



**Pacific Gas and
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January 13, 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
Interim Measure No. 3 Groundwater Treatment System
Discharge to Injection Well(s) – Combined Report
December 2005 Monitoring Report
Fourth Quarter 2005 Monitoring Report
Semi-Annual Operation and Maintenance Report
PG&E Topock Compressor Station, Needles, California**

Dear Mr. Perdue:

Enclosed is the Board Order R7-2004-0103 Combined Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System. This Combined Report encompasses the following requirements:

- December 2005 Monitoring Report,
- Fourth Quarter 2005 Monitoring Report, and
- Semi-Annual Operation and Maintenance Report for July 1, 2005 through December 31, 2005.

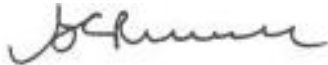
This Combined Report is being submitted in compliance with the Waste Discharge Requirements (WDRs) issued by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Board Order R7-2004-0103.

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.

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

Sincerely,

A handwritten signature in dark ink, appearing to read 'Curt Russell', is positioned above the printed name.

Curt Russell
Topock Onsite Project Manager

Enclosures:

Board Order R7-2004-0103 Combined Report for the IM No. 3 Groundwater Treatment System, including the December 2005 Monitoring Report, the Fourth Quarter 2005 Monitoring Report, and the Semi-Annual Operation and Maintenance Report.

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

December 2005 Monthly Report, Fourth Quarter 2005 Report, and Semi-Annual Operation and Maintenance Report for July 1 -December 31, 2005

**Interim Measure No. 3 Groundwater Treatment System
Waste Discharge Requirements Order No. R7-2004-0103
WDID No. 7B 36 2033 001
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

January 13, 2006

CH2MHILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612


**Combined Report
December 2005 Monthly Report,
Fourth Quarter 2005 Report,
and
Semi-Annual Operation and Maintenance Report
July 1 - December 31, 2005**

**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

January 13, 2006

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


Dennis Fink, P.E. No. 68986
Project Engineer



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Acronyms and Abbreviations

BLM	United States Bureau of Land Management
DTSC	California Department of Toxic Substances Control
gpm	gallons per minute
IM	Interim Measure
mg/kg	milligram per kilogram
mg/L	milligram per liter
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

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 the IM No. 3 groundwater treatment system. 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 15th day of the following month, and quarterly and semi-annual reports by January 15. **This IM No. 3 groundwater treatment system combined report includes the December 2005 Monthly Report, the Fourth Quarter 2005 Report, and the Semi-Annual Operation and Maintenance Report for the period of July 1, 2005 through December 31, 2005.**

In addition to Board Order No. R7-2004-0103, 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 will be submitted under separate cover.

The treatment system initially operated between July 25, 2005 and July 28, 2005; this was the startup phase as mandated by the order's Waste Discharge Requirements (WDRs). 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.

2.0 Sampling Station Locations

Table 1 lists the locations of sampling stations. The locations of the sampling stations are provided in process and instrumentation diagrams TP-PR-10-10-04, TP-PR-10-10-08, and TP-PR-10-10-06, which were previously provided in PG&E's Sampling Locations letter to the Water Board Executive Officer, dated June 29, 2005. These diagrams are provided again at the end of this report.

3.0 December 2005 Monitoring and Fourth Quarter 2005 Monitoring

IM No. 3 monitoring activities between October 1, 2005 and November 30, 2005 are included in the following reports:

- *October 2005 Monthly Report for Interim Measures No. 3 Groundwater Treatment System, Waste Discharge Requirements Order No. R7-2004-0103, PG&E Topock Compressor Station, Needles California.* Submitted to the Water Board November 15, 2005.
- *November 2005 Monthly Report for Interim Measures No. 3 Groundwater Treatment System, Waste Discharge Requirements Order No. R7-2004-0103, PG&E Topock Compressor Station, Needles California.* Submitted to the Water Board December 15, 2005.

Quarterly monitoring requirements, in addition to monthly monitoring requirements, are limited to sampling and analysis of the sludge generated during the quarter. The first fourth quarter 2005 sludge sampling and analysis event was conducted in November 2005 and was reported in the November 2005 Monitoring Report. The second and final fourth quarter 2005 sludge sampling and analysis event was conducted December 21, 2005, and is described in this report.

