-3	1258	0.67	817.7	1.03
998396-4	1093	0.62	710.45	0.96
998396-5	840	0.62	546	0.95
998396-6	845	0.60	549.25	0.92
998396-7	1782	0.77	1158.3	1.18
998396-8	1605	0.73	1043.25	1.12
998396-9	1725	0.69	1121.25	1.06
998392-16D	1045	0.59	679.25	0.91
LCS			1	
998396-10	1243	0.70	807.95	1.08
998404-1	1818	0.58	1181.7	0.90
998404-2	942	0.61	612.3	0.94
998404-3	928	0.63	603.2	0.98
998404-4	833	0.63	541.45	0.97
998411	7650	0.58	4972.5	0.89
998443-5	619	0.65	402.35	1.01
998486-3	545	0.63	354.25	0.97
998486-5	1367	0.61	888.55	0.94
998486-6	536	0.66	348.4	1.01



022

WetChem TDS_0810.xls



# Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	) Final pH	Time Buffered	Initiala
19-8-2-11	998374-1	9.5	NIA	MA		
	-2					(ju
	>		-			
	-5					
	-6					
	-7					
	-8		÷i: .			
	9					
$ \downarrow \downarrow$	-10					
	-11	·				
└─ <b>└</b>	-12					
<u> </u>	-13					
	<u>J-17</u>			ł		
11 3 200	998411		5 mL	9.5	8120 Am	And
11/9/ 12-11	998412-1		5 mb	9.5	9:30 Am	27
<del></del>						
	-6					
	<u> </u>					
						-
				· .		
-						
intelina	agui2: c		¥			4
		<u>`}}</u>		NIA	NA G	~
	1-4-	- <u> </u>		<u></u>		
<u> </u>	<u> </u>		-	¥	→   T	L

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

## Turbidity/pH Check

Sample Number	Turbidity		Det-	A		Adjusted to
Sample Number		рп		Analyst	Need Digest	pH<2 (Y/N)
000 550 H-3		</td <td>11/07/11</td> <td>M.M</td> <td>Ves</td> <td></td>	11/07/11	M.M	Ves	
998 242 (1-)		:				
908 549(1-7		-Y	¥	- K		
988358		<u> </u>				<i></i>
998359						
998360						
998561 1-11			,0		i	· · · · · · · · · · · · · · · · · · ·
998373(1-11	<u> &lt;1</u>	<2	1108/11	Nim	Yes	~
998374167124		-l	ĽV	l	V.	
998 369 (1-4)	7/	22		Ĭ		
99831711-4				V		
998411	<1	22	11/05/4	Man	Yes	
998413/3rH	V	i	1	1		
958412/1-13/	e	72		V		NO
998399	_>/	12	10/08/0	U.M	Yes	
998394 11-31	<u> </u>		1	1	Ī	
998492		V		V		
998440151	$\frac{1}{2}$	L 2	10/11/16	M. M.	Vez	
998441	1					
998442 (1-6/						
998443 (1-71						
998485 (1-21						
9984864-6,81						
99848811-61	,V					
998 51011-51	e 1	22	11/10/4	MM	V. A	
998 (51111-21	1/	1	1 .	1	105	
998501/1-41	71					
998489	Sol: d	······································	11/14/	V	74710	
498483	20 901			MM	1120	
998831	< 1 < 1	61	111514	I A A		
998539 11-61		<u> </u>		101	- 2e 3	
99853711-81				·		
998534 11-71						
99853511-51		-l				
998562	31	c 2	ALIILIA	- V		
998577				MINI	- yes	
9995 74					<i> </i>	
998515	<b> </b>		— <b>/</b> —		<u> </u>	
998585			<u> </u>	— <u> </u>		······
90,857(1, in1)	71	72	4	— <b> </b> —		
968577	<u> </u>					
G0185781,-1		<del></del>				
008109 11-2	<u> </u>	V	11/121	<u> </u>	¥	_
998605		eh ()	"11+14	MM	-783	
09860611 SI	<u> </u>					
008611-)1						
26210211						~
00 Phillip			<u> </u>			
- J-JOOLU 11- 51	<u> </u>	V	V	¥		-
L	1					· · · · · · · · · · · · · · · · · · ·

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# Sample Integrity & Analysis Discrepancy Form

Clie	ent: <u>E 2</u>	Lab # <u>8</u> 41
Dat	e Delivered: <u>///ゟ</u> /11 Time: <u>ゟ゚/゙</u> 30 By: □Mail ぬ゚I	Field Service DClient
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
}.	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 AN/A
	Were all requested analyses understood and acceptable?	Yes INO IN/A
	Were samples received in a chilled condition? Temperature (if yes)? ⁴ . <b><u>G</u>C</b>	A ^d Yes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	∕⊠áYes ⊡No ⊡N/A
	Were sample custody seals intact?	□Yes □No ゑŃ/A
	Does the number of samples received agree with COC?	Yes No N/A
	Did sample labels correspond with the client ID's?	Yes INO INA
	Did sample labels indicate proper preservation? Preserved (if yes) by: <b>□Truesdail □</b> Client	□Yes □No ,⊠N/A
	Were samples pH checked? $pH = \underline{See} c \cdot c \cdot e$	∕⊈Yes □No □N/A
•	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	¢⊈Yes □No □N/A
•	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>RUSH</b> X Std	Œ(Yes □No □N/A
	Sample Matrix:	Vater
	□Sludge □Soil □Wipe □Paint □Solid	Other <u>Water</u>
	Comments:	

044

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 2, 2012

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

Dear Mr. Duffy:

#### SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-335 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998577

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-335 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 November 15, 2011, 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.

ho – 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.: 998577 Date: January 2, 2012 Collected: November 15, 2011 Received: November 15, 2011

### ANALYST LIST

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

DAIL LABORATORIES, INC.	Ilent: E2 Consulting Engineers, Inc.       14201 FRANKLIN AVENUE · TUSTIN, CALIFORNIA 92780-7008         155 Grand Ave. Suite 1000       (714) 730-6239 · FAX (714) 730-6462 · www.truesdail.com         155 Grand Ave. Suite 1000       Laboratory No.: 998577         0akland, CA 94612       Laboratory No.: 998577         16ion: Shawn Duffy       Date Received: November 15, 2011	ame: PG&E Topock Project : No.: 424973.01.DM : No.: 424973.01.DM	Le D Field ID Method Method Sample Parameter Result Units RL	1         SC-700B-WDR-335         E120.1         NONE         1/15/2011         10:00         EC           1         SC-700B-WDR-335         E200.8         NONE-digested         11/15/2011         10:00         Chromium         ND         ug/L         1.0           1         SC-700B-WDR-335         E200.8         NONE-digested         11/15/2011         10:00         Chromium         ND         ug/L         1.0           1         SC-700B-WDR-335         E200.8         NONE-digested         11/15/2011         10:00         Chromium         ND         ug/L         1.0           1         SC-700B-WDR-335         E218.6         LABFLT         11/15/2011         10:00         Chromium, hexavalent         ND         ug/L         1.0           1         SC-700B-WDR-335         SM2130B         NONE         11/15/2011         10:00         Chromium, hexavalent         ND         ug/L         1.0           1         SC-700B-WDR-335         SM2130B         NONE         11/15/2011         10:00         Turbidity         ND         ND         ND         0.100           1         SC-700B-WDR-335         SM2540C         NONE         11/15/2011         10:00         Turbidity         ND         ND         N	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 bree (3) significant figures.	
TRUESDAIL L EXCELLENCE IN INDEPENDEN	Client: E2 Co 155 G Oakla Attention: Shaw	Project Name: PG&E Project No.: 42497 P.O. No.: 42497	l ab Sample (D Field	998577-001 SC-7( 998577-001 SC-7( 998577-001 SC-7( 998577-001 SC-7( 998577-001 SC-7( 998577-001 SC-7( 998577-001 SC-7(	ND: Non De mg/L: Milligrar Note: The foli Result Quality	00

EXCELLENCE IN INDEPENDENT TESTING

Project Number: 424973.01.DM

Established 1931

REPORT

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

#### Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800 Oakland, CA 94612 Attention: Shawn Duffy Project Name: PG & E Topock P.O. Number: 424973.01.DM Laboratory No. 998577 Page 1 of 10 Printed 1/2/2012

#### Samples Received on 11/15/2011 9:30:00 PM

Field ID				Lab ID	Col	lected	Matr	ix
SC-700B-WDR-335				998577-001	11/15	/2011 10:00	Wate	ər
Specific Conductivity - E Parameter	PA 120.1	Unit	Batch Ana	11EC11H	DF	MDL	11/16/201 RL	1 Result
998577-001 Specific Conduct	ivity	umhos/	/cm 11/16	5/2011	1.00	0.0950	2.00	7120
Method Blank	<u></u>	<u>ų trų, arma zuznas</u>						
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	998440-007
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 4670	Expected 4660	F	(PD 0.214	Accepta 0 - 10 Lab ID = 9	nce Range 998577-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Resuit 7110	Expected 7120	R	PD 0.140	Accepta 0 - 10	nce Range
Parameter Specific Conductivity	Unit umhos uplicate	DF 1.00	Result 710.	Expected 706	R	ecovery 100.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 712	Expected 706	R	ecovery 101.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 703	Expected 706	R	ecovery 99.6	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 950.	Expected 997	R	ecovery 95.3	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 3 of 10 Printed 1/2/2012

Chrome VI by EPA 218.6			Batch	11CrH11N			a a secondaria de la composición de la	
Parameter	· · · · ·	Unit	Ana	llyzed	DF	MDL	RL	Result
998577-001 Chromium, Hexav	alent	ug/L	11/16	6/2011 15:15	5.25	0.116	1.0	ND
Method Blank							29.000 - 000 - 000 - 00 - 00 - 00 - 00 -	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND					000050 005
Parameter Chromium, Hexavalent	Unit ug/L /erification	DF 5.25	Result ND	Expected 0.00	RP 0	D	Lab ID ≕ Accepta 0 - 20	nce Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.239	Expected 0.200	Re 1	covery 19.	Accepta 80 - 120	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.51	Expected 5.00	Re 9	covery 0.2	Accepta 90 - 110 Lab ID =	ince Range 998248-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 4.76	Expected/Add 5.25(5.25)	ed Re 9	covery 0.8	Accepta 90 - 110 Lab ID =	nce Range 998248-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 4.74	Expected/Add 5.25(5.25)	ed Re 9	covery 0.3	Accepta 90 - 110 Lab ID =	nce Range 998252-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 4.76	Expected/Add 5.25(5.25)	ed Re 9	covery 0.7	Accepta 90 - 110 Lab ID =	nce Range 998252-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.77	Expected/Add 6.21(5.25)	ed Re 9	covery 1.6	Accepta 90 - 110 Lab ID =	nce Range ) 998252-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.09	Expected/Add 5.25(5.25)	ed Re 9	covery 7.0	Accepta 90 - 110 Lab ID =	nce Range 998252-006
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 4.89	Expected/Add 5.25(5.25)	ed Re 9	covery 3,1	Accepta 90 - 110	nce Range



#### Report Continued

Client: E2 Consulting En	gineers, Inc.		Project Name: Project Number:	PG & E Topock 424973.01.DM		Page 4 of 10 Printed 1/2/2012
Matrix Spike						Lab ID = 998252-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.44	Expected/Added 5.25(5.25)	Recovery 104.	Acceptance Range 90 - 110 Lab ID = 998280-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.77	Expected/Added 8.25(5.30)	Recovery 90.9	Acceptance Range 90 - 110 Lab ID = 998280-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 9.50	Expected/Added 9.94(5.30)	Recovery 91.7	Acceptance Range 90 - 110 Lab ID = 998282-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 7.45	Expected/Added 7.80(5.25)	Recovery 93.4	Acceptance Range 90 - 110 Lab ID = 998282-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.88	Expected/Added 6.12(5.25)	Recovery 95.4	Acceptance Range 90 - 110 Lab ID = 998282-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 6.84	Expected/Added 6.38(5.25)	Recovery 109.	Acceptance Range 90 - 110 Lab ID = 998577-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.52	Expected/Added 5.97(5.25)	Recovery 91.4	Acceptance Range 90 - 110 Lab ID = 998577-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.06	Result 0.359	Expected/Added 1.06(1.06)	Recovery 33.9	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.62	Expected 5.00	Recovery 92.3	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 9.78	Expected 10.0	Recovery 97.8	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.80	Expected 10.0	Recovery 98.0	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG & E Topock Project Number: 424973.01.DM Printed 1/2/2012

Metals by EPA 200.8, To	otal		Batch	122711B			
Parameter	····	Unit	Ana	lyzed DI	F MDL	RL	Result
998577-001 Chromium		ug/L	12/28	3/2011 15:33 5.0	0 0.110	1.0	ND
Manganese		ug/L	12/28	3/2011 15:33 5.0	0 0.285	1.0	11.1
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	998577-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	Ŭ
Manganese	ug/L	5.00	10.4	11.1	6.61	0 - 20	
Low Level Calibration	Verification	1					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.253	0.200	127.	70 - 130	)
Manganese	ug/L	1.00	0.235	0.200	117.	70 - 130	)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	105.	100.	105.	85 - 115	5
Manganese	ug/L	5.00	99.0	100.	99.0	85 - 115	5
Lab Control Sample	Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	104.	100.	104.	85 - 115	5
Manganese	ug/L	5.00	96,9	100.	96.9	85 - 118	5
Matrix Spike						Lab ID =	998577-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	109	100.(100.)	109	75 - 128	5
Manganese	ug/L	5.00	109.	111.(100.)	98.3	75 - 125	5
MRCCS - Secondary	,						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	9.62	10.0	96.2	90 - 110	)
Manganese	ug/L	1.00	9.02	10.0	90.2	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	10.1	10.0	101.	90 - 110	) -

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

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Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG & E Topock	Page 9 of 10
	Project Number	: 424973.01.DM	Printed 1/2/2012

<b>Total Dissolved Solids b</b>	y SM 254	0 C	Batch	11TDS111			11/17/20	11
Parameter	a e le contrajor	Unit	Ana	alyzed	DF	MDL	RL	Result
998577-001 Total Dissolved	Solids	mg/L	11/1	7/2011	1.00	0.400	125	4150
Method Blank						With		
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND					000004.004
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 509	Expected 504	F	PD 0.987	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 500.	Expected 500.	R	ecovery 100.	Accepta 90 - 110	ince Range )
Turbidity by SM 2130 B Parameter		Unit	Batch Ana	11TUC11G	DF	MDL	11/16/20 ⁻ RL	I1 Result
998577-001 Turbidity		NTU	11/16	5/2011	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID ≕	998577-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	R	PD 0	Accepta 0 - 20	nce Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.03	Expected 8.00	R	ecovery 100 <i>.</i>	Accepta 90 - 110	nce Range
Lab Control Sample D	uplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 7.94	Expected 8.00	R	ecovery 99.2	Accepta 90 - 110	nce Range



Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi Manager, Analytical Services

E2 Conton

### Total Dissolved Solids by SM 2540 C

#### Calculations

Batch:	11TDS111
Date Calculated:	11/21/11

Laboratory Number	Sample volume, ml	initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, 9	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	105.2894	105.2897	105.2895	0.0002	No	0.0001	1.0	25.0	ND	1
998511-1	50	49.3592	49.4853	49.4853	0.0000	No	0.1261	2522.0	50.0	2522.0	1
998511-2	20	51.1879	51,264	51.264	0.0000	No	0.0761	3805.0	125.0	3805.0	1
998528-2	200	121.7035	121.7207	121.7207	0.0000	No	0.0172	86.0	12.5	86.0	1
998528-4	100	105.6280	105,6473	105.6471	0.0002	No	0.0191	191.0	25.0	191.0	1
998548	100	68.5192	68.5631	68.563	0.0001	Na	0.0438	438.0	25.0	438.0	1
998553-1	100	76.5597	76.6154	76,6151	0.0003	No	0.0554	554.0	25.0	554.0	1
998553-2	100	68.5709	68.6274	68.6271	0.0003	No	0.0562	562.0	25.0	562.0	1
998577	20	51.4248	51.508	51.5078	0.0002	No	0.0830	4150.0	125.0	4150.0	1
998618	50	71.0949	71.1367	71.1367	0.0000	No	0.0418	836.0	50.0	836.0	1
998604	100	78.3850	78.4356	78.4354	0.0002	No	0.0504	504.0	25.0	504.0	1
998604D	100	73.6034	73.6545	73.6543	0.0002	No	0.0509	509.0	25.0	509.0	1
LCS	100	112.1846	112.235	112.2346	0,0004	No	0.0500	500.0	25.0	500.0	1
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Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Printed Mame

Analyst \$ignature

Reviewer Printed Name

021

Reviewer Signature

WetChem TDS_0810.xls

#### TDS/EC CHECK

Date Galculated: (MZ//11							
aboratory Number.	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3			
998511-1	3670	0.60	2385 5	1.06			
008511.2	<u> </u>	0.75	3316	1.00			
000571-2	100	0.75	100.2	0.70			
009509.4	247	0.51	205 65	0.79			
009549	744	0.55	220.00 402 C	0.00			
009552 1	007	0.09	400.0 1 603 6F	0.02			
009553.3	921	0.00	602.00	0.92			
009577	7140	0.52	390.00 4604 E	0.94			
000640	1110	0.50	4021.0	0.90			
990018	1470	0.57	900.0	0.87			
990004	000	0.59	000.70	0.91			
9900040	800	0.60	555.75	0.92			
100							
			<u> </u>				
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			1	<u></u>			
			1				

Date Calculated: 11/21/11

Batch: 11TDS11I

024



### Turbidity/pH Check

						Adjusted to
Sample Number	Turbidity	·рН	Date	Analyst	Need Digest	pH<2 (Y/N)
998 339 4:51	71	</td <td>11/07/11</td> <td>M.M</td> <td>Ves</td> <td>40-11-12-12-12-12-12-12-12-12-12-12-12-12-</td>	11/07/11	M.M	Ves	40-11-12-12-12-12-12-12-12-12-12-12-12-12-
99834211-3	<u> </u>		,			
99834411-4	1V		V	V		
998358	ľ			n l	1	~
998359					1	
908 360		}				-
998361 1-111	V	11	,V	V	i	·
998373(1-11	<i>∠1</i>	22	11/08/11	N.M	Yes.	<i>_</i>
998274/167124	V I	L			V.	
998 3691 1-4	71	29	Ϋ́.		Î Î	
99831711.4	1/	1/				
018411	21	19	11/05/4	Man	Yei	
998412 13r H	1		1	1		
998419/1-121	61	79				No
098200	>/	19	1 Martin	11 M	Ver	
998391-11-21	1		1 1 1	1	T I	
GGRYAA						
998440151	< 1	1.2	10/11/16	al. M	1/22	
998441	1		1			
99844211-61						+
99844211-Il					<u> </u>	-
998405 11-21						
99848611-6 01			·			
99848811-61					17	
998 51011 51	<i>e</i> 1	22	11/10/1	MM	V.A	
998 (5111.21		f	1//.7/4	1	105	
99 10 007 14-21	71					
099409	S.I.I	U ²	11/14/		7510	
498483	social	~		and the	1120	
998821		21	MIGU	Vill	Ve 8	
998539 /1-61	<u> </u>		1 1	/*//~/	1 263	
96852211.81			·	<b> </b>		
998534 10-71	<u>↓                                      </u>					
69853511-51						· · · · · · · · · · · · · · · · · · ·
GGPKTT	51	c)	111614	111	1/22	
998577				1	125	
993574		<b> </b>	<u>                                      </u>		<i> </i>	
99851-	<b>├ -                                   </b>		<b>├</b>		<u>├</u>	
998585			<u> </u>	<b>├───│</b> ─────	<u>├</u>	
GORETCLIMI		27	11111		<u>├</u>	
998511	<u>├</u> ── <u> </u> '		11/10/		<u>├───</u>	
G01578/1-1					<u>+ ,  </u> /	
098101 11-7	71	1.12	11/17/1	V la la	Va a	L
998605	#1	67	1 1 1 1 1 1		19-	-
098/11/11-MI	<u> </u>		<u>├</u>	<u>├──</u>		
9976006 [1-]]	+					
9686021161	<u>}</u>					· · · · · · · · · · · · · · · · · · ·
06 8410 Vi 2	5/		<u>├</u>		<i>/</i>	-
- <u></u>	<u>     Y            </u>	- <u>↓</u> ¥	<u> </u>	<u>لا ا</u>	·J	
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044



### Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

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

045





# Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u> </u>	Lab # <u>99857</u> 7
Date	e Delivered: <u>////5</u> /11	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 \$\MA
З.	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 ¤(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)?	∮aYes ⊡No ⊡N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	⊠Yes □No □N/A
<b>8</b> .	Were sample custody seals intact?	□Yes □No ⁄¤(N/A
9.	Does the number of samples received agree with COC?	Æ(Yes ⊡No ⊡N/A
10.	Did sample labels correspond with the client ID's?	∳Yes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ <b>T</b> ruesdail □Client	□Yes □No /¤(N/A
12.	Were samples pH checked? pH = <u>SeeC</u> OC	⊡Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ŹŸes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>D RUSH</b> Std	Ø{Yes □No □N/A
15.	Sample Matrix: Liquid Drinking Water Ground	Water □Waste Water ĭOther <u>Water</u>
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving: _	Alex

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

December 17, 2011

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-3364 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998733

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-336 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 November 22, 2011, 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.

