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March 15, 2006

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

**Subject: Board Order R7-2004-0103  
WDID No. 7B 36 2033 001  
PG&E Topock Compressor Station, Needles, California  
Interim Measure No. 3 Groundwater Treatment System  
Discharge to Injection Well(s)  
February 2006 Monitoring Report**

Dear Mr. Perdue:

Enclosed is the Board Order R7-2004-0103 February 2006 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System. This report is being submitted in compliance with the Waste Discharge Requirements (WDRs) issued by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Board Order R7-2004-0103.

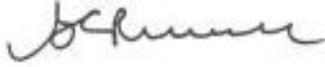
WDRs under Board Order R7-2004-0103 apply to IM No. 3 Treatment System discharge by subsurface injection wells only. In addition, the Water Board issued WDRs for IM No. 3 Treatment System discharge to the Colorado River (Board Order R7-2004-0100) and IM No. 3 Treatment System discharge to the PG&E Compressor Station (Board Order R7-2004-0080).

To date, there has been no IM No. 3 Treatment System discharge to the Colorado River or the PG&E Compressor Station. PG&E has no plans to discharge IM No. 3 Treatment System effluent to the Colorado River or the PG&E Compressor Station at this time. Reporting of Board Order R7-2004-0080 and Board Order R7-2004-0100 activities are submitted under separate covers.

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March 15, 2006

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

Sincerely,



Curt Russell  
Topock Onsite Project Manager

Enclosures:

Board Order R7-2004-0103 February 2006 Monitoring Report for the IM No. 3 Groundwater Treatment System.

cc: José Cortez, Water Board  
Liann Chavez, Water Board  
Tom Vandenberg, Water Board  
Norman Shopay, DTSC

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# **February 2006 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System**

**Waste Discharge Requirements  
Board Order No. R7-2004-0103  
PG&E Topock Compressor Station  
Needles, California**

Prepared for  
**California Regional Water Quality Control Board  
Colorado River Basin Region**

on behalf of  
**Pacific Gas and Electric Company**

March 15, 2006

**CH2MHILL**  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

**February 2006 Monitoring Report  
Interim Measures No. 3 Groundwater Treatment System  
Waste Discharge Requirements Order No. R7-2004-0103  
PG&E Topock Compressor Station  
Needles, California**

Prepared for  
Pacific Gas and Electric Company

March 15, 2006

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

*Dennis Fink*

Dennis Fink, PE No. 68986  
Project Engineer



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# Acronyms and Abbreviations

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gpm	gallons per minute
IM	Interim Measure
MBC	MBC Applied Environmental Sciences Laboratories
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
STL	Severn Trent Laboratories, Inc.
Truesdail	Truesdail Laboratories, Inc.
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirements

# 1.0 Introduction

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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 and management of extracted groundwater. The groundwater extraction, treatment, and injection systems collectively are referred to as IM No. 3. Figure 1 provides a map of the project area.

California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) Board Order No. R7-2004-0103 authorizes PG&E to inject treated groundwater into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. The Monitoring and Reporting Program (MRP) under the order requires monthly monitoring reports to be submitted by the 15<sup>th</sup> day of the following month.

**This report covers monitoring activities related to operation of the IM No. 3 groundwater treatment system during the month of February 2006.**

In addition to Board Order No. R7-2004-0103, the Water Board issued Waste Discharge Requirements (WDRs) for IM No. 3 treatment system discharge to the Colorado River (Board Order R7-2004-0100) and IM No. 3 treatment system discharge to the PG&E Compressor Station (Board Order R7-2004-0080). To date, there has been no IM No. 3 treatment system discharge to the Colorado River or the PG&E Compressor Station. PG&E has no plans to discharge IM No. 3 treatment system effluent to the Colorado River or the PG&E Compressor Station at this time. Reporting of Board Order R7-2004-0080 and Board Order R7-2004-0100 activities will be submitted under separate cover.

## 2.0 Sampling Station Locations

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Table 1 lists the locations of sampling stations. The locations of the sampling stations are provided in the process and instrumentation diagrams: Figures TP-PR-10-10-04, TP-PR-10-10-08, and TP-PR-10-10-06.

## 3.0 Description of Activities

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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 the WDRs. Full-time operation of the treatment system commenced in August 2005.

During February 2006, groundwater was pumped from extraction wells TW-3D and PE-1. The target groundwater extraction system pump rate was 135 gallons per minute (gpm) during February 2006 (excluding planned and unplanned downtime, which is described in Section 4.0).

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

- **Treated Effluent:** Treated water that is discharged to the injection well(s).
- **Reverse Osmosis Concentrate:** Treatment by-product that is transported and disposed offsite.
- **Sludge:** Treatment by-product that is transported offsite for disposal each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

## 4.0 Groundwater Treatment System Flow Rates

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The February 2006 treatment system monthly average flow rates are presented in Table 2. System influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-RP-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection well IW-2 and IW-3 (Figure TP-RP-10-10-11). The reverse osmosis concentrate flow rate was measured by a flow meter at the piping carrying water from reverse osmosis concentrate tank T-701 to the truck load-out station (Figure TP-RP-10-10-08).

No planned extraction system downtime occurred during February 2006. Periods of unplanned extraction system downtime are summarized below.

- **February 8, 14, 17, 24, and 26:** Extraction well PE-1 was automatically shut down for short-periods due to low water level above the well pump. This alarm condition protects the submersible well pump from damage due to overheating. The well pump was re-started after groundwater levels had sufficiently recovered in the well. Periods of PE-1 downtime occurred on February 8 (50 minutes), February 14 (10 minutes), February 17 (145 minutes), February 24 (250 minutes over two periods), and February 26 (10 minutes). Extraction well TW-3D continued to operate during these periods of PE-1 downtime.
- **February 25:** The IM-3 extraction well system was shut down at 2:53 pm on February 25 when switching microfilter membrane modules took longer than planned. Extraction wells TW-3D and PE-1 were re-started at 3:55 pm. TW-3D was shut down again from 4:51 pm until 5:40 pm until normal operations resumed. Extraction system downtime (i.e. no extraction wells operating) was 63 minutes.

## 5.0 Sampling and Analytical Procedures

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All samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. (Truesdail) or Severn Trent Laboratories, Inc. (STL). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a cooler at 4° Celsius and transported to Truesdail or STL via courier service under chain-of-custody documentation. Truesdail transported a portion of the sludge sample to MBC Applied Environmental Sciences Laboratories (MBC) for the aquatic bioassay analysis.

Truesdail is certified by the California Department of Health Services (Certification #1237) under the State of California's Environmental Laboratory Accreditation Program. STL is certified by the California Department of Health Services (Certification #1118) under the Environmental Laboratory Accreditation Program. MBC is certified by the California Department of Health Services (Certification # 1788) under the State of California's Environmental Laboratory Accreditation Program.

All analyses were performed in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR Part 136), promulgated by the United States Environmental Protection Agency.

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, reverse osmosis concentrate, and sludge sampling was conducted in accordance with the sampling frequency required by the MRP. The sampling analytical results are shown in Tables 3, 4, 5 and 6, respectively.

Groundwater quality is being monitored in observation and compliance wells according to procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* (CH2M HILL 2005). Quarterly groundwater monitoring analytical results will be reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

## 6.0 Analytical Results

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Laboratory reports prepared by the certified analytical laboratory(ies) are presented in Appendix A. The analytical results from groundwater treatment system influent, effluent, reverse osmosis concentrate, and sludge samples are presented in Tables 3, 4, 5, and 6, respectively.

In accordance with the WDR reporting requirements, the following sampling frequency schedule was followed:

- The influent was sampled monthly; sample date February 1, 2006.
- The effluent was sampled weekly; sample dates February 1, 8, 15, and 22, 2006.
- The reverse osmosis concentrate was sampled monthly; sample date February 1, 2006.
- The sludge was sampled monthly; sample date February 15, 2006. WDR requirements state that sludge is to be sampled each time sludge is transported offsite unless sludge is transported offsite more frequently than monthly, in which case the sampling frequency shall be monthly. The sludge is required to have an aquatic bioassay test quarterly; an aquatic bioassay test was conducted with a sludge sample from the February 15, 2006 sampling event.

Table 7 identifies the laboratory that performed each analysis and lists the following required information:

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

## 7.0 Conclusions

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

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

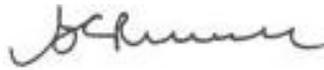
## 8.0 Certification

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PG&E submitted a signature delegation letter to the Water Board on August 12, 2005. The letter delegated PG&E signature authority to Mr. Curt Russell and Ms. Yvonne Meeks for correspondence regarding Board Order R7-2004-0103.

Certification Statement:

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

Signature:  \_\_\_\_\_

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Onsite Project Manager

Date: March 14, 2006

**Tables**

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**TABLE 1**  
 Sampling Station Descriptions  
*February 2006 Report for IM No. 3 Groundwater Treatment System*

<b>Sample Station</b>	<b>Sample ID<sup>a</sup></b>	<b>Location</b>
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 TP-RP-10-10-08).
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:**

<sup>a</sup> The sample event is included at the end of the sample ID (e.g. SC-100B-WDR-015).

TABLE 2  
 Flow Monitoring Results  
 February 2006 Report for IM No. 3 Groundwater Treatment System

Parameter	System Influent <sup>a,d</sup>	System Effluent <sup>b,d</sup>	Reverse Osmosis Concentrate <sup>c,d</sup>
Average Monthly Flowrate (gpm)	134.1	121.4	11.8

gpm: gallons per minute.

<sup>a</sup> Extraction wells TW-3D and PE-1 were operated during February 2006.

<sup>b</sup> All effluent was discharged into injection wells IW-2 and IW-3 during February 2006.

<sup>c</sup> Reverse Osmosis flow meter reading from FIT-701.

<sup>d</sup> The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates is approximately 0.6 percent, which is within the range of acceptable accuracy considering the margin of error for onsite instrumentation, the water contained within the sludge, and differences in the inventory of water in the treatment system between the beginning and end of the reporting period.

TABLE 3

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Influent Monitoring Results <sup>a</sup>

February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																						
Sample ID	Analytes Units <sup>b</sup> Date	TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L
SC-100B-WDR-032	2/1/2006	6040	ND (0.1)	11000	7.42	2280	2410	ND (52)	1.09	ND (3.0)	ND (5.0)	ND (300)	1.38	ND (10)	2.79	ND (2.0)	ND (500)	10.2	ND (20)	3.49	0.007	742	ND (300)	ND (20)

**NOTES:**

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

µg/L = micrograms per liter

mg/L = milligrams per liter

NTU = nephelometric turbidity units

µmhos/cm = micromhos per centimeter

ND = parameter not detected at the listed reporting limit

J = concentration or reporting limits estimated by laboratory or validation

<sup>a</sup> 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)

<sup>b</sup> Units reported in this table are those units required in the WDRs

TABLE 4

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)  
Effluent Monitoring Results<sup>a</sup>

February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

WDRs Effluent Limits <sup>b</sup>	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
	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
Required Sampling Frequency		Weekly						Monthly																
Sample ID	Analytes Units <sup>c</sup> Date	TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L
SC-700B-WDR-032	2/1/2006	4440	ND (0.1)	7450	8.13	ND (1.0)	ND (1.0)	ND (52)	0.70	ND (3.0)	ND (5.0)	ND (300)	1.45	ND (10)	1.92	ND (2.0)	ND (500)	6.20	ND (20)	2.81	ND (0.005)	528	ND (300)	20.8
SC-700B-WDR-033	2/8/2006	4230	ND (0.1)	7650	8.14	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-034	2/15/2006	4140	ND (0.1)	7750	8.07	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SC-700B-WDR-035	2/22/2006	4190	ND (0.1)	7600	7.76	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**NOTES:**

- (---) = not required by the WDR Monitoring and Reporting Program
- NA = not applicable
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- NTU = nephelometric turbidity units
- µmhos/cm = micromhos per centimeter
- ND = parameter not detected at the listed reporting limit
- J = concentration or reporting limits estimated by laboratory or validation

<sup>a</sup> 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)

<sup>b</sup> In addition to the listed effluent limits, the WDRs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.

<sup>c</sup> Units reported in this table are those units required in the WDRs

TABLE 5

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Reverse Osmosis Concentrate Results <sup>a</sup>

February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																					
Sample ID	Date	TDS	Specific Conductance	pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		mg/L	µmhos/cm	pHunits	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
SC-701-WDR-032	2/1/2006	24000	40100	8.07	ND (0.001)	ND (0.002)	ND (0.01)	ND (0.01)	ND (0.3)	ND (0.0052)	ND (0.0052)	ND (0.01)	ND (0.01)	10.8	ND (0.0052)	0.0471	ND (0.0002)	ND (0.02)	ND (0.021)	ND (0.01)	ND (0.0052)	0.0332	0.0429

**NOTES:**

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

µg/L = micrograms per liter

mg/L = milligrams per liter

µmhos/cm = micromhos per centimeter

ND = parameter not detected at the listed reporting limit

J = concentration or reporting limits estimated by laboratory or validation

<sup>a</sup> Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)

<sup>b</sup> Units reported in this table are those units required in the WDRs

TABLE 6

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)  
 Sludge Monitoring Results<sup>a</sup>  
 February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency			Monthly <sup>c</sup>																	Quarterly <sup>d</sup>				
Sample ID	Date	Analytes Units <sup>b</sup>	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Bioassay % Survival at 750 mg/L <sup>e</sup>	Bioassay % Survival at 500 mg/L <sup>e</sup>	Bioassay % Survival at 250 mg/L <sup>e</sup>
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
SC-Sludge-WDR-034	2/15/2006		26000	140	ND (45)	13.0	130	ND (3.8)	ND (3.8)	ND (38)	140	9.81	ND (3.8)	59.0	2.10	57.0	ND (3.8)	ND (7.5)	21.0	110	300	100	100	100

**NOTES:**  
 (---) = not required by the WDR Monitoring and Reporting Program  
 ND = parameter not detected at the listed reporting limit  
 J = concentration or reporting limits estimated by laboratory or validation  
 mg/kg = milligrams per killogram  
 mg/L = milligrams per liter

- <sup>a</sup> Sampling Location for all Sludge Samples is the Sludge Collection Tanks (see attached P&ID TP-PR-10-10-06)
- <sup>b</sup> Units reported in this table are those units required in the WDR
- <sup>c</sup> Sludge shall be tested for the listed constituents each time sludge is transported offsite, unless transport is more frequent than monthly, in which case the sampling frequency shall be monthly.
- <sup>d</sup> Sludge shall have an aquatic bioassay test performed each time sludge is transported offsite, unless transport is more frequent than quarterly, in which case the sampling frequency shall be quarterly.
- <sup>e</sup> Concentration of sludge per 1 liter of water.

