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July 15, 2014

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Executive Officer
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Colorado River Basin Region
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Subject: Topock IM-3 Combined Second Quarter 2014 Monitoring, Semiannual January – June 2014

Operation and Maintenance Report

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

(Document ID: PGE20140715B)

Dear Ms. Innis and Mr. Perdue:

Enclosed is the Second Quarter 2014 Monitoring, Semiannual January – June 2014 Operation and Maintenance Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure No. 3 (IM-3) Groundwater Treatment System.

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

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

The IM-3 groundwater extraction and treatment system has extracted and treated approximately 589,076,165 gallons of water and removed approximately 6,169 pounds of total chromium from August 1, 2005 through June 30, 2014.

Pamela S. Innis Robert Perdue July 15, 2014 Page 2

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

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

Sincerely,

Curt Russell

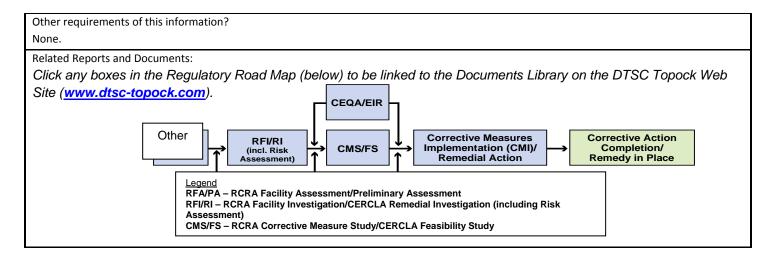
Topock Site Manager

Enclosures:

Topock IM-3 Combined Second Quarter 2014 Monitoring, Semiannual January – June 2014 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

Topock Project I	Executive Abstract
Document Title:	Date of Document: July 15, 2014
Topock IM-3 Second Quarter 2014 Monitoring, Semiannual	Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other)
January - June 2014 Operation and Maintenance Report	PG&E
Submitting Agency/Authored by: U.S. Department of the	Document ID Number:
Interior and Regional Water Quality Control Board	PGE20140715B
Final Document? X Yes No	
Priority Status: HIGH MED LOW	Action Required:
Is this time critical?	☐ Information Only ☐ Review & Comment
Type of Document:	Return to:
☐ Draft ☐ Report ☐ Letter ☐ Memo	
	By Date:
Other / Explain:	Other / Explain:
What does this information pertain to?	Is this a Regulatory Requirement?
Resource Conservation and Recovery Act (RCRA) Facility	⊠ Yes
Assessment (RFA)/Preliminary Assessment (PA)	□ No
RCRA Facility Investigation (RFI)/Remedial Investigation (RI)	If no, why is the document needed?
(including Risk Assessment)	·
Corrective Measures Study (CMS)/Feasibility Study (FS)	
Corrective Measures Implementation (CMI)/Remedial Action	
California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR)	
Impact Report (LIK) Interim Measures	
Other / Explain:	
What is the consequence of NOT doing this item? What is the	Other Justification/s:
consequence of DOING this item?	Permit Other / Explain:
Submittal of this report is a compliance requirement of the	
ARARs for waste discharge as documented in Attachment A to	
the Letter Agreement issued July 26, 2011.	
Brief Summary of attached document:	
This report covers the Interim Measures No. 3 (IM-3) groundwa	ter treatment system monitoring activities during the Second
Quarter 2014 period, and the operation and maintenance activi	ities during the January 1, 2014 to June 30, 2014 semiannual period.
The groundwater monitoring results for wells OW-1S/M/D, OW	-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and
CW-4M/D will be submitted under separate cover as part of the	e Compliance Monitoring Program. This report also covers the IM-3
operation and maintenance activities during the January – June	2013 semiannual period.
Written by: PG&E	
Recommendations:	
This report is for your information only.	
How is this information related to the Final Remedy or Regulatory Req	uirements?
The Tonock IM 2 Second Quarter 2014 Manitoring Semiannual	January, June 2014 Operation and Maintenance Beneritis related
to the Interim Measure. PG&E is currently operating the IM-3 g	January - June 2014 Operation and Maintenance Report is related
	·
	Relevant and Appropriate Requirements (ARARs) as documented
-	rom the Colorado River Basin Regional Water Quality Control Board
Board.	oncurrence issued August 18, 2011 from DOI to the Regional Water
Board.	



Version 9

Combined Second Quarter 2014 Monitoring, Semiannual January – June 2014 Operation and Maintenance Report Interim Measure No. 3 Groundwater Treatment System

Document ID: PGE20140715B

PG&E Topock Compressor Station Needles, California

Prepared for

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

on behalf of

Pacific Gas and Electric Company

July 15, 2014

CH2MHILL® 155 Grand Avenue, Suite 800

Oakland, CA 94612

Combined Second Quarter 2014 Monitoring, Semiannual January - June 2014 Operation and Maintenance Report for Interim Measure No. 3 Groundwater Treatment System

PG&E Topock Compressor Station Needles, California

Prepared for

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

on behalf of

Pacific Gas and Electric Company

July 15, 2014

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

Dennis Fink, P.E. Project Engineer

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- B Daily Volumes of Groundwater Treated
- C Flowmeter Calibration Records
- D Second Quarter 2014 Laboratory Analytical Reports

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Acronyms and Abbreviations

ARARS Applicable or Relevant and Appropriate Requirements

DOI United States Department of the Interior

gpm gallons per minute

IM Interim Measure

IM-3 Interim Measure No. 3

IW injection well

MRP Monitoring and Reporting Program
PG&E Pacific Gas and Electric Company

RCRA Resource Conservations and Recovery Act

Regional Water Board Colorado River Basin Regional Water Quality Control Board

RO reverse osmosis

Truesdail Laboratories, Inc.

WDR Waste Discharge Requirements

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SECTION 1

Introduction

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

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

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

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the Second Quarter 2014 and the operation and maintenance activities during the January 1, 2014 to June 30, 2014 semi-annual period. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

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SECTION 2

Sampling Station Locations

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

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Description of Activities

The treatment system was initially operated between July 25 and July 28, 2005 for the Waste Discharge Requirement (WDR)-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order No. R7-2004-0103. Full-time operation of the treatment system commenced in August 2005.

This report describes Second Quarter 2014 monitoring activities and the January 1, 2014 through June 30, 2014 (First and Second Quarters) operation and maintenance activities related to the IM-3 groundwater treatment system. IM-3 monitoring activities from January 1, 2014 through March 31, 2014 (First Quarter) were presented in the First Quarter 2014 Monitoring Report for IM-3 submitted to the DOI and Regional Water Board April 15, 2014.

This report, therefore, serves as the Semiannual January – June 2014 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 the following:

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

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

- Treated Effluent: Treated water that is discharged to the injection well(s)
- Reverse Osmosis (RO) Concentrate (brine): Treatment byproduct that is transported and disposed of offsite at a permitted facility
- Sludge: Treatment byproduct that is transported offsite for disposal at a permitted facility, which occurs
 either when a sludge waste storage bin reaches capacity, or within 90 days of the start date for
 accumulation in the storage container, whichever occurs first

3.2 Groundwater Treatment System Flow Rates for Second Quarter 2014

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 in the Semiannual Operations and Maintenance Log provided in Appendix A. The times shown are in Pacific Standard Time to be consistent with other data collected (e.g., water level data) at the site. Periods of planned and unplanned extraction system downtime during the months January 2014 through March 2014 were originally reported in the First Quarter 2014 Monitoring Report for IM-3 submitted to the DOI and Regional Water Board on April 15, 2014, and are also included in Appendix A of this report.

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

3.2.1 Treatment System Influent

During the Second Quarter 2014, extraction wells TW-3D and PE-1 operated with a target pumping rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction well TW-2D was only operated for a short time on April 4 and 5, 2014 for groundwater sampling, and on June 24, 25, 26 and 27 due to the TW-3D pump overheating. Extraction well TW-2S was not operated during Second Quarter 2014. The operational run time for the IM groundwater extraction system (combined or individual pumping), by month, was approximately:

- 87.7 percent during April 2014
- 97.8 percent during May 2014
- 92.3 percent during June 2014

The Second Quarter 2014 treatment system monthly average flow rates (influent, effluent, and RO concentrate) are presented in Table 2. The system influent flow rate was measured by flowmeters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-PR-10-10-03).

The IM-3 facility treated approximately 16,301,483 gallons of extracted groundwater during Second Quarter 2014.

In addition to extracted groundwater, during Second Quarter 2014 the IM-3 facility treated 5,210 gallons of water generated from the groundwater monitoring program and 29,700 gallons of injection well development water.

3.2.2 Effluent Streams

The treatment system effluent flow rate was measured by flowmeters in the piping leading to injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11) and in the piping running from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04). The IM-3 facility injected 16,258,512 gallons of treatment system effluent during Second Quarter 2014. The monthly average flow rate to injection wells is shown in Table 2.

The RO concentrate flow rate was measured by a flowmeter 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 105,180 gallons of RO concentrate during Second Quarter 2014. 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. Six sludge containers were shipped offsite from the IM-3 facility during Second Quarter 2014. 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.

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

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

Influent, effluent, RO concentrate, and sludge sampling frequency were in accordance with the MRP. The Second Quarter 2014 sample collection schedule is shown in Table 3.

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

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Analytical Results

The analytical results and laboratory reports for the IM-3 groundwater treatment system monitoring program were previously reported for the First Quarter of 2014 in the First Quarter 2014 Monitoring Report submitted to the DOI and Regional Water Board on April 15, 2014.

Laboratory reports for samples collected in Second Quarter 2014 were prepared by certified analytical laboratories, and are presented in Appendix D. The Second Quarter 2014 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.
- RO concentrate analytical results are presented in Table 6.
- Sludge analytical results are presented in Table 7.

The sludge is required to have an aquatic bioassay test annually. The most recent aquatic bioassay test was conducted on a September 2013 sample, and the results were presented in the Third Quarter 2013 Monitoring Report submitted to the DOI and the Regional Water Board on October 15, 2013.

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

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Semiannual Operation and Maintenance

This section includes the Semiannual Operation and Maintenance Report for the IM-3 groundwater treatment system for the period January 1, 2014 through June 30, 2014.

All operation 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. Operation and maintenance records are also archived using maintenance software. The subsections below summarize the operation 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 facility to measure groundwater flow:

Location	Flowmeter Location ID	Current Flowmeter Serial No.	Date of Calibration	Date of Installation
Extraction well PE-1	FIT-103	6C036F16000	8/6/2010	9/18/2013
Extraction well TW-3D	FIT-102	6C037316000	1/7/2013	9/4/2013
Extraction well TW-2D	FIT-101	6A022016000	9/20/2013	11/1/2013
Extraction well TW-2S	FIT-100	6A022116000	9/20/2013	11/1/2013
Injection well IW-02	FIT-1202	6C037016000	6/19/2012	7/12/2012
Injection well IW-03	FIT-1203	6C037216000	9/20/2013	10/1/2013
Combined IW-02 and IW-03	FIT-700	7700C616000	7/25/2011	12/13/2011
Reverse osmosis concentrate	FIT-701	6A021F16000	6/19/2012	7/14/2012

5.2 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated between January 1, 2014 through June 30, 2014 are provided in Appendix B.

Approximately 33,391,211 gallons of groundwater were extracted and treated between January 1, 2014 and June 30, 2014. Treatment of this water at the IM-3 facility is being performed in accordance with the conditions of ARARs.

Additionally, approximately 7,070 gallons of well purge water (generated during well development, monitoring well sampling, and/or aquifer testing), as well as 50,600 gallons of injection well re-development water, were treated at the IM-3 facility during the January 1, 2014 through June 30, 2014 semiannual period.

A total of approximately 33,359,064 gallons of treated groundwater were injected back into the Alluvial Aquifer between January 1, 2014 and June 30, 2014.

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5.3 Residual Solids Generated (Sludge)

During the January 1, 2014 through June 30, 2014 reporting period, 16 containers of sludge were shipped offsite for disposal. The sludge was shipped to U.S. Ecology in Beatty, Nevada for disposal. A listing of each shipment during the reporting period is provided below.

Date Sludge Bin Removed from Site	Approximate Quantity from Waste Manifests (cubic yards)	Type of Shipment
1/15/2014	8	Non-RCRA hazardous waste
1/15/2014	8	Non-RCRA hazardous waste
1/30/2014	8	Non-RCRA hazardous waste
1/30/2014	8	Non-RCRA hazardous waste
2/18/2014	8	Non-RCRA hazardous waste
2/18/2014	8	Non-RCRA hazardous waste
3/18/2014	8	Non-RCRA hazardous waste
3/18/2014	8	Non-RCRA hazardous waste
3/31/2014	8	Non-RCRA hazardous waste
3/31/2014	8	Non-RCRA hazardous waste
4/23/2014	8	Non-RCRA hazardous waste
4/23/2014	8	Non-RCRA hazardous waste
5/21/2014	8	Non-RCRA hazardous waste
5/21/2014	8	Non-RCRA hazardous waste
6/1/2014	8	Non-RCRA hazardous waste
6/1/2014	8	Non-RCRA hazardous waste

Notes:

RCRA = Resource Conservation and Recovery Act

5.4 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of RO concentrate generated are provided in Appendix B, as measured by flowmeter FIT-701 (Figures PR-10-03 and PR-10-04). From January 1, 2014 through June 30, 2014, approximately 219,180 gallons of RO concentrate were transported to Liquid Environmental Solutions in Phoenix, Arizona for disposal.

5.5 Summary of ARARs Compliance

No ARAR violations were identified during the January 1, 2014 through June 30, 2014 semiannual reporting period.

5.6 Operation and Maintenance - Required Shutdowns

Records of routine maintenance are kept onsite.

Appendix A contains a summary of the operation or maintenance issues that required the groundwater extraction system to be shut down during the January 1, 2014 through June 30, 2014 semiannual reporting period.

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Activities during the Second Quarter 2014 included one extended shutdown. The extraction system downtime was 3 days, 12 hours, 54 minutes, and it occurred from April 1 to 4, 2014 due to scheduled semi-annual facility maintenance.

5.7 Treatment Facility Modifications

No modifications were made to the IM-3 treatment facility that resulted in a material change in the quality or quantity of wastewater treated or discharged, nor resulted in a material change in the location of discharge, during the January 1, 2014 through June 30, 2014 semiannual period.

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SECTION 6

Conclusions

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

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

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SECTION 7

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:	behum
Name:	Curt Russell
Company:	Pacific Gas and Electric Company
Title:	Topock Site Manager
Date:	July 15, 2014

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TABLE 1
Sampling Station Descriptions
Second Quarter 2014 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

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

TABLE 2 Flow Monitoring Results

Second Quarter 2014 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^b (gpm)
April 2014 Average Monthly Flowrate	117.9	115.7	1.2
May 2014 Average Monthly Flowrate	134.6	133.9	0.9
June 2014 Average Monthly Flowrate	120.4	122.3	0.3

Notes:

gpm: gallons per minute

- ^a Extraction wells TW-3D and PE-1 were operated during the Second Quarter 2014. Extraction wells TW-2D operated on April 4 and 5, 2014 and June 24, 25, 26 and 27, 2014. TW-2S did not operate during Second Quarter 2014.
- ^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the Second Quarter 2014 is approximately 0.38 percent.

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TABLE 3
Sample Collection Dates
Second Quarter 2014 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System

Parameter	Sample Collection Dates	Results
Influent	April 8, 2014	See Table 4
	May 6, 2014	
	June 3, 2014	
Effluent	April 5, 2014	See Table 5
	April 8, 2014	
	April 15, 2014	
	April 22, 2014	
	April 29, 2014	
	May 6, 2014	
	May 13, 2014	
	May 20, 2014	
	May 27, 2014	
	June 3, 2014	
	June 10, 2014	
	June 17, 2014	
	June 24, 2014	
Reverse Osmosis Concentrate	April 8, 2014	See Table 6
Sludge ^a	First Quarter Composite sent to lab April 8, 2014	See Table 7

Notes:

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^a Sludge samples analysis is required quarterly by composite.

TABLE 4 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Influent Monitoring Results ^a Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency	/									Мо	nthly												
Analytes Units ^b	TDS mg/L	Turbidity NTU	Specific Conductance µmhos/cm	Field ^c pH pH units	Chromium µg/L	Hexavalent Chromium µg/L	Aluminium μg/L	Ammonia (as N) mg/L	Antimony µg/L	Arsenic μg/L	Barium µg/L	Boron mg/L	Copper µg/L	Fluoric mg/L	de Lead µg/L	Manganese M	Molybdenum µg/L	Nickel µg/L	(as N)		Sulfate mg/L	e Iron µg/L	Zinc μg/L
Sample ID Date	1.76	0.0140	0.606		0.710	0.150	7.20	0.0318	0.0350	0.0500	0.300	0.0041	0.190	0.104	0.140	0.0600	0.0500	0.240	0.0415	0.00063	1.54	3.00	5.10
SC-100B-WDR-462 4/8/2014	4620	ND (0.100)	6910	7.5	643	610	ND (50.0)	ND (0.500)	ND (2.00)	3.40	27.6	0.974	ND (1.00)	2.30	ND (1.00)	6.60	18.7	ND (2.00)	2.53 N	ID (0.0050) 523	ND (20.0)	ND (20.0)
RL	125	0.100	2.00		5.00	5.00	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	50.0	20.0	20.0
SC-100B-WDR-466 5/6/2014	4420	0.184	7470	7.1	624	575	ND (50.0)	ND (0.500)	ND (2.00)	3.60	26.2	0.979	ND (1.00)	2.34	ND (1.00)	7.80	21.3	ND (2.00)	2.64 N	ID (0.0050) 512	ND (20.0)	ND (20.0)
RL	250	0.100	2.00		1.00	5.00	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	25.0	20.0	20.0
SC-100B-WDR-470 6/3/2014	4250	0.177	7380	7.1	575	516	ND (50.0)	ND (0.500)	ND (2.00)	3.90	24.4	1.01	ND (1.00)	2.41	ND (1.00)	6.90	19.8	ND (2.00)	2.60 N	ID (0.0050) 513	ND (20.0)	ND (20.0)
RL	250	0.100	2.00		2.00	5.00	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	25.0	20.0	20.0

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

ND = parameter not detected at the listed value

NTU = nephelometric turbidity units

RL = project reporting limit

μg/L = micrograms per liter μmhos/cm = micromhos per centimeter

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

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

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

TABLE 5
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Effluent Monitoring Results ^a
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Effluent	Ave. Monthly	NA	NA	NA	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	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sampl	ling Frequency			Weekly												Monthl	у							
	Analytes Units ^C MDL ^d	TDS mg/L 1.76	Turbidity NTU 0.0140	Specific Conductance µmhos/cm 0.100	Field ^e pH pH units	Chromium µg/L 0.0300	Hexavalent Chromium µg/L 0.0060	Aluminium µg/L 7.20	Ammonia (as N) mg/L 0.0318	Antimony µg/L 0.0350	Arsenic μg/L 0.0500	Barium µg/L 0.300	Boron mg/L 0.0041	Copper µg/L 0.190	Fluoride mg/L 0.104	Lead μg/L 0.140	Manganese μg/L 0.0260	Molybdenum μg/L 0.0500	Nickel μg/L 0.240	Nitrate (as N) mg/L 0.0415	mg/L	Sulfate mg/L 1.54	Iron µg/L 3.00	Zinc µg/L 5.10
Sample ID	Date																							
SC-700B-WDR-4	61 4/5/2014	3800	ND (0.100)	6600	6.90	ND (1.00)	0.450										ND (0.500)							
RL		50.0	0.100	0.100		1.00	0.200										0.500							
SC-700B-WDR-4	62 4/8/2014	4440	ND (0.100)	6850	6.90	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (2.00)	ND (0.500) 12.0	0.936	ND (1.00)	1.98	ND (1.00) 4.30	18.7	ND (2.00)	2.38	ND (0.0050)	478	ND (20.0)) ND (20.0)
RL		125	0.100	2.00		1.00	0.200	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	25.0	20.0	20.0
SC-700B-WDR-4	63 4/15/2014	4390	ND (0.100)	6590	6.80	ND (1.00)	ND (0.200)										2.70							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	64 4/22/2014	3940	0.283	6150	6.90	ND (1.00)	ND (0.200)										0.900							
RL		125	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	65 4/29/2014	3800	0.136	6370	7.00	ND (1.00)	ND (0.200)										1.00							
RL		125	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	66 5/6/2014	4410	ND (0.100)	7310	7.10	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (2.00)	ND (0.500) 10.2	0.945	ND (1.00)	2.00	ND (1.00) 1.00	21.0	2.30	2.60	ND (0.0050)	500	ND (20.0)) ND (20.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	25.0	20.0	20.0
SC-700B-WDR-4	67 5/13/2014	4120	ND (0.100)	7170	7.00	ND (1.00)	ND (0.200)										4.20							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	68 5/20/2014	4210	0.125	7640	7.10	ND (1.00)	0.350										4.10							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	69 5/27/2014	4340	ND (0.100)	7170	7.10	ND (1.00)	0.210										1.50							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	70 6/3/2014	4360	ND (0.100)	7490	6.80	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.500)	ND (2.00)	ND (0.500) 10.0	0.970	ND (1.00)	2.13	ND (1.00	3.00	19.9	2.10	2.68	ND (0.0050)	506	ND (20.0)) ND (20.0)
RL		250	0.100	2.00		1.00	0.200	50.0	0.500	2.00	0.500	5.00	0.0500	1.00	0.500	1.00	0.500	2.00	2.00	0.500	0.0050	25.0	20.0	20.0
SC-700B-WDR-4	71 6/10/2014	4230	ND (0.100)	7360	7.10	ND (1.00)	ND (0.200)										1.10							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	72 6/17/2014	4380	ND (0.100)	7330	6.90	ND (1.00)	ND (0.200)										3.20							
RL		250	0.100	2.00		1.00	0.200										0.500							
SC-700B-WDR-4	73 6/24/2014	4510	0.150	7800	6.80	3.40	1.50										31.4							
RL		250	0.100	2.00		1.00	1.00										0.500							

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TABLE 5

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

Effluent Monitoring Results a

Second Quarter 2014 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

NTU = nephelometric turbidity units RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

ND = parameter not detected at the listed value

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

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TABLE 6

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

Reverse Osmosis Concentrate Monitoring Results ^a

Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Samplin	ng Frequency											Quarter	ly										
	Analytes	TDS	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium		Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenur	n Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	Units ^b	mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sample ID	MDL Date	1.76	0.606		0.00014	0.000060	0.000076	0.00010	0.00059	0.00072	0.00080	0.00080	0.00038	0.104	0.00029	0.0010	0.000080	0.00048	0.00042	0.00058	0.000060	0.00014	0.0051
SC-701-WDR-46	62 4/8/2014	27500	35900	7.7	0.00160	ND (0.0020) I	ND (0.0020) 0	.000810	0.0805	ND (0.0040)	ND (0.0040	ND (0.005	0) 0.00480	12.6	ND (0.001	0) 0.118	ND (0.00040)	0.00940	0.0246	ND (0.0100) ND (0.001	0) ND (0.0050) ND (0.0200
RL		833	2.00		0.0010	0.0020	0.0020	0.00050	0.0050	0.0040	0.0040	0.0050	0.0020	0.500	0.0010	0.0040	0.00040	0.0020	0.0100	0.0100	0.0010	0.0050	0.0200

NOTES:

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

MDL = method detection limit

mg/L = milligrams per liter

ND = parameter not detected at the listed value

RL = project reporting limit

μg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

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

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

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

TABLE 7 Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) Sludge Monitoring Results^a Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Sampling Frequency									(Quarterly										
Analytes Units I MDL Sample ID Date	Chromium mg/kg 0.0070	Hexavalent Chromium mg/kg 0.0112	Antimony mg/kg 0.00017	Arsenic mg/kg 0.0188	Barium mg/kg 0.0106	Beryllium mg/kg 0.0092	Cadmium mg/kg 0.0025	Cobalt mg/kg 0.0050	Copper mg/kg 0.0264	Fluoride mg/kg 0.0209	Lead mg/kg 0.00072	Molybdenum mg/kg 0.0216	Mercury mg/kg 0.00020	Nickel mg/kg 0.0040	Selenium mg/kg 0.0064	Silver mg/kg 0.00015	Thallium mg/kg 0.00015	Vanadium mg/kg 0.0056	Zinc mg/kg 0.0255	
SC-Sludge-WDR-462 4/8/2014	2480 5.37	49.2 4.64	ND (5.00) 5.00	ND (5.00) 5.00	59.2 10.0	ND (2.15) 2.15	4.29 2.15	ND (10.0) 10.0	35.1 8.58	22.5 4.64	ND (5.00) 5.00	ND (10.0) 10.0	ND (0.107) 0.107	19.5 5.00	ND (5.00) 5.00	ND (5.00) 5.00	ND (5.00) 5.00	30.7 5.00	24.9 10.7	

NOTES:

(---) = not required by the ARARs Monitoring and Reporting Program J = concentration or reporting limits estimated by laboratory or validation

mg/kg = milligrams per killogram mg/L = milligrams per liter

MDL = method detection limit

ND = parameter not detected at the listed reporting limit

RL = project reporting limit

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

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

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

ocation	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-462	Ryan Phelps	4/8/2014	2:18:00 PM	TLI	EPA 120.1	SC	4/11/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	4/16/2014	Ethel Suico
					TLI	EPA 200.7	В	4/16/2014	Ethel Suico
					TLI	EPA 200.7	FE	4/16/2014	Ethel Suico
					TLI	EPA 200.7	ZN	4/16/2014	Ethel Suico
					TLI	EPA 200.8	AS	4/9/2014	Ethel Suico
					TLI	EPA 200.8	BA	4/10/2014	Ethel Suico
					TLI	EPA 200.8	CR	4/9/2014	Ethel Suico
					TLI	EPA 200.8	CU	4/25/2014	Ethel Suico
					TLI	EPA 200.8	MN	4/10/2014	Ethel Suico
					TLI	EPA 200.8	MO	4/10/2014	Ethel Suico
					TLI	EPA 200.8	NI	4/9/2014	Ethel Suico
					TLI	EPA 200.8	PB	4/10/2014	Ethel Suico
					TLI	EPA 200.8	SB	4/10/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/10/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	4/9/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/9/2014	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/9/2014	Giawad Ghenniwa
					FIELD	HACH	PH	4/8/2014	Ryan Phelps
					TLI	SM2130B	TRB	4/8/2014	Felipe Mendoza
					TLI	SM2540C	TDS	4/14/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	4/16/2014	Himani Vaishnav/Maksim Gorbu
					TLI	SM4500NO2B	NO2N	4/9/2014	Jenny Tankunakorn
SC-100B	SC-100B-WDR-466	Scott O' Donnell	5/6/2014	2:20:00 PM	TLI	EPA 120.1	SC	5/12/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	5/13/2014	Ethel Suico
					TLI	EPA 200.7	В	5/13/2014	Ethel Suico
					TLI	EPA 200.7	FE	5/13/2014	Ethel Suico
					TLI	EPA 200.7	FETD	5/13/2014	Ethel Suico
					TLI	EPA 200.7	ZN	5/13/2014	Ethel Suico
					TLI	EPA 200.8	AS	5/12/2014	Ethel Suico
					TLI	EPA 200.8	BA	5/12/2014	Ethel Suico
					TLI	EPA 200.8	CR	5/12/2014	Ethel Suico
					TLI	EPA 200.8	CU	5/14/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/12/2014	Ethel Suico
					TLI	EPA 200.8	MND	5/13/2014	Ethel Suico
					TLI	EPA 200.8	MO	5/12/2014	Ethel Suico

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TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 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-466	Scott O' Donnell	5/6/2014	2:20:00 PM	TLI	EPA 200.8	NI	5/12/2014	Ethel Suico
					TLI	EPA 200.8	РВ	5/12/2014	Ethel Suico
					TLI	EPA 200.8	SB	5/12/2014	Ethel Suico
					TLI	EPA 218.6	CR6	5/7/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	5/7/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/7/2014	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/7/2014	Giawad Ghenniwa
					FIELD	HACH	PH	5/6/2014	Scott O'Donnel
					TLI	SM 2320B	ALKB	5/16/2014	Alex Luna
					TLI	SM 2320B	ALKC	5/16/2014	Alex Luna
					TLI	SM2130B	TRB	5/7/2014	Jennine Ta
					TLI	SM2540C	TDS	5/12/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/28/2014	Felipe Mendoza
					TLI	SM4500NO2B	NO2N	5/7/2014	Jenny Tankunakorn
SC-100B	SC-100B-WDR-470	Chris Lentz	6/3/2014	9:00:00 AM	TLI	EPA 120.1	SC	6/3/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	6/6/2014	Ethel Suico
					TLI	EPA 200.7	В	6/6/2014	Ethel Suico
					TLI	EPA 200.7	FE	6/6/2014	Ethel Suico
					TLI	EPA 200.7	FETD	6/11/2014	Ethel Suico
					TLI	EPA 200.7	ZN	6/6/2014	Ethel Suico
					TLI	EPA 200.8	AS	6/6/2014	Ethel Suico
					TLI	EPA 200.8	BA	6/6/2014	Ethel Suico
					TLI	EPA 200.8	CR	6/6/2014	Ethel Suico
					TLI	EPA 200.8	CU	6/5/2014	Ethel Suico
					TLI	EPA 200.8	MN	6/6/2014	Ethel Suico
					TLI	EPA 200.8	MND	6/10/2014	Ethel Suico
					TLI	EPA 200.8	MO	6/6/2014	Ethel Suico
					TLI	EPA 200.8	NI	6/6/2014	Ethel Suico
					TLI	EPA 200.8	PB	6/6/2014	Ethel Suico
					TLI	EPA 200.8	SB	6/6/2014	Ethel Suico
					TLI	EPA 218.6	CR6	6/4/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	6/4/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/4/2014	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	6/4/2014	Giawad Ghenniwa
					FIELD	HACH	PH	6/3/2014	Chris Lentz
					TLI	SM 2320B	ALKB	6/10/2014	Alex Luna/Jennine Ta

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 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-470	Chris Lentz	6/3/2014	9:00:00 AM	TLI	SM 2320B	ALKC	6/10/2014	Alex Luna/Jennine Ta
					TLI	SM2130B	TRB	6/4/2014	Jennine Ta
					TLI	SM2540C	TDS	6/3/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/30/2014	Maksim Gorbunov
					TLI	SM4500NO2B	NO2N	6/4/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-461	Joe Aide	4/5/2014	6:30:00 AM	AVTS	EPA 120.1	SC	4/5/2014	Luisa Cabasug
					AVTS	EPA 180.1	TRB	4/5/2014	Luisa Cabasug
					AVTS	EPA 200.8	CR	4/7/2014	Claire Ignacio
					AVTS	EPA 200.8	MN	4/7/2014	Claire Ignacio
					AVTS	EPA 218.6	CR6	4/6/2014	Quennie Manimtim
					FIELD	HACH	PH	4/5/2014	J.Aide
					AVTS	SM2540C	TDS	4/7/2014	Luisa Cabasug
SC-700B	SC-700B-WDR-462	Ryan Phelps	4/8/2014	2:05:00 PM	TLI	EPA 120.1	SC	4/11/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	4/16/2014	Ethel Suico
					TLI	EPA 200.7	В	4/16/2014	Ethel Suico
					TLI	EPA 200.7	FE	4/16/2014	Ethel Suico
					TLI	EPA 200.7	ZN	4/16/2014	Ethel Suico
					TLI	EPA 200.8	AS	4/9/2014	Ethel Suico
					TLI	EPA 200.8	BA	4/10/2014	Ethel Suico
					TLI	EPA 200.8	CR	4/9/2014	Ethel Suico
					TLI	EPA 200.8	CU	4/25/2014	Ethel Suico
					TLI	EPA 200.8	MN	4/10/2014	Ethel Suico
					TLI	EPA 200.8	MO	4/10/2014	Ethel Suico
					TLI	EPA 200.8	NI	4/9/2014	Ethel Suico
					TLI	EPA 200.8	PB	4/10/2014	Ethel Suico
					TLI	EPA 200.8	SB	4/10/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/10/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	4/9/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/9/2014	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/9/2014	Giawad Ghenniwa
					FIELD	HACH	PH	4/8/2014	Ryan Phelps
					TLI	SM2130B	TRB	4/8/2014	Felipe Mendoza
					TLI	SM2540C	TDS	4/14/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	4/16/2014	Himani Vaishnav/Maksim Gorbunov
					TLI	SM4500NO2B	NO2N	4/9/2014	Jenny Tankunakorn

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-463	Chris Lentz	4/15/2014	8:40:00 AM	TLI	EPA 120.1	SC	4/30/2014	Maksim Gorbunov
					TLI	EPA 200.8	CR	4/18/2014	Ethel Suico
					TLI	EPA 200.8	MN	4/18/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/16/2014	Naheed Eidinejad
					FIELD	HACH	PH	4/15/2014	Chris Lentz
					TLI	SM2130B	TRB	4/16/2014	Felipe Mendoza
					TLI	SM2540C	TDS	4/17/2014	Maksim Gorbunov
SC-700B	SC-700B-WDR-464	Chris Lentz	4/22/2014	8:35:00 AM	TLI	EPA 120.1	SC	4/29/2014	Maksim Gorbunov
					TLI	EPA 200.8	CR	4/28/2014	Ethel Suico
					TLI	EPA 200.8	MN	4/28/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/23/2014	Naheed Eidinejad
					FIELD	HACH	PH	4/22/2014	Chris Lentz
					TLI	SM2130B	TRB	4/23/2014	Felipe Mendoza
					TLI	SM2540C	TDS	4/22/2014	Kim Luck
SC-700B	SC-700B-WDR-465	Chris Lentz	4/29/2014	9:00:00 AM	TLI	EPA 120.1	SC	4/30/2014	Maksim Gorbunov
					TLI	EPA 200.8	CR	5/1/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/1/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/30/2014	Naheed Eidinejad
					FIELD	HACH	PH	4/29/2014	Chris Lentz
					TLI	SM2130B	TRB	4/30/2014	Himani Vaishnav
					TLI	SM2540C	TDS	4/29/2014	Kim Luck
SC-700B	SC-700B-WDR-466	Scott O' Donnell	5/6/2014	2:30:00 PM	TLI	EPA 120.1	SC	5/12/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	5/13/2014	Ethel Suico
					TLI	EPA 200.7	В	5/13/2014	Ethel Suico
					TLI	EPA 200.7	FE	5/13/2014	Ethel Suico
					TLI	EPA 200.7	ZN	5/13/2014	Ethel Suico
					TLI	EPA 200.8	AS	5/12/2014	Ethel Suico
					TLI	EPA 200.8	BA	5/12/2014	Ethel Suico
					TLI	EPA 200.8	CR	5/12/2014	Ethel Suico
					TLI	EPA 200.8	CU	5/14/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/12/2014	Ethel Suico
					TLI	EPA 200.8	MO	5/12/2014	Ethel Suico
					TLI	EPA 200.8	NI	5/12/2014	Ethel Suico
					TLI	EPA 200.8	PB	5/12/2014	Ethel Suico
					TLI	EPA 200.8	SB	5/12/2014	Ethel Suico

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-466	Scott O' Donnell	5/6/2014	2:30:00 PM	TLI	EPA 218.6	CR6	5/7/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	5/7/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	5/7/2014	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	5/7/2014	Giawad Ghenniwa
					FIELD	HACH	PH	5/6/2014	Scott O'Donnel
					TLI	SM2130B	TRB	5/7/2014	Jennine Ta
					TLI	SM2540C	TDS	5/12/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	5/28/2014	Felipe Mendoza
					TLI	SM4500NO2B	NO2N	5/7/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-467	Chris Lentz	5/13/2014	1:00:00 PM	TLI	EPA 120.1	SC	5/16/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	5/19/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/19/2014	Ethel Suico
					TLI	EPA 218.6	CR6	5/14/2014	Naheed Eidinejad
					FIELD	HACH	PH	5/13/2014	Chris Lentz
					TLI	SM2130B	TRB	5/14/2014	Jennine Ta
					TLI	SM2540C	TDS	5/16/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-468	Chris Lentz	5/20/2014	2:50:00 PM	TLI	EPA 120.1	SC	5/22/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	5/27/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/27/2014	Ethel Suico
					TLI	EPA 218.6	CR6	5/23/2014	Naheed Eidinejad
					FIELD	HACH	PH	5/20/2014	Chris Lentz
					TLI	SM2130B	TRB	5/21/2014	Jennine Ta
					TLI	SM2540C	TDS	5/22/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-469	Ron Phelps	5/27/2014	10:00:00 AM	TLI	EPA 120.1	SC	5/27/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	5/30/2014	Ethel Suico
					TLI	EPA 200.8	MN	5/30/2014	Ethel Suico
					TLI	EPA 218.6	CR6	6/4/2014	Naheed Eidinejad
					FIELD	HACH	PH	5/27/2014	Ron Phelps
					TLI	SM2130B	TRB	5/28/2014	Jennine Ta
					TLI	SM2540C	TDS	5/27/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-470	Chris Lentz	6/3/2014	9:00:00 AM	TLI	EPA 120.1	SC	6/3/2014	Jenny Tankunakorn
					TLI	EPA 200.7	AL	6/6/2014	Ethel Suico
					TLI	EPA 200.7	В	6/6/2014	Ethel Suico
					TLI	EPA 200.7	FE	6/6/2014	Ethel Suico
					TLI	EPA 200.7	ZN	6/6/2014	Ethel Suico

\\Zinfandel\\Proj\\PacificGasElectricCo\TopockProgram\\Database\Tuesdai\\M3WDR\\M3_WDR_\Qtrly.mdb\\rpt_qtrlySummary_Paramet ers pkumar2 07/08/2014 10:55:34

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Date Printed 7/8/2014

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-470	Chris Lentz	6/3/2014	9:00:00 AM	TLI	EPA 200.8	AS	6/6/2014	Ethel Suico
					TLI	EPA 200.8	BA	6/6/2014	Ethel Suico
					TLI	EPA 200.8	CR	6/6/2014	Ethel Suico
					TLI	EPA 200.8	CU	6/5/2014	Ethel Suico
					TLI	EPA 200.8	MN	6/6/2014	Ethel Suico
					TLI	EPA 200.8	MO	6/6/2014	Ethel Suico
					TLI	EPA 200.8	NI	6/6/2014	Ethel Suico
					TLI	EPA 200.8	PB	6/6/2014	Ethel Suico
					TLI	EPA 200.8	SB	6/6/2014	Ethel Suico
					TLI	EPA 218.6	CR6	6/4/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	6/4/2014	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	6/4/2014	Jenny Tankunakorn
					TLI	EPA 300.0	SO4	6/4/2014	Giawad Ghenniwa
					FIELD	HACH	PH	6/3/2014	Chris Lentz
					TLI	SM2130B	TRB	6/4/2014	Jennine Ta
					TLI	SM2540C	TDS	6/3/2014	Jenny Tankunakorn
					TLI	SM4500NH3D	NH3N	6/30/2014	Maksim Gorbunov
					TLI	SM4500NO2B	NO2N	6/4/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-471	Ron Phelps	6/10/2014	9:00:00 AM	TLI	EPA 120.1	SC	6/11/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	6/18/2014	Ethel Suico
					TLI	EPA 200.8	MN	6/18/2014	Ethel Suico
					TLI	EPA 218.6	CR6	6/11/2014	Naheed Eidinejad
					FIELD	HACH	PH	6/10/2014	Ron Phelps
					TLI	SM2130B	TRB	6/10/2014	Jennine Ta
					TLI	SM2540C	TDS	6/11/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-472	Chris Lentz	6/17/2014	2:05:00 PM	TLI	EPA 120.1	SC	6/19/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	6/18/2014	Ethel Suico
					TLI	EPA 200.8	MN	6/18/2014	Ethel Suico
					TLI	EPA 218.6	CR6	6/18/2014	Naheed Eidinejad
					FIELD	HACH	PH	6/17/2014	Chris Lentz
					TLI	SM2130B	TRB	6/19/2014	Jennine Ta
					TLI	SM2540C	TDS	6/18/2014	Jenny Tankunakorn
SC-700B	SC-700B-WDR-473	Ron Phelps	6/24/2014	10:30:00 AM	TLI	EPA 120.1	SC	6/27/2014	Jenny Tankunakorn
					TLI	EPA 200.8	CR	6/27/2014	Ethel Suico
					TLI	EPA 200.8	MN	6/27/2014	Ethel Suico

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-473	Ron Phelps	6/24/2014	10:30:00 AM	TLI	EPA 218.6	CR6	6/25/2014	Naheed Eidinejad
					FIELD	HACH	PH	6/24/2014	Ron Phelps
					TLI	SM2130B	TRB	6/26/2014	Jennine Ta
					TLI	SM2540C	TDS	6/27/2014	Jenny Tankunakorn
SC-701	SC-701-WDR-462	Ryan Phelps	4/8/2014	2:09:00 PM	TLI	EPA 120.1	SC	4/11/2014	Jenny Tankunakorn
					TLI	EPA 200.7	ZN	4/16/2014	Ethel Suico
					TLI	EPA 200.8	AG	4/10/2014	Ethel Suico
					TLI	EPA 200.8	AS	4/9/2014	Ethel Suico
					TLI	EPA 200.8	BA	4/10/2014	Ethel Suico
					TLI	EPA 200.8	BE	4/10/2014	Ethel Suico
					TLI	EPA 200.8	CD	4/10/2014	Ethel Suico
					TLI	EPA 200.8	CO	4/10/2014	Ethel Suico
					TLI	EPA 200.8	CR	4/9/2014	Ethel Suico
					TLI	EPA 200.8	CU	4/10/2014	Ethel Suico
					TLI	EPA 200.8	HG	4/10/2014	Ethel Suico
					TLI	EPA 200.8	MN	4/9/2014	Ethel Suico
					TLI	EPA 200.8	MO	4/10/2014	Ethel Suico
					TLI	EPA 200.8	NI	4/9/2014	Ethel Suico
					TLI	EPA 200.8	PB	4/10/2014	Ethel Suico
					TLI	EPA 200.8	SB	4/10/2014	Ethel Suico
					TLI	EPA 200.8	SE	4/10/2014	Ethel Suico
					TLI	EPA 200.8	TL	4/10/2014	Ethel Suico
					TLI	EPA 200.8	V	4/9/2014	Ethel Suico
					TLI	EPA 218.6	CR6	4/10/2014	Naheed Eidinejad
					TLI	EPA 300.0	FL	4/9/2014	Giawad Ghenniwa
					FIELD	HACH	PH	4/8/2014	Ryan Phelps
					TLI	SM2540C	TDS	4/14/2014	Jenny Tankunakorn
hase Separator	SC-Sludge-WDR-462	Chris Lentz	4/8/2014	2:15:00 PM	TLI	EPA 300.0	FL	4/9/2014	Giawad Ghenniwa
					TLI	EPA 6010B	AS	4/15/2014	Ethel Suico
					TLI	EPA 6010B	BA	4/15/2014	Ethel Suico
					TLI	EPA 6010B	BE	4/15/2014	Ethel Suico
					TLI	EPA 6010B	CD	4/15/2014	Ethel Suico
					TLI	EPA 6010B	CO	4/16/2014	Ethel Suico
					TLI	EPA 6010B	CR	4/15/2014	Ethel Suico
					TLI	EPA 6010B	CU	4/15/2014	Ethel Suico

TABLE 8
Topock IM-3 Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs)
Monitoring Information
Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
Phase Separator	SC-Sludge-WDR-462	Chris Lentz	4/8/2014	2:15:00 PM	TLI	EPA 6010B	MN	4/15/2014	Ethel Suico
					TLI	EPA 6010B	MO	4/15/2014	Ethel Suico
					TLI	EPA 6010B	NI	4/15/2014	Ethel Suico
					TLI	EPA 6010B	SE	4/15/2014	Ethel Suico
					TLI	EPA 6010B	V	4/15/2014	Ethel Suico
					TLI	EPA 6010B	ZN	4/16/2014	Ethel Suico
					TLI	SM2540B	MOIST	4/15/2014	Himani Vaishnav
					TLI	SW 6020A	AG	4/24/2014	Ethel Suico
					TLI	SW 6020A	HG	4/18/2014	Ethel Suico
					TLI	SW 6020A	PB	4/24/2014	Ethel Suico
					TLI	SW 6020A	SB	4/24/2014	Ethel Suico
					TLI	SW 6020A	TL	4/24/2014	Ethel Suico
					TLI	SW 7199	CR6	4/25/2014	Naheed Eidinejad

TABLE 8

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

Second Quarter 2014 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

NOTES:

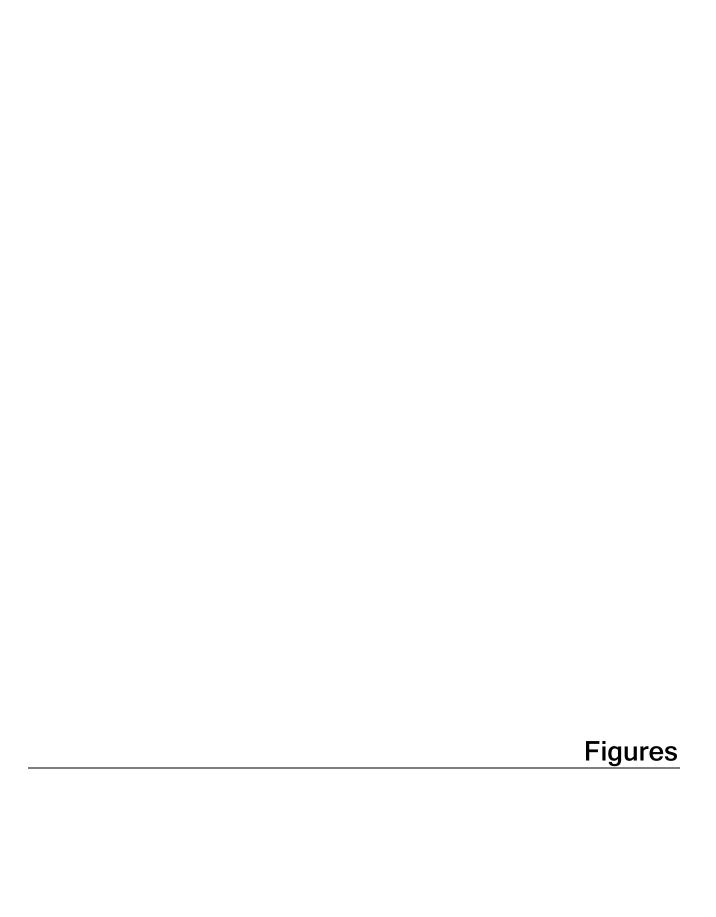
SC-700B = Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04).

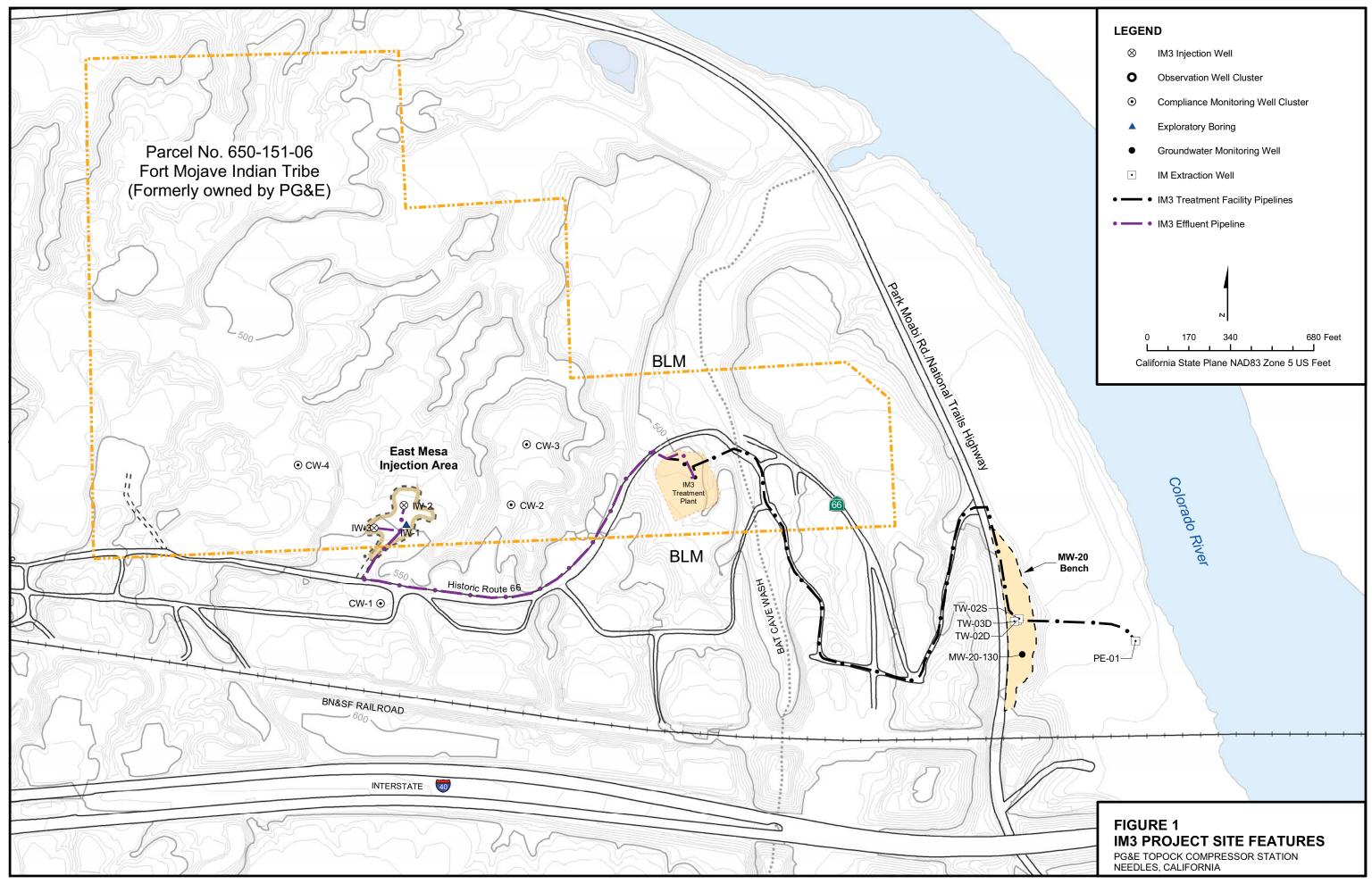
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

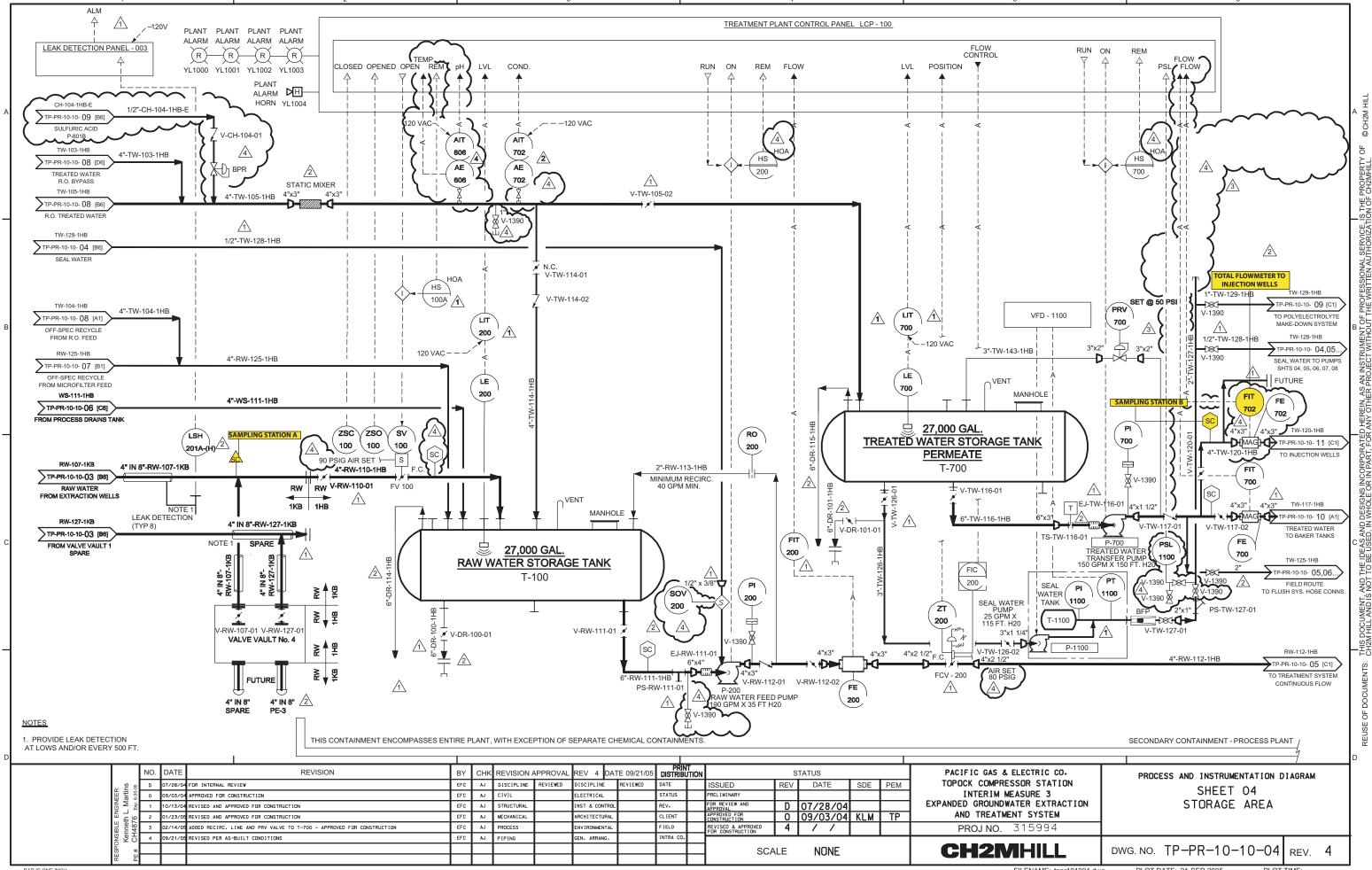
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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

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







BAR IS ONE INCH ON ORIGINAL DRAWING.

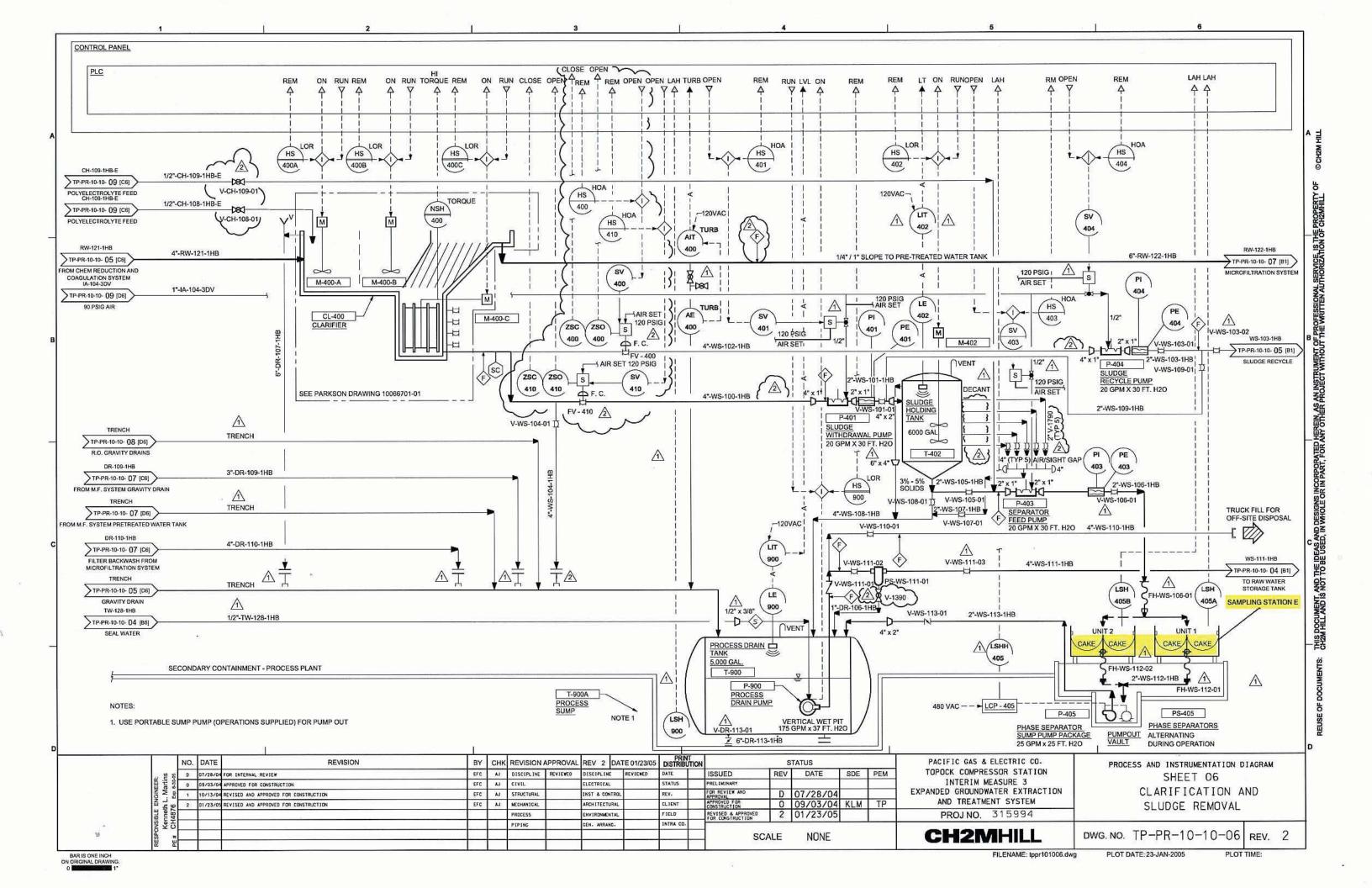
FILENAME: PR-10-03.dgn PLOT DATE: 11/19/2009

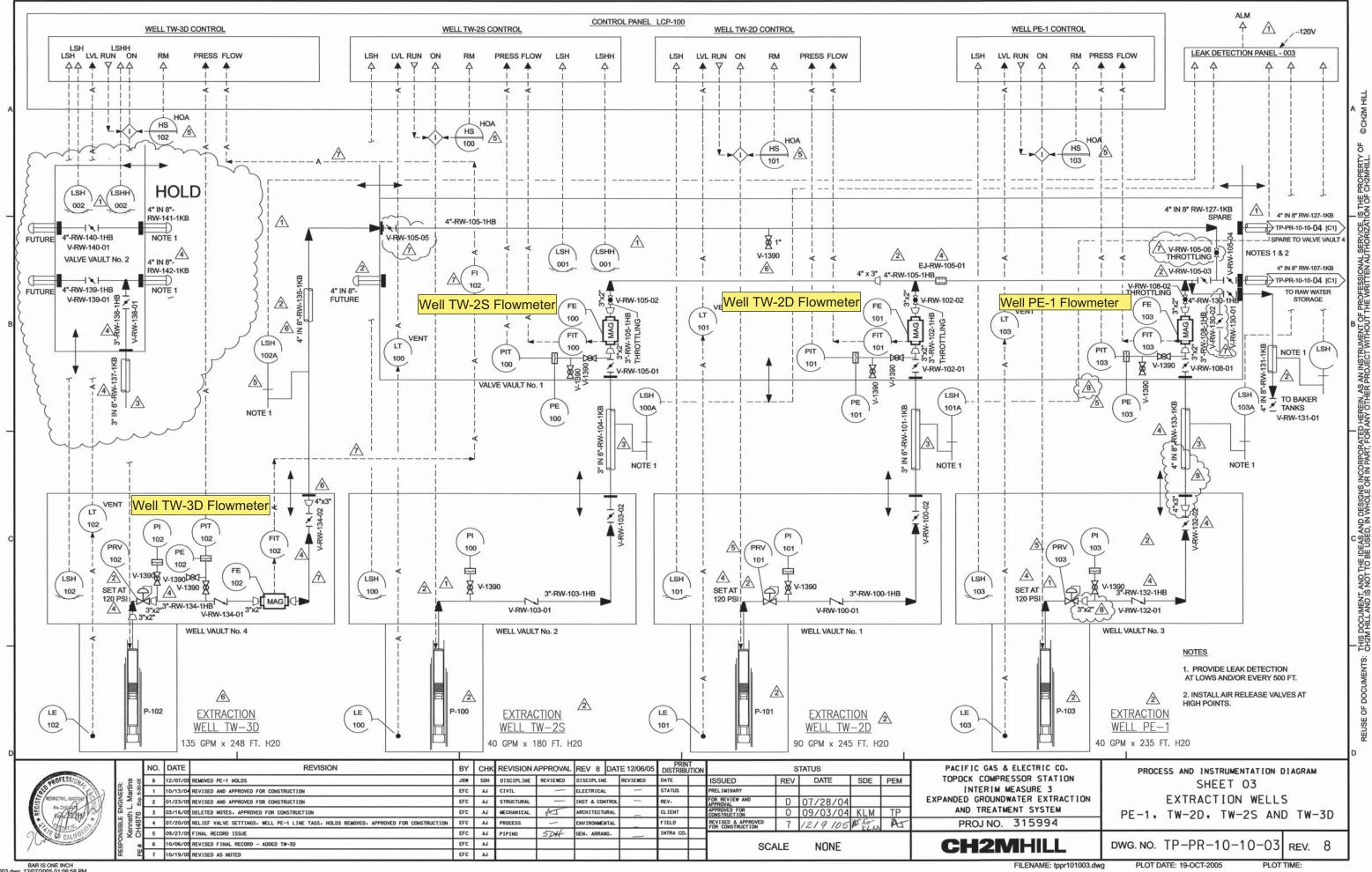
PLOT TIME: 10:27:54 AM

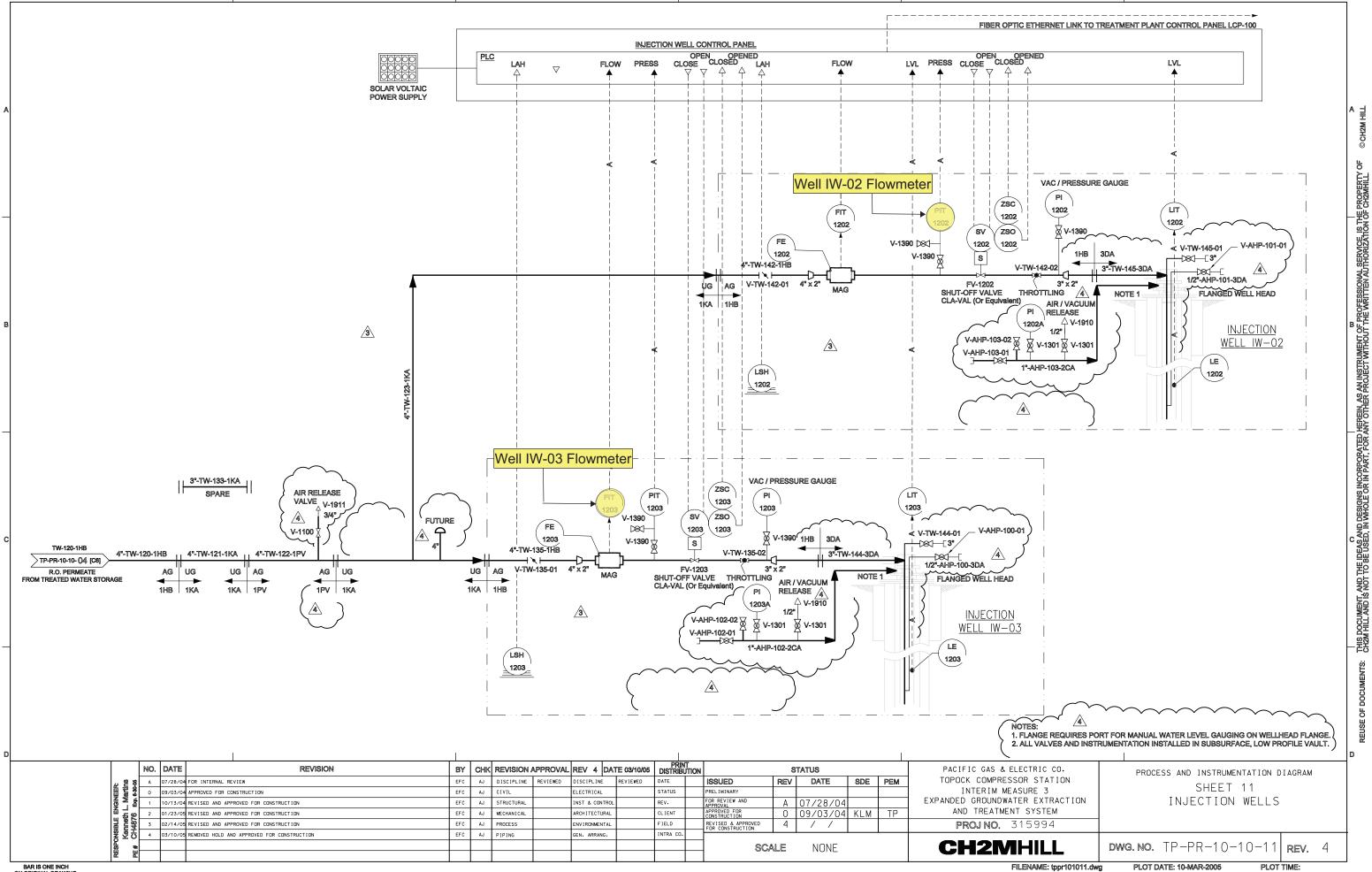
TO SEAL WATER TRUNK LINE PR-10-03 (HS 701 1 1/2" TW-154-1HB THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN AS AN INSTRUMENT OF PROFESSIONAL SERVICE. IS THE PROPERTY CHZM HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CHZMHILL.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

COND

RUN ON FLOW







BAR IS ONE INCH ON ORIGINAL DRAWING

Appendix A Semiannual Operations and Maintenance Log, January 1, 2014 through June 30, 2014

APPENDIX A

Semiannual Operations and Maintenance Log, January 1, 2014 through June 30, 2014

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

January 2014

During January 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during January 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 98.7 percent during the January 2014 reporting period.