/o / 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.: 998733 Date: December 17, 2011 Collected: November 22, 2011 Received: November 22, 2011

### ANALYST LIST

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

	AIL LABORATC	DRIES, INC					Establishe	1931	
					$\mathbf{N}$	14201 FRA (714) 730	NKLIN AVENUE · TUS -6239 · FAX (714) 7	sttin, california 92 730-6462 - www.true	7807008 sdail.com
Clier Attentio	nt: E2 Consulting Engine 155 Grand Ave. Suite Oakland, CA 94612 in: Shawn Duffy	eers, Inc. e 1000				<u> </u>	aboratory No.: )ate Received:	998733 November 22,	2011
Project Nam Project Nc P.O. Nc	ie: PG&E Topock Projec o.: 424973.01.DM o.: 424973.01.DM	5							
			Ana	lytical R	<u>esults</u>	Summary			
Lab Sample II	D Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
998733-001 998733-001 998733-001	SC-700B-WDR-336 SC-700B-WDR-336 SC-700B-WDR-336	E120.1 E200.8 E200.8	NONE NONE-digested NONE-digested	11/22/2011 11/22/2011 11/22/2011	10:30 10:30 10:30	EC Chromium Manganese	7030 ND 4.1	umhos/cm ug/L ug/L	2.00 2.0
998733-001 998733-001 998733-001	SC-700B-WDR-336 SC-700B-WDR-336 SC-700B-WDR-336 SC-700B-WDR-336	E218.6 SM2130B SM2540C	LABFLT NONE NONE	11/22/2011 11/22/2011 11/22/2011	10:30 10:30 10:30	Chromium, hexavalent Turbidity Total Dissolved Solids	ND 004400	ug/L mg/L	1.0 0.100 125
L ≟ E ₩	ND: Non Detected (below reportin g/L: Milligrams per liter. ote: The following "Significant Fig. Results below 0.01ppm will he Result above or equal to 0.01 Quality Control data will away.	ig limit) ures" rule has been appli ures" rule has been appli ave two (2) significant frg ippm will have three (3) s ys have three (3) signific	ied to all results: jures. significant figures. ant figures.						
005									
This report applies c and these laboratori publicity matter with	only to the sample, or samples ies, this report is submitted at iout prior written authorization	s, investigated and is ind accepted for the e i from Truesdail Labor	not necessarily indica: xclusive use of the cli atories.	tive of the quality or of the price of the second	condition of ap dressed and u	pparently identical or similar produc	tts. As a mutual pro e used, in whole or	otection to clients, l in part, in any adv	he public, ertising or

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

# REPORT

#### Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800 Oakland, CA 94612 Laboratory No. 998733 Page 1 of 9 Printed 12/17/2011

Attention: Shawn Duffy Project Name: PG & E Topock P.O. Number: 424973.01.DM Project Number: 424973.01.DM

#### Samples Received on 11/22/2011 9:30:00 PM

Field ID				Lab ID	Col	lected	Matr	ix
SC-700B-WDR-336				998733-001	11/22	/2011 10:30	Wat	er
Specific Conductivity - E	PA 120.1		Bato	sh 11EC11J			11/23/20 ⁻	1
Parameter		Unit	An	alyzed	DF	MDL	RL	Result
998733-001 Specific Conducti	vity	umhos/	cm 11/2	23/2011	1.00	0.0949	2.00	7030
Method Blank								
Parameter Specific Conductivity	Unit umhoะ	DF 1.00	Result ND					
Duplicate			[.]				Lab ID =	998746-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 3220	Expected 3230	F	RPD 0.310	Accepta 0 - 10	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 703	Expected 706	F	Recovery 99.6	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 710.	Expected 706	F	Recovery 100.	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 962	Expected 997	न	Recovery 96.5	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 2 of 9 Printed 12/17/2011

Chrome VI by EPA 218.6			Batch	11CrH11V	10				
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result		
998733-001 Chromium, Hexa	valent	ug/L	11/23	/2011 13:14 5.2	25 0.136	1.0	ND		
Method Blank									
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND						
Duplicate						Lab ID =	998532-001		
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.05	Result 1.06	Expected 1.08	RPD 1.48	Accepta 0 - 20	ance Range		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.91	Expected 5.00	Recovery 98.1	Accepta 90 - 110 Lab ID =	ance Range ) 998532-001		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.23	Expected/Addec 6.38(5.30)	Recovery 97.1	Accepta 90 - 110 Lab ID =	ance Range ) 998532-002		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.02	Expected/Addec 7.18(5.30)	Recovery 97.0	Accepta 90 - 11 Lab ID =	ance Range ) 998532-003		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.04	Expected/Addec 7.20(5.30)	Recovery 97.0	Accepta 90 - 110 Lab ID =	ance Range ) 998532-004		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.46	Expected/Addec 6.59(5.30)	Recovery 97.6	Accepta 90 - 11 Lab ID =	ance Range 0 998532-005		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.05	Expected/Addec 7.18(5.30)	Recovery 97.5	Accepta 90 - 11 Lab ID =	ance Range 0 998532-006		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.83	Expected/Addec 1.86(1.06)	I Recovery 97.0	Accepta 90 - 11 Lab ID =	ance Range 0 998605-001		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.10	Expected/Addec 1.14(1.06)	Recovery 95.8	Accepta 90 - 11	ance Range 0		

Report Continued

Client: E2 Consulting En	gineers, Inc.	F	Project Name: Project Number:		Page 4 of 9 Printed 12/17/2011		
Matrix Spike						Lab ID = 998733-001	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.14	Expected/Added 5.25(5.25)	Recovery 97.9	Acceptance Range 90 - 110 Lab ID = 998733-001	
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.06	Result 1.01	Expected/Added 1.06(1.06)	Recovery 95.5	Acceptance Range 90 - 110	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.93	Expected 5.00	Recovery 98.5	Acceptance Range 90 - 110	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.87	Expected 10.0	Recovery 98.7	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.78	Expected 10.0	Recovery 97.8	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.70	Expected 10.0	Recovery 97.0	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.74	Expected 10.0	Recovery 97.4	Acceptance Range 95 - 105	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.74	Expected 10.0	Recovery 97.4	Acceptance Range 95 - 105	

Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG & E Topock	Page 5 of 9
	Project Number:	: 424973.01.DM	Printed 12/17/2011

Metals by EPA 200.8, To	otal		Batch	120311D			
Parameter	le. Colo poe obligee ende	Unit	Ana	lyzed D	F MDL	RL	Result
998733-001 Chromium		ug/L	12/04	/2011 22:27 10	0.0 0.420	1.0	ND
Manganese		ug/L	12/04	/2011 22:27 10	0.0 0.230	2.0	4.1
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	998733-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Range
Chromium	ug/L	10.0	ND	0.00	0	0 - 20	-
Manganese	ug/L	10.0	3.48	4.15	17.6	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	0.125	0.100	125.	70 - 130	)
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	0.261	0.200	130.	70 - 130	) –
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	10.0	98.2	100.	98.2	85 - 115	5
Manganese	ug/L	10.0	100.	100.	100.	85 - 115	5
Lab Control Sample [	Duplicate						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	10.0	100.	100.	100.	85 - 115	5
Manganese	ug/L	10.0	101.	100.	101.	85 - 115	5
Matrix Spike						Lab ID =	998733-001
Parameter	Unit	DF	Result	Expected/Addeo	Recovery	Accepta	ince Range
Chromium	ug/L	10.0	89.6	100.(100.)	89,6	75 - 125	5
Manganese	ug/L	10.0	94.7	104.(100.)	90.6	75 - 125	5
Matrix Spike Duplicat	е					Lab ID =	998733-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ince Range
Chromium	ug/L	10.0	93.3	100.(100.)	93.3	75 - 125	5
Manganese	ug/L	10.0	90.6	104.(100 <i>.</i> )	86.5	75 - 125	5

NTU

Turbidity

1.00

8.40

Report Continued

Client: E2 Consulting Eng	ineers, Ind	c. Pr Pr	oject Name: oject Numbe	Page 8 of 9 Printed 12/17/2011				
Total Dissolved Solids by Parameter	/ SM 2540	0 C Unit	Batch Ana	11TDS11J lyzed	DF	MDL	11/22/201 RL	1 Result
998733-001 Total Dissolved S	olids	mg/L	11/22	/2011	1.00	0.400	125	4400
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	998733-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4200	Expected 4400	F	RPD 4.53	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 510.	Expected 500.	F	Recovery 102	Accepta 90 - 110	ince Range
<b>Turbidity by SM 2130 B</b> Parameter		Unit	Batch Ana	11TUC11M lyzed	DF	MDL	11/23/20 ⁻ RL	11 Result
998733-001 Turbidity		NTU	11/23	/2011	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity Duplicate	Unit NTU	DF 1.00	Result ND				Lab ID =	998733-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	I	RPD 0	Accepta 0 - 20	ance Range
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result 8.10	Expected 8.00	I	Recovery 101.	Accepta 90 - 110	ance Range )
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range

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

8.00

90 - 110

105



Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Respectfully submitted, TRUESDAIL LABORATORIES, INC.

to-Mona Nassimi Manager, Analytical Services



### Total Dissolved Solids by SM 2540 C

#### Calculations

Batch:	11TDS11J
Date Calculated:	11/28/11

Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, 9	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	111.3978	111.3986	111.3985	0.0001	No	0.0007	7.0	25.0	ND	1
998638	480	111.3746	111.3746	111.3746	0.0000	No	0.0000	0.0	5.2	ND	1
998650	490	112,3625	112.3647	112.3645	0.0002	No	0.0020	4.1	5.1	ND	1
998669-2	200	112.3114	112.3319	112,3319	0.0000	No	0.0205	102.5	12.5	102.5	1
998669-4	100	108.1041	108.1291	108.1291	0.0000	No	0.0250	250.0	25.0	250,0	1
998680-1	100	75.7687	75.7971	75.7969	0.0002	No	0.0282	282.0	25.0	282.0	1
998680-2	100	74.7568	74.789	74,7886	0.0004	No	0.0318	318.0	25.0	318.0	1
998680-3	100	67.7800	67.8201	67.8198	0.0003	No	0.0398	398.0	25.0	398.0	1
998680-4	100	66.7201	66.7462	66.7458	0.0004	No	0.0257	257.0	25.0	257.0	11
998680-5	100	69.5747	69.6028	69.6024	0.0004	No	0.0277	277.0	25.0	277.0	1
998680-6	100	72.4692	72.4965	72.4961	0.0004	No	0.0269	269.0	25.0	269.0	1
998733D	20	72.9999	73.084	73.084	0.0000	No	0.0841	4205.0	125.0	4205.0	1
LCS	100	109.4415	109.4927	109.4925	0.0002	No	0.0510	510.0	25.0	510.0	1
998733	20	49.6999	49.7878	49.7878	0.0000	No	0.0879	4395.0	125.0	4395.0	1
998743	480	68.1053	68.1073	68,1069	0.0004	No	0.0016	3.3	5.2	ND	1
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Icen				1		1		3		1	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)

Printed Werne Analyst

WetChem TDS_0810.xls

Analys Signature

Reviewer Printed Name

020

**Reviewer Signature** 

#### TDS/EC CHECK

#### Batch: 11TDS11J

#### Date Calculated: 11/28/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
	VL-11.			
998638	6.55	ND	4.2575	ND
998650	7.8	ND	5.07	ND
998669-2	188	0.55	122.2	0.84
998669-4	446	0.56	289.9	0.86
998680-1	467	0.60	303.55	0.93
998680-2	542	0.59	352.3	0.90
998680-3	627	0.63	407.55	0.98
998680-4	414	0.62	269,1	0.96
998680-5	457	0.61	297.05	0.93
998680-6	463	0.58	300.95	0.89
998733D	7030	0.60	4569.5	0.92
LCS	j			
998733	7030	0.63	4569.5	0.96
998743	1.13	ND	0.7345	ND

023

WeiChem TDS_0810.xls





## Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

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

041

Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)		
99863411-81	61	< 2	11/18/4	Man	Yes	~		
99863511-61				1		······		
99863211-81	1					~		
098597114521	71	:						
998623						•		
998694			1		1			
998632				· · · · · · · · · · · · · · · · · · ·				
968637	1/	j	./	. /.				
002201 (1-10)1	Nati	<u>~</u> 2	11-1-1-1-1	Katio	NO	K HIBNI		
aggilities 1	/ 1	11	411-1-11/13/1	EC	iu i	- 40 11 12/11		
9981.5.2 (1-1)	1		1/21/11/10/10	<u> </u>				
adu zau z		¥	+					
998221-2		·····						
		····						
$\frac{994241-2}{964241-1}$								
Garat								
$\frac{\gamma_{3}}{\gamma_{4}}$			v la a lu		144.4			
001110	<u> </u>	<u> </u>	11/22 [1]	<u> </u>	cpcs	······		
948682(1-2)			- Jacob	<u>v</u>				
00 242 701		<u>~</u> ~9	11/2818	<u>E</u> S	yes			
MAS + Y HAK	[	<u> </u>	110/9/11	M.M.	yes			
998779	J	/	<u> </u>	/		-		
908 815	Jolid		11/30/A	Han	yes	TTLC		
908751					L'			
99880311-13	4	-22	12/01/11	M	yes_			
99880911-10				<u> </u>		<u> </u>		
998805(1-13)			<i> </i>					
998828/1-5/			<i>\</i> /					
998829/1-8/	¥	<b>X</b>		¥	<u> </u>			
948 830/1.131		/						
998730 (1-5)	4	2	11/23/n	65	VES			
498878	Solia		12/05/	M.M.	yes	S120/114		
998935/1-31	<u> </u>	22	12/06/m	N.M	Vez	- '		
998936/1-3	-1/		V		1 V			
998851 1-51	<1	<u> </u>	12108/11	MM	yes	-		
998852 11-M			· · · · · · · · · · · · · · · · · · ·			<u> </u>		
998874						~		
99887311-1					ļ	<u> </u>		
2989751-9								
698945 11-2						· · ·		
998946 1-2	<u> </u>	· /	· · · · · · · · · · · · · · · · · · ·	/	//	-		
998947		1	V	<u>v</u>				
998 882111-4	<u></u>	22	12/28/1	M.M.	Yes	-		
998823					1 -	-		
998863						<b>^</b>		
998866						^		
998884					-			
9988390	/	/				-		
998943	X	V						
1			1 19	I V	J			

042

C.



C:\Users\Test\Desktop\Forms A - D\Discrp.FormBlank.doc

# Sample Integrity & Analysis Discrepancy Form

Clie	ent: <u>F 2</u>	Lab # <u>99873</u> 3
Date	e Delivered: <u>//</u> / <u>&amp;</u> & 11 Time: <u>&amp;/.'3</u> 2 By: □Mail _ØF	Field Service
1.	Was a Chain of Custody received and signed?	,¢a(Yes ⊡No ⊡N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ﷺ
З.	Are there any special requirements or notes on the COC?	□Yes □No 2N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No œAN/A
5.	Were all requested analyses understood and acceptable?	∞QÍYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>4.3° <b>C</b></u>	∕AYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	,Æ(Yes ⊡No ⊡N/A
8.	Were sample custody seals intact?	□Yes □No JZÍN/A
9.	Does the number of samples received agree with COC?	a\$(Yes □No □N/A
10.	Did sample labels correspond with the client ID's?	,∕¤(Yes ⊡N/A
11.	Did sample labels indicate proper preservation Preserved (if yes) by: □ <b>Truesdail</b> □Client	□Yes □No ∞in/A
12.	Were samples pH checked? pH = <u>See</u> C - A	Yes INO IN/A
13.	Were all analyses within holding time at time of receipt?	ATYES DNO DN/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>C RUSH</b> Std	XQ(Yes □No □N/A
15.	Sample Matrix: Liquid Drinking Water Ground W	Vater 🗆 Waste Water
	□Sludge □Soil □Wipe □Paint □Solid ፵	Other <u>Warler</u>
16.	Comments:	
17.	Sample Check-In completed by <b>Truesdail</b> Log-In/Receiving:	J. Straburn

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

December 21, 2011

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-337 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998802

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-337 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 November 29, 2011, 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.

fo - Mona Nassimi

Mona Nassimi Manager, Analytical Services

Midra

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.: 998802 Date: December 21, 2011 Collected: November 29, 2011 Received: November 29, 2011

### ANALYST LIST

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

Established 1931	AVENUE · TUSTIN, CALIFORNIA 92780-7008 · FAX (714) 730-6462 · www.truesdail.com itory No.: 998802 Received: November 29, 2011		tesult Units RL	7120 umhos/cm 2.00 ND ug/L 1.0 12.9 ug/L 1.0 ND ug/L 1.0 ND NTU 0.100 ND NTU 0.100 4180 mg/L 125		
	14201 FRANKLIN (714) 730-6239 (714) 730-6239 <b>Labor</b> : Date F	,	Summary Parameter F	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids		
			esults ^{Sample} Time	10:00 10:00 10:00 10:00 10:00		
			Ivtical R( Sample Date	11/29/2011 11/29/2011 11/29/2011 11/29/2011 11/29/2011		
ſ.			Anal Extraction Method	NONE NONE-digested NONE-digested LABFLT NONE NONE	died to all results: gures. significant figures. cant figures.	
ories, înc	te 1000	sct	Analysis Method	E120.1 E200.8 E200.8 E218.6 SM2540C SM2540C	ng limit) jures" rule has been appl ave two (2) significant fi 1ppm will have three (3). iys have three (3) signific	
IL LABORAT( EPENDENT TESTING	: E2 Consulting Engir 155 Grand Ave. Suit Oakland, CA 94612 : Shawn Duffy	: PG&E Topock Proje : 424973.01.DM : 424973.01.DM	Field ID	SC-700B-WDR-337 SC-700B-WDR-337 SC-700B-WDR-337 SC-700B-WDR-337 SC-700B-WDR-337 SC-700B-WDR-337	<ol> <li>Non Detected (below reporti  Milligrams per itter.</li> <li>The following "Significant Fig Results below 0.0 typpm will 1 Result above or equal to 0.0 Quality Control data will alwa</li> </ol>	
TRUESDA Excellence in Inde	Client Attention	Project Name Project No. P.O. No.	Lab Sample ID	998802-001 998802-001 998802-001 998802-001 998802-001 998802-001	N DEC	
<i>.</i>						005

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

Page 1 of 9

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

Printed 12/21/2011

Laboratory No. 998802

REPORT

### Client: 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

#### Samples Received on 11/29/2011 8:30:00 PM

Field ID				Lab ID	Col	lected	Matri	x
SC-700B-WDR-337			998802-001		11/29/2011 10:00		Water	
Specific Conductivity - I	EPA 120.1		Batch	11EC11L			11/30/201	1
Parameter		Unit	Ana	lyzed	DF	MDL	RL ·	Result
998802-001 Specific Conduc	tivity	umhos/	′cm 11/30	/2011	1.00	0,0950	2.00	7120
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 919	Expected 918	F	RPD 0.109	Acceptar 0 - 10 Lab ID = 9	nce Range
Parameter Specific Conductivity Lab Control Sample	Unit umhoร	DF 1.00	Result 935	Expected 936	F	RPD 0.107	Acceptar 0 - 10	nce Range
Parameter Specific Conductivity Lab Control Sample E	Unit umhos Duplicate	DF 1.00	Result 705	Expected 706	F	ecovery 99.8	Acceptar 90 - 110	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umho៖	DF 1.00	Result 708	Expected 706	F	Recovery 100.	Acceptar 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Prímary	Unit umhos	DF 1.00	Result 682	Expected 706	F	Recovery 96.6	Acceptar 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 950	Expected 997	F	lecovery 95.3	Acceptar 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Project	Page 3 of 9
	Project Number:	424973.01.DM	Printed 12/21/2011

Chrome VI by EPA 218.6		Batch 11CrH11AD							
Parameter		Unit	Ana	lyzed I	DF MDL	RL	Result		
998802-001 Chromium, Hexavalent		ug/L	11/30	/2011 13:54 5	.25 0.136	1.0	ND		
Method Blank									
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND						
Duplicate						Lab ID =	998777-002		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.05	Result 1.33	Expected 1.34	RPD 0.937	Accepta 0 - 20	ance Range		
Low Level Calibration	Verification								
Parameter Chromium, Hexavalent Lab Control Sample	Unit	DF	Result 0.227	Expected 0.00	Recovery	Accepta	ance Range		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.90	Expected 5.00	Recovery 98.1	Accepta 90 - 11( Lab ID =	ance Range ) 998777-001		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 6.80	Expected/Adde 6.81(5.30)	d Recovery 99.9	Accepta 90 - 110	ance Range		
Matrix Spike							990///-002		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.66	Expected/Adde 6.64(5.30)	d Recovery 100.	Accepta 90 - 11( Lab ID =	ance Range ) 998777-003		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.48	Expected/Adde 6.50(5.30)	d Recovery 99.6	Accepta 90 - 110 Lab ID =	ance Range ) 998777-004		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.83	Expected/Adde 6.85(5.30)	d Recovery 99.6	Accepta 90 - 110 Lab ID =	ance Range ) 998777-005		
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.07	Expected/Adde 1.11(1.06)	d Recovery 96.0	Accepta 90 - 110 Lab ID =	ance Range ) 998777-006		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 6.30	Expected/Adde 6.34(5.30)	d Recovery 99.2	Accepta 90 - 110	ance Range )		
Report Continued

Client: E2 Consulting	Engineers, Inc.		Project Name: Project Number:	PG&E Topock Pro 424973.01.DM	oject	Page 4 of 9 Printed 12/21/2011
Matrix Spike						Lab ID = 998777-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.94	Expected/Added 7.93(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998778-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.74	Expected/Added 1.80(1.06)	Recovery 93.9	Acceptance Range 90 - 110 Lab ID = 998778-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.18	Expected/Added 1.23(1.06)	Recovery 96.0	Acceptance Range 90 - 110 Lab ID = 998778-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.24	Expected/Added 1.27(1.06)	Recovery 96.8	Acceptance Range 90 - 110 Lab ID = 998778-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.05	Expected/Added 1.06(1.06)	Recovery 99.4	Acceptance Range 90 - 110 Lab ID = 998778-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.91	Expected/Added 6.88(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998778-006
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.43	Expected/Added 6.40(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998778-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.87	Expected/Added 6.85(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998778-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.36	Expected/Added 6.37(5.30)	Recovery 99.8	Acceptance Range 90 - 110 Lab ID = 998778-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.08	Expected/Added 7.08(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998802-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.28	Expected/Added 5.43(5.25)	Recovery 97.2	Acceptance Range 90 - 110 Lab ID = 998802-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.17	Expected/Added 1.20(1.06)	Recovery 97.6	Acceptance Range 90 - 110

Manganese

ug/L

1.00

Report Continued

Client: E2 Consulting Eng	ineers, Inc	:. Pr Pr	roject Name: roject Numbe	PG&E Topock Pr r: 424973.01.DM	oject	Pa Printed 12	age 6 of 9 2/21/2011
Metals by EPA 200.8, Tota	al		Batch	121611B			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
998802-001 Chromium		ua/L	12/16	/2011 23:38 5.0	0 0 110	10	ND
Manganese		ug/L	12/16	/2011 23:38 5.0	0 0.285	1.0	12.9
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	Recoverv	Accepta	nce Range
Chromium	ug/L	1.00	0.240	0.200	120.	70 - 130	nee nange
Manganese	ug/L	1.00	0.245	0.200	122.	70 - 130	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	102.	100.	102.	85 - 115	J J .
Manganese	ug/L	5.00	106.	100.	106.	85 - 115	
Lab Control Sample Du	plicate						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	103	100.	103	85 - 115	Ŭ
Manganese	ug/L	5.00	104,	100.	104.	85 - 115	
Matrix Spike						Lab ID = 9	998802-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125	Ŭ
Manganese	ug/L	5.00	114.	113.(100.)	101	75 - 125	
Matrix Spike Duplicate						Lab ID = 9	998802-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	97.3	100.(100.)	97.3	75 - 125	Ū
Manganese	ug/L	5.00	104.	113.(100.)	90.6	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.38	10.0	93.8	90 - 110	
Manganese	ug/L	1.00	10.7	10.0	107.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	9.40	10.0	94.0	90 - 110	

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

10.0

90.6

9.06

90 - 110

Report Continued

Client: E2 Consulting En	gineers, In	<b>с.</b> Рг Рг	roject Name: roject Numbe	PG&E Topo er: 424973.01.0	ck Proje DM	ct	P Printed 1	age 8 of 9 2/21/2011
Total Dissolved Solids b	y SM 254	0 C	Batch	11TDS11L			11/30/201	11
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998802-001 Total Dissolved	Solids	mg/L	11/30	)/2011	1.00	0.400	125	4180
Method Blank						······		
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1,00	ND					
Duplicate							Lab ID =	998802-001
Parameter	Unit	DF	Result	Expected	न	RPD	Accepta	ince Range
Total Dissolved Solids	mg/L	1.00	4240	4180		1.54	0 - 5	5
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	501	500.		100.	90 - 110	)
Turbidity by SM 2130 B			Batch	11TUC110			11/30/201	11
Parameter	· · · · ·	Unit	Ana	lyzed	DF	MDL	RL	Result
998802-001 Turbidity		NTU	11/30	)/2011	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	998802-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Turbidity	NTU	1,00	8.06	8.00		101.	90 - 110	)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	न	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.10	8.00		101.	90 - 110	)



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 9 of 9 Printed 12/21/2011

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

4. – Mona Nassimi

Mona Nassimi Manager, Analytical Services

E2 Sean

# Total Dissolved Solids by SM 2540 C

#### Calculations

Batch:	11TDS11L
Date Calculated:	12/5/11

Laboratory Number	Sample volume, ml	lnitial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL., ppm	Reported Value, ppm	DF
BLANK	100	100.6829	100.6840	100.6839	0.0001	No	0.0010	10.0	25.0		1
998766-2	200	115.2427	115.2646	115,2646	0.0000	No	0.0219	109.5	12.5	109.5	
998766-4	100	51.7057	51.7304	51.73	0.0004	No	0.0243	243.0	25.0	243.0	1
998802	20	47.6174	47.7011	47.7009	0.0002	No	0.0835	4175.0	125.0	4175.0	1
998813-1	480	110.9534	110.9557	110.9557	0.0000	No	0.0023	4.8	5.2	ND	1
998813-2	480	111.3734	111.3744	111.3744	0.0000	No	0.0010	2.1	5.2	ND	1
993819-1	480	112.3625	112.3645	112.3645	0.0000	No	0.0020	4.2	5.2	ND	
998819-2	480	111.1853	111.1859	111.1859	0.0000	No	0.0006	1.3	5.2	ND	
998823	100	112.1750	112.195	112,1948	0.0002	No	0.0198	198.0	25.0	198.0 1	1
998825-1	50	69.4859	69,5965	69.5964	0.0001	No	0.1105	2210.0	50.0	2210.0	1
998825-2	50	72.8058	72.9248	72.9244	0.0004	Na	0.1186	2372.0	50.0	2372.0	
998802D	20	70.3185	70.4038	70.4034	0.0004	No	0.0849	4245.0	125.0	4245.0	1
LCS	100	111.6485	111.6988	111.6986	0.0002	No	0.0501	501.0	25.0	501.0	<u> </u>
998843	50	49.4751	49.5122	49.512	0.0002	No	0.0369	738.0	50.0	738.0	
998844	470	105.2837	105.2893	105.2893	0.0000	No	0.0006	1.3	5.3	ND	1
			-								
LCSD											

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

#### Total Dissolved Solids by SM 2540 C

WetChem TD5_0810.xls

#### TDS/EC CHECK

#### Batch: 11TDS11L Date Calculated: 12/5/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
998766-2	198	0.55	128.7	0.85
998766-4	444	0.55	288.6	0.84
998802	7120	0.59	4628	0.90
998813-1	16.23	ND	10.5495	ND
998813-2	0.703	ND	0.45695	ND
998819-1	12.31	ND	8.0015	ND
998819-2	0.994	ND	0.6461	ND
998823	323	0.61	209.95	0.94
998825-1	3730	0.59	2424,5	0.91
998825-2	3940	0.60	2561	0.93
998802D	7120	0.60	4628	0.92
LCS				
998843	1195	0.62	776,75	0.95
998844	0.778	ND	0.5057	ND
			L	
	- /		   	