TABLE 7

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

February 2006 Monthly Report for Interim Measures 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-032	Brian Dobbs	2/1/2006	2:00:00 PM	TLI	EPA 120.1	SC	2/2/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/2/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/2/2006	Emilia Haley
					TLI	EPA 180.1	TRB	2/2/2006	Gautam Savani
					TLI	EPA 300.0	FL	2/2/2006	Iordan Stavrev
					TLI	EPA 300.0	NO3N	2/2/2006	Iordan Stavrev
					TLI	EPA 300.0	SO4	2/2/2006	Iordan Stavrev
					TLI	EPA 350.2	NH3N	2/3/2006	Alex Hernandez
					TLI	EPA 354.1	NO2N	2/2/2006	Hope Trinidad
					TLI	EPA 6010B	NI	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	ZN	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	MN	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	FE	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	BA	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	B	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	CRT	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	AL	2/2/2006	Riddhi Patel
					TLI	SW 6020A	MO	2/16/2006	Victoria Than
					TLI	SW 6020A	CU	2/16/2006	Victoria Than
					TLI	SW 6020A	SB	2/16/2006	Victoria Than
TLI	SW 6020A	PB	2/16/2006	Victoria Than					
TLI	SW 6020A	AS	2/16/2006	Victoria Than					
TLI	SW 7199	CR6	2/2/2006	Jorge Arriaga					
SC-700B	SC-700B-WDR-032	Brian Dobbs	2/1/2006	2:05:00 PM	TLI	EPA 120.1	SC	2/2/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/2/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/2/2006	Emilia Haley
					TLI	EPA 180.1	TRB	2/2/2006	Gautam Savani
					TLI	EPA 300.0	SO4	2/2/2006	Iordan Stavrev
					TLI	EPA 300.0	NO3N	2/2/2006	Iordan Stavrev
					TLI	EPA 300.0	FL	2/2/2006	Iordan Stavrev
					TLI	EPA 350.2	NH3N	2/3/2006	Alex Hernandez
					TLI	EPA 354.1	NO2N	2/2/2006	Hope Trinidad
					TLI	EPA 6010B	MN	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	AL	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	B	2/2/2006	Riddhi Patel

TABLE 7

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

February 2006 Monthly Report for Interim Measures 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-032	Brian Dobbs	2/1/2006	2:05:00 PM	TLI	EPA 6010B	BA	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	CRT	2/9/2006	Riddhi Patel
					TLI	EPA 6010B	FE	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	NI	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	ZN	2/2/2006	Riddhi Patel
					TLI	SW 6020A	CU	2/16/2006	Victoria Than
					TLI	SW 6020A	SB	2/16/2006	Victoria Than
					TLI	SW 6020A	MO	2/16/2006	Victoria Than
					TLI	SW 6020A	AS	2/16/2006	Victoria Than
					TLI	SW 6020A	PB	2/16/2006	Victoria Than
TLI	SW 7199	CR6	2/2/2006	Jorge Arriaga					
SC-700B	SC-700B-WDR-033	Gary Sibble	2/8/2006	12:08:00 PM	TLI	EPA 120.1	SC	2/10/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/9/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/9/2006	Emilia Haley
					TLI	EPA 180.1	TRB	2/9/2006	Gautam Savani
					TLI	EPA 6010B	CRT	2/13/2006	Riddhi Patel
					TLI	SW 7199	CR6	2/9/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-034	David Chaney	2/15/2006	1:25:00 PM	TLI	EPA 120.1	SC	2/16/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/16/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/16/2006	Hope Trinidad
					TLI	EPA 180.1	TRB	2/16/2006	Gautam Savani
					TLI	EPA 6010B	CRT	2/16/2006	Riddhi Patel
					TLI	SW 7199	CR6	2/16/2006	Jorge Arriaga
SC-700B	SC-700B-WDR-035	David Chaney	2/22/2006	12:50:00 PM	TLI	EPA 120.1	SC	2/24/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/23/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/23/2006	Emilia Haley
					TLI	EPA 180.1	TRB	2/23/2006	Gautam Savani
					TLI	EPA 6010B	CRT	2/27/2006	Riddhi Patel
					TLI	SW 7199	CR6	2/23/2006	Jorge Arriaga
SC-701	SC-701-WDR-032	Brian Dobbs	2/1/2006	2:10:00 PM	TLI	EPA 120.1	SC	2/2/2006	Alex Hernandez
					TLI	EPA 150.1	PH	2/2/2006	Alex Hernandez
					TLI	EPA 160.1	TDS	2/2/2006	Emilia Haley
					TLI	EPA 300.0	FL	2/2/2006	Iordan Stavrev
					TLI	EPA 6010B	ZN	2/2/2006	Riddhi Patel

TABLE 7

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-032	Brian Dobbs	2/1/2006	2:10:00 PM	TLI	EPA 6010B	NI	2/2/2006	Riddhi Patel
					TLI	EPA 6010B	CRT	2/9/2006	Riddhi Patel
					TLI	EPA 6010B	BA	2/2/2006	Riddhi Patel
					TLI	EPA 7470A	HG	2/13/2006	Riddhi Patel
					TLI	SW 6020A	SB	2/16/2006	Victoria Than
					TLI	SW 6020A	V	2/16/2006	Victoria Than
					TLI	SW 6020A	SE	2/16/2006	Victoria Than
					TLI	SW 6020A	PB	2/16/2006	Victoria Than
					TLI	SW 6020A	MO	2/16/2006	Victoria Than
					TLI	SW 6020A	AG	2/16/2006	Victoria Than
					TLI	SW 6020A	CO	2/16/2006	Victoria Than
					TLI	SW 6020A	CD	2/16/2006	Victoria Than
					TLI	SW 6020A	TL	2/16/2006	Victoria Than
					TLI	SW 6020A	BE	2/16/2006	Victoria Than
					TLI	SW 6020A	AS	2/16/2006	Victoria Than
					TLI	SW 6020A	CU	2/16/2006	Victoria Than
					TLI	SW 7199	CR6	2/2/2006	Jorge Arriaga
SC-Sludge	SC-Sludge-WDR-034	David Chaney	2/15/2006	1:40:00 PM	STL	EPA 160.3	MOIST	2/21/2006	Florian Zimmermann
					TLI	EPA 300.0	FL	2/17/2006	Vanna Kho
					STL	EPA 6010B	NI	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	V	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	TL	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	SE	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	SB	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	PB	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	ZN	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	MO	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	CU	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	CRT	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	CO	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	CD	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	BE	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	BA	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	AG	2/21/2006	Josephine Asuncion
					STL	EPA 6010B	AS	2/21/2006	Josephine Asuncion

TABLE 7

Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)

Monitoring Information

February 2006 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-Sludge	SC-Sludge-WDR-034	David Chaney	2/15/2006	1:40:00 PM	STL	EPA 7471A	HG	2/21/2006	Hao Ton
					STL	SW 7199	CR6	2/20/2006	Yuriy Zakhrabov
SC-Sludge	SC-Sludge-WDR-034	David Chaney	02/15/2006	01:40:00 P.M	MBC	96-Hour Acute Aquatic Toxicity Screening Test	BIO	02/17/2006 - 02/21/2006	Sonia Beck

**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 TP-PR-10-10-08)

TLI = Truesdail Laboratories, Inc.

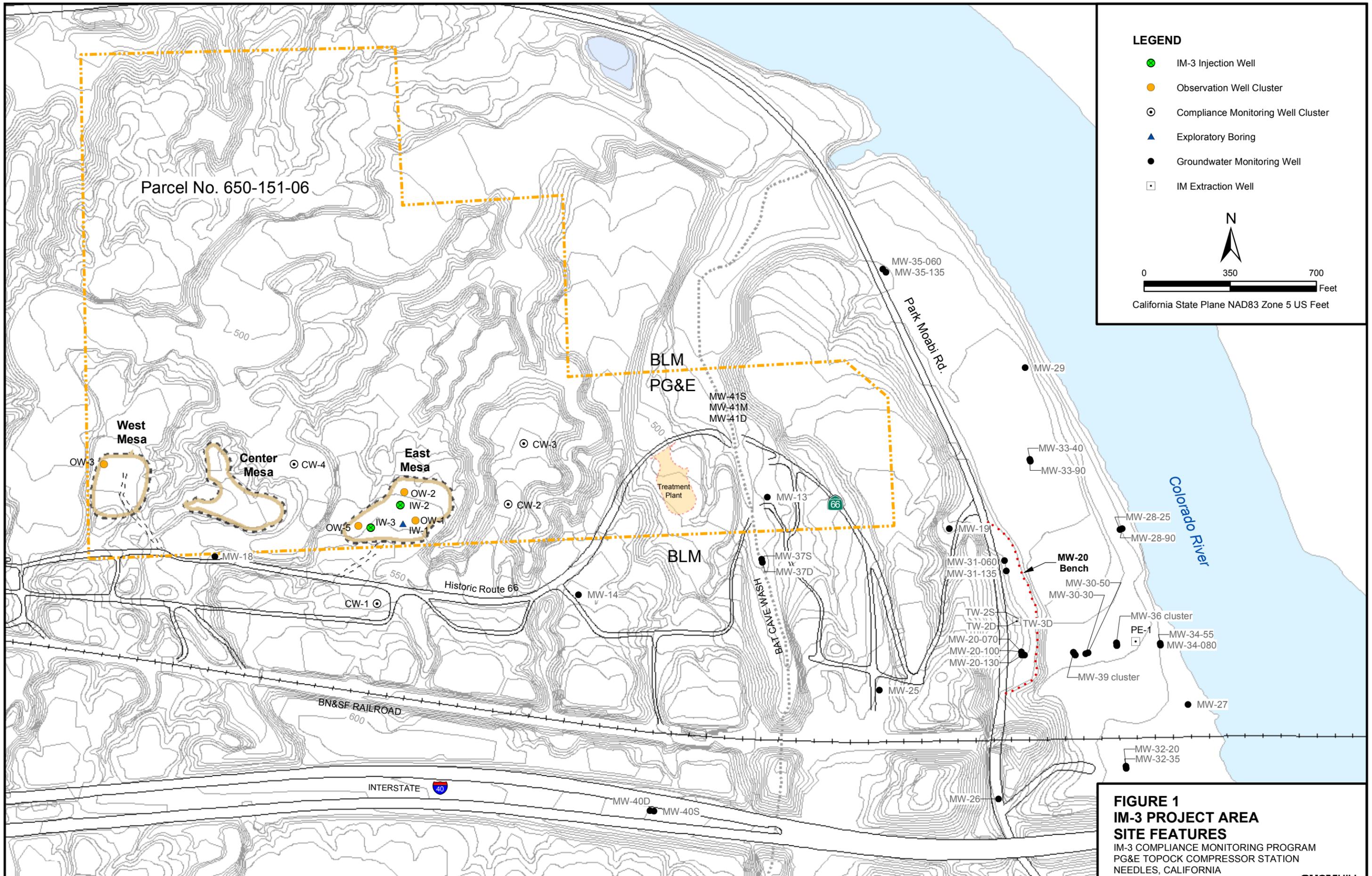
STL = Severn Trent Laboratories, Inc.

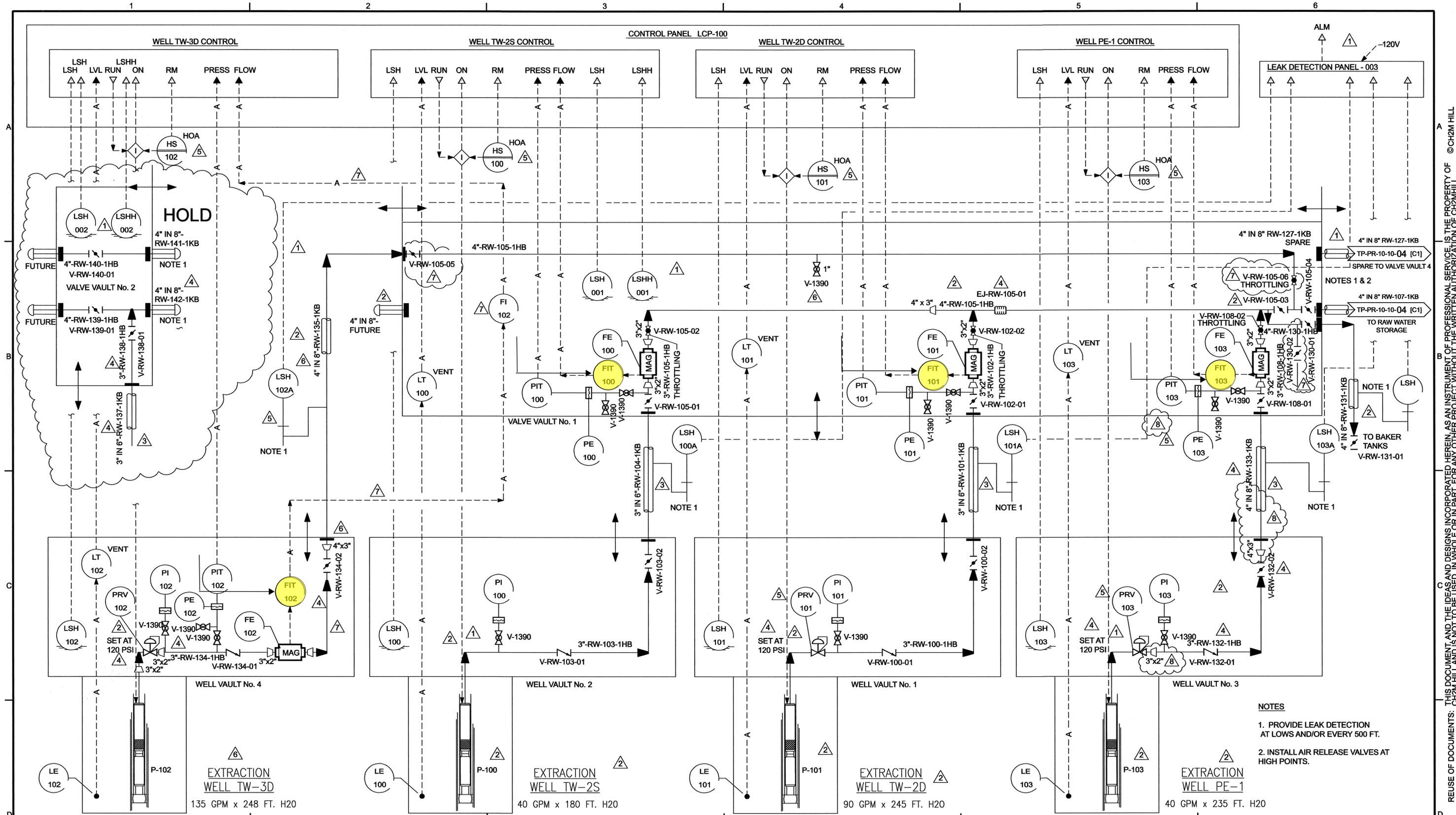
MBC = MBC Applied Environmental Sciences

- |                              |                       |
|------------------------------|-----------------------|
| SC = specific conductance    | MO = molybdenum       |
| PH = pH                      | NI = nickel           |
| TDS = total dissolved solids | PB = lead             |
| TRB = turbidity              | HG = mercury          |
| CRT = chromium               | SE = selenium         |
| CR6 = hexavalent chromium    | TL = thallium         |
| FL = fluoride                | CO = cobalt           |
| AL = aluminum                | CD = cadmium          |
| B = boron                    | BE = beryllium        |
| FE = iron                    | AG = silver           |
| MN = manganese               | V = vanadium          |
| ZN = zinc                    | NO3N = nitrate (as N) |
| SB = antimony                | NH3N = ammonia (as N) |
| AS = arsenic                 | NO2N = nitrite (as N) |
| BA = barium                  | SO4 = sulfate         |
| CU = copper                  |                       |

**Figures**

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- NOTES**
1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.
  2. INSTALL AIR RELEASE VALVES AT HIGH POINTS.

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 8	DATE 12/06/05	PRINT DISTRIBUTION	STATUS					
8	12/07/05	REMOVED PE-1 HOLDS	JBW	SDH	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	---	ELECTRICAL	---	STATUS	PRELIMINARY				
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	---	INST & CONTROL	---	REV.	FOR REVIEW AND APPROVAL	D	07/28/04		
3	03/16/05	DELETED NOTES. APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	---	ARCHITECTURAL	---	CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
4	07/20/05	RELIEF VALVE SETTINGS, WELL PE-1 LINE TAGS, HOLDS REMOVED. APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS	---	ENVIRONMENTAL	---	FIELD	REVISED & APPROVED FOR CONSTRUCTION	7	12/19/05		
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ	PIPING	SDH	GEN. ARRANG.	---	INTRA CD.					
6	10/06/05	REVISED FINAL RECORD - ADDED TW-3D	EFC	AJ										
7	10/19/05	REVISED AS NOTED	EFC	AJ										