The IM-3 facility treated approximately 5,905,218 gallons of extracted groundwater during January 2014. The IM-3 facility treated 20,900 gallons of injection well backwashing/re-development water and 910 gallons from groundwater monitoring well sampling. Four containers of solids from the IM-3 facility were transported offsite during January 2014.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 1.3 percent of downtime during January 2014) are summarized below.

- January 6, 2014 (planned): The extraction well system was offline from 8:34 a.m. to 8:36 a.m., from 9:00 a.m. to 9:12 a.m., and from 9:16 a.m. to 9:28 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 26 minutes.
- January 8, 2014 (planned): The extraction well system was offline from 8:14 a.m. to 4:08 p.m. for replacement of the primary RO membranes and cleaning of the T-100, T-700 and Microfilter strainers. Extraction system downtime was 7 hours, 54 minutes.
- January 16, 2014 (planned): The extraction well system was offline from 6:36 a.m. to 7:52 a.m. to lower
 the level in the raw water storage tank (T-100) for injection of AquaGuard in injection wells IW-2 and
 IW-3. Extraction system downtime was 1 hour, 16 minutes.
- **January 27, 2014 (unplanned):** The extraction well system was offline from 1:50 p.m. to 1:52 p.m. due to loss of power from City of Needles power. Extraction system downtime was 2 minutes.
- **January 28, 2014 (unplanned):** The extraction well system was offline from 9:58 a.m. to 10:20 a.m. due to a low oil level in the air compressor. Extraction system downtime was 22 minutes.

February 2014

During February 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during February 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 99.0 percent during the February 2014 reporting period.

The IM-3 facility treated approximately 5,349,142 gallons of extracted groundwater during February 2014. The IM-3 facility treated 950 gallons from groundwater monitoring well sampling. Two containers of solids from the IM-3 facility were transported offsite during February 2014.

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Periods of planned and unplanned extraction system downtime (that together resulted in approximately 0.9 percent of downtime during February 2014) are summarized below.

- **February 6, 2014 (planned):** The extraction well system was offline from 10:24 a.m. to 11:24 a.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 1 hour.
- **February 6, 2014 (unplanned):** The extraction well system was offline from 12:38 p.m. to 1:00 p.m. to repair a minor leak in the RO system. Extraction system downtime was 22 minutes.
- **February 10, 2014 (planned):** The extraction well system was offline from 10:44 a.m. to 11:20 a.m. to clean the Microfilter strainers. Extraction system downtime was 36 minutes.
- **February 12, 2014 (planned):** The extraction well system was offline from 10:58 a.m. to 1:26 p.m. to replace the Chemical Mixing Pump (P-201) and clean the pipes in the chemical loop. Extraction system downtime was 2 hours, 28 minutes.
- **February 14, 2014 (unplanned):** The extraction well system was offline from 6:18 a.m. to 6:46 a.m. to repair a valve on the ferrous chloride feed skid. Extraction system downtime was 28 minutes.
- **February 19, 2014 (planned):** The extraction well system was offline from 10:32 a.m. to 12:04 p.m. to replace a fitting on the primary RO unit. Extraction system downtime was 1 hour, 32 minutes.

March 2014

During March 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during March 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 97.3 percent during the March 2014 reporting period.

The IM-3 facility treated approximately 5,835,368 gallons of extracted groundwater during March 2014. Two containers of solids from the IM-3 facility were transported offsite during March 2014.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 2.7 percent of downtime during March 2014) are summarized below.

- March 5, 2014 (planned): The extraction well system was offline from 12:26 pm to 12:28 pm during installation of a riser extension on the leak detection system sensors. Extraction system downtime was 2 minutes.
- March 6, 2014 (planned): The extraction well system was offline from 7:06 a.m. to 7:08 a.m., from 7:48 a.m. to 7:50 a.m., from 11:28 a.m. to 11:30 a.m., from 11:34 a.m. to 11:44 a.m., from 11:48 a.m. to 11:50 a.m., and from 11:58 a.m. to 12:00 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 20 minutes.
- March 12, 2014 (unplanned): The extraction well system was offline from 12:40 p.m. to 1:38 p.m. due
 to a high level alarm in the Pre-Treated Water Tank (T-500) caused by a Microfilter shutdown. Extraction
 system downtime was 58 minutes.
- March 31, 2014 (planned): The extraction well system was offline from 5:32 a.m. to 12:00 a.m. for the semiannual maintenance shutdown event. Extraction system downtime was 18 hours, 28 minutes.

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April 2014

During April 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2D operated on April 4 and 5, 2014 for a total of 6 hours and 24 minutes. Extraction well TW-2S was not operated during April 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 87.7 percent during the April 2014 reporting period.

The IM-3 facility treated approximately 5,094,054 gallons of extracted groundwater during April 2014. The IM-3 facility treated 2,700 gallons of injection well backwashing/re-development water and 3,000 gallons from groundwater monitoring well sampling. Two containers of solids from the IM-3 facility were transported offsite during April 2014.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 12.3 percent of downtime during April 2014) are summarized below.

- April 1-4, 2014 (planned): The extraction well system was offline from 12:00 a.m. on April 1st to 7:22 a.m. on April 4th and from 1:46 p.m. to 7:18 p.m. on April 4th for semiannual scheduled maintenance. Extraction system downtime was 3 days, 12 hours and 54 minutes.
- April 6, 2014 (unplanned): The extraction well system was offline from 5:58 a.m. to 6:14 a.m., from 8:24 a.m. to 8:36 a.m., and from 1:40 p.m. to 1:46 p.m. due to loss of power from City of Needles power. Extraction system downtime was 34 minutes.
- April 10, 2014 (unplanned): The extraction well system was offline from 10:28 p.m. to 10:30 p.m. and 10:34 p.m. to 10:36 p.m. due to loss of power from City of Needles power. Extraction system downtime was 4 minutes.
- April 16, 2014 (unplanned): The extraction well system was offline from 4:04 p.m. to 6:36 p.m. to repair a leaking valve in the TW-03D vault at the MW-20 bench. Extraction system downtime was 2 hours, 32 minutes.
- April 29, 2014 (unplanned): The extraction well system was offline from 2:06 p.m. to 2:14 p.m. and 3:36 p.m. to 3:48 p.m. due to loss of power from City of Needles power. Extraction system downtime was 20 minutes.

May 2014

During May 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during May 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 97.8 percent during the May 2014 reporting period.

The IM-3 facility treated approximately 6,006,584 gallons of extracted groundwater during May 2014. The IM-3 facility treated 2,210 gallons from groundwater monitoring well sampling. Two containers of solids from the IM-3 facility were transported offsite during May 2014.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 2.2 percent of downtime during May 2014) are summarized below.

May 1, 2014 (planned): The extraction well system was offline from 12:56 p.m. to 12:58 p.m., 1:12 p.m. to 1:16 p.m., from 1:20 p.m. to 1:22 p.m., from 1:28 p.m. to 1:30 p.m., from 1:38 p.m. to 1:44 p.m., and from 1:46 p.m. to 1:48 p.m. due to testing of critical alarms and leak detection system. Extraction system downtime was 18 minutes.

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- May 4, 2014 (unplanned): The extraction well system was offline from 2:52 p.m. to 3:54 p.m. due to a low ferrous level. Extraction system downtime was 1 hour, 2 minutes.
- May 7, 2014 (unplanned): The extraction well system was offline from 10:42 p.m. to 11:22 p.m. to clean the T-100 microfilter strainer and flow meter FSL-201 and replace the concentrate CLA valve. Extraction system downtime was 40 minutes.
- May 14, 2014 (unplanned): The extraction well system was offline from 10:16 p.m. to 10:54 p.m. to replace the gear box on the clarifier flocculator. Extraction system downtime was 38 minutes.
- May 17, 2014 (unplanned): The extraction well system was offline from 9:32 p.m. to 9:54 p.m. to a low ferrous level. Extraction system downtime was 22 minutes.
- May 20, 2014 (unplanned): The extraction well system was offline from 9:38 a.m. to 10:20 a.m., 10:54 a.m. to 12:40 p.m., 1:04 p.m. to 1:36 p.m., 7:22 p.m. to 7:58 p.m., and 10:04 p.m. to 10:34 p.m. due to a malfunctioning air valve water valves in the microfilter system. Extraction system downtime was 4 hours, 6 minutes.
- May 21, 2014 (unplanned): The extraction well system was offline from 10:52 a.m. to 12:20 p.m. due to a high level in the Raw Water Tank (T-100). Extraction system downtime was 1 hour, 28 minutes.
- May 28, 2014 (unplanned): The extraction well system was offline from 4:44 a.m. to 12:20 p.m. and from 12:30 p.m. to 12:48 p.m. due to failure of the pretreated water booster pump (P-500). The pump was replaced and the RO membranes were switched during this time. Extraction system downtime was 7 hours, 54 minutes.

June 2014

During June 2014, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2D was in operation June 24, 25, 26, and 27, 2014. Extraction well TW-2S was not operated during June 2014. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 92.3 percent during the June 2014 reporting period.

The IM-3 facility treated approximately 5,200,751 gallons of extracted groundwater during June 2014. The IM-3 facility treated 27,000 gallons of injection well backwashing/re-development water. Two containers of solids from the IM-3 facility were transported offsite during June 2014.

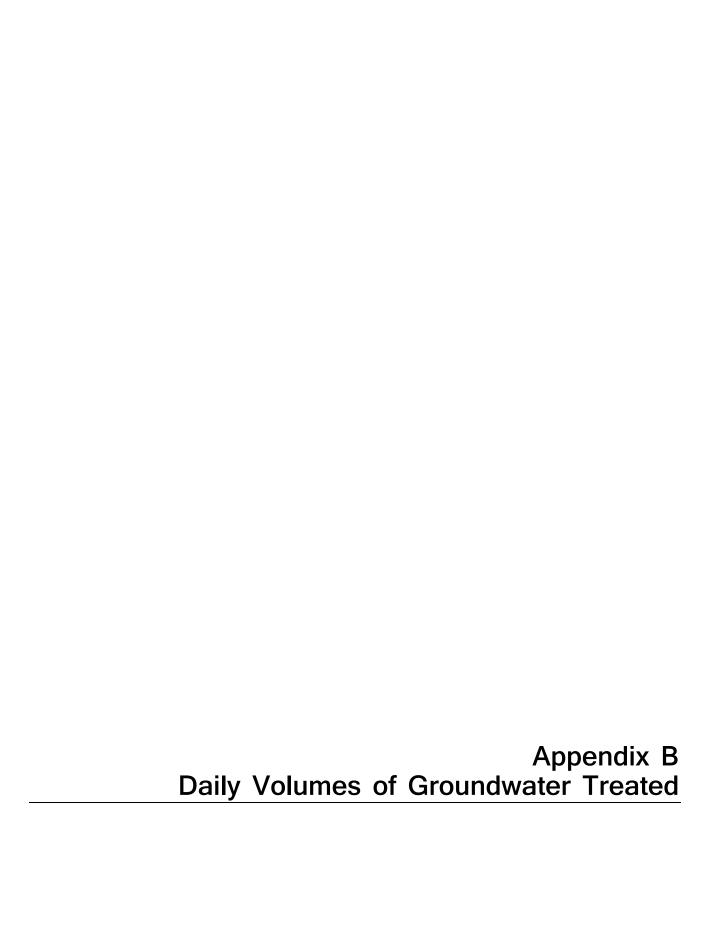
Periods of planned and unplanned extraction system down time (that together resulted in approximately 7.7 percent of downtime during June 2014) are summarized below.

- June 5, 2014 (planned): The extraction well system was offline from 11:38 a.m. to 2:02 p.m. due to testing of critical alarms and leak detection system and replacement of the ferrous draw down tube. Extraction system downtime was 2 hours, 24 minutes.
- June 7, 2014 (unplanned): The extraction well system was offline from 6:58 a.m. to 10:12 a.m. due to a motor failure in the primary RO system. Extraction system downtime was 3 hours, 14 minutes.
- June 11, 2014 (unplanned): The extraction well system was offline from 1:18 p.m. to 3:08 p.m. due to a flow blockage in a manually operated valve between the oxidation tanks and the clarifier. Extraction system downtime was 1 hour, 50 minutes.

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- June 18, 2014 (unplanned): The extraction well system was offline from 1:54 a.m. to 2:26 a.m. due to high levels in the Chromium Reduction Reactor (T-300) and the Iron Oxidation Reactors 1&2 (T-301A and T-301B). Extraction system downtime was 32 minutes.
- June 18, 2014 (unplanned): The extraction well system was offline from 1:04 p.m. to 4:12 p.m. due to a flow blockage in a manually controlled valve between the Iron Oxidation Reactors (T-301A,B,C) and the Clarifier (CL 400). Extraction system downtime was 3 hours, 8 minutes.
- June 23-24, 2014 (planned): The extraction well system was offline from 12:34 p.m. on June 23, 2014 to 8:34 a.m. on June 24, 2014 for AquaGuard application in extraction well TW-3D. Extraction system downtime was 20 hours.
- June 24-25, 2014 (unplanned): The extraction well system was offline on June 24, 2014 from 8:48 a.m. to 8:54 a.m., 9:10 a.m. to 9:14 a.m., 9:30 a.m. to 9:38 a.m. and 9:48 a.m. to 10:54 a.m.; on June 24, 2014 from 8:04 p.m. to June 25, 2014 at 1:36 p.m.; and on June 25, 2014 from 3:36 p.m. to 8:30 p.m. due to the TW-3D pump overheating. Extraction system downtime was 23 hours, 50 minutes.
- June 26, 2014 (unplanned): The extraction well system was offline from 7:24 p.m. to 7:38 p.m. due to a high level in the Raw Water Tank (T-100). Extraction system downtime was 14 minutes.
- June 27, 2014 (unplanned): The extraction well system was offline from 3:22 p.m. to 3:34 p.m. and 4:28 p.m. to 4:32 p.m. to switch the plant onto and off of generator power due to a loss of power from the City of Needles. Extraction system downtime was 16 minutes.

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				Extrac	tion Well Sys	tem		Inje	ection Well Sys	stem	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)
January	1	2014			155,247	38,142	193,389	193,277	19	193,296	0
January	2	2014			155,203	38,062	193,265	190,938	19	190,956	0
January	3	2014			155,167	38,007	193,174	197,394	24	197,418	0
January	4	2014			155,165	38,000	193,165	196,014	41	196,055	2,773
January	5	2014			155,054	37,922	192,977	191,555	26	191,581	0
January	6	2014			151,419	37,768	189,186	89,895	99,492	189,387	0
January	7	2014			154,876	38,620	193,496	145,835	46,268	192,103	0
January	8	2014			103,797	25,868	129,665	127,365	24	127,389	0
January	9	2014			154,985	38,425	193,410	195,355	27	195,382	3,013
January	10	2014			154,948	38,363	193,311	196,488	20	196,508	2,834
January	11	2014			154,928	38,362	193,290	190,834	21	190,856	3,777
January	12	2014			154,824	38,322	193,146	182,223	12,493	194,716	0
January	13	2014			154,732	38,160	192,892	186,358	239	186,596	0
January	14	2014			154,701	38,105	192,806	192,487	429	192,916	0
January	15	2014			154,649	38,141	192,790	128,154	68,997	197,151	0
January	16	2014			146,299	36,652	182,951	77,042	120,010	197,052	3,339
January	17	2014			154,471	38,870	193,341	87,575	108,803	196,378	0
January	18	2014			154,444	38,885	193,329	0	194,955	194,955	0
January	19	2014			154,411	38,859	193,270	0	195,328	195,328	0
January	20	2014			154,450	38,906	193,356	0	191,897	191,898	0
January	21	2014			154,380	38,758	193,138	0	194,952	194,953	0
January	22	2014			154,280	38,892	193,172	0	195,126	195,126	0
January	23	2014			154,268	38,833	193,101	1	194,424	194,425	3,309
January	24	2014			154,290	38,854	193,144	0	192,728	192,728	0
January	25	2014			154,295	38,824	193,118	1	191,875	191,875	0
January	26	2014			154,266	38,871	193,138	0	192,321	192,322	0
January	27	2014			154,074	38,666	192,740	0	192,987	192,987	0
January	28	2014			151,939	37,798	189,737	0	193,174	193,174	0
January	29	2014			154,387	38,414	192,801	86,798	108,177	194,975	2,977
January	30	2014			153,220	38,730	191,950	195,385	19	195,404	0
January	31	2014			154,167	38,804	192,970	197,819	16	197,835	2,892
otal Monthly	Volumes	(gallons)	0	0	4,727,337	1,177,881	5,905,218	3,248,793	2,694,933	5,943,725	24,914
,		n Rates (gpr	m) 0.0	0.0	105.9	26.4	132.3	72.8	60.4	133.1	0.6

a. Extraction wells TW-3D and PE-1 were operated during January 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during January 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during January 2014 is approximately 1.07 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

				Extrac	tion Well Sys	tem		Inje	ection Well Sys	stem	RO Brine
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
February	1	2014			154,114	38,878	192,992	193,006	18	193,024	3,105
February	2	2014			154,080	38,743	192,823	189,226	18	189,244	3,042
February	3	2014			154,057	38,701	192,759	192,802	17	192,819	3,334
February	4	2014			153,982	38,837	192,819	190,583	24	190,607	1,951
February	5	2014			154,015	38,868	192,883	186,703	27	186,730	1,194
February	6	2014			145,118	36,630	181,748	178,673	20	178,693	2,816
February	7	2014			154,202	38,558	192,760	191,220	25	191,245	0
February	8	2014			154,100	38,618	192,718	194,824	22	194,846	0
February	9	2014			154,149	38,536	192,685	191,073	24	191,098	3,028
February	10	2014			150,151	37,524	187,676	191,851	16	191,867	0
February	11	2014			154,076	38,328	192,403	193,241	17	193,258	3,039
February	12	2014			138,100	34,597	172,696	169,681	19	169,700	0
February	13	2014			153,956	38,513	192,468	189,485	17	189,503	2,998
February	14	2014			150,756	38,185	188,941	190,494	21	190,515	0
February	15	2014			153,764	38,894	192,658	190,251	19	190,270	2,788
February	16	2014			153,700	38,865	192,565	194,472	17	194,489	3,282
February	17	2014			153,678	38,835	192,513	194,618	19	194,637	0
February	18	2014			154,215	38,794	193,009	191,672	16	191,687	0
February	19	2014			144,540	36,373	180,913	175,934	15	175,949	3,375
February	20	2014			154,417	38,703	193,119	190,981	19	191,001	0
February	21	2014			154,282	38,559	192,841	197,744	19	197,763	0
February	22	2014			154,288	38,517	192,805	195,039	18	195,057	3,212
February	23	2014			154,229	38,518	192,747	194,899	16	194,915	0
February	24	2014			154,184	38,568	192,753	191,740	11	191,751	3,066
February	25	2014			154,166	38,478	192,644	191,763	19	191,781	0
February	26	2014			154,493	38,553	193,046	191,962	22	191,984	0
February	27	2014			155,792	38,566	194,358	191,885	20	191,906	3,056
February	28	2014			156,283	38,516	194,799	191,601	26	191,627	0
Total Monthly	Volumes	(gallons)	0	0	4,276,887	1,072,255	5,349,142	5,327,424	544	5,327,968	43,284
Average Pum	p/Injectio	n Rates (gpm	0.0	0.0	106.1	26.6	132.7	132.1	0.0	132.1	1.1

a. Extraction wells TW-3D and PE-1 were operated during February 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during February 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during February 2014 is approximately 0.41 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

				Extrac	tion Well Sys	tem		Inje	ection Well Sys	stem	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)
March	1	2014			156,184	38,510	194,694	197,436	17	197,453	2,708
March	2	2014			156,047	38,533	194,580	198,131	22	198,153	0
March	3	2014			156,048	38,453	194,501	192,603	20	192,623	0
March	4	2014			154,554	38,348	192,902	195,722	19	195,741	0
March	5	2014			152,767	38,503	191,270	188,780	13	188,793	3,340
March	6	2014			150,898	38,225	189,122	180,939	12	180,951	0
March	7	2014			152,671	38,495	191,166	201,213	21	201,234	0
March	8	2014			153,681	38,495	192,176	192,863	19	192,881	3,031
March	9	2014			153,180	38,466	191,646	194,102	19	194,121	0
March	10	2014			148,814	40,160	188,974	182,045	16	182,062	0
March	11	2014			152,037	42,115	194,152	195,543	21	195,563	0
March	12	2014			147,240	39,839	187,080	187,336	19	187,355	2,885
March	13	2014			153,322	41,799	195,121	195,145	22	195,167	0
March	14	2014			153,009	41,644	194,652	194,802	17	194,819	0
March	15	2014			152,796	41,533	194,330	193,448	19	193,467	3,093
March	16	2014			152,635	41,536	194,171	194,566	19	194,585	0
March	17	2014			152,344	41,568	193,912	197,596	22	197,618	2,412
March	18	2014			152,466	41,727	194,192	190,122	17	190,139	1,301
March	19	2014			152,433	41,750	194,183	189,883	25	189,909	2,751
March	20	2014			152,500	41,671	194,170	201,285	19	201,304	0
March	21	2014			152,460	41,635	194,094	192,192	17	192,209	2,876
March	22	2014			152,158	41,573	193,731	192,399	19	192,418	3,093
March	23	2014			152,180	41,631	193,811	192,462	18	192,480	0
March	24	2014			152,168	41,618	193,786	192,507	18	192,525	3,082
March	25	2014			151,963	41,517	193,480	192,363	23	192,386	2,921
March	26	2014			151,975	41,535	193,510	193,258	19	193,277	3,342
March	27	2014			151,538	41,555	193,093	192,383	19	192,402	0
March	28	2014			151,403	41,538	192,941	186,645	20	186,665	3,068
March	29	2014			151,114	41,530	192,644	183,371	18	183,389	2,871
March	30	2014			151,255	41,545	192,799	192,295	18	192,312	3,027
March	31	2014			34,881	9,601	44,482	54,843	17	54,860	0
otal Monthly	y Volumes	(gallons)	0	0	4,608,719	1,226,649	5,835,368	5,828,276	582	5,828,858	45,802
verage Pun	p/Injectio	n Rates (gpr	n) 0.0	0.0	103.2	27.5	130.7	130.6	0.0	130.6	1.0

a. Extraction wells TW-3D and PE-1 were operated during March 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during March 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during March 2014 is approximately 0.67 percent. This percentage difference includes instrument noise in the system, but is within the accuracy of the flow meters. A well is considered to be offline if the daily reported flow is 140 gallons per day or less.

				Extrac	tion Well Sys	tem		Inje	ection Well Sys	stem	
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
April	1	2014			0	0	0	0	0	0	0
April	2	2014			0	0	0	0	0	0	0
April	3	2014			0	0	0	17,092	0	17,092	0
April	4	2014		79,959	0	8,399	88,358	31,452	0	31,452	0
April	5	2014		46,800	113,792	37,456	198,048	171,528	0	171,528	3,423
April	6	2014			155,436	36,512	191,948	191,941	0	191,941	3,203
April	7	2014			156,238	37,521	193,759	189,736	0	189,736	3,332
April	8	2014			155,795	37,878	193,673	188,917	0	188,917	2,950
April	9	2014			156,281	36,688	192,970	177,530	0	177,530	13,855
April	10	2014			155,946	35,891	191,837	192,454	0	192,454	0
April	11	2014			156,948	34,310	191,258	194,017	0	194,017	0
April	12	2014			157,271	32,974	190,244	189,373	0	189,373	0
April	13	2014			157,206	32,662	189,868	192,473	0	192,473	3,087
April	14	2014			155,952	36,419	192,371	189,606	0	189,606	0
April	15	2014			155,443	38,258	193,701	192,393	0	192,393	0
April	16	2014			139,374	33,764	173,138	120,880	47,642	168,522	3,087
April	17	2014			157,281	36,996	194,276	0	192,165	192,165	0
April	18	2014			157,117	37,005	194,122	0	195,221	195,221	0
April	19	2014			156,665	36,367	193,032	0	194,822	194,822	3,231
April	20	2014			156,767	35,980	192,746	0	191,065	191,065	0
April	21	2014			156,868	35,522	192,389	0	192,724	192,724	3,425
April	22	2014			156,225	37,639	193,864	0	193,590	193,590	0
April	23	2014			156,320	37,237	193,556	75,704	118,435	194,139	2,893
April	24	2014			156,349	36,538	192,887	191,719	0	191,719	0
April	25	2014			156,566	37,443	194,009	199,257	0	199,257	2,857
April	26	2014			155,640	37,703	193,344	191,052	0	191,052	0
April	27	2014			155,493	36,736	192,229	191,529	0	191,529	2,899
April	28	2014			154,800	39,852	194,652	195,553	0	195,553	0
April	29	2014			154,142	40,890	195,033	190,135	0	190,135	2,868
April	30	2014			155,808	41,026	196,834	197,537	0	197,537	0
Γotal Monthl	y Volumes	(gallons)	0	126,759	4,001,723	965,666	5,094,148	3,671,879	1,325,663	4,997,542	51,109
	•	n Rates (gpm)	0.0	2.9	92.6	22.4	117.9	85.0	30.7	115.7	1.2

a. Extraction wells TW-3D and PE-1 were operated during April 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during April 2014. Extraction well TW-2D operated on April 4 and 5, 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during April 2014 is approximately 0.89 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.

d. In April 2014, data exclusion criteria for instrument noise were modified to exclude all extraction and injection well flow data less than 15 gpm.

				Extract	tion Well Sys	tem		Inje	ection Well Sys	stem	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
Мау	1	2014			154,896	41,610	196,506	195,769	0	195,769	0
May	2	2014			156,180	42,530	198,710	196,361	0	196,361	3,038
May	3	2014			155,270	42,132	197,402	201,982	0	201,982	0
May	4	2014			149,684	40,400	190,084	187,864	0	187,864	3,318
May	5	2014			158,234	42,430	200,664	193,251	0	193,251	0
May	6	2014			157,520	42,040	199,560	202,038	0	202,038	2,816
May	7	2014			152,695	40,388	193,083	191,360	0	191,360	0
May	8	2014			158,080	42,597	200,676	197,590	0	197,590	2,831
May	9	2014			156,744	42,115	198,860	139,037	60,859	199,895	0
May	10	2014			155,860	41,803	197,663	0	197,301	197,301	3,286
May	11	2014			155,665	41,717	197,382	0	192,488	192,488	3,345
May	12	2014			155,101	41,667	196,768	0	193,369	193,369	2,927
May	13	2014			154,203	41,683	195,886	0	197,064	197,064	0
May	14	2014			150,153	40,520	190,673	0	188,038	188,038	2,847
May	15	2014			156,423	42,424	198,848	0	193,854	193,854	2,782
May	16	2014			154,858	42,292	197,150	0	197,849	197,849	0
May	17	2014			151,771	41,562	193,334	0	195,970	195,970	0
May	18	2014			155,122	42,559	197,680	0	193,003	193,003	3,161
May	19	2014			154,866	42,089	196,955	0	198,123	198,123	0
May	20	2014			130,731	35,154	165,885	0	158,452	158,452	0
May	21	2014			150,152	40,288	190,440	0	197,322	197,322	0
May	22	2014			158,471	42,389	200,860	0	203,671	203,671	0
May	23	2014			157,169	42,039	199,208	0	199,024	199,024	3,223
May	24	2014			155,610	41,819	197,429	0	196,013	196,013	0
May	25	2014			155,038	41,682	196,720	0	194,811	194,811	0
May	26	2014			155,103	41,575	196,678	0	191,864	191,864	3,141
May	27	2014			154,806	41,482	196,288	0	194,090	194,090	0
May	28	2014			105,877	28,536	134,413	0	135,838	135,838	0
May	29	2014			155,940	43,000	198,940	0	203,027	203,027	0
May	30	2014			153,155	43,079	196,235	0	195,652	195,652	3,012
May	31	2014			152,665	42,942	195,606	0	195,082	195,082	0
tal Monthly	y Volumes	(gallons)	0	0	4,728,042	1,278,543	6,006,584	1,705,251	4,272,762	5,978,013	39,72
		n Rates (gpn	n) 0.0	0.0	105.9	28.6	134.6	38.2	95.7	133.9	0.9

a. Extraction wells TW-3D and PE-1 were operated during May 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D and TW-2S were not operated during May 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during May 2014 is approximately 0.19 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.

d. In April 2014, data exclusion criteria for instrument noise were modified to exclude all extraction and injection well flow data less than 15 gpm.

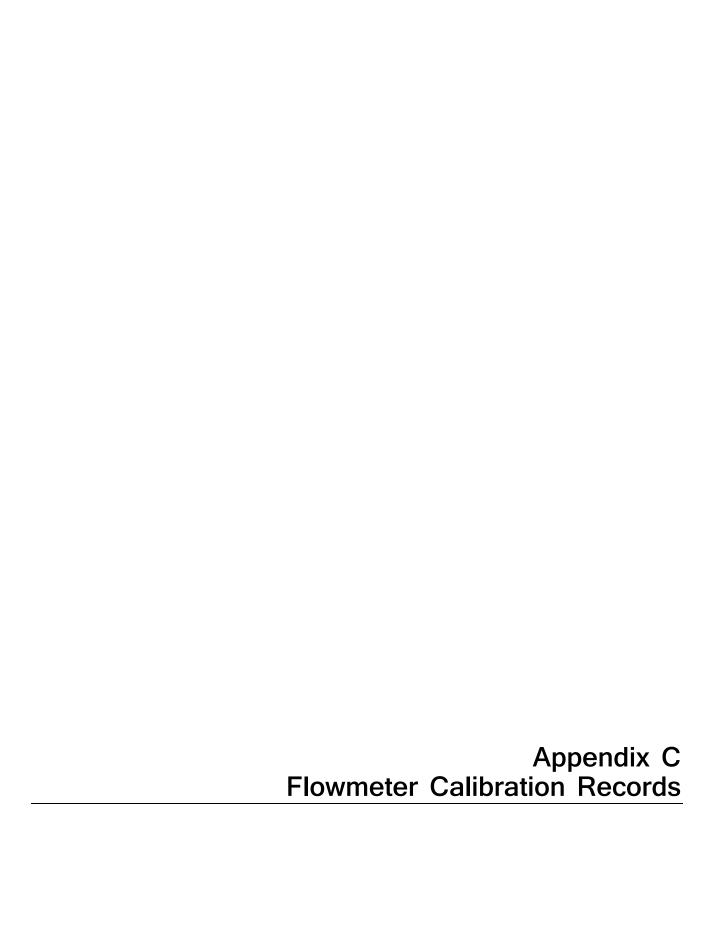
				Extrac	tion Well Sys	tem		Inj	ection Well Sys	stem	RO Brine
Month	Day	Year	TW-2S (gallons)	TW-2D (gallons)	TW-3D (gallons)	PE-1 (gallons)	Total (gallons)	IW-02 (gallons)	IW-03 (gallons)	Total (gallons)	(gallons)
June	1	2014			152,733	42,811	195,544	0	195,183	195,183	0
June	2	2014			151,771	42,711	194,481	0	195,169	195,169	0
June	3	2014			152,032	42,561	194,593	0	195,077	195,077	0
June	4	2014			151,250	42,546	193,796	0	189,387	189,387	2,908
June	5	2014			138,532	38,346	176,878	0	179,717	179,717	0
June	6	2014			153,267	42,499	195,766	0	197,281	197,281	0
June	7	2014			132,846	37,061	169,907	0	168,905	168,905	0
June	8	2014			153,067	42,962	196,029	0	200,183	200,183	0
June	9	2014			152,617	42,579	195,196	0	189,711	189,711	0
June	10	2014			152,004	42,282	194,286	27,225	168,552	195,777	0
June	11	2014			140,907	39,111	180,018	0	183,279	183,279	0
June	12	2014			152,415	42,330	194,746	0	193,654	193,654	0
June	13	2014			151,535	42,487	194,022	0	192,177	192,177	2,925
June	14	2014			150,634	42,642	193,276	0	188,850	188,850	0
June	15	2014			150,368	42,567	192,934	0	192,682	192,682	0
June	16	2014			150,235	42,369	192,604	0	191,339	191,339	0
June	17	2014			150,365	42,200	192,564	0	188,187	188,187	2,892
June	18	2014			129,927	35,599	165,526	0	170,821	170,821	0
June	19	2014			151,743	42,926	194,669	0	192,651	192,651	0
June	20	2014			150,562	42,836	193,398	0	197,218	197,218	0
June	21	2014			150,220	42,619	192,839	0	188,567	188,567	0
June	22	2014			149,614	42,602	192,217	84,367	110,731	195,098	2,887
June	23	2014			78,824	22,295	101,119	105,158	0	105,158	0
June	24	2014		15,022	5,132	16,623	36,777	31,875	26,652	58,527	0
June	25	2014		13,028	0	10,045	23,073	0	29,333	29,333	0
June	26	2014		31,881	55,817	42,605	130,303	95,622	68,848	164,470	0
June	27	2014		32,959	62,495	42,784	138,238	156,457	0	156,457	0
June	28	2014			153,225	42,561	195,786	195,632	0	195,632	2,732
June	29	2014			153,114	42,072	195,186	198,358	0	198,358	0
June	30	2014			153,102	41,878	194,979	194,111	0	194,111	0
Total Monthl	y Volumes	s (gallons)	0	92,891	3,930,353	1,177,507	5,200,751	1,088,805	4,194,152	5,282,957	14,344
Average Pun	np/Injectio	n Rates (gpm)	0.0	2.2	91.0	27.3	120.4	25.2	97.1	122.3	0.3

a. Extraction wells TW-3D and PE-1 were operated during June 2014 at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well TW-2S was not operated during June 2014. Extraction well TW-2D operated on June 24, 25, 26 and 27, 2014.

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

c. The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during June 2014 is approximately 1.86 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.

d. In April 2014, data exclusion criteria for instrument noise were modified to exclude all extraction and injection well flow data less than 15 gpm.





People for Process Automation

Flow Calibration with Adjustment

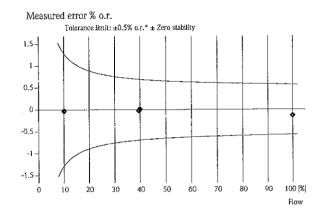
30171212-1304705

Tag N°

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°
FIT-1201

FCP-6.F	
Calibration rig	
155.6102 us.gal/min Calibrated full scale	(△ 100%)
Current 4 - 20 mA	
Calibrated output	
0.9101	
Calibration factor	
-34	
Zero point	
78.7 °F	

	Flow	Flow [us.gal/min]	Duration	V target [us.gal]	V meas. [us.gal]	∆ o.r.* [%]	Outp.**
	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
ļ	39.9	62.1	30.2	31.263	31.268	0.02	10.39
İ	100.0	155.7	30.2	78.338	78.232	-0.14	19.98
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*o.r.: of rate **Calculated value (4 - 20 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 Réinach (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

Water temperature

Certified acc. to

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



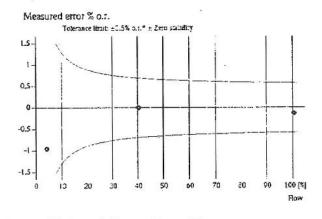
Flow Calibration with Adjustment

30258091-1304700

4600091011			
Purchase order number			
US-3601523401-200 /	Endress	+Hause	r Flowtec
Order N°/Manufacturer			
23P50-AL1A1AA022AV	N		
Order code			
PROMAG 23 P 2"			
Transmitter/Sensor			
6C037316000	6		Mi
Serial Nº			
FIT-1205			
Tag N°		***************************************	

Calibration rig .	
155.6102 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9145	
Calibration factor	
C	
Zerc point	
70.5 °F	
Water temperature	

Flow Fil	Flow [us.gai/min]	Duration [4]	V target [us.gal]	V meas.	∆ o.:.* [%]	Outp.** [mA]
4.0	6.27	55.2	5.7720	5.7163	-0.96	4.64
40.2	62.5	30.2	31.439	31.439	0.00	10.43
40.3	62.6	30.2	31.498	31.497	0.00	10.44
100.7	156.7	30.2	78.760	78.656	-0.13	20.09
=	-	-	-	-	-	-
-		-	-	-	-	
-	-	-	-	-	-	-
-	-			-	-	-
-	-	-	-	-	-	-
=	-	-	-	-	-	-



**Calculated value (4 - 20 mA)

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

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

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

01-07-2013 Date of calibration

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

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

Endress+Hauser **国**

People for Process Automation

Flow Calibration without Adjustment

92004354-1275191

Putchase order number
US-3601525773-100 / Endress+Hauser Inc.
Order N°/Manufacturer
23P50-ALI A1 RA022AW
Order code
PROMAG 23 P 2"
Transmitter/Sensor
6A022016000
Serial N°
FIT-101
Tag N°

	Row ⊯	Flow [us.gal/min]	Duration (sec)	V :arget [us.gal]	V meas, [us,gal]	Δ o.a.*	Cutp. **
1	10.0	15.661	60.0	15.672	15.677	0.03	5.61
	40.1	62.621	60.0	62,668	62,570	-0.16	10.41
	40.2	62.632	60.0	62,678	62.615	-0.10	10.42
i	100.4	156.615	0.00	156,730	156.360	-0.24	20.03
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out of rate

FCP-8.2 US

156 us.gal/min

 $(\triangleq 100\%)$

Calibrated full scale

Current 4-20 mA

Calibrated output

0.9207

Calibration factor

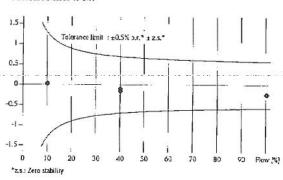
0

Zero point

72.6 °F

Water temperature

Measured error % o.r.



For detailed data concerning output specifications of the unit under test, see Technica, Information [TI], chapter Performance characteristics. Traceability to the national standard for all test instruments used for the calibration is guaranteed.

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

09-20-2013 Date of calibration

Endress+Hauser Inc. 10057 Porter Road La Porte, Texas 77571 Wesley Wither

W. Watkins

^{**}Calculated value (4 - 20 m.A)



People for Process Automation

Flow Calibration without Adjustment

92004350-1275192

101	751	571	12
4111	1)	3/4	.)

Purchase order number

US-3601525789-100 / Endress+Hauser Inc.

Order Nº/Manufacturer

23P50-AL1A1RA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial Nº

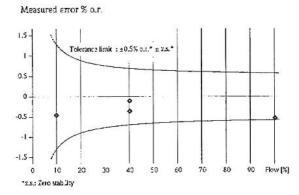
FIT-102

Tag N°

FCP-8.2 US	
Calibration rig	
156 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9082	
Calibration factor	
0	
Zero point	
72 2 9E	

							1
	Flow [%]	Flow [us.gal/min]	Duration [sec]	V target [us.gal]	V meas. [us.gai]	∆ o.r.* %	Outp.**
ì	10.0	15.643	0.00	15.654	15.582	-0.46	5.60
	40.1	62.618	60.0	62,665	62.440	-0.36	10.40
	40.2	62,628	60.0	62.673	62.607	-0.11	10.42
	100.3	156.535	60.0	156.646	155.804	-0.54	19.97
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o.:.. of race



For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics. Traceability to the national standard for all test instruments used for the calibration is guaranteed.

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

09-20-2013

Date of calibration

Endress—Hauser Inc. 10057 Porter Road La Porte, Texas 77571 Waster Watter

W. Watkins
Operator

Water temperature

^{**}Calculated value [4 - 20 mA]

Endress + Hauser 4

Flow Calibration without Adjustment

People for Process Automation

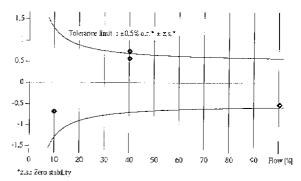
92004352-1304708

4017515743	
Purchase order number	-
US-3601525789-300 / Endress+Hauser Inc.	
Order Nº/Manufacturer	
23P50-AL1A1AA022AW	
Order code	
PROMAG 23 P 2"	
Transmitter/Sensor	-
6C037216000	
Serial N°	
FIT-1204	
Tag N ^c	

FCP-8.2 US	
Calibration rig	
156 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4 - 20 mA	
Calibrated output	
0.9184	
Calibration factor	
20	
Zero point	
72.4 °F	
Water temperature	

Flow [%]	Flow us.gal/min]	Duration [sec]	V target [us.gal]	V meas, [us.gal]	∆ o.r.* [%]	Cutp,**
10.0	15.636	60.0	15.646	15.540	-0.68	5.59
40.2	62.632	60.1	62.693	63.163	0.75	10.47
40.2	62.630	60.0	62.671	63.033	0.58	10.46
100.4	156.630	60.0	156.742	155.931	-0.52	19.98
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Measured error % o.r.



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

For detailed data concerning output specifications of the unit under test, see Eechnical Information (TI), chapter Performance characteristics. Traceability to the national standard for all test instruments used for the calibration is guaranteed.

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

09-20-2013 Date of calibration

Endress-Hauser Inc.

10057 Porter Road La Porte, Texas 77571

W. Watkins

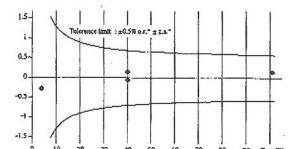


Flow Calibration without Adjustment

92002720-1304706

4600082515	FCP-8.2 US
Putchase order number	Calibration rig
US-3601521707-200 / Endress+Hauser Inc.	155 us.gal/min { ≜ 100%
Order N°/Manufacturer	Callbrated full scale
23P50-AL1A1AA022AW	Current 4-20 mA
Order code	Calibrated output
PROMAG 23 P 2"	0.9154
Transmitter/Sensor	Callbration factor
6C037016000	0
Sertal Nº	Zero point
FIT-1202	75.5 °F
Tag №	Water temperature

Plow [K]	Flow [us.gal/min]	Duration [sec]	V turget [us.gal]	V meas. [us.gal]	Δ o.r.~ [%]	Outp.**	
4.0	6.12	60.0	6.1222	6.1053	-0.28	4.63	ľ
40.1	62.2	60.0	62.267	62.358	0.15	10.43	
40.2	62.2	60.0	62,283	62.243	-0.06	10.42	
101.1	156.7	60.0	156,766	156.998	0.15	20.20	ì
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**Calculated value (4 - 20 mA)

For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics. Traceability to the national standard for all test instruments used for the calibration is guaranteed.

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

06-19-2012

Date of calibration

Endress+Hauser Inc. 10057 Porter Road La Porte, Texas 77571 Wasty Watter

Measured error % o.r.

"Z.S.: Zero stability

W. Watkins
Operator



People for Process Automation

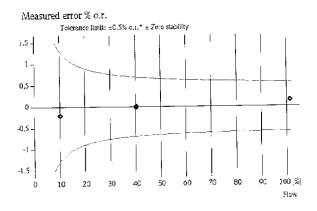
Flow Calibration with Adjustment

30202337-1385113

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

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

	Flow [%]	Flow [us.gal/min]	Duration is	V target [us.gal]	V meas. [us.gal]	∆ o.r.* %	Outp.**
ĺ	10.1	40.0	60.1	40.074	39.992	-0.20	5.60
l	40.2	160.2	60.1	160.332	160.322	-0.01	10.43
	40.2	160.2	60.1	160.400	160.424	0.01	10.44
İ	101.4	404.0	60.1	404.438	405.041	0.15	20.25
	_	-		-	۱ - ۱	-	- 1
ļ	_	_	_	-	-	-	-
	_	_	<u>-</u> '	-	i -	=	- 1
l	_	_	-	į -	- '	-	
ļ	_	_	-		-	-	-
	-	_	-	_	-	-	-



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

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

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

07-25-2011 Date of calibration

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

Operator

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

[&]quot;o.r.z of rate

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



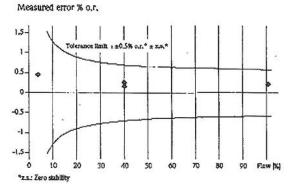
Flow Calibration without Adjustment

92002718-1275190

4600082515	
Purchase order number	
US-3601521707-100 / Endress+Hatt	iser Inc.
Order N°/Manufacturer	
23P50-AL1A1RA022AW	
Order code	
PROMAG 23 P 2"	
Transmitter/Sensor	
6A021F16000	
Serial Nº	
FIT-100	3
Tag N°	

FCP-8.2 US	
Calibration rig	
155 us.gal/min	(≙ 100%)
Calibrated full scale	
Current 4-20 mA	
Calibrated output	
0.9178	
Calibration factor	
0 .	12
Zero point	
75.3 °F	
Water temperature	

	Flow (%)	Flow [us.gal/min]	Duration [sed]	V target (us.gal)	V mess. [us.gal]	Δ o.r.* [%]	Outp.**
١	4.0	6.14	60.0	6.1423	6.1699	0.45	4.64
١	40.2	62.3	60.0	62.353	62.512	0.26	10.45
ĺ	40.2	62.3	60.0	62.361	62.460	0.16	10.44
ı	100.8	156.3	60.0	156.354	156.703	0.22	20.17
١	-	-	-	-	-	-	-
	-	-	-	-	1 - 1	-	-
١		-	-	-	- 1	7	-
	_	-	-	_	-	_	-
	-	-	-	•	-	-	-
	_	- 1	2	-	_	2	-



*o.r.: of rate

**Calculated value (4 - 20 mA)

For detailed data concerning output specifications of the unit under test, see Technical Information (TI), chapter Performance characteristics. Traceability to the national standard for all test instruments used for the calibration is guaranteed.

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

06-19-2012

Date of calibration

Endress+Hauser Inc. 10057 Porter Road La Porte, Texas 77571 Wesley Within

W. Watkins

Appendix D Second Quarter 2014 Laboratory Analytical Reports

April 21, 2014

Shawn P. Duffy
CH2M HILL
CA-ELAP No.: 2676
NV Cert. No.: NV-00922

155 Grand Avenue, Suite 1000

Oakland, CA 94612 TEL: (530) 229-3303

FAX: (530) 339-3303 Workorder No.: N012293

RE: PG&E Topock, 428648.IM.CS.EX.AC

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on April 05, 2014 by Advanced Technology Laboratories, Inc. . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Jose Tenorio Jr.

Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL

Project: PG&E Topock, 428648.IM.CS.EX.AC CASE NARRATIVE

Date: 18-Apr-14

Lab Order: N012293

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Samples were analyzed within method holding time.

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL

Project: PG&E Topock, 428648.IM.CS.EX.AC Work Order Sample Summary

Date: 18-Apr-14

Lab Order: N012293

Contract No: IM3Plant-WDR-

Lab Sample ID Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N012293-001A SC-700B-WDR-461	Water	4/5/2014 6:30:00 AM	4/5/2014	4/21/2014
N012293-001B SC-700B-WDR-461	Water	4/5/2014 6:30:00 AM	4/5/2014	4/21/2014
N012293-001C SC-700B-WDR-461	Water	4/5/2014 6:30:00 AM	4/5/2014	4/21/2014

ANALYTICAL RESULTS

Print Date: 18-Apr-14

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL N012293

Lab Order:

Project: PG&E Topock, 428648.IM.CS.EX.AC

Lab ID: N012293-001 Client Sample ID: SC-700B-WDR-461 Collection Date: 4/5/2014 6:30:00 AM

Matrix: WATER

Result MDL **PQL** Units DF Analyses Qual Date Analyzed

SPECIFIC CONDUCTANCE

EPA 120.1

QC Batch: R92983 RunID: WETCHEM_140405A Analyst: LCC PrepDate: Specific Conductance 6600 0.10 0.10 umhos/cm 4/5/2014 1

Qualifiers: Analyte detected in the associated Method Blank

> Н Holding times for preparation or analysis exceeded

Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ASSET Laboratories

Value above quantitation range

Not Detected at the Reporting Limit Results are wet unless otherwise specified

> 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL
Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

Project: PG&E Topock, 428648.IM.CS.EX.AC

TestCode: 120.1_WPGE

Date: 18-Apr-14

Sample ID: N012293-001C-DUF	P SampType: DUP	TestCod	de: 120.1_WP	GE Units: umh	os/cm	Prep Da	ite:		RunNo: 929	83	
Client ID: ZZZZZZ	Batch ID: R92983	TestN	No: EPA 120.1			Analysis Da	ite: 4/5/201	4	SeqNo: 175	55545	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6620.000	0.10						6640	0.302	10	

Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL Lab Order: N012293

N012293 PG&E Topock, 428648.IM.CS.EX.AC

Project: PG&E Topock, 428648.

Lab ID: N012293-001

Client Sample ID: SC-700B-WDR-461

Print Date: 18-Apr-14

Collection Date: 4/5/2014 6:30:00 AM

Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

TOTAL FILTERABLE RESIDUE

Filterable)

SM2540C

 RunID:
 WETCHEM_140407A
 QC Batch:
 45367
 PrepDate:
 4/7/2014
 Analyst:
 LCC

 Total Dissolved Solids (Residue,
 3800
 50
 50
 mg/L
 1
 4/7/2014 01:43 PM

Qualifiers:

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

O Not Detected at the Reporting Limit Results are wet unless otherwise specified

> 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL
Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

Project: PG&E Topock, 428648.IM.CS.EX.AC

TestCode: 160.1_2540C_W

Date: 18-Apr-14

Sample ID: MB-45367	SampType: MBLK	TestCode: 160.1_2540C_ Units: mg/L	Prep Date: 4/7/2014	RunNo: 93001
Client ID: PBW	Batch ID: 45367	TestNo: SM2540C	Analysis Date: 4/7/2014	SeqNo: 1757111
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Resid	ue, Filtera ND	10		
Sample ID: LCS-45367	SampType: LCS	TestCode: 160.1_2540C_ Units: mg/L	Prep Date: 4/7/2014	RunNo: 93001
Client ID: LCSW	Batch ID: 45367	TestNo: SM2540C	Analysis Date: 4/7/2014	SeqNo: 1757112
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Resid	ue, Filtera 979.000	10 1000 0	97.9 80 120	
Sample ID: N012278-007D-D	UP SampType: DUP	TestCode: 160.1_2540C_ Units: mg/L	Prep Date: 4/7/2014	RunNo: 93001
Client ID: ZZZZZZ	Batch ID: 45367	TestNo: SM2540C	Analysis Date: 4/7/2014	SeqNo: 1757119
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Resid	ue, Filtera 677.000	10	676.0	0.148 5

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

- E Value above quantitation range
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL

Lab Order: N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC

Lab ID: N012293-001

Print Date: 18-Apr-14
Client Sample ID: SC-700B-WDR-461

Collection Date: 4/5/2014 6:30:00 AM

Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

TURBIDITY

EPA 180.1

 RunID:
 WETCHEM_140405B
 QC Batch:
 R92984
 PrepDate:
 Analyst:
 LCC

 Turbidity
 ND
 0.10
 0.10
 NTU
 1
 4/5/2014

Qualifiers: B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

D Not Detected at the Reporting Limit Results are wet unless otherwise specified

> 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL

ANALYTICAL QC SUMMARY REPORT

Date: 18-Apr-14

Work Order: N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC TestCode: 180.1_W

Sample ID: N012293-001C-DUP	SampType: DUP	TestCode	e: 180.1_W	Units: NTU		Prep Da	ite:		RunNo: 929	84	
Client ID: ZZZZZZ	Batch ID: R92984	TestNo	o: EPA 180.1			Analysis Da	ate: 4/5/201	4	SeqNo: 175	55547	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10						0	0	30	

Qualifiers:

B Analyte detected in the associated Method Blank

ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL
Lab Order: N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC

Lab ID: N012293-001

Client Sample ID: SC-700B-WDR-461

Print Date: 18-Apr-14

Collection Date: 4/5/2014 6:30:00 AM

Matrix: WATER

Analyses Result MDL PQL Qual Units DF Date Analyzed

ICPMS METALS

EPA 200.8

RunID: ICP7_140407A QC Batch: 45356 PrepDate: 4/7/2014 Analyst: CEI

Manganese ND 0.026 0.50 µg/L 1 4/7/2014 02:54 PM

Qualifiers: B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

O Not Detected at the Reporting Limit Results are wet unless otherwise specified

> 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

Date: 18-Apr-14

CLIENT: CH2M HILL

Work Order:

Project:

N012293

PG&E Topock, 428648.IM.CS.EX.AC

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

0	0T MBLK	T+0	Davis Date: 4/7/0044	Dura National Control
Sample ID: MB-45356	SampType: MBLK	TestCode: 200.8_W Units: µg/L	Prep Date: 4/7/2014	RunNo: 92998
Client ID: PBW	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1756980
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Manganese	ND	0.50		
Sample ID: LCS-45356	SampType: LCS	TestCode: 200.8_W Units: µg/L	Prep Date: 4/7/2014	RunNo: 92998
Client ID: LCSW	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1756981
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Manganese	102.710	0.50 100.0 0	103 85 115	
Sample ID: N012251-001B-MS	SampType: MS	TestCode: 200.8_W Units: µg/L	Prep Date: 4/7/2014	RunNo: 92998
Sample ID: N012251-001B-MS Client ID: ZZZZZZ	SampType: MS Batch ID: 45356	TestCode: 200.8_W Units: μg/L TestNo: EPA 200.8	Prep Date: 4/7/2014 Analysis Date: 4/7/2014	RunNo: 92998 SeqNo: 1756985
·		_ ,,		
Client ID: ZZZZZZ	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1756985
Client ID: ZZZZZZ Analyte	Batch ID: 45356 Result	TestNo: EPA 200.8 PQL SPK value SPK Ref Val	Analysis Date: 4/7/2014 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 1756985
Client ID: ZZZZZZ Analyte Manganese	Batch ID: 45356 Result 93.423	TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 100.0 0	Analysis Date: 4/7/2014 %REC LowLimit HighLimit RPD Ref Val 93.4 75 125	SeqNo: 1756985 %RPD RPDLimit Qual
Client ID: ZZZZZZ Analyte Manganese Sample ID: N012251-001B-MSD	Batch ID: 45356 Result 93.423 SampType: MSD	TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 100.0 0 TestCode: 200.8_W Units: μg/L	Analysis Date: 4/7/2014 %REC LowLimit HighLimit RPD Ref Val 93.4 75 125 Prep Date: 4/7/2014	SeqNo: 1756985 %RPD RPDLimit Qual RunNo: 92998

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

ANALYTICAL RESULTS

Advanced Technology Laboratories, Inc.

CLIENT: CH2M HILL Lab Order: N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC

Lab ID: N012293-001

Client Sample ID: SC-700B-WDR-461

Print Date: 18-Apr-14

Collection Date: 4/5/2014 6:30:00 AM

Matrix: WATER

Analyses	Result MDL	PQL	Qual Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC					
		EPA	218.6		
RunID: IC6_140406A	QC Batch: R92992		PrepDate:		Analyst: QBM
Hexavalent Chromium	0.45 0.016	0.20	μg/L	1	4/6/2014 09:32 AM
ICP-MS METALS					
		EPA	200.8		
RunID: ICP7_140407A	QC Batch: 45356		PrepDate:	4/7/2014	Analyst: CEI
Chromium	ND 0.030	1.0	μg/L	1	4/7/2014 02:54 PM

Qualifiers: B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

E Value above quantitation range

Not Detected at the Reporting Limit
Results are wet unless otherwise specified

3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com CLIENT: CH2M HILL

Work Order:

N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_CRPGE

Date: 18-Apr-14

Sample ID: MB-45356	SampType: MBLK	TestCode: 200.8_W_CR Units: μg/L	Prep Date: 4/7/2014	RunNo: 92998
Client ID: PBW	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1757010
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Chromium	ND	1.0		
Sample ID: LCS-45356	SampType: LCS	TestCode: 200.8_W_CR Units: μg/L	Prep Date: 4/7/2014	RunNo: 92998
Client ID: LCSW	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1757011
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Chromium	10.285	1.0 10.00 0	103 85 115	
Sample ID: N012251-001B-MS	SampType: MS	TestCode: 200.8_W_CR Units: µg/L	Prep Date: 4/7/2014	RunNo: 92998
Sample ID: N012251-001B-MS Client ID: ZZZZZZ	SampType: MS Batch ID: 45356	TestCode: 200.8_W_CR Units: μg/L TestNo: EPA 200.8	Prep Date: 4/7/2014 Analysis Date: 4/7/2014	RunNo: 92998 SeqNo: 1757015
· ·		· ·	•	
Client ID: ZZZZZZ	Batch ID: 45356	TestNo: EPA 200.8	Analysis Date: 4/7/2014	SeqNo: 1757015
Client ID: ZZZZZZ Analyte	Batch ID: 45356 Result 11.081	TestNo: EPA 200.8 PQL SPK value SPK Ref Val	Analysis Date: 4/7/2014 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 1757015
Client ID: ZZZZZZ Analyte Chromium	Batch ID: 45356 Result 11.081	TestNo: EPA 200.8 PQL SPK value SPK Ref Val 1.0 10.00 1.286	Analysis Date: 4/7/2014 %REC LowLimit HighLimit RPD Ref Val 98.0 75 125	SeqNo: 1757015 %RPD RPDLimit Qual
Client ID: ZZZZZZ Analyte Chromium Sample ID: N012251-001B-MSD	Batch ID: 45356 Result 11.081 SampType: MSD	TestNo: EPA 200.8 PQL SPK value SPK Ref Val 1.0 10.00 1.286 TestCode: 200.8_W_CR Units: μg/L	Analysis Date: 4/7/2014 % REC LowLimit HighLimit RPD Ref Val 98.0 75 125 Prep Date: 4/7/2014	SeqNo: 1757015 %RPD RPDLimit Qual RunNo: 92998

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out

Advanced Technology Laboratories, Inc.

dba ASSET Laboratories

- E Value above quantitation range
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

Project: PG&E Topock, 428648.IM.CS.EX.AC

TestCode: 218.6_WPGE

Sample ID: MB-R92992 Client ID: PBW	SampType: MBLK Batch ID: R92992	TestCode: 218.6_WPGE Units: μg/L TestNo: EPA 218.6	Prep Date: Analysis Date: 4/6/2014	RunNo: 92992 SeqNo: 1756768
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	ND	0.20		
Sample ID: LCS-R92992	SampType: LCS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: LCSW	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756769
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	5.073	0.20 5.000 0	101 90 110	
Sample ID: N012292-023ADUP	SampType: DUP	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756771
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	21.222	0.40	20.94	1.32 20
Sample ID: N012253-015A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756773
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.041	0.20 1.000 0.03370	101 90 110	
Sample ID: N012253-015A-MSD	SampType: MSD	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756774
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.031	0.20 1.000 0.03370	99.7 90 110 1.041	0.975 20

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

PG&E Topock, 428648.IM.CS.EX.AC **Project:**

TestCode:	218.6_WPGE	
		=

Sample ID: N012293-001A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756776
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.506	0.20 1.000 0.4526	105 90 110	
Sample ID: N012292-002A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756780
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.796	0.20 1.000 0.8239	97.2 90 110	
Sample ID: N012253-016A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756782
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.051	0.20 1.000 0.04320	101 90 110	
Sample ID: N012268-001A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756784
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.592	0.20 1.000 1.595	99.7 90 110	
Sample ID: N012268-002A-MS	SampType: MS	TestCode: 218.6_WPGE Units: μg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756786
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	4.670	0.20 1.000 3.705	96.5 90 110	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

Project: PG&E Topock, 428648.IM.CS.EX.AC TestCode: 218.6_WPGE

Sample ID: N012268-003A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756788
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.435	0.20 1.000 1.436	99.9 90 110	
Sample ID: N012268-004A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756792
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.785	0.20 1.000 1.834	95.2 90 110	
Sample ID: N012268-005A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756794
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.163	0.20 1.000 1.195	96.8 90 110	
Sample ID: N012268-006A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756796
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.462	0.20 1.000 1.475	98.8 90 110	
Sample ID: N012268-007A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756798
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	4.938	0.20 1.000 3.951	98.8 90 110	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Work Order: N012293

Project: PG&E Topock, 428648.IM.CS.EX.AC

Sample ID: N012268-008A-MS	SampType: MS	TestCode: 218.6_WPGE Units: μg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756800
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.699	0.20 1.000 0.6716	103 90 110	
Sample ID: N012268-009A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756804
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.758	0.20 1.000 1.782	97.6 90 110	
Sample ID: N012268-010A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756806
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	3.668	0.20 1.000 2.596	107 90 110	
Sample ID: N012268-011A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756808
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.739	0.20 1.000 1.652	109 90 110	
Sample ID: N012268-012A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756810
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	3.077	0.20 1.000 2.122	95.5 90 110	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

Calculations are based on raw values 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

CLIENT: CH2M HILL Work Order: N012293

ANALYTICAL QC SUMMARY REPORT

Project: PG&E Topock, 428648.IM.CS.EX.AC

Sample ID: N012268-013A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756812
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	2.255	0.20 1.000 1.215	104 90 110	
Sample ID: N012268-014A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756816
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.383	0.20 1.000 0.3566	103 90 110	
Sample ID: N012268-015A-MS	SampType: MS	TestCode: 218.6_WPGE Units: µg/L	Prep Date:	RunNo: 92992
Client ID: ZZZZZZ	Batch ID: R92992	TestNo: EPA 218.6	Analysis Date: 4/6/2014	SeqNo: 1756818
Analyte	Result	PQL SPK value SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val	%RPD RPDLimit Qual
Hexavalent Chromium	1.210	0.20 1.000 0.2217	98.9 90 110	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit

DO Surrogate Diluted Out Advanced Technology Laboratories, Inc.