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For Sample Conditions See Form Attached -TOTAL NUMBER OF CONTAINERS 3.4° E DH=6 (200. COMMENTS ~~~~ Ч 10 Days PAGE 1 þ ••••• WARM 9 SAMPLE CONDITIONS NUMBER OF CONTAINERS TURNAROUND TIME DATE 11/29/11 YES COC Number ო  $\mathcal{O}$ ð COOL SPECIAL REQUIREMENTS: CUSTODY SEALED RECEIVED -9L1.2 2 Date/ // - ユーウー// Time // - ユーウー// Date/ // ノンター // シのきま Time // ノング/// 2.0:36 Date/ Time Date/ Time **CHAIN OF CUSTODY RECORD** Time Ama Turbidity (SMI2130) × [IM3Plant-WDR-337] LDS (SWS 24OC) Specific Conductance (1201) × (2.005) states (200.7) × CHAIN OF CUSTODY SIGNATURE RECORD Cr6 (218.6) 230 FILLER × (Jose) ナレ てい × Company/ SAgency Company/ Agency Company/ Agency Company/ Agency Company/ Company/ Agency Agency DESCRIPTION FAX (530) 339-3303 Water Ben Haces DayaoName B. DAYAG Brinted DayaoName B. DAYAG und ia **TEAM** 10,00 TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462 TIME ----Printed Printed 11/29/11 155 Grand Ave Ste 1000 Printed Printed DATE (Received) And & Mall 4 mil Name Name -Oakland, CA 94612 (530) 229-3303 424973.01.DM PG&E Topock Signature (Relinquished) *R* · *D* 224 04 www.truesdail.com SAMPLERS (SIGNATURE Ы SC-700B-WDR-337 PROJECT NAME (Relinquished) (Relinquished) P.O. NUMBER SAMPLE I.D. Signature (Received) 7.1.P COMPANY ADDRESS Signature Signature Signature PHONE 041

Printed

Name

Signature (Received)

# Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log



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

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# Metals Samples Logbook

Sample Number	Turbidity	pH	Date	Analyst	Need Digest	Adjusted to
008901 TS	<u> </u>	<u> </u>	19/00/	MM	V	
00894511-21		·	-2107 /		-19-	
098911/2 11-21						-
age min Lina						
00800(1, 61		¥	¥	<u> </u>	Y	
296 BIC 11 11		-V-	10/10/11	V	- K	
000 0 60		22	12/12/11	<u> </u>	100	·····
77702 000056		22	(7.114) (1	<u> </u>	125	
7990 SO		<u> </u>	<i> </i>			
49905911-1	- d	-Va-				
49903811-21		- 24-	12/19/1	<u></u> <u></u>	<u> </u>	<u>۲</u>
999039[12-5]			17:00		L	-
999089 (1-6]						~
999086 [1-6]	<b>_</b>					-
99908711-21			ļ			-
999088		ļļ,		//		~
999089 [1-5]	<u>√</u>	<u> </u>		V		· · · · ·
999091 11-241	~ (	62	12/15/	MM	Yes	
39909011- 191	<b> </b>					
999092 (1-16)						-
499117 11-21	·					-
999118						-
999 121 11-41		L V	J.	V		
99915411.91	21	<b>2</b>	12/16/4	MAN	yes	-
944155/1-2/	1	1	1		1	~
999156	il	V	11			
499047-1	71	22	12/16/11	MM	Ver	~
999057M-21	1		1/1/		1	
999124						
999125 11-41						
999148					1	
999149				-		-
999151			,	1	i i	
995167			1 V 1	V	1	
999178/1-X/	÷1	c1	12/19/11	AL M	Ver	-
99917011-8	/ /	i T		<u> </u>		-
9991801426		1/	, 1,	/		
99902811-21	Sound		12/1910	pr. 11	Vol	TTIC
9991781191		<u> </u>			1-1	
996191			t	t	tt_	
90 8 121/19441		29	11 93/4	AL M	Ver	<u>₩</u>
900227	- <u>~</u>   	12	19/21/ "	11 m	Vo.	
06 8 12711-121		1 2	11/30/11	1 A	- 42-	
098 809	21	-1	11/2014	MM	Ve	~
110002		y	1. ( 0 ~ ( 4 )		<u> </u>	
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	<u> </u>					
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L		<u>i</u>				



# Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>F</u> L	Lab # <u>995802</u>
Date	e Delivered: <u>//</u> / <u>∠</u> 9/11 Time: <u>∠0/30</u> By: □Mail മ(F	Field Service DClient
1.	Was a Chain of Custody received and signed?	AqYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No JAN/A
3.	Are there any special requirements or notes on the COC?	Yes No PAVA
1.	If a letter was sent with the COC, does it match the COC?	□Yes □No QHVA
5.	Were all requested analyses understood and acceptable?	Q [™] Yes □No □N/A
5.	Were samples received in a chilled condition? Temperature (if yes)?3 <u>,                                    </u>	⊠(Ýes ⊡No ⊡N/A
•	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	∕¤(Yes □No □N/A
	Were sample custody seals intact?	□Yes □No ZĺN/A
	Does the number of samples received agree with COC7	⊠aqYes ⊡No □N/A
).	Did sample labels correspond with the client ID ?	Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø Ø
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: DTruesdail DClient	□Yes □No din/A
) ''	Were samples pH checked? pH = <u>See c. e.</u> c.	₽ Yes □No □N/A
8.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	√eyYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>I RUSH</b>	₽{Yes □No □N/A
5.	Sample Matrix:   □Liquid   □Drinking Water   □Ground V     □Sludge   □Soil   □Wipe   □Paint   □Solid   ☑	Vater 🗆 Waste Water Other <u>Water</u>
5.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving	2 Shabin

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# **Analytical Bench Log Book**

# WDR pH Results

	awry bri iest	TIL TOL T-/00	Lank is less	than pH 6	6 or greater than p	H 8.3 the Injec	tion well sho	uld be shu	t down until the problem i	s fixed.
Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	рH Result
15C-700B	11-1-11	1200	11-1-11	1204	MC162 #1	11-1-11	3,30	-54.0	No and No and No.	2
ᢤי)tes:							,		Carran and a	
8001-D	11-1-11	1200	11-1-11	1707	pletert 1	11-1-11	3:30	-54.8	Mart In Leine	10
iva <b>tes</b>										>
30C-700B	11-8-11	1100	11-8-11	1104	METERZI	11-8-11	00:1	5372	Der HHELDS	0'X
Actes:										
4 02 - 100/25	11-15-11	1000	11-15-11	1105	METERXI	11-15-11	1:10	57.6	has theys	7./
4400 00	1/ **	\$							$\mathcal{A}\mathcal{A}$	
- 31 00- 7 00 10 Notes:	11-22-01	10.30	11-12-11	035	NEIERA	11-22-11	00:1	8.25	Mon THELPS	7.0
	<b>5</b> -				era-		<b>63</b>			<b></b>
15C-700B	11-79-11	10:00	11-22-11	10:05	METERA!	11-99-11	1:00	56,7	how for HELDS	7.0
totes:										
votes:								-		
		Remi	nder: WDR	Required	pH Range for the	Effluent (SC-	700B) is: 6.5	- 8 4		
				nodau ea	איז ויפוואס וטו נווס ו		/UUD) IS: 0.0	α.4		

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 6, 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-188, GROUNDWATER MONITORING PROJECT, TLI NO.: 998945

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-EW-189 groundwatermonitoring 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 December 6, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

Samples for Total Dissolved Chromium were analyzed by method EPA 200.8 with the approval of Mr. Shawn Duffy of CH2M Hill.

Due to the discrepancy between the Total Dissolved Chromium (13.4 ug/L) and Hexavalent Chromium (10.9 ug/L) results for sample PE-01-189, sample from the Total Dissolved Chromium and Hexavalent Chromium sample containers were digested and analyzed for Total Dissolved Chromium. The results were 10.8 and 12.0 ug/L, respectively. The original digestate was re-analyzed for confirmation and yielded a result of 11.5 ug/L. The result from the re-digested Total Dissolved Chromium was reported as it more closely matched the Hexavalent Chromium result.

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

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

Respectfully Submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Mona Nassimi Manager, Analytical Services

Ale Khyg

Fee 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: Two (2) Groundwater Samples Project Name: PG&E Topock Project Project No.: 424973.01.DM

Laboratory No.: 998945 Date: January 6, 2012 Collected: December 6, 2011 Received: December 6, 2011

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
EPA 200.8	Total Dissolved Chromium	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov
SM 3500-CrB	Hexavalent Chromium	Jenny Tankunakorn

Client: E2 Consulting Engineers. Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612   Laboratory No: 398945     Attention: Shawn Duffy Date Stawn Duffy Project Nou: 324973 01:DM P.O. No: 324973 01:DM P.O. No: 324973 01:DM   Laboratory No: 398945     Project Name: PG&E Topock Project Project Nou: 324973 01:DM P.O. No: 324973 01:DM   Laboratory No: 398945     Project Name: PG&E Topock Project Project Nou: 324973 01:DM   Laboratory No: 398945     Project Nou: 324973 01:DM   Laboratory No: 324973 01:DM     PLOINDIANDIANDIANDIANDIANDIANDIANDIANDIANDI	Clear: E2 Consulting Engineers, Inc. 155 Grand Are. Sulter 100.   Laboratory No.: 998945     Tent: E2 Consulting Engineers, Inc. 155 Grand, CX 94612   Laboratory No.: 998945     Tent: 25 Grand, CX 94612   Laboratory No.: 998945     Tent: 215 Engock Project Name: PC&E Topock Project Project PC Topock Project Project PC Topock Project PC Project PC Topock PC Topock PC Topock Project PC Project PC Topock PC Topo	Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000 Oakland, CA 94612 Attention: Shawn Duffy     Attention: Shawn Duffy   Oakland, CA 94612     Attention: Shawn Duffy   Dakland, CA 94612     Project Name: PG&E Topock Project   Project No.: 424973.01.DM     Project No.: 424973.01.DM   Analysis     P.O. No.: 424973.01.DM   Analysis     P.O. No.: 424973.01.DM   Analysis     B.O. No.: 424973.01.DM   Analysis     P.O. No.: 424973.01.DM   Analysis     P.O. No.: 424973.01.DM   Analysis     B.O. No.: 424973.01.DM   Analysis     B.Sample ID Field ID   Method     B.SB945-001   PE-01-189   E218.6     B.B8945-001   PE-01-189   SM2540C     B.B8945-002   TW-03D-189   SM2540C     B.B8945-002   TW-03D-189   E120.1     B.B8945-002   TW-03D-189   E120.1	Analytical Extraction Sample Method Date	Results Sample Tim	Labo Date Summary e Parameter	oratory No.: e Received: Result	998945 December 6, 2 Units	93 RL
Project No.: 424973.01.DM     Project No.: 424973.01.DM     Project No.: 424973.01.DM   24973.01.DM     P.O. No.: 424973.01.DM   24973.01.DM     P.O. No.: 424973.01.DM   Analysis   Extraction   P.O. No.: 424973.01.DM     P.O. No.: 424973.01.DM   Analysis   Extraction   P.O. No.: 424973.01.DM     P.O. No.: 424973.01.DM   Analysis   Extraction   P.O. No.: 424973.01.DM     P.O. No.: 424973.01.DM   Analysis   Extraction   P.O. No.   P.O. No.     P.O. No.: 424973.01.DM   Mathod   Bample   P.O. No.	Project Name: FG&E Topock Project       Project Name: FG&E Topock Project       P.O. No.: 424973.01.DM       P.O. No.     226/2011     14:00     Chromium     P.O. 0.       P.O. No.: 426/2011     14:00     Chromium     P.O. 0.     P.O. 0.       P.O. NO.: 170.03D-189     EXD201     14:00     Chromium     P.O. 0.       P.O. NO.: 170.03D-189     SM2540C     NO.NE     22/6/2011     14:00     Chromium       P.O. NO.: 170.03D-189     EXD2011     14:00     Ch	Project Name:     PG&E Topock Project       Project No.:     424973.01.DM       P.O. No.:     424973.01.DM       P.O. No.:     424973.01.DM       P.O. No.:     424973.01.DM       B.O. No.:     424973.01.DM       P.O. No.:     424973.01.DM       P.O. No.:     424973.01.DM       B.Sample ID     Mathsis       B98945-001     PE-01-189       PE-01-189     E218.6       B98945-001     PE-01-189       PE-01-189     E218.6       B98945-001     PE-01-189       PE-01-189     E200.8       B98945-001     PE-01-189       PE-01-189     SM2540C       B98945-002     TW-03D-189       PE-012-189     E120.1	Analytical Extraction Sample Method Date	Results Sample Tim	Summary Re Parameter	e receiveu. Result	Units	
AnalysisArractionSample ILF SummaryIab Sample ID Field IDAnalysisExtractionSample Time ParameterResultUnitsLJab Sample ID Field IDMethodDateSample Time ParameterResultUnitsR999345-001PE-01-189E120.1NONE12/6/201114:00Chromium4900umhos/cm2.00999345-001PE-01-189E120.1NONE12/6/201114:00Chromium10.8ug/L1.0999345-001PE-01-189E210.1NONE12/6/201114:00Chromium10.8ug/L1.0999345-001PE-01-189E120.1NONE12/6/201114:00Chromium10.8ug/L1.0999345-002TW-03D-189E210.1NONE12/6/201114:00Chromium10.9ug/L1.0999345-002TW-03D-189E210.114:00ChromiumHexavalent10.9ug/L2.00999345-002TW-03D-189E210.114:00ChromiumHexavalent10.9ug/L2.00999345-002TW-03D-189E210.114:00ChromiumHexavalent10.9ug/L2.00999345-002TW-03D-189E210.114:00ChromiumHexavalent10.9ug/L2.00999345-002TW-03D-189E210.114:00ChromiumHexavalent10.9ug/L2.00 <th>Analysis Analysis Colspan="6"&gt;Analysis Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"&gt;Colspan="6"Colspan="6"&gt;Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colspan="6"Colsp</th> <th>ab Sample ID   Field ID   Analysis   E     998945-001   PE-01-189   E120.1     998945-001   PE-01-189   E120.1     998945-001   PE-01-189   E200.8     998945-001   PE-01-189   E200.8     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-002   TW-03D-189   E200.8     1002   TW-03D-189   E200.8     1014   PE-00.1   PE-01.189     1015   PE-01.189   E120.1</th> <th>Analytical Extraction Sample Method Date NONE 12/6/201</th> <th>Results Sample Tim</th> <th>Summary e Parameter</th> <th>Result</th> <th>Units</th> <th>RL</th>	Analysis Analysis Colspan="6">Analysis 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Sample ID   Field ID   Analysis   E     998945-001   PE-01-189   E120.1     998945-001   PE-01-189   E120.1     998945-001   PE-01-189   E200.8     998945-001   PE-01-189   E200.8     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-001   PE-01-189   E218.6     998945-002   TW-03D-189   E200.8     1002   TW-03D-189   E200.8     1014   PE-00.1   PE-01.189     1015   PE-01.189   E120.1	Analytical Extraction Sample Method Date NONE 12/6/201	Results Sample Tim	Summary e Parameter	Result	Units	RL
Lab Sample ID     Field ID     Method     Method     Date     Sample Time     Result     Units     Kesult     Units     Z     Z       998945-001     PE-01-189     E200.8     LABFLT     12/6/2011     14:00     Chromium     10.8     ug/L     1.0     2.00       998945-001     PE-01-189     SM2540C     NONE     12/6/2011     14:00     Chromium     10.8     ug/L     1.0     2.00       998945-002     TW-03D-189     E120.1     NONE     12/6/2011     14:00     Chromium     2930     mg/L     1.0     2.00     98945-00     98945-002     TW-03D-189     E120.1     12/6/2011     14:00     Chromium     10.8     0.0/L     1.0     2.00     98945-002     TW-03D-189     E120.1     14:00	Lab Sample ID     Field ID     Method     Date     Sample Time     Parameter     Result     Units     Rul     Nits     Units     Rul     Units     Rul     Units     Rul     Inits     Rul     Inits     Rul     Units     Zul     Zul <th>ab Sample ID     Field ID     Method       998945-001     PE-01-189     E120.1       998945-001     PE-01-189     E200.8       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E210.3       998945-002     TW-03D-189     E120.1       998945-002     TW-03D-189     E200.8</th> <th>Method Date NONE 12/6/201</th> <th>Sample Tim 14:00</th> <th>te Parameter</th> <th>Result</th> <th>Units</th> <th>꿉</th>	ab Sample ID     Field ID     Method       998945-001     PE-01-189     E120.1       998945-001     PE-01-189     E200.8       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E218.6       998945-001     PE-01-189     E210.3       998945-002     TW-03D-189     E120.1       998945-002     TW-03D-189     E200.8	Method Date NONE 12/6/201	Sample Tim 14:00	te Parameter	Result	Units	꿉
998945-001     PE-01-189     E120.1     NONE     12/6/2011     14:00     EC     4900     umhos/cm     2.00       998945-001     PE-01-189     E200.8     LABFLT-digested     12/6/2011     14:00     Chromium     10.8     ug/L     1.0       998945-001     PE-01-189     E200.8     LABFLT     12/6/2011     14:00     Chromium     10.8     ug/L     1.0       998945-001     PE-01-189     E218.6     LABFLT     12/6/2011     14:00     Chromium     10.8     ug/L     1.0       998945-001     PE-01-189     SM2540C     NONE     12/6/2011     14:00     Chromium     10.9     ug/L     1.2       998945-002     TW-03D-189     E120.1     NONE     12/6/2011     14:00     Chromium     1150     ug/L     1.0       998945-002     TW-03D-189     E120.1     NONE     12/6/2011     14:00     Chromium     1150     ug/L     1.0       998945-002     TW-03D-189     SM2540C     NONE     12/6/2011     14:00     Chromium	998945-001     PE-01-189     E120.1     NONE     12/6/2011     14:00     EC     4900     umhos/cm     2.0       998945-001     PE-01-189     E200.8     LABFLT     12/6/2011     14:00     Chromium     10.8     ug/L     1.0       998945-001     PE-01-189     E200.8     LABFLT     12/6/2011     14:00     Chromium     10.8     ug/L     1.0       998945-001     PE-01-189     E218.6     LABFLT     12/6/2011     14:00     Chromium     10.9     ug/L     1.2       998945-002     TW-03D-189     E120.1     NONE     12/6/2011     14:00     Chromium     10.9     ug/L     1.2       998945-002     TW-03D-189     E720.8     LABFLT     12/6/2011     14:00     Chromium     1.1     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2     1.2	998945-001 PE-01-189 E120.1 998945-001 PE-01-189 E200.8 LAB 998945-001 PE-01-189 E218.6 998945-001 PE-01-189 E218.6 998945-002 TW-03D-189 E120.1 1002 TW-03D-189 E200.8 LAB	NONE 12/6/201	14:00				
998945-001   PE-01-189   E218.0   CADELL   12/0/2011   14:00   Total Dissolved Solids   2930   mg/L   125     998945-001   PE-01-189   SM2540C   NONE   12/6/2011   14:00   Total Dissolved Solids   2930   mg/L   125     998945-002   TW-03D-189   E120.1   NONE   12/6/2011   14:00   EC   8430   umhos/cm   2.00     998945-002   TW-03D-189   E200.8   LABFLT-digested   12/6/2011   14:00   Chromium   1150   ug/L   1.0     998945-002   TW-03D-189   SM2540C   NONE   12/6/2011   14:00   Total Dissolved Solids   4650   mg/L   2.00     998945-002   TW-03D-189   SM2540C   NONE   12/6/2011   14:00   Total Dissolved Solids   4650   mg/L   2.00     998945-002   TW-03D-189   SM3500-CrB   LABFLT   12/6/2011   14:00   Chromium   4650   mg/L   2.00     998945-002   TW-03D-189   SM3500-CrB   LABFLT   12/6/2011   14:00   Chromium, hexavalent   1080   ug/L   260	998945-001     PE-UI-189     EZ I0.0     NONE     12/01-01     14:00     Ontomum, nexamenen     10:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00     00:00	988945-001 PE-01-189 EZ 18.0 988945-001 PE-01-189 SM2540C 998945-002 TW-03D-189 E120.1 998945-002 TW-03D-189 E200.8 LAB	PLI-digesten (2/0/201)	14.00	EC Chromium Chromium hovevalant	4900 10.8	umhos/cm ug/L	2.00 1.0
998945-002 1W-03D-189 E120.1 NONE 12/0/2011 14:00 EC 0420 umoven 2.00 998945-002 TW-03D-189 E200.8 LABFLT-digested 12/6/2011 14:00 Chromium 1150 ug/L 1.0 998945-002 TW-03D-189 SM2540C NONE 12/6/2011 14:00 Total Dissolved Solids 4650 mg/L 250 998945-002 TW-03D-189 SM3500-CrB LABFLT 12/6/2011 14:00 Chromium, hexavalent 1080 ug/L 100	998945-002     1 W-03U-189     E 1/20.1     NUNE     12/6/2011     14.00     Chromium     04.00     uninosymin     2.00       998945-002     TW-03D-189     E 200.8     LABFLT-digested     12/6/2011     14.00     Chromium     04.00     uninosymin     2.00       998945-002     TW-03D-189     SM3500-CrB     LABFLT     12/6/2011     14.00     Chromium     0450     uninosymin     2.00       998945-002     TW-03D-189     SM3500-CrB     LABFLT     12/6/2011     14.00     Chromium     16.00     uninosymin     2.00       998945-002     TW-03D-189     SM3500-CrB     LABFLT     12/6/2011     14.00     Chromium     16.00     Uninosymin     2.00       998945-002     TW-03D-189     SM3500-CrB     LABFLT     12/6/2011     14.00     Chromium     16.00     Unio/L     10       Non betected (belowing "Significant Figures" rule has been applied to all results:     Results below 0.01 wit have two (2) significant figures.     1080     ug/L     101       Note:     The following "Significant Figures" rule has been applied to all results. <td< td=""><td>998945-002 1VV-03D-189 E120,1 998945-002 TVV-03D-189 E200,8 LAB</td><td>NONE 12/6/201</td><td>14:00</td><td>Total Dissolved Solids</td><td>2930</td><td>ug/L mbos/cm</td><td>125</td></td<>	998945-002 1VV-03D-189 E120,1 998945-002 TVV-03D-189 E200,8 LAB	NONE 12/6/201	14:00	Total Dissolved Solids	2930	ug/L mbos/cm	125
998945-002 TW-03D-189 SM3500-CrB LABFLT 12/6/2011 14:00 Chromium, hexavalent 1080 ug/L 100	998945-002 TW-03D-189 SM3500-CrB LABFLT 12/6/2011 14:00 Chromium, hexavalent 1080 ug/L 100 ug/L 100 ND: Non betected (below reporting imit) ND: Non betected (below reporting imit) Note: The following "Significant Figures" rule has been applied to all results: Results below 0.01 will have two (2) significant figures.		NUNE 12/0/201 BFLT-digested 12/6/201 NONE 12/6/201	14:00 14:00	CO Chromium Total Discolved Sodids	4650 4650	ug/L mg/l	2.50 2.50
	ND: Non Detected (below reporting limit) Note: The following "Significant Figures" rule has been applied to all results: Results below 0.01 will have thew (2) significant figures. Results below 0.01 will have there (2) significant figures.	398945-002 TW-03D-189 SM3500-CrB	LABFLT 12/6/201	14:00	Chromium, hexavalent	1080	ug/L	100

EXCELLENCE IN INDEPENDENT TESTING



Laboratory No. 998945

REPORT

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

Printed 1/6/2012

Page 1 of 10

# Client: 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

#### Samples Received on 12/6/2011 11:30:00 PM

Field ID				Lab ID	Col	lected	Matrio	<
PE-01-189 TW-03D-189				998945-001 998945-002	12/06 12/06	/2011 14:00 /2011 14:00	Wate Wate	r r
Specific Conductivity -	EPA 120.1		Batcl	h 12EC11C			12/8/2011	
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
998945-001 Specific Condu	ctivity	umhos/c	m 12/0	8/2011	1.00	0.0950	2.00	4900
998945-002 Specific Condu	ctivity	umhos/c	m 12/0	8/2011	1.00	0.0950	2.00	8430
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID = 9	98945-002
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 8420	Expected 8430	F	RPD 0.119	Acceptan 0 - 10 Lab ID = 9	ice Range 98946-002
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7730	Expected 7750	F	RPD 0.258	Acceptan 0 - 10	ice Range
Parameter Specific Conductivity Lab Control Sample	Unit umhoક Duplicate	DF 1.00	Result 695	Expected 706	F	Recovery 98.4	Acceptan 90 - 110	ice Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 694	Expected 706	F	Recovery 98.3	Acceptan 90 - 110	ice Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 697	Expected 706	F	ecovery 98.7	Acceptan 90 - 110	ce Range

Report Continued

Client: E2 Consulting Engineers, Inc.

TRUESDAIL LABORATORIES, INC.