RESPONSIBLE ENGINEER:  
Kenneth L. Martins  
PE # CH4876 Exp. 6/30/08

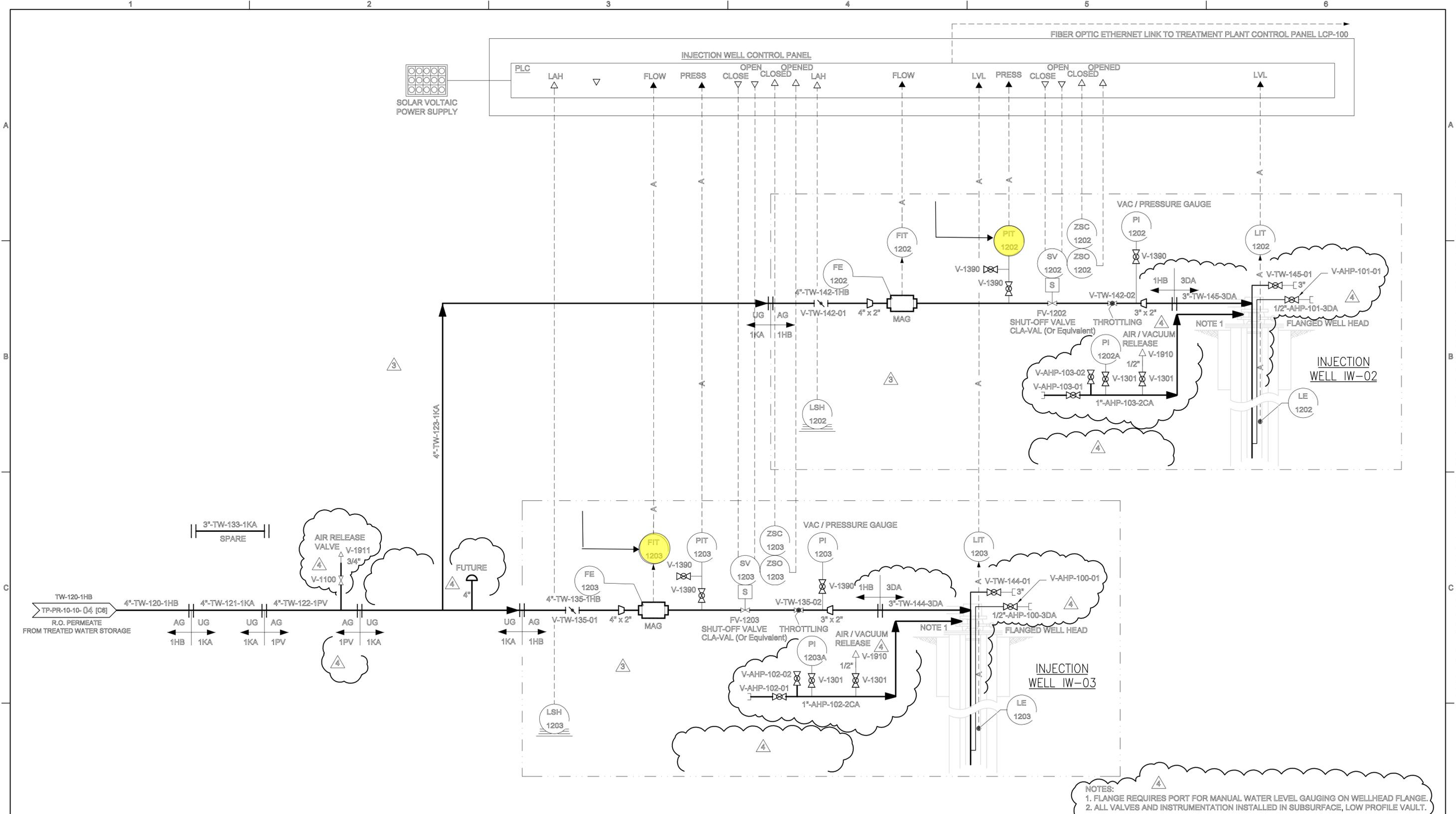
PACIFIC GAS & ELECTRIC CO.  
TOPOCK COMPRESSOR STATION  
INTERIM MEASURE 3  
EXPANDED GROUNDWATER EXTRACTION  
AND TREATMENT SYSTEM  
PROJ. NO. 315994

PROCESS AND INSTRUMENTATION DIAGRAM  
SHEET 03  
EXTRACTION WELLS  
PE-1, TW-2D, TW-2S AND TW-3D  
DWG. NO. TP-PR-10-10-03 REV. 8

SCALE NONE

**CH2MHILL**

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NOTES:  
 1. FLANGE REQUIRES PORT FOR MANUAL WATER LEVEL GAUGING ON WELLHEAD FLANGE.  
 2. ALL VALVES AND INSTRUMENTATION INSTALLED IN SUBSURFACE, LOW PROFILE VAULT.

NO.	DATE	REVISION	BY	CHK	DISCIPLINE	APPROVAL	REV 4	DATE 03/10/05	PRINT DISTRIBUTION	STATUS				
										ISSUED	REV	DATE	SDE	PEM
A	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE					
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS					
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.					
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT					
3	02/14/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD					
4	03/10/05	REMOVED HOLD AND APPROVED FOR CONSTRUCTION	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.					

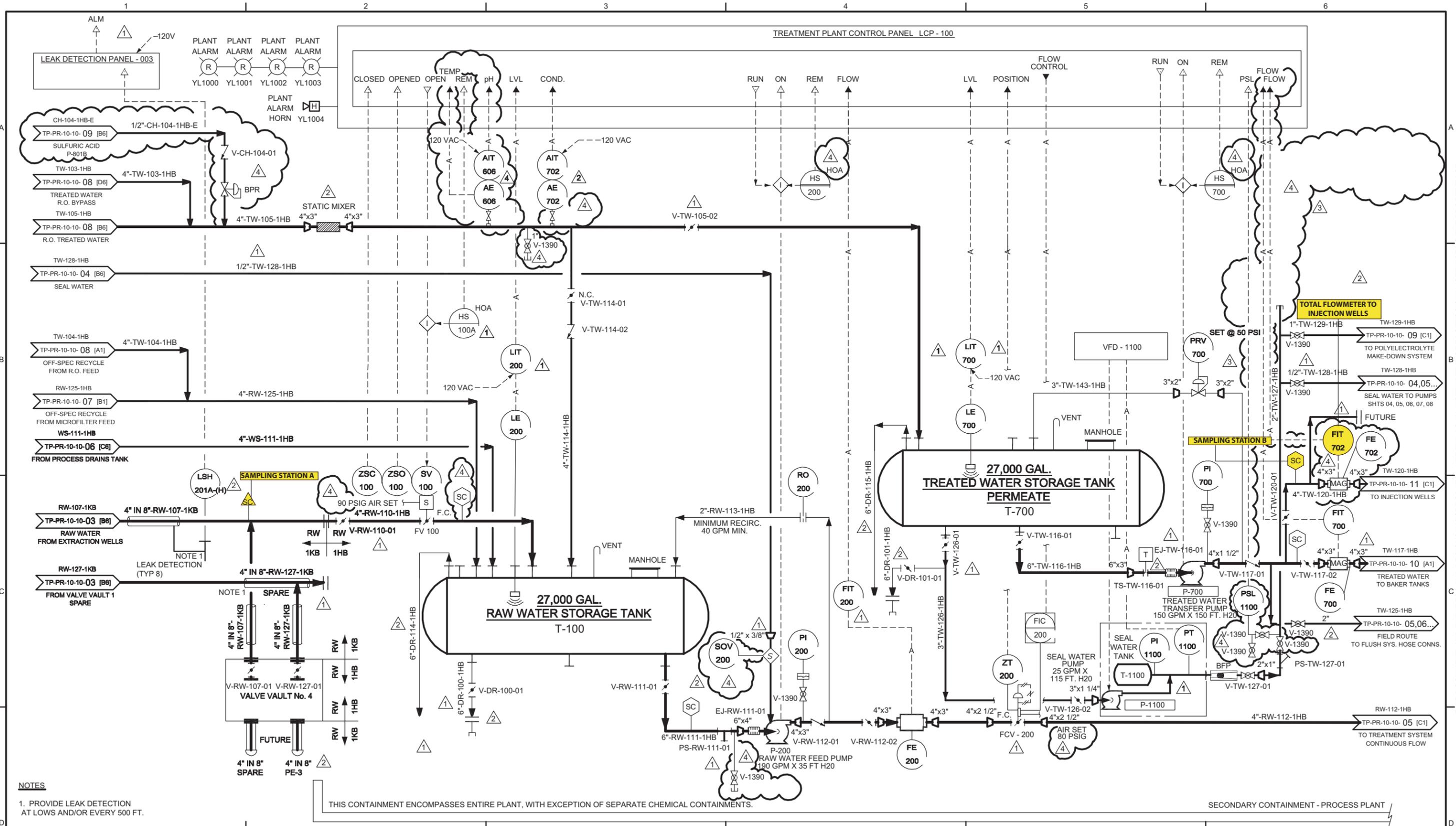
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**CH2MHILL**

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

PROCESS AND INSTRUMENTATION DIAGRAM  
 SHEET 11  
 INJECTION WELLS

DWG. NO. TP-PR-10-10-11 REV. 4



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

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

SECONDARY CONTAINMENT - PROCESS PLANT

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4 DATE 09/21/05		PRINT DISTRIBUTION	STATUS					
						DISCIPLINE	REVIEWED		DISCIPLINE	REVIEWED	ISSUED	REV	DATE	SDE
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE					
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS					
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.					
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT					
3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD					
4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.					

SCALE NONE

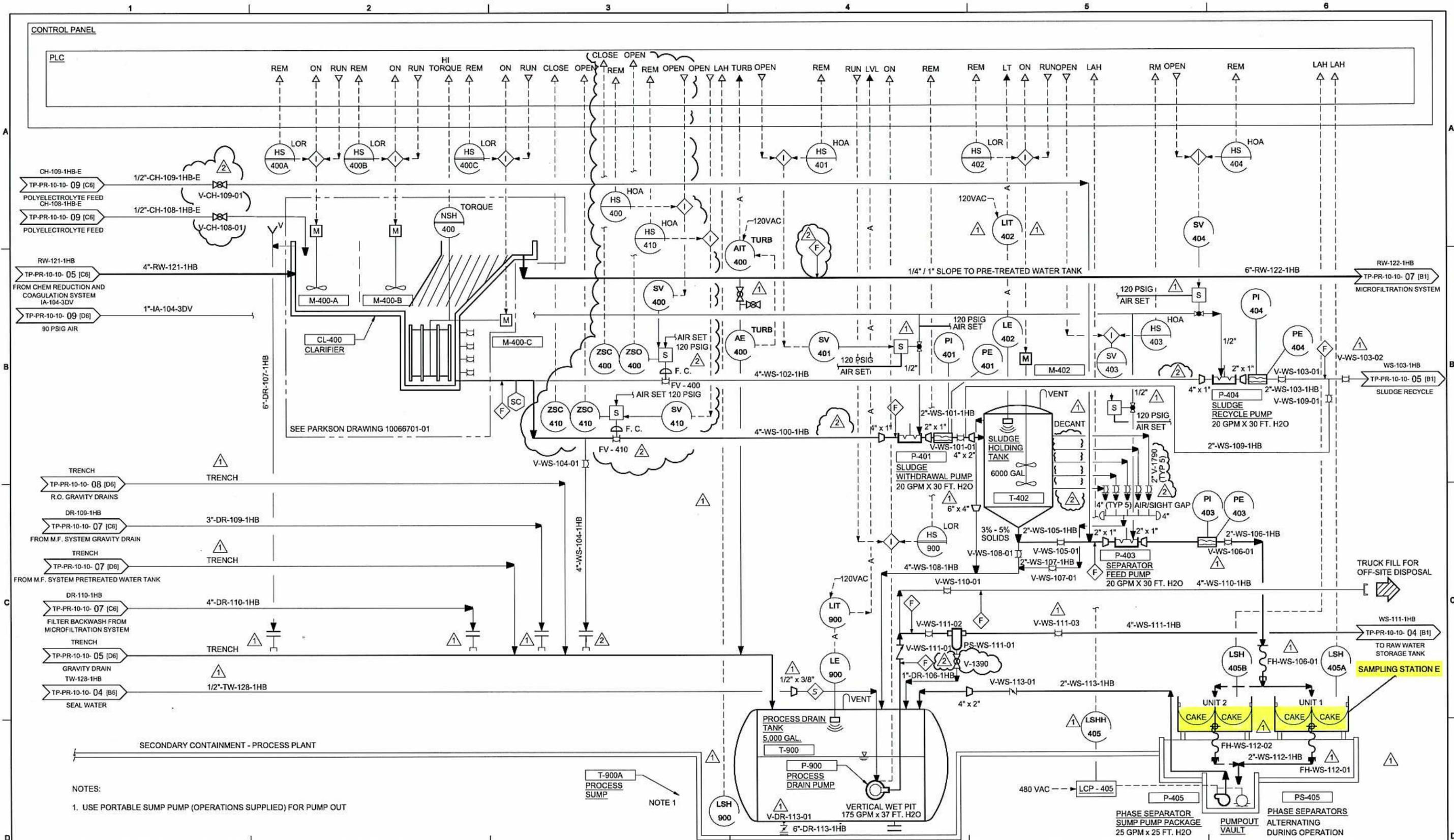
PACIFIC GAS & ELECTRIC CO.  
TOPOCK COMPRESSOR STATION  
INTERIM MEASURE 3  
EXPANDED GROUNDWATER EXTRACTION  
AND TREATMENT SYSTEM  
PROJ NO. 315994

**CH2MHILL**

PROCESS AND INSTRUMENTATION DIAGRAM  
SHEET 04  
STORAGE AREA

DWG. NO. TP-PR-10-10-04 REV. 4

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NOTES:  
 1. USE PORTABLE SUMP PUMP (OPERATIONS SUPPLIED) FOR PUMP OUT

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 2	DATE 01/23/05	PRINT DISTRIBUTION	STATUS				
									REV	DATE	SDE	PEM	
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED				
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	ELECTRICAL	REVIEWED	DATE	PRELIMINARY				
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	INST & CONTROL	REVIEWED	DATE	FOR REVIEW AND APPROVAL	D	07/28/04		
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	ARCHITECTURAL	REVIEWED	DATE	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
					PROCESS	ENVIRONMENTAL	REVIEWED	DATE	REVISED & APPROVED FOR CONSTRUCTION	2	01/23/05		
					PIPING	GEN. ARRANG.	REVIEWED	DATE					

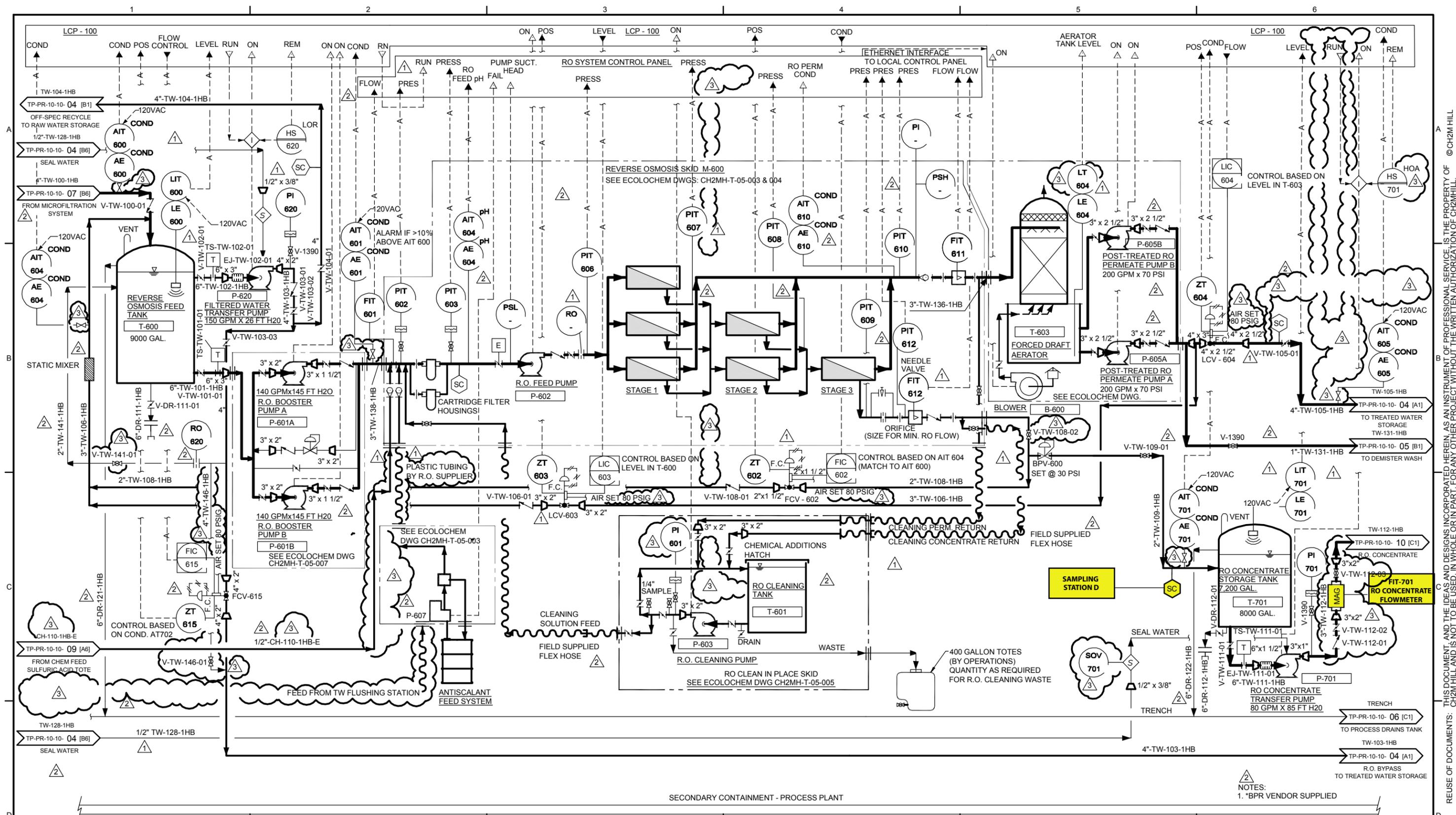
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 TOPOCK COMPRESSOR STATION  
 INTERIM MEASURE 3  
 EXPANDED GROUNDWATER EXTRACTION  
 AND TREATMENT SYSTEM  
 PROJ. NO. 315994

PROCESS AND INSTRUMENTATION DIAGRAM  
 SHEET 06  
 CLARIFICATION AND  
 SLUDGE REMOVAL

SCALE NONE

**CH2MHILL**

DWG. NO. TP-PR-10-10-06 REV. 2



SECONDARY CONTAINMENT - PROCESS PLANT

NOTES:  
1. \*BPR VENDOR SUPPLIED

NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 3	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					
									ISSUED	REV	DATE	SDE	PEM	
0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED				
0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS	PRELIMINARY				
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	D	07/28/04		
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
3	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	3	/ /		
					PIPING		GEN. ARRANG.		INTRA CO.					