3.1 Description of Activities

During December 2005, the IM No. 3 groundwater treatment system influent consisted of groundwater extracted from extraction wells TW-2D and TW-3D. Extraction well TW-3D was brought into full-time operation on December 20, 2005 after completing construction and pump testing of the extraction well. Extraction well TW-3D was installed near TW-2D at the direction of the DTSC to provide additional pumping capacity in this area. Treatment system effluent was discharged to injection well IW-2. Figure 1 shows the locations of the IM-3 system extraction and injection wells.

Approximately 18,000 gallons of well development and test water generated from the installation of extraction well TW-3D and temporarily stored in a holding tank was transported and treated at the IM-3 facility during December 2005 after obtaining Water Board approval.

3.2 Groundwater Treatment System Flow Rates

The December 2005 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-2D, TW-2S, and TW-3D (Figure TP-PR-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection well IW-2 (Figure TP-PR-10-10-11), and in the piping from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04). Injection well IW-3 was not used during December 2005. 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-PR-10-10-08).

Periods of treatment system and resulting extraction system downtime during December 2005 are listed below.

- **December 1 and 2, 2005:** Extraction well TW-2D was shut down to connect TW-3D piping in Valve Vault No. 1 and subsequently to repair a broken mixing shaft on the polymer feed system. Extraction system downtime for these events was 8 hours 30 minutes.
- **December 13, 2005:** Extraction well TW-2D was shut down for 27 minutes due to ferrous chloride meter testing at the IM-3 facility.
- **December 15, 2005.** Extraction well TW-2D was shut down at 2:40 pm to allow the groundwater levels in the aquifer to return to ambient conditions before starting the TW-3D pump test at 7:39 pm. Extraction system downtime was 4 hours 59 minutes.
- **December 18, 2005:** Extraction well TW-3D was shut down from 2:43 pm to 5:13 pm due to a combination of power failure, high turbidity readings during system re-start, and changing out microfilter membrane modules. Extraction system downtime was 2 hours 30 minutes.
- **December 29, 2005:** Extraction wells TW-2D and TW-3D were shut down from approximately 9:30 am to 2:29 pm to complete a partial chemical cleaning of the microfilter membranes. Extraction system downtime was 4 hours 59 minutes.

3.3 Sampling and Analytical Procedures

Monitoring 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). Reporting of quarterly groundwater monitoring analytical results will be in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

4.0 Monitoring Analytical Results

The analytical results and laboratory reports for the IM No. 3 groundwater treatment system monitoring program between October 1, 2005 and November 30, 2005 were provided in previous monthly reports submitted to the Water Board (see Section 3.0 for a complete listing of reports).

The December 2005 analytical results from groundwater treatment system influent, effluent, reverse osmosis concentrate, and sludge samples are presented in Tables 3, 4, 5, and 6 respectively. The December 2005 laboratory reports prepared by the certified analytical laboratory(ies) are presented in Appendix A.

In accordance with the WDR reporting requirements, the following sampling frequency schedule was followed during December 2005:

- The influent was sampled monthly, on December 7, 2005. Analyses for nitrate and nitrite were conducted on December 13, 2005.
- The effluent was sampled weekly, on December 7, 14, 21, and 28, 2005. Analyses for nitrate and nitrite were conducted on December 13, 2005.
- The reverse osmosis concentrate was sampled monthly, on December 7, 2005.
- A sludge sample was collected on December 21, 2005. WDR requirements state that sludge is scheduled to be sampled each time sludge is transported offsite unless sludge is transported offsite more frequently than quarterly, in which case the sampling frequency will be quarterly.

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

5.0 Semi-Annual Operation and Maintenance

Pursuant to the WDRs Operations and Maintenance Section 1:

The discharger shall inspect and document any operation/maintenance problems by inspecting each unit process. In addition, calibration of flow meters and equipment shall be performed in a timely manner and documented. Operation and Maintenance reports shall be submitted to the Regional Board Office twice annually.

This section includes the Semi-Annual Operation and Maintenance Report for the IM No. 3 groundwater treatment system for the period July 1, 2005 to December 31, 2005.

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

5.1 Monthly Analytical Results

System monitoring analytical results for July 2005 through November 2005 were previously provided in the appropriate monthly monitoring report (see Section 3.0 for complete listing of reports). The December 2005 analytical results are summarized in Tables 3 through 6 and laboratory reports are provided in Appendix A.