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

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Chrome VI by EPA 218.6		Batch 12CrH11G					
Parameter		Unit	Anal	lyzed D	F MDL	RL	Result
998945-001 Chromium, Hexa	ivalent	ug/L	12/08	/2011 06:01 1.0	05 0.0260	0.20	10.9
Method Blank							
Parameter	Unit	DF	Result				
Chromium, Hexavalent	ug/L	1.00	ND				
Duplicate						Lab ID =	998830-005
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.05	0.159	0.170	6.50	0 - 20	
Low Level Calibration	Verification	ì					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.235	0.200	118.	70 - 130	כ
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.89	5.00	97.9	90 - 11(	D
Matrix Spike						Lab ID =	998830-005
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.23(1.06)	99.6	90 - 11	0
Matrix Spike						Lab ID =	998830-006
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	98.4	90 - 11	0
Matrix Spike						Lab ID =	998830-007
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.06	1.22	1.24(1.06)	97.9	90 - 11	0
Matrix Spike						Lab ID =	998830-008
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.06	1.24	1.25(1.06)	99.0	90 - 11	0
Matrix Spike						Lab ID ≃	998830-009
Parameter	Unit	DF	Result	Expected/Addeo	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.06	1.16	1.25(1.06)	91.7	90 - 11	0
Matrix Spike						Lab ID =	998830-010
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.06	1.25	1.25(1.06)	99.7	90 - 11	0

Report Continued

Client: E2 Consulting Engineers, Inc.		Project Name: Project Number:		PG&E Topock Project 7 424973.01.DM		Page 4 of 10 Printed 1/6/2012
Matrix Spike						Lab ID = 998830-011
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.20	Expected/Added 1.25(1.06)	Recovery 95.1	Acceptance Range 90 - 110 Lab ID = 998830-012
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.25	Expected/Added 1.25(1.06)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998830-013
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.23	Expected/Added 1.26(1.06)	Recovery 97.4	Acceptance Range 90 - 110 Lab ID = 998901-007
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 9.14	Expected/Added 9.24(5.30)	Recovery 98.1	Acceptance Range 90 - 110 Lab ID = 998901-008
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 8,27	Expected/Added 8.38(5.30)	Recovery 97.9	Acceptance Range 90 - 110 Lab ID = 998901-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.17	Expected/Added 1.22(1.06)	Recovery 95.5	Acceptance Range 90 - 110 Lab ID = 998936-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.00	Expected/Added 7.04(5.30)	Recovery 99.2	Acceptance Range 90 - 110 Lab ID = 998936-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.93	Expected/Added 7.97(5.30)	Recovery 99.3	Acceptance Range 90 - 110 Lab ID = 998936-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 2.00	Expected/Added 2.01(1.06)	Recovery 99.3	Acceptance Range 90 - 110 Lab ID = 998945-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 27.0	Expected/Added 26.8(15.9)	Recovery 101.	Acceptance Range 90 - 110 Lab ID = 998946-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.28	Expected/Added 5.46(5.25)	Recovery 96.4	Acceptance Range 90 - 110 Lab ID = 998946-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.16	Expected/Added 1.18(1.06)	Recovery 98.4	Acceptance Range 90 - 110

Duplicate

**Total Dissolved Solids** 

Total Dissolved Solids

Lab Control Sample

Parameter

Parameter

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 6 of 10 Project Number: 424973.01.DM Printed 1/6/2012

Chromium, Hexavalent by SM 3500-Cr B			Batch 12CrH11A				· · · · · · · · · · · · · · · · · · ·	
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998945-002 Chromium, Hexa	valent	ug/L	12/12	2/2011 16:18	10.0	15.0	100.	1080
Method Blank								·
Parameter Chromium, Hexavalent Dunlicate	Unit ug/L	DF 1.00	Result ND				1 ah 10	009045 002
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 10.0	Result 1100	Expected 1080		RPD 2.33	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 102.	Expected 100.		Recovery 102.	Accepta 90 - 110 Lab ID =	ance Range ) 998945-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 10.0	Result 2140	Expected/Ac 2080(1000)	dded	Recovery 106.	Accepta 85 - 11	ance Range 5
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 62.7	Expected 60.0		Recovery 104.	Accepta 90 - 11(	ance Range
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 64.0	Expected 60.0		Recovery 107.	Accepta 90 - 110	ance Range )
Total Dissolved Solids b	v SM 254	0 C	Batch	12TDS11A			12/7/201	12.22
Parameter		Unit	Ana	ilyzed	DF	MDL	RL	Result
998945-001 Total Dissolved S	Solids	mg/L	12/07	7/2011	1.00	0.400	125	2930
998945-002 Total Dissolved S	Solids	mg/L	12/07	7/2011	1.00	0.400	250.	4650
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					

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

Result

1100

Result

494

Expected

Expected

1090

500.

DF

1.00

DF

1.00

Unit

mg/L

Unit

mg/L

Lab ID = 998901-008

Acceptance Range

Acceptance Range

0 - 5

90 - 110

RPD

1.09

Recovery

98.8



Report Continued

Project Name: PG&E Topock Project Client: E2 Consulting Engineers, Inc. Page 7 of 10 Project Number: 424973.01.DM Printed 1/6/2012

Metals by EPA 200.8, Dissolved		Batch 123011C		123011C			
Parameter		Unit	Ana	lyzed C	F MDL	RL	Result
998945-002 Chromium		ug/L	12/31	/2011 19:38 5.	00 0.110	1.0	1150
Method Blank							
Parameter Chromium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	998731-001
Parameter Chromium	Unit ug/L	DF 5.00	Result 2.20	Expected 2.20	RPD 0.228	Accepta 0 - 20	ance Range
Low Level Calibration V	'erification						
Parameter Chromium Lab Control Sample	Unit ug/L	DF 1.00	Result 0.232	Expected 0.200	Recovery 116.	Accepta 70 - 130	ance Range )
Parameter Chromium Lab Control Sample Du	Unit ug/L plicate	DF 5.00	Result 109.	Expected 100.	Recovery 109.	Accepta 85 - 115	ince Range
Parameter Chromium	Unit ug/L	DF 5.00	Result 106.	Expected 100.	Recovery 106.	Accepta 85 - 115	ince Range
Matrix Spike						Lab ID =	998731-001
Parameter Chromium	Unit ug/L	DF 5.00	Result 105.	Expected/Addeo 102.(100.)	l Recovery 102.	Accepta 75 - 125	ince Range
Matrix Spike Duplicate						Lab ID =	998731-001
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 105.	Expected/Addeo 102.(100.)	d Recovery 102.	Accepta 75 - 125	ince Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.5	Expected 10.0	Recovery 105.	Accepta 90 - 110	ince Range )
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.88	Expected 10.0	Recovery 98.8	Accepta 90 - 110	ince Range )
Parameter Chromium	Unit ug/L	DF 1.00	Result 9.94	Expected 10.0	Recovery 99.4	Accepta 90 - 110	ince Range



Report Continued

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, Di	ssolved	and the second second	Batch 010512A		internet		
Parameter		Unit	Ana	lyzed DI	= MDL	RL	Result
998945-001 Chromium		ug/L	01/05	/2012 21:52 5.0	0 0.110	1.0	10.8
Method Blank							
Parameter Chromium	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	998945-001
Parameter Chromium	Unit ug/L	DF 5.00	Result 10.9	Expected 10.8	RPD 0.554	Accepta 0 - 20	ince Range
Low Level Calibration	Verification						
Parameter Chromium Lab Control Sample	Unit ug/L	DF 1.00	Result 0.197	Expected 0.200	Recovery 98.6	Accepta 70 - 130	ince Range )
Parameter Chromium Matrix Spike	Unit ug/L	DF 5.00	Result 104.	Expected 100.	Recovery 104.	Accepta 85 - 115 Lab ID =	ance Range 5 998945-001
Parameter Chromium Matrix Spike Duplica	Unit ug/L	DF 5.00	Result 114.	Expected/Added 111.(100.)	Recovery 104.	Accepta 75 - 125 Lab ID =	ance Range 5 998945-001
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 117.	Expected/Added 111.(100.)	Recovery 106.	Accepta 75 - 128	ance Range 5
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Accepta 90 - 110	ance Range )
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.63	Expected 10.0	Recovery 96.3	Accepta 90 - 110	ance Range )
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.18	Expected 10.0	Recovery 91.8	Accepta 90 - 11(	ance Range )
Parameter Chromium	Unit ug/L	DF 1.00	Result 9.66	Expected 10.0	Recovery 96.6	Accepta 90 - 110	ance Range D

Report Continued

Client: E2 Consulting Engineers, Inc.		:. Pr Pr	Project Name: PG&E Topock Project Project Number: 424973.01.DM			Page 10 of 10 Printed 1/6/2012	
MRCVS - Primary							
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.77	Expected 10.0	Recovery 97.7	Acceptance Range 90 - 110	
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.91	Expected 10.0	Recovery 99.1	Acceptance Range 90 - 110	
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.84	Expected 10.0	Recovery 98.4	Acceptance Range 90 - 110	
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.36	Expected 10.0	Recovery 93.6	Acceptance Range 90 - 110	
Parameter Chromium Interference Check Sta	Unit ug/L andard A	DF 1.00	Result 9.81	Expected 10.0	Recovery 98.1	Acceptance Range 90 - 110	
Parameter Chromium Interference Check Sta	Unit ug/L andard A	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interfererice Check Sta	Unit ug/L andard AB	DF 1.00	Result ND	Expected 0.00	Recovery	Acceptance Range	
Parameter Chromium Interference Check Sta	Unit ug/L andard AB	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 80 - 120	
Parameter Chromium	Unit ug/L	DF 1.00	Result 9.67	Expected 10.0	Recovery 96.7	Acceptance Range 80 - 120	

Respectfully submitted,

**TRUESDAIL LABORATORIES, INC.** 

a Can  $\int_{\mathcal{F}_{\mathcal{F}}} Mona Nassimi$ 

Manager, Analytical Services





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#### Total Dissolved Solids by SM 2540 C

#### Calculations

Batch: 12TDS11A Date Calculated: 12/9/11

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	92.0966	92.0970	92.0969	0,0001	No	0.0003	3.0	25.0	ND	1
998868-8	100	67.2146	67.2383	67.2379	0.0004	No	0.0233	233.0	25.0	233.0	1
998869	10	50.3832	50.4314	50.431	0.0004	No	0.0478	4780.0	250.0	4780.0	1
998895-2	100	71.0973	71.1093	71.1093	0.0000	No	0.0120	120.0	25.0	120.0	1
998895-4	100	70.8985	70.9232	70.923	0.0002	No	0.0245	245.0	25.0	245.0	1
938901-1	50	50,4300	50.4596	50.4595	0.0001	No	0.0295	590.0	50.0	590.0	1
998901-2	50	51.0004	51.0295	51.0291	0.0004	No	0.0287	574.0	50.0	574.0	1
998901-3	50	50.1293	50.228	50.228	0,0000	No	0.0987	1974.0	50.0	1974.0	1
998901-4	100	74.7529	74.8008	74.801	-0.0002	No	0.0481	481.0	25.0	481.0	1
998901-5	20	75.3080	75.3798	75.3798	0.0000	No	0.0718	3590.0	125.0	3590.0	1
998901-6	50	51.2523	51.3132	51.313	0.0002	No	0.0607	1214.0	50.0	1214.0	1
998901-8 <b>D</b>	50	69.2150	69.2704	69.2701	0.0003	No	0.0551	1102.0	50.0	1102.0	1
LCS	100	68.1683	68,2179	68.2177	0.0002	No	0.0494	494.0	25.0	494.0	1
998901-7	50	72.8250	72.9265	72.9265	0.0000	No	0.1015	2030,0	50.0	2030.0	1
998901-8	50	68.1412	68.1959	68.1957	0.0002	No	0.0545	1090.0	50.0	1090.0	1
998918-10	100	74.6864	74.7434	74.7433	0.0001	No	0.0569	569.0	25.0	569.0	1
998919-16	50	47.9092	47.9394	47.939	0.0004	No	0.0298	596.0	50.0	596.0	1
998929-1	50	69.7508	69.8017	69.8017	0.0000	No	0.0509	1018.0	50.0	1018.0	1
998929-2	100	65.6277	65.6823	65.6822	0.0001	No	0.0545	545.0	25.0	545.0	1
998929-3	100	68.8840	68.9411	63.9409	0.0002	No	0.0569	569.0	25.0	569.0	1
998929-4	100	66.8110	66.8627	66.8623	0.0004	No	0.0513	513.0	25.0	513.0	1
998945-1	20	49.8316	49.8904	49.8902	0.0002	No	0.0586	2930.0	125.0	2930.0	1
998945-2	10	48.1842	48.2308	48,2307	0.0001	No	0.0465	4650.0	250.0	4650.0	1

#### Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Frinted Name

Analyst Signature

d-Name Reviewer Pri

Reviewer Signature

#### TDS/EC CHECK

#### Batch: 12TDS11A

Date Calculated: 12/9/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
		:	- -	
998868-8	420	0.55	273	0.85
998869	7960	0.60	5174	0.92
998895-2	217	0.55	141.05	0.85
998895-4	446	0.55	289.9	0.85
998901-1	1032	0.57	670.8	0.88
998901-2	1032	0.56	670.8	0.86
998901-3	3050	0.65	1982.5	1.00
998901-4	763	0.63	495,95	0.97
998901-5	4840	0.74	3146	1.14
998901-6	1790	0.68	1163.5	1.04
998901-8D	1640	0.67	1066	1.03
LCS				: :
998901-7	2910	0.70	1891.5	1.07
998901-8	1640	0.66	1066	1.02
998918-10	919	0.62	597.35	0.95
998919-16	1069	0.56	694.85	0.86
998929-1	1808	0.56	1175.2	0.87
998929-2	947	0.58	615.55	0.89
998929-3	933	0.61	606,45	0.94
998929-4	830	0.62	539.5	0.95
998945-1	4920	0.60	3198	0.92
998945-2	8500	0.55	5525	0.84
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# Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/2/11	998873-1	9.5	AIA	NIA	NIA	Cind
	-2			1		
	4	-				·
	-5					
	-6					
				·		
	-8					
	-9					-
	10					
10/10	// _ //	1	V		~	Vn
12/6/2011	998900	7	5 mL	9.5	9:30 AM	G
12/6/2011	998901=7	9.5	N/A	NA	NA	Cul
					P	
	=q		*	V,		
12/7/2014	998935-1	4.5	NIA	NIA	NIA	Gui
					· · · · · · · · · · · · · · · · · · ·	
	4 -3		<u> </u>	¥		
12/1/2011	998937	9.5	NIA	NA	NIA	Gu
1217/2014	<u>ay 8936-1</u>	9.5	N/A	NA	NIA	Ger
					·	1
12/2/2010	-3	- V -				
12/12/14	198995		<u>S ML</u>	4.5	10:15 Am	
151212-01	<u>aagaar-1</u>		5mL	9.5	10:30 Am (	25
12/-1-12	1 -2				10:35 Am	ký l
W YEY		4.5	A	NIA	NIA	Line
						1
			<u> </u> ,		·	
<u>v</u>	<b>v</b> 0	¥	$\nabla V$	1	V	

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

Metals Samples Logbook

			<u> </u>			Adjusted to
Sample Number	Turbidity	рН	Date	Analyst	Need Digest	pH<2 (Y/N)
998901 7-8	</td <td>&lt;2</td> <td>12/09</td> <td>M, M</td> <td>Yes</td> <td></td>	<2	12/09	M, M	Yes	
09894511-27			,		, ] =	_
998946 11-21						-
998 947 459					V	-
99899611-61	I V	1V	1		1.V	
29901671-61	21	22	12/12/11	M. 14	Jes	
999052	71	22	1204/11	an	Yes	<u> </u>
999056				<b>~</b> _	-	
99905911-21	./	1/			<b>-</b> -	
99902811-21	21	2	12/14/4	H.M	Yes	r
999039112-51			19:00		+	-
999084 (1-61						~
99908611-61						-
99908711-21						*
999088						
99908911-51	J	J J	V	V		
999091 11-241	21	62	12/15/	MM	Yes	F
999109011- 491	,			<u> </u>		
999092 (1-16)						
999117 11-21						-
999118						~~
999 12111-41		J			J.	l
99915411.91	21	c-2	12/16/4	Mar	yes	
944155/1-2/	1		<u>  / </u>			<u> </u>
994156						
999047-1	71	22	12/16/11	M.M.	1 yes	<u> </u>
999067H-21			· · / ·			
099124						-
999125 11-41						-
999148						-
999149						
999151				ļ/	<i>i</i>	-
995167		Vi		¥	1	
	v					
	_					
			ļ			
•				<u> </u>		



# Sample Integrity & Analysis Discrepancy Form

Clie	ent: <u>F&amp;</u>	Lab #_ <u>998945</u>
Dat	e Delivered:///////////////////////////////////	Field Service DClient
1.	Was a Chain of Custody received and signed?	σ¤(Yes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No _N/A
З.	Are there any special requirements or notes on the COC?	□Yes □No ∂AN/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No pin/A
5.	Were all requested analyses understood and acceptable?	o\$qlYes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? ک <u>َرْکَّ <b>C</b></u>	02-Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ZáYes □No □N/A
8.	Were sample custody seals intact?	R Pyes INO DINA
9.	Does the number of samples received agree with COC?	Trans INO IN/A
10.	Did sample labels correspond with the client ID's?	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ <b>Truesdail</b> □Client	□Yes □No ⁰ ⊠N/A
12.	Were samples pH checked? pH = <u>Set C-AC</u>	Ø1Yes □No □N/A
(3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	OPTYES DNO DN/A
'4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): D <b>RUSH</b> @ Std	AYes □No □N/A
5.	Sample Matrix: Liquid Drinking Water AGround V	Vater DWaste Water Other
6.	Comments:	
7.	Sample Check-In completed by <b>Truesdail</b> Log-In/Receiving:	d. Steabuutn,

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 10, 2012

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

Dear Mr. Duffy:

#### SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-338 PROJECT, GROUNDWATER MONITORING, TLI NO.: 998946

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-338 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 December 6, 2011, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

No violations or 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.

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

Laboratory No.: 998946 Date: January 10, 2012 Collected: December 6, 2011 Received: December 6, 2011

# ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Gautam Savani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Kim Luck
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	Maksim Gorbunov

8	EXCELLENCE IN INDEPE	INDENT TESTING						Established	1931	
							14201 FRANKLIN (714) 730-6239	AVENUE · TUSTII • • FAX (714) 73(	N, CALIFORNIA 9278 0-6462 · www.truesd	07008 ail.com
	Clien	t: E2 Consulting Enginee 155 Grand Ave. Suite Oakland, CA 94612	ers, Inc. 1000				Labo Date	ratory No.: 9 Received: 1	998946 December 6, 2(	11
	Attention	i: Shawn Duffy								
	Project Name Project No. P.O. No.	:: PG&E Topack Project :: 424973.01.DM :: 424973.01.DM								
			<b>A</b> I	<u>nalytical F</u>	<u> Results S</u>	Summ	ary			
_	Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
" -	998946-001	SC-700B-WDR-338	E120.1	NONE	12/6/2011	13:30	EC	7130	umhos/cm	2.00
	998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Aluminum	QN	ng/L	50.0
	998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	BORON	1060	ng/L	200
	998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Iron	Q	ng/L	20.0
	998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Nickel	Q Z	ng/L	10.0
	998946-001	SC-700B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Zinc	Q i	ng/L	10.0
-	998946-001 008046 004	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011 42/5/2014	13:30	Antimony		ug/L	10.0
	998946-001 998946-001	SC-700B-WDR-338 SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Barium	15.4	ug/L ug/L	10.0
	998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Chromium	1.1	ng/L	1.0
	998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Copper	ON S	ug/L	5.0
	998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Lead	ON N	ug/L	10.0
	998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Manganese	6.6 7 7	ug/L	0.1
	998946-001	SC-700B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Molybdenum Chromium hevavalant	18.1 ND	ug/L	10.0
	990940-001 008046_001	SC700B-WDR-338		NONF	12/0/2011	13-30	Flinride	137	ug/r mo/l	0.500
	998946-001 998946-001	SC-700B-WDR-338	E300	NONE	12/6/2011	13:30	Nitrate as N	4.74	ma/L	1.00
	998946-001	SC-700B-WDR-338	E300	NONE	12/6/2011	13:30	Sulfate	477	mg/L	25.0
	998946-001	SC-700B-WDR-338	SM2130B	NONE	12/6/2011	13:30	Turbidity	QN	NTU	0.100
	998946-001	SC-700B-WDR-338	SM2540C	NONE	12/6/2011	13:30	Total Dissolved Solids	5120	mg/L	250
n	998946-001	SC-700B-WDR-338	SM4500NH3D	NONE	12/6/2011	13:30	Ammonia-N	QN	mg/L	0.500
ሰፍ	998946-001	SC-700B-WDR-338	SM4500NO2B	NONE	12/6/2011	13:30	Nitrite as N	QN	mg/L	0.0050
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and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories.

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Report Continued

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
998946-002	SC-100B-WDR-338	E120.1	NONE	12/6/2011	13:30	EC	7750	umhos/cm	2.00
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Aluminum	QN	ng/L	50.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	BORON	1080	ng/L	200
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Iron	QN	ng/L	20.0
998946-002	SC-100B-WDR-338	E200.7	LABFLT-digested	12/6/2011	13:30	Iron	QN	ng/L	20.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Nickel	QN	ng/L	10.0
998946-002	SC-100B-WDR-338	E200.7	NONE-digested	12/6/2011	13:30	Zinc	QN	ng/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Antimony	QN	ng/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Arsenic	3.7	ng/L	1.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Barium	28.0	ng/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Chromium	920	ug/L	1.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Copper	QN	ng/L	5.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Lead	ND	ng/L	10.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Manganese	7.2	ng/L	1.0
998946-002	SC-100B-WDR-338	E200.8	LABFLT-digested	12/6/2011	13:30	Manganese	6.1	ng/L	5.0
998946-002	SC-100B-WDR-338	E200.8	NONE-digested	12/6/2011	13:30	Molybdenum	20.0	ug/L	10.0
998946-002	SC-100B-WDR-338	E218.6	LABFLT	12/6/2011	13:30	Chromium, hexavalent	910	ng/L	21.0
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Fluoríde	1.50	mg/L	0.500
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Nitrate as N	3.35	mg/L	1.00
998946-002	SC-100B-WDR-338	E300	NONE	12/6/2011	13:30	Sulfate	528	mg/L	25.0
998946-002	SC-100B-WDR-338	SM2130B	NONE	12/6/2011	13:30	Turbidity	0.178	NTU	0.100
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Alkalinity	135	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Bicarbonate	135	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2320B	NONE	12/6/2011	13:30	Carbonate	QN	mg/L	5.00
998946-002	SC-100B-WDR-338	SM2540C	NONE	12/6/2011	13:30	Total Dissolved Solids	4390	mg/L	250
998946-002	SC-100B-WDR-338	SM4500NH3D	NONE	12/6/2011	13:30	Ammonia-N	QN	mg/L	0.500
998946-002	SC-100B-WDR-338	SM4500NO2B	NONE	12/6/2011	13:30	Nitrite as N	QN	mg/L	0.0050
998946-002	SC-100B-WDR-338	SM4500-PB_E	NONE	12/6/2011	13:30	Total Phosphorous-P	QN	mg/L	0.0200
998946-002	SC-100B-WDR-338	SM4500SI	NONE	12/6/2011	13:30	Soluble Silica	19.1	mg/L	1.00
998946-002	SC-100B-WDR-338	SM5310C	NONE	12/6/2011	13:30	Total Organic Carbon	0.321	mg/L	0.300

ND: Non Detected (below reporting #mit) mg/L: Milligrams per liter. Note: The following "Significant Figures" rule has been applied to all results: Results below 0.01ppm will have two (2) significant figures. Result above or equal to 0.01ppm will have three (3) significant figures. Quality Control data will always have three (3) significant figures.