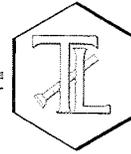
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PACIFIC GAS & ELECTRIC CO.  
TOPOCK COMPRESSOR STATION  
INTERIM MEASURE 3  
EXPANDED GROUNDWATER EXTRACTION  
AND TREATMENT SYSTEM  
PROJ NO. 315994  
**CH2MHILL**

PROCESS AND INSTRUMENTATION DIAGRAM  
SHEET 08  
REVERSE OSMOSIS SYSTEM  
DWG. NO. TP-PR-10-10-08  
REV. 3

**Appendix A**  
**Laboratory Analytical Reports**

---



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

**R E C E I V E D**  
FEB 22 2006  
CH2M HILL  
REDDING

**CH2M HILL**  
**PG&E Topock Project**

**Laboratory Number: 951370**  
**Received: February 1, 2006**

**IM3Plant-WDR-032**  
**Project No.: 334168.IM.04.00**  
**P.O. No.: 911248**



Prepared for:

**CH2M HILL**  
**Attn: Mark Cichy**  
**2525 Airpark Dr.**  
**Redding, CA 96001**

Prepared by:

**TRUESDAIL LABORATORIES, INC.**  
**TUSTIN, CALIFORNIA**

**Table of Contents**  
**TLI Laboratory Data Package**  
For Laboratory Number: 951370

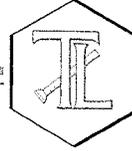
<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

Section 1.0

# Case Narrative

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

February 21, 2006

CH2M HILL  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-032 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 951370

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-024 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Anions, Ammonia, Total Dissolved Solids, and Title 22 Metals. 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 February 1, 2006, 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.

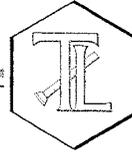
Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

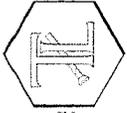
**Received:** February 1, 2006

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 180.1	Turbidity	Gautam Savani
EPA 300.0	Anions	Iordan Stavrev
EPA 350.2	Ammonia	Alex Hernandez
EPA 354.1	Nitrite as N	Hope Trinidad
SW 6010B	Metals by ICP	Riddhi Patel
SW 6020	Metals by ICP/MS	Victoria Than
SW 7470A	Mercury	Riddhi Patel
SW 7199	Hexavalent Chromium	Jorge Arriaga

## Section 2.0

# Summary Table of Final Results



**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 951370  
**Date Received:** February 1, 2006

## Analytical Results Summary

**METALS ANALYSIS: Total Metal Analyses as Requested**

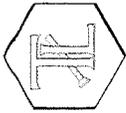
Lab I.D.	Sample ID	Date of Analysis:	Time Coll.	Aluminum EPA 6010B	Antimony EPA 6020	Arsenic EPA 6020	Barium EPA 6010B	Beryllium EPA 6020	Cadmium EPA 6020	Chromium EPA 6010B	Cobalt EPA 6020	Copper EPA 6020	Lead EPA 6020
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
951370-1	SC-100B-WDR-032	14:00		ND	ND	ND	ND	---	---	2.28	---	ND	ND
951370-2	SC-700B-WDR-032	14:05		ND	ND	ND	ND	---	---	ND	---	ND	ND
951370-3	SC-701-WDR-032	14:10		---	ND	ND	ND	ND	ND	ND	ND	ND	ND

Lab I.D.	Sample ID	Date of Analysis:	Time Coll.	Magnesium EPA 6010B	Manganese EPA 6010B	Mercury EPA 7470A	Molybdenum EPA 6020	Nickel EPA 6010B	Selenium EPA 6020	Silver EPA 6020	Thallium EPA 6020	Vanadium EPA 6020	Zinc EPA 6010B
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
951370-1	SC-100B-WDR-032	14:00		---	ND	---	0.0102	ND	---	---	---	---	ND
951370-2	SC-700B-WDR-032	14:05		---	ND	---	0.0062	ND	---	---	---	---	0.0208
951370-3	SC-701-WDR-032	14:10		---	---	ND	0.0471	ND	ND	ND	ND	0.0332	0.0429

Lab I.D.	Sample ID	Date of Analysis:	Time Coll.	Boron EPA 6010B	Calcium EPA 6010B	Iron EPA 6010B	Potassium EPA 6010B	Sodium EPA 6010B
				mg/L	mg/L	mg/L	mg/L	mg/L
951370-1	SC-100B-WDR-032	14:00		1.38	---	ND	---	---
951370-2	SC-700B-WDR-032	14:05		1.45	---	ND	---	---
951370-3	SC-701-WDR-032	14:10		---	---	---	---	---

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

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612  
**Attention:** Shawn Duffy

**Laboratory No.:** 951370  
**Date Received:** February 1, 2006

**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>EPA 150.1</u> pH	<u>EPA 120.1</u> EC	<u>EPA 160.1</u> TDS	<u>EPA 180.1</u> Turbidity	<u>SW 7199</u> Hexavalent Chromium	<u>EPA 350.2</u> Ammonia
			<u>Units</u>	<u>µmhos/cm</u>	<u>mg/L</u>	<u>NTU</u>	<u>mg/L</u>	<u>mg/L</u>
951370-1	SC-100B-WDR-032	14:00	7.42	11000	6040	ND	2.41	1.09
951370-2	SC-700B-WDR-032	14:05	8.13	7450	4440	ND	ND	0.700
951370-3	SC-701-WDR-032	14:10	8.07	40100	24000	---	ND	---

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>EPA 300.0</u> Fluoride	<u>EPA 300.0</u> Sulfate	<u>EPA 300.0</u> Nitrate as N	<u>EPA 354.1</u> Nitrite as N
			<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>	<u>mg/L</u>
951370-1	SC-100B-WDR-032	14:00	2.79	742	3.49	0.0070
951370-2	SC-700B-WDR-032	14:05	1.92	528	2.81	ND
951370-3	SC-701-WDR-032	14:10	10.8	---	---	---

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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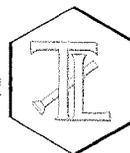
Section 3.0

# Final Reports

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



## REPORT

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02PH06B

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
951370-1	SC-100B-WDR-032	07:00	pH Units	0.0570	2.00	7.42
951370-2	SC-700B-WDR-032	07:05	pH Units	0.0570	2.00	8.13
951370-3	SC-701-WDR-032	07:10	pH Units	0.0570	2.00	8.07

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	951370-1	7.42	7.43	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.01	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	+ 0.100 Units	Yes
LCS #2	7.02	7.00	0.02	+ 0.100 Units	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

**Attention:** Shawn Duffy

**Laboratory No.:** 951370

**Sample:** Three (3) Groundwater Samples

**Date:** February 17, 2006

**Project Name:** PG&E Topock Project

**Collected:** February 1, 2006

**Project No.:** 334168.IM.04.00

**Received:** February 1, 2006

**P.O. No.:** 911248

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02EC06A

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951370-1	SC-100B-WDR-032	µmhos/cm	EPA 120.1	10.0	20.0	11000
951370-2	SC-700B-WDR-032	µmhos/cm	EPA 120.1	10.0	20.0	7450
951370-3	SC-701-WDR-032	µmhos/cm	EPA 120.1	10.0	20.0	40100

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951391-3	180	179	0.56%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	671	706	95.0%	90% - 110%	Yes
CVS#1	924	998	92.6%	90% - 110%	Yes
LCS	671	706	95.0%	90% - 110%	Yes
LCSD	672	706	95.2%	90% - 110%	Yes

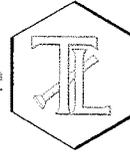
Respectfully submitted,  
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Mona Nassimi, Manager  
Analytical Services

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**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02TDS06A

**Investigation:**

**Total Dissolved Solids by EPA 160.1**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
951370-1	SC-100B-WDR-032	mg/L	EPA 160.1	312	6040
951370-2	SC-700B-WDR-032	mg/L	EPA 160.1	250	4440
951370-3	SC-701-WDR-032	mg/L	EPA 160.1	1250	24000

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-2	4440	4440	0.00%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	492	500	98.4%	90% - 110%	Yes
LCS 2	497	500	99.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

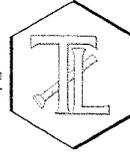
RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
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Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02TUC06B

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951370-1	SC-100B-WDR-032	14:00	NTU	1.00	0.100	ND
951370-2	SC-700B-WDR-005	14:05	NTU	1.00	0.100	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951363-88	0.177	0.180	1.68%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.10	8.00	101%	90% - 110%	Yes
LCS	8.00	8.00	100%	90% - 110%	Yes
LCS	8.12	8.00	102%	90% - 110%	Yes

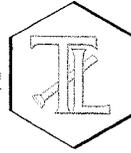
ND: Below the reporting limit (Not Detected).  
DF: Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Prep. Batch:** 02CrH06B

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02CrH06B

**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
951370-1	SC-100B-WDR-032	14:00	07:16	mg/L	200	0.0400	2.41
951370-2	SC-700B-WDR-032	14:05	09:39	mg/L	5.00	0.0010	ND
951370-3	SC-701-WDR-032	14:10	10:16	mg/L	10.0	0.0020	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-1	2.41	2.47	2.46%	< 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	951370-1	2.41	200	0.0200	4.00	6.46	6.41	101%	75-125%	Yes
MS	951370-2	0.00	5.00	0.00100	0.00500	0.00524	0.00500	105%	75-125%	Yes
MS	951370-3	0.00	10.0	0.00100	0.0100	0.0113	0.0100	113%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00484	0.00500	96.8%	90% - 110%	Yes
MRCVS#1	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#2	0.0101	0.0100	101%	90% - 110%	Yes
LCS	0.00504	0.00500	101%	90% - 110%	Yes
LCSD	0.00503	0.00500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

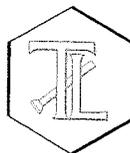
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**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 3, 2006

**Analytical Batch:** 02NH306A

**Investigation:** Ammonia as N by Method EPA 350.2

### Analytical Results Ammonia as N

TLI I.D.	Field I.D.	Sample Time	Method	Units	DF	RL	Results
951370-1	SC-100B-WDR-032	14:00	EPA 350.2	mg/L	1.00	0.500	1.09
951370-2	SC-700B-WDR-032	14:05	EPA 350.2	mg/L	1.00	0.500	0.700

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-1	1.09	1.15	5.4%	≤ 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	951370-2	0.70	1.00	10.0	10.0	9.08	10.7	83.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.58	10.0	95.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

*Mona Nassimi*  
Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02AN06B

**Investigation:** Fluoride by Ion Chromatography using EPA 300.0

### Analytical Results Fluoride

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
951370-1	SC-100B-WDR-032	14:00	11:43	mg/L	1.00	0.200	2.79
951370-2	SC-700B-WDR-032	14:05	11:23	mg/L	1.00	0.200	1.92
951370-3	SC-701-WDR-032	14:10	14:19	mg/L	5.00	1.00	10.8

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-2	1.92	1.88	2.11%	≤ 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	951370-2	1.92	1.00	2.00	2.00	3.85	3.92	96.5%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	4.09	4.00	102%	90% - 110%	Yes
MRCVS#1	3.08	3.00	103%	90% - 110%	Yes
MRCVS#2	3.12	3.00	104%	90% - 110%	Yes
MRCVS#3	3.12	3.00	104%	90% - 110%	Yes
LCS	4.08	4.00	102%	90% - 110%	Yes
LCSD	4.10	4.00	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

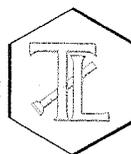
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155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02AN06B

**Investigation:**

**Sulfate by Method EPA 300.0**

### Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
951370-1	SC-100B-WDR-032	14:00	13:59	mg/L	50.0	25.0	742
951370-2	SC-700B-WDR-032	14:05	14:09	mg/L	50.0	25.0	528

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-2	528	540	2.25%	≤ 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	951370-2	528	50.0	10.0	500	1060	1028	106%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	20.2	20.0	101%	90% - 110%	Yes
MRCVS#1	15.3	15.0	102%	90% - 110%	Yes
MRCVS#2	15.3	15.0	102%	90% - 110%	Yes
MRCVS#3	15.3	15.0	102%	90% - 110%	Yes
LCS	20.3	20.0	102%	90% - 110%	Yes
LCSD	20.3	20.0	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Laboratory No.:** 951370

**Attention:** Shawn Duffy  
**Sample:** Three (3) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 17, 2006  
**Collected:** February 1, 2006  
**Received:** February 1, 2006  
**Prep/ Analyzed:** February 2, 2006  
**Analytical Batch:** 02AN06B

**Investigation:** Nitrate as N by Ion Chromatography using EPA 300.0

### Analytical Results Nitrate as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
951370-1	SC-100B-WDR-032	14:00	11:43	mg/L	1.00	0.200	3.49
951370-2	SC-700B-WDR-032	14:05	11:23	mg/L	1.00	0.200	2.81

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-2	2.81	2.88	2.46%	≤ 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	951370-2	2.81	1.00	3.00	3.00	5.73	5.81	97.3%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	3.96	4.00	99.0%	90% - 110%	Yes
MRCVS#1	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#2	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#3	2.97	3.00	99.0%	90% - 110%	Yes
LCS	3.97	4.00	99.3%	90% - 110%	Yes
LCSD	3.97	4.00	99.3%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

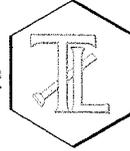
Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

*Mona Nassimi*  
Mona Nassimi, Manager  
Analytical Services

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## REPORT

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TUSTIN, CALIFORNIA 92780-7008  
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www.truesdail.com

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Date:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Prep/ Analyzed:** February 2, 2006

**Analytical Batch:** 02NO206A

**Investigation:**

Nitrite as N by Method EPA 354.1

### Analytical Results for Nitrite as N

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951370-1	SC-100B-WDR-032	14:00	13:52	mg/L	1.00	0.0050	0.0070
951370-2	SC-700B-WDR-032	14:05	13:54	mg/L	1.00	0.0050	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951370-1	0.0070	0.0076	8.2%	≤ 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	951370-2	0.00	1.00	0.100	0.100	0.104	0.100	104%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.100	0.100	100%	90% - 110%	Yes
MRCVS#1	0.100	0.100	100%	90% - 110%	Yes
LCS	0.197	0.200	98.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

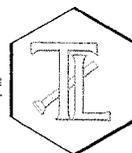
Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



## REPORT

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

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

**Laboratory No.:** 951370

**Attention:** Shawn Duffy

**Reported:** February 17, 2006  
**Collected:** February 1, 2006  
**Received:** February 1, 2006  
**Analyzed:** February 16, 2006

**Samples:** Three (3) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

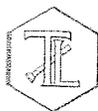
**Investigation:** Total Metal Analyses as Requested

## Analytical Results

SAMPLE ID: SC-100B-WDR-032		Time Collected: 14:00		LAB ID: 951370-1				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	020206A	02/02/06	15:50
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	021606A	02/16/06	13:15
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	021606A	02/16/06	13:15
Barium	EPA 6010B	ND	1.04	mg/L	0.300	020206A	02/02/06	15:50
Chromium	EPA 6010B	2.28	1.04	mg/L	0.0104	020206A	02/02/06	15:50
Copper	EPA 6020	ND	2.08	mg/L	0.0100	021606A	02/16/06	13:15
Lead	EPA 6020	ND	2.08	mg/L	0.0020	021606A	02/16/06	13:15
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	020206A	02/02/06	15:50
Molybdenum	EPA 6020	0.0102	2.08	mg/L	0.0050	021606A	02/16/06	13:15
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	020206A	02/02/06	15:50
Zinc	EPA 6010B	ND	1.04	mg/L	0.0200	020206A	02/02/06	15:50
Boron	EPA 6010B	1.38	1.04	mg/L	0.200	020206A	02/02/06	15:50
Iron	EPA 6010B	ND	1.04	mg/L	0.300	020206A	02/02/06	15:50

SAMPLE ID: SC-700B-WDR-032		Time Collected: 14:05		LAB ID: 951370-2				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	020206A	02/02/06	16:06
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	021606A	02/16/06	13:21
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	021606A	02/16/06	13:21
Barium	EPA 6010B	ND	1.04	mg/L	0.300	020206A	02/02/06	16:06
Chromium	EPA 6010B	ND	1.04	mg/L	0.0010	020906A	02/09/06	11:05
Copper	EPA 6020	ND	2.08	mg/L	0.0100	021606A	02/16/06	13:21
Lead	EPA 6020	ND	2.08	mg/L	0.0020	021606A	02/16/06	13:21
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	020206A	02/02/06	16:06
Molybdenum	EPA 6020	0.0062	2.08	mg/L	0.0050	021606A	02/16/06	13:21
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	020206A	02/02/06	16:06
Zinc	EPA 6010B	0.0208	1.04	mg/L	0.0200	020206A	02/02/06	16:06
Boron	EPA 6010B	1.45	1.04	mg/L	0.200	020206A	02/02/06	16:06
Iron	EPA 6010B	ND	1.04	mg/L	0.300	020206A	02/02/06	16:06

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TRUESDAIL LABORATORIES, INC.