ASSET Laboratories

- E Value above quantitation range
- RPD outside accepted recovery limits

Calculations are based on raw values 3151 W. Post Rd, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 www.assetlaboratories.com

- H Holding times for preparation or analysis exceeded
- Spike/Surrogate outside of limits due to matrix interference

WORKORDER: N012293

ANALYST LIST

NAME	TEST METHOD
Quennie Manimtim	EPA 218.6
Claire Ignacio	EPA 200.8
Luisa Cabasug	EPA 120.1, SM 2540C, EPA 180.1

Advanced Technology Laboratories
3151 W.Post Road, Las Vegas, NV 89118
(702) 307-2659 FAX: (702) 307-2691

CHAIN OF CUSTODY RECORD

COC Number

TURNAROUND T	ME	10	Days
DATE 04/05/14	4	PAGE	

[IM3Plant-WDR-461]

COMPANY	CH2M HILL		ON THE PROPERTY OF THE PROPERT	overende van de state		-	7	1	7	1 /	7	7	7	7	7	1	/ /	77	<u> </u>
PROJECT NAME	PG&E Topock				- Company of the Comp			/ /	/ /						/ /	/ /			COMMENTS
PHONE	(530) 229-3303		FAX (530)) 339-3303	erestificentes de la constante		/	/ /		/ .	/ /	/ /	/ /	/ /					
ADDRESS	155 Grand Ave	in the state of th	ernsonaus		ALIANDARIA PRODUCTO	/	1	15 C	/ /	/ /	f					/ /	/ /	CONTAINERS	
	Oakland, CA 94	1612	kinin komunikan pikari			/8	80/8	150	/ /					/ ,	/ /	/ /		1 X X	
P.O. NUMBER	428648.IM.CS.EX	49/	TEAN	A 1	/	Lab Fillered	184 /	stance /		100	/ /	/ /	/ /		- /-		/ ,	12/2	
SAMPLERS (SIGNA	TURE)		861.	1 (da		2040. 12540.	/ /							//	/ /		
SAMPLE I.D.		DATE	TIME	DESCRIPTION	Cr6 (278.6)	Total M	Specific	TDS (SM2540C)		(SINZ130)	/	/	/ /	/ /	/ /	/ /	NUM		
SC-700B-WDR	R-461	04/05/14	0630	Water	x	х	Х	x	X								3	NO122	293-1
											eva co care u area e						3	TOTAL NUMB	ER OF CONTAINERS

Please Provide a preliminary Result for the TDS ASAP

O CH	AIN OF CUSTODY SIG	SNATURE RECORD	4-5-14	SAMPLE CONDITIONS . ,,
Signature (Relinquished)	Printed HDL	Company/ 47	Date/ 1/.00	RECEIVED COOL WARM 1 190 %
Signature (Received)	Printed Name HERSEY SWMS	Company/ Agency <i>HTL</i>	Date/ 054PP14 Time //00	CUSTODY SEALED YES NO Z
Signature (Refinquished)	Printed Name /EPSE/SW/S	Camananil	Date/ oSAPR14 Time 1300	SPECIAL REQUIREMENTS:
Signature (Received)	Printed HEIDSEY SAYING	Company/ Agency HTC	Date/ 05/4P/2 Time 1300	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Advanced Technology Laboratories, Inc.

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions o	r further in:	struction, pleas	e contact our P	roject Coord	dinator at (702) 307-2659.		
Cooler Received/Opened On:	4/5/2014				Workorder:	N012293		
Rep sample Temp (Deg C):	1.4				IR Gun ID:	2		
Temp Blank:	Yes	✓ No						
Carrier name:	ATL							
Last 4 digits of Tracking No.:	NA			Packing	Material Used:	None		
Cooling process:	✓ Ice	☐ Ice Pack	☐ Dry Ice	Other	None			
		<u>s</u>	ample Receip	t Checklis	ţ			
1. Shipping container/cooler in	good condit	ion?			Yes 🗸	No 🗌	Not Present	
2. Custody seals intact, signed	, dated on s	hippping containe	er/cooler?		Yes	No 🗌	Not Present	✓
3. Custody seals intact on sam	ple bottles?				Yes \square	No 🗌	Not Present	✓
4. Chain of custody present?					Yes 🗹	No 🗌		
5. Sampler's name present in 0	COC?				Yes 🗹	No 🗌		
6. Chain of custody signed whe	en relinquish	ed and received?	>		Yes 🗸	No 🗌		
7. Chain of custody agrees with	n sample lab	els?			Yes 🗹	No 🗌		
8. Samples in proper container	/bottle?				Yes 🗸	No 🗌		
9. Sample containers intact?					Yes 🗸	No 🗆		
10. Sufficient sample volume fo	or indicated	test?			Yes 🗸	No 🗌		
11. All samples received within	holding time	e?			Yes 🗸	No \square		
12. Temperature of rep sample	or Temp BI	ank within accep	table limit?		Yes 🗹	No 🗌	NA	
13. Water - VOA vials have zer	o headspac	e?			Yes	No 🗌	NA	✓
14. Water - pH acceptable upo Example: pH > 12 for (Cl	•	for Metals			Yes 🗸	No 🗌	NA	
15. Did the bottle labels indicat	e correct pre	eservatives used	?		Yes 🗹	No 🗌	NA	
16. Were there Non-Conformat Wa	nce issues a as Client not	-			Yes Yes	No 🗌 No 🗆	NA NA	
Comments:								
	or: A	ates 041	07/2014		į	Reviewed By:	1 8 04/	08/14

SAMPLE CALCULATION

METHOD: SM 2540C

TEST NAME: Total Filterable Residue

MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

TDS, mg/L =
$$(\underline{A-B})*1000000$$

C

Where:

A = weight in g of dish + residue after drying

B = weight of dish in g

C = volume of sample used in mL

For **N012293-001C,** TDS concentration in mg/L is calculated as follows:

TDS, mg/L =
$$(64.0602-63.9836)*1000000$$

20
3830 mg/L

Reporting result in two significant figures,

TDS =
$$3800 \text{ mg/L}$$



WHERE:

A = weight in grams of dish + residue after drying
B = weight of dish in grams
C = volume of sample used in mL

Date Started: 4/7/2014								TDS/CONDUCTIVITY
Date Finished: 4/8/2014	vol	initial	final	calc	prep fact	TDS, mg/L	CONDUCTIVITY	RATIO
MB-45367	100	61.3651	61.3658	7	1	7.00		
LCS-45367	100	63.52	63.6179	979	1	979.00		
N012278-007D	100	64.122	64.1896	676	1	676.00	1084	0.62
N012278-007D-DUP	100	64.2888	64.3565	677	1	677.00	1084	0.62
N012278-010D	100	62.1305	62.1831	526	1	526.00	848	0.62
N012279-001D	100	64.0018	64.0426	408	1	408.00	693	0.59
N012289-005E	100	63.3817	63.4136	319	1	319.00	522	0.61
N012289-006E	100	63.0051	63.0347	296	1	296.00	475	0.62
N012291-001C	100	63.8125	63.8823	698	1	698.00	1162	0.60
N012293-001C	20	63.9836	64.0602	766	5	3830.00	6660	0.58



Sample Calculation

METHOD: EPA 200.8

TEST NAME: Heavy Metals by ICP-MS

MATRIX: Aqueous

FORMULA:

Calculate the Chromium concentration, in ug/L, in the original sample as follows:

Chromium, ug/L = A * DF * PF

where:

A = ug/L, calculated concentration

DF = dilution factor

PF = Final Vol. of Digestate in mL / Vol. of Sample used in mL

For Sample N012293-001B, the concentration in ug/L is calculated as follows:

Chromium, ug/L = 0.234763917800923 * 1 * (25/25)

= 0.234763917800923

Reporting results in two significant figures,

Chromium, ug/L = 0.23

Since PQL of Chromium is 1.0 ug/L,

Chromium, ug/L = ND

Narry 4/17/2014

Sample Calculation

METHOD: EPA 218.6

TEST NAME: HEXAVALENT CHROMIUM BY IC

MATRIX: Water

FORMULA:

Calculate the Hexavalent Chromium concentration, in $\mu g/L$, in the original sample as follows:

$$Cr^{+6}$$
, $\mu g/L = A * DF$

where:

A =
$$\mu$$
g/L, IC Cr⁺⁶ calculated concentration DF = dilution factor

For **N012293-001A** concentration in μ g/L is calculated as follows:

$$Cr^{+6}$$
, $\mu g/L$ = 0.4526 * 1 = 0.4526

Reporting result in two significant figures,

$$Cr^{+6}$$
, μ g/L = 0.45

Many 4/17/2014

Established 1931



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

April 28, 2014

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-462 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 812966

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-462 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 8, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The internal standard for sample SC-701-WDR-462 analyzed at dilutions of 2x and 10x for Total Beryllium, Cadmium, Cobalt, and Silver by EPA 200.8 were outside the recovery limits of 70% - 130% as a result of matrix interference. Therefore, the samples were re-analyzed at a 20x dilution. The internal standards were within acceptable limits. The internal standard for Total Mercury analyzed straight was outside the recovery limits and therefore was analyzed at a 2x dilution. Due to the dilutions, the reporting limits for these metals exceed the Contract Required Detection Limits. All other QA/QC were within acceptable limits.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

√or Mona Nassimi

Manager, Analytical Services

Michael

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Three (3) Groundwaters
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 812966

Date: February 23, 2014

Collected: April 8, 2014

Received: April 8, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST		
EPA 120.1	Specific Conductivity	Jenny Tankunakorn		
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn		
SM 2130B	Turbidity	Felipe Mendoza		
EPA 300.0	Anions	Giawad Ghenniwa		
SM 4500-NH3 D	Ammonia	Himani Vaishnav / Maksim Grobunov		
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn		
EPA 200.7	Metals by ICP	Ethel Suico		
EPA 200.8	Metals by ICP/MS	Ethel Suico		
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad		

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

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

Laboratory No.: 812966 Date Received: April 8, 2014

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
812966-001	SC-700B-WDR-462	E120.1	NONE	4/8/2014	14:05	EC	6850	umhos/cm	2.00
812966-001	SC-700B-WDR-462	E200.7	NONE	4/8/2014	14:05	Aluminum	ND		50.0
		E200.7	NONE	4/8/2014	14:05	BORON		ug/L	
812966-001	SC-700B-WDR-462						936	ug/L	50.0
812966-001	SC-700B-WDR-462	E200.7	NONE	4/8/2014	14:05	Iron	ND	ug/L	20.0
812966-001	SC-700B-WDR-462	E200.7	NONE	4/8/2014	14:05	Zinc	ND	ug/L	20.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Antimony	ND	ug/L	2.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Arsenic	ND	ug/L	0.50
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Barium	12.0	ug/L	5.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Chromium	ND	ug/L	1.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Copper	ND	ug/L	1.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Lead	ND	ug/L	1.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Manganese	4.3	ug/L	0.50
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Molybdenum	18.7	ug/L	2.0
812966-001	SC-700B-WDR-462	E200.8	NONE	4/8/2014	14:05	Nickel	ND	ug/L	2.0
812966-001	SC-700B-WDR-462	E218.6	LABFLT	4/8/2014	14:05	Chromium, Hexavalent	ND	ug/L	0.20
812966-001	SC-700B-WDR-462	E300	NONE	4/8/2014	14:05	Fluoride	1.98	mg/L	0.500
812966-001	SC-700B-WDR-462	E300	NONE	4/8/2014	14:05	Nitrate as N	2.38	mg/L	0.500
812966-001	SC-700B-WDR-462	E300	NONE	4/8/2014	14:05	Sulfate	478	mg/L	25.0
812966-001	SC-700B-WDR-462	SM2130B	NONE	4/8/2014	14:05	Turbidity	ND	NTU	0.100
812966-001	SC-700B-WDR-462	SM2540C	NONE	4/8/2014	14:05	Total Dissolved Solids	4440	mg/L	125
812966-001	SC-700B-WDR-462	SM4500NH3D	NONE	4/8/2014	14:05	Ammonia-N	ND	mg/L	0.500
812966-001	SC-700B-WDR-462	SM4500NO2B	NONE	4/8/2014	14:05	Nitrite as N	ND	mg/L	0.0050

505



		Analysis	Extraction	Sample	Sample				
Lab Sample ID	Field ID	Method	Method	Date	Time	Parameter	Result	Units	RL
812966-002	SC-100B-WDR-462	E120.1	NONE	4/8/2014	14:18	EC	6910	umhos/cm	2.00
812966-002	SC-100B-WDR-462	E200.7	NONE	4/8/2014	14:18	Aluminum	ND	ug/L	50.0
812966-002	SC-100B-WDR-462	E200.7	NONE	4/8/2014	14:18	BORON	974	ug/L	50.0
812966-002	SC-100B-WDR-462	E200.7	NONE	4/8/2014	14:18	Iron	ND	ug/L	20.0
812966-002	SC-100B-WDR-462	E200.7	NONE	4/8/2014	14:18	Zinc	ND	ug/L	20.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Antimony	ND	ug/L	2.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Arsenic	3.4	ug/L	0.50
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Barium	27.6	ug/L	5.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Chromium	643	ug/L	5.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Copper	ND	ug/L	1.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Lead	ND	ug/L	1.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Manganese	6.6	ug/L	0.50
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Molybdenum	18.7	ug/L	2.0
812966-002	SC-100B-WDR-462	E200.8	NONE	4/8/2014	14:18	Nickel	ND	ug/L	2.0
812966-002	SC-100B-WDR-462	E218.6	LABFLT	4/8/2014	14:18	Chromium, Hexavalent	610	ug/L	5.0
812966-002	SC-100B-WDR-462	E300	NONE	4/8/2014	14:18	Fluoride	2.30	mg/L	0.500
812966-002	SC-100B-WDR-462	E300	NONE	4/8/2014	14:18	Nitrate as N	2.53	mg/L	0.500
812966-002	SC-100B-WDR-462	E300	NONE	4/8/2014	14:18	Sulfate	523	mg/L	50.0
812966-002	SC-100B-WDR-462	SM2130B	NONE	4/8/2014	14:18	Turbidity	ND	NTU	0.100
812966-002	SC-100B-WDR-462	SM2540C	NONE	4/8/2014	14:18	Total Dissolved Solids	4620	mg/L	125
812966-002	SC-100B-WDR-462	SM4500NH3D	NONE	4/8/2014	14:18	Ammonia-N	ND	mg/L	0.500
812966-002	SC-100B-WDR-462	SM4500NO2B	NONE	4/8/2014	14:18	Nitrite as N	ND	mg/L	0.0050



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
812966-003	SC-701-WDR-462	E120.1	NONE	4/8/2014	14:09	EC	35900	umhos/cm	2.00
812966-003	SC-701-WDR-462	E200.7	NONE	4/8/2014	14:09	Zinc	ND	ug/L	20.0
812966-003	SC-701-WDR-462	E200.7	NONE	4/8/2014	14:09	Antimony	ND	-	2.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Arsenic	0.81	ug/L	0.50
			NONE	4/8/2014	14:09	Barium		ug/L	
812966-003	SC-701-WDR-462	E200.8					80.5	ug/L	5.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Beryllium	ND	ug/L	4.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Cadmium	ND	ug/L	4.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Chromium	1.6	ug/L	1.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Cobalt	ND	ug/L	5.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Copper	4.8	ug/L	2.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Lead	ND	ug/L	1.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Manganese	33.0	ug/L	1.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Mercury	ND	ug/L	0.40
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Molybdenum	118	ug/L	4.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Nickel	9.4	ug/L	2.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Selenium	24.6	ug/L	10.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Silver	ND	ug/L	10.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Thallium	ND	ug/L	1.0
812966-003	SC-701-WDR-462	E200.8	NONE	4/8/2014	14:09	Vanadium	ND	ug/L	5.0
812966-003	SC-701-WDR-462	E218.6	LABFLT	4/8/2014	14:09	Chromium, Hexavalent	ND	ug/L	2.0
812966-003	SC-701-WDR-462	E300	NONE	4/8/2014	14:09	Fluoride	12.6	mg/L	0.500
812966-003	SC-701-WDR-462	SM2540C	NONE	4/8/2014	14:09	Total Dissolved Solids	27500	mg/L	833

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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

Printed 4/28/2014

Laboratory No. 812966

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 4/8/2014 8:05:00 PM

Field ID	Lab ID	Collected	Matrix
SC-700B-WDR-462	812966-001	04/08/2014 14:05	Water
SC-100B-WDR-462	812966-002	04/08/2014 14:18	Water
SC-701-WDR-462	812966-003	04/08/2014 14:09	Water

Anions By I.C EPA 300.0		Batch 04AN14H				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
812966-001 Fluoride	mg/L	04/09/2014 09:51	5.00	0.104	0.500	1.98
Nitrate as Nitrogen	mg/L	04/09/2014 09:51	5.00	0.0415	0.500	2.38
Sulfate	mg/L	04/09/2014 12:20	50.0	1.54	25.0	478
812966-002 Fluoride	mg/L	04/09/2014 10:03	5.00	0.104	0.500	2.30
Nitrate as Nitrogen	mg/L	04/09/2014 10:03	5.00	0.0415	0.500	2.53
Sulfate	mg/L	04/09/2014 11:18	100	3.07	50.0	523
812966-003 Fluoride	mg/L	04/09/2014 10:40	5.00	0.104	0.500	12.6

Method Blank			
Parameter	Unit	DF	Result
Chloride	mg/L	1.00	ND
Fluoride	mg/L	1.00	ND
Sulfate	mg/L	1.00	ND
Nitrate as Nitrogen	mg/L	1.00	ND
Duplicate			

Duplicate Lab ID = 812942-004Parameter Unit DF Result Expected RPD Acceptance Range Chloride mg/L 25.0 84.2 86.2 2.37 0 - 20



Client: E2 Consulting Eng		roject Name: roject Numbe	ject .AC	Page 2 of 38 Printed 4/28/2014		
Duplicate						Lab ID = 812966-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 2.27	Expected 2.30	RPD 1.44	Acceptance Range 0 - 20
Sulfate Nitrate as Nitrogen	mg/L mg/L	100 5.00	511 2.52	523 2.53	2.28 0.237	0 - 20 0 - 20
Lab Control Sample	50 Signar ay					
Parameter Chloride Fluoride	Unit mg/L mg/L	DF 1.00 1.00	Result 3.84 3.97	Expected 4.00 4.00	Recovery 96.1 99.2	Acceptance Range 90 - 110 90 - 110
Sulfate	mg/L	1.00	19.3	20.0	96.4	90 - 110
Nitrate as Nitrogen Matrix Spike	mg/L	1.00	3.84	4.00 	96.1	90 - 110 Lab ID = 812942-004
Parameter Chloride	Unit mg/L	DF 25.0	Result 185	Expected/Added 186(100)	Recovery 98.9	Acceptance Range 85 - 115
Matrix Spike						Lab ID = 812966-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 21.8	Expected/Added 22.3(20.0)	Recovery 97.4	Acceptance Range 85 - 115
Sulfate	mg/L	100	1480	1520(1000)	95.4	85 - 115
Nitrate as Nitrogen	mg/L	5.00	22.0	22.5(20.0)	97.3	85 - 115
MRCCS - Secondary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 4.02	Expected 4.00	Recovery 100	Acceptance Range 90 - 110
Fluoride	mg/L	1.00	4.14	4.00 20.0	103 100	90 - 110 90 - 110
Sulfate Nitrate as Nitrogen	mg/L mg/L	1.00 1.00	20.0 4.03	4.00	100	90 - 110
MRCVS - Primary		usassaannii kar		 2745 (77) (77)	1048840mmmuu	
Parameter Chloride	Unit mg/L	DF 1.00	Result 2.87	Expected 3.00	Recovery 95.7	Acceptance Range 90 - 110
MRCVS - Primary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.26	Expected 3.00	Recovery 108	Acceptance Range 90 - 110
MRCVS - Primary	ericini Adami				Page	
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.12	Expected 3.00	Recovery 104	Acceptance Range 90 - 110



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Project Name: PG&E Topock Project

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Nitrite SM 4500-NO2 B			Batch	04NO214D				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
812966-001 Nitrite as Nitrogen		mg/L	04/09/	/2014 12:37 1	.00	0.000630	0.0050	ND
812966-002 Nitrite as Nitrogen		mg/L	04/09/	/2014 12:42 1	.00	0.000630	0.0050	ND
Method Blank								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID = 8	12966-002
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result ND	Expected 0	F	RPD 0	Acceptar 0 - 20	nce Range
Lab Control Sample								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0212	Expected 0.0230	F	Recovery 92.2	Acceptar 90 - 110	nce Range
Matrix Spike							Lab ID = 8	12966-002
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0231	Expected/Adde 0.0230(0.0230		Recovery 100	Acceptar 85 - 115	nce Range
MRCCS - Secondary								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0212	Expected 0.0230	F	Recovery 92.2	Acceptar 90 - 110	nce Range
MRCVS - Primary								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0185	Expected 0.0200	F	Recovery 92.5	Acceptar 90 - 110	nce Range
MRCVS - Primary								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0185	Expected 0.0200	F	Recovery 92.5	Acceptar 90 - 110	nce Range



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Specific Conductivity -	EPA 120.1		Batch	04EC14B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
812966-001 Specific Condu	ıctivity	umhos/cm 04/11/		1/2014	1.00	0.606	2.00	6850
812966-002 Specific Condu	ıctivity	umhos/cm 04/		1/2014	1.00	0.606	2.00	6910
812966-003 Specific Condu	ıctivity	umhos/cm 04/11/2		1/2014	1.00	0.606	2.00	35900
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	812966-003
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 35800	Expected 35900	F	RPD 0.279	Accepta 0 - 10	ance Range
Parameter	Unit	DF	Result	Expected		Recovery	Accenta	ance Range
Specific Conductivity MRCCS - Secondar	umhos	1.00	703	706		99.6	90 - 110	•
Composition (44) Composition Review Composition	e en nomen de la recorda	DE	D#	F t - d)	· · · · · · · · · · · · · · · · · · ·	D
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 693	Expected 706	Г	Recovery 98.2	90 - 110	ance Range 0
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1000	Expected 1000	F	Recovery 100	Accepta 90 - 110	ance Range 0
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1010	Expected 1000	F	Recovery 101	Accepta 90 - 110	ance Range 0



Client: E2 Consulting Engineers, Inc.

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Chrome VI by EPA 218.6	6		Batch	04CrH14 A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
812966-001 Chromium, Hex	avalent	ug/L	04/10	/2014 11:26	1.00	0.00600	0.20	ND
812966-002 Chromium, Hex	avalent	ug/L	04/10	/2014 11:37	25.0	0.150	5.0	610
812966-003 Chromium, Hex	avalent	ug/L	04/10	/2014 18:02	10.0	0.0600	2.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	812967-015
Parameter	Unit	DF	Result	Expected	ı	RPD	Accepta	ince Range
Chromium, Hexavalent	ug/L	1.00	19.8	19.8		0.00707	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	ı	Recovery		ince Range
Chromium, Hexavalent	ug/L	1.00	0.198	0.200		99.2	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	I	Recovery	•	ince Range
Chromium, Hexavalent	ug/L	1.00	5.04	5.00		101	90 - 110	
Matrix Spike							Lab ID =	812966-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	5.00	5.35	5.10(5.00)		105	90 - 110	
Matrix Spike							Lab ID =	812966-001
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	-	ince Range
Chromium, Hexavalent	ug/L	1.00	1.17	1.12(1.00)		105	90 - 110	
Matrix Spike								812966-002
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	•	ance Range
Chromium, Hexavalent	ug/L	25.0	1260	1240(625)		104	90 - 110	
Matrix Spike			haganagan keranggan panah kadada daga meneng		Pirodicus indente			812966-003
Parameter	Unit	DF	Result	Expected/Add	ed I	Recovery	Accepta 90 - 110	ance Range
Chromium, Hexavalent	ug/L	1.00	ND	1.00(1.00)				812966-003
Matrix Spike						1944 (444.64) -		
Parameter Chromium Hovavalent	Unit	DF 5.00	Result 5.86	Expected/Add 5.96(5.00)	ea I	Recovery 98.1	Accepta 90 - 110	ance Range
Chromium, Hexavalent	ug/L	3.00 -:///////////////////////////////////	0.00	3.30(3.00) v.(.) Massaulens (2.00)		au. i Süsaanan anasa		812966-003
Matrix Spike	(Marijangan Hari					gada sidyiyi Zaqaya		
Parameter Chromium, Hexavalent	Unit ug/L	DF 10.0	Result 11.6	Expected/Add 10.8(10.0)	eu I	Recovery 107	90 - 110	ance Range
Onformum, Hexavalent	ug/L	10.0	11.0	10.0(10.0)		101	00 - 110	•



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Metals by EPA 200.7, T	otal		Batch 041614A-Th2						
Parameter		Unit	Ana	lyzed [OF MDL	RL	Result		
812966-001 Aluminum		ug/L	04/16	/2014 13:22 1	.00 7.20	50.0	ND		
Boron		ug/L	04/16	/2014 13:22 1	.00 4.10	50.0	936		
Iron		ug/L	04/16	/2014 13:22 1	.00 3.00	20.0	ND		
Zinc		ug/L	04/16	/2014 13:22 1	.00 5.10	20.0	ND		
312966-002 Aluminum		ug/L	04/16	3/2014 12:42 1	.00 7.20	50.0	ND		
Boron		ug/L	04/16	3/2014 12:42 1	.00 4.10	50.0	974		
Iron		ug/L	04/16	5/2014 12:42 1	.00 3.00	20.0	ND		
Zinc		ug/L	04/16	5/2014 12:42 1	.00 5.10	20.0	ND		
812966-003 Zinc		ug/L	04/16	i/2014 13:28 1	.00 5.10	20.0	ND		
Method Blank	24 2 22 EAR	anskatikansk	tar-cendifyddiolo				distriction.		
Parameter	Unit	DF	Result						
Aluminum	ug/L	1.00	ND						
Iron	ug/L	1.00	ND						
Zinc	ug/L	1.00	ND						
Boron	ug/L	1.00	ND						
Duplicate						Lab ID =	812966-002		
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Range		
Aluminum	ug/L	1.00	ND	0	0				
Iron	ug/L	1.00	ND	0	0	0 - 20			
Zinc	ug/L	1.00	ND	0	0	0 - 20			
Boron	ug/L	1.00	950	974	2.48	0 - 20			
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range		
Aluminum	ug/L	1.00	2020	2000	101	85 - 118	5		
lron	ug/L	1.00	2120	2000	106	85 - 118	5		
Zinc	ug/L	1.00	2120	2000	106	85 - 118	5		
Boron	ug/L	1.00	2050	2000	103	85 - 115	5		
Matrix Spike						Lab ID =	812966-002		
Parameter	Unit	DF	Result	Expected/Adde	d Recovery	Accepta	ance Range		
Aluminum	ug/L	1.00	1700	2000(2000)	85.2	75 - 128	5		
Iron	ug/L	1.00	1800	2000(2000)	90.0	75 - 128	5		
7:	ug/L	1.00	2200	2000(2000)	110	75 - 125	5		
Zinc	ug/L								



Client: E2 Consulting Engineers, Inc.			Project Name: Project Number:	PG&E Topock Project 428648.IM.CS.EX.AC		Page 12 of 38 Printed 4/28/2014	
Matrix Spike Duplicate						Lab ID = 812966-002	
Parameter Aluminum	Unit ug/L	DF 1.00	Result 1690	Expected/Added 2000(2000)	Recovery 84.6	Acceptance Range 75 - 125	
Iron	ug/L	1.00	1800	2000(2000)	89.8	75 - 125	
Zinc	ug/L	1.00	2200	2000(2000)	110	75 - 125	
Boron	ug/L	1.00	2840	2970(2000)	93.2	75 - 125	
MRCCS - Secondary							
Parameter Aluminum	Unit ug/L	DF 1.00	Result 5070	Expected 5000	Recovery 101	Acceptance Range 95 - 105	
Iron	ug/L	1.00	5120	5000	102	95 - 105	
Zinc	ug/L	1.00	5220	5000	104	95 - 105	
Boron	ug/L	1.00	5130	5000	103	95 - 105	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Aluminum	ug/L	1.00	4730	5000	94.6	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Aluminum	ug/L	1.00	4920	5000	98.3	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Iron	ug/L	1.00	4920	5000	98.3	90 - 110	
MRCVS - Primary							
Parameter Iron	Unit ug/L	DF 1.00	Result 4930	Expected 5000	Recovery 98.6	Acceptance Range 90 - 110	
MRCVS - Primary							
Parameter Zinc	Unit ug/L	DF 1.00	Result 4960	Expected 5000	Recovery 99.3	Acceptance Range 90 - 110	
MRCVS - Primary		i 10. gotilgiacidosa (seig			alata este anta arreste (esta grape esta esta esta esta esta esta esta est		
Parameter Zinc	Unit ug/L	DF 1.00	Result 5140	Expected 5000	Recovery 103	Acceptance Range 90 - 110	
Boron	ug/L	1.00	4930	5000	98.6	90 - 110	
MRCVS - Primary							
Parameter Boron	Unit ug/L	DF 1.00	Result 4940	Expected 5000	Recovery 98.9	Acceptance Range 90 - 110	



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Metals by EPA 200.8, To	otal		Batch	040914A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
812966-001 Arsenic		ug/L	04/09	/2014 18:23	2.00	0.100	0.50	ND
Chromium		ug/L	04/09	/2014 18:23	2.00	0.142	1.0	ND
Nickel		ug/L	04/09	/2014 18:23	2.00	0.480	2.0	ND
812966-002 Arsenic		ug/L	04/09	/2014 19:14	2.00	0.100	0.50	3.4
Chromium		ug/L	04/09	/2014 19:21	10.0	0.710	5.0	643
Nickel		ug/L	04/09	/2014 19:14	2.00	0.480	2.0	ND
812966-003 Arsenic		ug/L	04/09	/2014 19:34	2.00	0.100	0.50	0.81
Chromium		ug/L	04/09	/2014 19:34	2.00	0.142	1.0	1.6
Manganese		ug/L	04/09	/2014 19:34	2.00	0.120	1.0	33.0
Nickel		ug/L	04/09	/2014 19:34	2.00	0.480	2.0	9.4
Vanadium		ug/L	04/09	/2014 19:34	2.00	0.140	5.0	ND
Method Blank		17/08:508						
Parameter	Unit	DF	Result					
Arsenic	ug/L	1.00	ND					
Chromium	ug/L	1.00	ND					
Nickel	ug/L	1.00	ND					
Vanadium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	812966-00
Parameter	Unit	DF	Result	Expected	F	RPD	-	ance Rang
Arsenic	ug/L	2.00	ND	0		0	0 - 20	
Chromium	ug/L	2.00	ND	0		0	0 - 20	
Nickel	ug/L	2.00	ND	0		0	0 - 20	
Vanadium	ug/L	2.00	ND	0		0	0 - 20	
Manganese	ug/L	2.00	3.92	4.18		6.39	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery		ance Rang
Arsenic	ug/L	1.00	0.218	0.200		109	70 - 130	
Chromium	ug/L	1.00	0.532	0.500		106	70 - 130	
Nickel	ug/L	1.00	1.12	1.00		112	70 - 130	
Vanadium	ug/L	1.00	0.486	0.500		97.2	70 - 130	
Manganese	ug/L	1.00	0.383	0.500		76.6	70 - 130	J



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and programmed and the second					_	
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	2.00	48.6	50.0	97.3	85 - 115
Chromium	ug/L	2.00	48.9	50.0	97.9	85 - 115
Nickel	ug/L	2.00	47.4	50.0	94.9	85 - 115
Vanadium	ug/L	2.00	49.0	50.0	98.0	85 - 115
Manganese	ug/L	2.00	47.8	50.0	95.7	85 - 115 Lab ID = 812966-001
Matrix Spike						
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	47.7	50.0(50.0)	95.5	75 - 125
Chromium	ug/L	2.00	46.2	50.0(50.0)	92.4	75 - 125
Nickel	ug/L	2.00	46.7	50.0(50.0)	93.4	75 - 125
Vanadium	ug/L	2.00	47.6	50.0(50.0)	95.1	75 - 125
Manganese	ug/L	2.00	49.0	54.2(50.0)	89.7	75 - 125
Matrix Spike Duplic	ate					Lab ID = 812966-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	47.2	50.0(50.0)	94.5	75 - 125
Chromium	ug/L	2.00	45.5	50.0(50.0)	90.9	75 - 125
Nickel	ug/L	2.00	43.9	50.0(50.0)	87.9	75 - 125
Vanadium	ug/L	2.00	47.4	50.0(50.0)	94.8	75 - 125
Manganese	ug/L	2.00	47.5	54.2(50.0)	86.6	75 - 125
MRCCS - Seconda	i ry					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	19.3	20.0	96.6	90 - 110
Chromium	ug/L	1.00	19.0	20.0	95.2	90 - 110
Nickel	ug/L	1.00	18.8	20.0	94.3	90 - 110
Vanadium	ug/L	1.00	19.2	20.0	96.2	90 - 110
Manganese	ug/L	1.00	19.1	20.0	95.5	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.6	20.0	103	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.2	20.0	101	90 - 110
MRCVS - Primary	in O. S. Kiringa ya	Kilika karistan				
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.4	20.0	102	90 - 110



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Manganese

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Interference Check Standard AB Parameter Unit DF Result Expected Acceptance Range Recovery 20.0 80 - 120 uq/L 1.00 20.8 104 Nickel Interference Check Standard AB DF Result Expected Parameter Unit Recovery Acceptance Range 20.0 96.6 80 - 120 Nickel ua/L 1.00 19.3 1.00 ND Vanadium ua/L 0 Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range Vanadium ug/L 1.00 ND 0 Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range 94.9 80 - 120 ug/L 1.00 19.0 20.0 Manganese Interference Check Standard AB DF Parameter Unit Result **Expected** Recovery Acceptance Range Manganese ug/L 1.00 18.4 20.0 92.0 80 - 120 Lab ID = 812966-002 Serial Dilution **RPD** Parameter Unit DF Result Expected Acceptance Range 643 0 - 10Chromium ug/L 50.0 641 0.361 Lab ID = 812966-003 **Serial Dilution** Unit DF Result Expected **RPD** Acceptance Range Parameter 10.0 35.6 33.0 7.59 0 - 10uq/L



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Metals by EPA 200.8, Total		Batch 041014A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
812966-001 Antimony	ug/L	04/10/2014 13:09	2.00	0.0760	2.0	ND
Barium	ug/L	04/10/2014 13:09	2.00	0.594	5.0	12.0
Lead	ug/L	04/10/2014 13:09	2.00	0.286	1.0	ND
Manganese	ug/L	04/10/2014 13:09	2.00	0.120	0.50	4.3
Molybdenum	ug/L	04/10/2014 13:09	2.00	0.100	2.0	18.7
812966-002 Antimony	ug/L	04/10/2014 14:08	2.00	0.0760	2.0	ND
Barium	ug/L	04/10/2014 14:08	2.00	0.594	5.0	27.6
Lead	ug/L	04/10/2014 14:08	2.00	0.286	1.0	ND
Manganese	ug/L	04/10/2014 14:08	2.00	0.120	0.50	6.6
Molybdenum	ug/L	04/10/2014 14:08	2.00	0.100	2.0	18.7
812966-003 Antimony	ug/L	04/10/2014 18:20	2.00	0.0760	2.0	ND
Barium	ug/L	04/10/2014 18:20	2.00	0.594	5.0	80.5
Beryllium	ug/L	04/10/2014 14:21	20.0	0.720	4.0	ND
Cadmium	ug/L	04/10/2014 14:21	20.0	0.800	4.0	ND
Cobalt	ug/L	04/10/2014 14:21	20.0	0.800	5.0	ND
Copper	ug/L	04/10/2014 18:20	2.00	0.380	2.0	4.8
Lead	ug/L	04/10/2014 18:20	2.00	0.286	1.0	ND
Mercury	ug/L	04/10/2014 18:20	2.00	0.0800	0.40	ND
Molybdenum	ug/L	04/10/2014 14:21	20.0	1.00	4.0	118
Selenium	ug/L	04/10/2014 18:20	2.00	0.424	10.0	24.6
Silver	ug/L	04/10/2014 14:21	20.0	0.580	10.0	ND
Thallium	ug/L	04/10/2014 18:20	2.00	0.0600	1.0	ND



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Method Blank						
Parameter	Unit	DF	Result			
Barium	ug/L	1.00	ND			
Beryllium	ug/L	1.00	ND			
Cadmium	ug/L	1.00	ND			
Cobalt	ug/L	1.00	ND			
Mercury	ug/L	1.00	ND			
Selenium	ug/L	1.00	ND			
Antimony	ug/L	1.00	ND			
Copper	ug/L	1.00	ND			
Lead	ug/L	1.00	ND			
Silver	ug/L	1.00	ND			
Thallium	ug/L	1.00	ND			
Manganese	ug/L	1.00	ND			
Molybdenum	ug/L	1.00	ND			
Duplicate						Lab ID = 812966-001
Duplicate Parameter	Unit	DF	Result		RPD	Acceptance Range
The state of the s	Unit ug/L	DF 2.00	Result 11.9	Expected I	RPD 1.16	Acceptance Range 0 - 20
Parameter						Acceptance Range
Parameter Barium	ug/L	2.00	11.9	12.0	1.16	Acceptance Range 0 - 20
Parameter Barium Beryllium	ug/L ug/L	2.00 2.00	11.9 ND	12.0 0	1.16 0	Acceptance Range 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium	ug/L ug/L ug/L	2.00 2.00 2.00	11.9 ND ND	12.0 0 0	1.16 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt	ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00	11.9 ND ND ND	12.0 0 0 0	1.16 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury	ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND	12.0 0 0 0 0	1.16 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury Selenium	ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND ND	12.0 0 0 0 0 0 4.20	1.16 0 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury Selenium Antimony	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND ND ND	12.0 0 0 0 0 0 4.20	1.16 0 0 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury Selenium Antimony Copper	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND ND ND ND	12.0 0 0 0 0 0 4.20 0	1.16 0 0 0 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury Selenium Antimony Copper Lead	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND ND ND ND	12.0 0 0 0 0 0 4.20 0	1.16 0 0 0 0 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20
Parameter Barium Beryllium Cadmium Cobalt Mercury Selenium Antimony Copper Lead Silver	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	11.9 ND ND ND ND ND ND ND ND	12.0 0 0 0 0 0 4.20 0 0	1.16 0 0 0 0 0 0 0 0	Acceptance Range 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20 0 - 20



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Barium ug/L 1.00 0.967 1.00 96.7 70 - 130 Beryllium ug/L 1.00 0.220 0.200 110 70 - 130 Cadmium ug/L 1.00 0.195 0.200 97.5 70 - 130 Cobalt ug/L 1.00 0.203 0.200 102 70 - 130 Mercury ug/L 1.00 0.204 0.200 102 70 - 130 Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 1.20 1.00 120 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130	Low Level Calibrati	on verification					
Beryllium ug/L 1.00 0.220 0.200 110 70 - 130 Cadmium ug/L 1.00 0.195 0.200 97.5 70 - 130 Cobalt ug/L 1.00 0.203 0.200 102 70 - 130 Mercury ug/L 1.00 0.204 0.200 102 70 - 130 Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 0.200 0.200 100 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Lead ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Lab Control Sample	Parameter	Unit			•	•	Acceptance Range
Cadmium ug/L 1.00 0.195 0.200 97.5 70 - 130 Cobalt ug/L 1.00 0.203 0.200 102 70 - 130 Mercury ug/L 1.00 0.204 0.200 102 70 - 130 Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 0.469 0.500 93.8 70 - 130 Lead ug/L 1.00 0.471 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Molydenum ug/L 1.00 0.171 0.200 85.5 70 - 130 Lab Control Sample	Barium	ug/L	1.00	0.967	1.00	96.7	70 - 130
Cobalt ug/L 1.00 0.203 0.200 102 70 - 130 Mercury ug/L 1.00 0.204 0.200 102 70 - 130 Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 1.20 1.00 120 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Silver ug/L 1.00 0.177 0.200 88.5 70 - 130 Thallium ug/L 1.00 0.171 0.200 85.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Barium ug/L	Beryllium	ug/L	1.00	0.220	0.200	110	70 - 130
Mercury ug/L 1.00 0.204 0.200 102 70 - 130 Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 0.469 0.500 93.8 70 - 130 Lead ug/L 1.00 0.471 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Expected Recovery Acceptance Rangellarium 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115<	Cadmium	ug/L	1.00	0.195	0.200	97.5	70 - 130
Selenium ug/L 1.00 1.52 2.00 75.8 70 - 130 Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 1.20 1.00 120 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115	Cobalt	ug/L	1.00	0.203	0.200	102	70 - 130
Antimony ug/L 1.00 0.200 0.200 100 70 - 130 Copper ug/L 1.00 1.20 1.00 120 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 47.4 50.0 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Mercury	ug/L	1.00	0.204	0.200	102	70 - 130
Copper ug/L 1.00 1.20 1.00 120 70 - 130 Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 47.2 50.0 93.7 85 - 115 <td>Selenium</td> <td>ug/L</td> <td>1.00</td> <td>1.52</td> <td>2.00</td> <td>75.8</td> <td>70 - 130</td>	Selenium	ug/L	1.00	1.52	2.00	75.8	70 - 130
Lead ug/L 1.00 0.469 0.500 93.8 70 - 130 Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range R	Antimony	ug/L	1.00	0.200	0.200	100	70 - 130
Silver ug/L 1.00 0.471 0.500 94.2 70 - 130 Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 94.8 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.0	Copper	ug/L	1.00	1.20	1.00	120	70 - 130
Thallium ug/L 1.00 0.177 0.200 88.5 70 - 130 Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Copper ug/L 2.00 50.5 50.0 1	Lead	ug/L	1.00	0.469	0.500	93.8	70 - 130
Manganese ug/L 1.00 0.171 0.200 85.5 70 - 130 Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Ran	Silver	ug/L	1.00	0.471	0.500	94.2	70 - 130
Molybdenum ug/L 1.00 0.193 0.200 96.5 70 - 130 Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Ra	Thallium	ug/L	1.00	0.177	0.200	88.5	70 - 130
Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range	Manganese	ug/L	1.00	0.171	0.200	85.5	70 - 130
Parameter Unit DF Result Expected Recovery Acceptance Range Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Molybdenum	ug/L	1.00	0.193	0.200	96.5	70 - 130
Barium ug/L 2.00 46.8 50.0 93.5 85 - 115 Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Lab Control Sample	e					
Beryllium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Cadmium ug/L 2.00 47.2 50.0 94.4 85 - 115 Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Barium	ug/L	2.00	46.8	50.0	93.5	85 - 115
Cobalt ug/L 2.00 46.9 50.0 93.7 85 - 115 Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	–						
Mercury ug/L 2.00 4.76 5.00 95.1 85 - 115 Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Beryllium	ug/L	2.00	47.2	50.0	94.4	85 - 115
Selenium ug/L 2.00 47.4 50.0 94.8 85 - 115 Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	•	_					
Antimony ug/L 2.00 47.0 50.0 94.0 85 - 115 Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Cadmium	ug/L	2.00	47.2	50.0	94.4	85 - 115
Copper ug/L 2.00 50.5 50.0 101 85 - 115 Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Cadmium Cobalt	ug/L ug/L	2.00 2.00	47.2 46.9	50.0 50.0	94.4 93.7	85 - 115 85 - 115
Lead ug/L 2.00 46.9 50.0 93.8 85 - 115	Cadmium Cobalt Mercury	ug/L ug/L ug/L	2.00 2.00 2.00	47.2 46.9 4.76	50.0 50.0 5.00	94.4 93.7 95.1	85 - 115 85 - 115 85 - 115
•	Cadmium Cobalt Mercury Selenium	ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4	50.0 50.0 5.00 50.0	94.4 93.7 95.1 94.8	85 - 115 85 - 115 85 - 115 85 - 115
Silver ug/L 2.00 50.8 50.0 102 85 - 115	Cadmium Cobalt Mercury Selenium Antimony	ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4 47.0	50.0 50.0 5.00 50.0 50.0	94.4 93.7 95.1 94.8 94.0	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115
	Cadmium Cobalt Mercury Selenium Antimony Copper	ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4 47.0 50.5	50.0 50.0 5.00 50.0 50.0 50.0	94.4 93.7 95.1 94.8 94.0 101	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115
Thallium ug/L 2.00 42.7 50.0 85.4 85 - 115	Cadmium Cobalt Mercury Selenium Antimony Copper Lead	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4 47.0 50.5 46.9	50.0 50.0 5.00 50.0 50.0 50.0	94.4 93.7 95.1 94.8 94.0 101 93.8	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115
Manganese ug/L 2.00 46.6 50.0 93.2 85 - 115	Cadmium Cobalt Mercury Selenium Antimony Copper Lead Silver	ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4 47.0 50.5 46.9 50.8	50.0 50.0 5.00 50.0 50.0 50.0 50.0	94.4 93.7 95.1 94.8 94.0 101 93.8 102	85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115 85 - 115
Molybdenum ug/L 2.00 46.9 50.0 93.8 85 - 115	Cadmium Cobalt Mercury Selenium Antimony Copper Lead Silver Thallium	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	47.2 46.9 4.76 47.4 47.0 50.5 46.9 50.8 42.7	50.0 50.0 5.00 50.0 50.0 50.0 50.0 50.0	94.4 93.7 95.1 94.8 94.0 101 93.8 102 85.4	85 - 115 85 - 115



Client: E2 Consulting Engineers, Inc.

Molybdenum

Project Name: PG&E Topock Project

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Project Number: 428648.IM.CS.EX.AC

Matrix Spike						Lab ID = 812966-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	2.00	58.3	62.0(50.0)	92.7	75 - 125
Beryllium	ug/L	2.00	40.7	50.0(50.0)	81.4	75 - 125
Cadmium	ug/L	2.00	41.0	50.0(50.0)	82.0	75 - 125
Cobalt	ug/L	2.00	45.5	50.0(50.0)	91.0	75 - 125
Mercury	ug/L	2.00	4.37	5.00(5.00)	87.5	75 - 125
Selenium	ug/L	2.00	47.8	54.2(50.0)	87.3	75 - 125
Antimony	ug/L	2.00	47.2	50.0(50.0)	94.5	75 - 125
Copper	ug/L	2.00	46.0	50.0(50.0)	92.0	75 - 125
Lead	ug/L	2.00	42.4	50.0(50.0)	84.8	75 - 125
Silver	ug/L	2.00	42.9	50.0(50.0)	85.8	75 - 125
Thallium	ug/L	2.00	39.3	50.0(50.0)	78.6	75 - 125
Manganese	ug/L	2.00	48.0	54.3(50.0)	87.3	75 - 125
Molybdenum	ug/L	2.00	63.2	68.7(50.0)	89.0	75 - 125
Matrix Spike Duplicate						Lab ID = 812966-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Barium	ug/L	2.00	56.4	62.0(50.0)	88.8	75 - 125
Beryllium	ug/L	2.00	40.3	50.0(50.0)	80.5	75 - 125
Cadmium	ug/L	2.00	40.3	50.0(50.0)	80.6	75 - 125
Cobalt	ug/L	2.00	44.4	50.0(50.0)	88.8	75 - 125
Mercury	ug/L	2.00	4.28	5.00(5.00)	85.7	75 - 125
Selenium	ug/L	2.00	46.4	54.2(50.0)	84.4	75 - 125
Antimony	ug/L	2.00	45.9	50.0(50.0)	91.9	75 - 125
Copper	ug/L	2.00	47.6	50.0(50.0)	95.2	75 - 125
Lead	ug/L	2.00	41.2	50.0(50.0)	82.3	75 - 125
Silver	ug/L	2.00	41.8	50.0(50.0)	83.6	75 - 125
Thallium	ug/L	2.00	38.7	50.0(50.0)	77.5	75 - 125
	ug/L	2.00	30.7	30.0(30.0)	77.0	10 - 120
Manganese	ug/L	2.00	48.6	54.3(50.0)	88.7	75 - 125

62.0

68.7(50.0)

86.7

75 - 125

2.00

ug/L



Molvbdenum

Report Continued

Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Page 34 of 38

Project Number: 428648.IM.CS.EX.AC Printed 4/28/2014

Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range Silver 1.00 19.4 ua/L 20.0 97.0 80 - 120 Interference Check Standard AB DF Parameter Unit Result Expected Recovery Acceptance Range Thallium ua/L 1.00 ND 0 Interference Check Standard AB DF Parameter Unit Result Expected Recovery Acceptance Range Thallium ug/L 1.00 ND Manganese 1.00 19.1 20.0 95.5 ug/L 80 - 120 Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range Manganese ug/L 1.00 20.9 20.0 105 80 - 120 Molybdenum 1.00 ND 0 ug/L Interference Check Standard AB Parameter Unit DF Result Expected Recovery Acceptance Range Molybdenum ug/L 1.00 ND 0 Lab ID = 812966-002 Serial Dilution DF Parameter Unit Result Expected **RPD** Acceptance Range Barium ug/L 10.0 28.6 27.6 3.66 0 - 10Serial Dilution Lab ID = 812967-010 **RPD** Parameter Unit DF Result Expected Acceptance Range

29.1

ug/L

25.0

29.0

0.327

0 - 10



Client: E2 Consulting Engineers, Inc.

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Metals by EPA 200.8, Parameter		Unit		042514A	DE	NAID1	DΙ	Danill
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	lyzed	DF	MDL	RL	Result
812966-001 Copper		ug/L			1.00	0.190	1.0	ND
812966-002 Copper		ug/L	04/25	/2014 13:17	1.00	0.190	1.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Copper	ug/L	1.00	ND					
Duplicate							Lab ID =	812966-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Copper	ug/L	1.00	ND	0		0	0 - 20	
Low Level Calibrati	ion Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	0.763	1.00		76.3	70 - 130)
Lab Control Sample	e							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	50.3	50.0		101	85 - 11	5
Matrix Spike							Lab ID =	812966-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	49.8	50.0(50.0)		99.5	75 - 12	5
Matrix Spike Duplic	cate						Lab ID =	812966-001
Parameter	Unit	DF	Result	Expected/Add	ed F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	42.0	50.0(50.0)		83.9	75 - 12	5
MRCCS - Seconda	ıry							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	20.0	20.0		100.	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Copper	ug/L	1.00	18.9	20.0		94.5	90 - 110	_
Interference Check	Standard A							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0		•		J
Interference Check	Standard A							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0	-	•	- 1	3-



Total Dissolved Solids by SM 2540 C

Parameter

Report Continued

Client: E2 Consulting Engineers, Inc. Project Name:

PG&E Topock Project

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Result

Project Number: 428648.IM.CS.EX.AC

DF

MDL

RL

Printed 4/28/2014

Interference Che	ck Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	18.0	20.0	90.2	80 - 120
Interference Che	ck Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	19.5	20.0	97.3	80 - 120

Unit

Batch 04TDS14C

Analyzed

812966-001 Total Dissolved	Solids	mg/L	04/14	/2014	1.00	1.76	125	4440
812966-002 Total Dissolved	Solids	mg/L	04/14	/2014	1.00	1.76	125	4620
812966-003 Total Dissolved	Solids	mg/L	04/14	/2014	1.00	1.76	833	27500
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	812966-001
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result 4330	Expected 4440	F	RPD 2.51	0 - 10	ance Range 812966-003
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 27900	Expected 27500	F	RPD 1.32	Accept 0 - 10	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 499	Expected 500	F	Recovery 99.8	Accept 90 - 11	ance Range 0



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Ammonia Nitrogen by SN	/14500-NH	I3D	Batch	04NH314A				
Parameter		Unit	Ana	lyzed I)F	MDL	RL	Result
812966-001 Ammonia as N		mg/L	04/16	i/2014 1	.00	0.0318	0.500	ND
812966-002 Ammonia as N		mg/L	04/16	5/2014 1	.00	0.0318	0.500	ND
Method Blank	vo v korvetení boy (
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	8.72	8.00		109	90 - 110	
Lab Control Sample Do	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Rang
Ammonia as N	mg/L	1.00	8.32	8.00		104	90 - 110	1
Matrix Spike							Lab ID =	812967-00 [,]
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	9.80	10.0(10.0)		98.0	75 - 125	ı
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	5.98	6.00		99.7	90 - 110	ı
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.17	6.00		103	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	6.42	6.00		107	90 - 110	



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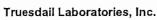
Turbidity by SM 2130 B			Batch	04TUB14F				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
812966-001 Turbidity		NTU	04/08	3/2014	1.00	0.0140	0.100	ND
812966-002 Turbidity		NTU	04/08	3/2014	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	812956-004
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	0.141	0.158		11.4	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.16	8.00		102	90 - 110)
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.22	8.00		103	90 - 110)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services





3

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS14C
Date Analyzed: 4/14/2014

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	79.0554	79.0556	79.0555	0.0001	No	0.0001	1.0	25.0	ND	1
812966-1	20	28.8877	28.9770	28.9766	0.0004	No	0.0889	4445.0	125.0	4445.0	1
812966-2	20	30.5001	30.5926	30.5925	0.0001	No	0.0924	4620.0	125.0	4620.0	1
812966-3	3	29.2834	29.3661	29,3660	0.0001	No	0.0826	27533.3	833.3	27533.3	1
812967-1	20	28.8149	28.9058	28.9053	0.0005	No	0.0904	4520.0	125.0	4520.0	1
812967-2	20	28.5920	28.6805	28.6801	0.0004	No	0.0881	4405.0	125.0	4405.0	11
812967-3	20	28.8540	28.9420	28.9418	0.0002	No	0.0878	4390.0	125.0	4390.0	1
812967-4	20	29.3961	29.4832	29.4830	0.0002	No	0.0869	4345.0	125.0	4345.0	1
812967-5	20	28.4726	28.5611	28.5607	0.0004	No	0.0881	4405.0	125.0	4405.0	1
812967-6	20	29.3281	29.4189	29.4189	0.0000	No	0.0908	4540.0	125.0	4540.0	1
812967-7	20	28.8877	28.9826	28.9826	0.0000	No	0.0949	4745.0	125.0	4745.0	1
812966-1 Dup	20	29.3764	29.4633	29.4630	0.0003	No	0.0866	4330.0	125.0	4330.0	1
LCS	100	69.7928	69.8431	69.8427	0.0004	No	0.0499	499.0	25.0	499.0	1
812967-8	20	28.6296	28.7122	28.7120	0.0002	No	0.0824	4120.0	125.0	4120.0	1
812967-9	20	29.5519	29.6368	29.6368	0.0000	No	0.0849	4245.0	125.0	4245.0	1
812967-10	50	51.9142	51.9715	51.9712	0.0003	No	0.0570	1140.0	50.0	1140.0	1
812967-11	50	50.4824	50.6119	50.6118	0.0001	No	0.1294	2588.0	50.0	2588.0	1
812967-14	10	30.4193	30.4737	30.4735	0.0002	No	0.0542	5420.0	250.0	5420.0	1
812967-15	50	51.4982	51.5572	51.5569	0.0003	No	0.0587	1174.0	50.0	1174.0	1
812969-1	20	28.7834	28,8373	28.8373	0.0000	No	0.0539	2695.0	125.0	2695.0	1
812969-2	10	30.1415	30.1936	30.1936	0.0000	No	0.0521	5210.0	250.0	5210.0	1
813001-1 ·	100	66.7875	66.8365	66.8362	0.0003	No	0.0487	487.0	25.0	487.0	11
813001-2	100	79.4964	79.5455	79.5453	0.0002	No	0.0489	489.0	25.0	489.0	1
812966-3 Dup	3	30.4361	30.5197	30.5197	0.0000	No	0.0836	27866.7	833.3	27866.7	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Eastratory Control Campio (200) Cambridge								
QC SId I.D.	Measurd Value, ppm	Theorelical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?			
LCS	499.0	500	99.8%	90-110%	Yes			
LCSD								

Duplicate Determinations Difference Summary

Lab Number	Sample Welght, g	Sample Dup Welght, g	% RPD	Acceptance Limit	QC Within Control?
812966-1	0.0889	0.0866	1.3%	≤5%	Yes
812966-3	0.0826	0.0836	0.6%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS14C Date Analyzed: 4/14/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
812966-1	6850	0.65	4452.5	1.00
812966-2	6910	0.67	4491.5	1.03
812966-3	35900	0.77	23335	1.18
812967-1	6850	0.66	4452.5	1.02
812967-2	6680	0.66	4342	1.01
812967-3	6810	0.64	4426.5	0.99
812967-4	6810	0.64	4426.5	0.98
812967-5	6910	0.64	4491.5	0.98
812967-6	8220	0.55	5343	0.85
812967-7	6800	0.70	4420	1.07
812966-1 Dup	6850	0.63	4452.5	0.97
LCS				
812967-8	6510	0.63	4231.5	0.97
812967-9	5810	0.73	3776.5	1.12
812967-10	2050	0.56	1332.5	0.86
812967-11	3890	0.67	2528.5	1.02
812967-14	8260	0.66	5369	1.01
812967-15	2050	0.57	1332.5	0.88
812969-1	4150	0.65	2697.5	1.00
812969-2	7810	0.67	5076.5	1.03
813001-1	885	0.55	575.25	0.85
813001-2	827	0.59	537.55	0.91
812966-3 Dup	35900	0.78	23335	1.19







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

HAIN OF CUSTODY RECOR

Rec'd 04/07/14

8 1 2 9 6 6

TURNAROUND TIME 10 Days

DATE 04/08/14 PAGE 1 OF 1

																							-
COMPANY	CH2M HILL /E2		:				7	/,	(45.1)	7	/	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	NO ₁₅	$\overline{}$	/	/	7	7	7		7	COMMENT	s
PROJECT NAME	PG&E Topock I	M3						/ 2	*/			ist			/							COMMENT	
PHONE	530-229-33	303	FAX 530	-339-3303		,	/ /	200.8	/ /	/ ,	/ /	See List	/ /	/ /	, δ /	/ ,	/ ,	/	/ ,	/ / /	7		
ADDRESS	155 Grand Ave	Ste 1000) ig	V.'.			/ 6	જે /	/		S /		_ /			FRS			
	Oakland, CA 94						List (20	<u> </u>			30,		?/	, AO3		8		$\cdot /$		N. N.			
P.O. NUMBER	428648.IM.C8.	EX.AC) ;			Lab	S Lisi		/_ ,	/ ,	8	00	16/).0).F.	/ /	300.	, (4500-NO2B) , (4500-NO2B)		/	R OF CONTAINERS			
				-	/	78.6	letal.	=/	Turb (2)	6	s/s/.	\$ / B	90.	70C (534.	$\frac{5}{2}$) / _E				6			
SAMPLERS (SIGNA	ATURE		· · · · · · · · · · · · · · · · · · ·		/ 🖹	%\ [%]	EC (13)	0 (5	7urb (2,				Anions				£/						
SAMPLE I.D.		DATE	TIME	DESCRIPTION	\\\	71tle 22 (218.6) Lab Fill	EC (13)	/8		7ofal	Ammon; (200.7, 200	\	Anions (300.0) F	/8/	Total Mes	/\$′		/	NUMBE				
SC-700B-V	VDR-462	04/08/14	1405		X		Х	Х	Х	Х	Х		Х			Х			4	PH=	2))	
SC-100B-V	VDR-462	04/08/14	1418		Х		Х	Х	Х	Х	Х		Х			Χ			4	AH-	7 {	200.7/20	ולה מ
SC-701-W	DR-462	04/08/14	1409		X	Х	Х	Х				Х			х				4	sH: 2	/		
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				AICO			MACON MANUAL PROPERTY OF	Not a supplied and a															
				Address and the second		E) D)		12. 6	ia	MI	ole	C	or	d	tid	m:	ŝ						- University of the Control of the C
		L		evell		Q		-				-	-	ich	-		I		12	TOTAL NU	MBER	OF CONTAINS	ERS
			. disconnection and or		a and proceedings		4		6				FFC			A		1					