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REPORT

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

Printed 1/10/2012

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Laboratory No. 998946

### Client: 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

Nitrate as Nitrogen

mg/L

1.00

#### Samples Received on 12/6/2011 11:30:00 PM

Field ID				Lab ID	Collected Mat		ix	
SC-700B-WDR-338 SC-100B-WDR-338				998946-001 998946-002	12/06 12/06	/2011 13:30 /2011 13:30	Wat Wat	er er
Anions By I.C EPA 300	.0		Batch	12AN11G				ana Nganatata
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998946-001 Nitrate as Nitrog	en	mg/L	12/07	/2011 10:50 5	5.00	0.135	1.00	4.74
998946-002 Nitrate as Nitrog	en	mg/L	12/07	/2011 11:02 🗧 🗧	5.00	0.135	1.00	3.35
Method Blank								
Parameter Nitrate as Nitrogen	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	998938-003
Parameter Nitrate as Nitrogen Lab Control Sample	Unit mg/L	DF 5.00	Result 15.1	Expected 13.1	F	RPD 14.5	Accepta 0 - 20	ance Range
Parameter Nitrate as Nitrogen Matrix Spike	Unit mg/L	DF 1.00	Result 3.95	Expected 4.00	F	Recovery 98.7	Accepta 90 - 110 Lab ID =	ance Range ) 998938-003
Parameter Nitrate as Nitrogen MRCCS - Secondary	Unit mg/L	DF 5.00	Result 34.5	Expected/Add 33.1(20.0)	ed F	Recovery 107.	Accepta 85 - 115	ance Range 5
Parameter Nitrate as Nitrogen MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.96	Expected 4.00	F	Recovery 98.9	Accepta 90 - 11(	ance Range )
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories. 014

3.00

98.2

90 - 110

2.94

Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Anions By I.C EPA 300.0	۱		Batch	12AN11G			
Parameter		Unit	Ana	lyzed I	DF MDL	RL	Result
998946-001 Sulfate		mg/L	12/07	/2011 12:16 5	0.0 5.70	25.0	477.
998946-002 Sulfate		mg/L	12/07	/2011 12:29 5	0.0 5.70	25.0	528.
Method Blank							<u> </u>
Parameter	Unit	DF	Result				
Chloride	mg/L	1.00	ND				
Sulfate	mg/L	1.00	ND				
Duplicate						Lab ID =	998901-004
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Range
Chloride	mg/L	25.0	66.9	67.0	0.0806	0 - 20	
Sulfate	mg/L	25.0	100.	99.7	0.428	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chloride	mg/L	1.00	4.01	4.00	100.	90 - 110	)
Sulfate	mg/L	1.00	19.8	20.0	99.3	90 - 110	)
Matrix Spike					1	Lab ID =	998901-004
Parameter	Unit	DF	Result	Expected/Adde	d Recovery	Accepta	ance Range
Chloride	mg/L	25.0	174.	167(100.)	108.	85 - 115	5
Sulfate	mg/L	25.0	356.	350 <i>.</i> (250.)	103.	85 - 115	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chloride	mg/L	1.00	4.02	4.00	100.	90 - 110	)
Sulfate	mg/L	1.00	19.9	20.0	99.4	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chloride	mg/L	1.00	2.90	3.00	96.6	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chloride	mg/L	1.00	2.89	3.00	96.4	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chloride	mg/L	1.00	2.93	3.00	97.7	90 - 110	) _
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chloride	mg/L	1.00	2.95	3.00	98.5	90 - 110	) –

Report Continued

Client: E2 Consulting Engineers, Inc.

TRUESDAIL LABORATORIES, INC.

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

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Anions By I.C EPA 300.	0		Batch	12AN11G				
Parameter	, in this second <u>i</u> n	Unit	Ana	lyzed D	DF MDL		RL	Result
998946-001 Fluoride		mg/L	12/07	/2011 10:50 5.	0. 0	155	0.500	1.32
998946-002 Fluoride		mg/L	12/07	/2011 11:02 5.	0. 0	155	0.500	1.50
Method Blank								
Parameter	Unit	DF	Result					
Fluoride	mg/L	1.00	ND					
Duplicate							Lab ID = 9	998894-008
Parameter	Unit	DF	Result	Expected	RPD		Accepta	nce Range
Fluoride	mg/L	1.00	0.712	0.709	0.4	22	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	4.07	4.00	10	2.	90 - 110	
Matrix Spike							Lab ID = 9	998894-008
Parameter	Unit	DF	Result	Expected/Addec	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	2.87	2.71(2.00)	10	8.	85 - 115	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	4.07	4.00	10	2.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recovery Acc		Accepta	nce Range
Fluoride	mg/L	1.00	3.10	3.00	103.		90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	3.10	3.00	10	4.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	3.06	3.00	10.	2.	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Reco	overy	Accepta	nce Range
Fluoride	mg/L	1.00	3.06	3.00	10	2	90 - 110	

Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Nitrite SM 4500-NO2 B			Batch	12NO211B			
Parameter		Unit	Anal	yzed C	F MDL	RL	Result
998946-001 Nitrite as Nitrogen		mg/L	12/07	/2011 14:09 1.	00 0.000360	0.0050	ND
998946-002 Nitrite as Nitrogen		mg/L	12/07,	/2011 14:10 1.	00 0.000360	0.0050	ND
Method Blank							
Parameter	Unit	DF	Result				
Nitrite as Nitrogen	mg/L	1.00	ND				
Duplicate						Lab ID = 9	98919-006
Parameter	Unit	DF	Result	Expected	RPD	Acceptar	ice Rande
Nitrite as Nitrogen	mg/L	1.00	ND	0.00	0	0 - 20	Ŭ
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0412	0.0400	103	90 - 110	C
Matrix Spike						Lab ID = 998946-001	
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Acceptance Range	
Nitrite as Nitrogen	mg/L	1.00	0.0209	0.0200(0.0200)	104.	85 - 115	_
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0213	0.0200	106.	90 - 110	-
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0204	0.0200	102	90 - <b>1</b> 10	Ū
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptar	ice Range
Nitrite as Nitrogen	mg/L	1.00	0.0204	0.0200	102	90 - 110	

Unit

mg/L

DF

1.00

Result

210.

Expected/Added

226(100.)

Recovery

84.0

Matrix Spike

Alkalinity as CaCO3

Parameter

Report Continued

Client: E2 Consulting Engineers, Inc.			oject Name: oject Numbe	Page 6 of 37 Printed 1/10/2012				
Alkalinity by SM 2320B	ferija se kaj Granda se kaj se se	- -	Batch	12ALK11A			12/7/201	la succe
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
998946-002 Alkalinity as Ca	aCO3	mg/L	12/07	/2011	1.00	1.68	5.00	135
Bicarbonate (C	alculated)	mg/L	12/07	/2011	1.00	0.153	5.00	135
Carbonate (Ca	lculated)	mg/L	12/07	/2011	1.00	0,153	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1.00	ND					
Duplicate							Lab ID =	998919-020
Parameter	Unit	DF	Result	Expected	RPD		Acceptance Range	
Alkalinity as CaCO3	mg/L	1.00	84.0	85.0	1.18		0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recovery		Accepta	ince Range
Alkalinity as CaCO3	mg/L	1.00	100.	100.	100.		90 - 110	)
Lab Control Sample	Duplicate							
Parameter Alkalinity as CaCO3	Unit mg/L	DF 1.00	Result 100.	Expected 100.	F	lecovery 100.	Accepta 90 - 110	ince Range )

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Lab ID = 998830-001

Acceptance Range

75 - **1**25
Report Continued

Project Name: PG&E Topock Project Page 7 of 37 Client: E2 Consulting Engineers, Inc. Project Number: 424973.01.DM Printed 1/10/2012

Specific Conductivity - El	PA 120.1	a an an Argan. A Charta	Batch	12EC11C		and ne 1999 - Ngalaking	12/8/2011	
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
998946-001 Specific Conducti	vity	umhos/	cm 12/08/	2011	1.00	0.0950	2.00	7130
998946-002 Specific Conducti	vity	umhos/cm 12/08/2011		1.00	0.0950	2.00	7750	
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND				l ah ID =	998945-002
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result 8420	Expected 8430	F	RPD 0.119	Accepta 0 - 10 Lab ID =	998946-002
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7730	Expected 7750	F	RPD 0.258	Accepta 0 - 10	ance Range
Parameter Specific Conductivity Lab Control Sample Da	Unit umhos uplicate	DF 1.00	Result 695	Expected 706	F	Recovery 98.4	Accepta 90 - 110	ance Range )
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 694	Expected 706	F	Recovery 98.3	Accepta 90 - 110	ance Range )
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 697	Expected 706	F	Recovery 98.7	Accepta 90 - 110	ance Range )
Parameter Specific Conductivity MRCVS - Primary	Unit umhoะ	DF 1.00	Result 949	Expected 997	F	Recovery 95.2	Accepta 90 - 110	ance Range )
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 950.	Expected 997	F	Recovery 95.3	Accepta 90 - 110	ance Range )

Report Continued

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	12CrH11G				
Parameter		Unit	Anal	yzed D	F MDL	RL	Result
998946-001 Chromium, Hex	avalent	ug/L	12/08	/2011 06:32 5.3	25 0.136	1.0	ND
998946-002 Chromium, Hex	avalent	ug/L	12/08	/2011 06:53 10	5 2.73	21.0	910.
Method Blank							
Parameter Chromium, Hexavalent	Unit ua/L	DF 1.00	Result ND				
Duplicate	- 9. –					Lab ID =	998830-005
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.05	ResultExpectedRPD0.1590.1706.50		RPD 6.50	Acceptance Range 0 - 20	
	venication				_		-
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.235	Expected 0.200	Recovery 118.	Accepta 70 - 130	ance Range )
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 4.89	Expected 5.00	Recovery 97.9	Accepta 90 - 110	ance Range
Matrix Spike						Lab ID =	998830-005
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.22	Expected/Addeo 1.23(1.06)	I Recovery 99.6	Accepta 90 - 110	ance Range
Matrix Spike							990030-000
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.22	Expected/Addeo 1.24(1.06)	l Recovery 98.4	Accepta 90 - 110	ance Range
Matrix Spike						Lab ID =	998830-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.22	Expected/Addeo 1.24(1.06)	I Recovery 97.9	Accepta 90 - 110	ance Range D
Matrix Spike						Lab ID =	998830-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.24	Expected/Addeo 1.25(1.06)	d Recovery 99.0	Accepta 90 - 11	ance Range 0
Matrix Spike	Ū					Lab ID ≖	998830-009
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.16	Expected/Addeo 1.25(1.06)	d Recovery 91.7	Accepta 90 - 11 Lab ID =	ance Range 0 : 998830-010
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.25	Expected/Adden 1.25(1.06)	d Recovery 99.7	Accepta 90 - 11	ance Range 0

Report Continued

Client: E2 Consulting	Engineers, Inc.		Project Name: Project Number:	oject	Page 9 of 37 Printed 1/10/2012	
Matrix Spike			,			Lab ID = 998830-011
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.20	Expected/Added 1.25(1.06)	Recovery 95.1	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998830-012
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.25	Expected/Added 1.25(1.06)	Recovery 100.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998830-013
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.23	Expected/Added 1.26(1.06)	Recovery 97.4	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998901-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 9.14	Expected/Added 9.24(5.30)	Recovery 98.1	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998901-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 8.27	Expected/Added 8.38(5.30)	Recovery 97.9	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998901-009
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.17	Expected/Added 1.22(1.06)	Recovery 95.5	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998936-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 7.00	Expected/Added 7.04(5.30)	Recovery 99.2	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998936-002
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 7.93	Expected/Added 7.97(5.30)	Recovery 99.3	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998936-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 2.00	Expected/Added 2.01(1.06)	Recovery 99.3	Acceptance Range 90 - 110
матлх Spike		_				Lab ID = 998945-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 27.0	Expected/Added 26.8(15.9)	Recovery 101.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998946-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 5.28	Expected/Added 5.46(5.25)	Recovery 96.4	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 998946-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 1.16	Expected/Added 1.18(1.06)	Recovery 98.4	Acceptance Range 90 - 110

#### Report Continued

Client: E2 Consulting Eng	ineers, Inc	. Pr Pr	oject Name: oject Number	PG&E Topock Pro : 424973.01.DM	PG&E Topock Project 424973.01.DM	
Matrix Spike						Lab ID = 998946-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 105	Result 2030	Expected/Added 1960(1050)	Recovery 107.	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.89	Expected 5.00	Recovery 97.8	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.90	Expected 10.0	Recovery 99.0	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.96	Expected 10.0	Recovery 99.6	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.70	Expected 10.0	Recovery 97.0	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1,00	Result 9.71	Expected 10.0	Recovery 97.1	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.70	Expected 10.0	Recovery 97.0	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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Client: E2 Consulting Engineers, Inc.

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

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Metals by EPA 200.7, To	tal		Batch	121311A	· ·			
Parameter	e egi si beling herdelin T	Unit	Ana	lyzed	DF	MDL	RL	Result
998946-001 Aluminum		ug/L	12/13	/2011 15:46	1.00	2.83	50.0	ND
Iron		ug/L	12/13	/2011 15:46	1.00	1.34	20.0	ND
Nickel		ug/L	12/13	/2011 15:46	1.00	2.56	10.0	ND
Zinc		ug/L	12/13	/2011 15:46	1.00	3.89	10.0	ND
998946-002 Aluminum		ug/L	12/13	/2011 16:08	1.00	2.83	50.0	ND
Iron		ug/L	12/13	/2011 16:08	1.00	1.34	20.0	ND
Nickel		ug/L	12/13	/2011 16:08	1.00	2.56	10.0	ND
Zinc		ug/L	12/13	/2011 16:08	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					
Nickel	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Aluminum	ug/L	1.00	ND	0.00		0	0 - 20	•
Iron	ug/L	1.00	ND	0.00		0	0 - 20	
Nickel	ug/L	1.00	ND	0.00		0	0 - 20	
Zinc	ug/L	1.00	ND	0.00		0	0 - 20	
Manganese	ug/L	1.00	ND	0.00		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Aluminum	ug/L	1.00	104.	100.		104.	85 - 115	5
Iron	ug/L	1.00	99.1	100.		99.1	85 - 115	<b>i</b>
Nickel	ug/L	1.00	95.6	100.		95.6	85 - 115	5
Zinc	ug/L	1.00	97.5	100.		97.5	85 - 115	5
Manganese	ua/L	1.00	93.2	100.		93.2	85 - 115	ò

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Client: E2 Consulting Engineers, Inc.

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

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Metals by EPA 200.7, To	otal		Batch	121611A		an. Na sekati	
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
998946-001 Boron		ug/L	12/16	6/2011 11:41 1.0	0 1.50	200.	1060
998946-002 Boron		ug/L	12/16	6/2011 12:01 1.0	00 1.50	200.	1080
Method Blank							
Parameter	Unit	DF	Result				
Boron	ug/L	1.00	ND				
Duplicate						Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Boron	ug/L	1.00	129.	130.	0.772	0 - 20	Ũ
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	105.	100.	105.	85 - 115	5
Matrix Spike						Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Boron	ug/L	1.00	238.	230.(100.)	108.	75 - 12	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	5120	5000	102.	90 - 11(	) -
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	5110	5000	102.	90 - 110	) -
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	4920	5000	98.4	90 - 110	)
Interference Check S	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	ND	0.00			-
Interference Check S	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Boron	ug/L	1.00	ND	0.00	-	·	-
Interference Check S	tandard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Boron	ug/L	1.00	ND	0.00	-	•	Ŭ

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Client: E2 Consulting Engineers, Inc.

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

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Metals by EPA 200.8, Total	Batch 123011C	
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Parameter	na nango na alas	Unit	Ana	lyzed	DF	MDL	RL	Result
998946-001 Arsenic		ug/L	12/31	/2011 17:36	5.00	0.285	1.0	ND
Barium		ug/L	12/31	/2011 17:36	5.00	0.200	10.0	15.4
Chromium		ug/L	12/31	/2011 17:36	5.00	0.110	1.0	1.1
Lead		ug/L	12/31	/2011 17:36	5.00	0.110	10.0	ND
Molybdenum		ug/L	12/31	/2011 17:36	5.00	0.270	10.0	18.1
998946-002 Arsenic		ug/L	12/31	/2011 18:20	5.00	0.285	1.0	3.7
Barium		ug/L	12/31	/2011 18:20	5.00	0.200	10.0	28.0
Chromium		ug/L	12/31	/2011 18:20	5.00	0.110	1.0	920.
Lead		ug/L	12/31	/2011 18:20	5.00	0.110	10.0	ND
Molybdenum		ug/L	12/31	/2011 18:20	5.00	0.270	10.0	20.0
Method Blank			·			*****		
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Barium	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Lead	ug/L	1.00	ND					
Molybdenum	ug/L	1.00	ND					
Duplicate							Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Arsenic	ug/L	5.00	2.95	2.48		17.3	0 - 20	
Barium	ug/L	5.00	121.	121		0.331	0 - 20	
Chromium	ug/L	5.00	ND	0.00		0	0 - 20	
Lead	ug/L	5.00	ND	0.00		0	0 - 20	
Molybdenum	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibratio	on Verification	1						
Parameter	Unit	DF	Result	Expected	f	Recovery	Accepta	ince Range
Arsenic	ug/L	1.00	0.175	0.200		87.4	70 - 130	)
Barium	ug/L	1.00	0.214	0.200		107.	70 - 130	)
Chromium	ug/L	1.00	0.232	0.200		116.	70 - 130	)
Lead	ug/L	1.00	0.200	0.200		99.8	70 - 130	)
Molybdenum	ug/L	1.00	0.220	0.200		110.	70 - 130	)

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Client: E2 Consulting Engineers, Inc.		Pr Pr	oject Name: oject Number	ject	Page 19 of 37 Printed 1/10/2012	
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	103.	100.	103.	85 - 115
Barium	ug/L	5.00	107.	100.	107.	85 - 115
Chromium	ug/L	5.00	107.	100.	107.	85 - 115
Lead	ug/L	5.00	106.	100.	106.	85 - 115
Molybdenum	ug/L	5.00	103.	100.	103.	85 - 115
Lab Control Sample Du	uplicate					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	5.00	102.	100.	102.	85 <b>- 1</b> 15
Barium	ug/L	5.00	101.	100.	<b>10</b> 1.	85 - 115
Chromium	ug/L	5.00	105.	100.	105.	85 - 115
Lead	ug/L	5.00	99.4	100.	99.4	85 - 115
Molybdenum	ug/L	5.00	98.2	100.	98.2	85 - 115
Matrix Spike						Lab ID = 998830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	104.	102.(100.)	101.	75 - 125
Barium	ug/L	5,00	218.	221(100.)	96.5	75 - 125
Chromium	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Lead	ug/L	5.00	94.8	100.(100.)	94.8	75 - 125
Molybdenum	ug/L	5.00	102.	100.(100.)	102.	75 - 125
Matrix Spike Duplicate						Lab ID = 998830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	5.00	106.	102.(100.)	104.	75 - 125
Barium	ug/L	5.00	220.	221(100.)	98.5	75 - 125
Chromium	ug/L	5,00	105.	100.(100.)	105.	75 - 125
Lead	ug/L	5.00	96.1	100.(100.)	96.1	75 - 125
Molybdenum	ug/L	5.00	103.	100.(100.)	103.	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	9.65	10.0	96.5	90 - 110
Barium	ug/L	1.00	9.52	10.0	95.2	90 - 110
Chromium	ug/L	1.00	10.5	10.0	105.	90 - 110
Lead	ug/L	1.00	9,35	10.0	93.5	90 - 110
Molybdenum	ug/L	1.00	10.5	10.0	105	90 - 110

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

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Client: E2 Consulting Engineers, Inc.

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

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Metals by EPA 200.8, To	tal		Batch	010712B			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
998946-001 Manganese		ug/L	01/07	7/2012 21:10 5.0	00 0.285	1.0	9.9
998946-002 Manganese		ug/L	01/07	7/2012 21:18 5.0	0 0.285	1.0	7.2
Method Blank					·····		
Parameter	Unit	DF	Result				
Manganese	ug/L	1.00	ND				
Low Level Calibration	Verification	I					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Manganese	ug/L	1.00	0.170	0.200	85.0	70 - 130	)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Manganese	ug/L	5.00	102.	100.	102.	85 - 115	5
Matrix Spike						Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected/Added	Recoverv	Accepta	ince Rande
Manganese	ug/L	5.00	99.1	102.(100.)	97.5	75 - 125	5
Matrix Spike Duplicate	e					Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ince Range
Manganese	ug/L	5.00	101.	102.(100.)	99.7	75 - 125	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	9.81	10.0	98.1	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	9.46	10.0	94.6	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	9.58	10.0	95.8	90 - 110	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Manganese	ug/L	1.00	9.47	10.0	94.7	90 - 110	) –
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	9.44	10.0	94.4	90 - 110	)

Report Continued

Client: E2 Consulting E	c. F F	Project Name: Project Numbe	PG&E Topock r: 424973.01.DM	Proje	ct	P Printed 1 Revised	age 26 of 37 /10/2012	
Metals by EPA 200.8, 1 Parameter	<b>Fotal</b>	Unit	Batch Anal	010812A lyzed	DF	MDL	RL	Result
998946-001 Antimony		ug/L	01/09	/2012 09:05	5.00	0.120	10.0	ND
Copper		ug/L	01/09	/2012 09:05	5.00	0.125	5.0	ND
998946-002 Antimony		ug/L	01/09	/2012 09:13	5.00	0.120	10.0	ND
Copper		ug/L	01/09	01/09/2012 09:13 5.00 0.12		0.125	5.0	ND
Method Blank								
Parameter Antimony	Unit ug/L	DF 1.00	Result ND					
Copper	ug/L	1.00	ND					
Duplicate	_						Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected	1	RPD	Accepta	ance Range
Antimony	ug/L	5.00	ND	0.00		0	0 - 20	0
Copper	ug/L	5.00	ND	0.00		0	0 - 20	
Low Level Calibration	on Verification							
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ance Range
Antimony	ug/L	1.00	1.01	1.00		101.	70 - 130	)
Copper	ug/L	1.00	0.848	1.00		84.8	70 - 130	)
Lab Control Sample	9							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Antimony	ug/L	5.00	105.	100.		105.	85 - 11	5
Copper	ug/L	5.00	104.	100.		104.	85 - 11	5
Lab Control Sample	e Duplicate							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Antimony	ug/L	5.00	104.	100.		104.	85 - 11	5
Copper	ug/L	5.00	104.	100.		104.	85 - 11	5
Matrix Spike							Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Range
Antimony	ug/L	5.00	104.	100.(100.)		104.	75 - 12	5
Copper	ug/L	5.00	107.	100.(100.)		107.	75 - 12	5
Matrix Spike Duplic	ate						Lab ID =	998830-001
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Range
Antimony	ug/L	1.00	104	100.(100.)		104	75 - 12	5
Copper	ug/L	1.00	99.9	100.(100.)		99.9	75 - 12	5

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Client: E2 Consulting Engineers, Inc.			oject Name: oject Numbe	Page 28 of 37 Printed 1/10/2012			
Interference Check Sta	andard AB						
Parameter Copper Interference Check Sta	Unit ug/L andard AB	DF 1.00	Result 9.06	Expected 10.0	Recovery 90.6	Accepta 80 - 120	nce Range
Parameter Copper	Unit ug/L	DF 1.00	Result 9.12	Expected 10.0	Recovery 91.2	Accepta 80 - 120	nce Range
Reactive Silica by SM450 Parameter	10-SI D	Unit	Batch Ana	12Si11B lyzed D	F MDL	12/8/2011 RL	Result
998946-002 Silica		mg/L	12/08	/2011 25	5.0 0.532	1.00	19.1
Method Blank						· · · · · · · · · · · · · · · · · · ·	
Parameter Silica	Unit mg/L	DF 1.00	Result ND				
Duplicate						Lab ID = 9	998979-001
Parameter Silica É Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0.00	RPD 0	Acceptar 0 - 20	nce Range
Parameter Silica Matrix Spike	Unit mg/L	DF 1.00	Result 0.221	Expected 0.220	Recovery 100.	Acceptar 90 - 110 Lab ID = 9	nce Range 998979-002
Parameter Silica MRCCS - Secondary	Unit mg/L	DF 1.00	Result 0.378	Expected/Addec 0.400(0.400)	Recovery 94.6	Acceptar 75 - 125	nce Range
Parameter Silica MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.119	Expected 0.110	Recovery 108	Acceptar 90 - 110	nce Range
Parameter Silica	Unit mg/L	DF 1.00	Result 0.378	Expected 0.400	Recovery 94.6	Acceptar 90 - 110	nce Range



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Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Project		Page 29 of 37
	Project Number:	424973.01.DM	Printed	1/10/2012

Total Dissolved Solids I	oy SM 254	0 C	Batch	12TDS11B			12/9/2011	Liboration.
Parameter	a se	Unit	Ana	lyzed	DF	MDL	RL	Result
998946-001 Total Dissolved	Solids	mg/L	12/08	3/2011	1.00	0.400	250.	5120
998946-002 Total Dissolved	Solids	mg/L	12/08	3/201 <b>1</b>	1.00	0.400	<b>2</b> 50.	4390
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				l eb ID =	00015 001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 371	Expected 379	F	RPD 2.13	Accepta 0 - 5	nce Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 487	Expected 500.	F	lecovery 97.4	Accepta 90 - 110	nce Range



Report Continued

Client: E2 Consulting Engineers, Inc.