Report Continued

SAMPLE ID: SC-701-WDR-032		Time Collected: 14:10		LAB ID: 951370-3				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 6020	ND	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Arsenic	EPA 6020	ND	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Barium	EPA 6010B	ND	1.04	mg/L	0.300	020206A	02/02/06	16:10
Beryllium	EPA 6020	ND	10.4	mg/L	0.0052	021606A	02/16/06	13:26
Cadmium	EPA 6020	ND	10.4	mg/L	0.0052	021606A	02/16/06	13:26
Chromium	EPA 6010B	ND	1.04	mg/L	0.0010	020906A	02/09/06	11:09
Cobalt	EPA 6020	ND	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Copper	EPA 6020	ND	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Lead	EPA 6020	ND	10.4	mg/L	0.0052	021606A	02/16/06	13:26
Mercury	EPA 7470A	ND	1.00	mg/L	0.00020	021306A	02/13/06	NA
Molybdenum	EPA 6020	0.0471	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	020206A	02/02/06	16:10
Selenium	EPA 6020	ND	10.4	mg/L	0.0208	021606A	02/16/06	13:26
Silver	EPA 6020	ND	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Thallium	EPA 6020	ND	10.4	mg/L	0.0052	021606A	02/16/06	13:26
Vanadium	EPA 6020	0.0332	10.4	mg/L	0.0104	021606A	02/16/06	13:26
Zinc	EPA 6010B	0.0429	1.04	mg/L	0.0200	020206A	02/02/06	16:10

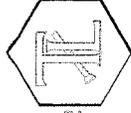
ND: Not detected, or below limit of detection.

DF :Dilution factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL

155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Samples:** Three (3) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951370

**Reported:** February 17, 2006

**Collected:** February 1, 2006

**Received:** February 1, 2006

**Investigation:** Total Metal Analyses as Requested

## Quality Control/Quality Assurance Report

Parameter	Method	Batch	Units	BLANK		MRCCS		MRCVS					
				Blank	RL	Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Chromium	EPA 6010B	020206A	mg/L	ND	0.0100	4.81	5.00	96.2%	90-110%	4.94	5.00	98.8%	90-110%

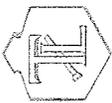
### LABORATORY CONTROL SAMPLES

Parameter	Method	Units	LCS Obs.	LCS Theo.	% Rec.	Control Limits	SAMPLE DUPLICATES			Precision Control Limits %	
							SAMPLE RESULT	DUP RESULT	% RPD		
Chromium	EPA 6010B	mg/L	4.95	5.00	99.0%	90-110%	951370-1	2.28	2.29	0.44%	≤20

### MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %

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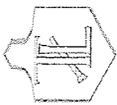
TRUESDAL LABORATORIES, INC.

Report Continued

Parameter	Method	Batch	Units	Blank	RL	MRCCS			MRCVS				
						Observed Value	TRUE Value	% Rec	Control Limits	Observed Value	TRUE Value	% Rec	Control Limits %
Aluminum	EPA 6010B	020206A	mg/L	ND	0.0500	4.87	5.00	97.4%	90-110%	4.92	5.00	98.4%	90-110%
Antimony	EPA 6020	021606A	mg/L	ND	0.0030	0.0491	0.0500	98.2%	90-110%	0.0473	0.0500	94.6%	90-110%
Arsenic	EPA 6020	021606A	mg/L	ND	0.0050	0.0509	0.0500	102%	90-110%	0.0469	0.0500	93.8%	90-110%
Barium	EPA 6010B	020206A	mg/L	ND	0.300	4.87	5.00	97.4%	90-110%	4.92	5.00	98.4%	90-110%
Beryllium	EPA 6020	021606A	mg/L	ND	0.0010	0.0495	0.0500	99.0%	90-110%	0.0525	0.0500	105%	90-110%
Cadmium	EPA 6020	021606A	mg/L	ND	0.0020	0.0477	0.0500	95.4%	90-110%	0.0465	0.0500	93.0%	90-110%
Chromium	EPA 6010B	020906A	mg/L	ND	0.0010	0.0102	0.0100	102%	90-110%	0.00973	0.0100	97.3%	90-110%
Cobalt	EPA 6020	021606A	mg/L	ND	0.0050	0.0496	0.0500	99.2%	90-110%	0.0460	0.0500	92.0%	90-110%
Copper	EPA 6020	021606A	mg/L	ND	0.0100	0.0501	0.0500	100%	90-110%	0.0457	0.0500	91.4%	90-110%
Lead	EPA 6020	021606A	mg/L	ND	0.0020	0.0496	0.0500	99.2%	90-110%	0.0476	0.0500	95.2%	90-110%
Manganese	EPA 6010B	020206A	mg/L	ND	0.500	4.93	5.00	98.6%	90-110%	4.96	5.00	99.2%	90-110%
Mercury	EPA 7470A	021306A	mg/L	ND	0.00020	0.00096	0.00100	96.0%	90-110%	0.00091	0.00100	91.0%	80-120%
Molybdenum	EPA 6020	021606A	mg/L	ND	0.0050	0.0486	0.0500	97.2%	90-110%	0.0462	0.0500	92.4%	90-110%
Nickel	EPA 6010B	020206A	mg/L	ND	0.0200	4.93	5.00	98.6%	90-110%	5.02	5.00	100%	90-110%
Selenium	EPA 6020	021606A	mg/L	ND	0.0050	0.0495	0.0500	99.0%	90-110%	0.0468	0.0500	93.6%	90-110%
Silver	EPA 6020	021606A	mg/L	ND	0.0050	0.0480	0.0500	96.0%	90-110%	0.0466	0.0500	93.2%	90-110%
Thallium	EPA 6020	021606A	mg/L	ND	0.0010	0.0499	0.0500	99.8%	90-110%	0.0479	0.0500	95.8%	90-110%
Vanadium	EPA 6020	021606A	mg/L	ND	0.0050	0.0499	0.0500	99.8%	90-110%	0.0464	0.0500	92.8%	90-110%
Zinc	EPA 6010B	020206A	mg/L	ND	0.0200	4.96	5.00	99.2%	90-110%	5.14	5.00	103%	90-110%
Boron	EPA 6010B	020206A	mg/L	ND	0.200	4.82	5.00	96.4%	90-110%	4.91	5.00	98.2%	90-110%
Iron	EPA 6010B	020206A	mg/L	ND	0.300	4.74	5.00	94.8%	90-110%	4.86	5.00	97.2%	90-110%

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MATRIX SPIKE

Sample ID	Parameter	Method	Units	Sample Result	DF	Spike Level	Total Amt. of Spike	Theo. Value	MS Obs.	% Rec.	Accuracy Control Limits %
951370-1	Aluminum	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.75	106%	75-125%
951370-3	Antimony	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.562	108%	75-125%
951370-3	Arsenic	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.544	105%	75-125%
951370-1	Barium	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.67	103%	75-125%
951370-3	Beryllium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.427	82.1%	75-125%
951370-3	Cadmium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.537	103%	75-125%
951563-2	Chromium	EPA 6010B	mg/L	0.0064	1.04	0.0100	0.0104	0.0168	0.0156	88.5%	75-125%
951370-3	Cobalt	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.451	86.7%	75-125%
951370-3	Copper	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.464	89.2%	75-125%
951370-3	Lead	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.458	88.1%	75-125%
951370-1	Manganese	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.63	101%	75-125%
951370-3	Mercury	EPA 7470A	mg/L	0.00	1.00	0.00100	0.00100	0.00100	0.00083	83.0%	75-125%
951370-3	Molybdenum	EPA 6020	mg/L	0.0471	10.4	0.0500	0.520	0.567	0.568	100%	75-125%
951370-1	Nickel	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.54	97.7%	75-125%
951370-3	Selenium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.597	115%	75-125%
951370-3	Silver	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.487	93.7%	75-125%
951370-3	Thallium	EPA 6020	mg/L	0.00	10.4	0.0500	0.520	0.520	0.466	89.6%	75-125%
951370-3	Vanadium	EPA 6020	mg/L	0.0332	10.4	0.0500	0.520	0.553	0.479	85.7%	75-125%
951370-1	Zinc	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.81	108%	75-125%
951370-1	Boron	EPA 6010B	mg/L	1.38	1.04	2.50	2.60	3.98	4.21	109%	75-125%
951370-1	Iron	EPA 6010B	mg/L	0.00	1.04	2.50	2.60	2.60	2.61	100%	75-125%

ND: Not detected, or below limit of detection.

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager  
Analytical Services



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-032] **951370**

COC Number \_\_\_\_\_  
 TURNAROUND TIME 5 Days  
 DATE \_\_\_\_\_ PAGE 1 OF 1

COMPANY	CH2M HILL	
PROJECT NAME	PG&E Topock	
PHONE	(510) 251-2888	FAX (510) 622-7086
ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	
P.O. NUMBER	334168.IM.04.00	
SAMPLERS (SIGNATURE)	<i>Bill Decker</i>	

SAMPLE I.D.	DATE	TIME	DESCRIPTION	NUMBER OF CONTAINERS											COMMENTS	
				CR6 (7199) Lab Filtered	Total Met (6010B) Title 22	Total Met (6010B) Total Al, Ba, B, Cr, Cu, Pb, Mn, Mo, Ni, Fe, Zn, Sb	Metals (7470A)	Specific Conductance (120.1)	PH (150.1)	TDS (160.1)	Anions (300) FI	Anions (300) FI, SO4, NO2, NO3	Ammonia (350.2)	Turbidity (180.1)		
SC-100B-WDR-032	2-1-06	14:00	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	PH=2
SC-700B-WDR-032	2-1-06	14:05	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	
SC-701-WDR-032	2-1-06	14:10	Groundwater	X	X	X	X	X	X	X	X	X	X	X	X	
				TOTAL NUMBER OF CONTAINERS											12	

Rec'd 02/10/06  
**951370**

**ALERT!!**  
 Level III QC

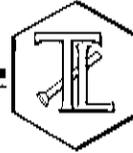
For Sample Conditions  
 See Form Attached

**RUSH**

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL	WARM	°F
<i>[Signature]</i>	BLANK	Agency	2-1-06 14:15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>[Signature]</i>	Shana Decker	Agency	2-1-06 19:30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>[Signature]</i>	KED. PAULSEN	EXECUTIVE Agency	2/1/06	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES	NO	
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time				
Signature (Received)	Printed Name	Company/ Agency	Date/ Time				

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

February 14, 2006

CH2M HILL  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-033 PROJECT GROUNDWATER  
MONITORING,  
TLI NO.: 951608

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-033 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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 sample was received and delivered with the chain of custody on February 8, 2006, intact and in chilled condition. The sample 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.

Upon receipt, the Total Chromium SC-700B-WDR-033 sample was preserved with Nitric Acid since its pI was measured at 8 pH units.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

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www.truesdail.com

**Laboratory No.:** 951608

**Date:** February 15, 2006

**Collected:** February 8, 2006

**Received:** February 8, 2006

## ANALYST LIST

EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 180.1	Turbidity	Gautam Savani
SW 6010B	Total Chromium	Riddhi Patel
SW 7199	Hexavalent Chromium	Jorge Arriaga

## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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**Client:** CH2M HILL

155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Date Received:** February 8, 2006

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 6010B</u> Chromium Total mg/L	<u>SW 7199</u> Chromium Hexavalent mg/L	<u>EPA 180.1</u> Turbidity NTU	<u>EPA 150.1</u> pH Unit	<u>EPA 120.1</u> EC $\mu$ mhos/cm	<u>EPA 160.1</u> TDS mg/L
951608	SC-700B-WDR-033	12.08	ND	ND	ND	8.14	7650	4230

**ND:** Non Detected (below reporting limit)

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

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

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

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

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## Section 3.0

# Final Reports

# TRUESDAIL LABORATORIES, INC.

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## REPORT

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 15, 2006  
**Collected:** February 8, 2006  
**Received:** February 8, 2006  
**Prep/ Analyzed:** February 9, 2006  
**Analytical Batch:** 02CrH06F

**Investigation:**

**Hexavalent Chromium by SW 7199**

### Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	12:08	07:21	mg/L	5.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951609-3	0.785	0.796	1.39%	≤ 20%	Yes

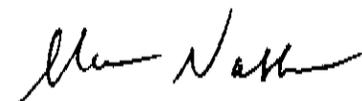
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	951608	0.000293	1.06	0.00100	0.00106	0.00136	0.00135	101%	75-125%	Yes
MS	951608	0.00	5.00	0.00100	0.00500	0.00564	0.00500	113%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00494	0.00500	98.8%	90% - 110%	Yes
MRCVS#1	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#2	0.00994	0.0100	99.4%	90% - 110%	Yes
MRCVS#3	0.00982	0.0100	98.2%	90% - 110%	Yes
LCS	0.00502	0.00500	100%	90% - 110%	Yes
LCSD	0.00504	0.00500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Sample:** One (1) Groundwater Sample

**Date:** February 15, 2006

**Project Name:** PG&E Topock Project

**Collected:** February 8, 2006

**Project No.:** 334168.IM.04.00

**Received:** February 8, 2006

**P.O. No.:** 911248

**Prep/ Analyzed:** February 13, 2006

**Prep. Batch:** 021306A

**Analytical Batch:** 021306A

**Investigation:**

**Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B**

### Analytical Results Total Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>Run Time</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	mg/L	SW 6010B	13:47	1.04	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951609-8	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	951609-8	0.00	1.04	0.0100	0.0104	0.00928	0.0104	89.2%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00999	0.0100	99.9%	90% - 110%	Yes
MRCVS#1	0.00972	0.0100	97.2%	90% - 110%	Yes
MRCVS#2	0.00969	0.0100	96.9%	90% - 110%	Yes
ICS	0.00993	0.0100	99.3%	80% - 120%	Yes
LCS	0.00990	0.0100	99.0%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

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

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 15, 2006  
**Collected:** February 8, 2006  
**Received:** February 8, 2006  
**Prep/ Analyzed:** February 10, 2006  
**Analytical Batch:** 02EC06B

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	µmhos/cm	EPA 120.1	10.0	20.0	7650

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951631	341	342	0.29%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	672	706	95.2%	90% - 110%	Yes
CVS#1	921	998	92.3%	90% - 110%	Yes
CVS#2	922	998	92.4%	90% - 110%	Yes
LCS	673	706	95.3%	90% - 110%	Yes
LCSD	675	706	95.6%	90% - 110%	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 15, 2006  
**Collected:** February 8, 2006  
**Received:** February 8, 2006  
**Prep/ Analyzed:** February 9, 2006  
**Analytical Batch:** 02PH06F

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

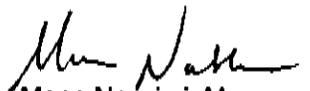
<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	12:08	07:15	pH Units	0.0570	2.00	8.14

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance Limits	QC Within Control
Duplicate	951607-1	7.57	7.58	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.01	7.00	0.01	+ 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	+ 0.100 Units	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 951608

**Sample:** One (1) Groundwater Sample

**Date:** February 15, 2006

**Project Name:** PG&E Topock Project

**Collected:** February 8, 2006

**Project No.:** 334168.IM.04.00

**Received:** February 8, 2006

**P.O. No.:** 911248

**Prep/ Analyzed:** February 9, 2006

**Analytical Batch:** 02TDS06D

**Investigation:**

**Total Dissolved Solids by EPA 160.1**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	mg/L	EPA 160.1	250	4230

### QA/QC Summary

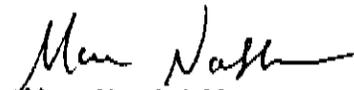
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	951608	4230	4230	0.00%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	496	500	99.2%	90% - 110%	Yes
LCS 2	497	500	99.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951608

**Date:** February 15, 2006

**Collected:** February 8, 2006

**Received:** February 8, 2006

**Prep/ Analyzed:** February 9, 2006

**Analytical Batch:** 02TUC06J

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951608	SC-700B-WDR-033	12:08	NTU	1.00	0.100	ND

### QA/QC Summary

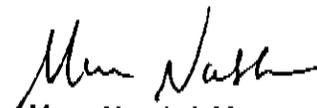
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951600-79	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.75	8.00	96.9%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes
LCS	7.72	8.00	96.5%	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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951608

**CHAIN OF CUSTODY RECORD**  
 (IM3Plant-WDR-033)

TRUESDAIL LABORATORIES, INC.  
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COC Number \_\_\_\_\_  
 TURNAROUND TIME 5 Days  
 DATE 02-08-06 PAGE 1 OF 1

COMPANY CH2M HILL		DATE 02-08-06		TIME 12:08		DESCRIPTION Groundwater	
PROJECT NAME PG&E Topock		SAMPLE I.D. SC-700B-WDR-033		TURBIDITY (180.1)		X	
PHONE (510) 251-2888		FAX (510) 622-7086		TDS (160.1)		X	
ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612		P.O. NUMBER 334168.IM.04.00		PH (150.1)		X	
SAMPLERS SIGNATURE 		SAMPLER TYPE CR6 (7199) Lab Filtered		Specific Conductance (120.1)		X	
		Total Mer (6010B) Total Chromium		X		X	
		Rec'd 02/08/06		51608		3	
						3	
						PH 27	
						TOTAL NUMBER OF CONTAINERS	
						COMMENTS	

**For Sample Conditions  
See Form Attached**

**ALERT!!  
Level III QC**

**RUSH**

<b>CHAIN OF CUSTODY SIGNATURE RECORD</b>		<b>CHAIN OF CUSTODY SIGNATURE RECORD</b>	
Signature (Relinquished)	Printed Name <i>[Signature]</i>	Company/ Agency ENVIRONMENTAL	Date/ Time 02-08-06 12:15
Signature (Received)	Printed Name J. Brown	Company/ Agency TLI	Date/ Time 2-8-06 20:00
Signature (Relinquished)	Printed Name M.L.	Company/ Agency EXECUTIVE	Date/ Time 02/08/06 20:00
Signature (Received)	Printed Name M.L.	Company/ Agency	Date/ Time
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time

SAMPLE CONDITIONS  
 RECEIVED COOL  WARM  °F \_\_\_\_\_  
 CUSTODY SEALED YES  NO

SPECIAL REQUIREMENTS:

**ALERT!!  
Level III QC**

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

February 28, 2006

CH2M HILL  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-034 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 951860

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-034 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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.