There were no occurrences of non-compliant discharge to the injection wells during the July 1, 2005 to December 31, 2005 reporting period.

5.2 Flowmeter Calibration Records

The IM No. 3 groundwater treatment system flowmeter calibration records are provided in Appendix B. The following flowmeters were used to record the flows to each area of the treatment system:

- Influent flowmeter FIT-100 which records flow from extraction well TW-2S;
- Influent flowmeter FIT-101 which records flow from extraction well TW-2D;
- Influent flowmeter FIT-102 which records flow from extraction well TW-3D;

- Effluent flowmeter FIT-1202 which records flow to injection well IW-2;
- Effluent flowmeter FIT-1203 which records flow to injection well IW-3; and
- Effluent flowmeter FIT-702 which records combined flow to injection wells IM-2 and IM-3.
- Reverse osmosis concentrate flowmeter FIT-701 recorded flow to the reverse osmosis concentrate storage tank.

Between August 14, 2005 at 10:50 am and August 15 at 8:30 am, continuous influent and effluent flow data were not automatically recorded and archived while computer programming modifications were in progress. The treatment system shut down due to a power failure on August 15 at approximately 2:00 am. The influent flow that was not recorded between August 14, 2005 at 10:50 am and August 15 at 2:00 am was estimated to be approximately 62,300 gallons assuming an average system influent flowrate of about 66 gpm observed on August 14, 2005. The effluent flow during this same time period was estimated to be approximately 64,200 gallons assuming an average system effluent flowrate of about 68 gpm observed on August 14, 2005. System effluent flow rates will vary depending on system operation to the injection wells.

The reverse osmosis concentrate flowmeter was not accurately reporting flowrates from August 1 to August 18, 2005. The reverse osmosis concentrate flow meter was repaired August 18, 2005 at 4:00 PM. The average flow rate for reverse osmosis concentrate during August 2005 was estimated by calculating the August 1 to August 18, 2005 flowrate based on flowrate data from August 18 to August 31, 2005.

Communications to injection well flow meters FIT-1202 and FIT-1203 located at the injection well heads for IM-2 and IM-3 malfunctioned in December 2005. Repairs are anticipated to be completed in January 2006 to restore communications to the flow meters. During December 2005, flow meter FIT-702 was used to calculate effluent volumes and flow rates. This flow meter is located at the IM-3 facility and measures the total flow from the treated water tank T-700 to the injection wells (Figure TP-PR-10-10-04).

5.3 Volumes of Groundwater Treated

Data regarding daily volumes of groundwater treated are provided in Appendix C. An estimated volume of 18,905,333 gallons of groundwater was extracted and treated between August 1, 2005 after completing system start-up and December 31, 2005. Approximately 16,966,960 gallons of treated groundwater was injected back into the Alluvial Aquifer and approximately 1,739,339 gallons of water was treated offsite as reverse osmosis concentrate (i.e., brine). The differences in the estimated influent volumes and the sum of effluent and reverse osmosis concentration volumes is approximately one percent over the six month period, which is within

the range of acceptable accuracy considering the margin of error for on-site instrumentation, the water contained within the sludge, and differences in the inventory of water in the treatment system between the beginning and end of each reporting period.

5.4 Groundwater Monitoring Data

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). Reporting of quarterly groundwater monitoring analytical results is issued separately to the Water Board, in conjunction with groundwater level maps of the same monitoring wells.

5.5 Residual Solids Generated (Sludge)

Three containers of residual solids (i.e., sludge) were sampled and shipped off site for disposal during July 1, 2005 to December 31, 2005.

- Sampled September 22, 2005, analytical results were provided in the September 2005 Monitoring Report; approximately 18 cubic yards of sludge was shipped off site on October 28, 2005 to Chemical Waste Management's Kettleman Hills facility for disposal as a non-RCRA hazardous waste.
- Sampled November 16, 2005, analytical results were provided in the November 2005 Monitoring Report; approximately 14 cubic yards of sludge was shipped off site on December 16, 2005 to Chemical Waste Management's Kettleman Hills facility for disposal as a non-RCRA hazardous waste.
- Sampled December 21, 2005, analytical results are presented in Table 6 of this report and the laboratory report is provided in Appendix A; approximately 14 cubic yards of sludge was shipped off site date on January 6, 2006 to Chemical Waste Management's Kettleman Hills facility for disposal as a non-RCRA hazardous waste.