CH	IAIN OF CUSTODY SI	GNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished)	Printed Name hypen Phelps	Company/ Agency CH2MHILL	Date/ 4-8-14 Time /528	received cool \bowtie warm \square 5.2%
Signature (Received) Charles	Printed Name 7 HANH NGC	Company	Date/ 4 - 8 - 14 Time 5 30	CUSTODY SEALED YES NO A
(Relinquished) Juan Mgo	Printed	Company/ Agency TO UZCDA/	Date/ 4 - 8 - 14 Time 2007	SPECIAL REQUIREMENTS:
Signature (Received) and Deader	Printed Name Marcheal Front	Company/ Agency 12/	Date/ 48/14@2005	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Signature/ (Relinquished)	Printed Name	Company/ Agency	Date/ Time	,,, =
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
3,26/19	8/2753	7.00	2ml/100ml	9.5	7.30	NE
419114	812966-1	7.00	2 hl/ 100 ml	9.5	7:20	NZ
	-2					
	√ -3	1	\bigvee		V	
	812967-1	9.5	~1.7	NIA	NA	
	-2			1		
	~3					
	-5		·			
	- 6					
	-7					
	-3					
	-8 -9					
	-13					
·	-11			ļ		
	-12					
	-13					
	-19					
	V -15					
	812968 CS	(E) V	V			↓
	812969-1		2 ml/100 ml	9.5	7:20	NL
V	V -2	1	Ĺ		()	1
			Marine Marine 1 (Marine 1) (Marine 1) (Marine 1) (Marine 1) (Marine 1) (Marine 1) (Marine 1) (Marine 1)	CHICAGO AND AND AND AND AND AND AND AND AND AND		
					L	

M2 4114114

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



Turbidity/pH Check

			Turbi	dity/pH (Check			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
817.829	フし	42	4/3/14-	157	Yes			
412830	>1	<2			j			
8175833 (4)	>1			v				
(Eli 70 / cm	:	<z< td=""><td></td><td></td><td></td><td></td><td></td><td></td></z<>						
812849-4 812851 (1-2)	71	<2	1	1				
817851 (1-2)	>1	42		,	200			
812852	フリ	<2	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Ý	V			
817218	71	<z< td=""><td>4/3/14</td><td>KD</td><td>Yes</td><td></td><td></td><td></td></z<>	4/3/14	KD	Yes			
817878 817.820	21	22	1					******
817821	>1	ZZ_			_ _			
817823	<1	>2	V.	4	NO	1110	धीपीप गरः ७०	PHZZ
617859	<1	27	4/4/14	KD	NB			
812859	71	<2_	,		Yes			
812866	>1	77	L .	6 441	EVery			
812912	71	42	417114	ES	Yes			
812922	41	47	1		11			
8/2 923(1-4)	フリ	22	V	4	<u> </u>			
9 2929(1-2)	71	L2	4/8/14	ES	No			
812977-6	21	77	1,1,	1		10:10		
812947(1,2,4)	21	'>2	4/8/14	IRI>	NO	1305		
112944	41	42	4/9/14	ES_	y-es_			
812945	_\V_							
812946	フリ							
812947	1							
812949	41							
812950	1			_				
812951								
412952								
812953				-				
812959		<u>V</u>			No	11:00		-
812965(1-2)) 21	72	4/9/14	占	Yes	11.00		
812967(1-11,14-15	41	L2 L2	419114	<u> </u>	1-0>			
812966(1,3)	<u> </u>	72	11			1703		off 12
		12						PH LZ ilteredtken ficio
812969(1-2)	/ 1	7.7	4/10/14	KD	NO	1:00		- 11 was men full
812984/10-12	Tojuda	77	7 110114	1		1220		
812991	71 spect	22		- 1	Yes			
812993 (4)	71	72			Yes Yes			
\$12986 (1,2)		フン			16	1770		
SIZON (1,0)	2	72			NO	1270		
813007 (1-4)	21	<z< td=""><td></td><td></td><td>Yes</td><td>)V</td><td></td><td></td></z<>			Yes)V		
	21	27			Var			
813004	21	<z <z< td=""><td></td><td>V</td><td>Yes</td><td></td><td></td><td></td></z<></z 		V	Yes			
012004	`	_	V/		100			

Notes:

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





Sample Integrity & Analysis Discrepancy Form

Cli	ent: <u>E 2</u>	Lab # <u> </u>
Dat	re Delivered:0 <u>Y</u> / <u>08</u> / 14 Time: <u>∆0:05</u> By: □Mail 女F	Field Service
1.	Was a Chain of Custody received and signed?	ŹYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes ÆNo □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 ⋳NA
5 .	Were all requested analyses understood and acceptable?	AYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? $\underline{\mathcal{S}.\ \mathcal{L}^{\circ}\mathbf{C}}$	ŻaYes □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?	□Yes □No ÆN/A
9.	Does the number of samples received agree with COC?	ØYes □No □N/A
10.	Did sample labels correspond with the client ID's?	₫Yes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □ Client	MaYes □No □N/A
12.	Were samples pH checked? $pH = Sell.O.C.$	⊠Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	tiγes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH 🖆 Std	ØYes □No □N/A
15.	Sample Matrix: □ Liquid □ Drinking Water □ Ground V □ Sludge □ Soil □ Wipe □ Paint □ Solid □ Y	
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda





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

April 29, 2014

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-462 PROJECT, SLUDGE

MONITORING,

TLI No.: 812968

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-462 project sludge monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 8, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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

The internal standard for Total Beryllium by SW 6020A analyzed at a 5x dilution was outside the recovery limits of 70% - 130% as a result of matrix interference. Therefore, the result from the 2x dilution by SW 6010B was reported. Due to the dilution, the reporting limit for Total Beryllium exceeded the Contract Required Detection Limit and the result was below the reporting limit. All other QA/QC were within acceptable limits.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

√ Mona Nassimi

Manager, Analytical Services

Mirlead Ate

Michael Ngo

Quality Assurance/Quality Control Officer

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 812968 Date: April 29, 2014

Collected: April 8, 2014 Received: April 8, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 300.0	Anions	Giawad Ghenniwa
SM 2540 B	% Moisture	Himani Vaishnav
SW 6010B	Metals by ICP	Ethel Suico
SW 6020A	Metals by ICP/MS	Ethel Suico
SW 7199	Hexavalent Chromium	Naheed Eidinejad

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Laboratory No.: 812968 Date Received: April 8, 2014

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

<u>Lab I.D.</u>	Sample I.D.	Sample Time	<u>SW 7199</u> Hexavalent Chromium	EPA 300.0 Fluoride	SM 2540 B % Moisture	
			mg/kg	mg/kg	%	
812968	SC-Sludge-WDR-	462 14:15	49.2	22.5	56.9	

ND: Non Detected (below reporting limit)

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

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

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

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



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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC
P.O. No.: PGEIM11111001

Laboratory No.: 812968

Date Received: April 8, 2014

Analytical Results Summary

METALS ANALYSIS:

Total Metal Analyses as Requested

Lab I.D.	I Sample ID	Date of Analysis: Time Coll.		Antimony SW 6020A 04/24/14 mg/kg	Arsenic SW 6010B 04/15/14 mg/kg	Barium SW 6010B 04/15/14 mg/kg	Beryllium SW 6010B 04/15/14 mg/kg	Cadmium SW 6010B 04/15/14 mg/kg	Chromium SW 6010B 04/15/14 mg/kg	Cobalt SW 6010B 04/16/14 mg/kg	Copper SW 6010B 04/15/14 mg/kg	Lead SW 6020A 04/24/14 mg/kg
812968	SC-Sludge-WDR-	462 14:15		ND	ND	59.2	ND	4.29	2480	ND	35.1	ND
Lab I.D.	I Sample ID	Date of Analysis: Time Coll.	Manganese SW 6010B 04/15/14 mg/kg	Mercury SW 6020A 04/18/14 mg/kg	Molybdenum SW 6010B 04/15/14 mg/kg	Nickel SW 6010B 04/15/14 mg/kg	Selenium SW 6010B 04/15/14 mg/kg	Silver SW 6020A 04/24/14 mg/kg	Thallium SW 6020A 04/24/14 mg/kg	Vanadium SW 6010B 04/15/14 mg/kg	Zinc SW 6010B 04/16/14 mg/kg	
812968	SC-Sludge-WDR-	-462 14:15	252	ND	ND	19.5	ND	ND	ND	30.7	24.9	

NOTES:

ND: Not detected, or below limit of detection

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

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC
P.O. No.: PGEIM11111001

Prep. Batch: 04CrH14B1

Laboratory No.: 812968

Date: April 29, 2014 Collected: April 8, 2014

Received: April 8, 2014

Prep/ Analyzed: April 25, 2014 Analytical Batch: 04CrH14B1

Investigation:

Hexavalent Chromium by IC Using Method SW 7199

Analytical Results Hexavalent Chromium

TLI I.D. Field I.D. Sample Time **Run Time Units** DF RL Results 4.64 812968 SC-Sludge-WDR-462 14:15 12:45 mg/kg 5.00 49.2

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	812968	49.2	48.9	0.59%	<u><</u> 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	812968	49.2	10.0	18.6	18.6	70.2	67.7	113%	75-125%	Yes
IMS	812968	49.2	100	2746	2746	2600	2795	92.9%	75-125%	Yes
PDMS	812968	49.2	10.0	18.6	186	227	235	95.9%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.400		<0.400	Yes
MRCCS	2.07	2.00	104%	90% - 110%	Yes
MRCVS#1	2.18	2.00	109%	90% - 110%	Yes
LLCS	0.0110	0.0100	110%	70% - 130%	Yes
LCS	2.10	2.00	105%	80% - 120%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

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

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Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001

REPORT

Laboratory No.: 812968

Date: April 29, 2014 Collected: April 8, 2014 Received: April 8, 2014 Prep/ Analyzed: April 15, 2014

Analytical Batch: 04SOLID14A

Investigation:

Total Solids by SM 2540 B

Analytical Results % Moisture

TLI I.D. Field I.D.

Sample Time

<u>Units</u>

Results

812968

SC-Sludge-WDR-462

14:15

%

56.9

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	812968	56.9	55.6	2.21%	<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

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.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001

Laboratory No.: 812968

Date: April 29, 2014

Collected: April 8, 2014 Received: April 8, 2014

Prep/ Analyzed: April 9, 2014

Acceptance | QC Within

Analytical Batch: 04AN14H

Investigation:

Fluoride by Ion Chromatography using EPA 300.0

Analytical Results Fluoride

TLI I.D.	Field I.D.	Sample Time	Run Time	<u>Units</u>	DF	<u>RL</u>	Results
812968	SC-Sludge-WDR-462	14:15	14:02	mg/kg	1.00	4.64	22.5

QA/QC Summary

Relative

		QCSIL) I.D.	Number	Concentra	ation	Conc	entration	Percent Difference	limits	Control	
		Duplic	ate	812966-2	2.30			2.27	1.66%	≤ 20%	Yes	
	QC Std I.D.	Lab Number	Conc.o unspike sample	d Dilution Factor	Added Spike Conc.		MS nount	Measured Conc. of spiked sample	Theoretica Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
I	MS	812966-2	2.30	5.00	4.00	:	20.0	21.8	22.3	97.4%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
Blank	ND	<0.500		<0.500	Yes
MRCCS	4.14	4.00	103%	90% - 110%	Yes
MRCVS#1	3.04	3.00	101%	90% - 110%	Yes
MRCVS#2	3.05	3.00	102%	90% - 110%	Yes
MRCVS#3	3.03	3.00	101%	90% - 110%	Yes
MRCVS#4	3.05	3,00	102%	90% - 110%	Yes
MRCVS#5	3.08	3.00	103%	90% - 110%	Yes
MRCVS#6	3.05	3.00	102%	90% - 110%	Yes
LCS	3.97	4.00	99.2%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

💤 / Mona Nassimi, Manager Analytical Services

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Laboratory No.: 812968

Reported: April 29, 2014 Collected: April 8, 2014 Received: April 8, 2014 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.: 428648.IM.CS.EX.AC
P.O. No.: PGEIM11111001

Investigation: Total Metal Analyses as Requested

Analytical Results

REPORT

SAMPLE ID:	SC-Sludge-WDR-462	Time Co	llected:	14:15		LAB	ID: 812968	
		Reported					Date	Time
Parameter	Method	Value	DF	Units	RL	Batch	Analyzed	Analyzed
Antimony	SW 6020A	ND	5.00	mg/kg	5.00	042414A	04/24/14	18: 2 3
Arsenic	SW 6010B	ND	2.00	mg/kg	5.00	041514A-Th2	04/15/14	20:32
Barium	SW 6010B	59.2	2.00	mg/kg	10.0	041514A-Th2	04/15/14	20:32
Beryllium	SW 6010B	ND	2.00	mg/kg	2.15	041514A-Th2	04/15/14	20:32
Cadmium	SW 6010B	4.29	2.00	mg/kg	2.15	041514A-Th2	04/15/14	20:32
Chromium	SW 6010B	2480	5.0	mg/kg	5.37	041514A-Th2	04/15/14	19:08
Cobalt	SW 6010B	ND	5.00	mg/kg	10.0	041614A-Th2	04/16/14	14:32
Copper	SW 6010B	35.1	2.00	mg/kg	8.58	041514A-Th2	04/15/14	20:32
Lead	SW 6020A	ND	5.00	mg/kg	5.00	042414A	04/24/14	18:23
Manganese	SW 6010B	252	2.00	mg/kg	8.58	041514A-Th2	04/15/14	20:32
Mercury	SW 6020A	ND	5.00	mg/kg	0.107	041814A	04/18/14	19:50
Molybdenum	SW 6010B	ND	2.00	mg/kg	10.0	041514A-Th2	04/15/14	20:32
Nickel	SW 6010B	19.5	2.00	mg/kg	5.00	041514A-Th2	04/15/14	20:32
Selenium	SW 6010B	ND	2.00	mg/kg	5.00	041514A-Th2	04/15/14	20:32
Silver	SW 6020A	ND	5.00	mg/kg	5.00	042414A	04/24/14	18:23
Thallium	SW 6020A	ND	5.00	mg/kg	5.00	042414A	04/24/14	18:23
Vanadium	SW 6010B	30.7	2.00	mg/kg	5.00	041514A-Th2	04/15/14	20:32
Zinc	SW 6010B	24.9	5.00	mg/kg	10.7	041614A-Th2	04/16/14	14:32

NOTES:

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

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager Analytical Services

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

Oakland, CA 94612

Attention: Shawn Duffy
Samples: One (1) Soil Sample
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC
P.O. No.: PGEIM11111001

Laboratory No.: 812968 Reported: April 29, 2014 Collected: April 8, 2014 Received: April 8, 2014

Quality Control/Quality Assurance Report

			DIGES	TED BLANK		MRCCS				MRCVS			
						Observed	TRUE	%	Control	Observed	TRUE	_%	Control
Parameter	Method	Batch	Units	Blank	RL	Value	Value	Rec	Limits	Value	Value	Rec	Limits %
Antimony	SW 6020A	042414A	mg/kg	ND	5.00	0.0192	0.0200	96.1%	90-110%	0.0190	0.0200	95.1%	90-110%
Arsenic	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.15	5.00	103%	90-110%	4.69	5.00	93.8%	90-110%
Barium	SW 6010B	041514A-Th2	mg/kg	ND	10.0	4.93	5.00	98.6%	90-110%	5.19	5.00	104%	90-110%
Beryllium	SW 6010B	041514A-Th2	mg/kg	ND	1.00	5.02	5.00	100%	90-110%	4.98	5.00	99.6%	90-110%
Cadmium	SW 6010B	041514A-Th2	mg/kg	ND	1.00	5.23	5.00	105%	90-110%	4.88	5.00	97.5%	90-110%
Chromium	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.13	5.00	103%	90-110%	5.26	5.00	105%	90-110%
Cobalt	SW 6010B	041614A-Th2	mg/kg	ND	10.0	5.08	5.00	102%	90-110%	4.84	5.00	96.9%	90-110%
Copper	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.12	5.00	102%	90-110%	4.99	5.00	99.8%	90-110%
Lead	SW 6020A	042414A	mg/kg	ND	5.00	0.0198	0.0200	99.2%	90-110%	0.0198	0.0200	99.1%	90-110%
Manganese	SW 6010B	041514A-Th2	mg/kg	ND	4.00	5.05	5.00	101%	90-110%	4.99	5.00	99.8%	90-110%
Mercury	SW 6020A	041814A	mg/kg	ND	0.100	0.00192	0.00200	96.1%	90-110%	0.00198	0.00200	98.9%	90-110%
Molybdenum	SW 6010B	041514A-Th2	mg/kg	ND	10.0	5.00	5.00	99.9%	90-110%	5.16	5.00	103%	90-110%
Nickel	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.11	5.00	102%	90-110%	4.94	5.00	98.8%	90-110%
Selenium	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.22	5.00	104%	90-110%	5.02	5.00	100%	90-110%
Silver	SW 6020A	042414A	mg/kg	ND	5.00	0.0196	0.0200	97.9%	90-110%	0.0196	0.0200	98.0%	90-110%
Thallium	SW 6020A	042414A	mg/kg	ND	5.00	0.0198	0.0200	98.8%	90-110%	0.0200	0.0200	100%	90-110%
Vanadium	SW 6010B	041514A-Th2	mg/kg	ND	5.00	5.04	5.00	101%	90-110%	5.50	5.00	110%	90-110%
Zinc	SW 6010B	041614A-Th2	mg/kg	ND	10.0	5.22	5.00	104%	90-110%	4.96	5.00	99.3%	90-110%



INTERFERENCE C	HECK	STANDARD	(ICS A+B #1)	

INTERFERENCE CHECK STANDARD (ICS A+B #2)

Parameter	Method	Units	ICS	ICS	%	Control	ı	cs	ICS	%	Control
			Obs.	Theo.	Rec.	Limits	C	bs.	Theo.	Rec.	Limits
Arsenic	SW 6010B	mg/kg	2.01	2.00	101%	80-120%	1	.88	2.00	94.2%	80-120%
Cadmium	SW 6010B	mg/kg	2.09	2.00	104%	80-120%	1	.97_	2.00	98.7%	80-120%
Chromium	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2	2.12	2.00	106%	80-120%
Cobalt	SW 6010B	mg/kg	2.04	2.00	102%	80-120%	2	2.04	2.00	102%	80-120%
Copper	SW 6010B	mg/kg	2.07	2.00	103%	80-120%	2	2.06	2.00	103%	80-120%
Manganese	SW 6010B	mg/kg	2.04	2.00	102%	80-120%	2	2.02	2.00	101%	80-120%
Mercury	SW 6020A	mg/kg	0.00194	0.00200	97.1%	80-120%	0.0	00193	0.00200	96.4%	80-120%
Nickel	SW 6010B	mg/kg	2.08	2.00	104%	80-120%	2	2.02	2.00	101%	80-120%
Silver	SW 6020A	mg/kg	0.0204	0.0200	102%	80-120%	0.	0206	0.0200	103%	80-120%
Zinc	SW 6010B	mg/kg	2.09	2.00	105%	80-120%	2	2.15	2.00	108%	80-120%

LABORATORY CONTROL SAMPLES

SAMPLE DUPLICATES

		.,	:								Precision
Parameter	Method	Units	LCS	LCS	%	Control	SAMPLE	SAMPLE	DUP	%	Control
			Obs.	Theo.	Rec.	Limits	ID	RESULT	RESULT	RPD	Limits %
Antimony	SW 6020A	mg/kg	0.0481	0.0500	96.2%	85-115%	812968	ND	ND	0.00%	≤20
Arsenic	SW 6010B	mg/kg	1.99	2.00	99.6%	85-115%	812968	ND	ND	0.00%	≤20
Barium	SW 6010B	mg/kg	2.07	2.00	103%	85-115%	812968	59.2	59.5	0.63%	≤20
Beryllium	SW 6010B	mg/kg	2.05	2.00	103%	85-115%	812968	ND	ND	0.00%	≤20
Cadmium	SW 6010B	mg/kg	2.04	2.00	102%	85-115%	812968	4.29	4.30	0.11%	≤20
Chromium	SW 6010B	mg/kg	2.11	2.00	105%	85-115%	812968	2480	2440	1.63%	≤20
Cobalt	SW 6010B	mg/kg	2.09	2.00	105%	85-115%	812968	ND	ND	0.00%	≤20
Copper	SW 6010B	mg/kg	2.07	2.00	103%	85-115%	812968	35.1	33.4	4.87%	≤20
Lead	SW 6020A	mg/kg	0.0495	0.0500	98.9%	85-115%	812968	ND	ND	0.00%	≤20
Manganese	SW 6010B	mg/kg	2.06	2.00	103%	85-115%	812968	252	252	0.13%	≤20
Mercury	SW 6020A	mg/kg	0.00498	0.00500	99.6%	85-115%	812968	ND	ND	0.00%	≤20
Molybdenum	SW 6010B	mg/kg	2.04	2.00	102%	85-115%	812968	ND	ND	0.00%	≤20
Nickel	SW 6010B	mg/kg	2.03	2.00	102%	85-115%	812968	19.5	19.3	0.87%	≤20
Selenium	SW 6010B	mg/kg	2.09	2.00	105%	85-115%	812968	ND	ND	0.00%	≤20
Silver	SW 6020A	mg/kg	0.0486	0.0500	97.2%	85-115%	812968	ND	ND	0.00%	≤20
Thallium	SW 6020A	mg/kg	0.0494	0.0500	98.8%	85-115%	812968	ND	ND	0.00%	≤20
Vanadium	SW 6010B	mg/kg	2.14	2.00	107%	85-115%	812968	30.7	30.7	0.08%	≤20
20 c	SW 6010B	mg/kg	2.12	2.00	106%	85-115%	812968	24.9	23.7	4.96%	≤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.



TR			

				Sample		Spike	Total Amt.	Theo.	MS	%	Control
Sample ID	Parameter	Method	Units	Result	DF	Level	of Spike	Value	Obs.	Rec.	Limits %
812968	Antimony	SW 6020A	mg/kg	0.00	5.00	1.10	5.48	5.48	5.86	107%	75-125%
812968	Arsenic	SW 6010B	mg/kg	0.00	2.00	90.2	180	180	161	89.4%	75-125%
812968	Barium	SW 6010B	mg/kg	59.2	2.00	90.2	180	240	258	110%	75-125%
812968	Beryllium	SW 6010B	mg/kg	0.00	2.00	90.2	180	180	202	112%	75-125%
812968	Cadmium	SW 6010B	mg/kg	4.29	2.00	90.2	180	185	162	87.4%	75-125%
812968	Chromium	SW 6010B	mg/kg	2480	5.00	215	1073	3553	3510	96.0%	75-125%
812968	Cobalt	SW 6010B	mg/kg	0.00	5.00	36.1	180	180	166	92.0%	75-125%
812968	Copper	SW 6010B	mg/kg	35.1	2.00	90.2	180	216	208	96.1%	75-125%
812968	Lead	SW 6020A	mg/kg	0.00	5.00	1.10	5.48	5.48	6.22	114%	75-125%
812968	Manganese	SW 6010B	mg/kg	252	2.00	90.2	180	432	411	88.0%	75-125%
812968	Mercury	SW 6020A	mg/kg	0.00	5.00	0.110	0.548	0.548	0.541	98.8%	75-125%
812968	Molybdenum	SW 6010B	mg/kg	0.00	2.00	90.2	180	180	185	103%	75-125%
812968	Nickel	SW 6010B	mg/kg	19.5	2.00	90.2	180	200	175	86.2%	75-125%
812968	Selenium	SW 6010B	mg/kg	0.00	2.00	90.2	182	182	157	86.5%	75-125%
812968	Silver	SW 6020A	mg/kg	0.00	5.00	1.10	5.48	5.48	5.29	96.6%	75-125%
812968	Thallium	SW 6020A	mg/kg	0.00	5.00	1.10	5.48	5.48	5.89	108%	75-125%
812968	Vanadium	SW 6010B	mg/kg	30.7	2.00	90.2	180	211	212	100%	75-125%
812968	Zinc	SW 6010B	mg/kg	24.9	5.00	36.1	180	205	203	98.9%	75-125%

MATRIX SPIKE DUPLICATE

				Sample		Spike	Total Amt.	Theo.	MS	%	Control
Sample ID	Parameter	Method	Units	Result	DF	Level	of Spike	Value	Obs.	Rec.	Limits %
812968	Antimony	SW 6020A	mg/kg	0.00	5.00	0.863	4.31	4.31	4.58	106%	75-125%
812968	Lead	SW 6020A	mg/kg	0.00	5.00	0.863	4.31	4.31	4.85	112%	75-125%
812968	Mercury	SW 6020A	mg/kg	0.00	5.00	0.0863	0.431	0.431	0.453	105%	75-125%
812968	Silver	SW 6020A	mg/kg	0.00	5.00	0.863	4.31	4.31	4.15	96.3%	75-125%
812968	Thallium	SW 6020A	mg/kg	0.00	5.00	0.863	4.31	4.31	4.65	108%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted, TRUESDAIL LABORATORIES, INC.

Accuracy

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Mona Nassimi, Manager Analytical Services

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Established 1931



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

Dry Weight Calculations

Date Calculated: 4/29/2014

						Sample I.D.	
	Sample			Sample		Reporting	Reporting
	Result			Result		Limit	Limit
	Wet	Dilution	% Moisture	Dry*	Reported	Wet	Dry
	Weight	Factor		Weight	Value	Weight	Weight
	mg/kg	T	%%	mg/kg	mg/kg	mg/kg	mg/kg
Fluoride	9.720		56.9	22.5428	22.5	2.00	4.64
I I a considerat Objective	24 2055		56.9	49.1802	49.2	2.00	4.64
Hexavalent Chromium	21.2055				48.9		4.64
Hexavalent Chromium - Dup	21.0817		56.9 56.9	48.8931 70.174	70.2	2.00 4.00	9.28
Hexavalent Chromium - MS	30.2577						92.8
Hexavalent Chromium - IMS	1119.574		56.9	2596.535	2600	40.0	
Hexavalent Chromium - PDMS	97.9037		56.9	227.060	227	4.00	9.28
Antimony	ND	5.00	56.9	ND	ND	0.2313	5.00
Arsenic	ND	2.00	56.9	ND	ND	1.8507	5.00
Barium	25.51	2.00	56.9	59.1632	59.2	1.8507	10.0
Beryllium	0.6834	2.00	56.9	1.5850	ND	0.9253	2.15
Cadmium	1.850	2.00	56.9	4.2906	4.29	0.9253	2.15
Chromium	1071	5.00	56.9	2483.8814	2480	2.3133	5.37
Cobalt	1.218	5.00	56.9	2.8248	ND	2.3133	10.0
Copper	15.14	2.00	56.9	35.1129	35.1	3.7013	8.58
Lead	ND	5.00	56.9	ND	ND	0.2313	5.00
Manganese	108.9	2.00	56.9	252.5627	252	3.7013	8.58
Mercury	0.027250	5.00	56.9	0.06320	ND	0.04627	0.107
Molybdenum	3.399	2.00	56.9	7.8830	ND	3.7013	10.0
Nickel	8.408	2.00	56.9	19.5000	19.5	0.9253	5.00
Selenium	ND	2.00	56.9	ND	ND	0.9253	5.00
Silver	ND	5.00	56.9	ND	ND	0.2313	5.00
Thallium	0.246427	5.00	56.9	0.5715	ND	0.2313	5.00
Vanadium	13.22	2.00	56.9	30.6600	30.7	0.9253	5.00
Zinc	10.75	5.00	56.9	24.9316	24.9	4.6266	10.7

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

where:

Sample_{ww} = Sample result in wet weight

Dry Weight Calculations

Date Calculated: 4/29/2014

	Sample			Sample		Reporting	Reporting
	Result			Result		Limit	Limit
	Wet	Dilution	% Moisture	Dry*	Reported	Wet	Dry
	Weight	Factor		Weight	Value	Weight	Weight
	mg/kg		%%	mg/kg	mg/kg	mg/kg	mg/kg
Sample Duplicate: 812968							
Antimony	ND	5.00	56.9	ND_	ND	0.2311	5.00
Arsenic	ND	2.00	56.9	ND	ND	1.8486	5.00
Barium	25.67	2.00	56.9	59.5343	59.5	1.8486	10.0
Beryllium	0.8250	2.00	56.9	1.9134	ND	0.9243	2.14
Cadmium	1.852	2.00	56.9	4.2952	4.30	0.9243	2.14
Chromium	1051	5.00	56.9	2437.4971	2440	2.3107	5.36
Cobalt	0.9779	5.00	56.9	2.2680	ND	2.3107	10.0
Copper	14.42	2.00	56.9	33.4431	33.4	3.6972	8.57
Lead	ND	5.00	56.9	ND	ND	0.2311	5.00
Manganese	108.8	2.00	56.9	252.3308	252	3.6972	8.57
Mercury	0.026976	5.00	56.9	0.06256	ND	0.04621	0.107
Molybdenum	3.382	2.00	56.9	7.8436	ND	3.6972	10.0
Nickel	8.335	2.00	56.9	19.3307	19.3	0.9243	5.00
Selenium	ND	2.00	56.9	ND	ND	0.9243	5.00
Silver	ND	5.00	56.9	ND	ND	0.2311	5.00
Thallium	ND	5.00	56.9	ND	ND	0.2311	5.00
Vanadium	13.23	2.00	56.9	30.6832	30.7	0.9243	5.00
Zinc	10.23	5.00	56.9	23.7256	23.7	4.6215	10.7
Matrix Spike: 812968							
Antimony	2.52666	5.00	56.9	5.85987	5.86	0.2362	5.00
Arsenic	69.53	2.00	56.9	161.2552	161	1.5559	5.00
Barium	111.4	2.00	56.9	258.3608	258	1.5559	10.0
Beryllium	87.29	2.00	56.9	202.4445	202	0.7780	1.80
Cadmium	69.88	2.00	56.9	162.0669	162	0.7780	1.80
Chromium	1512	5.00	56.9	3506.6562	3510	2.3133	5.37
Cobalt	71.57	5.00	56.9	165.9864	166	1.9449	10.0
Copper	89.88	2.00	56.9	208.4512	208	3.1119	7.22
Lead	2.682943	5.00	56.9	6.22233	6.22	0.2362	5.00
Manganese	177.1	2.00	56.9	410.7333	411	3.1119	7.22
Mercury	0.233349	5.00	56.9	0.541187	0.541	0.0472	0.110
Molybdenum	79.75	2.00	56.9	184.9576	185		10.0
Nickel	75.45	2.00	56.9	174.9847	175		5.00
Selenium	67.91	2.00	56.9	157.4980	157	0.7780	5.00
Silver	2.28059	5.00	56.9	5.28918	5.29		5.00
Thallium	2.540140	5.00	56.9	5.89114	5.89		5.00
Vanadium	91.31	2.00	56.9	211.7677	212		5.00
Zinc	87.70	5.00	56.9	203.3953	203		10.0

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

where:

Sampleww = Sample result in wet weight

Dry Weight Calculations

Date Calculated: 4/29/2014

	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
Matrix Spike Duplicate: 812968							
Antimony	1.97346	5.00	56.9	4.57688	4.58	0.1860	5.00
Lead	2.092568	5.00	56.9	4.85312	4.85	0.1860	5.00
Mercury	0.195523	5.00	56.9	0.453460	0.453	0.0372	0.100
Silver	1.79101	5.00	56.9	4.15374	4.15	0.1860	5.00
Thallium	2.006353	5.00	56.9	4.65317	4.65	0.1860	5.00

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

where:

Sample_{ww} = Sample result in wet weight

TRUESD.	AIL LA	BOR	ATORIES.	INC.



TOTAL SOLIDS BY SM 2540 B

Date of Analysis: 04/15/14

Analytical Batch: 04SOLID14A Oven Temp, °C: 105

Lab No.	Dish Number	Weight of dish,	Wt of wet sample, g	Wt of wet sample+ dish,	Wt of dried residue+dish,g	Wt of dried residue, g	% Total Solids	% Moisture
812968	1	1.3430	2.0082	3.3512	2.2089	0.8659	43.118	56.882
812968 D	2	1.342	2.0125	3.3545	2.2348	0.8928	44.363	55.637
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Relative Percent Difference Sample ID Sample Sample Dup RPD 812968 56.882 55.637 2.2								
Sample ID Sample Sample Dup RPD								
812968	56.882	55.637						

% Total Solids =

(A-B)*100 =

Weight of dried residue x 100
Weight of wet sample

Where:

A = Weight of dried Residue + Dish, g

B = Weight of dish, g

C = Weight of wet sample + Dish, g

Himani

Analyst Name

Analyst Signature

Maksim

Reviewer Name

Reviewer Signature

812968

TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 92780-7008 (714)730-6239 FAX: (714) 730-6462 www.truesdail.com CHAIN OF CUSTODY RECORD [IM3plant-WDR-462]

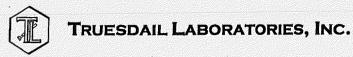
Rec'd 8129 6 8

TURNAROUND TIME DATE 04/08/14

10 Days
PAGE 1 OF 1

COMPANY	CH2M HILL / E2	2					7	Cre (7.1	/.	\$\]	/	7		$\overline{}$	7	/	7	7	7	7	//	COMMENTS
PROJECT NAME	PG&E Topock I	M3							S.M.S.												/ /	COMMENTS
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					N _i o _i	Bioass (300.0) F	Metals (Metals (2)											JER OF CONTAINERS		
SAMPLE I.D.		DATE	TIME	DESCRIPTION	1	/ 49	/ ~	-				_						/—		<u> </u>		
SC-Sludge-	WDR-462	04/08/14	1415	Sludge	Х		Х	Х	×										4			
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// / CH	IAIN OF CUSTODY SI	GNATURE RECORD				SA	MPLE CO	NDITIONS	c
Signature (Relinquished)	Printed CHRIS Laws	Company/ Agency CH2mHILL	Date/ Time	4-8-14 1528	RECEIVED	COOL	B v	WARM 🔲	5.2 °F'
Signature (Received) Shak wao	Printed Name ASSAUT NGO	Company/ Agency ThuESDA!	Date/ Time	1.8-14	CUSTODY SE	ALED	YES 🗖	NO	2
Signature (Relinquished)	Printed Name THAWH NGE	Company Agency RUSSDAL	Date/ ¿ Time	2000	SPECIAL REQUIRE	EMENTS:			
(Received) and Stand	Printed Marches Brad	Company/ Agency	Date/ Time	4/8/14					
Signature ((Relinquished)	Printed Name	Company/ Agency	Date/ Time						
Signature (Received)	Printed Name	Company/ Agency	Date/ Time						



Sample Integrity & Analysis Discrepancy Form

Clie	ent: E2	Lab #
Dat	e Delivered: <u>0 4</u> / <u>08</u> / 14 Time: <u>∆0:05</u> By: □Mail ☆ÓF	Field Service
1.	Was a Chain of Custody received and signed?	ZaYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes □W% □N/A
3 .	Are there any special requirements or notes on the COC?	□Yes 12No □N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No ੴN/A
5 .	Were all requested analyses understood and acceptable?	ÒDYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? $\frac{\int_{\mathcal{C}} \mathcal{L} \circ \mathbf{C}}{\mathbf{C}}$	Yes ONO ON/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ArYes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ゼN/A
9.	Does the number of samples received agree with COC?	ÆYes □No □N/A
10.	Did sample labels correspond with the client ID's?	☐Yes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No ÆN/A
12.	Were samples pH checked? pH =	□Yes □No ⊅AN/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	⊠Ýes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): RUSH Std	□Yes □No □N/A
15.	Sample Matrix:	Water □Waste Water Other
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Ludh



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

April 30, 2014

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-463 PROJECT, GROUNDWATER MONITORING, TLI No.: 813068

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-463 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 15, 2014, 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. Duffy's approval.

The straight runs for the sample and associated matrix spike on sample SC-700B-WDR-463 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

efficient Algo

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.: 428648.IM.CS.EX.AC **Laboratory No.: 813068 Date:** April 30, 2014

Collected: April 15, 2014 Received: April 15, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Maksim Gorbunov
SM 2540C	Total Dissolved Solids	Maksim Gorbunov
SM 2130B	Turbidity	Felipe Mendoza
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad



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Laboratory No.: 813068

Date Received: April 15, 2014

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000 Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
A Section of the section									
813068-001	SC-700B-WDR-463	E120.1	NONE	4/15/2014	8:40	EC	6590	umhos/cm	2.00
813068-001	SC-700B-WDR-463	E200.8	NONE	4/15/2014	8:40	Chromium	ND	ug/L	1.0
813068-001	SC-700B-WDR-463	E200.8	NONE	4/15/2014	8:40	Manganese	2.7	ug/L	0.50
813068-001	SC-700B-WDR-463	E218.6	LABFLT	4/15/2014	8:40	Chromium, Hexavalent	ND	ug/L	0.20
813068-001	SC-700B-WDR-463	SM2130B	NONE	4/15/2014	8:40	Turbidity	ND	NTU	0.100
813068-001	SC-700B-WDR-463	SM2540C	NONE	4/15/2014	8:40	Total Dissolved Solids	4390	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 4/15/2014 6:00:00 PM

Laboratory No. 813068

Page 1 of 7 Printed 4/30/2014

Field ID				Lab ID	Coll	ected	Matrix		
SC-700B-WDR-463				813068-001		2014 08:40	Wat	er	
Specific Conductivity -	EPA 120.1		Batch	04EC14F					
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result	
813068-001 Specific Condu	ctivity	umhos/cr	n 04/30)/2014	1.00	0.606	2.00	6590	
Method Blank									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND						
Duplicate							Lab ID =	813085-002	
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 716	Expected 733	R	2.35	Accepta 0 - 10	ance Range	
Lab Control Sample									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 639	Expected 706	R	ecovery 90.5	Accepta 90 - 110	ance Range)	
MRCCS - Secondar	9								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 665	Expected 706	R	decovery 94.2	Accepta 90 - 110	ance Range	
MRCVS - Primary									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 935	Expected 1000	R	lecovery 93.5	Accepta 90 - 110	ance Range)	
MRCVS - Primary									
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 923	Expected 1000	F	lecovery 92.3	Accepta 90 - 110	ance Range)	

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800



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Chrome VI by EPA 218.6			Batch	04CrH14 C				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
313068-001 Chromium, Hex	avalent	ug/L	04/16/2014 12:58		1.00	0.00600	0.20	ND
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate			Maria pagasara ara	and the second control of the second of the			Lab ID =	813068-00
Parameter	Unit	DF	Result	Expected		RPD	Accepta	ance Rang
Chromium, Hexavalent	ug/L	5.00	0.123	0.123		0.162	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	0.199	0.200		99.3	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	5.03	5.00		101	90 - 110	0
Matrix Spike							Lab ID =	812967-00
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	10.0	9.52(5.00)		110	90 - 110)
Matrix Spike							Lab ID =	812967-00
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	•	ance Rang
Chromium, Hexavalent	ug/L	5.00	10.2	9.94(5.00)		104	90 - 110	0
Matrix Spike							Lab ID =	813068-00
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	1.18	1.12(1.00)		106	90 - 110	0
Matrix Spike							Lab ID =	813068-00
Parameter	Unit	DF	Result	Expected/Add	ed	Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	5.00	5.24	5.12(5.00)		102	90 - 11	0
MRCCS - Secondary	•							
Parameter	Unit	DF	Result	Expected		Recovery	•	ance Rang
Chromium, Hexavalent	ug/L	1.00	5.00	5.00		100	90 - 11	0
MRCVS - Primary			principal de la companya de la compa					
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Rang
Chromium, Hexavalent	ug/L	1.00	9.87	10.0		98.7	95 - 10	5

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Client: E2 Consulting Engineers, Inc.

Chromium

PG&E Topock Project Project Name:

Project Number: 428648.IM.CS.EX.AC Printed 4/30/2014

Page 4 of 7

Batch 041814A Metals by EPA 200.8, Total Unit DF MDL Result Analyzed RL Parameter ug/L 1.0 04/18/2014 18:06 2.00 0.142 ND 813068-001 Chromium 0.120 2.7 04/18/2014 18:06 2.00 0.50 Manganese ug/L Method Blank Unit DF Parameter Result ug/L 1.00 ND Chromium ug/L ND Manganese 1.00 Lab ID = 813068-001 **Duplicate** DF **RPD** Parameter Unit Result Expected Acceptance Range 0 0 - 20ND 0 ug/L 2.00 Chromium 2.74 2.27 0 - 20ug/L 2.00 2.80 Manganese Low Level Calibration Verification Parameter Unit DF Result Expected Recovery Acceptance Range Chromium ug/L 1.00 0.183 0.200 91.5 70 - 130ug/L 1.00 0.208 0.200 104 70 - 130Manganese Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range 97.5 85 - 115 2.00 48.8 50.0 Chromium ug/L 2.00 47.2 50.0 94.4 85 - 115 ug/L Manganese Lab ID = 813068-001 Matrix Spike DF Result Acceptance Range Unit Expected/Added Recovery Parameter 2.00 44.9 89.8 75 - 125ug/L 50.0(50.0) Chromium 48.1 52.7(50.0) 90.7 75 - 125 ug/L 2.00 Manganese Lab ID = 813068-001 Matrix Spike Duplicate DF Result Expected/Added Recovery Acceptance Range Parameter Unit 45.6 91.3 75 - 125 Chromium ug/L 2.00 50.0(50.0) 90.3 75 - 125 47.9 Manganese ug/L 2.00 52.7(50.0) MRCCS - Secondary DF Result Recovery Acceptance Range Parameter Unit Expected 99.5 90 - 110 19.9 20.0 ug/L 1.00 Chromium 1.00 19.6 20.0 98.0 90 - 110 ug/L Manganese MRCVS - Primary Unit DF Result Expected Recovery Acceptance Range Parameter ug/L 1.00 19.5 20.0 97.6 90 - 110

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011



Client: E2 Consulting Engineers, Inc.

Lab Control Sample

Parameter

Turbidity

Project Name: PG&E Topock Project

Page 6 of 7 Printed 4/30/2014

Project Number: 428648.IM.CS.EX.AC

Interference Check Standard AB

Parameter Unit DF Result Expected Recovery Acceptance Range Manganese ug/L 1.00 19.8 20.0 98.9 80 - 120

Total Dissolved Solids b	Total Dissolved Solids by SM 2540 C				3.9 S			
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813068-001 Total Dissolved S	Solids	mg/L	04/17	//2014	1.00	1.76	250	4390
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					MARKET SERVICE AND CONTROL OF SERVICE
Duplicate							Lab ID =	813007-004
Parameter	Unit	DF	Result Expected		F	RPD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	620 610		1.63		0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	515	500	103		90 - 110	
Turbidity by SM 2130 B			Batch	04TUB14I				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813068-001 Turbidity		NTU	04/16	5/2014	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	81307 7 -001
Parameter	Unit	DF	Result Expected		RPD		Acceptance Range	
Turbidity	NTU	1.00	0.134 0.143		6.50		0 - 20	

Lab Control Sample Duplicate

Parameter Unit DF Result Expected Recovery Acceptance Range Turbidity NTU 1.00 8.65 8.00 108 90 - 110

Result 8.70 Expected

8.00

Recovery

109

DF

1.00

Unit

NTU

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013

Acceptance Range

90 - 110



Client: E2 Consulting Engineers, Inc.

Project Name:

PG&E Topock Project

Page 7 of 7

Project Number: 428648.IM.CS.EX.AC

Printed 4/30/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS14D Date Analyzed: 4/17/2014

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	79.4941	79.4945	79.4944	0.0001	No	0.0003	3.0	25.0	ND	1
812989-1	100	78.9016	78.9514	78.9513	0.0001	No	0.0497	497.0	25.0	497.0	11
812989-2	100	69.4696	69.5061	69.5061	0.0000	No	0.0365	365.0	25.0	365.0	1
812989-3	100	74.6424	74.6794	74.6793	0.0001	No	0.0369	369.0	25.0	369.0	1
812989-4	100	75.2661	75.3036	75.3032	0.0004	No	0.0371	371.0	25.0	371.0	1
813007-1	50	47.9471	47.9980	47.9976	0.0004	No	0.0505	1010.0	50.0	1010.0	1
813007-2	100	78.7839	78.8369	78.8369	0.0000	No	0.0530	530.0	25.0	530.0	1
813007-3	100	76.8047	76.8639	76.8636	0.0003	No	0.0589	589.0	25.0	589.0	1_
813007-4	50	51.0442	51.0747	51.0747	0.0000	No	0.0305	610.0	50.0	610.0	11
813032-1	_100	78.3873	78.4330	78.4328	0.0002	No	0.0455	455.0	25.0	455.0	1
813032-2	100	67.4821	67.5305	67.5302	0.0003	No	0.0481	481.0	25.0	481.0	1
813007-4 Dup	50	50.9515	50.9829	50.9825	0.0004	No	0.0310	620.0	50.0	620.0	1
LCS	100	75.8067	75.8583	75.8582	0.0001	No	0.0515	515.0	25.0	515.0	1
813045-2	100	77.9016	77.9151	77.9151	0.0000	No	0.0135	135.0	25.0	135.0	1
813045-4	100	68.5444	68.5827	68.5823	0.0004	No	0.0379	379.0	25.0	379.0	1
813082-1	100	75.2758	75.3236	75.3236	0.0000	No	0:0478	478.0	25.0	478.0	1
813082-2	100	78.6069	78.6509	78.6509	0.0000	No	0.0440	440.0	25.0	440.0	1
813082-3	100	68.1109	68.1575	68.1575	0.0000	No	0.0466	466.0	25.0	466.0	1
813082-4	100	78.3634	78.4104	78.4104	0.0000	No_	0.0470	470.0	25.0	470.0	1
813085-1	100	75.7485	75.7943	75.7943	0.0000	No	0.0458	458.0	25.0	458.0	1
813085-2	100	74.1463	74.1937	74.1937	0.0000	No	0.0474	474.0	25.0	474.0	1
813068	10	29.3200	29.3639	29.3639	0.0000	No	0.0439	4390.0	250.0	4390.0	1
813096	600	173.1990	173.1998	173.1998	0.0000	No	0.0008	1.3	4.2	ND	1_
813045-4 Dup	100	75.7451	75.7826	75.7825	0.0001	No	0.0374	374.0	25.0	374.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Laboratory	CONTROL DA	mpie (ECO	Cummary		
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	515.0	500	103.0%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

	Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
	813007-4	0.0305	0.0310	0.8%	≤5%	Yes
ĺ	813045-4	0.0379	0.0374	0.7%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

WetChem 04TDS14D

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS14D Date Analyzed: 4/17/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
812989-1	850	0.58	552.5	0.90
812989-2	627	0.58	407.55	0.90
812989-3	628	0.59	408.2	0.90
812989-4	624	0.59	405.6	0.91
813007-1	1743	0.58	1132.95	0.89
813007-2	853	0.62	554.45	0.96
813007-3	929	0.63	603.85	0.98
813007-4	1036	0.59	673.4	0.91
813032-1	774	0.59	503.1	0.90
813032-2	758	0.63	492.7	0.98
813007-4 Dup	1036	0.60	673.4	0.92
LCS				
813045-2	261	0.52	169.65	0.80
813045-4	629	0.60	408.85	0.93
813082-1	812	0.59	527.8	0.91
813082-2	802	0.55	521.3	0.84
813082-3	830	0.56	539.5	0.86
813082-4	827	0.57	537.55	0.87
813085-1	833	0.55	541.45	0.85
813085-2	785	0.60	510.25	0.93
813068	6730	0.65	4374.5	1.00
813096	13	ND	8.45	ND
813045-4 Dup	629	0.59	408.85	0.91

Mus

020

Rec'd 04/15/14 8130 68

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-463]

212062

COC Number

TURNAROUND TIME	10	Days		
DATE	PAGE	1_	OF	_1

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COMPANY	E2				I		$\overline{}$	$\overline{\mathcal{I}}$	7	7	7/	7	7	7	7	7	7	\mathcal{T}		T	CO	MMENTS	
PROJECT NAME	PG&E Topock								/ /		/ /			/		//	/ /	/	/ /			WINIERIG	
PHONE	(530) 229-3303	F	-AX (530) 339-3303		,	/ /	/ /	' /		′ /		/ /	/ /	/ /	/ /							
ADDRESS	155 Grand Ave	Ste 1000							\cdot / \cdot			' /							CONTAINERS				
·	Oakland, CA 94	1612				\\ \gamma_{\text{\rightar}}	/ ਨ	120	/ /	/	/ /			/		/ /			Ř Ž				
P.O. NUMBER	428648.IM.CS.EX.	MC /	7 TEAM	1	/	Lab Fillered	(200.8)	ctance	ر م /	/ /	(08)	/ ,	/ /		'/	/ /		6	ဂ္ဂ				
SAMPLERS (SIGNA	ATURE	ris X	low			, 16, 16,	sie / c	Sondi	5	18							/ ,	FR					
					Co (210)	Total Mai	Becific	TDS (SM25402	/ /	Turbidity (SM2)				/	/	/ /		NUMBER					
SAMPLE I.D.		DATE	TIME	DESCRIPTION	10	/_	S						4-4					$\leq L$					
SC-700B-WDF	₹-463	04/15/14	8:40	Water	х	х	х	х		х							3	3		pl	1=61	2005	9)
									and the second sections	againg and a			a Janes Carles Lavore Vi					3	TOTA	L NUMB	ER OF CO	ONTAINER	s

Please Provide a preliminary Result for the TDS ASAP



For Sample Conditions See Form Attached

// //сн	AIN OF CUSTODY SIG	SNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) // // // // // // // // // // // // //	Printed CHRIS LEME	Company/ Agency CH 2 M HILL	Date/ <i>4-</i> /5-/4 Time /2:55	RECEIVED COOL WARM \ 4.3 % °F
Signature (Received) The Braunt	Printed Name Mike Stonet	Company/ Agency	Date/ 4.75.14 Time 11.00	CUSTODY SEALED YES NO
Signature (Relinquished) Make Brunned	Name Mike Brunet	Company/ T L (Date/ 4 15.14 Time 6:00	SPECIAL REQUIREMENTS:
Signature (Received) Mach -	Printed Name Luda	Company/ Agency 72 I	Date/ 4-15-19 Time 6:00 pm	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
3,26/14	8/2753	7.00	2ml/(00ml	9.5	7/30	NE
419114	812966-1	7.00	2 hl/100 ml	9.5	7:20	NE
	2		1	1		1
	V -3	1	V		1/	
	812.967-1	9.5	~1.4	NIA	NA	,
	1 -2	l				
	~3					
	-4					
	-5					
	-6					
	~ 7					
	-3					
	_9					
	-10					
	c 1.1					
	-12					
	-13					
	14					
	V ~15					
	812968 CS	ıg)√	V			4
	812969-1	7.00	2 ml joonl	9.5	7.20	NE
V	V -2	V	V			
4116114	813068	7,00	2ml/ 100ml	9.5	7:40	NE

Ju 4117/14

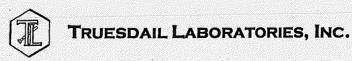
C:\My Documents\Templates\Hexavalent Chromium\Cr6+ pH Log



Turbidity/pH Check

		_	_	ruru	idity/pH (JIIECK		T	
	Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
	313003	71	42	4/10/14	20	Yes		*	
	413006	71	47	1.	ولد	Yes		ì	
	817013(1-3)	21		4/11/14	B	No	3:10		
	913014	71	72	4	,	Yes			
	813019	T	ı			i			
	813021-4	21							
	817022	71							
	817023	V							
	813016(1-2)		LID	+ 1		"			TILC
	813015		OLID	11/					4
	413074	41	,	4114(14	1	Yes			<u> </u>
			NOGE		的 的	Yes			
	812969	71		4114114	ES				
	412032(1-2)	41	12	4115/14	ピ>	res			
	8120 36	Z\ Z\		100	l i	INO			
,_	912078 (1-2)	(W		<u> </u>				
16/14	813051	41</td <td></td> <td>4/16/14</td> <td>KD</td> <td>Yes</td> <td></td> <td></td> <td>Rush</td>		4/16/14	KD	Yes			Rush
	813053	21	17	1		Yes			
Į	813069	つ!	72						
	813068	21	>2	4)/		1230		HZMLI
	43075	>1	<u> </u>	4/16/14	KIT	YES	_		
	313055(1,2)	フィ	<z< td=""><td>4/17/18</td><td>KD</td><td>105</td><td></td><td></td><td>·</td></z<>	4/17/18	KD	105			·
	8/3045/1,2,4)	LI A17	GG-77		i	No	1245		
Γ	813663 1125.78	3) <1	77			NO	1		
	813065 (1-3)	<u> </u>	72			NO			
ľ	813018 (10-12)	4	72			NO			
ľ	83079/121	<1	77	1	W	NO	4		
l	8/3019 (1,2)			4/12/14	1	Yes	V		solid.
F	8/3097(1.2)	-		1,121	100	Yes	-		3016
-	—————————————————————————————————————	>1	<z< td=""><td>4/21/14</td><td>KD</td><td>1/4 <</td><td></td><td></td><td></td></z<>	4/21/14	KD	1/4 <			
F	813/04	<1	22	7/6/1/4	1	Yes			
	813107			1		Yes			
-	813108	.				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
H:	8/2/10								
. [8/5/11	<u> </u>	<u> </u>			165			
ļ.	813121 [1,2]	ブリ	17	4 - 11		195			
-	813174	7(<2 <2 <2	4121114	100	Yes			. 1
F	813131	71 4/2	1142	4/21/14 4/27/19 4/24 A/24/10	NO)	Yes Yes Yes Yes Yes	1145		Eday Zust
	213140	<1	72 72	4/24 4/24/1	L LED	Yes	1000		CHZM
	813108 813110 813111 813121 (1,2) 813121 813131 813139 813137 813134 (-4) 813135 (-4) 813135 (-4)	<u> </u>	フて		1		·		Eday Zust CHZM TZVSh
4	8/3/37 (-4)	>1	<7						
4	8/3/33	1 .	1						
6	803134 (-4)	The same of the sa							
Γ.	813135 (-4)								
5	8131361-4)	j							
	017177	V	4	W		V			

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



Sample Integrity & Analysis Discrepancy Form

Clie	ont: E2	Lab # 8/3 063
Date	e Delivered: <u>0</u>	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 ÆINo □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 ÉTN/A
5 .	Were all requested analyses understood and acceptable?	ØYes □No □N/A
6 .	Were samples received in a chilled condition? Temperature (if yes)? <u>½, 3 °C</u>	AÓ Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	⊠Yes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ÆΩN/A
9.	Does the number of samples received agree with COC?	odYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ØYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ⊘ÓN/A
12.	Were samples pH checked? $pH = \frac{See}{C.O.C.}$	Yes \(\text{No} \) \(\text{\text{\$\sigma}} \) \(\text{\$\sigma} \) \(\text{\$\sigma} \)
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ÆYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH △ Std	Yes ONO ONA
15.	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid	
16.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda

ALERT!!
Level III QC



Established 1931

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

May 7, 2014

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-464 PROJECT, GROUNDWATER

MONITORING, TLI NO.: 813140

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-464 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 22, 2014, 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. Duffy's approval.

The straight runs for the sample and associated matrix spike on sample SC-700B-WDR-464 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

√a - Mona Nassimi

Manager, Analytical Services

alliebool t

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.: 428648.IM.CS.EX.AC

Laboratory No.: 813140

Date: May 7, 2014 Collected: April 22, 2014 Received: April 22, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Maksim Gorbunov
SM 2540C	Total Dissolved Solids	Kim Luck
SM 2130B	Turbidity	Felipe Mendoza
EPA 200.8	Total Metals	Ethel Suico
FPA 218.6	Hexavalent Chromium	Naheed Eidinejad

EXCELLENCE IN INDEPENDENT TESTING

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001



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Established 1931

Date Received: April 22, 2014 Laboratory No.: 813140

Analytical Results Summary

Lab Sample ID Field ID) Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
813140-001	SC-700B-WDR-464 E120.1	E120.1	NONE	4/22/2014	8:35	EC	6150	nmhos/cm	2.00
813140-001	SC-700B-WDR-464	E200.8	NONE	4/22/2014	8:35	Chromium	2	ng/L	1.0
813140-001	SC-700B-WDR-464	E200.8	NONE	4/22/2014	8:35	Manganese	0.90	ng/L	0.50
813140-001	SC-700B-WDR-464		LABFLT	4/22/2014	8:35	Chromium, Hexavalent	Q	ng/L	0.20
813140-001	SC-700B-WDR-464		NONE	4/22/2014	8:35	Turbidity	0.283	OTN OTN	0.100
813140-001	SC-700B-WDR-464		NONE	4/22/2014	8:35	Total Dissolved Solids	3940	mg/L	125

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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REPORT

Client: CH2MHill

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 4/22/2014 4:00:00 PM

Laboratory No. 813140
Page 1 of 6
Printed 5/7/2014

•	annipies i is s					
Field ID		Lab ID	Col	lected	Matr	ix
SC-700B-WDR-464		813140-001	04/22	/2014 08:35	Wat	er
Specific Conductivity - EPA 120.1		Batch 04EC14E				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
		04/20/2014	1.00	0.606	2.00	6150

umhos/cm 04/29/2014 813140-001 Specific Conductivity Method Blank DF Result Unit Parameter ND 1.00 umhos Specific Conductivity Lab ID = 813194-001 Duplicate Acceptance Range **RPD** Expected DF Result Unit Parameter 0 - 10 0.133 749 1.00 750 umhos **Specific Conductivity** Lab Control Sample Acceptance Range Recovery Expected Unit DF Result Parameter 90 - 110 90.6 706 640 1.00 umhos Specific Conductivity



Client: CH2MHill Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Printed 5/7/2014

Page 2 of 6

Chrome VI by EPA 218.6			Batch	04CrH14 D			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
813140-001 Chromium, Hexav	/alent	ug/L	04/23	/2014 10:20 1.	0.00600	0.20	ND
Method Blank	2.1				Alan enge		
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND				
Duplicate						Lab ID =	813140-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 0.156	Expected 0.159	RPD 2.22	Accepta 0 - 20	ince Range
Low Level Calibration V							
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 0.196	Expected 0.200	Recovery 98.2	Accepta 70 - 130	ince Range)
Lab Control Sample							
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 5.02	Expected 5.00	Recovery 100	Accepta 90 - 110	ince Range)
Matrix Spike						Lab ID =	813140-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.32	Expected/Added 5.16(5.00)	Recovery 103	90 - 110	nce Range) 813140-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.15	Expected/Added	Recovery 100		nce Range
MRCCS - Secondary							
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.03	Expected 5.00	Recovery 100	Accepta 90 - 110	ince Range
	l lest	PC	D			e Helder de distri	dere digere. Te
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.85	Expected 10.0	Recovery 98.5	95 - 105	ince Range



Client: CH2MHill Project Name: PG&E Topock Project

Project Name: PG&E Topock Project Page 3 of 6
Project Number: 428648.IM.CS.EX.AC Printed 5/7/2014

Parameter		Unit	Ana	lyzed D	F	MDL	RL	Result
813140-001 Chromium		ug/L	04/28	/2014 13:32 1.0	00 (0.0710	1.0	ND
Manganese		ug/L	04/28	/2014 13:32 1.0	00 (0.0600	0.50	0.90
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813140-001
Parameter	Unit	DF	Result	Expected	RPI)	Accepta	nce Range
Chromium	ug/L	1.00	ND	0	0		0 - 20	•
Manganese	ug/L	1.00	0.880	0.895	1.	69	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	Rec	covery	Accepta	nce Range
Chromium	ug/L	1.00	0.239	0.200		20	70 - 130	_
Manganese	ug/L	1.00	0.465	0.500	93	3.0	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Rec	covery	Accepta	ince Range
Chromium	ug/L	1.00	44.2	50.0		3.5	85 - 115	_
Manganese	ug/L	1.00	43.4	50.0	86	3.8	85 - 115	5
Matrix Spike							Lab ID =	813140-001
Parameter	Unit	DF	Result	Expected/Added	Rec	covery	Accepta	nce Range
Chromium	ug/L	1.00	42.7	50.0(50.0)		5.4	75 - 125	_
Manganese	ug/L	1.00	42.6	50.9(50.0)	83	3.3	75 - 125	5
Matrix Spike Duplicate				Program and supply to			Lab ID =	813140-001
Parameter	Unit	DF	Result	Expected/Added	Rec	covery	Accepta	ince Range
Chromium	ug/L	1.00	41.9	50.0(50.0)		3.9	75 - 125	_
Manganese	ug/L	1.00	41.4	50.9(50.0)	. 80	0.9	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Red	overy	Accepta	nce Range
Chromium	ug/L	1.00	20.2	20.0	10	•	90 - 110	•
Manganese	ug/L	1.00	19.8	20.0	99	9.1	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Rec	overy		nce Range
Chromium	ug/L	1.00	20.1	20.0		00	90 - 110	_
Manganese	ug/L	1.00	20.0	20.0	10	00	90 - 110)

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



Client: CH2MHill Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813140-001 Total Dissolved	Solids	mg/L	04/22	2/2014	1.00	1.76	125	3940
Method Blank							gar sa	
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	813140-001
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	4250	3940		7.57	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Total Dissolved Solids	mg/L	1.00	476	500		95.2	90 - 110)
Parameter	and the second of the second of the second	Unit	Ana	lyzed	DF	MDL	RL	Result
Parameter	the second transfer second	Unit	Ana	lyzed	DF	MDL	RL	Result
813140-001 Turbidity		NTU	04/23	3/2014	1.00	0.0140	0.100	0.283
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	813147-009
Parameter	Unit	DF	Result	Expected	R	PD	Accepta	nce Range
Turbidity	NTU	1.00	0.189	0.167		12.4	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
Turbidity	NTU	1.00	8.74	8.00		109	90 - 110)
Lab Control Sample	Duplicate							
Parameter	Unit	DF	Result	Expected	R	ecovery	Accepta	nce Range
	NTU	1.00	8.52	8.00		106	90 - 110	



Client: CH2MHill Project Name: PG&E Topock Project

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Project Number: 428648.IM.CS.EX.AC

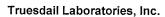
Printed 5/7/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

£ - Mona Nassimi

Manager, Analytical Services







Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS14E Date Analyzed: 4/22/2014

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	51.2258	51.2259	51.2257	0.0002	No	-0.0001	-1.0	25.0	ND	1
813140	20	51.9254	52.0044	52.0041	0.0003	No	0.0787	3935.0	125.0	3935.0	1
813057	10	50.1513	50.2082	50.2079	0.0003	No	0.0566	5660.0	250.0	5660.0	1
						5					
813140 Dup LCS	20	51.4853 72.6348	51.5706 72.6826	51.5703 72.6824	0.0003	No No	0.0850 0.0476	4250.0 476.0	125.0	4250.0	1
	100	72.0346	72.0020	12.0024	0.0002	NO	0.0476	475.0	25.0	476.0	1
, 4										V-10-10-10-10-10-10-10-10-10-10-10-10-10-	

Calculation as follows:

Where:

A = weight of dish + residue in grams. B = weight of dish in grams.