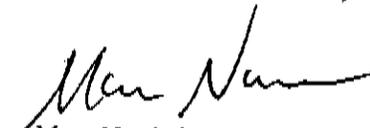
The samples were received and delivered with the chain of custody on February 15, 2006, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

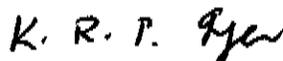
Upon receipt, the Total Chromium SC-700B-WDR-034 sample was preserved with Nitric Acid since its pH was measured at 7 pH units.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi  
Manager, Analytical Services

  
K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

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(714) 730-6239 · FAX (714) 730-6462  
[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 951860

**Date:** February 22, 2006

**Collected:** February 15, 2006

**Received:** February 15, 2006

## ANALYST LIST

EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Hope Trinidad
EPA 180.1	Turbidity	Gautam Savani
SW 6010B	Total Chromium	Riddhi Patel
SW 7199	Hexavalent Chromium	Jorge Arriaga

## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612  
**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 951860  
**Date Received:** February 15, 2006

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 6010B</u> Chromium Total mg/L	<u>SW 7199</u> Chromium Hexavalent mg/L	<u>EPA 180.1</u> Turbidity NTU	<u>EPA 150.1</u> pH	<u>EPA 120.1</u> EC	<u>EPA 160.1</u> TDS
			mg/L	mg/L	NTU	Unit	$\mu$ mhos/cm	mg/L
951860	SC-700B-WDR-034	13:25	ND	ND	ND	8.07	7750	4140

**ND:** Non Detected (below reporting limit)

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

- Results below 0.01 will have two (2) significant figures.
- Result above or equal to 0.01 will have three (3) significant figures.
- Quality Control data will always have three (3) significant figures.

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Section 3.0

# Final Reports

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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## REPORT

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 951860

**Date:** February 22, 2006  
**Collected:** February 15, 2006  
**Received:** February 15, 2006  
**Prep/ Analyzed:** February 16, 2006  
**Analytical Batch:** 02CrH060

**Investigation:**

**Hexavalent Chromium by SW 7199**

### Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	13:25	09:32	mg/L	5.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951858-28	0.0155	0.0155	0.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	951860	0.00	5.00	0.00100	0.00500	0.00512	0.00500	102%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00504	0.00500	101%	90% - 110%	Yes
MRCVS#1	0.00993	0.0100	99.3%	90% - 110%	Yes
MRCVS#2	0.00982	0.0100	98.2%	90% - 110%	Yes
MRCVS#3	0.00983	0.0100	98.3%	90% - 110%	Yes
MRCVS#4	0.00981	0.0100	98.1%	90% - 110%	Yes
LCS	0.00505	0.00500	101%	90% - 110%	Yes
LCSD	0.00508	0.00500	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

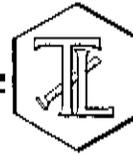
Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

*Mona Nassimi*  
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 these laboratories.

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 951860

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248  
**Prep. Batch:** 021606A

**Date:** February 22, 2006  
**Collected:** February 15, 2006  
**Received:** February 15, 2006  
**Prep/ Analyzed:** February 16, 2006  
**Analytical Batch:** 021606A

**Investigation:** Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B

### Analytical Results Total Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>Run Time</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	mg/L	SW 6010B	13:26	1.04	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	951691-1	0.0346	0.0358	3.41%	≤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	951691-3	0.0486	5.21	0.0100	0.0521	0.105	0.101	108%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00970	0.0100	97.0%	90% - 110%	Yes
MRCVS#1	0.0104	0.0100	104%	90% - 110%	Yes
ICS	0.00995	0.0100	99.5%	80% - 120%	Yes
LCS	0.0101	0.0100	101%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager  
Analytical Services

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www.truesdail.com

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951860

**Date:** February 22, 2006

**Collected:** February 15, 2006

**Received:** February 15, 2006

**Prep/ Analyzed:** February 16, 2006

**Analytical Batch:** 02TUC060

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	13:25	NTU	1.00	0.100	ND

### QA/QC Summary

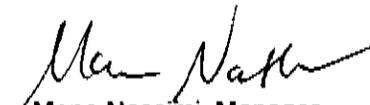
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	951794-5	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.96	8.00	99.5%	90% - 110%	Yes
LCS	7.95	8.00	99.4%	90% - 110%	Yes
LCS	7.90	8.00	98.8%	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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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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155 Grand Ave. Suite 1000  
Oakland, CA 94612

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**Attention:** Shawn Duffy

**Laboratory No.:** 951860

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 22, 2006  
**Collected:** February 15, 2006  
**Received:** February 15, 2006  
**Prep/ Analyzed:** February 16, 2006  
**Analytical Batch:** 02EC06D

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	µmhos/cm	EPA 120.1	10.0	20.0	7750

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	951777-1	1200	1200	0.00%	≤ 10%	Yes
QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control	
CCS	677	706	95.9%	90% - 110%	Yes	
CVS#1	921	998	92.3%	90% - 110%	Yes	
LCS	671	706	95.0%	90% - 110%	Yes	
LCSD	672	706	95.2%	90% - 110%	Yes	

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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**Client:** CH2M HILL  
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## REPORT

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www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 951860

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 22, 2006  
**Collected:** February 15, 2006  
**Received:** February 15, 2006  
**Prep/ Analyzed:** February 16, 2006  
**Analytical Batch:** 02PH06K

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

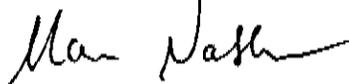
<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	13:25	07:10	pH Units	0.0570	2.00	8.07

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance Limits	QC Within Control
Duplicate	951860	8.07	8.08	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.02	7.00	0.02	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	+ 0.100 Units	Yes

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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**Attention:** Shawn Duffy

**Laboratory No.:** 951860

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Date:** February 22, 2006  
**Collected:** February 15, 2006  
**Received:** February 15, 2006  
**Prep/ Analyzed:** February 16, 2006  
**Analytical Batch:** 02TDS06G

**Investigation:** Total Dissolved Solids by EPA 160.1

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
951860	SC-700B-WDR-034	mg/L	EPA 160.1	250	4140

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance Limits	QC Within Control
Duplicate	951860	4140	4180	0.48%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	518	500	104%	90% - 110%	Yes
LCS 2	499	500	99.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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CHAIN OF CUSTODY RECORD

[IM3] Plant-WDR-034

951860

COC Number

5 Days

TURNAROUND TIME

DATE 2-15-06 PAGE 1 OF 1

COMPANY	PROJECT NAME	PHONE	ADDRESS	P.O. NUMBER	SAMPLERS (SIGNATURE)	CH2M HILL	PG&E Topock	(510) 251-2888	FAX (510) 622-7086	155 Grand Ave Ste 1000	Oakland, CA 94612	334168.IM.04.00	SAMPLERS (SIGNATURE)	DATE	TIME	DESCRIPTION	CR6 (7199) Lab Filtered	Total Me (60108) Total Chromium	Specific Conductance (120.1)	pH (150.1)	TDS (160.1)	Turbidity (180.1)	COMMENTS
																	x	x	x	x	x	x	
																	x	x	x	x	x	x	
																	x	x	x	x	x	x	
																	x	x	x	x	x	x	
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																	x	x	x	x	x	x	
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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

March 1, 2006

CH2M HILL  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-035 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 952058

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-035 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, 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 February 22, 2006, 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.

Upon receipt, the Total Chromium SC-700B-WDR-035 sample was preserved with Nitric Acid since its pH was measured at 7 pH units.

No violations or nonconformance actions occurred for this data package.

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

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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## REPORT

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**Laboratory No.:** 952058

**Date:** March 1, 2006

**Collected:** February 22, 2006

**Received:** February 22, 2006

## ANALYST LIST

EPA 120.1	Specific Conductivity	Alex Hernandez
EPA 150.1	pH	Alex Hernandez
EPA 160.1	Total Dissolved Solids	Emilia Haley
EPA 180.1	Turbidity	Gautam Savani
SW 6010B	Total Chromium	Riddhi Patel
SW 7199	Hexavalent Chromium	Jorge Arriaga

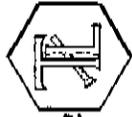
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## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612  
**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 952058  
**Date Received:** February 22, 2006

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 6010B</u> Chromium Total mg/L	<u>SW 7199</u> Chromium Hexavalent mg/L	<u>EPA 180.1</u> Turbidity NTU	<u>EPA 150.1</u> pH Unit	<u>EPA 120.1</u> EC $\mu$ mhos/cm	<u>EPA 160.1</u> TDS mg/L
952058	SC-700B-WDR-035	12:50	ND	ND	ND	7.76	7600	4190

ND: Non Detected (below reporting limit)

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

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

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

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

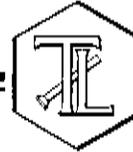
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## Section 3.0

# Final Reports

# TRUESDAIL LABORATORIES, INC.

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## REPORT

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248  
**Prep. Batch:** 022706A

**Laboratory No.:** 952058

**Date:** March 1, 2006  
**Collected:** February 22, 2006  
**Received:** February 22, 2006  
**Prep/ Analyzed:** February 27, 2006  
**Analytical Batch:** 022706A

**Investigation:**

**Total Chromium by Inductively Coupled Argon Plasma  
Using Method SW 6010B**

### Analytical Results Total Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>Run Time</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	mg/L	SW 6010B	14:23	1.04	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	952058	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	952058	0.00	1.04	0.0100	0.0104	0.0101	0.0104	97.1%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#1	0.00998	0.0100	99.8%	90% - 110%	Yes
ICS	0.0103	0.0100	103%	80% - 120%	Yes
LCS	0.0100	0.0100	100%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 952058

**Date:** March 1, 2006  
**Collected:** February 22, 2006  
**Received:** February 22, 2006  
**Prep/ Analyzed:** February 23, 2006  
**Analytical Batch:** 02CrH06Y

**Investigation:**

**Hexavalent Chromium by SW 7199**

### Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	12:50	07:09	mg/L	5.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	952059-1	0.0084	0.0084	0.00%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	952058	0.00022	1.06	0.00100	0.00106	0.00133	0.00128	105%	85-115%	Yes
MS	952058	0.00	5.00	0.00100	0.00500	0.00534	0.00500	107%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00513	0.00500	103%	90% - 110%	Yes
MRCVS#1	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#2	0.0102	0.0100	102%	90% - 110%	Yes
MRCVS#3	0.0101	0.0100	101%	90% - 110%	Yes
MRCVS#4	0.0100	0.0100	100%	90% - 110%	Yes
LCS	0.00508	0.00500	102%	90% - 110%	Yes
LCSD	0.00510	0.00500	102%	90% - 110%	Yes

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

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 952058

**Date:** March 1, 2006

**Collected:** February 22, 2006

**Received:** February 22, 2006

**Prep/ Analyzed:** February 23, 2006

**Analytical Batch:** 02TUC06T

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	12:50	NTU	1.00	0.100	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951968-4	0.105	0.103	1.92%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.97	8.00	99.6%	90% - 110%	Yes
LCS	7.95	8.00	99.4%	90% - 110%	Yes
LCS	7.92	8.00	99.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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## REPORT

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 334168.IM.04.00  
**P.O. No.:** 911248

**Laboratory No.:** 952058

**Date:** March 1, 2006  
**Collected:** February 22, 2006  
**Received:** February 22, 2006  
**Prep/ Analyzed:** February 23, 2006  
**Analytical Batch:** 02PH06N

**Investigation:**

pH by EPA 150.1

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	12:50	07:05	pH Units	0.0570	2.00	7.76

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	952058	7.76	7.77	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.02	7.00	0.02	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	+ 0.100 Units	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

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

**Attention:** Shawn Duffy

**Laboratory No.:** 952058

**Date:** March 1, 2006

**Sample:** One (1) Groundwater Sample

**Collected:** February 22, 2006

**Project Name:** PG&E Topock Project

**Received:** February 22, 2006

**Project No.:** 334168.IM.04.00

**Prep/ Analyzed:** February 24, 2006

**P.O. No.:** 911248

**Analytical Batch:** 02EC06F

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	µmhos/cm	EPA 120.1	10.0	20.0	7600

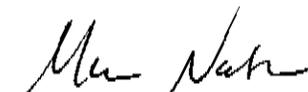
### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	951965	149	151	1.33%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	675	706	95.6%	90% - 110%	Yes
CVS#1	924	998	92.6%	90% - 110%	Yes
CVS#2	925	998	92.7%	90% - 110%	Yes
LCS	673	706	95.3%	90% - 110%	Yes
LCSD	675	706	95.6%	90% - 110%	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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## REPORT

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 952058

**Date:** March 1, 2006

**Collected:** February 22, 2006

**Received:** February 22, 2006

**Prep/ Analyzed:** February 23, 2006

**Analytical Batch:** 02TDS06I

**Investigation:**

**Total Dissolved Solids by EPA 160.1**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
952058	SC-700B-WDR-035	mg/L	EPA 160.1	250	4190

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	951984-4	970	954	0.83%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	520	500	104%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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 14201 Franklin Avenue, Tustin, CA 92780-7008  
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CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-035] **952058**

COC Number \_\_\_\_\_  
 TURNAROUND TIME 5 Days  
 DATE 2-22-06 PAGE 1 OF 1

COMPANY	CH2M HILL	PROJECT NAME	PG&E Topock	PHONE	(510) 251-2888	FAX	(510) 622-7086	ADDRESS	155 Grand Ave Site 1000 Oakland, CA 94612	P.O. NUMBER	334168.IM.04.00	SAMPLERS (SIGNATURE)	<i>David Chas</i>
SAMPLE I.D.	SC-700B-WDR-035	DATE	2-22-06	TIME	12:50	DESCRIPTION	Groundwater	CR6 (7199) Lab Filtered <input checked="" type="checkbox"/> X Total Met (60108) Total Chromium <input checked="" type="checkbox"/> X Specific Conductance (120.1) <input checked="" type="checkbox"/> X pH (150.1) <input checked="" type="checkbox"/> X TDS (160.1) <input checked="" type="checkbox"/> X Turbidity (180.1) <input checked="" type="checkbox"/> X					
COMMENTS: Rec'd 02/22/06 952058													
NUMBER OF CONTAINERS											PH = 7		
TOTAL NUMBER OF CONTAINERS											3		

**For Sample Conditions  
See Form Attached**

**ALERT!!  
Level III QC**

**RUSH**

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	Received	COOL <input checked="" type="checkbox"/> WARM <input type="checkbox"/>
Signature (Received)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	Custody Sealed	YES <input type="checkbox"/> NO <input type="checkbox"/>
Signature (Relinquished)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	SPECIAL REQUIREMENTS:	
Signature (Received)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	RECEIVED	
Signature (Relinquished)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	DATE/TIME	
Signature (Received)	<i>David Chas</i>	Printed Name	David Chas	Company/ Agency	OMI	2-22-06 12:50	

**STL Los Angeles**  
1721 South Grand Avenue  
Santa Ana, CA 92705

Tel: 714 258 8610 Fax: 714 258 0921  
www.stl-inc.com

March 2, 2006

STL LOT NUMBER: **E6B170405**  
PO/CONTRACT: 334168.IM.04.00

Shawn Duffy  
CH2M Hill Inc  
2525 Air Park  
Redding, CA 96001

Dear Mr. Duffy,

This report contains the analytical results for the sample received under chain of custody by STL Los Angeles on February 17, 2006. This sample is associated with your PG&E TOPOCK GWM project.