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

Total Organic Carbon (T/	DOC) SN	1 5310 C	Batch	12TOC11B	e da La catalana		Le Prope	
Parameter		Unit	Ana	llyzed l	ΟF	MDL	RL	Result
998946-002 Total Organic Ca	rbon	mg/L	12/08	3/2011 16:39 1	.00	0.0103	0.300	0.321
Method Blank								
Parameter	Unit	DF	Result					
Total Organic Carbon Duplicate	mg/L	1.00	ND				Lab ID = 9	98880-001
Parameter	Unit	DF	Result	Expected	RP	D	Accentar	
Total Organic Carbon Lab Control Sample	mg/L	1.00	1.20	1.20	0	.0833	0 - 20	ice Mange
Parameter Total Organic Carbon Matrix Spike	Unit mg/L	DF 1.00	Result 3.16	Expected 3.33	Rei 9	covery 4.9	Acceptar 90 - 110 Lab ID = 9	nce Range 198946-002
Parameter Total Organic Carbon MRCCS - Secondary	Unit mg/L	DF 1.00	Result 11.8	Expected/Adde 10.3(10.0)	d Red 1	covery 15.	Acceptar 75 - 125	ice Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 3.22	Expected 3.33	Rea 9	covery 6.8	Acceptar 90 - 110	ice Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.76	Expected 10.0	Rec 9	covery 7.6	Acceptan 90 - 110	ce Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.55	Expected 10.0	Rec 9	covery 5.5	Acceptan 90 - 110	ce Range
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.59	Expected 10.0	Rec 9	covery 5.9	Acceptan 90 - 110	ce Range

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 31 of 37 Project Number: 424973.01.DM Printed 1/10/2012

Total Phosphate, SM 450	0-PB,E		Batch	12TP11B	an tan Ang ang ang ang ang ang ang ang ang ang a	12/12/2011
Parameter		Unit	Anal	yzed E	DF MDL	RL Result
998946-002 Phosphate, Total	As P	mg/L	12/12	/2011 1.	00 0.00530	0.0200 ND
Method Blank			· · · · · · · · · · · · · · · · · · ·			
Parameter Phosphate, Total As P	Unit mg/L	DF 1.00	Result ND			
Duplicate						Lab ID = 998946-002
Parameter Phosphate, Total As P Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0.00	RPD 0	Acceptance Range 0 - 20
Parameter Phosphate, Total As P Matrix Spike	Unit mg/L	DF 1.00	Result 0.100	Expected 0.100	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 998946-002
Parameter Phosphate, Total As P MRCCS - Secondary	Unit mg/L	DF 1.00	Result 0.0651	Expected/Addec 0.0650(0.0650)	Recovery 100.	Acceptance Range 75 - 125
Parameter Phosphate, Total As P MRCVS - Primary	Unit mg/L	DF 1.00	Result 0.0591	Expected 0.0600	Recovery 98.5	Acceptance Range 90 - 110
Parameter Phosphate, Total As P	Unit mg/L	DF 1.00	Result 0.0607	Expected 0.0650	Recovery 93.4	Acceptance Range 90 - 110



Report Continued

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

### Page 32 of 37 Printed 1/10/2012

Ammonia Nitrogen by SM	4500-NH	13D	Batch	12NH3-E11C		Maria Alfa ang Maria Alfa ang	12/7/2011	
Parameter	na esta da este des	Unit	Апа	lyzed i	DF	MDL	RL	Result
998946-001 Ammonia as N		mg/L	12/07	/2011 1	.00	0.00120	0.500	ND
998946-002 Ammonia as N		mg/L	12/07	/2011 1	.00	0.00120	0.500	ND
Method Blank								
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Duplicate							Lab ID = !	998946-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Ammonia as N	mg/L	1.00	ND	0.00		0	0 - 20	5
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	10.6	10.0		106.	90 - 110	Ū.
Matrix Spike							Lab ID = !	998946-002
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.33	6.00(6.00)		106.	75 - 125	
Matrix Spike Duplicate							Lab ID = 9	998946-002
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.56	6.00(6.00)		109.	75 - 125	_
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	5.97	6.00		99.6	90 - 110	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.41	6.00		107.	90 - 110	-

Report Continued

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, D	ssolved		Batch	010912A			
Parameter	englerende Adog van de se	Unit	Ana	alyzed D	F MDL	RL	Result
998946-002 Manganese		ug/L	01/09	9/2012 19:11 5.0	0 0.285	5.0	6.1
Method Blank				······································			
Parameter	Unit	DF	Result				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	998946-002
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Manganese	ug/L	5.00	6.15	6.09	0.964	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	0.730	1.00	73.0	70 - 130	)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	5.00	107.	100.	107.	85 - 115	, ,
Matrix Spike						Lab iD ≃	998946-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range
Manganese	ug/L	5.00	<b>11</b> 1.	106.(100.)	105.	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	10.0	10.0	100.	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Rande
Manganese	ug/L	1.00	10.1	10.0	101.	90 - 110	
Interference Check S	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	ND	0.00	-	ŗ	
Interference Check S	tandard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	ND	0.00	-	,	5
Interference Check St	andard AB						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Manganese	ug/L	1.00	9.95	10.0	99.5	80 - 120	



Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Metals by 200.7, Dissolv	ed		Batch	1 121311B		linger all states and states Are final and the states are states and	
Parameter	na ng balang sa kasa na	Unit	Ana	alyzed D	F MDL	RL Res	sult
998946-002 Iron		ug/L	12/1:	3/2011 04:14 1.	00 1.34	20.0 ND	
Method Blank				·	······································		
Parameter	Unit	DF	Result				
Iron	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID = 998946	6-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance R	ange
Iron	ug/L	1.00	ND	0.00	0	0 - 20	ange
Manganese	ug/L	1.00	ND	0.00	0	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance R:	ande
Iron	ug/L	1.00	99.1	100.	99.1	85 - 115	ange
Manganese	ug/L	1.00	93.2	100.	93.2	85 - 115	
Matrix Spike						Lab ID = 998946	3-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance R:	ande
Iron	ug/L	1.00	87.8	100.(100.)	87.8	75 - 125	ange
Manganese	ug/L	1.00	96.4	100.(100.)	96.4	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Ra	ande
Iron	ug/L	1.00	4910	5000	98.1	90 - 110	
Manganese	ug/L	1.00	4770	5000	95.5	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance R:	ange
Iron	ug/L	1.00	4870	5000	97.4	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance Ra	ange
Iron	ug/L	1.00	4960	5000	99.2	90 - 110	ange
MRCVS - Primary						-	
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance Ra	ande
Iron	ug/L	1.00	4960	5000	99.1	90 - 110	ngo
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recoverv	Acceptance Ra	ande
Iron	ug/L	1.00	4990	5000	99.7	90 - 110	



Report Continued

Client: E2 Consulting Engineers, Inc.

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

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Turbidity by SM 2130 B			Batch	12TUC11B	11 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		12/7/2011	
Parameter	2 ee ta 1te - Naat	Unit	Ana	lyzed	DF	MDL	RL	Result
998946-001 Turbidity		NTU	12/07	/2011	1.00	0.0140	0.100	NÐ
998946-002 Turbidity		NTU	12/07	/2011	1.00	0.0140	0.100	0.178
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID = 9	998946-001
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	7.48	8.00		93.5	90 - 110	Ū
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	7.64	8.00		95.5	90 - 110	

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Hu , Mona Nassimi

Manager, Analytical Services

## E2 Sem

### Total Dissolved Solids by SM 2540 C

### Calculations

Batch:	12TDS11B
Date Calculated:	12/12/11

Laboratory Number	Sample volume, ml	lnitial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	105.3557	105,3559	105,3557	0.0002	No	0.0000	0.0	25.0	ND	1
998938-1	100	104.2424	104.2692	104.2691	0.0001	No	0.0267	267.0	25.0	267.0	1
998938-2	50	67.7908	67.8327	67,8325	0.0002	No	0.0417	834.0	50.0	834.0	1
998938-3	50	74.5474	74.5966	74.5966	0.0000	No	0.0492	984.0	50.0	984.0	1
998946-1	10	51.1311	51.1827	51.1823	0.0004,	No	0.0512	5120.0	250.0	5120.0	1
998946-2	10	47.0069	47.0509	47.0508	0.0001	No	0.0439	4390.0	250.0	4390.0	1
998976-1	50	73.4999	73,5509	73.5509	0.0000	No	0.0510	1020.0	50.0	1020.0	1
998976-2	50	67.7470	67.7951	67.7951	0.0000	No	0.0481	962,0	50.0	962.0	1
998976-3	50	76.5230	76.5696	76.5696	0.0000	No	0.0466	932.0	50.0	932.0	1
998976-4	50	76.5514	76.5944	76,5939	0.0005	No	0.0425	850.0	50.0	850.0	1
998976-5	50	68.1358	68.1796	68.1792	0.0004	No	0.0434	868.0	50.0	868.0	1
999015D	100	110.3680	110.4053	110.4051	0.0002	No	0.0371	371.0	25.0	371.0	1
LCS	100	74.2344	74,2832	74.2831	0.0001	No	0.0487	487.0	25.0	487.0	1
998976-6	50	65.5262	65.5898	65.5896	0.0002	No	0.0634	1268.0	50.0	1268.0	1
998976-7	50	73.8244	73.8715	73.8715	0.0000	No	0.0471	942.0	50.0	942.0	1
998976-8	50	75,1372	75.1778	75.1777	0,0001	No	0.0405	810.0	50.0	810.0	1
998976-9	50	75.9746	76.0078	76.0076	0.0002	No	0.0330	660.0	50.0	660,0	1
998981	100	110.4238	110,4813	110,4809	0.0004	No	0.0521	521.0	25.0	521.0	1
998982	460	112.8978	112.8979	112.8978	0.0001	No	0.0000	0.0	5.4	ND	1
998997-1	100	108.6889	108.7329	108.7329	0.0000	No	0.0440	440.0	25.0	440.0	1
998997-2	100	109.3934	109.4495	109.4494	0.0001	No	0.0560	560.0	25.0	560.0	1
998997-3	100	102.7253	102.7778	102.7776	0.0000	No	0.0523	523.0	25.0	523.0	1
999015	100	112.8342	112.8725	112.8721	0.0004	No	0.0379	379.0	25.0	379.0	1
LCSD							2				1

Calculation as follows:

Æ

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Printed Name

WelChem TDS_0810.xis

Analyst Signature

righted Name Review

054

Reviewer Signature

¥ COC - Signed

### TDS/EC CHECK

### Batch: 12TDS11B

Date Calculated: 12/12/11

Laboratory Number	EC	TDS/EC Řatio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
				1
998938-1	460	0.58	299	0.89
998938-2	1258	0.66	817.7	1.02
998938-3	1465	0.67	952.25	1.03
998946-1	7210	0.71	4686.5	1.09
998946-2	7810	0.56	5076.5	0.86
998976-1	1520	0.67	988	1.03
998976-2	1590	0.61	1033.5	0.93
998976-3	1530	0.61	994.5	0.94
998976-4	1390	0.61	903.5	0.94
998976-5	1390	0.62	903.5	0.96
999015D	632	0.59	410.8	0.90
LCS				
998976-6	2090	0.61	1358.5	0.93
998976-7	1483	0,64	963.95	0.98
998976-8	1287	0.63	836.55	0.97
998976-9	1077	0.61	700.05	0.94
998981	733	0.71	476.45	1.09
998982	0.615	ND	0.39975	ND
998997-1	752	0.59	488.8	0.90
998997-2	943	0.59	612.95	0.91
998997-3	878	0.60	570.7	0.92
999015	632	0.60	410.8	0.92
	-	*****		

057

WetChem TDS_0810.xls

falta line for analysis: Table of analysis: Table
TrueESDALLABORATORIES, INC.       Alkalinity by SM 23; Calculations         Date of Analysis:       127/11
TruceSDAIL LABORATORIES, INC.       Alkalinity by Science         Date of Analysis:
TruesDAil LABORATORIES, INC.       Alkalinity Calc         Date of Analysis: Start of Analysis: Date of Analysis: Date Sampled:       TZT/1/1 Calc         Date of Analysis: Start of Analysis: Date Sampled:       TZT/1/1 Calc         Date Sampled:       TZT/1/1 Calc         Pate Sampled:       Calc         Phate Sampled:       Calc         Phate Sampled:       Calc         Phate Sampled:       Calc         Pate Sample       Volume HCL         Polono       Eaco         Pate Sampled:       Calc         Pate Sampled:       Calc         Pate Sampled:       Calc         Pate Sampled:       Calc         Pate Calc       Calc         Pap
Thuesball LABORATORIES, INC.     AIK       Date of Analysis:     12/7/11       Start of Analysis:     12/7/11       Bate Samples:     12/7/11       Lab ID     ample     Not Volume       Maximum     ample     Not Volume       MAK     7.00     60     0.02       MAK     7.51     50     0.02       MAK     8.31     50     0.02       MAK     9.35     50     0.02       MAK<
TruesDAIL LABORATORIES, INC.         Date of Analysis: Start of Analysis: Date Sampled:       12/7/11         Start of Analysis: Date Sampled:       12/7/11         Sample of Analysis: Date Sampled:       12/7/11         Sample of Analysis: Date Sampled:       1/11/11         Sample of Analysis: Date Sampled:       1/11/11       1/11/11         Sample of Analysis: Date Sampled:       0/000       0/000       0/000         99800-10       8.35       50       0/02       0/02       0/02         99800-11       8.35       50       0/02       0/02       0/02       0/02       0/02         99800-10       8.36       50       0/02       0/02       0/02       0/02       0/02       0/02       0/02         99800-11       8.36       50       0/02       0/02       0/02       0/02       0/02
TruesDAIL LABORATORIES, INC.         Date of Analysis:         Etar of Analysis:         Etar of Analysis:         Date of Analysis:         Etar of Analysis:         Date sampled:         Date of Analysis:         Date of Analysis:         Date sampled:         Date safe of 0         Date standard         Date control standard         Date control standard
TRUESDAIL LABORATORIES, IN         Date of Analysis:         Date Sampled:         Lab ID         BLANK         Toto         999061         9990051       8.29         9990051       8.29         9998004       8.29         9988004       8.29         9988004       8.29         9988004       8.29         9988004       8.26         9988004       8.29         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         9988004       8.26         <
TRUESDAIL LABORATO         Date of Amalysis:         Date of Amalysis:         Lab ID         Date of Amalysis:         Date Sample         BLANK       7.00         99800-10       8.21         998030-10       8.23         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         998030-10       8.26         9980
TRUESDAIL LA Date of Analysis: Start of Analysis: Start of Analysis: Date Sampled: BLANK 99800-1 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 99830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90830-10 90802000000000000000000000000000000000

Alk 10c12/8/11 he HT

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The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Ò g YES SPECIAL REQUIREMENTS: CUSTODY SEALED Mo, Ni, Fe, Zn ন্ 262 Date/ / えっぽ … ぐ/ Time 0 Date/ Time Date/ Time Date/ Time Date/ Time Ť , Cata Companyl -Cata Companyl -Companyl -Companyl -Luglers Agency Company/ Agency Company/ Agency Printed Printed Printed Printed Printed Name Name (Relinquished)-(Relinquished) (Received) 🖉 Received) Signature (Received) Signature Signature Signature Signature 129

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# Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
12/2/11/998873-1	9.5	AIA	NA	NIA	Pul
-2					George
-1					
-6					
-10					
	1	V	N.	al and a second s	Va
14/6/2011 998900	7	5 mL	9.5	9:30 Am	G
12/6/2011 998901-7	9.5	N/A	NA	NA	Carl
<u>8</u> →					
			-VI		
12/7/2011 99 935-1	4.5	NA	NIA	NA	Cont
12/1/2 100 0000					X
12/1/201498931	9.5	NIA	NIA	NIA	Gu
1×11/2011 948976-1	4.5	NA	NA	/A	Gur
		·			1
12/16/1000010		V	1		
1~11/2/17/8/17	<u></u>	<u>&gt; mL</u>	1.5	10:15 Am	₩ I
Peripen addate		- <u>5ML</u>	4.9	10:30 Am (	7
12/7/2011/00/047-1				10:35 Am	kg
	<u>-1.7</u>		NIA	NA	Lin
					_1
¥ -6	$\downarrow$			· .	

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

al

### Turbidity/pH Check

Sample Number	Turbidity	nH	Date	Analvet	Need Digest	Adjusted to
10 PC 24/1 01	Turbluity	- 9	b L olu	M M	lic A	
30812511-01	6	- ~	11/18/4	Mar	100	
2006222 10 81						
30 Prot 111, 541						
970976((4,2,4) 1088 ( 2 2						
MABRAU						
000621						
94103A 968624			1	. //	/	
190038 (1- M	night	<u> </u>	11-40111-1+	Vation	NK	K HIBAI
GAQUER D	piant	17	A16.1.013M	FERENCE	in i	4.5 111211
Gaultalin		<u></u>	192111-11-1-			
1-10002 (1-G)		¥				
998 221 - 2		·····				
945 212 -1					<u>                                      </u>	
994 241-L			<u> </u>	<u>├</u>	<u>† – † – – – – – – – – – – – – – – – – –</u>	
941257-1						
aquin (1-1)	61	1/2	11/22/11	47	ins	
9441.42 (1-1)			1		j_	
auunas		72	1/17/110	ET		
OGRAVILIP		£9	112914	M M	Ver	
092770	<u> </u>		1 2014		1.	
Q02 215	l.A	<u> </u>	11/20/0	I ALA	Vas	TTLC
008251	Jorral		11/30/1	Plan	1-1-2-	
0 0 8 8 102/1		22	10/10/11	MM	Vee	
agernu		1	1210111			~
110007/12/0 04881051,10	1		+			
06089011-13	<u> </u>		<u>                                      </u>			
910020110			+ <i>1</i> /			
990 00 9 11-8				<u> </u>	1 1/	
910 130/1-13			11-8/n	E E	LIPE	
008 842	× Rad	<u> </u>	12/05/	11.6	Vier	STLCTIV
970 088	500/01		12/05/	MAT	1/08	
9000011		1	12100/14	NoF	1	
468851 1A F	<u>, v, -</u>	1	1100%		Vec	
GG2801 1-3	4-5-17	<u>                                     </u>	+ KIYO/	MNL		P
69284U	Y	+	·	+	+	
100822511		<u> </u>		+		
AGDGICI	7	+		<u> </u>	+	
GOR QU- 11	<u>,}</u>	137		<u>      </u>		1 4.
0680, 11 2	<u> </u>	1/2		<u>+</u> [	· · · · · · · · · · · · · · · · · · ·	<i>f f f f f f f f f f</i>
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		1	<u> </u>	<u> </u>	<u> </u>	_ <u></u>

130/A

# Sample Integrity & Analysis Discrepancy Form

Cli	ent: <u>E</u> Z	Lab # _ <u>9939946</u>
Dai	te Delivered: <u> / / / / 11</u> Time: <u><i>】3:30</i> By: ロMail 成</u>	Field Service DClient
1.	Was a Chain of Custody received and signed?	,∂{Yes ⊡No ⊡N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ゑN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No dN/A
4.	If a letter was sent with the COC, does it match the COC?	
5.	Were all requested analyses understood and acceptable?	,⊈Yes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)?3 <u>.5 ° <b>C</b></u>	ŹYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	∕¤́QYes ⊡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?	ZYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by:/ <b>(Truesdail</b> Client	Æ Yes ⊡No ⊐N/A
2.	Were samples pH checked? pH = <u></u> C. O. C	ØKYes □No □N/A
'3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ǿYes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>RUSH 2</b> Std	QYes □No □N/A
<b>5</b> .	Sample Matrix:	Nater
	□Sludge □Soil □Wipe □Paint □Solid 💢	Other <u>Walek</u>
6.	Comments:	
7.	Sample Check-In completed by <b>Truesdail</b> Eog. In/Receiving:	J. Straleur

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 5, 2012

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

Dear Mr. Duffy:

### SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-339 PROJECT, GROUNDWATER MONITORING, TLI NO.: 999088

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-339 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 December 13, 2011, 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.

J. Mona Nassimi Manager, Analytical Services

Michoel The

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.: 999088 Date: January 5, 2012 Collected: December 13, 2011 Received: December 13, 2011

### ANALYST LIST

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

						14201 FRA (714) 730	establish NNKLIN AVENUE - TU 1-6239 - FAX (714)	strin, california 9 30-6462 · www.tru	2780-7008 esdail.com
Clier Attentio	nt: E2 Consulting Engin 155 Grand Ave. Suit Oakland, CA 94612 m: Shawn Duffy	eers, Inc. e 1000					aboratory No.: Date Received:	: 999088 : December 13,	2011
Project Nam Project Nc P.O. Nc	ie: PG&E Topock Projec o.: 424973.01.DM o.: 424973.01.DM	t							
			Ana	lytical R	esults	Summary			
Lab Sample II	D Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
999088-001 999088-001 999088-001 999088-001	SC-700B-WDR-339 SC-700B-WDR-339 SC-700B-WDR-339 SC-700B-WDR-339	E120.1 E200.8 E200.8 E218.6	NONE NONE-digested NONE-digested LABFLT	12/13/2011 12/13/2011 12/13/2011 12/13/2011	13:30 13:30 13:30 13:30	EC Chromium Manganese Chromium, hexavalent	6990 UN 7.5 UN	umhos/cm ug/L ug/L	2.00 1.0 0.20
999088-001 999088-001	SC-700B-WDR-339 SC-700B-WDR-339	SM2130B SM2540C	NONE	12/13/2011 12/13/2011	13:30 13:30	Turbidity Total Dissolved Solids	ND 4150	NTU mg/L	0.100 125
τĔΖ	VD: Non Detected (below reportin g/L: Milligrams per liter. ote: The following "Significant Fig. Results below 0.01ppm will h Result above or equal to 0.01 Quality Control data will alway	g limit) ures" ruie has been app ave two (2) significant fi ppm will have three (3) is have three (3) signifi	bied to all results: igures, significant figures. cant figures.						
004								,	
This report applies o and these laboratoric publicity matter witho	nly to the sample, or samples es, this report is submitted an out prior written authorization f	, investigated and is of accepted for the ( from Truesdail Labo	<ul> <li>not necessarily indicati exclusive use of the clie ratories.</li> </ul>	ive of the quality or c int to whom it is add	ondition of ap	parently identical or similar production the condition that it is not to be	ts. As a mutual pro tused, in whole or	otection to clients, t in part, in any adv	he public, ertising or

EXCELLENCE IN INDEPENDENT TESTING

REPORT

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

Established 1931

### Client: 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

Laboratory No. 999088 Page 1 of 12 Printed 1/5/2012

### Samples Received on 12/13/2011 11:30:00 PM

Field ID				Lab ID	Collected	Matrix
SC-700B-WDR-339				999088-001	12/13/2011	13:30 Water
Specific Conductivity - E Parameter	PA 120.1	Unit	Batch	12EC11E	DF N	12/14/2011 IDL RI Result
999088-001 Specific Conduct	ivity	umhos	/cm 12/14	1/2011	1.00 0.09	50 2.00 6990
Method Blank			······································			2.00 0000
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND			l ah ID ≈ 999099 001
Parameter Specific Conductivity Lab Control Sample	Unit umhoะ	DF 1.00	Result 7000	Expected 6990	RPD 0.143	Acceptance Range 0 - 10
Parameter Specific Conductivity Lab Control Sample Di	Unit umhos uplicate	DF 1.00	Result 703	Expected 706	Recover 99.6	y Acceptance Range 90 - 110
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 705	Expected 706	Recover 99.8	y Acceptance Range 90 - 110
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 681	Expected 706	Recover 96.4	y Acceptance Range 90 - 110
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 940.	Expected 997	Recover 94.3	y Acceptance Range 90 - 110
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 950.	Expected 997	Recover 95.3	y Acceptance Range 90 - 110

Report Continued

Client: E2 Consulting Engineers, Inc.