C = mL of sample filtered.

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	476.0	500	95.2%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

	Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
	813140	0.0787	0.0850	3.8%	≤5%	Yes
Γ						

Analyst Signature

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

P =Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

KIM

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS14E Date Analyzed: 4/22/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813140 813057	6330 336	0.62 16.85	4114.5 218.4	0.96 25.92
813140 Dup LCS	6330	0.67	4114.5	1.03
LUS				



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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-464]

COC Number
3
00

Q 10 Days PAGE 1 TURNAROUND TIME DATE 04/22/14

1800 COMMENTS NUMBER OF CONTAINERS m Turbidity (SM2130) × TDS (SM2540C) Cro (218.6) Lab Fillered DESCRIPTION Water FAX (530) 339-3303 TEAM 8:35 TIME 04/22/14 155 Grand Ave Ste 1000 DATE Oakland, CA 94612 428648.IM.CS.EX,AC (530) 229-3303 PG&E Topock SAMPLERS (SIGNATURE E SC-700B-WDR-464 PROJECT NAME P.O. NUMBER SAMPLE 1.D. COMPANY ADDRESS PHONE

Please Provide a preliminary Result for the TDS ASAP



For Sample Conditions See Form Attached

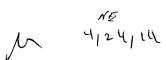
TOTAL NUMBER OF CONTAINERS

 ω

D / /	CHAIN OF CUSTODY SIGNATURE RECORD	of transfer and the first statement of the statement of the statement of the statement of the statement of the	CANDY TOWNS
Signature (Relinquished)	Name (HOS LEVIZ Gompany) CH PM 11	Date/ 4/22/14	
	1-	11me //:55	NEOFINED COOL ET WARM I
	DO BROWN Name Mike Drune Hagency 1	Time 1/22/14	CUSTODY SEALED VES 1
Signature C	Printed Company/	Date/ 12.03:14]
J 02 17 1 (pau	11 m Chame (1), Ke Drong Agency / L	Time 1.00,	SPECIAL REQUIREMENTS;
	Printed 0, i Company/	Date/ 0.77.14	
Marin Sell	Name I ME Kander Mad Agency / C)	Time 4:00	
Signature (Relinenished)		Date/	
	Name Agency	Time	
Signature	Printed Company/	Date/	
(Keceived)	Name Agency	Time	
	TO THE PROPERTY OF THE PROPERT	TO STATE OF THE ST	

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
3126/14	812753	7.00	2 ml 1 (00 ml	9.5	7,'30	NE
419114	812966-1	7.00	2 hl/ 100 ml	9.5	7:20	NE
	2		İ			
	√ -3	V	V		V	
	812967-1	9.5	~17	214	NA	
	-2			.		
	-3					
	-4				·	
	-5					
	-6					
	-7				1	
	-3					
	-10					
	-11					
	-12				·	
	-13					
	_14					
	V -15					
	812968 CS		<u>V</u>	-		4
	812969-1	7.00	2 ml/100 ml	9.5	7:20	NE
V	V -2	<u> </u>	V			
		7,00	2ml/ 100ml		7;40	NE
4/23/14	813/40	7.00	2 ml/ 100 ml	9.5	7:30	NZ
				(m. p. 1997)		
					·	





Turbidity/pH Check

			lurp	idity/pH (леск			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
513003	71	<z< td=""><td>4/10/14</td><td>20</td><td>Yes</td><td></td><td>. ,</td><td></td></z<>	4/10/14	20	Yes		. ,	
413006	21	47	1.	داد	Yes		3	
817013 (1-3)	21		4/11/14	B	No	3:00		
913014	71	72	G IV		Yes			-
813019	71	1	 		i			
813021-4	21		+ +			1		
817022	71							
						-		
817073			-	<u> </u>	, ,			447 (
813016(1-2)		LID	 					172C
813015		olio	- And H	1 -		-		V
413074	41	10GE	4114/14	的的	tes			
812964	J-6	1065	4114114		Yes			
412032(1-2)	71	12	4115/14	ES	res			
4120 36	41			<u> </u>	- ¥.,			
912078(1-2)	41	l l			IND			
14 813051	e/1</td <td>1/2 T 72</td> <td>4/16/14</td> <td>MD</td> <td>Yes</td> <td></td> <td></td> <td>Rush</td>	1/2 T 72	4/16/14	MD	Yes			Rush
813457	21	47	4		465			
813049	つり	72						
330/4/	21	>2	4		6	1736		CHZMU.
412075	>1	47	4/16/14	K	JEX.			
617056 (1.2)		<z>Z</z>	4/17/14	KD	Yes			
813045/1,2.4	1 41 112	GGT >7	, , , , , , , , , , , , ,	,,,,	50	1245		
813063 11,25,7	x) <1	>7			NO	1		
813065 (1-3)	<u> </u>	72			20			
		72						
0			1		NO			
813079 (12)	<1	77	11.1.1.1			V		sal 1
8,3029 (1,2) —		A/15/14	KD 100	Yes			solid,
8/3097(1,2)	~ 1		14.	100	yes			Don'd
813/04	>1	<7	4/21/14	KD	yes_			
813107	<	<2			yes Ves			
813108	1				1/25			
81310					Yes Yes Yes			
813111		_ J			Yes			
8/3/21/1.2)	71	۷ 2	مل	J	Yes			
513174	71	12	4/21/14	100	Yex			
813131	7/ 4/2	<2 <2 ¥2	4/27/14	1257	ND	145		Sday Zust
813107 813108 813110 813111 813121 (1,2) 813131 813131 813132 (-4) 813133 (-4) 813135 (-4)	<1	72	4/21/14 4/27/19 4/24/4/24/1	KD KD L ED	Yes	1000		Eday Zust CHZM IZush
817179	ci	, フェ フェ	1	-1	ì	,		Tuch
\$13177 /A	>1	<7_						* - 1
47177		·						
607171/17		_						
512134 (1)			- 1					
813135 (-4) 813136 (-4)					_			
813136/-4)	 	4		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ 				
\$13137	4		W		A		<u> </u>	

Notes:

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



ALERT !! Level III QC

Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u> </u>	Lab #81314
Date	e Delivered: ৭ / <u>ম</u> ম / 14 Time: <u>৭০০</u> By: □Mail আ	Field Service
1.	Was a Chain of Custody received and signed?	y Maryes □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 CQC, does it match the COC?	□Yes □No □XN/A
5.	Were all requested analyses understood and acceptable?	⊠Yes □No □N/A
3.	Were samples received in a chilled condition? Temperature (if yes)? <u> </u>	ÖYes □No □N/A
	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	X Yes □No □N/A
	Were sample custody seals intact?	□Yes □No ƊN/A
	Does the number of samples received agree with COC?	^QYes □No □Ņ/A
0.	Did sample labels correspond with the client ID's?	Yes □No □N/A
1.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	□Yes □No ₽N/A
2.	Were samples pH checked? pH = Sec C. O. C	Ø1Yes □No □N/A
3.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ĎPŠÝes □No □N/A
4.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH 및 Std	Yes □No □N/A
5 .	Sample Matrix: □Liquid □Drinking Water □Ground	Water □Waste Water
	□Sludge □Soil □Wipe □Paint □Solid ◘	Other Water
6.	Comments:	
7.	Sample Check-In completed by Truesdail Log-In/Receiving:	AW



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

May 12, 2014

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-465 PROJECT, GROUNDWATER MONITORING, TLI NO.: 813212

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-465 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 29, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The straight run for the matrix spike on sample SC-700B-WDR-465 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

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.: 428648.IM.CS.EX.AC

Laboratory No.: 813212

Date: May 12, 2014 Collected: April 29, 2014 Received: April 29, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Maksim Gorbunov
SM 2540C	Total Dissolved Solids	Kim Luck
SM 2130B	Turbidity	Himani Vaishnav
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001

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Established 1931

Date Received: April 29, 2014

Laboratory No.: 813212

Analytical Results Summary

	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Z.	2.00 1.0 0.50 0.20 0.100 125
Units	umhos/cm ug/L ug/L ug/L NTU
Result	6370 ND 1.0 ND 0.136 3800
Parameter	EC Chromium Manganese Chromium, Hexavalent Turbidity Total Dissolved Solids
Sample Time	00:6 00:6 00:6
Sample Date	4/29/2014 4/29/2014 4/29/2014 4/29/2014 4/29/2014
Extraction Method	NONE NONE LABFLT NONE
Analysis Method	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C
D Field ID	SC-700B-WDR-465 SC-700B-WDR-465 SC-700B-WDR-465 SC-700B-WDR-465 SC-700B-WDR-465
Lab Sample ID Field ID	813212-001 813212-001 813212-001 813212-001 813212-001

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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04/29/2014 09:00

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Printed 5/12/2014

Water

Page 1 of 6

Laboratory No. 813212

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

SC-700B-WDR-465

Samples Received on 4/29/2014 3:50:00 PM

813212-001

Field ID Lab ID Collected Matrix

Specific Conductivity -	EPA 120.1		Batch	04EC14F				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813212-001 Specific Condu	ıctivity	umhos/c	m 04/30	/2014	1.00	0.606	2.00	6370
Method Blank								
Parameter	Unit	DF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	813085-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Specific Conductivity	umhos	1.00	716	733		2.35	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	639	706		90.5	90 - 11	0
MRCCS - Secondar	y algar							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	. 665	706		94.2	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accept	ance Range
Specific Conductivity	umhos	1.00	935	1000		93.5	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	-	ance Range
Specific Conductivity	umhos	1.00	923	1000		92.3	90 - 11	0

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Chrome VI by EPA 218.	6		Batch	04CrH14 E				
Parameter		Unit Analyzed ug/L 04/30/2014 10:27		lyzed D	F MDL	RL	Result	
813212-001 Chromium, Hex	avalent)/2014 10:27 1.	0.00600	0.20	ND	
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND			Lab ID =	813212-001	
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L	DF 5.00	Result 0.146	Expected 0.149	ted RPD 2.03		nce Range	
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.203	Expected 0.200	Recovery 102		Acceptance Range 70 - 130	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.05	Expected 5.00	Recovery 101	90 - 110	ince Range) 813212-001	
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.29	Expected/Added 5.15(5.00)	Recovery 103	90 - 110	ince Range) 813212-001	
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.20	Expected/Added 1.15(1.00)	Recovery 105	Accepta 90 - 110	nce Range)	
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.05	Expected 5.00	Recovery 101	Accepta 90 - 110	ince Range)	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 9.92	Expected 10.0	Recovery 99.2	Accepta 95 - 105	ince Range	

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Metals by EPA 200.8, Total Batch 050114A-ICF								
Parameter	Parameter Unit Analyzed			lyzed	DF	MDL	RL	Result
813212-001 Chromium		ug/L	/L 05/01/2014 18:20		2.00	0.142	1.0	ND
Manganese		ug/L	05/01	/2014 18:20	2.00	0.120	0.50	1.0
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813212-001
Parameter	Unit	DF	Result	Expected	Ī	RPD	Accepta	ance Range
Chromium	ug/L	2.00	ND	0		0	0 - 20	
Manganese	ug/L	2.00	0.932	1.03		9.98	0 - 20	
Low Level Calibration	n Verification	1						
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.216	0.200		108	70 - 130)
Manganese	ug/L	1.00	0.238	0.200		119	70 - 130	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ance Range
Chromium	ug/L	2.00	47.5	50.0		95.1	85 - 11	5
Manganese	ug/L	2.00	46.9	50.0		93.9	85 - 11	5
Matrix Spike							Lab ID =	813212-001
Parameter	Unit	DF	Result	Expected/Add	ed l	Recovery	Accepta	ance Range
Chromium	ug/L	2.00	49.4	50.0(50.0)		98.7	75 - 12	5
Manganese	ug/L	2.00	48.1	51.0(50.0)		94.1	75 - 12	5
Matrix Spike Duplica	te						Lab ID =	813212-001
Parameter	Unit	DF	Result	Expected/Add	ed l	Recovery	Accepta	ance Range
Chromium	ug/L	2.00	50.0	50.0(50.0)		100	75 - 12	5
Manganese	ug/L	2.00	49.0	51.0(50.0)		95.9	75 - 12	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	I	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	20.6	20.0		103	90 - 11	ם -
Manganese	ug/L	1.00	20.5	20.0		103	90 - 11	ס
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	1	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	19.4	20.0		96.8	90 - 11	o -
Manganese	ug/L	1.00	19.9	20.0		99.4	90 - 11	0

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

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Total Dissolved Solids	by SM 254	0 C	Batch	04TDS14F		Jack Committee C		
Parameter	Unit	Ana	lyzed	DF	MDL	RL	Result	
813212-001 Total Dissolved Solids		mg/L	04/29	/2014	1.00	1.76	125	3800
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	813194-002
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 456	Expected 423	RPD 7.51		Acceptance Ran 0 - 10	
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result Expected 479 500		Recovery 95.8		Acceptance Rang 90 - 110	
Turbidity by SM 2130 B			Batch	04TUB14P			el Paper	
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813212-001 Turbidity		NTU	04/30)/2014	1.00	0.0140	0.100	0.136
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	813198-001
Parameter Turbidity	Unit NTU	DF 1.00	Result 0.127	Expected 0.115	RPD Accep 9.92		Accepta	ance Range
Lab Control Sample								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.48			•	Accepta 90 - 110	ance Range)
Lab Control Sample	Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.57	Expected 8.00	······································	Recovery 107	Accepta 90 - 110	ance Range)

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Printed 5/12/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

for Mona Nassimi

Manager, Analytical Services



Truesdail Laboratories, Inc.

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 04TDS14F Date Analyzed: 4/29/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank .	100	109.3900	109.3904	109.3904	0.0000	No	0.0004	4.0	25.0	ND	1
813121-1	100	51.4350	51.4766	51.4766	0.0000	No	0.0416	416.0	25.0	416.0	1
813121-2	100	50.4947	50.5387	50.5381	0.0006	Yes	0.0434	434.0	25.0	434.0	1
813161-1	100	50.4947	50.5370	50.5369	0.0001	No	0.0422	422.0	25.0	422.0	1
813161-2	100	51.8320	51.8760	51.8756	0.0004	No	0.0436	436.0	25.0	436.0	1
813161-3	100	49.8779	49.9243	49.9241	0.0002	No	0.0462	462.0	25.0	462.0	1
813161-4	100	50.3945	50.4408	50.4405	0.0003	No	0.0460	460.0	25.0	460.0	1
813162-1	100	47.8427	47.8863	47.8861	0.0002	No	0.0434	434.0	25.0	434.0	1
813162-2	100	47.4805	47.5256	47.5254	0.0002	No	0.0449	449.0	25.0	449.0	1
813194-1	100	51.4553	51.4972	51.4970	0.0002	No	0.0417	417.0	25.0	417.0	1
813194-2	100	51.8105	51.8532	51.8528	0.0004	No	0.0423	423.0	25.0	423.0	1
813194-2 Dup	100	50.6338	50.6798	50.6794	0.0004	No	0.0456	456.0	25.0	456.0	1
LCS	100	51.0510	51.0989	51.0989	0.0000	No	0.0479	479.0	25.0	479.0	1
813199-2	100	51.1592	51.1686	51.1684	0.0002	No	0.0092	92.0	25.0	92.0	1
813199-4	100	48.5148	48.5445	48.5444	0.0001	No	0.0296	296.0	25.0	296.0	1
813212	20	50.7831	50.8592	50.8590	0.0002	No	0.0759	3795.0	125.0	3795.0	1
							ļ				

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

ND = not detected (below the reporting limit)

Laboratory Control Sample (LCS) Summary

austratory control cumple (200) cummary										
QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?					
LCS	479.0	500	95.8%	90-110%	Yes					
LCSD										

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
813194-2	0.0423	0.0456	3.8%	≤5%	Yes

LCS Recovery

$$P = \left(\frac{LC}{LT}\right) x \, 10^{\circ}$$

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name



KIM

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 04TDS14F
Date Analyzed: 4/29/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813121-1	755	0.55	490.75	0.85
813121-2	650	0.67	422.5	1.03
813161-1	704	0.60	457.6	0.92
813161-2	724	0.60	470.6	0.93
813161-3	745	0.62	484.25	0.95
813161-4	759	0.61	493.35	0.93
813162-1	740	0.59	481	0.90
813162-2	696	0.65	452.4	0.99
813194-1	749	0.56	486.85	0.86
813194-2	741	0.57	481.65	0.88
813194-2 Dup	741	0.62	481.65	0.95
LCS				
813199-2	162	0.57	105.3	0.87
813199-4	485	0.61	315.25	0.94
813212	5600	0.68	3640	1.04
				_





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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-465]

COC Number

TURNAROUND TIME

DATE 04/29/14 PAGE 1

9

10 Days

COMMENTS THE NUMBER OF CONTAINERS Turbidity (SM2130) 108 (SM2540C) Specific Conductance (120,1) × (500.8) Cr. DESCRIPTION Water FAX (530) 339-3303 TEAM 3.6 TIME 04/29/14 155 Grand Ave Ste 1000 DATE Oakland, CA 94612 428648.IM.CS.EX.AC (530) 229-3303 PG&E Topock SAMPLERS (SIGNATURE SC-700B-WDR-465 E2 PROJECT NAME P.O. NUMBER SAMPLE I.D. COMPANY ADDRESS PHONE

Please Provide a preliminary Result for the TDS ASAP



Test services of the services

TOTAL NUMBER OF CONTAINERS

M

10 / 0	CHAIN OF CUSTODY SIGNATURE	SNATURE RECORD		SAMPLE CONDITIONS
Circumstance	The state of the s	MANAGEMENT OF THE PROPERTY OF	THE PROPERTY OF THE PROPERTY O	
(Relinquished)	Name CHESCEME Agency	Company! CHZm HUL Agency	Date! 4-29-/4 Time //:00	RECEIVED COOL ID WARM I L. 7 %
Signature (Received) (0, 20 A) grad	Printed Compar Name M. Le DC ()NPF Agency	Company/ TLI	Date/ Cいよる・ 4 Time しい	CUSTODY SEALED YES CON NO RE
Signature . 0	1 Printed	Company/	Date/ (1, 20, 1/1)]
(Relinquished) The Do DI & Mo		Agency TL	Time 25.50	SPECIAL REQUIREMENTS;
O pnature	Printed A	Company/	Date! ひんなしい	
(Deceived)	Name IT PLANCE WA	がか/Agency / こ)	Time A.S.	
4 gnature	Printed	Company/	Date/	
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		AND SOUTH AND SOUTH AND SOUTH ASSESSMENT OF THE SOUTH	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED IN THE PERSON NAMED	CONTRACTOR CONTRACTOR

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
3,26/14	8/2753	7.00	2ml/100ml	9.5	7.'30	NE
49114	812966-1	7.00	2 hl/100 ml	9.5	7:20	NE
	2		·			
	√ -3	<u>, , , , , , , , , , , , , , , , , , , </u>	.\/		V	
	812967-1	9.5	~17	N/4	NA	
	-2	1				
	~3					
	_4		·			
	-5					
	-6		·			
	- 7		·			
	-8					
	_9		·			
	-10					
	_11					
	-12					
	-13					
	_14					
	V -15					
	812968 CS	ı3) √	V			<u> </u>
	812969-1	7.00	2 ml / 100 ml	9.5	7:20	NE
V	V -2	<u> </u>	V			
4116114	813068	7.00	2ml/ 100ml	9.5	7;40	NE
4/23/14	813140	7.00	2 ml/ 100 ml	i	7:30	NE
1	813212	7,05	2 ml / 100 ml	9.5	7:30	NE
					<u> </u>	
					J	

NE 4130/14

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

M



Turbidity/pH Check

			Turbi	dity/pH C	neck			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
813150	71	47.	4/20/1A	M	Yes			
8/3/67(1,7)	>1 >2 A/24	427	1/2-47111	1	1			
813/49 (1,2)	21	72			Jo	1015	4 25 14 1:10	PH LZ
\$1315/11-31	2/	72			1	101 >	41 - 21.1 1.11	71.22
		72					i	
813/54(10-12)	14001	74	٠ طرا					1
8/3/55/1,2)	<1 200 yell	- 77		1217	Va.	W	· · · · · · · · · · · · · · · · · · ·	<u> </u>
28/3177	71	72	A/24/14		Yes	5:N	istantini Maint	111
113183-1		22	4/25/14	<u>B</u>	₩0 	9.00	4/28/14 10:M	1112
813175-4	71		4/12/14	ES	fus			
817189 (1-Z)	Z	72	1 1		yu	4.5.		
-2	Ci	72	 		Nο	1:00		
4131ay (1-2)	71	42			Yes -			
913196 913199 (1-2,4)	L1	T	1	<u> </u>				• (1)
\$13 199 (1-2,4)	41	72	4/20/14	ES	NO	2:W	4/30/14 10:00	8HL2
\$132.03	41	42	4/30/N	ES,	/ ()			
813207-4			i		/			
413209								
813211								
813215		1			4			
813220		7			20	11:10		
813212	V	7	1		Yes	11:00		
913231 (1-3)	21	72	Sulu	ES	No	3:00		
813230(1-2)	'>1	L2		ī	Yes			
413245(1-3)	Zi	72	5/5/14	ES	NO	10:00		
813244-16,23	- 1	1	7/3/19	1	1	10.00		
817251		42			Yus	- V		
817256		<u> </u>			3,25			
611257								
	71							
613263-2 813276	<u> </u>		V	4	$-\psi$			
813276	Z1	42	5/1/14	By	74			1 -1 -
813282(1-2)	J			1	- 1			-17174
813286	71							
817290	41							
817291								
813294								
813295								
813296	V							
817301-4	71							
811762 · U	41							
81727	71	1						
617304	41							
813310	7				V			
813284-6	71	72			No	10:W		
817717	1/	11			T	V		
01/117	-V	V	<u> </u>					

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

Analytical Bench Log Book

WDR pH Results

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

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name pH (for the pH result) Result	_
										-

liotes: 4-5-14 0630 4-5-14 0631 intes: -53.9 1405 1417 0420 50-700B 1421 METER +2 1409 49-14 .53.9 7-7 6420 Intes: 4-8-14 METER #L 3c-100B 1418 4-8-14 1425 4-8-14 0420 -53.9 10.35: Jun.03.2014 Reminder: WDR Required pH Range for the Effluent (SC-700B) is: 6.5 - 8.4

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
SC-7008.	4-15-14	8:40	4-15-19	8:50	M616n#2	4-15-14	0425	-53.3	CHRS LENTE	6.8

Notes:

PAGE

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Jun. 03.2014

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2 SC-7008	: 44 - 77 - 10 ; X7 25)	34-7/40 X 35 1	And District of	コータ・スズツタートロチタ	13 -54.8 CHRI	16176	. 60. 1
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! Ca a	14 24 11 8:50	4.74-14 9-11	motor of 4 7	4 79 74 04 1	1 521 74015	TENTY 1 /- C
3 SC-700A	17-2/79: 0.30	12/17 1.00 1	MENERAL REL	1 / 4 / 17 1 2 / 1 / 1	1 JJ. 6 (J/K/J	Level La
1 20 200	i/ ~/ **i	<u></u>			the contraction of the contracti	the state of the s

Notes:



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

May 30, 2014

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-466 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 813315

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-466 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on May 6, 2014, 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 and Total Dissolved Metals were analyzed by EPA 200.8 and EPA 200.7 with Mr. Shawn Duffy's approval.

The straight runs for the sample and associated matrix spike on sample SC-700B-WDR-466 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



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

Client: E2 Consulting Engineers, Inc.

155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwaters
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 813315 Date: May 30, 2014 **Collected:** May 6, 2014

Received: May 6, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2320B	Total Alkalinity	Alex Luna
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	Jennine Ta
EPA 300.0	Anions	Giawad Ghenniwa
SM 4500-NH3 D	Ammonia	Felipe Mendoza
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn
EPA 200.7	Metals by ICP	Ethel Suico
EPA 200.8	Metals by ICP/MS	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Laboratory No.: 813315 Date Received: May 6, 2014

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

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
813315-001	SC-700B-WDR-466	E120.1	NONE	5/6/2014	14:30	EC	7310	umhos/cm	2.00
813315-001	SC-700B-WDR-466	E200.7	NONE	5/6/2014	14:30	Aluminum	ND	ug/L	50.0
813315-001	SC-700B-WDR-466	E200.7	NONE	5/6/2014	14:30	BORON	945	ug/L	50.0
813315-001	SC-700B-WDR-466	E200.7	NONE	5/6/2014	14:30	Iron	ND	ug/L	20.0
813315-001	SC-700B-WDR-466	E200.7	NONE	5/6/2014	14:30	Zinc	ND	ug/L	20.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Antimony	ND	ug/L	2.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Arsenic	ND	ug/L	0.50
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Barium	10.2	ug/L	5.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Chromium	ND	ug/L	1.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Copper	ND	ug/L	1.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Lead	ND	ug/L	1.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Manganese	1.0	ug/L	0.50
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Molybdenum	21.0	ug/L	2.0
813315-001	SC-700B-WDR-466	E200.8	NONE	5/6/2014	14:30	Nickel	2.3	ug/L	2.0
813315-001	SC-700B-WDR-466	E218.6	LABFLT	5/6/2014	14:30	Chromium, Hexavalent	ND	ug/L	0.20
813315-001	SC-700B-WDR-466	E300	NONE	5/6/2014	14:30	Fluoride	2.00	mg/L	0.500
813315-001	SC-700B-WDR-466	E300	NONE	5/6/2014	14:30	Nitrate as N	2.60	mg/L	0.500
813315-001	SC-700B-WDR-466	E300	NONE	5/6/2014	14:30	Sulfate	500	mg/L	25.0
813315-001	SC-700B-WDR-466	SM2130B	NONE	5/6/2014	14:30	Turbidity	ND	NTU	0.100
813315-001	SC-700B-WDR-466	SM2540C	NONE	5/6/2014	14:30	Total Dissolved Solids	4410	mg/L	250
813315-001	SC-700B-WDR-466	SM4500NH3D	NONE	5/6/2014	14:30	Ammonia-N	ND	mg/L	0.500
813315-001	SC-700B-WDR-466	SM4500NO2B	NONE	5/6/2014	14:30	Nitrite as N	ND	mg/L	0.0050



Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
813315-002	SC-100B-WDR-466	E120.1	NONE	5/6/2014	14:20	EC	7470	umhos/cm	2.00
813315-002	SC-100B-WDR-466	E200.7	NONE	5/6/2014	14:20	Aluminum	ND	umnos/cm ug/L	50.0
813315-002	SC-100B-WDR-466	E200.7 E200.7	NONE	5/6/2014	14:20	BORON	979	_	50.0
		E200.7	NONE	5/6/2014	14:20			ug/L	20.0
813315-002	SC-100B-WDR-466					Iron	ND	ug/L	
813315-002	SC-100B-WDR-466	E200.7	LABFLT	5/6/2014	14:20	Iron	ND	ug/L	20.0
813315-002	SC-100B-WDR-466	E200.7	NONE	5/6/2014	14:20	Zinc	ND	ug/L	20.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Antimony	ND	ug/L	2.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Arsenic	3.6	ug/L	0.50
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Barium	26.2	ug/L	5.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Chromium	624	ug/L	1.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Copper	ND	ug/L	1.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Lead	ND	ug/L	1.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Manganese	7.8	ug/L	0.50
813315-002	SC-100B-WDR-466	E200.8	LABFLT	5/6/2014	14:20	Manganese	7.8	ug/L	0.50
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Molybdenum	21.3	ug/L	2.0
813315-002	SC-100B-WDR-466	E200.8	NONE	5/6/2014	14:20	Nickel	ND	ug/L	2.0
813315-002	SC-100B-WDR-466	E218.6	LABFLT	5/6/2014	14:20	Chromium, Hexavalent	575	ug/L	5.0
813315-002	SC-100B-WDR-466	E300	NONE	5/6/2014	14:20	Fluoride	2.34	mg/L	0.500
813315-002	SC-100B-WDR-466	E300	NONE	5/6/2014	14:20	Nitrate as N	2.64	mg/L	0.500
813315-002	SC-100B-WDR-466	E300	NONE	5/6/2014	14:20	Sulfate	512	mg/L	25.0
813315-002	SC-100B-WDR-466	SM2130B	NONE	5/6/2014	14:20	Turbidity	0.184	NTU	0.100
813315-002	SC-100B-WDR-466	SM2320B	NONE	5/6/2014	14:20	Alkalinity	155	mg/L	5.00
813315-002	SC-100B-WDR-466	SM2320B	NONE	5/6/2014	14:20	Alkalinity, Bicarbonate (As CaCO3)	155	mg/L	5.00
813315-002	SC-100B-WDR-466	SM2320B	NONE	5/6/2014	14:20	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
813315-002	SC-100B-WDR-466	SM2540C	NONE	5/6/2014	14:20	Total Dissolved Solids	4420	mg/L	250
813315-002	SC-100B-WDR-466	SM4500NH3D	NONE	5/6/2014	14:20	Ammonia-N	ND	mg/L	0.500
813315-002	SC-100B-WDR-466	SM4500NO2B	NONE	5/6/2014	14:20	Nitrite as N	ND	mg/L	0.0050
813315-002	SC-100B-WDR-466	SM4500-PB_E	NONE	5/6/2014	14:20	Total Phosphorous-P	ND	mg/L	0.0200
813315-002	SC-100B-WDR-466	SM4500SI	LABFLT	5/6/2014	14:20	Soluble Silica	18.3	mg/L	1.00
813315-002	SC-100B-WDR-466	SM5310C	NONE	5/6/2014	14:20	Total Organic Carbon	0.889	mg/L	0.300

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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Page 1 of 31

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

Printed 5/30/2014

Laboratory No. 813315

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 5/6/2014 8:50:00 PM

Field ID Collected Matrix

SC-700B-WDR-466 813315-001 05/06/2014 14:30 Water
SC-100B-WDR-466 813315-002 05/06/2014 14:20 Water

Anions By I.C EPA 300.0		Batch 05AN14C				Result
Parameter	Unit	Analyzed	DF	MDL	RL 0.500	
813315-001 Fluoride	mg/L	05/07/2014 13:31	5.00	0.104		
Nitrate as Nitrogen	mg/L	05/07/2014 13:31	5.00	0.0415	0.500	2.60
Sulfate	mg/L	05/07/2014 14:35	50.0	1.54	25.0	500
813315-002 Fluoride	mg/L	05/07/2014 13:58	5.00	0.104	0.500	2.34
Nitrate as Nitrogen	mg/L	05/07/2014 13:58	5.00	0.0415	0.500	2.64
Sulfate	mg/L	05/07/2014 16:39	50.0	1.54	25.0	512

Sulfate	Sulfate		05/07/2014 16:39		50.0	1.54	25.0	512
Method Blank								
Parameter	Unit	DF	Result					
Chloride	mg/L	1.00	ND					
Fluoride	mg/L	1.00	ND					
Sulfate	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID =	813315-001
Parameter Sulfate	Unit mg/L	DF 50.0	Result 499	Expected 500	F	RPD 0.228	Accepta 0 - 20	nce Range
Duplicate	mg/L	50.0	433	300				813315-002
Parameter Fluoride Nitrate as Nitrogen	Unit mg/L mg/L	DF 5.00 5.00	Result 2.35 2.76	Expected 2.34 2.64	F	RPD 0.512 4.62	Accepta 0 - 20 0 - 20	nce Range

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



Client: E2 Consulting Engineers, Inc.		Project Name: PG&E Topock Project Project Number: 428648.IM.CS.EX.AC				Page 2 of 31 Printed 5/30/2014	
Duplicate						Lab ID = 813325-001	
Parameter Chloride	Unit mg/L	DF 25.0	Result 81.3	Expected 82.6	RPD 1.55	Acceptance Range 0 - 20	
Lab Control Sample							
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.93	Expected 4.00	Recovery 98.2	Acceptance Range 90 - 110	
Fluoride	mg/L	1.00	4.09	4.00	102	90 - 110	
Sulfate	mg/L	1.00	19.6	20.0	98.2	90 - 110	
Nitrate as Nitrogen	mg/L	1.00	4.03	4.00	101	90 - 110	
Matrix Spike						Lab ID = 813315-001	
Parameter Sulfate	Unit mg/L	DF 50.0	Result 1010	Expected/Added 1000(500)	Recovery 102	Acceptance Range 85 - 115	
Matrix Spike						Lab ID = 813315-002	
Parameter Fluoride Nitrate as Nitrogen	Unit mg/L mg/L	DF 5.00 5.00	Result 22.7 23.1	Expected/Added 22.3(20.0) 22.6(20.0)	Recovery 102 102	Acceptance Range 85 - 115 85 - 115	
Matrix Spike	1119/2	0.00	20. 1	22.5(25.5)		Lab ID = 813325-001	
Parameter Chloride	Unit mg/L	DF 25.0	Result 177	Expected/Added 183(100)	Recovery 94.2	Acceptance Range 85 - 115	
MRCCS - Secondary		4. e		Harri e di Barrana de la como de la como de la como de la como de la como de la como de la como de la como de l La como de la como dela como de la como dela como de la			
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.99	Expected 4.00	Recovery 99.6	Acceptance Range 90 - 110	
Fluoride	mg/L	1.00	4.14	4.00	103	90 - 110	
Sulfate	mg/L	1.00	19.8	20.0	99.1	90 - 110	
Nitrate as Nitrogen	mg/L	1.00	4.00	4.00	100.	90 - 110	
MRCVS - Primary		55	D !!		and the comment	ar en Madanes I en	
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.06	Expected 3.00	Recovery	Acceptance Range 90 - 110	
MRCVS - Primary	ilig/L	1.00	3.00 AMD 4	i i jaran dari dari dari dari dari dari dari dari	102 9452	of Total Revue of the color	
	Unit	DF	Result	Evacted	Pecovery	Accentance Pange	
Parameter Chloride	mg/L	1.00	3.02	Expected 3.00	Recovery 101	Acceptance Range 90 - 110	
MRCVS - Primary	g/ L		255 g	1.63 1.63	Jester Transport		
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Chloride	mg/L	1.00	3.00	3.00	99.8	90 - 110	

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



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Nitrite SM 4500-NO2 B			Batch	05NO214A				
Parameter	n per unit i hel datine	Unit	Ana	lyzed [DF	MDL	RL	Result
813315-001 Nitrite as Nitrogen		mg/L	05/07	7/2014 12:02 1	.00	0.000630	0.0050	ND
813315-002 Nitrite as Nitrogen		mg/L	05/07	//2014 12:07 1	.00	0.000630	0.0050	ND
Method Blank								
Parameter	Unit	DF	Result					
Nitrite as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 8	13315-001
Parameter	Unit	DF	Result	Expected	RF	PD	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	ND	0	()	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0214	0.0230	Ş	93.0	90 - 110	
Matrix Spike							Lab ID = 8	13315-001
Parameter	Unit	DF	Result	Expected/Adde	d Re	ecovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0208	0.0230(0.0230)) 9	90.4	85 - 115	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0214	0.0230	9	93.0	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0192	0.0200	(96.0	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Nitrite as Nitrogen	mg/L	1.00	0.0192	0.0200	,	96.0	90 - 110	



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Alkalinity by SM 2320B			Batc	h 05ALK14B			
Parameter		Unit	An	alyzed [DF N	IDL RL	Result
813315-002 Alkalinity as CaC	O3	mg/L	05/1	6/2014 1	1.00 1.68 5.00		155
Bicarbonate (Cal	culated)	mg/L	05/1	6/2014 1	.00 1.68	5.00	155
Carbonate (Calci	ulated)	mg/L	05/1	6/2014 1	.00 1.68	5.00	ND
Method Blank							
Parameter	Unit	DF	Result				
Alkalinity as CaCO3	mg/L	1.00	ND				
Duplicate						Lab ID =	813459-021
Parameter	Unit	DF	Result	Expected	RPD	Accept	ance Range
Alkalinity as CaCO3	mg/L	1.00	110	109	0.913	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recove	ry Accept	ance Range
Alkalinity as CaCO3	mg/L	1.00	99.0	100	99.0	90 - 11	0
Lab Control Sample D	uplicate						
Parameter	Unit	DF	Result	Expected	Recove	ry Accept	ance Range
Alkalinity as CaCO3	mg/L	1.00	100	100	100	90 - 11	0
Matrix Spike						Lab ID =	= 813315-002
Parameter	Unit	DF	Result	Expected/Adde	d Recove	ery Accept	ance Range
Alkalinity as CaCO3	mg/L	1.00	251	255(100)	96.0	75 - 12	5



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Specific Conductivity - E	PA 120.1		Bat	ch 05EC14B				
Parameter		Unit	A ı	nalyzed	DF	MDL	RL	Result
813315-001 Specific Conducti	vity	umhos	s/cm 05/	12/2014	1.00	0.606	2.00	7310
813315-002 Specific Conducti	vity	umhos	nos/cm 05/12/2014 1.00 0.60		0.606	2.00	7470	
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	813334-004
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 903	Expected 903	F 4.45(3-3)	RPD 0 14	Accepta 0 - 10	ance Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 728	Expected 706	F 	Recovery 103	Accepta 90 - 110	ance Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 726	Expected 706	F Partition	Recovery 103	Accepta 90 - 110	ance Range 0
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 975	Expected 1000	F Var ⁴⁸ SP	Recovery 97.5	Accepta 90 - 11	ance Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 984	Expected 1000	F	Recovery 98.4	Accepta 90 - 11	ance Range



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Chrome VI by EPA 218.6 Batch 05CrH14 A				05CrH14 A				
Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
813315-001 Chromium, Hexa	valent	ug/L	05/07	/2014 13:04 1	.00	0.00600	0.20	ND
813315-002 Chromium, Hexa	valent	ug/L	05/07	/2014 13:33 2	5.0	0.150	5.0	575
Method Blank				· 数、数、数数		water day	. 14. _{11.25}	
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND					
Duplicate							Lab ID =	813315-002
Parameter Chromium, Hexavalent	Unit ug/L	DF 25.0	Result 577	Expected 575	F	RPD 0.292	Accepta 0 - 20	ance Range
Low Level Calibration \	Verification							
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.198	Expected 0.200	F	Recovery 99.0	Accepta 70 - 130	ance Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 5.04	Expected 5.00	F Special	Recovery 101	90 - 110	ance Range) 813315-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.19	Expected/Adde 5.15(5.00)	d F	Recovery 101	90 - 110	ance Range) 813315-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 1.21	Expected/Adde 1.15(1.00)	d F	Recovery 107	90 - 110	ance Range) 813315-002
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 25.0	Result 1210	Expected/Adde 1200(625)	d F	Recovery 102	Accepta 90 - 110	ance Range)
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 5.03	Expected 5.00	F	Recovery 100	Accepta 90 - 110	ance Range)
MRCVS - Primary								
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	F	Recovery 102	Accepta 95 - 108	ance Range



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Metals by EPA 200.7, Tot	ai	Batch 051314A-Th2						
Parameter	e ja ji turi aggalesiy	Unit	Anal	yzed	DF	MDL	RL	Result
813315-001 Aluminum		ug/L	05/13	/2014 17:46	1.00	7.20	50.0	ND
Boron		ug/L	05/13	/2014 17:46	1.00	4.10	50.0	945
Iron		ug/L	05/13	/2014 17:46	1.00	3.00	20.0	ND
Zinc		ug/L	05/13	/2014 17:46	1.00	5.10	20.0	ND
813315-002 Aluminum		ug/L	05/13	/2014 17:51	1.00	7.20	50.0	ND
Boron		ug/L	05/13	/2014 17:51	1.00	4.10	50.0	979
Iron		ug/L	05/13	/2014 17:51	1.00	3.00	20.0	ND
Zinc		ug/L	05/13	/2014 17:51	1.00	5.10	20.0	ND
Method Blank		ari S		Red Marine and		ران النفي المشركة		Bayana (Jajór
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	813315-002
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Aluminum	ug/L	1.00	ND	0		0	0 - 20	
Iron	ug/L	1.00	ND	0		0	0 - 20	
Zinc	ug/L	1.00	ND	0		0	0 - 20	
Boron	ug/L	1.00	986	979		0.753	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Aluminum	ug/L	1.00	2010	2000		101	85 - 115	5
Iron	ug/L	1.00	2130	2000		106	85 - 115	5
Zinc	ug/L	1.00	1980	2000		98.8	85 - 115	5
Boron	ug/L	1.00	2020	2000		101	85 - 115	
Matrix Spike							Lab ID =	813315-002
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Accepta	ance Range
Aluminum	ug/L	1.00	1660	2000(2000)		83.0	75 - 125	5
Iron	ug/L	1.00	1970	2000(2000)		98.3	75 - 125	
Zinc	ug/L	1.00	2170	2000(2000)		109	75 - 125	
Boron	ug/L	1.00	2990	2980(2000)		100	75 - 125	5



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Matrix Spike Duplicate						Lab ID = 813315-002
Parameter Aluminum	Unit ug/L	DF 1.00	Result 1670	Expected/Added 2000(2000)	Recovery 83.6	Acceptance Range 75 - 125
Iron	ug/L	1.00	1940	2000(2000)	96.8	75 - 125
Zinc	ug/L	1.00	2160	2000(2000)	108	75 - 125
Boron	ug/L	1.00	2940	2980(2000)	98.2	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	4950	5000	99.0	95 - 105
Iron	ug/L	1.00	5050	5000	101	95 - 105
Zinc	ug/L	1.00	4960	5000	99.3	95 - 105
Boron	ug/L	1.00	5070	5000	101	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery 99.4	Acceptance Range 90 - 110
Aluminum	ug/L	1.00	4970	5000	99.4	90 - 110
MRCVS - Primary		24 .			Cyfridd y dailen y d	
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5120	5000	102	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5050	5000	101	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5090	5000	102	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5120	5000	102	90 - 110
MRCVS - Primary	Secretaria de la maria de la constitución de la con	and the second second	proposition in the second second second second second second second second second second second second second s	gart full gygdio ynnos artu roego air am silleir nego er roen. Soe artu haarega ellista i tali adjallani	ettida nigjallepitari tama zapografia internaciona espera e	er zaditat deligiti a grapa deser delibro emperatura delibro del ser a presenta emperatura del mente con const
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5160	5000	103	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5400	5000	108	90 - 110
MRCVS - Primary				A grant of the second of the s		
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	5090	5000	102	90 - 110
	-					



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Metals by EPA 200.8, Total		Batch 051214A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
813315-001 Antimony	ug/L	05/12/2014 14:10	1.00	0.0350	2.0	ND
Arsenic	ug/L	05/12/2014 14:10	1.00	0.0500	0.50	ND
Barium	ug/L	05/12/2014 14:10	1.00	0.297	2.0	10.2
Chromium	ug/L	05/12/2014 14:10	1.00	0.0710	1.0	ND
Lead	ug/L	05/12/2014 14:10	1.00	0.143	1.0	ND
Manganese	ug/L	05/12/2014 14:10	1.00	0.0600	0.50	1.0
Molybdenum	ug/L	05/12/2014 14:10	1.00	0.0500	2.0	21.0
Nickel	ug/L	05/12/2014 14:10	1.00	0.240	2.0	2.3
813315-002 Antimony	ug/L	05/12/2014 14:49	1.00	0.0350	2.0	ND
Arsenic	ug/L	05/12/2014 14:49	1.00	0.0500	0.50	3.6
Barium	ug/L	05/12/2014 14:49	1.00	0.297	2.0	26.2
Chromium	ug/L	05/12/2014 15:02	10.0	0.710	5.0	624
Lead	ug/L	05/12/2014 14:49	1.00	0.143	1.0	ND
Manganese	ug/L	05/12/2014 14:49	1.00	0.0600	0.50	7.8
Molybdenum	ug/L	05/12/2014 14:49	1.00	0.0500	2.0	21.3
Nickel	ug/L	05/12/2014 14:49	1.00	0.240	2.0	ND

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Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND



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Duplicate			å			Lab ID = 813315-001	
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range	
Arsenic	ug/L	1.00	ND	0	0	0 - 20	
Barium	ug/L	1.00	10.2	10.2	0.214	0 - 20	
Chromium	ug/L	1.00	ND	0	0	0 - 20	
Nickel	ug/L	1.00	ND	2.35	0	0 - 20	
Antimony	ug/L	1.00	ND	0	0	0 - 20	
Lead	ug/L	1.00	ND	0	0	0 - 20	
Manganese	ug/L	1.00	0.956	1.01	5.50	0 - 20	
Molybdenum	ug/L	1.00	21.8	21.0	3.69	0 - 20	
Low Level Calibration	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	0.226	0.200	113	70 - 130	
Barium	ug/L	1.00	1.05	1.00	105	70 - 130	
Chromium	ug/L	1.00	0.558	0.500	112	70 - 130	
Nickel	ug/L	1.00	1.18	1.00	118	70 - 130	
Antimony	ug/L	1.00	0.214	0.200	107	70 - 130	
Lead	ug/L	1.00	0.494	0.500	98.9	70 - 130	
Manganese	ug/L	1.00	0.515	0.500	103	70 - 130	
Molybdenum	ug/L	1.00	0.236	0.200	118	70 - 130	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	50.5	50.0	101	85 - 115	
Barium	ug/L	1.00	47.3	50.0	94.6	85 - 115	
Chromium	ug/L	1.00	51.4	50.0	103	85 - 115	
Nickel	ug/L	1.00	50.8	50.0	102	85 - 115	
Antimony	ug/L	1.00	45.5	50.0	91.1	85 - 115	
Lead	ug/L	1.00	49.4	50.0	98.8	85 - 115	
Manganese	ug/L	1.00	49.6	50.0	99.3	85 - 115	
Molybdenum	ug/L	1.00	49.4	50.0	98.8	85 - 115	



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Matrix Spike						Lab ID = 813315-001	
Parameter Arsenic	Unit ug/L	DF 1.00	Result 51.9	Expected/Added 50.0(50.0)	Recovery 104	Acceptance Range 75 - 125	
Barium	ug/L	1.00	58.5	60.2(50.0)	96.6	75 - 125	
Chromium	ug/L	1.00	50.9	50.0(50.0)	102	75 - 125	
Nickel	ug/L	1.00	50.0	52.4(50.0)	95.3	75 - 125	
Antimony	ug/L	1.00	48.3	50.0(50.0)	96.7	75 - 125	
Lead	ug/L	1.00	43.9	50.0(50.0)	87.8	75 - 125	
Manganese	ug/L	1.00	50.7	51.0(50.0)	99.3	75 - 125	
Molybdenum	ug/L	1.00	72.6	71.0(50.0)	103	75 - 125	
Matrix Spike Duplicate						Lab ID = 813315-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	51.0	50.0(50.0)	102	75 - 125	
Barium	ug/L	1.00	55.8	60.2(50.0)	91.2	75 - 125	
Chromium	ug/L	1.00	50.2	50.0(50.0)	100	75 - 125	
Nickel	ug/L	1.00	49.5	52.4(50.0)	94.3	75 - 125	
Antimony	ug/L	1.00	46.1	50.0(50.0)	92.2	75 - 125	
Lead	ug/L	1.00	44.3	50.0(50.0)	88.6	75 - 125	
Manganese	ug/L	1.00	48.3	51.0(50.0)	94.7	75 - 125	
Molybdenum	ug/L	1.00	71.7	71.0(50.0)	101	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	20.4	20.0	102	90 - 110	
Barium	ug/L	1.00	20.3	20.0	102	90 - 110	
Chromium	ug/L	1.00	21.0	20.0	105	90 - 110	
Nickel	ug/L	1.00	20.8	20.0	104	90 - 110	
Antimony	ug/L	1.00	19.9	20.0	99.4	90 - 110	
Lead	ug/L	1.00	20.2	20.0	101	90 - 110	
Manganese	ug/L	1.00	20.6	20.0	103	90 - 110	
Molybdenum	ug/L	1.00	20.4	20.0	102	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	21.1	20.0	105	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range	
Arsenic	ug/L	1.00	21.3	20.0	107	90 - 110	



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Interference Check S	Standard AB					
Parameter Lead Interference Check S	Unit ug/L Standard AB	DF 1.00	Result ND	Expected 0	Recovery	Acceptance Range
Parameter Manganese Interference Check S	Unit ug/L	DF 1.00	Result 21.7	Expected 20.0	Recovery 108	Acceptance Range 80 - 120
Parameter Manganese Interference Check S	Unit ug/L Standard AB	DF 1.00	Result 21.0	Expected 20.0	Recovery 105	Acceptance Range 80 - 120
Parameter Molybdenum Interference Check	Unit ug/L	DF 1.00	Result ND	Expected 0	Recovery	Acceptance Range
Parameter Molybdenum	Unit ug/L	DF 1.00	Result ND	Expected 0	Recovery	Acceptance Range
Serial Dilution						Lab ID = 813315-002
Parameter Barium Chromium	Unit ug/L ug/L	DF 5.00 50.0	Result 26.3 620	Expected 26.2 624	RPD 0.567 0.658	Acceptance Range 0 - 10 0 - 10



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Metals by EPA 200.8, Tot	al		Batch	051414A			
Parameter		Unit	Ana	lyzed D	F MDI	- RL	Result
813315-001 Copper		ug/L	05/14	/2014 14:02 1.	0.190	1.0	ND
813315-002 Copper		ug/L	05/14	/2014 14:41 1.	0.190	1.0	ND
Method Blank	44.	Kije ja o	eg jágayák	he 250 man en 256a.			
Parameter	Unit	DF	Result				
Copper	ug/L	1.00	ND				
Duplicate						Lab ID =	813315-001
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Copper	ug/L	1.00	ND	0	0	0 - 20	
Low Level Calibration \	Verification						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	1.28	1.00	128	70 - 130	•
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	53.2	50.0	106	85 - 1 18	-
Matrix Spike						Lab ID =	813315-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Copper	ug/L	1.00	52.0	50.0(50.0)	104	75 - 12	5
Matrix Spike Duplicate						Lab ID =	813315-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Copper	ug/L	1.00	50.4	50.0(50.0)	101	75 - 12	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	20.3	20.0	101	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	20.8	20.0	104	90 - 110)
Interference Check Sta	andard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0			
Interference Check Sta	andard A						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0			



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Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
Reactive Silica by SM	4500-Si D		Batcl	n 05Si14A				
Copper	ug/L	1.00	23.9	20.0	•	120	80 - 120)
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ance Range
Interference Check	k Standard AB							
Copper	ug/L	1.00	23.5	20.0	•	118	80 - 120)
Parameter	Unit	DF	Result	Expected	Re	ecovery	Accepta	ince Range
Interference Check	s Standard AB							

Reactive Silica by SM456	00-Si D		Batch	05Si14A			
Parameter		Unit	Ana	lyzed D	F MDL	RL	Result
813315-002 Silica		mg/L	05/12	/2014 25	.0 0.252	1.00	18.3
Method Blank							
Parameter Silica	Unit mg/L	DF 1.00	Result ND				
Duplicate						Lab ID =	813315-002
Parameter Silica	Unit mg/L	DF 25.0	Result 18.9	Expected 18.3	RPD 3.21	Accepta 0 - 20	ince Range
Lab Control Sample							
Parameter Silica	Unit mg/L	DF 1.00	Result 0.200	Expected 0.206	Recovery 97.2	Accepta 90 - 110	ince Range)
Matrix Spike						Lab ID =	813315-002
Parameter Silica	Unit mg/L	DF 25.0	Result 22.9	Expected/Added 23.4(5.15)	Recovery 90.3	Accepta 75 - 125	ance Range
MRCCS - Secondary							
Parameter Silica	Unit mg/L	DF 1.00	Result 0.200	Expected 0.206	Recovery 97.2	Accepta 90 - 110	ance Range)
MRCVS - Primary							
Parameter Silica	Unit mg/L	DF 1.00	Result 0.370	Expected 0.400	Recovery 92.5	Accepta 90 - 110	ance Range



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Total Dissolved Solids b	y SM 254	0 C	Batch	05TDS14B				
Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
813315-001 Total Dissolved	Solids	mg/L	05/12	2/2014	1.00	1.76	250	4410
813315-002 Total Dissolved	Solids	mg/L	05/12	2/2014	1.00	1.76	250	4420
Method Blank								
Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND				Lab ID =	813315-001
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4330	Expected 4410	40.5	RPD 1.83	0 - 10	ance Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 460	Expected 500	_	Recovery 92.0		ance Range



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Parameter	Statement of the statement	Unit	Ana	lyzed DI	= MDL	RL	Result
813315-002 Total Organic Car	bon	mg/L	05/08/2014 17:03		0.0877	0.300	0.889
Method Blank	٠						
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result ND				
Duplicate						Lab ID =	813320-001
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result ND	Expected 0	RPD 0	Accepta 0 - 20	nce Range
Lab Control Sample							
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 10.4	Expected 10.0	Recovery 104	90 - 110	
Matrix Spike						Lab ID =	813325-008
Parameter Total Organic Carbon MRCCS - Secondary	Unit mg/L	DF 1.00	Result 13.3	Expected/Added 12.6(10.0)	Recovery 107	Accepta 75 - 125	nce Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 11.5	Expected 10.0	Recovery 115	Accepta 85 - 115	nce Range
Parameter Total Organic Carbon MRCVS - Primary	Unit mg/L	DF 1.00	Result 9.67	Expected 10.0	Recovery 96.7	Accepta 90 - 110	ince Range
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Total Organic Carbon MRCVS - Primary	mg/L	1.00	9.27	10.0	92.7	90 - 110	•
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.73	Expected 10.0	Recovery 97.3	Accepta 90 - 110	ince Range



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Total Phosphate, SM 45	600-PB,E		Batch	05TP14A				
Parameter		Unit	Anal	yzed [)F	MDL	RL	Result
813315-002 Phosphate, Tota	al As P	mg/L	05/12	/2014 1.	1.00 0.00460		0.0200	ND
Method Blank		n de	e Magaza di	n Pay AKasi				2.5.5
Parameter	Unit	DF	Result					
Phosphate, Total As P	mg/L	1.00	ND					
Duplicate							Lab ID = 8	13315-002
Parameter	Unit	DF	Result	Expected	R	PD	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	ND	0	(0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0703	0.0650		108	90 - 110	
Matrix Spike							Lab ID = 8	13315-002
Parameter	Unit	DF	Result	Expected/Adde	d Re	ecovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0599	0.0650(0.0650)	9	92.2	75 - 125	_
MRCCS - Secondary	·							
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0703	0.0650		108	90 - 110	_
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Re	ecovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0671	0.0660		102	90 - 110	·



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Ammonia Nitrogen by SM	/14500-N	H3D	Batch	05NH314B				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813315-001 Ammonia as N		mg/L	05/28	3/2014	1.00	0.0318	0.500	ND
813315-002 Ammonia as N		mg/L	05/28	3/2014	1.00	0.0318	0.500	ND
Method Blank		14.200 A						
Parameter	Unit	DF	Result					
Ammonia as N	mg/L	1.00	ND					
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	7.46	8.00		93.2	90 - 110)
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	7.53	8.00		94.2	90 - 110)
Matrix Spike							Lab ID =	813315-001
Parameter	Unit	DF	Result	Expected/Add	led F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	8.79	10.0(10.0)		87.9	75 - 125	;
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Ammonia as N	mg/L	1.00	5.76	6.00		95.9	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ince Range
Ammonia as N	mg/L	1.00	5.76	6.00		95.9	90 - 110)



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Parameter		Unit	Anal	yzed C	F	MDL	RL	Result
813315-002 Manganese		ug/L	05/13/2014 17:42		00 0.	0600	0.50	7.8
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813316-001
Parameter	Unit	DF	Result	Expected	RPD		Accepta	ince Range
Chromium	ug/L	2.00	4.48	4.32	3.5	9	0 - 20	
Manganese	ug/L	2.00	75.2	72.2	4.0	8	0 - 20	
Low Level Calibration V	erification							Gilderetu k
Parameter	Unit	DF	Result	Expected	Reco	very	Accepta	ince Range
Chromium	ug/L	1.00	0.544	0.500	109	•	70 - 130	_
Manganese	ug/L	1.00	0.460	0.500	91.	9	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Reco	very	Accepta	ince Range
Chromium	ug/L	1.00	53.7	50.0	107	7	85 - 115	5
Manganese	ug/L	1.00	53.8	50.0	108	3	85 - 115	5
Matrix Spike							Lab ID =	813316-001
Parameter	Unit	DF	Result	Expected/Added	Reco	very	Accepta	nce Range
Chromium	ug/L	2.00	55.0	54.3(50.0)	101	١	75 - 125	_
Manganese	ug/L	2.00	126	122(50.0)	107	7	75 - 125	5
Matrix Spike Duplicate							Lab ID =	813316-001
Parameter	Unit	DF	Result	Expected/Adde	Reco	very	Accepta	nce Range
Chromium	ug/L	2.00	54.3	54.3(50.0)	100	•	75 - 125	•
Manganese	ug/L	2.00	123	122(50.0)	102	2	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Reco	very	Accepta	nce Range
Chromium	ug/L	1.00	19.0	20.0	95.	-	90 - 110	-
Manganese	ug/L	1.00	19.1	20.0	95.	4	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Reco	very		ance Range
Chromium	ug/L	1.00	20.6	20.0	103	•	90 - 110	-



Client: E2 Consulting Engineers, Inc.

Magnesium

ug/L

1.00

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Project Number: 428648.IM.CS.EX.AC

Metals by 200.7, Dissolved Batch 051314A-Th2 DF MDL RL Parameter Unit Analyzed Result 05/13/2014 17:07 1.00 3.00 20.0 ND 813315-002 Iron ug/L Method Blank DF Parameter Unit Result Calcium ND ug/L 1.00 Iron ug/L 1.00 ND Sodium ND ug/L 1.00 ND Magnesium ug/L 1.00 Lab ID = 813316-002 Duplicate Unit DF Result Expected **RPD** Parameter Acceptance Range 100 240000 236000 1.80 0 - 20 Calcium ug/L 0 0 - 20Iron ug/L 1.00 ND 0 8.16 0 - 20Sodium uq/L 500 1360000 1480000 10.0 31000 30400 1.89 0 - 20Magnesium ug/L Lab Control Sample Parameter Unit DF Result Recovery Acceptance Range **Expected** 1.00 2220 2000 111 85 - 115 Calcium uq/L 2110 2000 106 85 - 115 Iron uq/L 1.00 2000 99.8 85 - 115 Sodium ug/L 1.00 2000 1890 2000 94.4 85 - 115 Magnesium ug/L 1.00 Lab ID = 813316-002 Matrix Spike Parameter Unit DF Result Expected/Added Recovery Acceptance Range Calcium ug/L 100 452000 436000(200000) 108 75 - 125 97.6 Iron ug/L 1.00 1950 2000(2000) 75 - 125 109 Sodium ug/L 500 2570000 2480000(100000 75 - 125 Magnesium ug/L 10.0 49000 50400(20000) 93.2 75 - 125Matrix Spike Duplicate Lab ID = 813316-002 Parameter Unit DF Result Expected/Added Recovery Acceptance Range 75 - 125 ug/L 1.00 1910 2000(2000) 95.3 Iron MRCCS - Secondary Parameter Unit DF Result **Expected** Recovery Acceptance Range Calcium 5240 5000 105 95 - 105 ug/L 1.00 5050 5000 101 95 - 105 Iron ua/L 1.00 Sodium ug/L 1.00 4930 5000 98.7 95 - 105

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.