STL Los Angeles certifies that the test results provided in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of the report. NELAP Certification Number for STL Los Angeles is 01118CA.

Any matrix related anomaly is footnoted within the report. A cooler receipt temperature between 2-6 degrees Celsius is within EPA acceptance criteria. The temperature(s) of the cooler received for this project can be found on the Project Receipt Checklist. Historical control limits for the LCS are used to define the estimate of uncertainty for a method. All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

Preliminary results were sent via facsimile on February 23, 2006.

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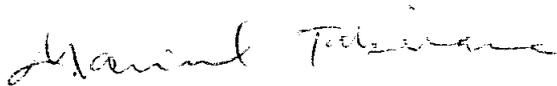
This report contains **000204** \_\_\_\_\_ pages.

## CASE NARRATIVE

The RPD (Relative Percent Difference) for percent moisture in the sample duplicate for Prep Batch # 6051301 exceeded acceptance criteria of 10%. However, please note that the laboratory controls the percent solids and not the percent moisture in the duplicates. In this particular batch, the RPD of the percent solids is 0.1%.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,



Marisol Tabirara  
Project Manager

cc: Project File

Severn Trent Laboratories  
1721 Grand Ave, Santa Ana, CA 92705  
(714)258-8610

**CHAIN OF CUSTODY RECORD**  
[Sludge Sample-6]

COC Number

5 Days

TURNAROUND TIME

DATE PAGE 1 OF 1

COMPANY CH2M HILL  
PROJECT NAME PG&E Topock GWM  
PHONE (510) 251-2888 FAX (510) 622-7086  
ADDRESS 155 Grand Ave Ste 1000  
Oakland, CA 94612  
PHONE NUMBER 334168.IM.04.00 TEAM 1

AMPLERS (SIGNATURE) \_\_\_\_\_  
DATE \_\_\_\_\_ TIME \_\_\_\_\_ DESCRIPTION Soil

SAMPLE I.D.	DATE	TIME	DESCRIPTION	TESTS	COMMENTS
C-6 (7199) Lab Filtered				X	Total Met (6010B) Title 22
				X	
Metals (7470A)				X	Total Met (6010B) Title 22
				X	
NUMBER OF CONTAINERS					
					1
					1
					TOTAL NUMBER OF CONTAINERS

**CHAIN OF CUSTODY SIGNATURE RECORD**

Signature	Printed Name	Company/Agency	Date/Time	Temperature
	David Chow	Company/Agency	2/15/06 13:50	WARM <input checked="" type="checkbox"/> °F
	J. Brown	Company/Agency	2/15/06 14:30	CUSTODY SEALED YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
	J. Padilla	Company/Agency	2/17/06 15:00	SPECIAL REQUIREMENTS:

Temp - 5.5 - 0.5 = 5.0  
J. Padilla 2/17/06 15:00

**STL LOS ANGELES - PROJECT RECEIPT CHECKLIST** Date: 2/17/06

**Single Cooler Only**

LIMS Lot #: E6B170405 Quote #: 58027  
 Client Name: CH2M Hill Project: Plate Topack GWM  
 Received by: SJA Date/Time Received: 2/17/06 15:00  
 Delivered by:  Client  STL  DHL  Fed Ex  UPS  Other

\*\*\*\*\* Initial / Date

Custody Seal Status Cooler:  Intact  Broken  None ..... SJA 2/17/06  
 Custody Seal Status Samples:  Intact  Broken  None .....  
 Custody Seal #(s): N/A  No Seal #.....  
 Sampler Signature on COC  Yes  No  N/A.....  
 IR Gun # A Correction Factor -.5 °C IR passed daily verification  Yes  No .....  
 Temperature - BLANK 55 °C - .5 CF = 5.0 °C Cooler #1 ID N/A .....  
 Temperature - COOLER ( °C °C °C °C ) = avg °C - .5 CF = °C.....  
 Samples outside temperature criteria but received within 6 hours of final sampling  Yes  N/A.....  
 Sample Container(s):  STL-LA  Client .....  
 pH measured:  Yes  Anomaly (if checked, notify lab and file NCM)  N/A.....  
 Anomalies:  No  Yes - complete CUR and Create NCM .....

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times.  Yes  No.....

Labeled by: SJA ..... 

Turn Around Time:  RUSH-24HR  RUSH-48HR  RUSH-72HR  NORMAL..... SJA 2/17/06

\*\*\*\*\* LEAVE NO BLANK SPACES ; USE N/A \*\*\*\*\*

Headspace Anomaly		Headspace Anomaly	
Lab ID	Container(s) #	Lab ID	Container(s) #
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm
	<input type="checkbox"/> > 6mm		<input type="checkbox"/> > 6mm

Fraction														
VOAH														
<i>4/17/06</i>	<i>2</i>													

H: HCL, S: H2SO4, N: HNO3, V: VOA, SL, Sleeve, E: Encore, PB: Poly Bottle, CGB: Clear Glass Bottle, AGJ: Amber Glass Jar, T: Terracore  
 AGB: Amber Glass Bottle, n/F:HNO3-Lab filtered, n/F:HNO3-Field filtered, zna: Zinc Acetate/Sodium Hydroxide, Na2s2o3: sodium thiosulfate

Condition Upon Receipt Anomaly Form		Anomalies <input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A <i>2/17/06</i>
<ul style="list-style-type: none"> <li>▪ COOLERS                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Not Received (received COC only)</li> <li><input type="checkbox"/> Leaking</li> <li><input type="checkbox"/> Other:</li> </ul> </li> <li>▪ TEMPERATURE (SPECS 4 ± 2°C)                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Cooler Temp(s)</li> <li><input type="checkbox"/> Temperature Blank(s)</li> </ul> </li> <li>▪ CONTAINERS                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Leaking      <input type="checkbox"/> Voa Vials with Bubbles &gt; 6mm</li> <li><input type="checkbox"/> Broken</li> <li><input type="checkbox"/> Extra</li> <li><input type="checkbox"/> Without Labels</li> <li><input type="checkbox"/> Other:</li> </ul> </li> <li>▪ SAMPLES                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Samples NOT RECEIVED but listed on COC</li> <li><input type="checkbox"/> Samples received but NOT LISTED on COC</li> <li><input type="checkbox"/> Logged based on Label Information</li> <li><input type="checkbox"/> Logged based on info from other samples on COC</li> <li><input type="checkbox"/> Logged according to Work Plan</li> <li><input type="checkbox"/> Logged on HOLD UNTIL FURTHER NOTICE</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ CUSTODY SEALS (COOLER(S) CONTAINER(S))                             <ul style="list-style-type: none"> <li><input type="checkbox"/> None</li> <li><input type="checkbox"/> Not Intact</li> <li><input type="checkbox"/> Other</li> </ul> </li> <li>▪ CHAIN OF CUSTODY (COC)                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Not relinquished by Client; No date/time relinquished</li> <li><input type="checkbox"/> Incomplete information provided</li> <li><input type="checkbox"/> Other      <input type="checkbox"/> COC not received – notify PM</li> </ul> </li> <li>▪ LABELS                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Not the same ID/info as in COC</li> <li><input type="checkbox"/> Incomplete Information</li> <li><input type="checkbox"/> Markings/Info illegible</li> <li><input type="checkbox"/> Torn</li> </ul> </li> </ul>	
Comments: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>		
Corrective Action Implemented: <input type="checkbox"/> Client Informed: verbally on _____ By: _____ <input type="checkbox"/> In writing on _____ By: _____ <input type="checkbox"/> Sample(s) on hold until: _____ <input type="checkbox"/> Sample(s) processed "as is."		
Logged by/Date: <i>logged in by other STL</i> <input type="checkbox"/> _____ <i>2/17/06</i>		PM Review/Date: <i>MT 2/17/06</i>

# Analytical Report

# **ANALYTICAL REPORT**

**PG&E TOPOCK GWM**

**Lot #: E6B170405**

**Shawn Duffy**

**CH2M Hill Inc**

**SEVERN TRENT LABORATORIES, INC.**

**Marisol Tabirara**  
Project Manager

**February 28, 2006**

# EXECUTIVE SUMMARY - Detection Highlights

E6B170405

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
<b>SC-SLUDGE-WDR- 02/17/06 001</b>				
Mercury	2.1	0.75	mg/kg	SW846 7471A
Arsenic	13	7.5	mg/kg	SW846 6010B
Barium	130	15	mg/kg	SW846 6010B
Chromium	26000	7.5	mg/kg	SW846 6010B
Copper	140	19	mg/kg	SW846 6010B
Molybdenum	59	30	mg/kg	SW846 6010B
Nickel	57	30	mg/kg	SW846 6010B
Thallium	21	7.5	mg/kg	SW846 6010B
Vanadium	110	38	mg/kg	SW846 6010B
Zinc	300	15	mg/kg	SW846 6010B
Percent Moisture	87	0.10	%	MCAWW 160.3 MOD
Hexavalent Chromium	140	3.0	mg/kg	SW846 7199

# METHODS SUMMARY

E6B170405

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Hexavalent Chromium	SW846 7199	SW846 3060A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD

## References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

# METHOD / ANALYST SUMMARY

E6B170405

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 160.3 MOD	FLORIAN ZIMMERMANN	000064
SW846 6010B	Josephine Asuncion	021088
SW846 7199	Yuriy Zakhrabov	000022
SW846 7471A	Hao Ton	000023

## References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",  
EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical  
Methods", Third Edition, November 1986 and its updates.

# SAMPLE SUMMARY

E6B170405

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
HXPRO	001	SC-SLUDGE-WDR-	02/17/06	

**NOTE (S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-

TOTAL Metals

Lot-Sample #...: E6B170405-001

Matrix.....: SO

Date Sampled...: 02/17/06

Date Received...: 02/17/06 15:00

% Moisture.....: 87

PARAMETER	RESULT	REPORTING		METHOD	PREPARATION-	WORK
		LIMIT	UNITS		ANALYSIS DATE	ORDER #
Prep Batch #...: 6051246						
Arsenic	13	7.5	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AD
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Antimony	ND	45	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AE
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Barium	130	15	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AF
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Cadmium	ND	3.8	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AG
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Chromium	26000	7.5	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AH
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Beryllium	ND	3.8	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AJ
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Lead	ND	3.8	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AK
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Selenium	ND	3.8	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AL
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		
Silver	ND	7.5	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AM
		Dilution Factor: 1		Analysis Time...: 13:02	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 6051166		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-

TOTAL Metals

Lot-Sample #...: E6B170405-001

Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	ND	38	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AN
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Copper	140	19	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AP
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Molybdenum	59	30	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AQ
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Nickel	57	30	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AR
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Thallium	21	7.5	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AT
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Vanadium	110	38	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AU
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Zinc	300	15	mg/kg	SW846 6010B	02/20-02/21/06	HXPR01AV
		Dilution Factor: 1		Analysis Time..: 13:02	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 6051166		
Prep Batch #...: 6051371						
Mercury	2.1	0.75	mg/kg	SW846 7471A	02/21/06	HXPR01AW
		Dilution Factor: 1		Analysis Time..: 14:45	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 6052198		

NOTE(S) :

Results and reporting limits have been adjusted for dry weight.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-

General Chemistry

Lot-Sample #...: E6B170405-001      Work Order #...: HXPR0      Matrix.....: SO  
Date Sampled...: 02/17/06      Date Received...: 02/17/06 15:00  
% Moisture.....: 87

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Hexavalent Chromium	140	3.0	mg/kg	SW846 7199	02/20/06	6049115
			Dilution Factor: 1	Analysis Time..: 11:53	Analyst ID.....: 000022	
			Instrument ID..: W18	MS Run #.....: 6049062		
Percent Moisture	87	0.10	%	MCAWW 160.3 MOD	02/20-02/21/06	6051301
			Dilution Factor: 1	Analysis Time..: 12:15	Analyst ID.....: 0000642	
			Instrument ID..: W15	MS Run #.....: 6051184		

**NOTE(S) :**

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

February 23, 2006

CH2M HILL  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

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

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-034 PROJECT, SLUDGE SAMPLE-6,  
TLI NO.: 951861

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-034 project, Sludge Sample-6. A summary table for this sample delivery group is included in Section 2. Complete laboratory report, 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 sample was received and delivered with the chain of custody on February 15, 2006, intact and in chilled condition. The sample 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.**

Mona Nassimi  
Manager, Analytical Services

For K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Soil Sample

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

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

**Laboratory No.:** 951861

**Date:** February 23, 2006

**Collected:** February 15, 2006

**Received:** February 15, 2006

## ANALYST LIST

[REDACTED]		
EPA 300.0	Fluoride	Vanna Kho

## Section 2.0

# Summary Table of Final Results

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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## REPORT

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

**Client:** CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Project Name:** PG&E Topock Project

**Project No.:** 334168.IM.04.00

**P.O. No.:** 911248

**Laboratory No.:** 951861

**Date Received:** February 15, 2006

## Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Time Sampled</u>	<u>EPA 300.0</u> <i>Fluoride</i> <i>mg/kg</i>
951861	SC-Sludge-WDR-034	13:40	9.81

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.

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

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

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

Section 3.0

# Final Report

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

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

Client: CH2M HILL  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy  
Sample: One (1) Soil Sample  
Project Name: PG&E Topock Project  
Project No.: 334168.IM.04.00  
P.O. No.: 911248

Laboratory No.: 951861  
Date: February 23, 2006  
Collected: February 15, 2006  
Received: February 15, 2006  
Prep/ Analyzed: February 17, 2006  
Analytical Batch: 02AN06R

Investigation: Fluoride by Ion Chromatography Using EPA 300.0

### Analytical Results Fluoride

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
951861	SC-Sludge-WDR-034	mg/kg	EPA 300.0	07:11	19.1	3.82	9.81

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	951861	9.81	10.0	1.92%	≤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	951861	9.81	19.1	2.00	38.2	50.1	48.0	105%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.08	4.00	102%	90% - 110%	Yes
MRCVS#1	3.09	3.00	103%	90% - 110%	Yes
MRCVS#2	3.11	3.00	104%	90% - 110%	Yes
MRCVS#3	3.08	3.00	103%	90% - 110%	Yes
LCS	4.09	4.00	102%	90% - 110%	Yes
LCSD	4.10	4.00	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

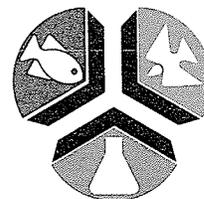
DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager  
Analytical Services

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 these laboratories.





MBC

21 February 2006

Truesdail Laboratories, Inc.  
14201 Franklin Avenue  
Tustin, CA 92780

Attention: Leda Semerjiev

Dear Leda,

The following are the results of the DOHS 96-hour Acute Aquatic Toxicity Screening test performed on the sample labeled 951861 submitted on 16 February 2006.

The sample **PASSED** the DOHS 96-hour Acute Aquatic Toxicity Screening test. Currently, California Code of Regulations (CCR), Title 22, Section 66261.24, Article 6 requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l. In addition to this regulation, the DOHS protocol requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l concentration and 60% survival at the 750 mg/l concentration for compliance of hazardous waste declassification.

**MBC Sample Number 06-164 - Client Identification: 951861**

**PERCENT SURVIVAL**

Control	100%
250 mg/l	100%
500 mg/l	100%
750 mg/l	100%

LC50 > 750 mg/l

If you have any questions or require further information, please contact me at your convenience.

Cordially,  
**MBC Applied Environmental Sciences**

Sonja M. Beck  
Bioassay Manager



**MBC**

**DEPARTMENT OF HEALTH SERVICES  
TITLE 22  
96-HOUR ACUTE AQUATIC  
TOXICITY SCREEN TESTING**

Prepared For:

**Truesdail Laboratories, Inc.**

Prepared By:

***MBC Applied Environmental Sciences***  
3000 Redhill Avenue  
Costa Mesa, California 92626

February 2006

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## INTRODUCTION

Title 22, Article 3, Section 66261.24 (6) of the California Code of Regulations (CCR) establishes the criteria for the identification of hazardous and extremely hazardous waste. The Department of Health Services (DOHS) compiles and evaluates analytical data for compliance with the toxicity criteria for potentially hazardous waste.

These analytical data have been derived from water and environmental samples submitted to laboratories certified by the DOHS for analysis. The California DOHS 96-Hour Acute Aquatic Toxicity testing assures CCR compliance and minimizes risk to the environment or threat to public health.