_ -

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

Page 3 of 12 Printed 1/5/2012

Chrome VI by EPA 218.6			Batch	1 12CrH11N			
Parameter		Unit	Ana	alyzed I	DF MDL	RL	Result
999088-001 Chromium, Hexa	avalent	ug/L	12/16	5/2011 04:46 1	.05 0.0260	0.20	ND
Method Blank	<u></u>	·····				0.20	
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND			l ab ID =	999121-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L Verification	DF 1.05	Result 1.52	Expected 1.54	RPD 1.42	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.218	Expected 0.200	Recovery 109.	Accepta 70 - 130	ance Range )
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.82	Expected 5.00	Recovery 96.5	Accepta 90 - 110 Lab ID =	ance Range ) 998947-021
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.26	Expected/Adde 5.47(5.25)	d Recovery 95.9	Accepta 90 - 11( Lab ID =	ance Range ) 999088-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.48	Expected/Adde 5.60(5.25)	d Recovery 97.8	Accepta 90 - 11( Lab ID =	ance Range ) 999088-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.22	Expected/Addee 1.22(1.06)	d Recovery 99.8	Accepta 90 - 110 Lab ID =	ance Range ) 999089-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 33.6	Expected/Addeo 34.4(26.2)	d Recovery 96.7	Accepta 90 - 110 Lab ID =	ance Range ) 999089-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 33.5	Expected/Addec 34.9(26.2)	d Recovery 94.6	Accepta 90 - 110 Lab ID =	ince Range ) 999089-003
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.25	Result 6.18	Expected/Addeo 6.41(5.25)	d Recovery 95.6	Accepta 90 - 110	ince Range

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 7 of 12 Project Number: 424973.01.DM Printed 1/5/2012

Metals by EPA 200.8, To	tal		Batch	122911B		
Parameter		Unit	Ana	lyzed D	F MDL	RL Result
999088-001 Manganese		ug/L	12/30	0/2011 07:30 5.0	0 0.285	10 75
Method Blank						1.0 7.0
Parameter Manganese	Unit ug/L	DF 1.00	Result ND			
Duplicate						Lab ID = 999088-001
Parameter Manganese	Unit ug/L	DF 5.00	Result 7.60	Expected 7.54	RPD 0.858	Acceptance Range 0 - 20
Low Level Calibration	Verification					
Parameter Manganese Lab Control Sample	Unit ug/L	DF 1.00	Result 0.197	Expected 0.200	Recovery 98.4	Acceptance Range 70 - 130
Parameter Manganese Lab Control Sample D	Unit ug/L uplicate	DF 5.00	Result 90.3	Expected 100.	Recovery 90.3	Acceptance Range 85 - 115
Parameter Manganese Matrix Spike	Unit ug/L	DF 5.00	Result 94.1	Expected 100.	Recovery 94.1	Acceptance Range 85 - 115 Lab ID = 999088-001
Parameter Manganese MRCCS - Secondary	Unit ug/L	DF 5.00	Result 103.	Expected/Added 108.(100.)	Recovery 95.1	Acceptance Range 75 - 125
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.17	Expected 10.0	Recovery 91.7	Acceptance Range 90 - 110
Parameter Manganese MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.21	Expected 10.0	Recovery 92.1	Acceptance Range 90 - 110
Parameter Manganese MRCVS - Primary	Unit ug/L	D <del>F</del> 1.00	Result 9.12	Expected 10.0	Recovery 91.2	Acceptance Range 90 - 110
Parameter Manganese	Unit ug/L	DF 1.00	Result 9.00	Expected 10.0	Recovery 90.0	Acceptance Range 90 - 110

Report Continued

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, Tota	al		Batch	010412A			a shin
Parameter	e e traje traje	Unit	Ana	lyzed D	F MDL	RL	Result
999088-001 Chromium		ug/L	01/04	/2012 21:34 5.0	00 0.110	1.0	ND
Method Blank							
Parameter Chromium	Unit ug/l	DF 1.00	Result				
Duplicate	ugru	1.00	NU			Lab ID =	999088-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Low Level Calibration V	ug/L /orification	5.00	ND	0.00	0	0 - 20	
	renncation			_			
Parameter Chromium	Unit ua/L	DF 1.00	Result 0 233	Expected	Recovery	Accepta	nce Range
Lab Control Sample			0.200	0.200	110.	70 - 100	
Parameter Chromium	Unit ug/L	DF 5.00	Result 101.	Expected 100.	Recovery 101.	Accepta 85 - 115	nce Range
Lab Control Sample Du	plicate						
Parameter Chromium	Unit ug/L	DF 5.00	Result 102.	Expected 100.	Recovery 102.	Accepta 85 - 115	nce Range
Matrix Spike						Lab ID =	999088-001
Parameter Chromium Matrix Spike Duplicate	Unit ug/L	DF 5.00	Result 105	Expected/Added 100.(100.)	Recovery 105	Accepta 75 - 125 Lab ID = 9	nce Range 999088-001
Parameter Chromium MRCCS - Secondary	Unit ug/L	DF 5.00	Result 104.	Expected/Added 100.(100.)	Recovery 104.	Accepta 75 - 125	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Accepta 90 - 110	nce Range
Parameter Chromium MRCVS - Primary	Unit ug/L	DF 1.00	Result 9.43	Expected 10.0	Recovery 94.3	Accepta 90 - 110	nce Range
Parameter Chromium	Unit ug/L	DF 1.00	Result 9.40	Expected 10.0	Recovery 94.0	Accepta 90 - 110	nce Range

Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Project	Page 11 of 12
	Project Number:	: 424973.01.DM	Printed 1/5/2012

Total Dissolved Solids b	y SM 254	0 C	Batch	12TDS11D			12/16/20	11
Parameter		Unit	Ала	llyzed	DF	MDL	RL	Result
999088-001 Total Dissolved	Solids	mg/L	12/16	6/2011	1.00	0.400	125	4150
Method Blank				······································	·····			
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 1030	Expected 1010	F	RPD 2.15	Lab ID = Accepta 0 - 5	999086-004 Ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 492	Expected 500.	Я	ecovery 98.4	Accepta 90 - 110	nce Range

### Turbidity by SM 2130 B

Turbidity by SM 2130 B			Batch	12TUC11E			12/14/201	1
Parameter		Unit	Ала	lyzed	DF	MDL	RL	Result
999088-001 Turbidity		NTU	12/14	/2011	1.00	0.0140	0 100	ND
Method Blank							0.100	
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID = 9	999088-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Acceptai 0 - 20	nce Range
Parameter Turbidity Lab Control Sample D	Unit NTU uplicate	DF 1.00	Result 8.05	Expected 8.00	F	Recovery 101.	Acceptar 90 - 110	псе Калде
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.10	Expected 8.00	F	lecovery 101.	Acceptar 90 - 110	nce Range



Report Continued

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.

For- Mona Nassimi

Manager, Analytical Services

# F2 Som

### Total Dissolved Solids by SM 2540 C

### Calculations

Batch:	12TDS11D
Date Calculated:	12/21/11

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	76.5513	76.5513	76.5513	0.0000	No	0.0000	0.0	25.0	ND	1
999085-1	50	68.5702	68.6123	68.6122	0.0001	No	0.0420	840.0	50.0	840.0	1
999085-2	50	68.6050	68.6453	68.645	0.0003	No	0.0400	800.0	50.0	800.0	1
999085-3	50	68,1054	68,1522	68.1518	0.0004	No	0.0464	928.0	50.0	928.0	1
999085-4	50	66.7184	66.7581	66.7578	0.0003	No	0.0394	788.0	50.0	788.0	1
999085-5	50	74.1772	74.2083	74.2083	0.0000	No	0.0311	622.0	50.0	622.0	1
999085-6	50	68.5192	68.5844	68.5844	0.0000	No	0.0652	1304.0	50.0	1304.0	1
999086-1	50	73.6043	73.6526	73.6522	0.0004	No	0.0479	958.0	50.0	958.0	1
999086-2	50	49.3589	49.4056	49,4053	0.0003	No	0.0464	928.0	50.0	928.0	1
999086-3	50	72.5085	72.5659	72.5656	0.0003	No	0.0571	1142,0	50.0	1142.0	1
999086-4	50	49.3224	49.3727	49.3727	0.0000	No	0.0503	1006.0	50.0	1006.0	1
999086-4D	50	73.0000	73.0516	73.0516	0.0000	No	0.0516	1032.0	50.0	1032.0	1
LCS	100	73.5003	73.5496	73.5495	0.0001	No	0.0492	492.0	25.0	492.0	1
999086-5	50	51.4257	51.4826	51.4823	0.0003	No	0.0566	1132.0	50.0	1132.0	1
999086-6	50	51.0882	51.1408	51.1408	0.0000	No	0.0526	1052.0	50.0	1052.0	1
999087-1	50	50.6109	50.6623	50.662	0.0003	No	0.0511	1022.0	50.0	1022.0	1
999087-2	50	49.0332	49.0898	49.0895	0.0003	No	0.0563	1126.0	50.0	1126.0	1
999088	20	51,2668	51.3499	51,3498	0.0001	No	0.0830	4150.0	125.0	4150.0	1
999120	50	50.4154	50.4629	50.4629	0.0000	No	0.0475	950.0	50.0	950.0	1
999136	50	47.9634	48.0112	48.0112	0.0000	No	0.0478	956.0	50.0	956.0	1
999156	50	49.2962	49.3479	49.3475	0.0004	No	0.0513	1026.0	50.0	1026.0	1
999143	450	105.3560	105.3566	105.3566	0.0000	No	0.0006	1.3	5.6	ND	1
999062-2	20	50.9469	50.9907	50.9907	0.0000	No	0.0438	2190.0	125.0	2190.0	1
					·						
LCSD								·		• • • • • • • • • • • • • • • • • • •	1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

Analyst Frinted Name

Analyst Signature

Reviewer Printed Mame

Reviewer Signature

### TDS/EC CHECK

#### Batch: 12TDS11D

### Date Calculated: 12/21/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3	
			· · · · · · · · · · · · · · · · · · ·		
999085-1	1402	0.60	911.3	0.92	
999085-2	1408	0.57	915.2	0.87	
999085-3	1473	0.63	957.45	0.97	
999085-4	1257	0.63	817.05	0.96	
999085-5	1055	0.59	685.75	0.91	
999085-6	2110	0.62	1371.5	0.95	
999086-1	1470	0.65	955.5	1.00	
999086-2	1460	0.64	949	0.98	
999086-3	1760	0.65	1144	1.00	
999086-4	1600	0.63	1040	0.97	
999086-4D	1600	0.64	1040	0.99	
LCS					
999086-5	1700	0.67	1105	1.02	
999086-6	1600	0.66	1040	1.01	
999087-1	1560	0.66	1014	1.01	
999087-2	1700	0.66	1105	1.02	
999088	7000	0.59	4550	0.91	
999120	1530	0.62	994.5	0.96	
999136	1720	0.56	1118	0.86	
999156	1605	0.64	1043.25	0.98	
999143	1.99	ND	1.2935	ND	
999062-2	2160	1.01	1404	1.56	

- R.P. but SFII

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#### Date Lab Number Initial pH Buffer Added (mL) Final pH Time Buffered Initials 12/9/11 999016-1 9.5 |A| $\mathcal{T}$ ٨ Ά $\rho$ -2 -3 -5 -6 ~~~~~~ ( 1 12/13/11 999 238-1 9.5 TA A $\Box$ IA --2 999039-2 -3 12/11/11/ 299083 9.5 NA NA NA al 12/14/11 999084-1 NIA 9.5 NIA NIA al -2 -3 4 6 999086-1 2114/11 9.5 NIA NA NA c. -2 -3 -4 -\$ -6 ah Muu 1990 87 999087-1 2014/11 NIA 9.5 NA NIA ah V $\mathbf{V}$ -2 Ŀ 12/14/11 9990 88 L 5ml to 95ml 9.5 10:40a Ŵ

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

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

049

Metals Samples Logbook

Comple Number	The sub-list face		Data			Adjusted to
Sample Number	Turbidity	рн	Date	Analyst	Need Digest	pH<2 (Y/N)
998901 1-3	د (	<u> </u>	12/09	MM	Yes	<b>**</b> ****
998945 (1-2)						-
998946 [1-2]						_
998 947 (1-59)				V		
99899611-61						
29901671-61	<١	22	12/12/11	M. 14	Jes	
999052	71	22	12/14/11	ann	Yes	_
999056				· .	-	·
999059(1-1)	.V	14				
99902811-91	21	12	12/14/11	H.M	Yes	7
999039112-51	1		14:00		4	
999084 (1-61						<u>~</u>
969086 11-61						-
99908711-21			<b> </b>	1		~
999088						
99908911-51	·····					
999 191 11-241	21	62	19/15/	NN	Vas	·
399129011 - dai				1	<u> </u>	<u>г</u>
999099 (1.16)						
99G111 11-21						
999118						
990 19111-21	<b> </b>		/		[/	
dagisur, al	-4,		19/11/14	Alai	<u> </u>	
094410011.21			12/10/4		Je J	
1141511-M						·
400067 1		- 02	Mul		1120	
GOGOFYM 21			1/16/4	<u>i</u>		
97706 FM-A			<u>├───</u> ┟───┤			
000125 W W			·····			-
999912) 11-41 000 1.1P						
999 198 GOG 1 (A						······
060101		<u>├</u>				-
000151	<u> </u>	 	<i>j</i>	/	· · · · /	
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# Sample Integrity & Analysis Discrepancy Form

CI	ient: <u> </u>	Lab # <u>77</u>	<u> 9088</u>
Da	nte Delivered: <u>[2]/2</u> /11 Time: <u>23:30</u> By: □Mail 🖄	, Field Service	□ <i>Client</i>
1.	Was a Chain of Custody received and signed?	∭ Xes ⊡No	
2.	Does Customer require an acknowledgement of the COC?	□Yes □No	XIN/A
З.	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	
5.	Were all requested analyses understood and acceptable?	∕¤(Yes □No	
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>^{(/} °C</u>	Ø(Yes □No	DN/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	\¤Yes □No	
<i>8</i> .	Were sample custody seals intact?	□Yes □No	χίνλα
9.	Does the number of samples received agree with COC?	∕∕¤Yes ⊡No	
10.	Did sample labels correspond with the client ID's?	QYes □No	
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ <b>Truesdail</b> □Client	□Yes □No	
12.	Were samples pH checked? pH = <u>See</u> COC	⊠íYes ⊡No	
<i>13</i> .	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Ø(Yes □No	<i>□N/A</i>
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>I RUSH</b> IN Std	ØYes □No	
15.	Sample Matrix: Liquid Drinking Water Ground W Sludge Soil Wipe Paint Solid	Vater □Waste Other_ <i>Ua</i> ⊀e	Water
16.	Comments:		
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Alex	

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EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 9, 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-340 PROJECT, GROUNDWATER MONITORING, TLI NO.: 999227

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-340 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 December 20, 2011, 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

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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.: 999227 Date: January 9, 2012 Collected: December 20, 2011 Received: December 20, 2011

### ANALYST LIST

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

	RUESDA CELLENCE IN INDI CCIIENT: Attention: Project Nou: P.O. Nou: P.O. Nou: P.O. Nou: 39227-001	IL LABORAT EPENDENT TESTING E2 Consulting Enginult55 Grand Ave. Suith 0akland, CA 94612 Shawn Duffy Shawn Duffy 155 Grand Ave. Suith 155 Grand Ave.	ORIES, INC. e 1000 e 1000 ct Analysis Method E 2200.8 E 2218.6 SM2130B	Anal Extraction Method NONE-digested NONE-digested NONE-digested NONE-digested NONE-digested NONE-digested NONE-digested	Vtical Re       12/20/2011       12/20/2011       12/20/2011       12/20/2011       12/20/2011	Sample         13:30           13:30         13:30           13:30         13:30	Lat Da I 1201 FRAN (714) 730- (714) 730- (714) 730- (714) 730- Da Da Da Da Da Da Da Da Tuzi I tati Manganese Chromium, hexavalent Turbidity	Establish KKLIN AVENULE - TUE 5239 - FAX (714) orratory No.: te Received: te Received: 7120 ND 6.5 ND 6.5 ND	ed 1931 STIN, CALIFORNIA 92 999227 December 20, 3 ug/L ug/L ug/L NTU	<b>RL</b> 2011 <b>RL</b> 2.0 1.0 0.100 0.100
005	99227-001 Mag Nat	SC-700B-WDR-340 SC-700B-WDR-340 L: Milligrams per liter. L: Milligrams per liter. Results below 0.01ppm will Result above or equal to 0.0 Quality Control data will atw	ing limit) ing limit) gures" rule has been appli have two (2) significant fig ays have three (3) significa	NONE ed to all results: ures. ant figures.	12/20/2011	13:30	Total Dissolved Solids	4280	Ч Э С	G71

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REPORT

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

Printed 1/9/2012

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Laboratory No. 999227

### Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800 Oakland, CA 94612

Attention: Shawn Duffy Project Name: PG&E Topock Projec P.O. Number: 424973.01.DM Project Number: 424973.01.DM

Samples Received on 12/20/2011 9:30:00 PM

Field ID	Lab ID	Collected	Matrix	
SC-700B-WDR-340	999227-001	12/20/2011 13:30	Water	

#### Specific Conductivity - EPA 120.1 Batch 12EC11H 12/28/2011

Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
999227-001 Specific Conducti	vity	umhos/	cm 12/28	/2011	1.00	0.0950	2.00	7120
Method Blank						<u> </u>		
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	999227-001
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 7130	Expected 7120	R	RPD 0.140	Accepta 0 - 10	nce Range
Parameter Specific Conductivity Lab Control Sample Du	Unit umhos plicate	DF 1.00	Result 684	Expected 706	R	ecovery 96.9	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 688	Expected 706	R	ecovery 97.4	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 684	Expected 706	R	ecovery 96.9	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 951	Expected 997	R	lecovery 95.4	Accepta 90 - 110	nce Range

Truesdail Laboratories, Inc.

Report Continued

Client: E2 Consulting Engineers, Inc.

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

Page 2 of 9 Printed 1/9/2012

Chrome VI by EPA 218.6	<b>5</b>		Batch	1 12CrH11P			
Parameter		Unit	Ana	llyzed D	F MDL	RL	Result
999227-001 Chromium, Hexa	avalent	ug/L	12/22	2/2011 11:01 5.	25 0.136	1.0	ND
Method Blank					· · · · · · · · · · · · · · · · · · ·		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND				
Duplicate	1.1	55	<b>.</b>			Lab ID =	999178-001
Chromium, Hexavalent Low Level Calibration	ug/L Verification	DF 1.05	Result 0.375	Expected 0.377	RPD 0.639	Accepta 0 - 20	ince Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.203	Expected 0.200	Recovery 102.	Accepta 70 - 130	nce Range
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.88	Expected 5.00	Recovery 97.6	Accepta 90 - 110 Lab ID =	nce Range 999178-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.46	Expected/Addec 1.44(1.06)	Recovery 102.	Accepta 90 - 110 Lab ID =	nce Range 999178-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.20	Expected/Addec 7.16(5.30)	Recovery 101.	Accepta 90 - 110 Lab ID = 1	nce Range 999178-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.31	Expected/Addec 7.29(5.30)	Recovery 100.	Accepta 90 - 110 Lab ID = 1	nce Range 999178-004
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.28	Expected/Added 1.28(1.06)	Recovery 99.6	Accepta 90 - 110 Lab ID = 1	nce Range 999178-005
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 7.08	Expected/Added 7.03(5.30)	Recovery 101.	Accepta 90 - 110 Lab ID = 9	nce Range 999178-006
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 7.17	Expected/Added 7.14(5.30)	Recovery 101.	Accepta 90 - 110	nce Range



#### Report Continued

Client: E2 Consulting En	gineers, Inc.	Pr Pr	oject Name: oject Number	jec	Page 3 of 9 Printed 1/9/2012	
Matrix Spike						Lab ID = 999178-007
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 7.62	Expected/Added 7.60(5.30)	Recovery 100.	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 999178-008
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.06	Result 8.63	Expected/Added 8.65(5.30)	Recovery 99.7	Acceptance Range 90 - 110
Matrix Spike						Lab ID = 999227-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.02	Expected/Added 1.06(1.06)	Recovery 95.8	Acceptance Range 90 - 110 Lab ID = 999227-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.12	Expected/Added 5.25(5.25)	Recovery 97.6	Acceptance Range 90 - 110 Lab ID = 999247-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.74	Expected/Added 6.72(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 999248-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 6.61	Expected/Added 6.61(5.30)	Recovery 99.9	Acceptance Range 90 - 110 Lab ID = 999248-002
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.22	Expected/Added 1.22(1.06)	Recovery 99.8	Acceptance Range 90 - 110 Lab ID = 999248-003
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 1.18	Expected/Added 1.10(1.06)	Recovery 107.	Acceptance Range 90 - 110 Lab ID = 999249-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.06	Result 8.13	Expected/Added 8.12(5.30)	Recovery 100.	Acceptance Range 90 - 110 Lab ID = 999249-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.06	Result 6.48	Expected/Added 6.52(5.30)	Recovery 99.2	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.87	Expected 5.00	Recovery 97.5	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

Report Continued

Client: E2 Consulting Engineers, Inc.Project Name:PG&E Topock ProjecPage 5 of 9Project Number:424973.01.DMPrinted 1/9/2012

Metals by EPA 200.8, To	otal	ana Maria di Karana Maria di Karana	Batch	010712B			
Parameter		Unit	Anal	yzed D	F MDL	RL	Result
999227-001 Chromium		ug/L	01/08	/2012 19:06 5.0	0 0.275	1.0	ND
Manganese		ug/L	01/08	/2012 19:06 5.0	0 0.285	1.0	6.5
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	999227-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Range
Chromium	ug/L	5.00	ND	0.00	0	0 - 20	
Manganese	ug/L	5.00	6.22	6.53	4.86	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	1.00	0.150	0.200	75.0	70 - 130	)
Manganese	ug/L	1.00	0.170	0.200	85.0	70 - 130	)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range
Chromium	ug/L	5.00	108.	100.	108.	85 - 115	5
Manganese	ug/L	5.00	104.	100.	104.	85 - 115	5
Matrix Spike						Lab ID =	999227-001
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium	ug/L	5.00	110.	100.(100.)	110.	75 - 125	5
Manganese	ug/L	5.00	107.	106.(100.)	100.	75 - 128	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	10.0	10,0	100.	90 - 110	)
Manganese	ug/L	1.00	9.81	10.0	98.1	90 - 11(	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	9.52	10.0	95.2	90 - 11(	)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	9.54	10.0	95.4	90 - 110	נ

Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Projec	Page 8 of 9
	Project Number:	424973.01.DM	Printed 1/9/2012

<b>Total Dissolved Solids b</b>	y SM 254	0 C	Batch	12TDS11E			12/27/20	11
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
999227-001 Total Dissolved S	Solids	mg/L	12/22	2/2011	1.00	0.400	125	4280
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	999227-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4320	Expected 4280	F	RPD 1.04	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 504	Expected 500.	F	Recovery 101.	Accepta 90 - 110	ince Range )

### Turbidity by SM 2130 B Batch 12TUC11G 12/21/2011

Parameter	Anna dha china ann	Unit	Ana	ilyzed	DF	MDL	RL	Result
999227-001 Turbidity		NTU	12/21	1/2011	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	999227-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.00		0	0 - 20	,
Lab Control Samp	le							
Parameter	Unit	DF	Result	Expected	R	ecoverv	Accepta	nce Rande
Turbidity	NTU	1.00	7.72	8.00		96.5	90 - 110	
Lab Control Sampl	le Duplicate							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Turbidity	NTU	1.00	7.65	8.00		95.6	90 - 110	



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Projec Project Number: 424973.01.DM Page 9 of 9 Printed 1/9/2012

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



### Total Dissolved Solids by SM 2540 C

### Calculations

Batch;	12TDS11E
Date Calculated:	12/27/11

		· · · · · · · · · · · · · · · · · · ·									
Laboratory Number	Sample volume, ml	Initial weight,g	1st Final weight,g	2nd Final weight,g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight,g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
BLANK	100	66,8117	66.8118	66.8117	0.0001	No	0.0000	0.0	25.0	ND	1
999247	100	67.7777	67.821	67.821	0.0000	No	0,0433	433.0	25.0	433.0	1
999227	20	51.5090	51.5946	51,5945	0.0001	No	0.0855	4275.0	125.0	4275.0	1
999202	100	69.7493	69.7963	69.7962	0.0001	No	0.0469	469.0	25.0	469.0	1
999204-2	200	104.2426	104.2641	104.2641	0.0000	No	0.0215	107.5	12.5	107.5	1
999204-4	100	72.8080	72.83	72.83	0.0000	No	0.0220	220.0	25.0	220.0	1
999226	100	74.7533	74.8138	74.8134	0.0004	No	0.0601	601.0	25,0	601.0	1
999258	480	105.2892	105.2892	105.2892	0.0000	No	0.0000	0.0	5.2	ND	1
999227D	20	50.1664	50.2533	50.2529	0.0004	No	0.0865	4325.0	125.0	4325.0	1
LCS	100	65.7036	65.7542	65.754	0.0002	No	0.0504	504.0	25.0	504.0	1
								1			
								· · · ·			
								1			
											**** · · · · · · · · · · · · · · · · ·
LCSD											1

Calculation as follows:

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

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

B = weight of dish in grams.

C = mL of sample filtered.