5000

95.3

4770

041

95 - 105



Client: E2 Consulting E	Client: E2 Consulting Engineers, Inc		oject Name: oject Numbe	PG&E Topo r: 428648.IM.C	-		Printed 5	age 31 of 31 /30/2014
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	nce Range
Sodium	ug/L	1.00	1960	2000		98.0	80 - 120	
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	nce Range
Sodium	ug/L	1.00	1950	2000		97.7	80 - 120	
Magnesium	ug/L	1.00	2130	2000		106	80 - 120	1
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Magnesium	ug/L	1.00	2060	2000		103	80 - 120	
Parameter	ertrije gan 127 turner verene 24000	Unit		lyzed	DF	MDL	RL	Result
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
813315-001 Turbidity		NTU		//2014	1.00	0.0140	0.100	ND
813315-002 Turbidity		NTU	05/07	7/2014	1.00	0.0140	0.100	0.184
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	813314-020
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	ND	0.110		0	0 - 20	
Lab Control Sample)							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.72	8.00		109	90 - 110)
Lab Control Sample	e Duplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.51	8.00		106	90 - 110	

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

€ / Mona Nassimi

Manager, Analytical Services





Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS14B Date Analyzed: 5/12/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	67.7776	67.7779	67.7779	0.0000	No	0.0003	3.0	25.0	ND	1
813315-1	10	30.0515	30.0959	30.0956	0.0003	No	0.0441	4410.0	250.0	4410.0	1
813315-2	10	29.5359	29.5803	29.5801	0.0002	No	0.0442	4420.0	250.0	4420.0	1
813316-1	20	29.2560	29.3098	29.3095	0.0003	No	0.0535	2675.0	125.0	2675.0	1
813316-2	10	29.4154	29.4639	29.4636	0.0003	No	0.0482	4820.0	250.0	4820.0	1
813325-7	100	70.8766	70.9345	70.9345	0.0000	No	0.0579	579.0	25.0	579.0	1
813329-1	100	72.5254	72.5585	72.5582	0.0003	No	0.0328	328.0	25.0	328.0	1
813334-1	100	76.7862	76.8368	76.8367	0.0001	_ No	0.0505	505.0	25.0	505.0	1
813334-2	100	74.7001	74.7506	74.7505	0.0001	No	0.0504	504.0	25.0	504.0	1
813334-3	100	73.4317	73.4811	73.4811	0.0000	No	0.0494	494.0	25.0	494.0	1
813334-4	100	76.2495	76.2993	76.2993	0.0000	No	0.0498	498.0	25.0	498.0	1
813315-1 Dup	10	30.4523	30.4960	30.4956	0.0004	No	0.0433	4330.0	250.0	4330.0	1
LCS	100	74.4535	74.4995	74.4995	0.0000	No	0.0460	460.0	25.0	460.0	1
813345-1	100	65.6719	65.7213	65.7213	0.0000	No	0.0494	494.0	25.0	494.0	1
813345-2	100	73.5706	73.6215	73.6212	0.0003	No	0.0506	506.0	25.0	506.0	1
813349-2	100	80.5714	80.5902	80.5902	0.0000	No	0.0188	188.0	25.0	188.0	1
813349-4	100	75.6057	75.6480	75.6480	0.0000	No	0.0423	423.0	25.0	423.0	1
813350-1	50	50.9271	50.9777	50.9777	0.0000	No	0.0506	1012.0	50.0	1012.0	1
813350-2	100	68.7237	68.7753	68.7753	0.0000	No	0.0516	516.0	25.0	516.0	1
813350-3	100	72.4021	72.4618	72.4616	0.0002	No	0.0595	595.0	25.0	595.0	11
813350-4	50	48.9740	49.0051	49.0050	0.0001	No	0.0310	620.0	50.0	620.0	11
813383-1	100	74.4531	74.4985	74.4985	0.0000	No	0.0454	454.0	25.0	454.0	1
813383-2	100	72.4800	72.5295	72.5293	0.0002	No	0.0493	493.0	25.0	493.0	1
813350-4 Dup	50	47.9106	47.9422	47.9422	0.0000	No	0.0316	632.0	50.0	632.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std i.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	460.0	500	92.0%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
813315-1	0.0441	0.0433	0.9%	≤5%	Yes
813350-4	0.0310	0.0316	1.0%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT =Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Reviewer Signature

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS14B

Date Analyzed: 5/12/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813315-1	7310	0.60	4751.5	0.93
813315-2	7470	0.59	4855.5	0.91
813316-1	4540	0.59	2951	0.91
813316-2	8270	0.58	5375.5	0.90
813325-7	920	0.63	598	0.97
813329-1	522	0.63	339.3	0.97
813334-1	903	0.56	586.95	0.86
813334-2	905	0.56	588.25	0.86
813334-3	903	0.55	586.95	0.84
813334-4	903	0.55	586.95	0.85
813315-1 Dup	7310	0.59	4751.5	0.91
LCS				
813345-1	893	0.55	580.45	0.85
813345-2	877	0.58	570.05	0.89
813349-2	306	0.61	198.9	0.95
813349-4	723	0.59	469.95	0.90
813350-1	1715	0.59	1114.75	0.91
813350-2	900	0.57	585	0.88
813350-3	990	0.60	643.5	0.92
813350-4	1090	0.57	708.5	0.88
813383-1	835	0.54	542.75	0.84
813383-2	832	0.59	540.8	0.91
813350-4 Dup	1090	0.58	708.5	0.89



050



Alkalinity by SM 2320B

Analytical Batch: 05ALK14B
Matrix: WATER
Date of Analysis: 5/16/2014

3

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as CaCO ₃ (ppm)	CO3 Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO ₃ (ppm)	Low Alkalinity as CaCO ₃
BLANK	4.99	50	0.02	0.00	0.0	0.00		0.0	5	ND	ND	ND	ND	
813315-1	7.65	50	0.02	0.00	0.0	2.20		44.0	5	44.0	44.0	ND	ND	
813315-2	7.61	50	0.02	0.00	0.0	7.75		155.0	5	155.0	155.0	ND	ND	
813445-1	7.75	50	0.02	0.00	0.0	6.60		132.0	5	132.0	132.0	ND	ND	
813445-2	8.03	50	0.02	0.00	0.0	6.75	- 45 (00000000	135.0	5	135.0	135.0	ND	ND	
813459-21	7.57	50	0.02	0.00	0.0	5.45		109.0	5	109.0	109.0	ND	ND	
813459-21 DUP	7.67	50	0.02	0.00	0.0	5.50		110.0	5	110.0	110.0	ND	ND	
QC-1	8.02	50	0.02	0.00	0.0	3.55		71.0	5	71.0	71.0	ND	ND	
QC-2	8.02	50	0.02	0.00	0.0	3.55		71.0	5	71.0	71.0	ND	ND	
PE-1	8.10	50	0.02	0.00	0.0	4.95	ed-Acc-	99.0	5	99.0	99.0	ND	ND	
PE-2	8.13	50	0.02	0.00	0.0	5.00		100.0	5	100.0	100.0	ND	ND	
QC-1 (LANG)	7.88	50	0.02	0.00	0.0	5.00		100.0	5	100.0	100.0	ND	ND	
LCS	10.22	50	0.02	2.0	39.0	4.95	y ke job at y legiglation de vous	99.0	5	99.0	21.0	78	ND	
LCSD	10.23	50	0.02	2.0	39.0	5.00		100.0	5	100.0	22.0	78	ND	
QC-2 (LANG)	7.92	50	0.02	0.0	0.0	5.05		101.0	5	101.0	101.0	ND	ND	
PE-1 (LANG)	8.24	50	0.02	0.0	0.0	9.25		185.0	5	185.0	185.0	ND	ND	
PE-2 (LANG)	8.26	50	0.02	0.0	0.0	9.30	The second second	186.0	5	186.0	186.0	ND	ND	
813315-2 MS	8.95	50	0.02	0.0	0.0	12.55	1	251.0	5	251.0	251.0	0	ND	
	- 1					1 11 11 11								
MO12 354 NOVERSON AND ADDRESS OF THE PERSON			1. 1											
						Transaction	1 1 1 1 1 1 1							
		j.												
3 330,000	1	100000000000000000000000000000000000000	V.			10000	1							

Calculations as follows:

Tor P=

Where:

Wh

Low Alkalinity: = (2 as mg/L CaCO3

(2 x B - C) x N x 50000 mL sample

-11

Blank Summary

Reporting Limit, RL Measured Value, ppm Accept Limit Control?

5 ppm 0 <5 Yes

 $mL \ sample$ T = Total Alkalinity, mg CaCO3/L

 \mathbf{P} = Phenolphthalein Alkalinity, mg CaCO3/L

A = mL standard acid usedN = normality of standard acid

here: B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Accetance Limit	QC Within Control?
LCS	99	100	99.0%	90-110	Yes
LCSD	100	100	100.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?
813459-21	109	110	0.9%	≤20%	Yes

Sample Matrix Spike (MS/MSD) Summary

Sample Mati	y oblice (i	VIONVIOD)	oullillial y									
Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
813315-2	155	1	100	100	251	255.00	96%	75-125	Yes			
013313-2				0				75-125			ا ا	

ALEX L Analyst Printed Name

Analyst Signature

Maksim Gorbunov
Reviewer Printed Name

Reviewer Signature



056



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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-466]

COC Number

TURNAROUND TIME DATE_05/06/14 10 Days

PAGE 1 OF 1

COMPANY	CH2M HILL /E2	2					$\overline{}$	7	$\overline{}$	$\overline{}$	/	7	7	7	$\overline{}$	7	7	pe _{leg}	Q /	$\overline{}$	\mathcal{T}	7	COMMEN	TS
PROJECT NAME	PG&E Topock I	M3											:/				1/2	[/ j	ن ا		//			
PHONE	530-229-33	303	AX 530	-339-3303		/	/ /	/ /	/ /	/ /	/ ,	ist B	/ /	/ /	804	/ /	O. M.	(4500-S;	/ ,	/ /				
ADDRESS	155 Grand Ave Oakland, CA 94					Fille	Deliam				27.5	WH3, Web L		No.		(2007)	7 () P	3) dective	\backslash	TAIME				
P.O. NUMBER	428648.IM.CS.EX.	AC Seel	QQ			Alkalipii (378.6) Lab F	EC (132 (1320-B)	(20.1)	Turb (3,40 C)	(2)	Metals (200	Total F (4500-MH2)	Anions (4500-P)	TOC (6.00.0) F. NO.	Dissolu:	ed Metals	NO2 (Ilica - Rec	(4500-NO2B)		SER OF CONTAINES				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	\S	Alkal	$\frac{E_{\rm C}}{}$	SQ_{1}	7,47	70ta	Am	70ts	Anie	/0/	Diss	80//			N.C.N.					
SC-700B-V	VDR-466	05/06/14	1430		х		х	Х	х	Х	х		Х				Х		4		¢	H = 7	177	10,7
SC-100B-\	NDR-466	05/06/14	1420		х	х	Х	Х	Х	Х	х	X	Х	Х	Х	Х	Х		9		1	M= :		
			The state of the s																					
ADOLISE STREET	ALTK	3 9		/pistez				Pi .	670			d a												
	evel III	QU	_	FO		d	Carrier Carrier	112			Q	Til	Sunac Sumin											
An Articular and					Se	e l	0	rm	A	ttë	C	ne(No.											
																			13	TOT	TAL NUN	IBER OF	CONTAI	NERS

CH	IAIN OF CUSTODY SIG				SAMPLE CONDITIONS
Signature (Relinquished) Scoth (20 July 1)	Printed Name Scott Donnell	Company/ CHOM HILL	Date/ 5-6-84 Time / 6 (5	4	RECEIVED COOL WARM 3.4% °F
Signature (Received) Sugar Nigo	Printed Name 7444 NEO	Company/ Agency (RUE))AL	Date/ S.6.1 Time 16.1	4	CUSTODY SEALED YES NO NO
Signature (Relinquished) A Q V V V V V V V V V V V V V V V V V V	PrintedName THANH N6 C	Company/ Agency	Date/ 5-6-1	14	SPECIAL REQUIREMENTS:
Signature (Received)	Printed Marcheal Brady	Company/ TU/	Date/ Time 5/6/146		The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Signature (Relinquished)	Printed / Name	Company/ Agency	Date/ Time		100, 10, 10, 21
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
3,26/19	8/2753	7.00	2ml/100inl	9.5	7.30	NE
419114	812966-1	7.00	2 hl/100 ml	9.5	7:20	NE
	2		1			
	V -3	1	J		1/	
	812967-1	9.5	MA	NIA	NA	
	-2			1	1	
	1 1					
	-3 -4 -5					
	-5					
	- 6	·				
	~ 7		-			
	-8	·				
	-9					
	-10					
	= 11					
	-12					
	-11 -13					
	14					
	-15					
	812968 CS	ıg)√				4
	812969-1	7.00	2 ml j loo ml	9.5	7:20	NE
V	1 -2	V	V			
4116114	813068	7.00	2ml/ 100ml	9.5	7:40	NE
4/23/14		7.00	2 ml/ 100 ml	9.5	7:30	NE
4130114	813212	7,00	2 ml / 100 ml	9.5	7:30	NX
5/1/4	813315-1	7.00	2ml (100 ml	9-5	Ir: 45	NE
	-2					
	8/3316-1			1	1	y
V	- 2	J				
		•	_		·	

M 5,7/11

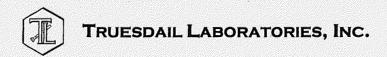


TRUESDAIL LABORATORIES, INC. Metals

Turbidity/pH Check

	r		, luibi	dity/pH (JIIGUK	····	1	
Sample Number	Turbidity	pН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
812336	21	22	5/9/14	B	TU			
813341	í	ì	1	1				
813345(1-2)								-1 TU71
813358								·
813346								
813365	71				4			
813325 (4-6)	4	72			No	16:00	11:00 Slizhiy	pH < 2
813726(1-3)	1	1			i	1	1	1
813327 (10-12)								
8/3324(1-2)								
813349 (1-2,4)								
813350 (1-4)	V	$\overline{}$	V	V	V		V	V
613315(1-2)	41	72	5/12/14	ES	Yes	10:00		TOTAL
- 2		1]	i	1	<u> </u>	Filtered th
613716 (1-2)						T		Filtered the
813383(1-2)	21	12	514114	ES	yes			-1 TU 71
812784	71	ſ	i	1	i			
613394-4	41							
813395	1							
813 407								
817416							-	
817417	V				or Confession and Con			
617418	71							
817419	√ V			1	V			
813390(1-2,4)	41	72			m	10:00		
813406	J	<u> </u>		V	1	1		
X13434 (1,2)	71	42	5/15/14	W	YES			
\$13440	71	42	1	L	į.			
313415	41	72	5/19/14	卧	tu	il:vo		PH LZ
813429(10-12)					NU	11:10		
813442 (1-2)								
813445(1-2)		<u> </u>			્ય	<u> </u>		•
813434(1-2)	71				143			
813444	21							
813458	1	<u> </u>	<u> </u>	4	1			
813474		4	5/19/14	4	Yes			
813415	4	<u> </u>	L		· U			
813482(1-2)	71	42	5/20/11/	ES.	405			
						,		
		· · · · · · · · · · · · · · · · · · ·						

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



Sample Integrity & Analysis Discrepancy Form

Clie	nt: E2	Lab #	1331
Date	e Delivered: <u>05</u> / <u>06</u> / 14 Time: <u>20:50</u> By: □Mail ⊠	Field Service	Client
1.	Was a Chain of Custody received and signed?	.ø⊈Yes □No	□ <i>N/A</i>
ž.	Does Customer require an acknowledgement of the COC?	□Yes ØNo	□N/A
3 .	Are there any special requirements or notes on the COC?	□Yes ⁄a⁄No	□N/A
4.	If a letter was sent with the CQC, does it match the COC?	□Yes □No	É N/A
5 .	Were all requested analyses understood and acceptable?	ÁYes □No	□N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? 3,4 ° C	taYes □No	□ <i>N/A</i>
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	ØN/A
9.	Does the number of samples received agree with COC?	⊠Yes □No	□Ņ/A
10.	Did sample labels correspond with the client ID/s?	☑Yes □No	□N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	`□Yes □No	D N/A
12.	Were samples pH checked? pH = <u>fee</u> c. QC.	Vri. WYes □No	□N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	d Ÿes □No	□N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH □ Std	Yes □No	□N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid □		
16.	Comments:		
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda	

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





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

May 28, 2014

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-467 PROJECT, GROUNDWATER MONITORING, TLI NO.: 813415

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-467 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on May 13, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The straight run for sample SC-700B-WDR-467 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 813415

Date: May 28, 2014 Collected: May 13, 2014 Received: May 13, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Oakland, CA 94612

Attention: Shawn Duffy

Project No.: 428648.IM.CS.EX.AC Project Name: PG&E Topock Project

P.O. No.: PGEIM11111001

Established 1931

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

Laboratory No.: 813415

Date Received: May 13, 2014

Analytical Results Summary

It Units RL	umhos/cm 2.00 ug/L 1.0 ug/L 0.50 ug/L 0.20 NTU 0.100
Result	7170 ND 4.2 avalent ND ND Solids 4120
e Parameter	EC Chromium Manganese Chromium, Hexavalent Turbidity Total Dissolved Solids
Sample Time	13:00 13:00 13:00 13:00 13:00
Sample Date	5/13/2014 5/13/2014 5/13/2014 5/13/2014 5/13/2014
Extraction Method	NONE NONE NONE LABFLT NONE
Analysis Method	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C
D Field ID	SC-700B-WDR-467 E120.1 SC-700B-WDR-467 E200.8 SC-700B-WDR-467 E200.8 SC-700B-WDR-467 E218.6 SC-700B-WDR-467 SM213(
Lab Sample ID Field ID	813415-001 813415-001 813415-001 813415-001 813415-001

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

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Established 1931

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project Number: 428648.IM.CS.EX.AC P.O. Number: PGEIM11111001

Release Number:

Samples Received on 5/13/2014 7:15:00 PM

Laboratory No. 813415 Page 1 of 6

Printed 5/28/2014

Field ID				Lab ID	Coll	ected	Mati	ix
SC-700B-WDR-467				813415-001	05/13/	2014 13:00	Wat	er
Specific Conductivity - E	PA 120.1		Batch	n 05EC14C				
Parameter	era da el el espera de las esperantes	Unit	Ana	alyzed	DF	MDL	RL	Result
813415-001 Specific Conduct	ivity	umhos	/cm 05/16	6/2014	1.00	0.606	2.00	7170
Method Blank							- X612	
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	813415-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7130	Expected 7170		PD 0.559	Accepta 0 - 10	ince Range
Lab Control Sample								
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 715	Expected 706		ecovery 101	Accepta 90 - 110	ince Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 713	Expected 706		ecovery 101	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 1050	Expected 1000		ecovery 105	Accepta 90 - 110	nce Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1060	Expected 1000		ecovery 106	Accepta 90 - 110	nce Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Page 2 of 6 Printed 5/28/2014

Chrome VI by EPA 218.0	6		Batch	n 05CrH14 C				
Parameter 813415-001 Chromium, Hexavalent		Unit	Analyzed 05/14/2014 10:11		DF N	/IDL	RL	Result
		ug/L			00 0.00	600	0.20	ND
Method Blank			ekter in a Max			dir.		angler garang l
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	813415-001
Parameter	Unit	DF	Result	Expected	RPD		Accepta	nce Range
Chromium, Hexavalent	ug/L	5.00	0.143	0.144	0.557		0 - 20	J
Low Level Calibration	Verification	r ijiya no						
Parameter	Unit	DF	Result	Expected	Recove	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	0.222	0.200	111	•	70 - 130	_
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recove	ry		nce Range
Chromium, Hexavalent	ug/L	1.00	5.03	5.00	101		90 - 110	•
Matrix Spike							Lab ID =	813415-001
Parameter	Unit	DF	Result	Expected/Adde	d Recove	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	5.00	5.37	5.14(5.00)	104	•	90 - 110	
Matrix Spike							Lab ID =	813415-001
Parameter	Unit	DF	Result	Expected/Adde	d Recove	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	1.20	1.14(1.00)	106		90 - 110	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Recove	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	5.08	5.00	102		90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recove	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102		95 - 105	_
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recover	ry	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102		95 - 105	ŭ



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Parameter		Unit	Ana	ılyzed [)F	MDL	RL	Result
813415-001 Chromium		ug/L	05/19	9/2014 14:33 2.	.00	0.142	1.0	ND
Manganese		ug/L	05/19/2014 14:33		.00	0.120	0.50	4.2
Method Blank	4		Same and	- Kita a Abarro, pomerova	- jan		in (43/4), (74	
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813415-001
Parameter ,	Unit	DF	Result	Expected	R	lPD		nce Range
Chromium	ug/L	2.00	ND	0	• •	0	0 - 20	nce range
Manganese	ug/L	2.00	4.28	4.19		2.12	0 - 20	
Low Level Calibration Ve	erification						Pive alae ila	
Parameter	Unit	DF	Result	Expected	R	ecovery	Acconta	nce Range
Chromium	ug/L	1.00	0.195	0.200		97.5	70 - 130	_
Manganese	ug/L	1.00	0.209	0.200		104	70 - 130	
Lab Control Sample	-			. vida se u vezavet		 Het make de		
Parameter	Unit	DF	Result	Expected	R	ecovery	Accenta	nce Range
Chromium	ug/L	1.00	49.1	50.0		98.2	85 - 115	
Manganese	ug/L	1.00	51.6	50.0		103	85 - 115	
Matrix Spike								313415-001
Parameter	Unit	DF	Result	Expected/Added	l R	ecovery	Accentai	nce Range
Chromium	ug/L	2.00	50.3	50.0(50.0)		100	75 - 125	noe range
Manganese	ug/L	2.00	53.8	54.2(50.0)		99.3	75 - 125	
Matrix Spike Duplicate				ovida ovid 100 revidenski susetinan				313415-001
Parameter	Unit	DF	Result	Expected/Added	l R	ecovery	Accentar	nce Range
Chromium	ug/L	2.00	50.7	50.0(50.0)		101	75 - 125	icc range
Manganese	ug/L	2.00	54.0	54.2(50.0)		99.7	75 - 125	
MRCCS - Secondary				di (18 km) matedoria (18 km).				
Parameter	Unit	DF	Result	Expected	R	ecovery		nce Range
Chromium	ug/L	1.00	19.4	20.0		96.8	90 - 110	ice italige
Manganese	ug/L	1.00	19.6	20.0		97.8	90 - 110	
MRCVS - Primary						i. Nelius — Ambrus	edan.	
Parameter	Unit	DF	Result	Expected	R	ecovery	Accenter	ice Range
Chromium	ug/L	1.00	19.7	20.0		98.7	90 - 110	ice italiye



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Parameter		Unit	Ana	ilyzed	DF	MDL	RL	Result
813415-001 Total Dissolved Solids		mg/L	05/16	05/16/2014		1.76	250	4120
Method Blank					125 _{1,1} - Š. c.			
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	813415-00
Parameter	Unit	DF	Result	Expected	F	RPD		
Total Dissolved Solids	mg/L	1.00	4070	4120	•	1.22	0 - 10	ince Rang
Duplicate	ann airt. Tagairtí					 &		813434-002
Parameter	Unit	DF	Result	Expected	R	PD		ince Range
Total Dissolved Solids	mg/L	1.00	496	489	• •	1.42	0 - 10	ince Nangi
Lab Control Sample						arian wasiilka	900	
Parameter	Unit	DF	Result	Expected	R	ecovery	Accenta	nco Pong
Total Dissolved Solids	mg/L	1.00	507	500	101		Acceptance Range 90 - 110	
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
313415-001 Turbidity		NTU	05/14	/2014	1.00	0.0140	0.100	ND
			00/17					
Method Blank			The present of	fyr diff aith		An grand		
Method Blank Parameter	Unit	DF	Result	for the same		Áta mesa t		
	Unit NTU		N. Terrer.	far i di jiday		45 model		
Parameter		DF	Result				Lab ID =	813415-001
Parameter Turbidity		DF	Result			PD		
Parameter Turbidity Duplicate	NTU	DF 1.00	Result ND	Expected 0	R	PD 0		
Parameter Turbidity Duplicate Parameter	NTU Unit	DF 1.00 DF	Result ND Result	Expected	R		Accepta	
Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter	NTU Unit	DF 1.00 DF	Result ND Result	Expected	R	o	Accepta 0 - 20	nce Range
Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample	NTU Unit NTU	DF 1.00 DF 1.00	Result ND Result ND	Expected 0	R		Accepta 0 - 20	nce Range
Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter	Unit NTU Unit Unit NTU	DF 1.00 DF 1.00	Result ND Result ND Result	Expected 0 Expected	R	0 ecovery	Accepta 0 - 20 Accepta	nce Range
Parameter Turbidity Duplicate Parameter Turbidity Lab Control Sample Parameter Turbidity	Unit NTU Unit Unit NTU	DF 1.00 DF 1.00	Result ND Result ND Result	Expected 0 Expected	R	0 ecovery	Accepta 0 - 20 Accepta 90 - 110	813415-001 nce Range nce Range



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Page 6 of 6 Printed 5/28/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS14C Date Analyzed: 5/16/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	70.3826	70.3830	70.3830	0.0000	No	0.0004	4.0	25.0	ND	1
813415	10	29.5551	29.5965	29.5963	0.0002	No	0.0412	4120.0	250.0	4120.0	1
813390-2	100	75.4062	75.4262	75.4259	0.0003	No	0.0197	197.0	25.0	197.0	1
813390-4	100	76.5015	76.5424	76.5423	0.0001	No	0.0408	408.0	25.0	408.0	1
813408-1	50	50.4782	50.5367	50.5366	0.0001	No	0.0584	1168.0	50.0	1168.0	1
813408-2	50	49.6761	49.7065	49.7064	0.0001	No	0.0303	606.0	50.0	606.0	1
813408-3	50	49.4270	49.4777	49.4772	0.0005	No	0.0502	1004.0	50.0	1004.0	1
813408-4	50	50.7447	50.7941	50.7940	0.0001	No	0.0493	986.0	50.0	986.0	1
813408-5	50	50.5717	50.6141	50.6141	0.0000	No	0.0424	848.0	50.0	848.0	1
813408-6	50	49.1669	49.1970	49.1966	0.0004	No	0.0297	594.0	50.0	594.0	1
813408-7	50	48.4411	48.4908	48.4906	0.0002	No	0.0495	990.0	50.0	990.0	1
813415 Dup	10	29.3955	29.4365	29.4362	0.0003	No	0.0407	4070.0	250.0	4070.0	1
LCS	100	59.9004	59.9512	59.9511	0.0001	No	0.0507	507.0	25.0	507.0	1
813408-8	50	46.9747	47.0344	47.0340	0.0004	No	0.0593	1186.0	50.0	1186.0	1
813408-9	50	51.5639	51.6101	51.6100	0.0001	No	0.0461	922.0	50.0	922.0	1
813408-10	50	50.7505	50.8028	50.8024	0.0004	No	0.0519	1038.0	50.0	1038.0	1
14E0049-1	100	67.0356	67.0850	67.0850	0.0000	No	0.0494	494.0	25.0	494.0	1
14E0049-2	100	76.1726	76.2221	76.2221	0.0000	No	0.0495	495.0	25.0	495.0	1
14E0049-3	100	76.2714	76.3208	76.3207	0.0001	No	0.0493	493.0	25.0	493.0	1
14E0049-4	100	73.1685	73.2178	73.2178	0.0000	No	0.0493	493.0	25.0	493.0	1
14E0050-1	100	75.1510	75.1995	75.1995	0.0000	No	0.0485	485.0	25.0	485.0	1
14E0050-2	100	71.9563	72.0055	72.0052	0.0003	No	0.0489	489.0	25.0	489.0	1
14E0050-2 Dup	100	60.0624	60.1123	60.1120	0.0003	No	0.0496	496.0	25.0	496.0	11

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	507.0	500	101.4%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

	Dupiloute Do				· <i>y</i>	
	Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
	813415	0.0412	0.0407	0.6%	≤5%	Yes
i	14E0050-2	0.0489	0.0496	0.7%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name



Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS14C Date Analyzed: 5/16/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813415	7170	0.57	4660.5	0.88
813390-2	335	0.59	217.75	0.90
813390-4	713	0.57	463.45	0.88
813408-1	1681	0.69	1092.65	1.07
813408-2	1013	0.60	658.45	0.92
813408-3	1464	0.69	951.6	1.06
813408-4	1482	0.67	963.3	1.02
813408-5	1318	0.64	856.7	0.99
813408-6	975	0.61	633.75	0.94
813408-7	1388	0.71	902.2	1.10
813415 Dup	7170	0.57	4660.5	0.87
LCS				
813408-8	1677	0.71	1090.05	1.09
813408-9	1433	0.64	931.45	0.99
813408-10	1551	0.67	1008.15	1.03
14E0049-1	896	0.55	582.4	0.85
14E0049-2	899	0.55	584.35	0.85
14E0049-3	898	0.55	583.7	0.84
14E0049-4	898	0.55	583.7	0.84
14E0050-1	886	0.55	575.9	0.84
14E0050-2	857	0.57	557.05	0.88
14E0050-2 Dup	857	0.58	557.05	0.89

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TRUESDAIL LABORATORIES, INC. 14201 Franklin Avenue, Tustin, CA 9.2780-7008 (714)730-6239 FAX: (714) 730-6462 www.truesdail.com

舀

COMPANY

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-467]

COC Number

TURNAROUND TIME DATE 05/13/14

9

10 Days

PAGE 1

813415

							-	_	_	_	-		_	_			-		
PROJECT NAME	PG&E Topock						\	_		\				-	\	\		COMMENTS	NTS
PHONE	(530) 229-3303	£	AX (530)	FAX (530) 339-3303		\		<u></u>					<u></u>						F
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	Ste 1000 612	1 1			, p	150.11									SABINIA	SV		
P.O. NUMBER	428648.IM.CS.EX.AC	C	TEAW	*	, A	, III ere,) eouel:		OE						\	CONT			
SAMPLERS (SIGNATURE	ATURE MA	o Kr			SIE19V 187 (9'81	Couque (S) siejay	SCOURTE (S		LEWS) A			<u></u>			733	40 82			
SAMPLE I.D.		DATE	TIME	DESCRIPTION	CLECS	VIBO,	S) SQI		i urbidi			<u></u>			AMUN	C			
SC-700B-WDR-467	2-467	05/13/14	13:w	Water	×	×	×	F	×						(3		200
		The second secon			-	1		-	-			****)		4	ついらい	2.5

Please Provide a preliminary Result for the TDS ASAP



TOTAL NUMBER OF CONTAINERS

M

CANAIT TIMES	RECEIVED COOL DV WARM 3. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	CUSTODY SEALED YES NO		STECIAL REQUIREMENTS:				
CHAIN OF CUSTODY SIGNATURE RECORD	hed) (Mus Kur Name CMIS L	Chan Man THAM NEO Company (RUZSDA (Date	(Relinquished) Man Name THANH WE Agency TO 122 D. Time S. 13. 14	1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 +	Printed Company	Name	(Received) Name Agency Time	mente de la companya de la companya de la companya de la companya de la companya de la companya de la companya

Hexavalent Chromium Method EPA 218.6 and SW 7199 Sample pH Log

Date	Lab Number	Initial pH	Buffer Added (mL)	Final pH	Time Buffered	Initials
3,26,14	8/2753	7.00	2ml/100ml	9.5	7.30	NE
4,9,14	812966-1	7.00	2 hl/ 100 ml	9.5	7:20	NZ
1	-2		1			
	√ -3	1	\downarrow		1/	
	812967-1	9.5	~17	N/4	NIA	,
	1 -2			J		
	~3					
	_4					
	-3					
	-6					
	-7					
	-8					
	-8 -9					
	-10					
	-11					
	-12					
	-13					
	_14					
	V -15					
	812968 CS	υ3) √	V			₩
	812969-1	7.00	2 ml / looml	9.5	7:20	NE
\bigvee	V -2	J	V ·		U	
4116114	813068	7.00	2ml/ 100ml		7;40	NE
4/23/14	813140	7.00	2 ml/ 100 ml	9.5	7:30	NZ -
4130114	813212	7,55	2 ml / 100 ml	9.5	7:30	N.E.
5/1/14	813315-1	7.00	2ml 1 100 ml	9.5	11:45	NE.
	-2					
	977316-1		1	\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	1	-
L V	- 2	/_		1		J
5/14/14	8/3 415	7.00	aml i looml	9.5	7,30	NE
	·			-		

m 5/14/14

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



Turbidity/pH Check

			Turb	idity/pH (Check			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
812336	41	22	5/9/14	E,	Tel			
613341		i	;					
813345(1-2)								-1 TU71
813358								
813346						·		
813365	71							
813325 (4-6)	4	72			NO	16:00	11:00 slizhik	pH <2
813726(1-3)	1	ĺ			I	1	1	1
813726(1-3) 813727(10-12)								
8 3324 (1-2)								
813349 (1-2,4)								
813350 (1-4)	V	$\overline{}$	1	V	\sqrt{V}		→	V
G13315(1-2)	41	72	5/12/14	巴	ies	10:00		TOTAL _
1		Ì			, i			Filtered then
613716(1-2)				(-	1	1		Filtered than acidify
813383(1-2)	41	12	5114114	ES	yes			-17471
813784	71	(i		i			
613394-4	41							
813395								
813407								
817416			2000				-	
817417	V		2713-y Comp					
617418	71							
817419	V				Autoritor and a state of the st			
813390(1-2,4)	41	7,2			m	10:00		
813406	J.	Ψ	•	V	<u> </u>	4		
813434 (1,2)	71	42	5/15/14	100	YES			
\$13440	71	47	V	_ L _	<u> </u>			
313415	<u> </u>	72	5/19/14	- 15	tu	11:00		PH LZ
813429(10-12)	1				NU	11:00		
813442 (1-2)								
813445(1-2)	<u> </u>	<u></u>			ત	<u> </u>		
813434(1-2)	71				YUS			
813444	21							
813456		$\neg v$	· 1	<u> </u>	<u>\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ </u>			
313474		4	5/19/14	1 12	Yej			
813415	<u> </u>	4 2	<u> </u>	*	. U			
813482(1-2)	71	42	5/20/11/	ES ES	yes			
43489	41	22	5/211W	_t>	yes			
813490	1 -			1-				
813491							•	
813 492	-							
813 493				1				
813516	V	Y	V		v			

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



Sample Integrity & Analysis Discrepancy Form

Clie	nt: E2	Lab # 8134 1
Date	e Delivered: ∑ / /ろ / 14 Time: //9://S By: □Mail □	dField Service □Client
1.	Was a Chain of Custody received and signed?	. ŽiYes □No □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes j2tNo □N/A
3.	Are there any special requirements or notes on the COC?	□Yes ŹNo □N/A
4.	If a letter was sent with the CQC, does it match the COC?	□Yes □No □N/A
5 .	Were all requested analyses understood and acceptable?	⊋Yes □No □N/A
<i>6</i> .	Were samples received in a chilled condition? Temperature (if yes)? $3 \cdot 2 \cdot \mathbf{C}$	☐Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	ÆÓYes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ÆN/A
9.	Does the number of samples received agree with COC?	ØYes □No □N/A
10.	Did sample labels correspond with the client ID's?	dyes ONO ON/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	ÜYes □No ÆIN/A
12.	Were samples pH checked? pH = <u>}ell_l_0.l.</u>	Yes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ÆYes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	ÆYes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Groun □Sludge □Soil □Wipe □Paint □Solid	d Water □Waste Water ØOther Wakle
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving.	· Luda





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

June 3, 2014

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-468 PROJECT, GROUNDWATER MONITORING, TLI NO.: 813517

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-468 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on May 20, 2014, 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.

∱c − Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING

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

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC Laboratory No.: 813517

Date: June 3, 2014 Collected: May 20, 2014 Received: May 20, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001

Established 1931

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

Laboratory No.: 813517

Date Received: May 20, 2014

Analytical Results Summary

RL	2 00	1 5	0.50	0.20	2.100	250
Units	nmhos/cm					mg/L
Result	7640	QN	1.7	0.35	0.125	4210
Parameter	EC	Chromium	Manganese	Chromium, Hexavalent	Turbidity	Total Dissolved Solids
Sample Time	14:50	14:50	14:50	14:50	14:50	14:50
Sample Date	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014	5/20/2014
Extraction Method	NONE	NONE	NONE	LABFLT	NONE	NONE
Analysis Method	E120.1	E200.8	E200.8	E218.6	SM2130B	SM2540C
) Field ID	SC-700B-WDR-468 E120.1	SC-700B-WDR-468	SC-700B-WDR-468	SC-700B-WDR-468	SC-700B-WDR-468	SC-700B-WDR-468 SM2540C
Lab Sample ID Field ID	813517-001	813517-001	813517-001	813517-001	813517-001	813517-001

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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Page 1 of 6

Laboratory No. 813517

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 5/20/2014 8:45:00 PM

Printed 6/3/2014

Campies Received on	0,20,2014 0: 10:00 1	
	Lab ID	Collected

Field ID				Lab ID	Colle	cted	Matri	x
SC-700B-WDR-468				813517-001	05/20/2	014 14:50	Wate	er
Specific Conductivity - E Parameter	PA 120.1	Unit		05EC14D lyzed	DF	MDL	RL	Result
813517-001 Specific Conducti	vity	umhos/	cm 05/22	2/2014	1.00	0.606	2.00	7640
Method Blank								
Parameter Specific Conductivity Duplicate	Unit umhos	DF 1.00	Result ND				l ah ID =	813518-009
Parameter Specific Conductivity Lab Control Sample	Unit umhos	DF 1.00	Result 686	Expected 691	RF C	PD).726	Accepta 0 - 10	nce Range
Parameter Specific Conductivity MRCCS - Secondary	Unit umhos	DF 1.00	Result 743	Expected 706		covery 105	Accepta 90 - 110	nce Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 743	Expected 706		ecovery 105	Accepta 90 - 110	ince Range
Parameter Specific Conductivity MRCVS - Primary	Unit umhos	DF 1.00	Result 1010	Expected 1000		ecovery 101	Accepta 90 - 110	ince Range
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1010	Expected 1000		ecovery 101	Accepta 90 - 110	ince Range)

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC Printed 6/3/2014

Page 2 of 6

Project Number: 428848.IWI.CS.EX.AC Printed 6/3/2014

Chrome VI by EPA 218.6			Batch	05CrH14 G		
Parameter		Unit	Ana	lyzed D	F MDL	RL Result
813517-001 Chromium, Hexa	valent	ug/L	05/23	/2014 10:52 1.0	0.00600	0.20 0.35
Method Blank						
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result ND			Lob ID - 042547 000
Duplicate						Lab ID = 813517-00
Parameter Chromium, Hexavalent	Unit ug/L	DF 5.00	Result 0.344	Expected 0.326	RPD 5.37	Acceptance Range 0 - 20
Low Level Calibration \	Verification	1				
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.191	Expected 0.200	Recovery 95.7	Acceptance Range 70 - 130
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.96	Expected 5.00	Recovery 99.2	Acceptance Range 90 - 110 Lab ID = 813517-00
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.22	Expected/Added 5.33(5.00)	Recovery 97.9	Acceptance Range 90 - 110 Lab ID = 813517-00
Parameter Chromium, Hexavalent MRCCS - Secondary	Unit ug/L	DF 1.00	Result 1.42	Expected/Added	Recovery 107	Acceptance Range 90 - 110
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.00	Expected 5.00	Recovery 99.9	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	Unit ug/L	DF 1.00	Result 10.1	Expected 10.0	Recovery 101	Acceptance Range 95 - 105

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



Client: E2 Consulting Engineers, Inc. Project Na

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Metals by EPA 200.8, Total	al		Batch	052714A				
Parameter		Unit	Ana	lyzed I)F	MDL	RL	Result
813517-001 Chromium		ug/L	05/27	7/2014 17:25 1	.00	0.0710	1.0	ND
Manganese		ug/L	05/27	//2014 17:25 1	.00	0.0600	0.50	4.1
Method Blank							· · · · · · · · · · · · · · · · · · ·	
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813555-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Chromium	ug/L	2.00	96.6	91.9		4.96	0 - 20	J
Manganese	ug/L	100	1840	1830		0.584	0 - 20	
Low Level Calibration V	erification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	0.470	0.500		94.0	70 - 130	-
Manganese	ug/L	1.00	0.455	0.500		91.0	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	48.2	50.0		96.4	85 - 115	
Manganese	ug/L	1.00	48.0	50.0		96.0	85 - 115	•
Matrix Spike							Lab ID =	813555-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Chromium	ug/L	2.00	140	142(50.0)		96.1	75 - 125	
Manganese	ug/L	100	6540	6830(5000)		94.1	75 - 125	ı
Matrix Spike Duplicate							Lab ID =	813555-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	nce Range
Chromium	ug/L	2.00	142	142(50.0)		101	75 - 125	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	19.6	20.0		97.9	90 - 110	
Manganese	ug/L	1.00	19.4	20.0		97.0	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	19.4	20.0		96.8	90 - 110	-

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

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Client: E2 Consulting E	ngineers, In		roject Name: roject Numbe	PG&E Topo er: 428648.IM.C	-	Printed 6/	age 5 of 6 /3/2014
Interference Check S	Standard AB						
Parameter Chromium Interference Check S	Unit ug/L Standard AB	DF 1.00	Result 19.9	Expected 20.0	Recovery 99.4	Accepta 80 - 120	nce Range
Parameter Manganese Interference Check S	Unit ug/L	DF 1.00	Result 18.9	Expected 20.0	Recovery 94.7	Accepta 80 - 120	nce Range
Parameter Manganese Serial Dilution	Unit ug/L	DF 1.00	Result 20.1	Expected 20.0	Recovery 101	80 - 120	nce Range 313555-001
Parameter Chromium Manganese	Unit ug/L ug/L	DF 10.0 500	Result 96.4 1970	Expected 91.9 1830	RPD 4.76 7.21	Acceptar 0 - 10 0 - 10	nce Range
Total Dissolved Solids Parameter	by SM 2540) C Unit		05TDS14D lyzed	DF MDL	RL	Result
813517-001 Total Dissolved	Solids	mg/L	05/22	/2014	1.00 1.76	250	4210
Method Blank Parameter Total Dissolved Solids Duplicate	Unit mg/L	DF 1.00	Result ND			Lab ID - 6	240547 004
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 4210	Expected 4210	RPD 0		313517-001 nce Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 503	Expected 500	Recovery 101	Acceptar 90 - 110	nce Range

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Page 6 of 6

Project Number: 428648.IM.CS.EX.AC

Printed 6/3/2014

Turbidity by SM 2130 B			Batch	05TUB14M				
Parameter		Unit	Ana	llyzed	DF	MDL	RL	Result
813517-001 Turbidity		NTU	05/21	1/2014	1.00	0.0140	0.100	0.125
Method Blank					, , , , , , , , , , , , , , , , , , , ,			
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	813495-023
Parameter	Unit	DF	Result Exped		F	RPD	Acceptance Range	
Turbidity	NTU	1.00	ND	0		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.68	8.00		108	90 - 110	•
Lab Control Sample Do	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.51	8.00		106	90 - 110	Ū

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

√ – Mona Nassimi

Manager, Analytical Services

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

Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS14D Date Analyzed: 5/22/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	72.4799	72.4810	72.4806	0.0004	No	0.0007	7.0	25.0	ND	1
813445-1	100	78.7934	78.8259	78.8257	0.0002	No	0.0323	323.0	25.0	323.0	1
813445-2	100	72.7584	72.7915	72.7911	0.0004	No	0.0327	327.0	25.0	327.0	1
813517	10	30.3852	30.4277	30.4273	0.0004	No	0.0421	4210.0	250.0	4210.0	1
QC9053-51	100	80.8574	80.9047	80.9047	0.0000	No	0.0473	473.0	25.0	473.0	1
QC9053-51	100	69.7614	69.8079	69.8079	0.0000	No	0.0465	465.0	25.0	465.0	1
PE9056-51	100	77.4787	77.5179	77.5179	0.0000	No	0.0392	392.0	25.0	392.0	1
PE9056-51	100	71.2977	71.3373	71.3369	0.0004	No	0.0392	392.0	25.0	392.0	1
QC9051-67	100	74.2178	74.2558	74.2554	0.0004	No	0.0376	376.0	25.0	376.0	1
QC9051-67	100	78.2414	78.2785	78.2785	0.0000	No	0.0371	371.0	25.0	371.0	1
PE9056-67	100	74.8856	74.9302	74.9302	0.0000	No	0.0446	446.0	25.0	446.0	1
813517 Dup	10	28.9677	29.0100	29.0098	0.0002	No	0.0421	4210.0	250.0	4210.0	1
LCS	100	79.7970	79.8473	79.8473	0.0000	No	0.0503	503.0	25.0	503.0	1
PE9056-67	100	75.1517	75.1964	75.1964	0.0000	No	0.0447	447.0	25.0	447.0	1
14E075-01	100	69.1827	69.2327	69.2326	0.0001	No	0.0499	499.0	25.0	499.0	1
14E075-02	100	74.6957	74.7454	74.7452	0.0002	No	0.0495	495.0	25.0	495.0	1
14E121-01	100	74.5076	74.5601	74.5600	0.0001	No	0.0524	524.0	25.0	524.0	1
14E121-02	100	74.0346	74.0854	74.0850	0.0004	No	0.0504	504.0	25.0	504.0	1
14E122-01	100	66.8770	66.9272	66.9272	0.0000	No	0.0502	502.0	25.0	502.0	1
14E122-02	100	70.3793	70.4284	70.4284	0.0000	No	0.0491	491.0	25.0	491.0	1
14E122-03	100	76.6603	76.7125	76.7124	0.0001	No	0.0521	521.0	25.0	521.0	1
14E122-04	100	75.2604	75.3136	75.3136	0.0000	No	0.0532	532.0	25.0	532.0	1
14E125-01	3	29.5841	29.6538	29.6538	0.0000	No	0.0697	23233.3	833.3	23233.3	1
14E125-01 Dup	3	28.8323	28.9009	28.9008	0.0001	No	0.0685	22833.3	833.3	22833.3	1

Calculation as follows:

Filterable residue (TDS), mg/L =

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Theoretical Value, ppm Value, ppm		Percent Rec	Acceptance Limit	QC Within Control?
LCS	503.0	500	100.6%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

	Duplicate De	terminati	ous Dinere	nce Sum	nary	
	Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
-	813517	0.0421	0.0421	0.0%	≤5%	Yes
1	14E125-01	0.0697	0.0685	0.9%	<5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

WetChem 05TDS14D

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS14D
Date Analyzed: 5/22/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813445-1	557	0.58	362.05	0.89
813445-2	556	0.59	361.4	0.90
813517	7640	0.55	4966	0.85
QC9053-51	704	0.67	457.6	1.03
QC9053-51	704	0.66	457.6	1.02
PE9056-51	644	0.61	418.6	0.94
PE9056-51	644	0.61	418.6	0.94
QC9051-67	561	0.67	364.65	1.03
QC9051-67	561	0.66	364.65	1.02
PE9056-67	688	0.65	447.2	1.00
813517 Dup	7640	0.55	4966	0.85
LCS				
PE9056-67	688	0.65	447.2	1.00
14E075-01	908	0.55	590.2	0.85
14E075-02	869	0.57	564.85	0.88
14E121-01	960	0.55	624	0.84
14E121-02	888	0.57	577.2	0.87
14E122-01	899	0.56	584.35	0.86
14E122-02	895	0.55	581.75	0.84
14E122-03	896	0.58	582.4	0.89
14E122-04	895	0.59	581.75	0.91
14E125-01	35300	0.66	22945	1.01
14E125-01 Dup	35300	0.65	22945	1.00





3151 W. Post Road, Las Vegas, NV 89118 Advanced Technology Laboratories (702) 307-2659 FAX: (702) 307-2691

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-468]

1 S Rec'd 05/20/14 Seas

COC Number

TURNAROUND TIME

PAGE DATE 05/20/14

COMMENTS 1250,00 NUMBER OF CONTAINERS Turbidily (SM2730) 108 (SM2540C) Specific Conductance (120.1) × × × DESCRIPTION Water FAX (530) 339-3303 14.50 TIME 05/20/14 155 Grand Ave Ste 1000 DATE Oakland, CA 94612 428648.IM.CS.EX.AC (530) 229-3303 PG&E Topock CH2M HILL SAMPLERS (SIGNATURE SC-700B-WDR-468 PROJECT NAME P.O. NUMBER SAMPLE I.D. COMPANY ADDRESS PHONE

Please Provide a preliminary Result for the TDS ASAP



TOLOGY LOOS

TOTAL NUMBER OF CONTAINERS

(M

) V	CHAIN OF CUSTODY SIGNATURE	RECORD	An expression of the feed of t	SAMPI E CONDITIONS
Signature (Relinquished)	Printed Company/	CH 7m MI	Date/ 5 - 20 - 1 4	RECEIVED COOL FT. WARM TI
Signature	Printed Company/	1.	Datel Sand	
Signature	Printed Company	1501	1 me 15 540	CUSTODY SEALED YES D NO [2]
(Relinquished)	Les Board	127	Time Sylve	SPECIAL REQUIREMENTS:
Stignature Cours No Bull	Printed Marchael South Agency	1,17	Date/ 5/30/19	
Signature (j	Date/	
(Kelinquished)	Name		Time	
Signature	Printed Company/		Date/	
(Nacelved)	Name		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
3,26/19	8/2753	7.00	and 100 inl	9.5	7/30	NE
419114	812966-1	7.00	2 hl/ 100 ml	9.5	7:20	NZ
	2		4			
	V −3				V	
	812967-1	9.5	N17	NIA	NIA	,
	-2					
	~3					
	-4					
	-5					
	~ 6					
	~ 7					
	-8					
	_9					
	-10					
	-11					
	-12					
	-13					
	14					
	V 15					
	812968 CS		V	V		4
	812969-1	7.00	2 ml / loo ml	9.5	7:20	NE
V	V -2	V	V			
4116114	813068	7,00	2ml/100ml	9.5	7;40	NE
	813140	7.00	2 ml/ 100 ml	9.5	7:30	NZ
9130114	813212	7.55	2 ml/ 100 ml	9.5	7:30	NE
5/1/1	813315-1	7.00	2ml (100 ml	9.5	1r: 4s	NE
	-2					
	813316-1		y.		V	jt
V	- 2_					1
5/14/14	8/3415	7.00	2ml / 100 ml	9.5	7/30	NE
5/2014	813517	1			7:40	NE

Ju 5/27/14



Turbidity/pH Check

Need Digest Time of Date/Time of 2nd				Turbi	dity/pH (песк		
313903 (1-1,4)	Sample Number	Turbidity	рН			Need Digest	Adjustment to	Comments
313903 (1-1,4)	313517	41	72	5/22/11	FS	4-11	1207	DHC2
313903 (1-1,4)	312595(1-8)		4-2	1	l .	Tel	1	 -7,8TU7
13512 (1-3) 13513 (10-12) V 13553 71 62 44 (1-2) 21 72 44 45 9:10 13523 71 62 5/29/14 45 46 17:10 13674 71 62 13651 71 62 13651 71 62 13651 71 62 13651 71 62 13651 71 62 13652 71 62 13651 71 62 13652 71 62	212904 (1-2,4)		72	SIZZIV	ES	No	9:30	
\$\\\ \frac{13594}{17623} \(\)	13512/ (-3)	1	1	1	1	1	1	
\$\\\ \frac{13594}{17623} \(\)	(12543 (10-12)		1					
\$\\\ 3\\\ 5\\\ 2\\\ 1\\\ 1\\\ 2\\\ 1\\\ 1\\\ 2\\\ 1\\\ 2\\\ 1\\\ 1\\\ 2\\\ 1\\\ 1\\\ 2\\\ 1\\\ 1\\\ 2\\\ 1\\\ 1\\\ 1\\\ 1\\\ 2\\\ 1\\\\ 1\\\\\ 1\\\\\ 1\\\\\ 1\\\\\\	12553					441		
17623 71 67 5/29/14 127 Yes 13677 71 67 13678 71 67 13678 71 67 13679 71 67 13650 71 67 13651 71 67 13651 71 67 13652 71 47 13652 71 47 137568 (1-5) 71 67 137557 1,2) - 5/20/14 12 165 1313577 1,2) - 5/20/14 12 165	12544 (1-2)	21				Yes	9:10	
17623 71 (2 5/29/14 ND) Yes 13674 71 (2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	13592 (1-2)		22	1				
13677 71 67 13678 71 67 13650 71 67 13651 71 67 13651 71 67 13652 71 42/1477 65 13652 71 42/1477 65 13658 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67	17,673		12	79/14</td <td>257</td> <td></td> <td></td> <td></td>	257			
13677 71 67 13678 71 67 13650 71 67 13651 71 67 13651 71 67 13652 71 42/1477 65 13652 71 42/1477 65 13658 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67 137568 (1-5) 71 67			67	- 1	1			
13628 71 67 13679 71 67 13650 71 67 13651 71 67 13651 71 67 13652 71 4201077 67 13652 71 4201077 67 13568 (1-5) 71 62 13568 (1-5) 71 62 13557 1,2) - 5/30/14 10 1/85 50/10	13677	21	17					
(13650 71 <7 \$1547 71 <7 \$13651 >1 <7 \$13652 >1 \$120	126754		47					
13650 71 <7 13657 71 <7 13651 >1 <7 13652 >1 <7 13652 >1 <7 13652 >1 <7 13658 (1-5) >1 <7 13568 (1-5) >1 <7 13568 (1-5) >1 <7 13568 (1-5) >1 <7 13568 (1-5) >1 <7 13568 (1-5) >1 <7 13577 (1-3) 5/30/14 D YES Solid			27					
13651 >1 <2 13652 >1 <2 13652 >1 <10077 <1 13652 >1 <10077 <1 13658 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137568 (1-5) >1 <2 137	17630	51	<7.					
3651 >1 <2 3652 >1 <12/177 <2 513618	1.64.7		47	4	V	V		
13652 >1 40/1077 <7	13/51		27	Y	j	1		
13618 61 57 72 5/2014 NOT YES 12:20 CHZM (13568 (1-5) >1 22 1 4 10 YES 5010			PO					
(13568 (1-5) >1 5 22) (47M Ca) (313537 1,2) - 5/30/14 10 Yes Solid		2: 12			א	Ves	17:20	 CHZH
3135571,2) - 5/50/14 10 YES Solid		>1	14 27	1.	j.	دا.'		CH7M Cal
x13475 (1-3)				5/30/14		1/25		
		_		1		1		
	47576	•		ر ا				V
	13>/6			UZ.	V	V		
				-				
							-	
	,	_				-		
							-	
	3							
					-			
							•	

- Notes:

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

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

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

Sample Integrity & Analysis Discrepancy Form

CI	ient: <u>F2</u>	Lab #_ 81351
De	te Delivered: <u>の∫ ゑ</u> の/ 14 Time: <u>ゑ゚゚゚゙ゕ゚゚゚゚</u> ・゚゚゚゚゚゚゚゚゚゙゚゚゚゚゚゚゚゚゚゚゚゙ By: □Mail ゑ゚!	Field Service
1.	Was a Chain of Custody received and signed?	ÆYes □No □N/A
2 .	Does Customer require an acknowledgement of the COC?	□Yes ੴNo □N/A
<i>3.</i>	Are there any special requirements or notes on the COC?	□Yes □No □N/A
4.	If a letter was sent with the COC, does it match the COC?	□Yes □No :⊒N/A
<i>5</i> .	Were all requested analyses understood and acceptable?	☑Yes □No □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>Ý・ん °C</u>	∀Yes □No □N/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles etc.)? Were sample custody seals intact?	ÆYes □No □N/A
8.	Were sample custody seals intact?	□Yes □No ØM/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?	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	□Yes □No ÞÍN/A
12.	Were samples pH checked? pH = } C. O-C	ÆYes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	☐Yes ☐No ☐N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH □ Std	ØÝes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground Water □Soil □Wipe □Paint □Solid	Vater
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	duda



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

June 17, 2014

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-469 PROJECT, GROUNDWATER MONITORING, TLI NO.: 813618

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-469 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on May 27, 2014, 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.

Sample SC-700B-WDR-469 was analyzed as sample I.D. 813618 or 14E0176 in the raw data but is reported as 813618 in all final report pages.