Laboratory certification by the DOHS standardized the toxicity testing program by requiring certification of testing laboratories and by utilizing the procedures set forth by Dr. James Polisini, Department of Fish and Game, Water Pollution Control Laboratory (Polisini 1988). Following this methodology, a waste can be evaluated for potential hazardous waste declassification.

Currently, CCR, Title 22, Section 66261.24, Article 6 requires wastes to pass the 96-hour aquatic toxicity screen testing with greater than 50% survival at the 500 mg/l concentration. In addition to this regulation, the DOHS protocol requires wastes to pass the 96-hour aquatic toxicity screen testing with greater than 50% survival at the 500 mg/l concentration and a minimum of 60% survival at the 750 mg/l concentration for compliance. When these screening criteria are not achieved, the DOHS test protocol requires additional definitive serial dilution toxicity testing with a minimum of five test concentrations prior to making a hazardous waste compliance determination.

Toxicity testing conducted by MBC for this report is a static non-renewal acute toxicity screen test following Standard Methods and the procedures of Dr. James Polisini. Death is the effect measured and toxicity is reported as percent survivorship at 250 mg/l, 500 mg/l and 750 mg/l concentrations and a  $LC_{50}$  calculated from these data. Original data worksheets will remain on file at MBC.

## MATERIALS AND METHODS

### Facilities

The toxicity tests are conducted in a laboratory located away from disturbances of non-laboratory personnel or other laboratory or heavy equipment. The laboratory, measuring approximately 20 x 20 ft, is insulated to protect it from rapid temperature changes. Shelves and water tables are provided which allow a capacity of 200 or more 5-gallon aquaria, as well as bench space for laboratory equipment and instruments.

Lighting is provided by five evenly spaced two lamp 4-foot cool white fluorescent fixtures that are regulated by a 24-hour timer. The lighting remains on for 16 hours and is off for 8 hours.

The temperature of the toxicity testing laboratory is maintained by a commercial climate controlled unit controlled by wall-mounted thermostat which provide accuracy to  $\pm 2^{\circ}C$ .

A Rustrak Model 2066 continuous recording thermograph monitored the laboratory's temperature 24 hours per day. The Rustrak is calibrated annually by the manufacturer to insure accuracy. Maximum-minimum thermometers are maintained within the laboratory to provide "back-up" temperature variation information.

Low pressure air is supplied to the laboratory for the purpose of slowly bubbling air into the exposure tanks to maintain an acceptable dissolved oxygen concentration. Filtered air is supplied via a Sutor-built oil-less blower that provides up to 340 l/min at 0.35 kg/cm<sup>2</sup>. The blower is equipped with a pressure equalizing expansion chamber and an adjustable pressure relief valve to maintain a constant delivery pressure and volume. Air is delivered to the laboratory through PVC piping with numerous individual flow valves. Individual aquaria receive air through commercial plastic aquarium air tubing and a 3 mm inside diameter by 30 cm long soft glass tube which reaches the bottom of the test container. Air is bubbled into the aquaria at a rate of approximately 30 ml /min following the guidelines of Kopperdahl (1976) and Peltier and Weber (1985).

### **Test Containers**

The toxicity tests are conducted in 5-gallon glass aquaria, approximately 26 cm high, 21 cm wide, and 41 cm long. For the definitive test, the aquaria contain a total of 10 liters of waste material and/or dilution softwater which provides a water depth within the test aquaria of approximately 14 cm.

Test containers are cleaned thoroughly with Liqui-Nox brand commercial glassware detergent and warm tap water, rinsed five times with warm tap water, rinsed with reagent grade acetone, rinsed five times with deionized water, rinsed with 5% HCl, and then rinsed three times with deionized water.

### **Determination of Water Quality Parameters**

Water quality measurements are taken and recorded for pH, dissolved oxygen and temperature after dosage of the appropriate concentration of waste sample to the test aquaria, and at 24, 48, 72, and 96 hours subsequent to initiation of the toxicity test exposures. The following instrumentation and methods are utilized to determine water quality parameters for each of the test and control aquaria. Total alkalinity and hardness, both expressed as mg/l CaCO<sub>3</sub>, are determined from sub-samples of dilution water and the 750 mg/l concentration obtained immediately prior to initiation and at the completion of toxicity testing.

A Horiba U-10 Water Quality Checker is utilized for determining the pH of the exposure solutions. After stabilization of the reading, the pH is recorded on the static toxicity test worksheet to the nearest 0.1 pH unit.

Dissolved oxygen concentrations (mg/l) are determined by gently swirling the Horiba U-10 Water Quality Checker in the aquarium to be monitored. Dissolved oxygen concentrations are recorded on the static toxicity test worksheet to the nearest 0.1 mg/l, only after stabilization of the reading.

Exposure temperature is determined by the Horiba U-10 Water Quality Checker calibrated by a mercury bulb thermometer graduated to 0.1°C with calibration traceable to the National Institute of Standards and Technology (NIST).

Alkalinity values are calculated by potentiometric titration to a pre-selected pH of 4.6 utilizing Method 2320B, *Standard Methods* (18<sup>th</sup> Edition).

Hardness values are calculated by EDTA titration utilizing Method 2340C, *Standard Methods* (18<sup>th</sup> Edition).

## TOXICITY TEST PREPARATION

### Receiving and Acclimating Fish

The fathead minnows, *Pimephales promelas*, are received from the supplier at least 10 days prior to initiation of toxicity testing. Shipment of the test fish in insulated containers with hard freshwater and an atmosphere of bottled oxygen from Aquatic Biosystems located in Fort Collins, Colorado is via Federal Express overnight to MBC. Upon receipt of the test fish, the plastic bags containing the fathead minnows are floated on the surface of an appropriately sized aquarium containing aged local (hard) drinking water in the temperature controlled toxicity test laboratory. When the temperature of the water in the shipping water is within 0.5°C of the holding tank, each plastic bag is opened and the fish are gently eased into the initial acclimation water containing penicillin. This antibiotic is effective against both gram-negative and gram-positive bacteria as well as fungus. The antibiotic is maintained in the acclimation water for 24 hours while the hardness is slowly decreased to that of the reconstituted moderately hardwater utilizing a reservoir and siphons to slowly change over the water following guidelines in *Standard Methods* (18<sup>th</sup> Edition). The test fish are subsequently gently transferred using a fine mesh dip net to the maintenance tank for further acclimation until initiation of the toxicity testing.

During the acclimation period, up until 48 hours prior to initiation of the toxicity testing, the fathead minnows are maintained on a diet of Tetramin brand flake food and San Francisco Bay Brand frozen brine shrimp. Tetramin flake food is fed in the morning and brine shrimp in the evening, while observing the behavior and monitoring the quality of the acclimating fish. The quantity of food delivered at each feeding is based upon the quantity that the tank population would completely consume within approximately five minutes of feeding. During these observations, any sick or dead fish are removed and the numbers of each, as well as any observations, are noted in the acclimation tank log book.

### Dilution Water Preparation

Dilution water for the toxicity tests is prepared following the formulation of Kopperdahl (1976) and Horning and Weber (1985) for artificially reconstituted softwater. Table I indicates the quantities of reagent grade chemicals utilized in preparing the synthetic freshwater. Reconstituted softwater is prepared in 208 liter linear polyethylene barrels by addition of the salts to deionized (resin exchange column) water followed by thorough mechanical mixing at least 48 hours prior to initiation of the toxicity testing. The reconstituted softwater is maintained in a isolated area of the same temperature-controlled laboratory in which the test fish are acclimated and the toxicity tests are performed to ensure against any significant difference between acclimation and test water temperature that might induce additional stress in the test fish.

**Table I. Quantities of reagent grade chemicals required to prepare reconstituted softwater and expected water qualities.**

NaHCO <sub>3</sub> :	48.0 mg/l
CaSO <sub>4</sub> 2H <sub>2</sub> O:	30.0 mg/l
MgSO <sub>4</sub> :	30.0 mg/l
KCl:	2.0 mg/l
pH:	7.2-7.8
Total Hardness:	40-48 mg/l CaCO <sub>3</sub>
Total Alkalinity:	30-35 mg/l CaCO <sub>3</sub>

### Handling and Storage of the Waste Samples

Upon arrival at MBC, the samples are listed in the Toxicity Test Sample Log Book located in the toxicity testing laboratory by the Toxicity Laboratory Coordinator. The samples are stored at 4°C in a designated area of the cold storage locker labeled "SAMPLES FOR HAZARDOUS WASTE TESTING", until the initiation of toxicity testing. The remaining portion of each sample is returned to the cold storage locker.

## WASTE SAMPLE PREPARATION

### Dry Waste Material

Each sample is identified as a Type i, Type ii or Type iii material. The samples are weighed into pre-tared Erlenmeyer flasks to yield final replicate sample concentrations of 250 mg/l, 500 mg/l, and 750 mg/l. Approximately 200 ml of dilution water is added to each flask. The flasks are capped with parafilm, a neoprene stopper and aluminum foil and are mechanically shaken for six hours.

### Liquid Waste of Low Viscosity

To determine the volume of a low viscosity liquid sample needed to dose the toxicity test, the specific gravity is measured.

The waste sample to be used in the toxicity test is first mechanically shaken or homogenized so as to evenly distribute any particulate matter in the sample. A known amount of sample, usually 20 ml, is drawn up through a volumetric pipette and dispensed into a 100 ml beaker that has previously been weighed on a Mettler balance to four decimal places. The beaker containing the known volume of sample is then re-weighed on the Mettler balance. The difference in weight of the beaker with the sample and the weight of the beaker when it is empty is divided by the known volume of the sample (in milliliters) to determine the specific gravity. This process is repeated in triplicate and the mean specific gravity is used in subsequent dosage determinations.

The sample is measured by pipette into pre-tared Erlenmeyer flasks to yield final replicate sample concentrations of 250 mg/l, 500 mg/l, and 750 mg/l. Approximately 200 ml of dilution water is added to each flask. The flasks are capped with parafilm, a neoprene stopper and aluminum foil and mechanically shaken for six hours.

## TOXICITY TESTING

### Dosing Test Aquaria

After shaking, the samples are dosed into the appropriately marked aquaria containing approximately 9 liters of dilution water. Dilution water is then added to the 10 liter mark to yield a final volume of 10 liters for all test conditions.

Reconstituted softwater (dilution water only) controls are established as a quality assurance measure. All test conditions and controls are run concurrently.

### Initial Water Quality Measurements

Prior to the addition of the test fish, preliminary water quality measurements are taken for dissolved oxygen and pH to determine if adjustment is necessary (Polisini 1988).

An initial hardness and alkalinity test analysis is performed on the control and the 750 mg/l concentrations.

### **Addition of Test Fish**

The test fish (fathead minnows) are gently corralled and dip netted in small groups from the plexiglass maintenance tank into smaller aquaria to confirm species identity and the healthy condition of each individual fish to be utilized in the test. Fish exhibiting any abnormalities, disease, wounds, or unusual behavior or color patterns are removed and destroyed. Those fish that passed the individual screening inspection are randomly allocated to test aquaria and controls.

Ten fathead minnows are gently released into each of the test aquaria replicate and the control, taking care not to allow the dip nets to contact the exposure media.

### **Observations**

Water quality parameters, enumeration of live organisms and any ancillary observations pertinent to the conduct of the toxicity tests are taken and recorded on the toxicity test worksheets at initiation and subsequently at 24, 48, 72, and 96 hours after initiation of the toxicity test exposures. Daily water quality parameters, live organism enumeration, and ancillary observations are recorded on individual toxicity testing worksheets. The worksheets are presented in Appendix A.

### **Alkalinity and Hardness Analysis**

Total alkalinity and hardness, both expressed as mg/l CaCO<sub>3</sub>, are determined by replicate samples utilizing the procedures in Method 2320B and 2340C, *Standard Methods* (18<sup>th</sup> Edition). Sub-samples of the dilution water control and the 750 mg/l concentration are obtained immediately prior to initiation and at the completion of toxicity testing and the results are presented on the toxicity test worksheets.

### **Determination of Test Fish Lengths and Weights**

At the conclusion of testing, 20 of the surviving fish are wet weighed to the nearest 0.1 gram on an analytical balance and measured to the nearest millimeter. The data are recorded on a Fish Weight/Length Measurements form and presented in Appendix B. All surviving fish are then destroyed following the procedures in *Standard Methods* (18<sup>th</sup> Edition).

## **RESULTS**

### **Standard DOHS Toxicity Screen Testing**

Toxicity testing conducted by MBC for this report is a static non-renewal acute toxicity screen test following Standard Methods and the procedures of Dr. James Polisini. Death is the effect measured and toxicity is reported as percent survivorship at 250 mg/l, 500 mg/l and 750 mg/l concentrations and a LC<sub>50</sub> calculated from these data. Original data worksheets will remain on file at MBC.

## REFERENCES

- American Public Health Association (APHA), American Water Works Association (AWWA) and Water Pollution Control Federation (WPCF). 1992. 18<sup>th</sup> Edition. Standard methods for examination of water and wastewater.
- American Society for Testing and Materials (ASTM). 1982. Parts 23 and 24.
- Environmental Protection Agency. 1979b. Methods for chemical analysis of water and wastes. EPA-600/4-79-020.
- Horning II, W. B., and C. I. Weber. 1985. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. EPA/600/4-85/014. 162 pp.
- Kopperdahl, F. R. 1976. Guidelines for performing static acute toxicity fish bioassays in municipal and industrial wastewaters. Report to California State Water Resources Control Board by Department of Fish and Game. 65 pp.
- Peltier, W. H., and C. I. Weber. 1985. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms (Third Edition), EPA/600/4-85/013. 216 pp.
- Plumb, R. H., Jr. 1981. Procedure for handling and chemical analysis of sediment and water samples. Technical report EPA/CE-81-1 prepared by Great Lakes Laboratory, State University College at Buffalo, Buffalo, New York for the U.S. Environmental Protection Agency/Corps of Engineers Technical Committee on Criteria for Dredged and Fill Material. Published by the U.S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Mississippi.
- Polisini, J. M. 1988. Static acute bioassay procedures for hazardous waste samples. California Fish and Game, Water Pollution Control Laboratory.
- Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW - 846, 2nd edition, U.S. Environmental Protection Agency, 1982.

**APPENDIX A  
DAILY WATER QUALITY PARAMETERS AND LIVE ORGANISM  
ENUMERATION DATA**

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**APPENDIX B**  
**FISH LENGTH AND WEIGHT MEASUREMENTS**

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## Bioassay Fish Length/Weight Measurements

MBC JOB #: 06415X

CLIENT: Truesdail Laboratories

MBC SAMPLE #: 06-164

DATE OF TEST: 02/17/06

SPECIES: Fathead minnow  
(*Pimephales promelas*)

SAMPLE IDENTIFICATION: 951861

	Standard Length mm	Weight g		Standard Length mm	Weight g
1.	32	0.26	11.	31	0.34
2.	29	0.23	12.	32	0.38
3.	28	0.28	13.	32	0.43
4.	30	0.26	14.	35	0.68
5.	32	0.38	15.	30	0.29
6.	28	0.21	16.	34	0.42
7.	31	0.37	17.	30	0.24
8.	34	0.41	18.	31	0.29
9.	30	0.39	19.	31	0.34
10.	30	0.28	20.	29	0.29

	Length (mm)	Weight (g)
Average:	31	0.34
Maximum:	35	0.68
Minimum:	28	0.21

Technician: SMB

Date: 02/21/06

Reviewed By: 

**APPENDIX C**  
**SAMPLE ANALYSIS INFORMATION**

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## SAMPLE ANALYSIS INFORMATION

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CLIENT: Truesdail Laboratories

SAMPLE IDENTIFICATION: 951861

MBC JOB NUMBER: 06415X

MBC SAMPLE NUMBER: 06-164

SAMPLE DATE/TIME: 02/15/06, 13:40

---

DATE SAMPLE RECEIVED BY MBC: 02/16/06

ANALYSIS REQUIRED: Title 22 DOHS 96-hour Acute Aquatic Toxicity Test

DATE/TIME ANALYSIS INITIATED: 02/17/06, 16:26

DATE/TIME ANALYSIS TERMINATED: 02/21/06, 14:45

---

AMOUNT OF SAMPLE: 250 ml

QUALITATIVE DESCRIPTION OF SAMPLE: A soil sludge matrix. Red/brown in color,  
with no odor.

SPECIAL SAMPLE PREPARATION: Shake for 6 hours.

SAMPLE ADJUSTMENTS DURING ANALYSIS: Air added at 0 hours.

---

**RESULTS:**

<u>Concentration</u>	<u>% Survival</u>
Control	100%
250mg/l	100%
500 mg/l	100%
750 mg/l	100%
LC <sub>50</sub> > 750 mg/l	

---

NOTES: Normal.

Reviewed By: 