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

st Printed Name

Analyst Signature

Reviewer Printed Name

Reviewer Signature

### TDS/EC CHECK

#### Batch: 12TDS11E Date Calculated: 12/27/11

999247         672         0.64         436.8         0           999227         6890         0.62         4478.5         0           999202         769         0.61         499.85         0           999204-2         198         0.54         128.7         0           999204-2         198         0.51         279.5         0           999226         960         0.63         624         0           999228         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         0           LCS	.99 .95 .94 .84
999247         672         0.64         436.8         C           999227         6890         0.62         4478.5         C           999202         769         0.61         499.85         C           999204-2         198         0.54         128.7         C           999204-2         198         0.51         279.5         C           999204-4         430         0.51         279.5         C           999226         960         0.63         624         C           999258         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         C	.99 .95 .94 .84
999227         6890         0.62         4478.5         C           999202         769         0.61         499.85         C           999204-2         198         0.54         128.7         C           999204-4         430         0.51         279.5         C           999226         960         0.63         624         C           999258         0.836         ND         0.5434         I           999227D         6890         0.63         4478.5         C           LCS	.95 .94 .84
999202         769         0.61         499.85         C           999204-2         198         0.54         128.7         C           999204-4         430         0.51         279.5         C           999226         960         0.63         624         C           999258         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         C           LCS	.94
999204-2         198         0.54         128.7         0           999204-4         430         0.51         279.5         0           999226         960         0.63         624         0           999228         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         0           LCS	.84
999204-4         430         0.51         279.5         0           999226         960         0.63         624         0           999258         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         0           LCS	
999226         960         0.63         624         0           999258         0.836         ND         0.5434         1           999227D         6890         0.63         4478.5         0           LCS	.79
999258         0.836         ND         0.5434           999227D         6890         0.63         4478.5         C           LCS	.96
999227D 6890 0.63 4478.5 C LCS	D
	.97
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### Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab	Number	Initia	al pH	Buffer A	dded (mL)	Fina	al pH	Time E	Buffered	Ini	tials
12/19/11	999	180-1	<u>३</u>	.5	N/	<u> </u>	N	A\	~	$\overline{/A}$	G	1
		-1'-								1		Í
	<u> </u>	-15										
	<u> </u>	-16										
										I		
		- 10										
		-11										·
		<u>-)</u>										
		-24										
		-25										
		-26										
V.,		1 -26	J			/		i l				
12/2011	<b>Q99</b>	226	7		5	m	9.4	5	10	An	$\overline{\Lambda}$	
12 21/1	299	227	7		Śr	n [.	9.	.5	10 :	IS Am	(m)	$\leq$
12/22/11	999	247	<u>q</u>	5	<u> </u>	IA		IA	$\cdot \mathcal{N}$	/A		5
12/22/11	999	218-1	٩.	5	N	1A		'IA	N	7A T	Ľ	
		-1										
	<u> </u>	/3	<u> </u>			V		V	<u> </u>	1		
1212411	9992	49-1	<u> </u>	5	N	<u>/A</u>	Ņ	<u>  A </u>	~	(IA	6	ノ
valaalu /	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	~1		a	······	$\frac{\nu}{\lambda}$	-j			$\overline{\gamma}$	J.	
1212411	1991	-1	<b>~1</b> , 7	<u> </u>	<u></u>	/ []	<u>_N /</u>	<u>A</u>	. <u>N</u>	IA I	G	$\angle$
	· ·	7	-+			<u>}</u>	{			Ì		
		<u> </u>			- <u></u>	<u> </u>				· · ·		
		-5					-		<u>.</u>			
		-6						L		· · · ·		
		-1	$\neg \uparrow$									
		-8								<u> </u>		
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V	Ţ	-10	Ţ		J	i i i i i i i i i i i i i i i i i i i	J	······································		/	<u> </u>	J

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

Metals Samples Logbook

		·				Adjusted to
Sample Number	Turbidity	рH	Date	Analyst	Need Digest	pH<2 (Y/N)
998901 7-8	</td <td><u> </u></td> <td>12/09</td> <td>MM</td> <td>125</td> <td>. <b>ga</b>ran</td>	<u> </u>	12/09	MM	125	. <b>ga</b> ran
998945 (1-2)						
998946 11-21		<u> </u>		//	,	
998 947 (1-59)	¥	/		¥	V	
998996[1-6]	<u>/ /</u>	V	- V	/		
949016 [[-6]	2/	22	12/12/11	M. 19	res	
999039		<u> </u>	19.04/11	<u>un</u>	TES_	
999056						
999059 [1-1-]	-l-	-Vg				
99903811-21	21	- <u> </u>	17/14/11	H.M.	725	
999039112-51		<u>├</u>	19:00			-
999089 (1-6/		<b> </b>		·		-
949080 [1-6]					{	*
99908+14-21					)	-
999000						~
600 001 1. MU		<u> </u>	VIALINI	11 11	V 1/ax	<b>.</b>
9900001 1 doi			1/2/13		<u> </u>	<b>—</b>
999099 1 1	<b> </b>	<u> </u>			<u>                                     </u>	
996117 11-21	 					
999118						-
990 19111-41	./				./	
019415411.91	21	c 9	12/16/4	Man	Ver	-
944155/1-21	1	1			1	
994156			11/			
999047-1	>1	22	12/16/0	MM	12e	~
99905 4M-21	<u>'</u>		Ĩ	Í		-
999124						·····
999125 11-41				· · ·		-
999148						-
999149				-		~
999151				1	i	
99516F	V	M	V	¥.		
999178/1-8/	c1	<2	12/19/4	Mr. M	Yes	
99917911-8			11			
949180(126	11/		1/	V		
99902811-21	solid		12/19/4	pi.ll	Yes	TTLC
99917511-21					1	<u> </u>
1999191						
90 8 731 1219	21	12	11423/4	ní n	yes_	<u> </u>
99922F	·e	22	12/21/4	N.M	Ver	
99 8 732 11-13	<u> &lt;1</u>	22	11/30/11	MM	Y5	
998802	21	<2	11/30/4	MM	yes_	
499241	<u>71</u>	22	19/2/14	Mar	Yes	<b></b>
19987771-7		22	413011	M.M.	yes	<b>~</b>
94877811-91	<u></u>	- 22	$\downarrow$ $\checkmark$			
990 308		<u> </u>	01/12	M.N.	- 1/21	
1999 360 121	<u>                                     </u>					
1999 362 (1; 3)	I V		⊥_₩	└──  -/		[
			v	V		

## Sample Integrity & Analysis Discrepancy Form

Clien	nt: <u>EL</u>	Lab # 999222
Date	Delivered: <u>1</u> / <u>1</u> /11 Time: <u>1:30</u> By: □Mail ØF	Field Service DClient
1.	Was a Chain of Custody received and signed?	ØYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No カŹN/A
3.	Are there any special requirements or notes on the COC?	□Yes □No diN/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?	⊠AYes ⊡No ⊡N/A
<b>6</b> .	Were samples received in a chilled condition? Temperature (if yes)? $\frac{\int_{-1}^{1} \frac{y}{2} \circ \mathbf{C}}{A}$	dYes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Xes INO IN/A
8.	Were sample custody seals intact?	QUYes INO ZIN/A
9.	Does the number of samples received agree with COC?	Res INO IN/A
10.	Did sample labels correspond with the client ID's?	Ayes INO IN/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ <b>Truesdail</b> □Client	□Yes □No Ģ(N/A
12.	Were samples pH checked? pH = <u>JUC</u> COCC-	da¥es ⊒No ⊒N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	Ø(Yes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>RUSH</b> a Std	,⊈dYes ⊒No ⊒N/A
15.	<u>Sample Matrix:</u> □Liquid □Drinking Water □Ground V □Sludge □Soil □Wipe □Paint □Solid ⊠	Vater 🗆 Waste Water Other <u>Water</u>
16.	Comments:	
17	Sample Check-In completed by <b>Truesdail</b> Log-In/Receiving:	Anda Shabun'i

EXCELLENCE IN INDEPENDENT TESTING

Established 1931

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

January 9, 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-341 PROJECT, GROUNDWATER MONITORING, TLI NO.: 999308

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-341 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 December 27, 2011, 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

flidere

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.: 999308 Date: January 9, 2012 Collected: December 27, 2011 Received: December 27, 2011

### ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Mark Kotani
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Kim Luck
EPA 200.8	Total Metals	Katia Kiarashpoor
EPA 218.6	Hexavalent Chromium	Maksim Gorbunov

	EXCELLENCE IN INDE	IL LABURAI ( EPENDENT TESTING					14201 FRA	<i>Estabiish</i> NKLIN AVENUE - TUS	ed 1931 STIN, CALIFORNIA 9	2780-7008
	Client: Attention:	E2 Consulting Engine 155 Grand Ave. Suite Oakland, CA 94612 Shawn Duffy	eers, Inc. a 1000		/	$\rangle$	(714) 730 <b>La</b>	b6239 · FAX (714) boratory No.: 1 ate Received: 1	730-6462 · www.tru 999308 December 27,	ssdail.com 2011
	Project Name: Project No.: P.O. No.:	: PG&E Topock Projec : 424973.01.DM : 424973.01.DM	ti							
				Ana	lytical Re	<u>esults</u>	<u>Summary</u>			
	Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
	999308-001 999308-001 999308-001 999308-001 999308-001 999308-001	SC-700B-WDR-341 SC-700B-WDR-341 SC-700B-WDR-341 SC-700B-WDR-341 SC-700B-WDR-341 SC-700B-WDR-341	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C SM2540C	NONE NONE-digested NONE-digested LABFLT NONE NONE NONE	12/27/2011 12/27/2011 12/27/2011 12/27/2011 12/27/2011	10:30 10:30 10:30 10:30 10:30	EC Chromium Manganese Chromium, hexavalent Turbidity Total Dissolved Solids	7160 ND ND 4240	umhos/cm ug/L ug/L NTU mg/L	2.0 1.0 1.0 0.100 125
	Σ Σ Σ Σ Σ	<ul> <li>D: Non Detected (below reportir</li> <li>L: Milligrams per liter.</li> <li>e: The following "Significant Fig Results below 0.01ppm will h Result above or equal to 0.0 Quality Control data will alwa</li> </ul>	ng limit) gures" rule has been appl have two (2) significant fil rippm will have three (3) signific ays have three (3) signific	died to all results: gures. significant figures. cant figures.						
005										
ſ	This societ apolice on	hito the second of seconds			يد مرابد مرابع مر	o to notificano	e ik ere relimie se teolookie ikone	Ac Action of the	حلممالم مبا مماله مفمه	

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REPORT

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

### Client: 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

Laboratory No. 999308 Page 1 of 9 Printed 1/9/2012

#### Samples Received on 12/27/2011 9:30:00 PM

Field ID				Lab ID	Collected	Matrix
SC-700B-WDR-341			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	999308-001	12/27/2011 10:30	Water
Specific Conductivity - El Parameter	PA 120.1	Unit	Batch	12EC11H lyzed	DF MDL	12/28/2011 RL Result
999308-001 Specific Conductiv	vity	umhos/	cm 12/28	/2011	1.00 0.0950	2.00 7160
Method Blank				·····	······································	**************************************
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND			l ah ID = 000227 004
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7130	Expected 7120	RPD 0.140	Acceptance Range 0 - 10
Parameter Specific Conductivity Lab Control Sample Du	Unit umhos plicate	DF 1.00	Result 684	Expected 706	Recovery 96.9	Acceptance Range 90 - 110
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 688	Expected 706	Recovery 97.4	Acceptance Range 90 - 110
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 684	Expected 706	Recovery 96.9	Acceptance Range 90 - 110
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 951	Expected 997	Recovery 95.4	Acceptance Range 90 - 110

Report Continued

Client: E2 Consulting Engineers, Inc.

TRUESDAIL LABORATORIES, INC.

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

Page 2 of 9 Printed 1/9/2012

Darameter		l Init	Ana	lvzed D	F MDI	RI	Result
			10/09			1.0	ND
999308-001 Chromium, Hexa	ivalent	ug/L	12/20	/2011 14:56 5.4	25 0.136	1.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Chromium, Hexavalent Duplicate	ug/L	1.00	ND			Lab ID =	999092-010
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.05	6.58	6.62	0.661	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.186	0.200	92.8	70 - 130	כ
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.90	5.00	98.0	90 - 11	D
Matrix Spike						Lab ID =	999090-007
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	10.5	10.3	10.5(10.5)	98.3	90 - 11	0
Matrix Spike						Lab ID =	999090-017
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	10.5	10.1	10.5(10.5)	96.2	90 - 11	0
Matrix Spike						Lab ID =	999092-001
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	5.25	5.06	5.25(5.25)	96.4	90 - 11	0
Matrix Spike						Lab ID =	999092-001
Parameter	Unit	DF	Result	Expected/Addec	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.06	0.00	1.06(1.06)	0.00	90 - 11	0
Matrix Spike						Lab ID =	999092-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.06	1.04	1.06(1.06)	98.5	90 - 11	0
Matrix Spike						Lab ID =	999092-003
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	5.25	5.23	5.25(5.25)	99.5	90 - 11	0



#### Report Continued

Client: E2 Consulting Eng	E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM		oject	Page 4 of 9 Printed 1/9/2012		
Matrix Spike						Lab ID = 999092-016
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 41.1	Expected/Added 40.7(26.2)	Recovery 102.	Acceptance Range 90 - 110 Lab ID = 999308-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.25	Result 5.24	Expected/Added 5.25(5.25)	Recovery 99.8	Acceptance Range 90 - 110 Lab ID = 999308-001
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.06	Result 0.960	Expected/Added 1.06(1.06)	Recovery 90.6	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 4.90	Expected 5.00	Recovery 98.0	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101.	Acceptance Range 95 - 105

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Project Number: 424973.01.DM				ct	Page 5 of 9 Printed 1/11/2012 Revised			
Metals by EPA 200.8, To Parameter	tal	Unit	Batch	010712C	ϽF	MDI	RI	Result
999308-001 Chromium	······································	ua/l	01/08	/2012 23:57 5	00	0.110	1.0	
Manganese		ug/L	01/08	/2012 23:57 5	.00 nn	0.110	1.0	57
Method Blank		ug, E				0.200	1.0	0.1
Parameter	Linit	DE	Requit					
Chromium	ua/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Low Level Calibration	Verification							
Parameter	Unit	DE	Result	Expected	F	Recovery	Accenta	nce Range
Chromium	ug/L	1.00	0.155	0.200	•	77.4	70 - 130	ice Nange
Manganese	ug/L	1.00	0.200	0.200		99.8	70 - 130	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recoverv	Accepta	nce Range
Chromium	ug/L	5.00	109.	100.		109.	85 - 115	iee nange
Manganese	ug/L	5.00	106.	100.		106.	85 - 115	
Matrix Spike							Lab ID = 9	999308-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	112.	100.(100.)		112.	75 - 125	
Manganese	ug/L	5.00	107.	106.(100.)		102.	75 - 125	
Matrix Spike Duplicate	9						Lab ID = 9	999308-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Chromium	ug/L	5.00	111.	100.(100.)		111.	75 - 125	-
Manganese	ug/L	5.00	107.	106.(100.)		<b>101</b> .	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	10.3	10.0		103.	90 - 110	
Manganese	ug/L	1.00	9.72	10.0		97.2	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	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	9.64	10.0		96.4	90 - 110	

Report Continued

Client: E2 Consulting Engineers, Inc.	Project Name:	PG&E Topock Project	Page 8 of 9
	Project Number:	424973.01.DM	Printed 1/9/2012

<b>Total Dissolved Solids b</b>	y SM 2540	) C	Batch	Batch 12TDS11F			12/28/2011	
Parameter	e districted system	Unit	Ana	lyzed	DF	MDL	RL	Result
999308-001 Total Dissolved S	Solids	mg/L	12/28	/2011	1.00	0.400	125	4240
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	999250-010
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 3200	Expected 3200	F	RPD 0.156	Accepta 0 - 5	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 491	Expected 500.	Recovery 98.2		Acceptance Rang 90 - 110	
Turbidity by SM 2130 B			Batch	12TUC11L			12/29/201	<b>11</b>
Parameter		Unit Analyzed		lyzed	DF	MDL	RL	Result
999308-001 Turbidity		NTU	NTU 12/29/2011		1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	999308-001
Parameter Turbidity Lab Control Sample	Unit NTU	DF 1.00	Result ND	Expected 0.00	F	RPD 0	Accepta 0 - 20	ince Range
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.06	Expected 8.00	F	Recovery 101.	Accepta 90 - 110	ince Range )
Lab Control Sample D	)uplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.02	Expected 8.00	F	Recovery 100.	Accepta 90 - 110	ince Range )



Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Project Number: 424973.01.DM Page 9 of 9 Printed 1/9/2012

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

*for* Mona Nassimi Manager, Analytical Services



E2 Sean

### Total Dissolved Solids by SM 2540 C

#### Calculations

Batch:	12TDS11F
Date Calculated:	12/29/11

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	68.8842	68.8842	68.8842	0.0000	No	0.0000	0.0	25.0	ND	1
999250-1	20	51.0760	51.1511	51.1508	0.0003	No	0.0748	3740.0	125.0	3740.0	1
999250-2	50	49.5264	49.6005	49.6002	0.0003	No	0.0738	1476.0	50.0	1476.0	11
999250-3	50	47.9073	47.9765	47.9761	0.0004	No	0.0688	1376.0	50.0	1376.0	1
999250-4	100	65.6262	65.6795	65.6794	0,0001	No	0.0532	532.0	25.0	532.0	1
999250-5	50	49.8292	49.9553	49.9549	0.0004	No	0.1257	2514.0	50.0	2514.0	1
999250-6	20	50.1287	50.1928	50,1926	0.0002	No	0.0639	3195.0	125.0	3195.0	1
999250-7	50	50.9977	51.0931	51.0928	0.0003	No	0.0951	1902.0	50.0	1902.0	1
999250-8	50	48,1853	48.2599	48.2597	0.0002	No	0.0744	1488.0	50.0	1488.0	1
999250-9	50	50.4265	50.5026	50.5026	0.0000	No	0.0761	1522.0	50.0	1522.0	1
999250-10	20	75.3065	75.3708	75.3706	0.0002	No	0.0641	3205.0	125.0	3205.0	1
999250-10D	20	51.2510	51.3149	51.3149	0.0000	No	0.0639	3195.0	125.0	3195.0	1
LCS	100	75.4496	75,4988	76.4987	0,0001	No	0.0491	491.0	25.0	491.0	1
999274-1	50	48.1837	48.2978	48.2974	0.0004	No	0.1137	2274.0	50.0	2274.0	1
999274-2	50	49.4744	49.5936	49.5934	0.0002	No	0.1190	2380.0	50.0	2380.0	1
999398-2	200	111.5190	111.5402	111.5402	0.0000	No	0.0212	106.0	12,5	106.0	1
999398-4	100	72.8204	72.8468	72.8464	0.0004	No	0,0260	260.0	25.0	260.0	1
999308	20	47.0052	47.0904	47.09	0,0004	No	0.0848	4240.0	125.0	4240.0	1
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LCSD			<u> </u>					<u> </u>			1

#### Calculation as follows:

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

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)

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Analyst Signature

Reviewer Printed Name

Reviewer Signature

WetChem TDS_0810.xls

### Total Dissolved Solids by SM 2540 C

### TDS/EC CHECK

#### Batch: 12TDS11F

Date Calculated: 12/29/11

Laboratory Number	EC	TDS/EC Ratio: 0.559	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
			-	
999250-1	4990	0.75	3243.5	1.15
999250-2	2180	0.68	1417	1,04
999250-3	2030	0.68	1319.5	1.04
999250-4	828	0.64	538.2	0.99
999250-5	3510	0.72	2281.5	1.10
999250-6	4730	0.68	3074.5	1,04
999250-7	2860	0.67	1859	1.02
999250-8	2290	0.65	1488.5	1.00
999250-9	2350	0.65	1527.5	1.00
999250-10	4740	0.68	3081	1.04
999250-10D	4740	0.67	3081	1.04
LCS				} } }
999274-1	3730	0.61	2424.5	0.94
999274-2	3970	0.60	2580.5	0.92
999398-2	206	0.51	133.9	0.79
999398-4	449	0.58	291.85	0.89
999308	7160	0.59	4654	0.91

WetChem TDS_0810.xls

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L	Signature (Relinquished)	Printed Name / Pow / 1/1/2005	Companyl Agency <i>CURT</i>	Datel /2. 2.7. // Time /0730	RECEIVED COOL E WARM D S 3 C
L	Signature' Karlou (Received) Karlou	Martine Da Cal	Company Company Agency	Date///27-// Time /5730	CUSTODY SEALED YES 🔲 NO 🗹
	Relinquished)	Printed P. K. /	Company' <u>I</u> <u>I</u> Agency <u>I</u> <u>I</u>	Date/2-27-1/ Time 27:30	SPECIAL REQUIREMENTS;
0	Signature (Received)	Printed Stated un	Company/ 71 2 Agency	Date/ Time /2/2 #/11 2/132	
41	Signature (Relinquished)	Printed Name	Company/ Agency	Date/ / / Time	
<b></b>	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
12/28/11	999308	7	5 mL	9.5	8:30 AM	
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C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log

Metals Samples Logbook

Sample Number	Turbidity	рН	Date	Analyst	Need Digest	Adjusted to pH<2 (Y/N)
998901 12-8	د/	c.2 ·	12/09/	M, M	Yee	
09894511-27	Ĭ					~
998946 11-21					1	
998 047 150	til a					
99899611-61		1	Y I	1/	Ÿ/	
29901611-61	21	19	19/19/11	M. M	Les -	
999059	71	12	19/14/11	nu en	405	
999056	T			~		
00905911-11						
GAADD PL 21	- il	19	19/14/1		Ves	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
10002011251		22	10.0	M	723	-
006084 11-61	· · · · ·		17.00			
QQQQ86 14 (1)			<u>├──</u> <mark>├</mark> ───┤			
999000 (1-6) GOOD87 11 21						
99900+14-21			┼╾┉┨╌───┤			~
AGGDOGILEI			┼──╎┟────┤		<u> </u>	-
19470 87 (1-3 )	<u> </u>	<u> </u>	10/10/	1/ 1/	<u> </u>	· · · · · · · · · · · · · · · · · · ·
1771071 11-24 19900001 1 dia	<u> </u>		X(15 )	<u></u>	yes_	r
609060 L	<b> </b>					
906117 (1-16)	<b> </b>					
19911 - 11-9						
997110 AGa 18121 21			<b>/</b>	·····		-
479 11 1-41 Clark Club al	- K		M	V	¥	
99915911-91	61	22	12/16/9		Jes	
-19915511-21 000015	<u> </u>	<u> </u>				
999130		-V_				
999096-1	21	- Ch	12/16/4	MM	125	<u> </u>
99906 FI4-H						
994124	f		·····			
999125 11-41	<u> </u>					
699999						
999199						
099151		1	/	/	<i>/</i>	
99576F	<b>↓</b>		V	Y	4	
9451 60/1-8/	<u> </u>	22	12/19/4	MM	yes_	
77711911-8	1 <i>1</i>	<u> </u>		/,	· · · · · · · · · · · · · · · · · · ·	-
797180(126		<u>├</u>		V	<u> </u>	-
474 028 11-21	Solid		12/19/4	min	- Yes-	TYPC
775 175 1-21	<b> </b>					<i> </i>
775191	l V.	<u> </u>		V		1/
40 8 31 12 45	<u> </u>	42	11723/4	N.M	1 years	<u> </u>
49922F	·< [	62	12/21/4	H.M	yez_	
199 8 432 (1-13/	<u> </u>	2	11/30/11	MM	75	~
998 802	1 - 1	-2	11/30/4	M.M	yes_	
494241	71	2)	12/2/11	MAI	Yes	<b>~</b>
9987771-7	<u>  &lt;  ·</u>	22	413011	M.M	- yes	-
9487781-91	<u> </u>	- 22-			+V	
900 308	4	<u>2</u>	oipi/12	<u>µ</u> .М	1/21	
9993601121	ļ		<u>                                      </u>	······	L-1,	
1949 362 11:31		$\square V$		L/	LV_	
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# Sample Integrity & Analysis Discrepancy Form

Cli	ent: <u>E &amp;</u>	Lab #999303
Da	te Delivered: <u>/ パ</u> ノ <mark>タナ</mark> / 11 Time: <u>よ/: 30</u> By: ロMail Øi	Field Service DClient
1.	Was a Chain of Custody received and signed?	⊠aYes ⊡No ⊡N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □No ¤N/A
3.	Are there any special requirements or notes on the COC?	□Yes □No ,¤N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ¤N/A
5.	Were all requested analyses understood and acceptable?	AYes □No □N/A
6.	Were samples received in a chiller condition? Temperature (if yes)? 5 <u>.3° C</u>	≪dYes ⊡No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ØdYes □No □N/A
8.	Were sample custody seals intact?	Y = Yes = No QAN/A
9.	Does the number of samples received agree with COC?	,⊈Yes □No □N/A
10.	Did sample labels correspond with the client ID's?	,⊈Yes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ <b>Truesdail</b> □Client	□Yes □No ZÍN/A
(2.	Were samples pH checked? pH = <u>See_C</u> . C. C.	,∕¤dYes ⊡No ⊡N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	,∕alYes ⊡No ⊡N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): <b>2 RUSH I</b> Std	aalYes □No □N/A
5.	Sample Matrix: Liquid Drinking Water Ground V Sludge Soil Wipe Paint Solid Date	Vater 🗆 Waste Water Other Water
6.	Comments:	
		1011

17. Sample Check-In completed by Truesdail Log-In/Receiving: _____ Mabuustur

#### MDB "H B' 4U

### Analytical Bench Log Book

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9006-251V	11-08-61	0881	11-06-61	-58.81	1#73131M	11-06-61	00:1	6.55-	5 8 13 H. J. TOY	1.6
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