The straight run for sample SC-700B-WDR-469 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

£. Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 813618

Date: June 17, 2014 Collected: May 27, 2014 Received: May 27, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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Laboratory No.: 813618

Date Received: May 27, 2014

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

		Analysis	Extraction		Sample				
Lab Sample ID	Field ID	Method	Method	Sample Date	Time	Parameter	Result	Units	RL
813618-001	SC-700B-WDR-469	E120.1	NONE	5/27/2014	10:00	EC	7170	umhos/cm	2.00
813618-001	SC-700B-WDR-469	E200.8	NONE	5/27/2014	10:00	Chromium	ND	ug/L	1.0
813618-001	SC-700B-WDR-469	E200.8	NONE	5/27/2014	10:00	Manganese	1.5	ug/L	0.50
813618-001	SC-700B-WDR-469	E218.6	LABFLT	5/27/2014	10:00	Chromium, Hexavalent	0.21	ug/L	0.20
813618-001	SC-700B-WDR-469	SM2130B	NONE	5/27/2014	10:00	Turbidity	ND	NTU	0.100
813618-001	SC-700B-WDR-469	SM2540C	NONE	5/27/2014	10:00	Total Dissolved Solids	4340	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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

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

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

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REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 5/27/2014 7:10:00 PM

Laboratory No. 813618

Page 1 of 6

Printed 6/17/2014

Field ID		Lab ID		Collected		Matrix		
SC-700B-WDR-469				813618-001	05/27/	2014 10:00	Water	
Specific Conductivity -	EPA 120.1		Batch	05EC14E				
Parameter		Unit	Ana	alyzed	DF	MDL	RL	Result
813618-001 Specific Condu	ctivity	umhos/cn	1 05/27	7/2014	1.00	0.606	2.00	7170
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	813548-004
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 895	Expected 895	R	PD 0	Accepta 0 - 10	ance Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 738	Expected 706	R	ecovery 104	Accepta 90 - 110	ance Range 0
MRCCS - Secondary	ý							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 738	Expected 706	R	Recovery 104	Accepta 90 - 110	ance Range
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 998	Expected 1000	R	lecovery 99.8	Accepta 90 - 110	ance Range 0
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 993	Expected 1000	R	Recovery 99.3	Accepta 90 - 110	ance Range 0

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Chrome VI by EPA 218.	6		Batch	1406028			
Parameter		Unit	Ana	ilyzed D	F MDL	RL	Result
813618-001 Chromium, Hex	avalent	ug/L	06/04	1/2014 12:00 1.0	0.00600	0.20	0.21
Method Blank						emont S	
Parameter	Unit	DF	Result				
Chromium, Hexavalent	ug/L	1.00	ND				
Low Level Calibration	n Verification	r.					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.197	0.200	98.4	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00	100	90 - 110)
Matrix Spike						Lab ID =	813618-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	5.00	5.26	5.22(5.00)	101	90 - 110)
Matrix Spike						Lab ID =	813618-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	1.27	1.21(1.00)	106	90 - 110)
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	4.99	5.00	99.8	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	95 - 108	5
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	95 - 108	5

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Metals by EPA 200.8, To	otal		Batch	053014A				
Parameter		Unit	Ana	lyzed C)F	MDL	RL	Result
813618-001 Chromium		ug/L	05/30	/2014 16:50 1.	00	0.0710	1.0	ND
Manganese		ug/L	05/30	/2014 16:50 1.	00	0.0600	0.50	1.5
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	813568-001
Parameter	Unit	DF	Result	Expected	R	RPD	Accepta	ance Range
Chromium	ug/L	10.0	244	239		2.16	0 - 20	
Manganese	ug/L	2.00	ND	0		0	0 - 20	
Low Level Calibration	n Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.230	0.200		115	70 - 130)
Manganese	ug/L	1.00	0.542	0.500		108	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	47.9	50.0		95.7	85 - 11	5
Manganese	ug/L	1.00	47.3	50.0		94.7	85 - 11	5
Matrix Spike							Lab ID =	813568-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Chromium	ug/L	10.0	692	739(500)		90.5	75 - 12	5
Manganese	ug/L	2.00	45.8	50.0(50.0)		91.7	75 - 12	5
Matrix Spike Duplica	te						Lab ID =	813568-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Manganese	ug/L	2.00	46.9	50.0(50.0)		93.9	75 - 12	5
MRCCS - Secondary		ociotiy osajiris e savijem (1894)	econocimica Compositiones Erezado	and the property of the second second second second second second second second second second second second se				
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	19.8	20.0		99.0	90 - 110	0
Manganese	ug/L	1.00	19.5	20.0		97.5	90 - 11	0
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	19.4	20.0		96.8	90 - 11	0

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Page 5 of 6

	J	Pr	oject Number	: 428648.IM.C	S.EX.A	0	Printed 6	/17/2014
Interference Check S	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	nce Range
Manganese	ug/L	1.00	20.1	20.0		101	80 - 120	
Total Dissolved Solids	by SM 254	0 C	Batch	05TDS14E				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
813618-001 Total Dissolved	Solids	mg/L	05/27/	2014	1.00	1.76	250	4340
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	813518-003
Parameter	Unit	DF	Result	Expected	F	RPD	•	nce Range
Total Dissolved Solids	mg/L	1.00	109000	110000		1.00	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ince Range
Total Dissolved Solids	mg/L	1.00	497	500		99.4	90 - 110)
Turbidity by SM 2130 B			Batch	05TUB14P				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
813618-001 Turbidity		NTU	05/28/	2014	1.00	0.0140	0.100	ND
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	813602-023
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ince Range
Turbidity	NTU	1.00	ND	0		0	0 - 20	
Lab Control Sample		and the state of the state of the state of the state of the state of the state of the state of the state of the	(h-ligher-sanger-santenbauk/1960-seesseente)	nagantas sa maganthan gar-a	itanaphinasahas ere≃pahha	principality of the constitution of the consti	sa ng Palithipus rayan sa Partijana	place of the second second
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ince Range
Turbidity	NTU	1.00	8.80	8.00		110	90 - 110) man ne veta ne ne ne en en en en en en en en en en
Lab Control Sample	the settlement on production							
Parameter	Unit	DF	Result	Expected	F	Recovery	•	ince Range
Turbidity	NTU	1.00	8.50	8.00		106	90 - 110)

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Printed 6/17/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

Batch: 05TDS14E Date Analyzed: 5/27/2014

Laboratory Number	Sample volume, mL	Initial weight, g	1st Final weight, g	2nd Final weight, g	Weight Difference, g	Exceeds 0.5mg? Yes/No	Residue weight, g	Filterable residue, ppm	RL, ppm	Reported Value, ppm	DF
Blank	100	69.4842	69.4852	69.4852	0.0000	No	0.0010	10.0	25.0	ND	1
813518-1	0.5	29.4835	29.6758	29.6757	0.0001	No	0.1922	384400.0	5000.0	384400.0	1
813518-2	2	28.7551	28.8390	28.8389	0.0001	No	0.0838	41900.0	1250.0	41900.0	1
813518-3	1 .	29.3560	29.4665	29.4664	0.0001	No	0.1104	110400.0	2500.0	110400.0	1
813518-4	0.5	29.3259	29.4267	29.4265	0.0002	No	0.1006	201200.0	5000.0	201200.0	1
813518-5	100	76.0252	76.1032	76.1031	0.0001	No	0.0779	779.0	25.0	779.0	1
813518-6	50	58.9425	58.9874	58.9870	0.0004	No	0.0445	890.0	50.0	890.0	1
813518-7	50	60.0624	60.0964	60.0961	0.0003	No	0.0337	674.0	50.0	674.0	1
813518-8	50	51.3346	51.3886	51.3882	0.0004	No	0.0536	1072.0	50.0	1072.0	1
813518-9	100	77.7687	77.8138	77.8137	0.0001	No	0.0450	450.0	25.0	450.0	1
813518-10	100	67.8053	67.8612	67.86 0 9	0.0003	No	0.0556	556.0	25.0	556.0	1
813518-3 Dup	1	29.4769	29.5858	29.5858	0.0000	No	0.1089	108900.0	2500.0	108900.0	1
LCS	100	76.5285	76.5785	76.5782	0.0003	No	0.0497	497.0	25.0	497.0	1
813518-11	50	62.6251	62.6602	62.66 0 0	0.0002	No	0.0349	698.0	50.0	698.0	1
813518-12	50	49.1109	49.1625	49.1624	0.0001	No	0.0515	1030.0	50.0	1030.0	1
14E0172-01	100	77.1107	77.1591	77.1591	0.0000	No	0.0484	484.0	25.0	484.0	ſ
14E0172-02	100	77.0659	77.1172	77.1172	0.0000	No	0.0513	513.0	25.0	513.0	1
14E0176-01	10	29.3290	29.3727	29.3724	0.0003	No	0.0434	4340.0	250.0	4340.0	1
313618-	1										
14E0172-01 Dur	100	50.7205	50.7707	50.7705	0.0002	No	0.0500	500.0	25.0	500.0	11

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

Laboratory	COLLIOLOS	inhie (co.	oj ounnia	A make followed to provide Administrations.	
QC S1d 1.0.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	497.0	500	99.4%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

	Dupiloute Do	torritati	and Birrer	moo camin	<u>y</u>	
	Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
	813518-3	0.1104	0.1089	0.7%	≤5%	Yes
į	14E0172-01	0.0484	0.0500	1.6%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 05TDS14E
Date Analyzed: 5/27/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
813518-1	169900	2.26	110435	3.48
813518-2	48500	0.86	31525	1.33
813518-3	109300	1.01	71045	1.55
813518-4	153600	1.31	99840	2.02
8135 18- 5	928	0.84	603.2	1.29
81351 8- 6	1189	0.75	772.85	1.15
813518-7	1004	0.67	652.6	1.03
813518-8	1645	0.65	1069.25	1.00
813518-9	691	0.65	449.15	1.00
813518-10	924	0.60	600.6	0.93
813518-3 Dup	109300	1.00	71045	1.53
LCS				
813518-11	1198	0.58	778.7	0.90
813518-12	1633	0.63	1061.45	0.97
14E0172-01	869	0.56	564.85	0.86
14E0172-02	843	0.61	547.9 5	0.94
14E0176-01/	7170	0.61	4660.5	0.93
913619-1				
14E0172-01 Dup	843	0.59	547.95	0.91

H. Me

Girmoni journal

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

CHAIN OF CUSTODY RECORD 14E0176/

COC Number

TURNAROUND TIME DATE 05/27/14 10 Days

[IM3Plant-WDR-463]

813618

- Library											(₩	P II S	Ø			***************************************					
COMPANY	E2		-				7	7	7	7	7	7	7	7	7	7	7	7	7	7	77	COMN	ICNTO
PROJECT NAME	PG&E Topock										/		/ .		/			/			/ /	COMIN	ENIS
PHONE	(530) 229-3303		FAX (530)	339-3303		/	/ /	/ /	/ /	/ /	/ /						' /	' 	/ /				
ADDRESS	155 Grand Ave	Ste 1000	-					T / 2	$\langle \cdot \rangle$														
	Oakland, CA 94	612				18				/		/ ,	/ ,		/ ,		/	/		NAT N			
P.O. NUMBER	428648.IM.CS.EX.A	AC	TEAM		/	Total Mer.	(200.8)	clance	5/		130)						/ /	′ /	/ /	OFCONTAINE	•		
SAMPLERS (SIGNA	TURE Som			<u></u>			Specific C.	TDS (SM2ELL)		Turbidity (Sa.c.										8			
					6/21	TOBI MAT	Becific .	8)80		'itbidit		/ /	/ ,	/ ,	/ /	/ ,	/		NUMBE				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/ 0		(S)	1															
SC-700B-WDF	R-469	05/27/14	10:00	Water	х	х	х	х		x									3		pu=	6(7	00. G)
Access Anny and Const Const Const Const Const Const Const Const Const Const Const Const Const Const Const Const				त्र कुरावास स्वापात अध्यापनाक अन्युवार करों (Asia पार्श स्वापना पार्शिक पार्श के अन्युवन ह			To the training of the second of		Sec. 1997			STEEL SAME	HAMMADADA V. S.	A CONTRACTOR OF THE PARTY OF TH		nor afficien	r Propose villelleng des fil Fr		3	то	Partir War III - Stand Sprinter	ER OF CON	IN COLL COLL SOM

Please Provide a preliminary Result for the TDS ASAP



For Sample Conditions See Form Attached

Rec'd 05/27/14 \$2c 8 1 36 1 8

CHAIN OF CUSTODY SIGNATURE REC	SAMPLE CONDITIONS
Signature Printed Company/ (Relinquished) Name Fox FAELUS Agency One	Date 5-27-14 RECEIVED COOL W WARM 4.1 "E "F
Signature (Received) Shaw Myo Name TRUZDAIL Company/ Agency TRU	Date/ 5-2) - 19 Time CUSTODY SEALED YES NO [2]
Signature (Relinquished) Eliqui Mg) Printed THANH Não Agency	Date/ - 27 10 SPECIAL REQUIREMENTS:
Signature Printed Company/ Name Supply Agency / Agency	Date/ 5-22/4 Time /9/0
Signature Printed Company/ (Relinquished) Name Agency	Date/ Time
Signature Printed Company/ (Received) Name Agency	Date/ Time

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	Initials
3120114			15 ml/25 ml	9.5-	1:7:00	NE
	1	1 1				
	-3					
	-4	I V	J. J	V	\downarrow	V
	-5	1 7 2 2	inl 150 ml	9.5	16:36	Nk²
	-6					
	-7	'				
	-8 -9					
				·		
	-10					
	1-11	 	1			
<u> </u>	V -13		Ψ	<u> </u>		-
5/21/14	813553-1	7.00	1 ml 150 ml	9.5	17:30	NE
	1 - 2					
	-2 -3 -4					
	- 4					
	-5					
	-7					
4 2 2 4 4			V	7 -	V	NE
5.12414		1 / 100	1 ml 1 50 ml	9.5	17:30	1VR
	-2					
	-3 -4					
1/	V -5	 				
5/28/4	813618	7.00	2ml/100ml	9.5	7:45	NE
-17-71	012410		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	_ ' >		
		1				



			Turbi	dity/pH C	Check			
Sample Number	Turbidity	pН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
813517	41	72	5/22/14	ES	Yes	1200		PHCZ
813595(1-8)	V	4-2	1	V.	yes	, ,		-7,8TU71
813908 (1-2,4)	41	72	5/27/14	ES	No	9:30	5/26/14 W 10: 11	
813512 (1-3)		l	i	1	ì	1	í	
813543(10-12)	J				V	V		
817553	71	L2			yes Yes			
813544 (1-2)	21	72			'Fes	9:10		
817592 (1-2)	71	22	1	+	HES			
817,623	71	12	5/29/14	NEST	Yes			
813624	フ! フ!	42	- 1	. 1				
43677	71	27						
813628	71	47 22						
813679	71	22					•	
413650	71	<z< td=""><td></td><td></td><td></td><td></td><td></td><td></td></z<>						
83/47	71	47	V	<i>y</i>				
813651	>1	22		1		,		
813652	>1 5/z	1F7 C-7	رىل.					> 6
813618	C 1 15	72 >2	5/20/14	NJ7	-yes-	17:70		CHZM
813568 (1-5)	>1	22	16.	1	بل			CHZM COM
813557 1,2)			5/30/14		1/8/S			5010
\$13475 (1-3)							```	
813576	•		ا طلا	V	V.	6/44		<i>\\\\\</i>
11-000	>1 6414	27	6/4/14	NO	YES	77		
14F0026(1,2)		77	4			1Z:30		CHZM
14,50004(1,2	71	Colo		-1				
14 10006								
14-1000/		·						
A-FOOX	-				and the state of t			
14F0053					Name of the last o			
(D) 10 10 14/14	-							
14F0036 14F0036 14F0036 14F0036 14F0056		1			3			
1470036 145001A						-		
MEME				1				
1450000	11	K.	V		7,			
14T0000	7	4	1.	Υ	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
14 FOOK (1-2)	ZI	72	6/10/14	Ë,	الإنسان الإنسان	11:00		filtere then
14 1 00 05 (1-2)	V	1	1	1	yes _	11.00		acidify
14 F 10 70 (1-2) 14 F 10 70 (1-2) 14 F 10 74- 14 F 10 75	71	42	6/10/14	B	Yes			
11150000-6			WILLIA	L>				
14. 10.75								
1470054	21							
14 F OV 90	71					-		
14 F UDA 1	41	1		1	\cup			
147001			1		-			

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





Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E2</u>	Lab # _) 34
Date	Delivered: 5 /2.7/14 Time: <u>/9://0</u> By: □Mail ØF	ield Service	□ Client
1.	Was a Chain of Custody received and signed?	∴diYes □No	o □N/A
2.	Does Customer require an acknowledgement of the COC?	□Yes DANG	o □N/A
3	Are there any special requirements or notes on the COC?	☐Yes ७१००	o □N/A
4.	If a letter was sent with the CQC, does it match the COC?	□Yes □No	dín/A
5 .	Were all requested analyses understood and acceptable?	ZiYes □No	o □N/A
6.	Were samples received in a chilled condition? Temperature (if yes)? <u>Y. / °C</u>	₫Yes □No	DN/A
7.	Were samples received intact (i.e. broken bottles, leaks, air bubbles, etc)?	Ø2Yes □No	O DN/A
8.	Were sample custody seals intact?	□Yes □No	DNA
9.	Does the number of samples received agree with COC?	ŻrYes □No	□Ņ⁄A
10.	Did sample labels correspond with the client ID's?	≌Ýes □No	□N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □Truesdail □Client	, [°] □Yes □No	ZÍN/A
12.	Were samples pH checked? pH = See l. 0. C	ØYes □No	□ <i>N/A</i>
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	ØŸes □No	□ <i>N/A</i>
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	Ġ Yes □No	□N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground \ □Sludge □Soil □Wipe □Paint □Solid \(\frac{\fra	1/1/2/	te Water
16.	Comments:		
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Lude	2

Analytical Bench Log Book

WDR pH Results

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

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
!	i sampiniy	Samping	dilalysis	ananysis	for Serial Number		00.00.00	-		

Notes:

: SC-700B	5-6-14 14216	5-6-14 14:48	MGTER# Z	5-6-14	6412	-53.2	SCOTT ODONNELL	7.7
···ites:								
5 SC-100B	5-6-14 14:48	5-6-14 14:48	METER # Z	5-6-14	0412	-53.2	SCOTT ODONNER.	7. /
utes:								
ii SC- 7008	5-13-14 1300	5-13-14 1305	mesen#2	5-13-14	0414	-53,1	CHILLS LEWIZ	7.0
etes:								
: SC-700B	5-20-14 1446	5-20-14 1450	METER & Z	5-20-14	00:55	-53,4	CHRUS LEAR	7.1
hutes. <i>8 5C-7008</i>	5-22-14 10:00	1 529.14 1005	melenta	5-21-14	00:55	-54.1	Nov WHELPS	7.1
<u> </u>		minder: WDR Require	ed pH Range for th	ne Effluent (SC	-700B) is: 6	5 - 8.4	/ / /	<u> </u>

EXCELLENCE IN INDEPENDENT TESTING



Established 1931

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

July 2, 2014

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-470 PROJECT, GROUNDWATER

MONITORING,

TLI No.: 814026

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-470 project groundwater monitoring. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 3, 2014, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Samples were analyzed and recorded in the raw data as SDG 14F0026 but are reported as SDG 814026 in all final report pages.

Total and Total Dissolved Metals were analyzed by EPA 200.8 and EPA 200.7 with Mr. Shawn Duffy's approval.

The straight runs for the sample and associated matrix spike on sample SC-700B-WDR-470 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.

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: Two (2) Groundwaters
Project Name: PG&E Topock Project
Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 814026 Date: June 30, 2014

Collected: June 6, 2014 Received: June 6, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST				
EPA 120.1	Specific Conductivity	Jenny Tankunakorn				
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn				
SM 2320B	Total Alkalinity	Alex Luna / Jennine Ta				
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	Jennine Ta				
EPA 300.0	Anions	Giawad Ghenniwa				
SM 4500-NH3 D	Ammonia	Maksim Gorbunov				
SM 4500-NO2 B	Nitrite as N	Jenny Tankunakorn				
EPA 200.7	Metals by ICP	Ethel Suico				
EPA 200.8 Metals by ICP/MS		Ethel Suico				
EPA 218.6 Hexavalent Chromium		Naheed Eidinejad				

TRUESDAIL LABORATORIES, INC.

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

Laboratory No.: 814026 Date Received: June 6, 2014

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC P.O. No.: PGEIM11111001

Analytical Results Summary

Lab Sample ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
814026-001	SC-700B-WDR-470	E120.1	NONE	6/3/2014	9:00	EC	7490	umhos/cm	2.00
814026-001	SC-700B-WDR-470	E200.7	NONE	6/3/2014	9:00	Aluminum	ND	ug/L	50.0
814026-001	SC-700B-WDR-470	E200.7	NONE	6/3/2014	9:00	BORON	970	ug/L	50.0
814026-001	SC-700B-WDR-470	E200.7	NONE	6/3/2014	9:00	Iron	ND	ug/L	20.0
814026-001	SC-700B-WDR-470	E200.7	NONE	6/3/2014	9:00	Zinc	ND	ug/L	20.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Antimony	ND	ug/L	2.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Arsenic	ND	ug/L	0.50
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Barium	10.0	ug/L	5.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Chromium	ND	ug/L	1.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Copper	ND	ug/L	1.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Lead	ND	ug/L	1.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Manganese	3.0	ug/L	0.50
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Molybdenum	19.9	ug/L	2.0
814026-001	SC-700B-WDR-470	E200.8	NONE	6/3/2014	9:00	Nickel	2.1	ug/L	2.0
814026-001	SC-700B-WDR-470	E218.6	LABFLT	6/3/2014	9:00	Chromium, Hexavalent	ND	ug/L	0.20
814026-001	SC-700B-WDR-470	E300	NONE	6/3/2014	9:00	Fluoride	2.13	mg/L	0.500
814026-001	SC-700B-WDR-470	E300	NONE	6/3/2014	9:00	Nitrate as N	2.68	mg/L	0.500
814026-001	SC-700B-WDR-470	E300	NONE	6/3/2014	9:00	Sulfate	506	mg/L	25.0
814026-001	SC-700B-WDR-470	SM2130B	NONE	6/3/2014	9:00	Turbidity	ND	NŤU	0.100
814026-001	SC-700B-WDR-470	SM2540C	NONE	6/3/2014	9:00	Total Dissolved Solids	4360	mg/L	250
814026-001	SC-700B-WDR-470	SM4500NH3D	NONE	6/3/2014	9:00	Ammonia-N	ND	mg/L	0.500
814026-001	SC-700B-WDR-470	SM4500NO2B	NONE	6/3/2014	9:00	Nitrite as N	ND	mg/L	0.0050

l ah Campia ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
Lab Sample ID	Fleid ID								
814026-002	SC-100B-WDR-470	E120.1	NONE	6/3/2014	9:00	EC	7380	umhos/cm	2.00
814026-002	SC-100B-WDR-470	E200.7	NONE	6/3/2014	9:00	Aluminum	ND	ug/L	50.0
814026-002	SC-100B-WDR-470	E200.7	NONE	6/3/2014	9:00	BORON	1010	ug/L	50.0
814026-002	SC-100B-WDR-470	E200.7	LABFLT	6/3/2014	9:00	Iron	ND	ug/L	20.0
814026-002	SC-100B-WDR-470	E200.7	NONE	6/3/2014	9:00	Iron	ND	ug/L	20.0
814026-002	SC-100B-WDR-470	E200.7	NONE	6/3/2014	9:00	Zinc	ND	ug/L	20.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Antimony	ND	ug/L	2.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Arsenic	3.9	ug/L	0.50
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Barium	24.4	ug/L	5.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Chromium	575	ug/L	2.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Copper	ND	ug/L	1.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Lead	ND	ug/L	1.0
814026-002	SC-100B-WDR-470	E200.8	LABFLT	6/3/2014	9:00	Manganese	6.4	ug/L	0.50
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Manganese	6.9	ug/L	0.50
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Molybdenum	19.8	ug/L	2.0
814026-002	SC-100B-WDR-470	E200.8	NONE	6/3/2014	9:00	Nickel	ND	ug/L	2.0
814026-002	SC-100B-WDR-470	E218.6	LABFLT	6/3/2014	9:00	Chromium, Hexavalent	516	ug/L	5.0
814026-002	SC-100B-WDR-470	E300	NONE	6/3/2014	9:00	Fluoride	2.41	mg/L	0.500
814026-002	SC-100B-WDR-470	E300	NONE	6/3/2014	9:00	Nitrate as N	2.60	mg/L	0.500
814026-002	SC-100B-WDR-470	E300	NONE	6/3/2014	9:00	Sulfate	513	mg/L	25.0
814026-002	SC-100B-WDR-470	SM2130B	NONE	6/3/2014	9:00	Turbidity	0.177	NTU	0.100
814026-002	SC-100B-WDR-470	SM2320B	NONE	6/3/2014	9:00	Alkalinity	170	mg/L	5.00
814026-002	SC-100B-WDR-470	SM2320B	NONE	6/3/2014	9:00	Alkalinity, Bicarbonate (As CaCO3)	170	mg/L	5.00
814026-002	SC-100B-WDR-470	SM2320B	NONE	6/3/2014	9:00	Alkalinity, Carbonate (As CaCO3)	ND	mg/L	5.00
814026-002	SC-100B-WDR-470	SM2540C	NONE	6/3/2014	9:00	Total Dissolved Solids	4250	mg/L	250
814026-002	SC-100B-WDR-470	SM4500NH3D	NONE	6/3/2014	9:00	Ammonia-N	ND	mg/L	0.500
814026-002	SC-100B-WDR-470	SM4500NO2B	NONE	6/3/2014	9:00	Nitrite as N	ND	mg/L	0.0050
814026-002	SC-100B-WDR-470	SM4500-PB_E	NONE	6/3/2014	9:00	Total Phosphorous-P	ND	mg/L	0.0200
814026-002	SC-100B-WDR-470	SM4500SI	LABFLT	6/3/2014	9:00	Soluble Silica	21.2	mg/L	1.00
814026-002	SC-100B-WDR-470	SM5310C	NONE	6/3/2014	9:00	Total Organic Carbon	0.867	mg/L	0.300

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



Laboratory No. 814026



REPORT

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

Printed 7/2/2014

Page 1 of 35

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 6/3/2014 2:00:00 PM

Field ID	Lab ID	Collected	Matrix	
SC-700B-WDR-470	814026-001	06/03/2014 09:00	Water	
SC-100B-WDR-470	814026-002	06/03/2014 09:00	Water	

Anions By I.C EPA 300.0		Batch 1406066				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
814026-001 Fluoride	mg/L	06/04/2014 13:17	5.00	0.104	0.500	2.13
Nitrate as Nitrogen	mg/L	06/04/2014 13:17	5.00	0.0415	0.500	2.68
Sulfate	mg/L	06/04/2014 14:06	50.0	1.54	25.0	506
814026-002 Fluoride	mg/L	06/04/2014 13:29	5.00	0.104	0.500	2.41
Nitrate as Nitrogen	mg/L	06/04/2014 13:29	5.00	0.0415	0.500	2.60
Sulfate	mg/L	06/04/2014 14:43	50.0	1.54	25.0	513

Sulfate		mg/L	06/0)4/2014 14:43	50.0	1.54	25.0	513
Method Blank								
Parameter	Unit	DF	Result					
Chloride	mg/L	1.00	ND					
Fluoride	mg/L	1.00	ND					
Sulfate	mg/L	1.00	ND					
Nitrate as Nitrogen	mg/L	1.00	ND					
Duplicate							Lab ID = 8	14025-001
Parameter	Unit	DF	Result	Expected	Ri	PD	Acceptar	nce Range
Chloride	mg/L	500	1080	1140	:	5.38	0 - 20	_
Duplicate				. Williamson			Lab ID = 8	14026-001
Parameter	Unit	DF	Result	Expected	RI	PD	Acceptar	nce Range
Sulfate	mg/L	50.0	503	506	(0.621	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.



Client: E2 Consulting Engineers, Inc.			roject Name: roject Number	PG&E Topock Pro	-	Page 2 of 35 Printed 7/2/2014
Duplicate						Lab ID = 814026-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 2.54	Expected 2.41	RPD 5.41	Acceptance Range 0 - 20
Nitrate as Nitrogen	mg/L	5.00	2.57	2.60	1.20	0 - 20
Lab Control Sample						
Parameter Chloride	Unit mg/L	DF 1.00	Result 4.06	Expected 4.00	Recovery 101	Acceptance Range 90 - 110
Fluoride	mg/L	1.00	4.21	4.00	105	90 - 110
Sulfate	mg/L	1.00	20.7	20.0	104	90 - 110
Nitrate as Nitrogen Matrix Spike	mg/L	1.00	4.06	4.00	102	90 - 110 Lab ID = 814025-001
Parameter Chloride	Unit mg/L	DF 500	Result 3190	Expected/Added 3140(2000)	Recovery 102	Acceptance Range 85 - 115
Matrix Spike						Lab ID = 814026-001
Parameter Sulfate	Unit mg/L	DF 50.0	Result 700	Expected/Added 706(200)	Recovery 97.2	Acceptance Range 85 - 115
Matrix Spike	Deckelyk					Lab ID = 814026-002
Parameter Fluoride	Unit mg/L	DF 5.00	Result 22.9	Expected/Added 22.4(20.0)	Recovery 102	Acceptance Range 85 - 115
Nitrate as Nitrogen	mg/L	5.00	22.8	22.6(20.0)	101	85 - 115
MRCCS - Secondary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 4.00	Expected 4.00	Recovery 100	Acceptance Range 90 - 110
Fluoride	mg/L	1.00	4.22	4.00	105	90 - 110
Sulfate	mg/L	1.00	20.5	20.0	102	90 - 110
Nitrate as Nitrogen	mg/L	1.00	4.05	4.00	101	90 - 110
MRCVS - Primary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.06	Expected 3.00	Recovery 102	Acceptance Range 90 - 110
MRCVS - Primary						
Parameter Chloride	Unit mg/L	DF 1.00	Result 3.02	Expected 3.00	Recovery 100	Acceptance Range 90 - 110
Fluoride	mg/L	1.00	3.15	3.00	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.

016



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Page 4 of 35 Printed 7/2/2014

Nitrite SM 4500-NO2 B			Batch	1406037				
Parameter		Unit	Anal	yzed D	F	MDL	RL	Result
814026-001 Nitrite as Nitro	gen	mg/L	06/04	/2014 15:02 1.	00	0.000630	0.0050	ND
814026-002 Nitrite as Nitro	gen	mg/L	06/04	/2014 15:07 1.	00	0.000630	0.0050	ND
Method Blank								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID = 8	14026-001
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result ND	Expected 0	R	PD 0	Acceptar 0 - 20	nce Range
Lab Control Sample								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0209	Expected 0.0230		ecovery 90.9	Acceptar 90 - 110	nce Range
Matrix Spike							Lab ID = 8	14026-001
Parameter Nitrite as Nitrogen MRCCS - Secondar	Unit mg/L y	DF 1.00	Result 0.0208	Expected/Added 0.0230(0.0230)		ecovery 90.4	Acceptar 85 - 115	nce Range
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0209	Expected 0.0230		ecovery 90.9	Acceptar 90 - 110	nce Range
MRCVS - Primary								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0189	Expected 0.0200	R	ecovery 94.5	Acceptar 90 - 110	nce Range
MRCVS - Primary								
Parameter Nitrite as Nitrogen	Unit mg/L	DF 1.00	Result 0.0189	Expected 0.0200		ecovery 94.5	Acceptar 90 - 110	nce Range



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Alkalinity by SM 2320B			Batch	1406157				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814026-002 Alkalinity as CaC	:O3	mg/L	06/10/2014		.00	1.68	5.00	170
Bicarbonate (Cal	lculated)	mg/L	06/10)/2014	.00	1.68	5.00	170
Carbonate (Calculated)		mg/L	06/10)/2014 1	.00	1.68	5.00	ND
Method Blank								
Parameter	Unit	DF	Result					
Alkalinity as CaCO3	mg/L	1.00	ND					
Carbonate (Calculated)	mg/L	1.00	ND					
Bicarbonate (Calculated)	mg/L	1.00	ND					
Duplicate							Lab ID =	814089-021
Parameter	Unit	DF	Result	Expected	I	RPD	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	120	119		0.837	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	100	100		100	90 - 110	0
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	ı	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	102	100		102	90 - 110	0
Matrix Spike							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected/Adde	ed I	Recovery	Accepta	ance Range
Alkalinity as CaCO3	mg/L	1.00	313	324(100)		89.0	75 - 12	5



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Specific Conductivity - EF	A 120.1		Batc	n 1406070				
Parameter		Unit	Unit Analyzed		DF	MDL	RL	Result
814026-001 Specific Conductiv		umhos/	•	3/2014	1.00	0.706	2.00	7490
814026-002 Specific Conductiv	rity	umhos/	cm 06/0	3/2014	1.00	0.706	2.00	7380
Method Blank								
Parameter	Unit	DF	Result					
Specific Conductivity	umhos	1.00	ND					
Duplicate							Lab ID =	814026-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Specific Conductivity	umhos	1.00	7510	7490		0.267	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	707	706		100	90 - 110)
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	707	706		100	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	1060	1000		106	90 - 11	כ
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Specific Conductivity	umhos	1.00	1060	1000		106	90 - 11)



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Chrome VI by EPA 218.0	6		Batch	1406028				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814026-001 Chromium, Hex	avalent	ug/L	06/04	/2014 15:35 1	.00	0.00600	0.20	ND
814026-002 Chromium, Hex	avalent	ug/L	06/04	/2014 15:46 2	5.0	0.150	5.0	516
Method Blank								
Parameter	Unit	DF	Result					
Chromium, Hexavalent	ug/L	1.00	ND					
Duplicate							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected	ı	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	3.76	3.74		0.464	0 - 20	
Low Level Calibration	Nerification							
Parameter	Unit	DF	Result	Expected	١	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.197	0.200		98.4	70 - 13	כ
Lab Control Sample								
Parameter	Unit	DF	Result	Expected		Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	5.02	5.00		100	90 - 11	0
Matrix Spike							Lab ID =	813618-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	5.00	5.26	5.22(5.00)		101	90 - 11	0
Matrix Spike							Lab ID =	813618-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.00	1.27	1.21(1.00)		106	90 - 11	0
Matrix Spike							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.00	8.71	8.74(5.00)		99.3	90 - 11	_
Matrix Spike							Lab ID =	814026-001
Parameter	Unit	DF	Result	Expected/Adde	ed -	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	5.00	5.26	5.21(5.00)		101	90 - 11	-
Matrix Spike							Lab ID =	814026-001
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	1.00	1.18	1.16(1.00)		102	90 - 11	•
Matrix Spike							Lab ID =	814026-002
Parameter	Unit	DF	Result	Expected/Adde	ed	Recovery	Accept	ance Range
Chromium, Hexavalent	ug/L	25.0	1200	1140(625)	-	109	90 - 11	•

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Metals by EPA 200.7, Tot	tal		Batch					
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
814026-001 Aluminum		ug/L	06/06	/2014 13:37	1.00	7.20	50.0	ND
Boron		ug/L	06/06	/2014 13:37	1.00	4.10	50.0	970
Iron		ug/L	06/06	/2014 13:37	1.00	3.00	20.0	ND
Zinc		ug/L	06/06	/2014 13:37	1.00	5.10	20.0	ND
314026-002 Aluminum		ug/L	06/06	/2014 14:17	1.00	7.20	50.0	ND
Boron		ug/L	06/06	/2014 14:17	1.00	4.10	50.0	1010
Iron		ug/L		/2014 14:17	1.00	3.00	20.0	ND
Zinc		ug/L		/2014 14:17	1.00	5.10	20.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Aluminum	ug/L	1.00	ND					
Iron	ug/L	1.00	ND					
Zinc	ug/L	1.00	ND					
Boron	ug/L	1.00	ND					
Duplicate							Lab ID =	814026-00
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Rang
Aluminum	ug/L	1.00	ND	0		0	0 - 20	
Iron	ug/L	1.00	ND	0		0	0 - 20	
Zinc	ug/L	1.00	ND	0		0	0 - 20	
Boron	ug/L	1.00	982	970		1.26	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Rang
Aluminum	ug/L	1.00	1990	2000		99.6	85 - 115	5
Iron	ug/L	1.00	2070	2000		104	85 - 118	5
Zinc	ug/L	1.00	2090	2000		104	85 - 115	5
Boron	ug/L	1.00	2020	2000		101	85 - 118	5
Matrix Spike							Lab ID =	814026-00
Parameter	Unit	DF	Result	Expected/Ad	ded F	Recovery	Accepta	ance Rang
Aluminum	ug/L	1.00	1780	2000(2000)		88.8	75 - 125	5
Iron	ug/L	1.00	1890	2000(2000)		94.4	75 - 125	5
Zinc	ug/L	1.00	2170	2000(2000)		109	75 - 125	5
Boron	ug/L	1.00	2910	2970(2000)		96.8	75 - 125	5

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Matrix Spike Duplicat	e yryddiaddiadd					Lab ID = 814026-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1750	2000(2000)	87.4	75 - 125
Iron	ug/L	1.00	1860	2000(2000)	92.8	75 - 125
Zinc	ug/L	1.00	2140	2000(2000)	107	75 - 125
Boron	ug/L	1.00	2920	2970(2000)	97.6	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5140	5000	103	95 - 105
Iron	ug/L	1.00	5130	5000	103	95 - 105
Zinc	ug/L	1.00	5260	5000	105	95 - 105
Boron	ug/L	1.00	5070	5000	101	95 - 105
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	5090	5000	102	90 - 110
Iron	ug/L	1.00	5120	5000	102	90 - 110
Zinc	ug/L	1.00	5120	5000	102	90 - 110
Boron	ug/L	1.00	5040	5000	101	90 - 110
Interference Check S	tandard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00	1990	2000	99.6	80 - 120
Interference Check S	tandard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Aluminum	ug/L	1.00		2000	99.2	80 - 120
Iron	ug/L	1.00	2140	2000	107	80 - 120
Interference Check S	tandard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Iron	ug/L	1.00	2170	2000	108	80 - 120
Zinc	ug/L	1.00	ND	0		
Interference Check S	tandard A					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Zinc	ug/L	1.00		0		
Boron	ug/L	1.00		0		
Interference Check S	-					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
- arameter	OTIIL	ום	Nosuit	_ Apoolou	1 (COOVER)	7 toochtande Mange

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0

ND

ug/L

Boron

1.00



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Metals by EPA 200.8, Total		Batch 060614A				
Parameter	Unit	Analyzed	DF	MDL	RL	Result
814026-001 Antimony	ug/L	06/06/2014 13:18	2.00	0.0700	2.0	ND
Arsenic	ug/L	06/06/2014 13:18	2.00	0.100	0.50	ND
Barium	ug/L	06/06/2014 13:18	2.00	0.594	5.0	10.0
Chromium	ug/L	06/06/2014 13:18	2.00	0.142	1.0	ND
Lead	ug/L	06/06/2014 13:18	2.00	0.286	1.0	ND
Manganese	ug/L	06/06/2014 13:18	2.00	0.120	0.50	3.0
Molybdenum	ug/L	06/06/2014 13:18	2.00	0.100	2.0	19.9
Nickel	ug/L	06/06/2014 13:18	2.00	0.480	2.0	2.1
814026-002 Antimony	ug/L	06/06/2014 14:16	2.00	0.0700	2.0	ND
Arsenic	ug/L	06/06/2014 14:16	2.00	0.100	0.50	3.9
Barium	ug/L	06/06/2014 14:16	2.00	0.594	5.0	24.4
Chromium	ug/L	06/06/2014 14:23	10.0	0.710	2.0	575
Lead	ug/L	06/06/2014 14:16	2.00	0.286	1.0	ND
Manganese	ug/L	06/06/2014 14:16	2.00	0.120	0.50	6.9
Molybdenum	ug/L	06/06/2014 14:16	2.00	0.100	2.0	19.8
Nickel	ug/L	06/06/2014 14:16	2.00	0.480	2.0	ND

Method Blank			
Parameter	Unit	DF	Result
Arsenic	ug/L	1.00	ND
Barium	ug/L	1.00	ND
Cadmium	ug/L	1.00	ND
Chromium	ug/L	1.00	ND
Nickel	ug/L	1.00	ND
Antimony	ug/L	1.00	ND
Lead	ug/L	1.00	ND
Manganese	ug/L	1.00	ND
Molybdenum	ug/L	1.00	ND



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Duplicate						Lab ID = 814026-001
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Arsenic	ug/L	2.00	ND	0	0	0 - 20
Barium	ug/L	2.00	10.0	10.0	0.230	0 - 20
Cadmium	ug/L	2.00	ND	0	0	0 - 20
Chromium	ug/L	2.00	ND	0	0	0 - 20
Nickel	ug/L	2.00	2.22	2.13	3.96	0 - 20
Antimony	ug/L	2.00	ND	0	0	0 - 20
Lead	ug/L	2.00	ND	0	0	0 - 20
Manganese	ug/L	2.00	2.82	2.98	5.52	0 - 20
Molybdenum	ug/L	2.00	20.2	19.9	1.62	0 - 20
Low Level Calibration	n Verification					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	0.254	0.200	127	70 - 130
Barium	ug/L	1.00	0.948	1.00	94.8	70 - 130
Cadmium	ug/L	1.00	0.193	0.200	96.5	70 - 130
Chromium	ug/L	1.00	0.235	0.200	118	70 - 130
Nickel	ug/L	1.00	1.11	1.00	111	70 - 130
Antimony	ug/L	1.00	0.238	0.200	119	70 - 130
Lead	ug/L	1.00	0.460	0.500	92.0	70 - 130
Manganese	ug/L	1.00	0.222	0.200	111	70 - 130
Molybdenum	ug/L	1.00	0.483	0.500	96.6	70 - 130
Lab Control Sample						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	51.2	50.0	102	85 - 115
Barium	ug/L	1.00	47.4	50.0	94.7	85 - 115
Cadmium	ug/L	1.00	47.3	50.0	94.6	85 - 115
Chromium	ug/L	1.00	51.4	50.0	103	85 - 115
Nickel	ug/L	1.00	51.2	50.0	102	85 - 115
Antimony	ug/L	1.00	47.7	50.0	95.3	85 - 115
Lead	ug/L	1.00	47.8	50.0	95.6	85 - 115
Manganese	ug/L	1.00	51.4	50.0	103	85 - 115
Molybdenum	ug/L	1.00	47.2	50.0	94.4	85 - 115



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Matrix Spike						Lab ID = 814026-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	49.6	50.0(50.0)	99.1	75 - 125
Barium	ug/L	2.00	52.8	60.0(50.0)	85.6	75 - 125
Cadmium	ug/L	2.00	40.3	50.0(50.0)	80.6	75 - 125
Chromium	ug/L	2.00	47.4	50.0(50.0)	94.8	75 - 125
Nickel	ug/L	2.00	47.5	52.1(50.0)	90.8	75 - 125
Antimony	ug/L	2.00	44.8	50.0(50.0)	89.6	75 - 125
Lead	ug/L	2.00	41.0	50.0(50.0)	82.0	75 - 125
Manganese	ug/L	2.00	48.7	53.0(50.0)	91.4	75 - 125
Molybdenum	ug/L	2.00	64.4	69.9(50.0)	89.0	75 - 125
Matrix Spike Duplicate						Lab ID = 814026-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Acceptance Range
Arsenic	ug/L	2.00	49.8	50.0(50.0)	99.6	75 - 125
Barium	ug/L	2.00	52.4	60.0(50.0)	84.8	75 - 125
Cadmium	ug/L	2.00	39.9	50.0(50.0)	79.8	75 - 125
Chromium	ug/L	2.00	47.2	50.0(50.0)	94.4	75 - 125
Nickel	ug/L	2.00	47.2	52.1(50.0)	90.2	75 - 125
Antimony	ug/L	2.00	43.8	50.0(50.0)	87.7	75 - 125
Lead	ug/L	2.00	40.5	50.0(50.0)	81.0	75 - 125
Manganese	ug/L	2.00	49.5	53.0(50.0)	93.1	75 - 125
Molybdenum	ug/L	2.00	64.2	69.9(50.0)	88.6	75 - 125
MRCCS - Secondary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.2	20.0	101	90 - 110
Barium	ug/L	1.00	18.5	20.0	92.5	90 - 110
Cadmium	ug/L	1.00	18.7	20.0	93.3	90 - 110
Chromium	ug/L	1.00	20.1	20.0	100	90 - 110
Nickel	ug/L	1.00	19.9	20.0	99.7	90 - 110
Antimony	ug/L	1.00	19.0	20.0	94.8	90 - 110
Lead	ug/L	1.00	18.7	20.0	93.3	90 - 110
Manganese	ug/L	1.00	20.0	20.0	99.9	90 - 110
Molybdenum	ug/L	1.00	18.6	20.0	93.0	90 - 110
MRCVS - Primary						
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Arsenic	ug/L	1.00	20.3	20.0	101	90 - 110

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Interference Check	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Molybdenum	ug/L	1.00	ND	0		
Serial Dilution						Lab ID = 814026-002
Parameter	Unit	DF	Result	Expected	RPD	Acceptance Range
Barium	ug/L	10.0	24.1	24.4	1.08	0 - 10
Chromium	ug/L	50.0	596	575	3.65	0 - 10



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Metals by EPA 200.8,	Total	Batch 060514A-ICPMS-1						
Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
814026-001 Copper		ug/L	06/05	6/2014 16:35 2	00	0.380	1.0	ND
814026-002 Copper		ug/L	06/05	/2014 17:03 2	.00	0.380	1.0	ND
Method Blank								
Parameter	Unit	DF	Result					
Copper	ug/L	1.00	ND					
Duplicate							Lab ID =	814026-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Copper	ug/L	2.00	ND	0		0	0 - 20	
Low Level Calibrat	ion Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	0.504	0.500		101	70 - 13	0
Lab Control Sampl	le							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	47.9	50.0		95.7	85 - 11	5
Matrix Spike							Lab ID = 814026-00	
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Copper	ug/L	2.00	41.2	50.0(50.0)		82.5	75 - 12	5
Matrix Spike Duplic	cate						Lab ID =	814026-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Copper	ug/L	2.00	41.1	50.0(50.0)		82.1	75 - 12	5
MRCCS - Seconda	ary							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	19.8	20.0		98.8	90 - 11	0
MRCVS - Primary								
Parameter	unit unit	DF	Result	Expected		Recovery	Accept	ance Range
Copper	ug/L	1.00	19.8	20.0		99.1	90 - 11	0
Interference Check	k Standard A							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0		-		_
Interference Check	k Standard A							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Copper	ug/L	1.00	ND	0		•	•	_

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Interference Check S	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	18.4	20.0	92.0	80 - 120
Interference Check S	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Copper	ug/L	1.00	20.1	20.0	100	80 - 120

Reactive Silica by SM4	500-Si D		Batch	1406110				
Parameter		Unit	Ana	lyzed)F	MDL	RL	Result
814026-002 Silica		mg/L	06/09)/2014 2	5.0	0.252	1.00	21.2
Method Blank								
Parameter Silica	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	814026-002
Parameter Silica	Unit mg/L	DF 25.0	Result 21.2	Expected 21.2	RPD 0.0392		Acceptance Rang 0 - 20	
Lab Control Sample								
Parameter Silica	Unit mg/L	DF 1.00	Result 0.203	Expected 0.206	F	Recovery 98.5	Acceptance Range	
Matrix Spike							Lab ID =	814026-002
Parameter Silica	Unit mg/L	DF 25.0	Result 27.1	Expected/Adde 26.4(5.15)	ed F	Recovery 114	Accepta 75 - 125	ance Range 5
MRCCS - Secondar	The control of the second seco		-	_		_		_
Parameter Silica	Unit mg/L	DF 1.00	Result 0.203	Expected 0.206	ŀ	Recovery 98.5	90 - 110	ance Range O
MRCVS - Primary								
Parameter Silica	Unit mg/L	DF 1.00	Result 0.415	Expected 0.400	F	Recovery 104	Accepta 90 - 110	ance Range)



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Total Dissolved Solids	by SM 254	0 C	Batch	1406069				
Parameter	Parameter Unit		Ana	lyzed	DF	MDL	RL	Result
14026-001 Total Dissolved Solids		mg/L	06/03	3/2014	1.00	1.76	250	4360
814026-002 Total Dissolved	olved Solids mg/L		06/03/2014		1.00	1.76	250	4250
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	2610	2610		0	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	517	500		103	90 - 110)



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Total Organic Carbon (T	DOC) 214		Datti	1406043				
Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
814026-002 Total Organic Ca	rbon	mg/L	06/05	/2014 14:08 1	.00	0.0877	0.300	0.867
Method Blank								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	813567-020
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 2.34	Expected 2.35	F	RPD 0.341	Accepta 0 - 20	nce Range
Lab Control Sample								
Parameter Total Organic Carbon Matrix Spike	Unit mg/L	DF 1.00	Result 8.44	Expected 8.56	F	Recovery 98.6	85 - 115	nce Range 814026-002
Parameter Total Organic Carbon MRCCS - Secondary	Unit mg/L	DF 1.00	Result 15.1	Expected/Adde 18.0(17.1)	d F	Recovery 83.0	Accepta 75 - 125	nce Range
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 8.67	Expected 8.56	F	Recovery 101	Accepta 90 - 110	nce Range
MRCVS - Primary								_
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 9.91	Expected 10.0	F	Recovery 99.1	Accepta 90 - 110	nce Range
MRCVS - Primary								
Parameter Total Organic Carbon	Unit mg/L	DF 1.00	Result 10.0	Expected 10.0	F	Recovery 100	Accepta 90 - 110	nce Range



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Total Phosphate, SM 45	00-PB,E		Batch	1406155				
Parameter		Unit	Anal	yzed	DF	MDL	RL	Result
814026-002 Phosphate, Total	al As P	mg/L	06/11/	/2014 1	.00	0.00460	0.0200	ND
Method Blank								
Parameter	Unit	DF	Result					
Phosphate, Total As P	mg/L	1.00	ND					
Duplicate							Lab ID = 8	14026-002
Parameter	Unit	DF	Result	Expected	F	RPD	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	ND	0		0	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0628	0.0650		96.6	90 - 110	
Matrix Spike							Lab ID = 8	14026-002
Parameter	Unit	DF	Result	Expected/Adde	ed F	Recovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0628	0.0650(0.0650)	96.6	75 - 125	
MRCCS - Secondary	de la compa							
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0628	0.0650		96.6	90 - 110	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Acceptar	nce Range
Phosphate, Total As P	mg/L	1.00	0.0647	0.0660		98.0	90 - 110	



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Project Number: 428648.IM.CS.EX.AC

Ammonia Nitrogen by SN	/ <mark>14500-N</mark> H	I3D	Batch	06NH314A				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814026-001 Ammonia as N		mg/L	06/30	/2014	1.00	0.0318	0.500	ND
814026-002 Ammonia as N		mg/L	06/30	/2014	1.00	0.0318	0.500	ND
Method Blank								
Parameter Ammonia as N	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	814026-001
Parameter Ammonia as N Lab Control Sample	Unit mg/L	DF 1.00	Result ND	Expected 0	RPD 0		Acceptance Rang 0 - 20	
Parameter Ammonia as N Matrix Spike	Unit mg/L	DF 1.00	Result 8.34	Expected 8.00	Recovery 104		Acceptance Rai 90 - 110 Lab ID = 814026-	
Parameter Ammonia as N	Unit mg/L	DF 1.00	Result 10.6	Expected/Adde 10.0(10.0)	ed I	Recovery 106	Accepta 75 - 125	nce Range
MRCCS - Secondary						_		
Parameter Ammonia as N	Unit mg/L	DF 1.00	Result 6.15	Expected 6.00		Recovery 102	90 - 110	ince Range
MRCVS - Primary								
Parameter Ammonia as N	Unit mg/L	DF 1.00	Result 6.17	Expected 6.00		Recovery 103	Accepta 90 - 110	ince Range)



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Parameter		Unit	Ana	lyzed I	DF	MDL	RL	Result
814026-002 Manganese		ug/L	06/10	/2014 16:56 2	.00	0.120	0.50	6.4
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Chromium	ug/L	2.00	4.06	4.13		1.66	0 - 20	-
Manganese	ug/L	2.00	69.4	68.7		0.991	0 - 20	
Low Level Calibration	Verification							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.545	0.500		109	70 - 130	_
Manganese	ug/L	1.00	0.221	0.200		110	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	54.6	50.0		109	85 - 115	_
Manganese	ug/L	1.00	54.1	50.0		108	85 - 118	5
Matrix Spike							Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Chromium	ug/L	2.00	51.0	54.1(50.0)		93.7	75 - 125	_
Manganese	ug/L	2.00	115	119(50.0)		93.2	75 - 125	5
Matrix Spike Duplicat	e						Lab ID =	814025-001
Parameter	Unit	DF	Result	Expected/Adde	d F	Recovery	Accepta	ance Range
Chromium	ug/L	2.00	50.6	54.1(50.0)		92.9	75 - 125	_
Manganese	ug/L	2.00	114	119(50.0)		90.8	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	19.0	20.0		94.9	90 - 110	•
Manganese	ug/L	1.00	18.7	20.0		93.6	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	20.0	20.0	·	99.8	90 - 110	•

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Metals by 200.7, Dissolve	ed		Batch	061114A-Th2			
Parameter	Control of the second s	Unit	Analy	zed D	F MDL	RL	Result
814026-002 Iron		ug/L	06/11/2	2014 16:54 1.	00 3.00	20.0	ND
Method Blank							
Parameter	Unit	DF	Result				
Calcium	ug/L	1.00	ND				
Iron	ug/L	1.00	ND				
Sodium	ug/L	1.00	ND				
Magnesium	ug/L	1.00	ND				
Duplicate						Lab ID =	814025-002
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Calcium	ug/L	100	214000	212000	1.12	0 - 20	
Iron	ug/L	1.00	132	136	3.29	0 - 20	
Sodium	ug/L	500	1480000	1540000	4.31	0 - 20	
Magnesium	ug/L	20.0	30400	31700	4.22	0 - 20	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Calcium	ug/L	1.00	1970	2000	98.4	85 - 11	5
Iron	ug/L	1.00	2140	2000	107	85 - 11	5
Sodium	ug/L	1.00	1890	2000	94.5	85 - 11	5
Magnesium	ug/L	1.00	2190	2000	109	85 - 11	5
Matrix Spike						Lab ID =	814025-002
Parameter	Unit	DF	Result	Expected/Added	I Recovery	Accepta	ance Range
Calcium	ug/L	100	411000	412000(200000) 99.7	75 - 12	5
Iron	ug/L	1.00	1810	2140(2000)	83.6	75 - 12	5
Sodium	ug/L	500	2390000	2540000(10000	C 85.1	75 - 12	5
Magnesium	ug/L	20.0	71100	71700(40000)	98.6	75 - 12	5
Matrix Spike Duplicate					rankung finaliska gudd Goddinerikka filifonisk gant til 1997.	Lab ID =	814025-002
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range
Iron	ug/L	1.00	1790	2140(2000)	82.5	75 - 12	5
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Calcium	ug/L	1.00	5070	5000	101	95 - 10	5
Iron	ug/L	1.00	5050	5000	101	95 - 10	5
Sodium	ug/L	1.00	4900	5000	97.9	95 - 10	5
Magnesium	ug/L	1.00	5090	5000	102	95 - 10	5

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Parameter Sodium	Unit ug/L	DF 1.00	Result 1930	Expected 2000	Recovery 96.6	Acceptance Range 80 - 120
Magnesium	ug/L	1.00	2120	2000	106	80 - 120
Interference Check	Standard AB					
Parameter	Unit	DF	Result	Expected	Recovery	Acceptance Range
Magnesium	ug/L	1.00	1940	2000	96.8	80 - 120

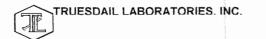
Turbidity by SM 2130 B			Batch	1406032				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814026-001 Turbidity		NTU	06/04	/2014	1.00	0.0140	0.100	ND
814026-002 Turbidity		NTU	06/04	/2014	1.00	0.0140	0.100	0.177
Method Blank								
Parameter	Unit	DF	Result					
Turbidity	NTU	1.00	ND					
Duplicate							Lab ID =	814027-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	nce Range
Turbidity	NTU	1.00	0.135	0.127		6.11	0 - 20	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.42	8.00		105	90 - 110)
Lab Control Sample D	uplicate							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Turbidity	NTU	1.00	8.34	8.00		104	90 - 110)

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

f. Mona Nassimi

Manager, Analytical Services



Alkalinity by SM 2320B

Analytical Batch: 1406157

Matrix: WATER

Date of Analysis: 6/10/2014

Lab ID	Sample pH	Sample Volume (ml)	N of HCL	Titrant Volume to reach pH 8.3	P Alkalinity as CaCO3	Titrant Volume to reach pH 4.5	Total mL titrant to reach pH 0.3 unit lower	Total Alkalinity as CaCO3	RL, ppm	Total Alkalinity Reported Value	HCO3 Conc. as CaCO ₃ (ppm)	CO3 Alkalinity as CaCO ₃ (ppm)	OH Alkalinity as CaCO ₃ (ppm)	Low Alkalinity as CaCO ₃
BLANK	5.45	50	0.02	0.00	0.0	0.00		0.0	5	ND	ND	ND	ND	
14F0025-01	7.91	50	0.02	0.00	0.0	11.20		224.0	5	224.0	224.0	ND	ND	
14F0026-02	7,33	50	0.02	0.00	0.0	8.50		170.0	5	170.0	170.0	ND	ND	
14F0065-01	7.89	50	0.02	0.00	0.0	6.00		120.0	5	120.0	120.0	ND	ND	
14F0089-17	7.70	50	0.02	0.00	0.0	5,45		109.0	5	109.0	109.0	ND	ND	
14F0089-21	7.87	50	0.02	0.00	0.0	5.95		119.0	5	119.0	119.0	ND	ND	
14F0089-21 DUP	7.92	50	0.02	0.00	0.0	6.00		120.0	5	120.0	120.0	ND	ND	
LCS	10.25	50	0.02	2.00	40.0	5.00		100.0	5	100.0	20.0	80	ND	
LCSD	10.18	50	0.02	2.00	40.0	5.10	***	102.0	5	102.0	22.0	80	ND	
LCS-3	10.22	50	0.02	2.00	40.0	5.05		101.0	5	101.0	21.0	80	ND	
LCS-4	10.25	50	0.02	2.00	40.0	5.10		102.0	5	102.0	22.0	80	ND	
14F0025-01 MS	9.05	50	0.02	0.00	0.0	15,65	350	313.0	5	313.0	313.0	0	ND	
				6.03										
							40							
SERVICE OF THE SERVIC					-									

Calculations as follows:

Tor P=

 $\frac{A \times N \times 50000}{\text{mL sample}}$

P = Phenolphthalein Alkalinity, mg CaCO3/L

T = Total Alkalinity, mg CaCO3/L

A = mL standard acid used

N = normality of standard acid

- |

Low Alkalinity: = as mg/L CaCO3

(2 x B - C) x N x 50000 mL sample

Where:

B = mL titrant to first recorded pH

C = Total mL titrant to reach pH 0.3 unit lower

N = Normality of standard acid

LCS = Laboratory Control Standard/Duplicate

MS/MSD = Matrix Spike/Duplicate

ND = Not Detected (below the reporting limit)

Blank Summary

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

Where:

Laboratory Control Sample (LCS/LCSD) Summary

QC Std I.D.	Measured Value, ppm	Theoretical Value, ppm	% Recovery	Accetance Limit	QC Within Control?
LCS	100	100	100.0%	90-110	Yes
LCSD	102	100	102.0%	90-110	Yes

Duplicate Determination Difference Summary

Lab Number I.D.	Measured Value, ppm	Dup Value, ppm	RPD	Accetance Limit	QC Within Control?	
14F0089-	119	120	0.8%	≤20%	Yes	

Sample Matrix Spike (MS/MSD) Summary

	p (.	,	<u>,</u>									
Lab Number	Conc of Unspk spl	Dil Factor	Added Spk Conc	MS/MSD Amt	Measrd Conc of Spk Spl	Theor Conc of Spk Spl	MS/MSD % Rec	MS Accept Limit	QC Within Control?	RPD	RPD Accept Limit	QC Within Control?
14F0025-01	224	1	100	100	313	324.00	89%	75-125	Yes			
141 0020-01				0				75-125			011	,

ALEX/ JENNINE
Analyst Printed Name

Analyst Signature

Máksim Gorbunov Reviewer Printed Name

Reviewer Signature



Total Dissolved Solids by SM 2540 C

Calculations

Date Analyzed: 6/3/2014

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	75.4367	75.4369	75.4367	0.0002	No	0.0000	0.0	25.0	ND	1
14E0196-01C	100	69.2164	69.2660	69.2660	0.0000	No	0.0496	496.0	25.0	496.0	1
14E0196-02C	100	74.5912	74.6413	74.6413	0.0000	No	0.0501	501.0	25.0	501.0	1
14E0196-03C	100	73.5681	73.6177	73.6177	0.0000	No	0.0496	496.0	25.0	496.0	1
14E0196-04C	100	73,7557	73.8056	73.8056	0.0000	No	0.0499	499.0	25.0	499.0	1
14F0025-01A	20	29.4752	29.5274	29.5274	0.0000	No	0.0522	2610.0	125.0	2610.0	1
14F0025-02A	10	28.7500	28.7975	28.7975	0.0000	No	0.0475	4750.0	250.0	4750.0	1
14F0026-01B	10	28.7431	28.7867	28.7867	0.0000	No	0.0436	4360.0	250.0	4360.0	1
14F0026-02J	10	30.3640	30.4065	30.4065	0.0000	No	0.0425	4250.0	250.0	4250.0	1
14F0054-01A	50	47.5150	47.6001	47.5999	0.0002	No	0.0849	1698.0	50.0	1698.0	1
4F0 025-01 Dur	20	29.1648	29.2170	29.2170	0.0000	No	0.0522	2610.0	125.0	2610.0	1
LCS	100	74.3733	74.4250	74.4250	0.0000	No	0.0517	517.0	25.0	517.0	1
											-
							-				
			-								

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	517.0	500	103.4%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14F0025-01	0.0522	0.0522	0.0%	≤5%	Yes

LCS Recovery

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

LC= Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

WetChem 06TDS 14A

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

Batch: 9/6/5749
Date Analyzed: 6/3/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14E0196-01C	905	0.55	588.25	0.84
14E0196-02C	909	0.55	590.85	0.85
14E0196-03C	904	0.55	587.6	0.84
14E0196-04C	903	0.55	586.95	0.85
14F0025-01A	4480	0.58	2912	0.90
14F0025-02A	8090	0.59	5258.5	0.90
14F0026-01B	7490	0.58	4868.5	0.90
14F0026-02J	7380	0,58	4797	0.89
14F0054-01A	2920	0.58	1898	0.89
14F0025-01 Dup	4480	0.58	2912	0.90
LCS				





814026/14F0026



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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-470]

COC Number

TURNAROUND TIME	10 Days		
DATE 06/03/14	PAGE 1	OF	1

COMPANY	CH2M HILL /E2						$\overline{}$	$\overline{}$	7	$\overline{\mathcal{I}}$	$\overline{}$	7	$\overline{}$	$\overline{\mathcal{I}}$	/	Solucial Metals (200	/	(4500-NO2B) (4500-S;	<u>Q</u>	$\overline{}$	$\overline{\Gamma}$	CON	MENTS
PROJECT NAME	PG&E Topock II	M3							/			/ No	:/				194.5		5/		/ /		
PHONE	530-229-33	03 '	-AX _530-	339-3303		/	/ /	/ /	/ /	/ /	/ /	st B	/ /	/ /	\ \psi_0s/	/ ,	/ N/	500	/ ,	/ /	_ /		
ADDRESS	155 Grand Ave	Ste 1000					<i>p</i> /					96			ა გ		7/	, Ke		E			
	Oakland, CA 94	612							/		100	$\left\langle \left\langle \vec{s} \right\rangle \right\rangle$	3/	/ 8	?/	18				A F			
P.O. NUMBER	428648.IM.CS.EX.	AC,	1		/), Lab	\g \g	/ /	/_ /	/ ,	1800	2007	19	6.6	/ 3	stals.	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	/ ₀ / ₂ / ₂ /	/ ,	[§			
SAMPLERS (SIGN	ATURE //	us X	//	_		Alkalinit (3) Lab Fills	EC (132 (132)	70S (25	7urb (240 c)	<u>@</u> /	stets /	Total D. 1500-WH3	Anions (4500-P)	70C/F. NO.	070	N /		00/		THE OF CONTAINEDS			
SAMP ELICO (SIGN)	ATURE	in f	w		/š	×/ i	EC (13)											£/					
SAMPLE I.D.		DATE	TIME	DESCRIPTION	/δ	/ * *	/ ² 2	/ <u>R</u>	/ 1/2	/10	4	10/2	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	/2	\ <u>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</u>	/ 8	/ 💆	_	\ <u>\{\}</u>			···	
SC-700B-V	WDR-470	06/03/14	09:00		Х		Х	X	х	Х	х		Х				×		4	1 7		4=7(700.8
SC-100B-	WDR-470	06/03/14	09:00		х	Х	Х	Х	×	Х	Х	Х	х	Х	Х	Х	Х		9	J	,		200.7
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L			L								L	L			L	<u> </u>	<u> </u>	L	13	TOT	AL NUMB	FR OF CO	NTAINERS

CHAIN OF	CUSTODY SIGNATURE RECORD		SAMPLE CONDITIONS
Signature (Relinquished) Work Printed Name	HRIS LENZ Company/ CH2m H	Date/ 6-3-74 Time 10:00	RECEIVED COOL ☑ WARM ☐ 3.9°C°F
Signature (Received) Printed Name 7	HANH NE Company/ TUZDA/	Date/ 6 3 - 19 Time 010	CUSTODY SEALED YES NO
(Relinquished) Shak Ngo Printed Name	HANH NGO Agency TLVEUA	Date/ G-134 / G	SPECIAL REQUIREMENTS:
Signature Printed Name A	example Was Agency Til	Date/ 6.3-141 Time 1400	The metals include: Cr, Al, Sb, As, Ba, B, Cu, Pb, Mn, Mo, Ni, Fe, Zn
Signature Printed	Company/	Date/	
(Relinquished) Name	Agency	Time	
Signature Printed	Company/	Date/	
(Received) Name	Agency	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
			2ml/100ml	9.5	7:45	NE
1	-2	i			1	1
	14 F0026-1					
	1 - 2	/	7/			
6/11/14	14F0170 14F0272	7:00	2ml/100ml	9.5	7:30	NE
5-119-111	MIKIND	1	1.	1	1, 3	1
6/10/19	191011			<u> </u>	W	V
	Magne , Street Park					
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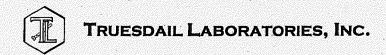
Ne 7,2/14



TRUESDAIL LABORATORIES, INC. Metals

			Turbi	dity/pH C	heck			
Sample Number	Turbidity	pН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
813517	21	72 4- 2	5/22/14	ES	Yes	1207)		PHCZ
813555(1-8)	V	4-2	V	V	yes No	,		-7,8 TU
813908 (1-2,4)	41	77	5/23/14	ES	No	9:30	5/26/14 W10: 10	1PH 62
813512 (1-3)		1	1	1	1	1	1	1
G13543 (10-12)	J	V				1		
813553	71	L 2			7-65			
813544 (1-2)	21	72			Fes	9:10		
817592 (1-2)	71	22	1		HEL			
817623	>1	12	5/29/14	W)	Yes			
813624	71	42	7/2011-2	1	9			
112611	51	47						
217276	21	17						
012002		47 22						
813679	71	<u> </u>	`.					
<u> </u>	71		1	1,	1/2		4	
384/		47	¥	- 7	\			
813651	21	19-17						
813652	7/5/2	1-7-67	3/2014	10-	104	17:20		CHZM
813618	5/2	72 >2	5/24/14	עק	_Xe5	1,000		
813568 (1-5)	>1	22	5/20/1		TES			CHZM CO
813557 1,2)			5/30/14	12	102			Solid
8134-75 (1-3)						z lain	,	
23576	-	\ <u></u>	(A 1) A	<u> </u>	<u>-</u>	6/44		_\b'
111000	>1 6A14	27	6/4/14	NZ	Yes	17.30		6: H3 1
1450016 (1,2)						12:30		CHZM
14 50004 (1, 2	71	67-		-I				
14 10006								
14-F0007								
14F0052								
14F0053								
2034-07 18/41	4							
4F0035-08								
4F0036								
14FCO49-								
197055 1034-01 1944 1470036 1470049- 1470056	1		5	1	<u> </u>			
PA (V) > ()	Y	<i>(</i>)	-	Y				
4F006	V	1	<u> </u>	<u> </u>				ETHALL A
14 F0075 (1-2)	21	72	6/10/14	ES	: yes	11:00		filteret the
141 0026 - 2	V	1	V.	4		V		
14F10070 (1-2)	71	L2	6/10/14	B	Yes			
14F1074-1			1	_				
14FW75	J							
1470054	41						:	
14 F W 90	>1							
14 F 0091	41	¥ .	1		\mathcal{L}			

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



Sample Integrity & Analysis Discrepancy Form

Clie	nt: <u>E2</u>	Lab # 14 F 0026
Date	e Delivered:0 <u>6</u> /0 <u>3</u> / 14 Time: <u>/Y:00</u> By: □Mail Ø	Field Service
1.	Was a Chain of Custody received and signed?	, ÆTYes □No □N/A
ž.*	Does Customer require an acknowledgement of the COC?	□Yes ÆNo □N/A
3.	Are there any special requirements or notes on the COC?	□Yes ŁINo □N/A
4.	If a letter was sent with the CQC, 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>3, 9 ° C</u>	ÚYes □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 ÞIN/A
9.	Does the number of samples received agree with COC?	DYes □No □N/A
10.	Did sample labels correspond with the client ID's?	ØYes □No □N/A
11.	Did sample labels indicate proper preservation? Preserved (if yes) by: □ Truesdail □Client	'□Yes □No ÆN/A
12.	Were samples pH checked? pH = <u>See</u> e.o.c	ØYes □No □N/A
13.	Were all analyses within holding time at time of receipt? If not, notify Project Manager.	∄Yes □No □N/A
14.	Have Project due dates been checked and accepted? Turn Around Time (TAT): □ RUSH ☑ Std	ÚYes □No □N/A
15.	Sample Matrix: □Liquid □Drinking Water □Ground □Sludge □Soil □Wipe □Paint □Solid 🏃	
16.	Comments:	
17.	Sample Check-In completed by Truesdail Log-In/Receiving:	Luda
gr.	1	ALEDTII



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

July 2, 2014

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-471 PROJECT, GROUNDWATER MONITORING, TLI NO.: 814170

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-471 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 10, 2014, 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.

Sample SC-700B-WDR-471 was analyzed as sample I.D. 14F0170 in the raw data but is reported as 814170 in all final report pages.

The straight run for the sample and associated matrix spike on SC-700B-WDR-471 for Hexavalent Chromium analysis by EPA 218.6 were just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING



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

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

Oakland, CA 94612 **Attention:** Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 814170

Date: July 2, 2014 Collected: June 10, 2014 Received: June 10, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001



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Date Received: June 10, 2014 Laboratory No.: 814170

Analytical Results Summary

l ab Sample ID Field ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	RL
814170-001 814170-001 814170-001 814170-001 814170-001	SC-700B-WDR-471 E120.1 SC-700B-WDR-471 E200.8 SC-700B-WDR-471 E200.8 SC-700B-WDR-471 E218.6 SC-700B-WDR-471 SM2130B SC-700B-WDR-471 SM2540C	E120.1 E200.8 E200.8 E218.6 SM2130B SM2540C	NONE NONE NONE LABFLT NONE	6/10/2014 6/10/2014 6/10/2014 6/10/2014 6/10/2014	00:6	EC Chromium Manganese Chromium, Hexavalent Turbidity Total Dissolved Solids	7360 ND 1.1 ND ND 4230	umhos/cm ug/L ug/L ug/L NTU mg/L	2.00 1.0 0.50 0.20 0.100 250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

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Laboratory No. 814170

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Field ID

Samples Received on 6/10/2014 7:00:00 PM

Lab ID Collected Matrix

SC-700B-WDR-471				814170-001	06/10/	/2014 09:00	Wat	er
Specific Conductivity -	EPA 120.1		Batch	1406120				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814170-001 Specific Condu	ıctivity	umhos/	/cm 06/11	/2014	1.00	0.606	2.00	7360
Method Blank	2.44.4	Arthurun ereun						
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND				The second company	
Duplicate							Grand Haller	814125-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1030	Expected 1030	F	RPD 0.0970	Accepta 0 - 10	ance Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 746	Expected 706	F	Recovery 106	Accepta 90 - 110	ance Range
MRCCS - Secondary	y Farificalisas							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 745	Expected 706	F	Recovery 106	Accepta 90 - 110	ance Range
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1020	Expected 1000	F	Recovery 102	Accepta 90 - 110	ance Range
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1020	Expected 1000	F	Recovery 102	Accepta 90 - 110	ance Range

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Chrome VI by EPA 218.	hrome VI by EPA 218.6			n 1406140					
Parameter		Unit	Ana	ilyzed D	F M	DL RL	Result		
814170-001 Chromium, Hex	avalent	ug/L	06/11	1/2014 11:25 1.0	0.006	00 0.20	ND		
Method Blank									
Parameter	Unit	DF	Result						
Chromium, Hexavalent	ug/L	1.00	ND						
Duplicate						Lab ID =	814170-001		
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range		
Chromium, Hexavalent	ug/L	5.00	0.141	0.117	18.6	0 - 20	J		
Low Level Calibration	r Verification								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range		
Chromium, Hexavalent	ug/L	1.00	0.205	0.200	102	70 - 130	_		
Lab Control Sample									
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range		
Chromium, Hexavalent	ug/L	1.00	5.01 5.00 100			90 - 110			
Matrix Spike						Lab ID =	Lab ID = 814170-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	ance Range		
Chromium, Hexavalent	ug/L	1.00	1.13	1.07(1.00)	106	90 - 110)		
Matrix Spike						Lab ID =	814170-001		
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range		
Chromium, Hexavalent	ug/L	5.00	5.36	5.12(5.00)	105	90 - 110)		
MRCCS - Secondary									
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range		
Chromium, Hexavalent	ug/L	1.00	4.99	5.00	99.8	90 - 110)		
MRCVS - Primary									
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	Acceptance Range		
Chromium, Hexavalent	ug/L	1.00	10.2	10.0	102	•	95 - 105		

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Metals by EPA 200.8, To	otal		Batch	061814A-ICPMS-1	061814A-ICPMS-1			
Parameter		Unit	Ana	ılyzed D	F MDL	RL	Result	
814170-001 Chromium		ug/L	06/18	3/2014 18:04 1.0	0.0710	1.0	ND	
Manganese		ug/L	06/18	3/2014 18:04 1.0	0.0600	0.50	1.1	
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate						Lab ID =	814170-001	
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ince Range	
Chromium	ug/L	1.00	ND	0	0	0 - 20	Ū	
Manganese	ug/L	1.00	1.04	1.07	2.65	0 - 20		
Low Level Calibration	n Verification	L egionales						
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ince Range	
Chromium	ug/L	1.00	0.171	0.200	85.5	70 - 130		
Manganese	ug/L	1.00	0.192	0.200	96.2	70 - 130)	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	48.3	50.0	96.6	85 - 115	i	
Manganese	ug/L	1.00	50.9	50.0	102	85 - 115	;	
Matrix Spike						Lab ID =	814170-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	50.9	50.0(50.0)	102	75 - 125	_	
Manganese	ug/L	1.00	53.7	51.1(50.0)	105	75 - 125	;	
Matrix Spike Duplicat	te					Lab ID =	814170-001	
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	50.8	50.0(50.0)	102	75 - 125	•	
Manganese	ug/L	1.00	52.8	51.1(50.0)	104	75 - 125	i	
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	20.5	20.0	103	90 - 110	1	
Manganese	ug/L	1.00	20.0	20.0	100	90 - 110	l	
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range	
Chromium	ug/L	1.00	18.8	20.0	94.0	90 - 110	1	

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Project Number: 428648.IM.CS.EX.AC

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Total Dissolved Solids	by SM 254	0 C	Batch	1406122				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814170-001 Total Dissolved	Solids	mg/L	06/11	1/2014	1.00	1.76	250	4230
Method Blank								
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result ND					
Duplicate							Lab ID =	814142-004
Parameter Total Dissolved Solids Lab Control Sample	Unit mg/L	DF 1.00	Result 585	Expected 547	R	RPD 6.71	Accepta 0 - 10	ince Range
Parameter Total Dissolved Solids	Unit mg/L	DF 1.00	Result 492	Expected 500	R	Recovery 98.4	Accepta 90 - 110	ince Range
Turbidity by SM 2130 B			Batch	1406129				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814170-001 Turbidity		NTU	06/10)/2014	1.00	0.0140	0.100	ND
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	814154-003
Parameter Turbidity	Unit NTU	DF 1.00	Result 0.109	Expected 0.119	R	PD 8.77	Accepta 0 - 20	nce Range
Lab Control Sample								
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.29	Expected 8.00	R	ecovery 104	Accepta 90 - 110	nce Range
Lab Control Sample I	Duplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.76	Expected 8.00	R	ecovery 110	Accepta 90 - 110	nce Range



Client: E2 Consulting Engineers, Inc.

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Project Number: 428648.IM.CS.EX.AC

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Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

fo Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

1406122

Calculations

Batch: 10/29/5749 Date Analyzed: 6/11/2014

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	112.9387	112.9390	112.9390	0.0000	No	0.0003	3.0	25.0	ND	1
14F0070-01D	100	72.0800	72.1297	72.1297	0.0000	No	0.0497	497.0	25.0	497.0	1
14F0070-02D	100	68.3649	68.4148	68.4148	0.0000	No	0.0499	499.0	25.0	499.0	1
14F0071-01C	100	74.4515	74.5033	74.5031	0.0002	No	0.0516	516.0	25.0	516.0	1
14F0071-02C	100	72.4774	72.5285	72.5285	0.0000	No	0.0511	511.0	25.0	511.0	1
14F0071-03C	100	75.2627	75.3138	75.3137	0.0001	No	0.0510	510.0	25.0	510.0	1
14F0071-04C	100	69.1809	69.2316	69.2315	0.0001	No	0.0506	506.0	25.0	506.0	1
14F0085-01B	50	51.3328	51.3699	51.3695	0.0004	No	0.0367	734.0	50.0	734.0	1
14F0085-02B	100	62.6202	62.6725	62.6723	0.0002	No	0.0521	521.0	25.0	521.0	1
14F0085-03B	100	80.8544	80.9155	80.9152	0.0003	No	0.0608	608.0	25.0	608.0	1
14F0085-04B	50	49.1115	49.1436	49.1432	0.0004	No	0.0317	634.0	50.0	634.0	1
14F0085-04 Dur	50	58.9435	58.9757	58.9756	0.0001	No	0.0321	642.0	50.0	642.0	1
LCS	100	77.0666	77.1160	77.1158	0.0002	No	0.0492	492.0	25.0	492.0	1
14F0089-17F	50	50.7191	50.7544	50.7543	0.0001	No	0.0352	704.0	50.0	704.0	1
14F0120-01C	100	67.9611	68.0186	68.0182	0.0004	No	0.0571	571.0	25.0	571.0	1
14F0125-01D	100	75.1503	75.1687	75.1683	0.0004	No	0.0180	180.0	25.0	180.0	1
14F0125-02D	100	66.8796	66.9203	66.9199	0.0004	No	0.0403	403.0	25.0	403.0	1
14F0142-02B	50	60.0619	60.0915	60.0915	0.0000	No	0.0296	592.0	50.0	592.0	1
14F0142-04B	100	77.1102	77.1650	77.1649	0.0001	No	0.0547	547.0	25.0	547.0	1
14F0170-01B	10	29.3788	29.4215	29.4211	0.0004	No	0.0423	4230.0	250.0	4230.0	1
4F0142-04 Dur	100	78.2401	78.2986	78.2986	0.0000	No	0.0585	585.0	25.0	585.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std I.D.	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	492.0	500	98.4%	90-110%	Yes
LCSD					

Duplicate Determinations Difference Summary

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14F0085-04	0.0317	0.0321	0.6%	≤5%	Yes
14F0142-04	0.0547	0.0585	3.4%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

1EUK /406/72 Batch: 10/29/5749 Date Analyzed: 6/11/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14F0070-01D	900	0.55	585	0.85
14F0070-02D	870	0.57	565.5	0.88
14F0071-01C	915	0.56	594.75	0.87
14F0071-02C	923	0.55	599.95	0.85
14F0071-03C	926	0.55	601.9	0.85
14F0071-04C	918	0.55	596.7	0.85
14F0085-01B	1265	0.58	822.25	0.89
14F0085-02B	899	0.58	584.35	0.89
14F0085-03B	994	0.61	646.1	0.94
14F0085-04B	1092	0.58	709.8	0.89
14F0085-04 Dup	1092	0.59	709.8	0.90
LCS				
14F0089-17F	1172	0.60	761.8	0.92
14F0120-01C	920	0.62	598	0.95
14F0125-01D	323	0.56	209.95	0.86
14F0125-02D	729	0.55	473.85	0.85
14F0142-02B	1031	0.57	670.15	0.88
14F0142-04B	964	0.57	626.6	0.87
14F0170-01B	7360	0.57	4784	0.88
14F0142-04 Dup	964	0.61	626.6	0.93



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

CHAIN OF CUSTODY RECORD $g_l \not q \mid l \not O /$

14F0170 [IM3Plant-WDR-471]

PAGE TURNAROUND TIME COC Number

10 Days

G

DATE 06/10/14

0,00.7 COMMENTS ジニエの NUMBER OF CONTAINERS Turbidity (SM2730) × 1DS (SM2540C) Specific Conductance (120,1) Total Metals (200.8) Cr. Mn × Cre (218.6) Lab Fillered × × DESCRIPTION FAX (530) 339-3303 Water TEAM 200 TIME 06/10/14 155 Grand Ave Ste 1000 DATE Oakland, CA 94612 428648.IM.CS.EX.AC (530) 229-3303 PG&E Topock SAMPLERS (SIGNATURE SC-700B-WDR-471 E2 PROJECT NAME P.O. NUMBER SAMPLE I.D. COMPANY ADDRESS PHONE

Please Provide a preliminary Result for the TDS ASAP



TOTAL NUMBER OF CONTAINERS

W

SAMPI F CONDITIONS	RECEIVED COO	CUSTODY SEALED YES D NO Z	100/ PSPECIAL REQUIREMENTS:	₹§		
CHAIN OF CUSTODY SIGNATURE RECORD	I Om!	FHAM NE Agency TRUZ (DA)	TRUZSDA) L Time	Truesdail Date 6/10/14	Printed Company/ Date/ Name Agency Time	Printed Company/ Date/ Name Agency Time
HS	hed the filling	dul ngo	ned Ehall has	Signature (Received) Malsing Locatings	Signature (Relinquished)	Signature (Received)

Printed: 6/11/14 7:05:52AM

14F0170

Truesdail Laboratories, Inc

Project Manager: Client: E2 Consulting Engineers, Inc. Sean Condon Project: Topock IM3Plant Project Number: Topock IM3Plant Report To: Invoice To: E2 Consulting Engineers, Inc. E2 Consulting Engineers, Inc. Christi Gitlin Christi Gitlin 1900 Powell Street, Suite 250 1900 Powell Street, Suite 250 Emeryville, CA 94608 Emeryville, CA 94608 Phone: 510-428-4728 Phone:510-428-4728 Fax: 510-652-5604 Fax: 510-652-5604 06/20/2014 16:30 (7 day TAT) Date Due: Received By: Date Received: Maksim Gorbunov 06/10/2014 19:00 Logged In By: Luda Shabunina Date Logged In: 06/11/2014 07:02 Samples Received at: 3.8°C

Chain of Custody re Yes

Letter (if sent) matc No

Requested analyses Yes Samples received in Yes

Samples intact? Yes Custody seals (if an No Analyses within hol- Yes

Analysis	Due	TAT	Expires	Comments
14F0170-01 SC-700B-WDR-47	1 [Water] Sampled	1 06/10/201	14 09:00 Pacific	
Turbidity	06/20/2014 12:00	7	06/12/2014 09:00	
TDS	06/20/2014 12:00	7	06/17/2014 09:00	
Specific Conductivity	06/20/2014 12:00	7	07/08/2014 09:00	
Mn-200.8	06/20/2014 12:00	7	12/07/2014 09:00	
Cr-200.8	06/20/2014 12:00	7	12/07/2014 09:00	
Cr VI-218.6	06/20/2014 12:00	7	07/08/2014 09:00	

6/11/19 Date

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
61414	14F0025-1		2ml/100ml	9.5	7:45	NE
	V -2					
	14 For26-1					
	1 -2		V	V/		
6/11/14	14F0170	7:00	2ml/100ml	9.5	7:30	NE
6/18/14	14F0272	4	1	1/		
					1.000	
·						

	1		1			

7,2/14



TRUESDAIL LABORATORIES, INC. Metals

Turbidity/pH Check

			ı urbi	dity/pH C	песк			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
1450254	41	42	4/11/14	ΕŞ	<i>4</i> 63			
14+0205				ì	1			
1440256	71							
14F 0170 -01	41	72	6/18/14	ES	1-64	1:00		pH 42
14 = 0 272 -01	V	VIJUIS	III V	レ	₩.	₩		1
14F0293-2	フー	77/2	6/18/14	砂	Tes			
14 F 0266	Z1	12	l l		<u> </u>			
1470267	フし							
14F0268	V							·
1470269	41							
14FO 271	<u> </u>	V	· •		V			
14 + 0278(1-2,5,7	<u>(i)</u>	72			NO	3:00)	6/19/1422:00	PHLZ
1470270(1-3)						_	1	
14 F U291 (10-12)			`,			1,		
1440293(1,357)		<u> </u>	Ψ	V	<u> </u>	$\sqrt{}$	<u> </u>	V
1450309	SOLI		6119114	5	Yes			TRC
14 = 0328	シレフリ		6/2014	E's				
1470215 (1-2)		12	6/23/14	ES	yes			
14502018								
1410700	<u>Z</u> 1			- ₩			\.	
1450725	<u> </u>	72		ES	Nb	1:10		
(4F0372(1-2)	21	1	clauliu		70	1.00		
1440371(1-3)			· ·			1		
14F0343(1-2)	71	62	t t		Yes			
1450348	1	1			1			
1480349								
14 F0756	$\sqrt{}$	72						
1450358	41	22		J	1			
14 FO 383 (10-15)	21	72	6/25/14	ES	No			
14F0394(1-3)	<i>y</i>	sk	J '	V	V			
14F0391 (1-2)	5011	_	412514	ES	yes.			TTIC
14F0363(1-4)	41	72	6/26/14	ES	tes			
111F0376					i	10:00		PHLZ
1470 577(1-7)		12				3		
1UFU 394 (1-2)								
1450395(1-4)	<u> </u>		4	4				
14F0425-01	ンー	72	7/1/14	ES	yes	11; W	,	PH 22
14 = 404 (1-6)	<u> </u>	12			l			

- Notes:

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

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

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

Established 1931



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July 2, 2014

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-472 PROJECT, GROUNDWATER

MONITORING, TLI No.: 814272

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-472 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 17, 2014, 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.

Sample SC-700B-WDR-472 was analyzed as sample I.D. 14F0272 in the raw data but is reported as 814272 in all final report pages.

The straight run for the sample and associated matrix spike on SC-700B-WDR-472 for Hexavalent Chromium analysis by EPA 218.6 was just outside the retention time window. Because the matrix spike recovery and all other QA/QC were within acceptable limits, the data from the straight run was reported.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

Lo Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

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

Oakland, CA 94612

Attention: Shawn Duffy

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

Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 814272

Date: July 2, 2014 Collected: June 17, 2014 Received: June 17, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

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

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001



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Laboratory No.: 814272

Date Received: June 17, 2014

Analytical Results Summary

Lab Sample ID Field ID	Field ID	Analysis Method	Extraction Method	Sample Date	Sample Time	Parameter	Result	Units	╏
814272-001	SC-700B-WDR-472 E120.1	E120.1	NONE	6/17/2014	14:05	EC	7330	nmhos/cm	2.00
814272-001	SC-700B-WDR-472	E200.8	NONE	6/17/2014	14:05	Chromium	QN	na/L	1.0
814272-001	SC-700B-WDR-472	E200.8	NONE	6/17/2014	14:05	Manganese	3.2	ng/L	0.50
814272-001	SC-700B-WDR-472	E218.6	LABFLT	6/17/2014	14:05	Chromium, Hexavalent	Q	ng/L	0.20
814272-001	SC-700B-WDR-472	SM2130B	NONE	6/17/2014	14:05	Turbidity	QN	ZN	0.100
814272-001	SC-700B-WDR-472	SM2540C	NONE	6/17/2014	14:05	Total Dissolved Solids	4380	mg/L	250

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

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Laboratory No. 814272

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project
Project Number: 428648.IM.CS.EX.AC
P.O. Number: PGEIM11111001

Release Number:

Samples Received on 6/17/2014 7:40:00 PM

Field ID Collected Matrix
SC-700B-WDR-472 814272-001 06/17/2014 14:05 Water

Specific Conductivity -	EPA 120.1		Batch	1406259				
Parameter		Unit	Ana	ılyzed	DF	MDL	RL	Result
814272-001 Specific Condu	ıctivity	umhos/cn	n 06/19	9/2014	1.00	0.606	2.00	7330
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	814272-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7330	Expected 7330	F	RPD 0	Accepta 0 - 10	ance Range
Lab Control Sample								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 756	Expected 706	F	Recovery 107	Accepta 90 - 110	ance Range)
MRCCS - Secondar	y janatija Kanada							
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 756	Expected 706	F	Recovery 107	Accepta 90 - 110	ance Range)
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1040	Expected 1000	F	Recovery 104	Accepta 90 - 110	ance Range)
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1050	Expected 1000	F	Recovery 105	Accepta 90 - 110	ance Range)

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



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

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Project Number: 428648.IM.CS.EX.AC

Chrome VI by EPA 218.6	3		Batch	1406228				
Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
814272-001 Chromium, Hex	avalent	ug/L	06/18	/2014 10:57 1	00	0.00600	0.20	ND
Method Blank								
Parameter Chromium, Hexavalent Duplicate	Unit ug/L	DF 1.00	Result ND				Lab ID =	814272-001
Parameter Chromium, Hexavalent Low Level Calibration	Unit ug/L verification	DF 5.00	Result 0.182	Expected 0.174	R	RPD 4.77	Accepta 0 - 20	ance Range
Parameter Chromium, Hexavalent Lab Control Sample	Unit ug/L	DF 1.00	Result 0.216	Expected 0.200	R	decovery 108	Accepta 70 - 130	ance Range)
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 1.00	Result 4.99	Expected 5.00	R	decovery 99.8	90 - 110	ance Range) 814272-001
Parameter Chromium, Hexavalent Matrix Spike	Unit ug/L	DF 5.00	Result 5.18	Expected/Adde 5.17(5.00)	d R	decovery 100	90 - 110	ance Range) 814272-001
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 1.16	Expected/Adde 1.13(1.00)	d F	Recovery 103	Accepta 90 - 11	ance Range)
MRCCS - Secondary								_
Parameter Chromium, Hexavalent MRCVS - Primary	Unit ug/L	DF 1.00	Result 5.03	Expected 5.00	F	Recovery 100	90 - 11	ance Range
Parameter Chromium, Hexavalent	Unit ug/L	DF 1.00	Result 10.2	Expected 10.0	F	Recovery 102	Accepta 95 - 10	ance Range 5



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Parameter		Unit	Ana	lyzed [)F	MDL	RL	Result
814272-001 Chromium		ug/L	06/18	3/2014 19:01 1	00	0.0710	1.0	ND
Manganese		ug/L	06/18	3/2014 19:01 1	00	0.0600	0.50	3.2
Method Blank								
Parameter	Unit	DF	Result					
Chromium	ug/L	1.00	ND					
Manganese	ug/L	1.00	ND					
Duplicate							Lab ID =	814170-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Chromium	ug/L	1.00	ND	0		0	0 - 20	·
Manganese	ug/L	1.00	1.04	1.07		2.65	0 - 20	
Low Level Calibration	Nerification							
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	0.171	0.200		85.5	70 - 130	_
Manganese	ug/L	1.00	0.192	0.200		96.2	70 - 130)
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	48.3	50.0		96.6	85 - 115	5
Manganese	ug/L	1.00	50.9	50.0		102	85 - 115	5
Matrix Spike							Lab ID =	814170-001
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	50.9	50.0(50.0)		102	75 - 125	5
Manganese	ug/L	1.00	53.7	51.1(50.0)		105	75 - 125	5
Matrix Spike Duplicat	te						Lab ID =	814170-001
Parameter	Unit	DF	Result	Expected/Adde	d R	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	50.8	50.0(50.0)		102	75 - 125	5
Manganese	ug/L	1.00	52.8	51.1(50.0)		104	75 - 125	5
MRCCS - Secondary								
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	20.5	20.0		103	90 - 110	_
Manganese	ug/L	1.00	20.0	20.0		100	90 - 110)
MRCVS - Primary								
Parameter	Unit	DF	Result	Expected	R	Recovery	Accepta	nce Range
Chromium	ug/L	1.00	18.8	20.0		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.

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Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

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Total Dissolved Solids by SM 2540 C Batch 1406233 Parameter Unit Analyzed DF MDL RL Result 814272-001 Total Dissolved Solids 4380 mg/L 06/18/2014 1.00 1.76 250 Method Blank Parameter Unit DF Result **Total Dissolved Solids** mg/L 1.00 ND Duplicate Lab ID = 814272-001 Parameter Unit DF Result Expected **RPD** Acceptance Range **Total Dissolved Solids** mg/L 1.00 4370 4380 0.228 0 - 10Lab Control Sample Parameter Unit DF Result Expected Recovery Acceptance Range Total Dissolved Solids mg/L 1.00 497 500 99.4 90 - 110 Turbidity by SM 2130 B Batch 1406236 Parameter Unit DF Analyzed MDL RL Result 814272-001 Turbidity NTU 06/19/2014 1.00 0.0140 0.100 ND Method Blank Parameter Unit DF Result NTU Turbidity 1.00 ND **Duplicate** Lab ID = 814277-001 Parameter Unit DF Result Expected **RPD** Acceptance Range **Turbidity** NTU 1.00 ND 0 0 0 - 20Lab Control Sample Parameter DF Unit Result Expected Recovery Acceptance Range **Turbidity** NTU 1.00 8.78 8.00 110 90 - 110 Lab Control Sample Duplicate Parameter Unit DF Result Expected Recovery Acceptance Range **Turbidity** NTU 1.00 8.50 8.00 106 90 - 110



Client: E2 Consulting Engineers, Inc. Project Name: PG&E Topock Project Page 6 of 6

Project Number: 428648.IM.CS.EX.AC Printed 7/2/2014

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

Mona Nassimi

Manager, Analytical Services



Total Dissolved Solids by SM 2540 C

Calculations

1406233

Batch: 2/47/5750 Date Analyzed: 6/18/2014

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	75.1517	75.1519	75.1519	0.0000	No	0.0002	2.0	25.0	ND	1
14F0197-01C	100	76.5276	76.5789	76.5788	0.0001	No	0.0512	512.0	25.0	512.0	1
14F0197-02C	100	74.8835	74.9359	74.9357	0.0002	No	0.0522	522.0	25.0	522.0	1
14F0197-03C	100	79.4425	79.4946	79.4944	0.0002	No	0.0519	519.0	25.0	519.0	1
14F0197-04C	100	76.6620	76.7151	76.7150	0.0001	No	0.0530	530.0	25.0	530.0	1
14F0194-01D	100	70.3755	70.4282	70.4281	0.0001	No	0.0526	526.0	25.0	526.0	1
14F0194-02D	100	74.6936	74.7508	74.7507	0.0001	No	0.0571	571.0	25.0	571.0	1
14F0227-01D	1000	158.8727	158.8765	158.8765	0.0000	No	0.0038	3.8	2.5	3.8	1
14F0228-01D	100	76.0239	76.0695	76.0693	0.0002	No	0.0454	454.0	25.0	454.0	1
14F0228-02	100	79.7960	79.8451	79.8450	0.0001	No	0.0490	490.0	25.0	490.0	1
14F0247-02C	100	77.4765	77.4930	77.4929	0.0001	No	0.0164	164.0	25.0	164.0	1
4F0247-02 Dur	100	74.0317	74.0480	74.0480	0.0000	No	0.0163	163.0	25.0	163.0	1
LCS	100	74.5101	74.5599	74.5598	0.0001	No	0.0497	497.0	25.0	497.0	1
14F0247-04C	100	77.7684	77.8105	77.8104	0.0001	No	0.0420	420.0	25.0	420.0	1
14F0272-01B	10	29.4896	29.5334	29.5334	0.0000	No	0.0438	4380.0	250.0	4380.0	1
813518-5 RR	100	71.2982	71.3409	71.3405	0.0004	No	0.0423	423.0	25.0	423.0	1
14F0285-01D	100	76.2679	76.3174	76.3170	0.0004	No	0.0491	491.0	25.0	491.0	1

Calculation as follows:

QC Std

LCS

LCSD

14F0285-02D

14F0290-01B

14F0290-02B

14F0290-03B

14F0290-04B

14F0272-01 Dur

100

100

100

100

100

74.2145

69.7589

67.8061

67.0315

76.1676

49.2702

Theoretical

Value, ppm

500

Filterable residue (TDS), mg/L =

QC Within

Control?

Yes

0.0004

0.0000

0.0005

0.0002

0.0000

0.0000

No

No

No

No

No

No

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

0.0492

0.0525

0.0517

0.0532

0.0521

0.0437

492.0

525.0

517.0

532.0

521.0

4370.0

25.0

25.0

25.0

25.0

25.0

250.0

ND = not detected (below the reporting limit)

492.0

525.0

517.0

532.0

521.0

4370.0

Where:

Percent Rec

99.4%

74.2641

69.8114

67.8583

67.0849

76.2197

49.3139

74.2637

69.8114

67.8578

67.0847

76.2197

49.3139

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

Acceptance Limit

90-110%

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determinations Difference Summary

Laboratory Control Sample (LCS) Summary

Measurd

Value, ppm

497.0

Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14F0247-02	0.0164	0.0163	0.3%	≤5%	Yes
14F0272-01	0.0438	0.0437	0.1%	≤5%	Yes

Duplicate Determination Difference

% Difference
$$= \frac{|A \text{ or } B - C|}{C} \times 100$$
where $C = \frac{|A + B|}{2}$

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

WetChem 06TDS14D

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

1406233

Batch: 2/47/5750 Date Analyzed: 6/18/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14F0197-01C	932	0.55	605.8	0.85
14F0197-02C	935	0.56	607.75	0.86
14F0197-03C	944	0.55	613.6	0.85
14F0197-04C	945	0.56	614.25	0.86
14F0194-01D	1030	0.51	669.5	0.79
14F0194-02D	972	0.59	631.8	0.90
14F0227-01D	5.02	0.76	3.263	1.16
14F0228-01D	819	0.55	532.35	0.85
14F0228-02	818	0.60	531.7	0.92
14F0247-02C	294	0.56	191.1	0.86
14F0247-02 Dup	294	0.55	191.1	0.85
LCS				
14F0247-04C	702	0.60	456.3	0.92
14F0272-01B	7330	0.60	4764.5	0.92
813518-5 RR	776	0.55	504.4	0.84
14F0285-01D	839	0.59	545.35	0.90
14F0285-02D	901	0.55	585.65	0.84
14F0290-01B	933	0.56	606.45	0.87
14F0290-02B	944	0.55	613.6	0.84
14F0290-03B	943	0.56	612.95	0.87
14F0290-04B	946	0.55	614.9	0.85
14F0272-01 Dup	7330	0.60	4764.5	0.92



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	Wipe	-		out

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

CHAIN OF CUSTODY RECORD g/4272/

[IM3Plant-WDR-472]

14F0272

COC Number

10 Days

PAGE 1 TURNAROUND TIME DATE 06/17/14

COMPANY	E				-	1			1	-		1	-		-			
							_	\ \	_		_	_		_	_	_		
PROJECT NAME	PG&F lopock					_		_		_	_	_	<u> </u>	_	_			COMMENTS
PHONE	(530) 229-3303	***************************************	-AX (530)	FAX (530) 339-3303			<u></u>		<u> </u>	\	_	<u></u>	\					
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	Ste 1000	******			PE PE	150.1)									MINERS		
P.O. NUMBER	428648.IM.CS.EX.AC	10	TEAM		Eller	(8.00) eoue		(06							LNOS		
SAMPLERS (SIGNATURE		CHUS LENTE	Me		Stelel 1967 (0.8)	onpuod s S) siejej	Conduction (20		LEWS) A		<u></u>				20.83	30:		
SAMPLE 1.D.		DATE	TIME	DESCRIPTION /	CR (2)	Specifi	s)sai		, line					\	AUMB			
SC-700B-WDR-472	R-472	06/17/14 14:05	20.41	Water	×	×	×	×				T	-	I			- 1	
				 		4							-		· ·		7	らくとう

Please Provide a preliminary Result for the TDS ASAP

0

TOTAL NUMBER OF CONTAINERS

M

	SAMPLE CONDITIONS	DECEMBED 2000 CONTRACTOR OF THE CONTRACTOR OF TH	2	1	COSTOUT SEALED YES D NO D	ODECNA DECLINATION	STEGAL NEGGIATION S.					
SIGNATIBE DECODE	SCIAL SECOND	Company/ (14.7 th 11.1)		Agency TRUE CAM Time 6-17-18	C Pulling	Agency Time (2)	***************************************	Scalled Date (17/1)	///	Agenov	/ 130	
//CHAIN OF CUSTODY SIGNATII	Simature	(Relinquished) / // Name Christof	Signature	Sull Man Name 74 AM	Printed /	11/1/M	Signature 7	Maybern	Signature	(Kelinquished)	Signature	NAMES OF THE PROPERTY OF THE P

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
	14F0025-1		2ml/100ml	9.5	7:45	NE
	V -2					
	14 F026-1					
	1 -2		V	1/_	\bigvee	
6/11/14	14F0170	7:00	2ml/100ml	9.5	7:30	NE
6/18/14	14F0272	4	1	<u>V</u>	\downarrow	
	i					
				<u> </u>		
					·	
		Life.		and Kanalana		
					The second secon	
				-		

Ne 7/2/14



TRUESDAIL LABORATORIES, INC. Metals

Turbidity/pH Check

			Turbi	dity/pH C	песк			
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
1450254	41	22	0/11/14	ΕŞ	423			
14+0205	.1	i	1	1	1			
14F0256	71							
14F 0170 -01	L1	72	6/18/14	ES	Tes,	1:00		PHLZ
14F0272-01	1	VIZLI	div V	1	V	₩		· 1
14F0293-2	フー	77/2	6/18/14	矽	Yes			
14 F 0266	41	12			<u> </u>			
14F0267	フリ	1						
14F0268	\downarrow							
1470269	41							
14FO 271		V			\overline{V}			
14+0278(1-2,5,7	<u>(i)</u>	72			ЙO	3:00	6/19/1422; N	PHLZ
14 = 0270(1-3)								
14 F 0291 (10-12)					<u> </u>			
1450293(1,757)	V	<u> </u>	Ψ	V	<u> </u>	V	V	
14F0309	SOLI		6119114	ES	yes Tus			TRC
1450326	જ્ઞા		6/20/14	欧				
1446245 (1-2)	ブリ	42	6/23/14	ES	yes			
14502018				1				
1450302	<u> </u>			/	$\overline{}$			
1450325	41	V	<u>U</u>	~			``.	
14 = 03 = 1 (1-2)	41	77	6/24/14	ES	NO	1:W		
14F0372(1-2)						1		
1446371(1-3)	₩.	<u> </u>			<u> </u>	•		
1450343(1-2)	71	12	1		yes			
1450348		- 1						
1450349		<u> </u>						
14 50756	<u> </u>	72						
1450358	Z1 :	62 22	-	<u> </u>	No			
14 F 0 383 (10-15) 11	72	alusty	ES	NO			
14F0394(1-3)		.	4/25/14	17				TTIC
14F0391 (1-2)	501	17	6/26/14	IS IS	yes tus			TIC
1410363(1-4)		72	G [26]14	<i>E</i> /	7-03	10:00		PHLZ
1450517(1-1)		12				,		1112
14 + 0 3 94 (1-2)		1		1				
11150205(1-4)		1,						
1450395(1-4)	ارّ	72	7/1/14	ES	jes	U; W	,	PH L2
14 = 404 (1-6)	41	12	11111	1	1	<u>u </u>	-	1 ,
141 400 (1-0)	- 1	<i>~~</i>						
·								

- Notes:

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

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

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

WORK ORDER

Printed: 6/18/14 7:02:15AM

14F0272

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc. Project Manager: Sean Condon Project: Topock IM3Plant Project Number: Topock IM3Plant **Invoice To:** Report To: E2 Consulting Engineers, Inc. E2 Consulting Engineers, Inc. Christi Gitlin Christi Gitlin 1900 Powell Street, Suite 250 1900 Powell Street, Suite 250 Emeryville, CA 94608 Emeryville, CA 94608 Phone: 510-428-4728 Phone:510-428-4728 Fax: 510-652-5604 Fax: 510-652-5604 06/27/2014 16:30 (7 day TAT) Date Due: Received By: Alexander Luna Date Received: 06/17/2014 19:40 Logged In By: Luda Shabunina Date Logged In: 06/18/2014 06:59 Samples Received at: 3.6°C Chain of Custody re Yes Samples intact? Yes Letter (if sent) matc No Custody seals (if an No Analyses within hol- Yes Requested analyses Yes

Analysis	Due	TAT	Expires	Comments
14F0272-01 SC-700B-WD	R-472 [Water] Sampled	06/17/20	14 14:05 Pacific	
Turbidity	06/27/2014 12:00	7	06/19/2014 14:05	
TDS	06/27/2014 12:00	7	06/24/2014 14:05	
Specific Conductivity	06/27/2014 12:00	7	07/15/2014 14:05	
Mn-200.8	06/27/2014 12:00	7	12/14/2014 14:05	
Cr-200.8	06/27/2014 12:00	7	12/14/2014 14:05	
Cr VI-218.6	06/27/2014 12:00	7	07/15/2014 14:05	



Reviewed By

Samples received in Yes

Date

Established 1931



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

July 2, 2014

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-473 PROJECT, GROUNDWATER MONITORING, TLI NO.: 814376

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-473 project groundwater monitoring for Hexavalent and Total Chromium, Total Manganese, Turbidity, Specific Conductivity, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on June 24, 2014, 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.

Sample SC-700B-WDR-473 was analyzed as sample I.D. 14F0376 in the raw data but is reported as 814376 in all final report pages.

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

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

Respectfully Submitted,

TRUESDAIL LABORATORIES, INC.

f__ Mona Nassimi

Manager, Analytical Services

Michael Ngo

Quality Assurance/Quality Control Officer

TRUESDAIL LABORATORIES, INC.

EXCELLENCE IN INDEPENDENT TESTING

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

Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

Laboratory No.: 814376

Date: July 2, 2014 Collected: June 24, 2014 Received: June 24, 2014

ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Jenny Tankunakorn
SM 2540C	Total Dissolved Solids	Jenny Tankunakorn
SM 2130B	Turbidity	Jennine Ta
EPA 200.8	Total Metals	Ethel Suico
EPA 218.6	Hexavalent Chromium	Naheed Eidinejad

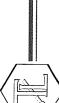
Client: E2 Consulting Engineers, Inc. 155 Grand Ave. Suite 1000

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project Project No.: 428648.IM.CS.EX.AC

P.O. No.: PGEIM11111001



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

Laboratory No.: 814376

Date Received: June 24, 2014

Analytical Results Summary

占	2.00 1.0 0.50 1.0 0.100 250
Units	umhos/cm ug/L ug/L ug/L NTU MTU
Result	7800 3.4 31.4 1.5 0.150 4510
Parameter	EC Chromium Manganese Chromium, Hexavalent Turbidity Total Dissolved Solids
Sample Time	10:30 10:30 10:30 10:30 10:30
Sample Date	6/24/2014 6/24/2014 6/24/2014 6/24/2014 6/24/2014 6/24/2014
Extraction Method	NONE NONE NONE LABFLT NONE
Analysis Method	SC-700B-WDR-473 E120.1 SC-700B-WDR-473 E200.8 SC-700B-WDR-473 E200.8 SC-700B-WDR-473 E218.6 SC-700B-WDR-473 SM2130B SC-700B-WDR-473 SM2540C
Field ID	SC-700B-WDR-473 E120.1 SC-700B-WDR-473 E200.8 SC-700B-WDR-473 E218.6 SC-700B-WDR-473 SM213(SC-700B-WDR-473 SM254(
Lab Sample ID Field ID	814376-001 814376-001 814376-001 814376-001 814376-001

ND: Non Detected (below reporting limit)

mg/L: Milligrams per liter.

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

TRUESDAIL LABORATORIES, INC.

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Page 1 of 6

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

Laboratory No. 814376

REPORT

Client: E2 Consulting Engineers, Inc.

155 Grand Avenue, Suite 800

Oakland, CA 94612

Attention: Shawn Duffy

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

P.O. Number: PGEIM11111001

Release Number:

Field ID

Samples Received on 6/24/2014 7:00:00 PM

Lab ID

Collected

Matrix

Printed 7/2/2014

SC-700B-WDR-473

814376-001 06/24/2014 10:30 Water

Parameter		Unit	Ana	iyzed	DF	MDL	RL	Result
814376-001 Specific Condu	ıctivity	umhos/	cm 06/27	7/2014	1.00	0.606	2.00	7800
Method Blank								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result ND					
Duplicate							Lab ID =	814376-001
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 7800	Expected 7800	F	RPD 0	Accepta 0 - 10	ince Range
Lab Control Sample								
Parameter Specific Conductivity MRCCS - Secondar	Unit umhos	DF 1.00	Result 714	Expected 706	F	Recovery 101	Accepta 90 - 110	ince Range)
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 714	Expected 706		Recovery 101	Accepta 90 - 110	ince Range)
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1000	Expected 1000	F	lecovery 100	Accepta 90 - 110	ince Range)
MRCVS - Primary								
Parameter Specific Conductivity	Unit umhos	DF 1.00	Result 1000	Expected 1000	F	Recovery 100	Accepta 90 - 110	nce Range

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from Truesdail Laboratories. 800



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Page 2 of 6 Printed 7/2/2014

Chrome VI by EPA 218.	6		Batch	1 1406334			
Parameter		Unit	Ana	alyzed [OF MDL	RL	Result
814376-001 Chromium, Hex	avalent	ug/L	06/25	5/2014 11:37 5	00 0.0300	1.0	1.5
Method Blank							
Parameter	Unit	DF	Result				
Chromium, Hexavalent	ug/L	1.00	ND				
Duplicate						Lab ID =	814377-006
Parameter	Unit	DF	Result	Expected	RPD	Accepta	ance Range
Chromium, Hexavalent	ug/L	50.0	1000	984	1.96	0 - 20	J
Low Level Calibration	n Verification	1					
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	ance Range
Chromium, Hexavalent	ug/L	1.00	0.187	0.200	93.6	70 - 130)
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	4.91	5.00	98.2	90 - 110)
Matrix Spike						Lab ID =	814376-001
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	5.00	6.69	6.54(5.00)	103	90 - 110)
Matrix Spike						Lab ID =	814376-001
Parameter	Unit	DF	Result	Expected/Added	d Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	2.54	2.56(1.00)	98.5	90 - 110)
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	4.94	5.00	98.8	90 - 110)
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	9.99	10.0	99.9	95 - 105	_
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accepta	nce Range
Chromium, Hexavalent	ug/L	1.00	10.0	10.0	100	95 - 105	-

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

009



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Project Number: 428648.IM.CS.EX.AC

Page 3 of 6 Printed 7/2/2014

Metals by EPA 200.8, T Parameter	- 341	11-11		h 062714A 			
	· · · · · · · · · · · · · · · · · · ·	Unit			F MDL	. RL	Result
814376-001 Chromium		ug/L	06/2	7/2014 13:41 1.	00 0.0710	1.0	3.4
Manganese		ug/L	06/2	7/2014 13:41 1.	0.0600	0.50	31.4
Method Blank							
Parameter	Unit	DF	Result				
Chromium	ug/L	1.00	ND				
Manganese	ug/L	1.00	ND				
Duplicate						Lab ID =	814376-00
Parameter	Unit	DF	Result	Expected	RPD	Accepta	nce Range
Chromium	ug/L	1.00	3.41	3.39	0.676	0 - 20	moc reange
Manganese	ug/L	1.00	32.6	31.4	3.81	0 - 20	
Low Level Calibration	n Verification	1					
Parameter	Unit	DF	Result	Expected	Recovery	Accenta	nce Range
Chromium	ug/L	1.00	0.247	0.200	124	70 - 130	•
Manganese	ug/L	1.00	0.581	0.500	116	70 - 130	
Lab Control Sample							
Parameter	Unit	DF	Result	Expected	Recovery	Accenta	nce Range
Chromium	ug/L	1.00	50.5	50.0	101	85 - 115	_
Manganese	ug/L	1.00	51.2	50.0	102	85 - 115	
Matrix Spike							314376-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accenta	nce Range
Chromium	ug/L	1.00	51.6	53.4(50.0)	96.4	75 - 125	noc realige
Manganese	ug/L	1.00	81.4	81.4(50.0)	99.9	75 - 125	
Matrix Spike Duplicat	е					Lab ID = 8	314376-001
Parameter	Unit	DF	Result	Expected/Added	Recovery	Accentar	nce Range
Chromium	ug/L	1.00	50.9	53.4(50.0)	95.0	75 - 125	ice range
Manganese	ug/L	1.00	81.2	81.4(50.0)	99.6	75 - 125	
MRCCS - Secondary							
Parameter	Unit	DF	Result	Expected	Recovery	Accentar	nce Range
Chromium	ug/L	1.00	18.9	20.0	94.4	90 - 110	ice italige
Manganese	ug/L	1.00	19.0	20.0	94.8	90 - 110	
MRCVS - Primary							
Parameter	Unit	DF	Result	Expected	Recovery	Accentor	nce Ponce
Chromium	ug/L	1.00	20.2	20.0	101	90 - 110	ice 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.

010



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project Printed 7/2/2014

Project Number: 428648.IM.CS.EX.AC Printed 7/2/2014

		г	oject Numbe	1. 420040.IIVI.C	JO.LA.A	C	Printed /	1212014
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Chromium	ug/L	1.00	20.5	20.0		102	80 - 120)
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Manganese	ug/L	1.00	19.8	20.0		99.3	80 - 120)
Interference Check	Standard AB							
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Manganese	ug/L	1.00	20.0	20.0		100	80 - 120)
Serial Dilution							Lab ID =	814376-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Manganese	ug/L	5.00	32.0	31.4		2.02	0 - 10	
Total Dissolved Solids	by SM 254	0 C	Batch	1406370				
Parameter	5 , 011 20 1	Unit		lyzed	DF	MDL	RL	Result
814376-001 Total Dissolved	Solids	mg/L	06/27	7/2014	1.00	1.76	250	4510
Method Blank								
Parameter	Unit	DF	Result					
Total Dissolved Solids	mg/L	1.00	ND					
Duplicate							Lab ID =	814376-001
Parameter	Unit	DF	Result	Expected	F	RPD	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	4550	4510		0.883	0 - 10	
Lab Control Sample								
Parameter	Unit	DF	Result	Expected	F	Recovery	Accepta	ance Range
Total Dissolved Solids	mg/L	1.00	488	500		97.6	90 - 110)

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012



Client: E2 Consulting Engineers, Inc.

Project Name: PG&E Topock Project

Printed 7/2/2014

Page 6 of 6

Project Number: 428648.IM.CS.EX.AC

Turbidity by SM 2130 B			Batch	1406354				
Parameter		Unit	Ana	lyzed	DF	MDL	RL	Result
814376-001 Turbidity		NTU	06/26	6/2014	1.00	0.0140	0.100	0.150
Method Blank								
Parameter Turbidity	Unit NTU	DF 1.00	Result ND					
Duplicate							Lab ID =	814384-001
Parameter Turbidity	Unit NTU	DF 1.00	Result 16.4	Expected 13.9	F	RPD 16.5	Accepta 0 - 20	nce Range
Lab Control Sample	11.1	DE.	D "		-			-
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.69	Expected 8.00	ŀ	Recovery 109	90 - 110	nce Range
Lab Control Sample D	uplicate							
Parameter Turbidity	Unit NTU	DF 1.00	Result 8.68	Expected 8.00	F	Recovery 108	Accepta 90 - 110	nce Range

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

√o Mona Nassimi

Manager, Analytical Services

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Total Dissolved Solids by SM 2540 C

Calculations

1406570

Batch:	7 /4/5750	ļ
ate Analyzed:	6/27/2014	

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	74.3733	74.3736	74.3735	0.0001	No	0.0002	2.0	25.0	ND	_ 1
14F0343-01D	100	68.7758	68.8235	68.8235	0.0000	No	0.0477	477.0	25.0	477.0	1
14F0343-02D	100	68.1094	68.1576	68.1576	0.0000	No	0.0482	482.0	25.0	482.0	1
14F0376-01B	10	29.4159	29.4610	29.4610	0.0000	No	0.0451	4510.0	250.0	4510.0	1
14F0385-01D	100	78.3828	78.4363	78.4363	0.0000	No_	0.0535	535.0	25.0	535.0	1
14F0385-02D	100	74.7256	74.7769	74.7769	0.0000	No	0.0513	513.0	25.0	513.0	1
14F0384-01G	100	78.5976	78.6113	78.6113	0.0000	No	0.0137	137.0	25.0	137.0	1
14F0384-02G	100	75.4048	75.4179	75.4177	0.0002	No	0.0129	129.0	25.0	129.0	1
14F0384-03G	100	71.3141	71.3271	71.3271	0.0000	No	0.0130	130.0	25.0	130.0	1
14F0387-01	100	68.5403	68.5924	68.5922	0.0002	No	0.0519	519.0	25.0	519.0	11
14F0387-02	100	77.9850	78.0292	78.0292	0.0000	No	0.0442	442.0	25.0	442.0	1
14F0376-01 Dug	10	28.6296	28.6751	28.6751	0.0000	No	0.0455	4550.0	250.0	4550.0	1
LCS	100	76.0236	76.0724	76.0724	0.0000	No	0.0488	488.0	25.0	488.0	1
14F0387-03	100	74.6376	74.6874	74.6874	0.0000	No	0.0498	498.0	25.0	498.0	11
14F0387-04	100	78.7904	78.8370	78.8367	0.0003	No	0.0463	463.0	25.0	463.0	1
MDL Ver@ 5ppn	1000	158.8739	158.8792	158.8791	0.0001	No	0.0052	5.2	2.5	5.2	1
14F0384-03 Dup	100	69.7902	69.8038	69.8038	0.0000	No	0.0136	136.0	25.0	136.0	1

Calculation as follows:

Filterable residue (TDS), mg/L =

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

Where:

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

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

Laboratory Control Sample (LCS) Summary

QC Std	Measurd Value, ppm	Theoretical Value, ppm	Percent Rec	Acceptance Limit	QC Within Control?
LCS	488.0	500	97.6%	90-110%	Yes
LCSD					

Duplicate Det	erminatio	ons Differen	ce Summ	ary	
Lab Number	Sample Weight, g	Sample Dup Weight, g	% RPD	Acceptance Limit	QC Within Control?
14F0376-01	0.0451	0.0455	0.4%	≤5%	Yes
14F0384-03	0.0130	0.0136	2.3%	≤5%	Yes

LCS Recovery

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

P = Percent recovery.

LC = Measured LCS value (ppm).

LT = Theoretical LCS value (ppm).

Duplicate Determination Difference

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

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

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

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

C = Average weight in (g).

Maksim G.

Reviewer Printed Name

Jenny T.

Analyst Printed Name

Total Dissolved Solids by SM 2540 C

TDS/EC CHECK

1406370

Batch: 7/4/5750

Date Analyzed: 6/27/2014

Laboratory Number	EC	TDS/EC Ratio: 0.55-0.90	Calculated TDS (EC*0.65)	Measured TDS / Calc TDS <1.3
14F0343-01D	869	0.55	564.85	0.84
14F0343-02D	840	0.57	546	0.88
14F0376-01B	7800	0.58	5070	0.89
14F0385-01D	976	0.55	634.4	0.84
14F0385-02D	830	0.62	539.5	0.95
14F0384-01G	225	0.61	146.25	0.94
14F0384-02G	219	0.59	142.35	0.91
14F0384-03G	214	0.61	139.1	0.93
14F0387-01	869	0.60	564.85	0.92
14F0387-02	787	0.56	511.55	0.86
14F0376-01 Dup	7800	0.58	5070	0.90
LCS				
14F0387-03	897	0.56	583.05	0.85
14F0387-04	820	0.56	533	0.87
MDL Ver@ 5ppm				
14F0384-03 Dup	214	0.64	139.1	0.98

* MI

St803h1/225h16

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

CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-473]

Days PAGE ທ TURNAROUND TIME DATE 06/24/14 COC Number

COMPANY	E2								_			/		_	<u> </u>			H	-		
PROJECT NAME	PG&E Topock									_										COMMENTS	
PHONE	(530) 229-3303		FAX (530)	FAX (530) 339-3303		_	\		<u></u>	\			_								***************************************
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	Ste 1000 :612				CF, Mn	Cr. Mn	(1021									TAINERS	SHEWS			
P.O. NUMBER	428648.IM.CS.EX.AC	Ac Ac	TEAM	-		D Filler	(8:0c) ac	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	(00	\				\		Noo.				
SAMPLERS (SIGNATURE	ATURE MOL				Sle ₁₉	c) slete	Conduc	00t9ZN	IZWS) A	/7:	_		\	\			EKO				
SAMPLE I.D.		DATE	TIME	DESCRIPTION	CIR (ZI	MIBIOT	Specifi (2) SOT	(S) c=	Į ibidiu T	\		\	_		\	MUM	Qu				
SC-700B-WDR-473	R-473	06124114 10:30	06:01	Water	×	×	×		×			ü				က			19=M	6 (200)	100
	Perform registrating (spin) in the carbon process are of the contribution on con-	and work - Society of Chicken and Dry consider	A dispersion of the property o	er og de manner er er generale og de mende og de versioner en en en en en en en en en en en en en		And Paul My Indoorse and Andreas	and the second				And William Bill and subsets	Control and Control and Control	and Charles and a second second	entition of the control of the contr		ω	10.	TAL NU	MBER OF	TOTAL NUMBER OF CONTAINERS	SS

Please Provide a preliminary Result for the TDS ASAP



SAMPLE CONDITIONS	RECEIVED COOL IN WARM S 37 % F	CUSTODY SEALED YES \(\Boxed{\omega}\) NO \(\Boxed{\omega}\)	SPECIAL REQUIREMENTS:			•
	Date/ 6-24-14 Time (3.55	Date/6-24- t	Time 6 20th 1 sp	Date/ 6/24/14 Time 19:000	Date/ Time	Date/ Time
CHAIN OF CUSTODY SIGNATURE RECORD	Printed Hulfs Company! Om!	Printed Name CHANH NW Agency (2012S) PHI	Printed THMH A GORDANY THUSEDHI (Printed Myksin Gorbuno Company Tuesdail	Printed Company/ Name Agency	Printed Company/ Name Agency
CHAI	Signature Pr (Relinquished)	Shade ngo	Relinquished) Slub (Mg) No	Signature (Ceceived) (Received) Na	Signature (Relinquished)	Signature Pr (Received) Na

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
5120114	813518-1	7.00	15ml/25ml	9.5	ت و زود ا	NE
	_		,			
	-3					
	-4	V		\bigvee	\bigvee	
	-5	7-00	inl 150 ml	9.5	16:36	NK ²
	76					
	-7					
	_8					
	_8 9					
	-10					
	/-11		/		~	
<i>y</i>	V -12	V	V	7		V
5/21/14	813555-1	7.00	I ml, so ml	9.5	17:30	NE
	1 - 2					
	-3					
	- 4					
	-5					
	-6					
	/-7		·			
	V -8	V	V	V	V	V
5.12414	813568-1	7.00	Iml 1 50 ml	9.5	17:30	NR
	-2					
	-3		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
	- y	<u>, </u>				
V	V −5	Ч	V	V	V	V
5/28/14	813618	7.00	2ml/100ml	9.5	7:45	NE
io/24/14	14 Fo3/3-1	9.5	NIA	NA	MA	NE
	-2			 		
	~3					
	1 - 4	V	<u>\</u>	 	V	\ <u>\</u>
6/25/14	14F0376-01	7.00	2ml/100ml	9.5	7:50	WR



TRUESDAIL LABORATORIES, INC. Metals

Turbidity/pH Check

i urbidity/pH Check								
Sample Number	Turbidity	рН	Date	Analyst	Need Digest (Y/N)	Time of Adjustment to pH 2	Date/Time of 2nd pH check	Comments
1450254	41	42	0/17/14	ΕŞ	jes			
14+0205	, j	1		ì	1			
14+0256	71							
14F 0170 -01	41	72	6/18/14	ES	Tes,	1:00		PHLZ
14F0272-01	V	Varuis	JIV V	レ	V	₩		· •
14F0293-2	フリ	77/2	6/18/14	E5	Yes			
14F0266	Z1	12			Ì			
1470267	71							
14F0268	<u> </u>							
1470269	41							
14FO 271	5	V			V	00	1.1.2.	11 . 0
14 + 0278(1-2,5,7	<i>(1)</i>	72			NO	3:50	6/19/1422;00	PHLZ
14 = 1270(1-3)								
14 F 0291 (10-12)								
1450293(1,7:7)		17			100	V	Ψ	TRC
1450309	9011 2011		6/20/14	ES ES	485 165			1100
14 = 0326	フリ	42	6/23/14	ES	yes -			
1470293 (1-2)	1	<u> </u>	ار کی از کی	<u> </u>	1			
14502018	$\neg \downarrow \neg$							
1450725	<u> </u>			∀	$\overline{}$		\.	
14 = 03 = 5 (1-2)	۷1	77	6/24/14	ES	NO	1:W	:	
14F0372(1-2)	1	1	1	1	1	1		
14F0371(1-3)		1				4		
14F0343(1-2)	71	12			Yes			
1450348	1	1			1			
1450349		V						`
14 F0756	$\sqrt{}$	72						
1450358	41	22	V	_ U				
14F0358 14F0383(10-15) <u> </u>	72	6/25/iy	ES	No			
1 14F0 384(1-3)	V	3k	J	<u> </u>	V			
14F0391 (1-2)	501		412514	ES ES	yes			TIC
14F0363(1-4)	41	72	6/26/14	ES	445	1 d n h n h	-	11 1 2
14F0376						10:00		MLZ
1450377(1-7)		12				. 1		
14FD 394 (1-2)								
1450395(1-4)	<u> </u>	<u></u>	71,1,11	ES	121	II: W	,	PH LZ
1450425-01		72	71114	<u>レフ</u>	yes	11, 40		1744
14 = 404 (1-6)	41	12						
						,		
					_		· · · · · · · · · · · · · · · · · · ·	
L								

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

WORK ORDER

Printed: 6/25/14 7:23:38AM

14F0376

Truesdail Laboratories, Inc

Client: E2 Consulting Engineers, Inc. Project: Topock IM3Plant	Project Manager: Sean Condon Project Number: Topock IM3Plant					
Report To: E2 Consulting Engineers, Inc.	Invoice To: E2 Consulting Engineers, Inc.					
Christi Gitlin	Christi Gitlin					
1900 Powell Street, Suite 250	1900 Powell Street, Suite 250					
Emeryville, CA 94608	Emeryville, CA 94608					
Phone: 510-428-4728	Phone :510-428-4728					
Fax: 510-652-5604	Fax: 510-652-5604					
Date Due: 07/02/2014 16:30 (5 day TAT)						
Received By: Maksim Gorbunov	Date Received: 06/24/2014 19:00					
Logged In By: Luda Shabunina	Date Logged In: 06/25/2014 07:17					
Samples Received at: 3.7°C						
Chain of Custody re Yes Samples intact? Yes Letter (if sent) matc No Custody seals (if an No						

Due	TAT	Expires	Comments
3 [Water] Sampled	1 06/24/20	14 10:30 Pacific	
07/02/2014 13:00	5	06/26/2014 10:30	
07/02/2014 13:00	5	07/01/2014 10:30	
07/02/2014 13:00	5	07/22/2014 10:30	
07/02/2014 13:00	5	12/21/2014 10:30	
07/02/2014 13:00	5	12/21/2014 10:30	
07/02/2014 13:00	5	07/22/2014 10:30	
	3 [Water] Sampled 07/02/2014 13:00 07/02/2014 13:00 07/02/2014 13:00 07/02/2014 13:00 07/02/2014 13:00	3 [Water] Sampled 06/24/20 07/02/2014 13:00 5 07/02/2014 13:00 5 07/02/2014 13:00 5 07/02/2014 13:00 5 07/02/2014 13:00 5 07/02/2014 13:00 5	Type of the properties (Water] Sampled 06/24/2014 10:30 Pacific 07/02/2014 13:00 5 06/26/2014 10:30 07/02/2014 13:00 5 07/02/2014 10:30 07/02/2014 13:00 5 07/22/2014 10:30 07/02/2014 13:00 5 12/21/2014 10:30 07/02/2014 13:00 5 12/21/2014 10:30



Analyses within hol Yes



Reviewed By

Requested analyses Yes

Samples received in Yes

Date

Analytical Bench Log Book

WDR pH Results

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1,#2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Resul
SC-100B	6-3-14	08:45	63-14	9:00	METER # Z	6-3-14	04:44	-52.9	CHRIS LENTE	7./
tes:										
SC-700B	6-3-14	08:45	6-3-14	9:00	METER#2	6-3-14	64:44	-52.9	CHRIS LENTE	6.8
tes:									1 1	
52-7008	6-10-14	9:00	6-10-14	9:10	METER#2	6-10-14	03:54	-52.9	how Total BS	7.1
tes:										_
SL-700B	6-17-14	1400	6-17-14	1405	METER# Z	6-17-14	04:25	-54.6	CHAS LEME	6.9
ites:										
50-700B	6-24-14	1030	6-24-14	1037	MELLE #2	4-24-14	3:40	53.2	That PHELPS	6.8
ites:					<u>-</u>	3/				
77-24 (14.5)	Time up you man					# # # # # # # # # # # # # # # # # # #				A Mariante Maria
ites:				,						
	and the second s	!		!	1	# f	 			ma dete par par
r'ies:		····		<u> </u>						
,	(400)		inday Win	D Paguira	d pH Range for th	a Effluent /CC	7009) ie: 6	5 R 4		■107 . 37 .