5.6 Reverse Osmosis Concentrate Generated

Data regarding daily volumes of reverse osmosis concentrate generated are provided in Appendix C, as measured by flowmeter FIT-701 (Figure TP-PR-10-10-08). Between July 1, 2005 and December 31, 2005, approximately 1,739,339 gallons of reverse osmosis concentrate was transported to U.S. Filter Corporation in Los Angeles, California for disposal based on onsite metering.

5.7 Summary of WDR Violations

No WDRs violations were identified during the July 1, 2005 to December 31, 2005 reporting period; no corrective actions were required.

5.8 Operation and Maintenance Required Shutdowns

A summary of the operation or maintenance issues that required shutting down the treatment system during this semi-annual reporting period is provided in Appendix D.

5.9 Treatment Plant Modifications

There were no treatment plant modifications that affected the capacity or performance of the extraction and treatment system during the July 1, 2005 to December 31, 2005 reporting period.

The following modifications that did not affect the capacity or performance of the extraction and treatment system were made:

- As described in PG&E's letter to the Water Board Executive Officer dated July 28, 2005, the groundwater treatment system effluent sampling station used for the startup test differed from the effluent sampling station proposed in the June 29, 2005 letter in that startup effluent samples were collected upstream of the Treated Water Tank (T-700), rather than downstream of the tank. The need for an alternate effluent sampling station for the startup testing period was caused by the temporary re-routing of reverse osmosis concentrate (brine) into the treated water tank while waste profiling was being performed.
- As described in PG&E's letter to the Water Board Executive Officer dated July 28, 2005, startup effluent samples from the alternate effluent sampling station were collected as composite samples over a 40-minute period to capture variability in effluent conductivity. This sampling approach is representative of the normal treatment system effluent and meets the requirements of WDR Provision 25. The sampling station proposed in the June 29, 2005 letter has been used as the effluent sampling station for compliance monitoring since injection of effluent began.
- In a letter dated September 16, 2005, DTSC directed PG&E to install extraction well TW-3D to provide redundant pumping capacity for TW-2D and allow for extraction of groundwater from the deep portion of the alluvial aquifer up to 135 gpm. DTSC and the United States Bureau of Land Management (BLM) subsequently approved work plans for the extraction well installation and conveyance piping and power supply in October 2005. The extraction well was installed in October 2005 and completion of conveyance piping and power

supply and initial well testing was completed by December 19, 2005. TW-3D began full-time operation on December 20, 2005.

- Extraction Well PE-1 was installed in March 2005 per DTSC direction. A Final Work Plan to construct conveyance piping and power supply from PE-1 to the IM-3 treatment system was submitted to the DTSC and BLM on July 29, 2005. DTSC conditionally approved the work plan in October 5, 2005 and BLM approved the work plan on December 9, 2005. Construction of the conveyance piping and power supply began on December 12, 2005. It is anticipated that construction of the pipeline will be completed in late January 2006 and extraction well PE-1 will be brought into operation in combination with TW-3D or TW-2D.

6.0 Conclusions

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

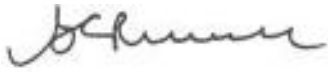
In addition, no incidents of non-compliance were identified during the reporting period, and no events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified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

7.0 Certification

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: January 13, 2006

TABLE 1
 Sampling Station Descriptions
December 2005 Report for IM No. 3 Groundwater Treatment System

Sample Station	Sample ID^a	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-PR-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-PR-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-PR-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-PR-10-10-06).

Note:

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

TABLE 2
Flow Monitoring Results
December 2005 Report for IM No. 3 Groundwater Treatment System

Parameter	System Influent ^{a,d}	System Effluent ^{b,d}	Reverse Osmosis Concentrate ^{c,d}
Average Monthly Flowrate (gpm)	111.1	103.5	7.5

Note:

gpm: gallons per minute.

^a Extraction wells TW-2D and TW-3D were operated during December 2005.

^b All effluent was discharged into injection well IW-2. Flow meter readings from FIT-702 were used in December 2005 to record system effluent due to communication difficulties with FIT-1202 at the injection wellhead.

^c Reverse Osmosis flow meter reading from FIT-701.

^d The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates is approximately 0.4 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 ^a
December 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																							
<div><div></div><div>Sample ID</div></div>	<div><div>Analytes Units ^b</div><div>Date</div></div>	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	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
SC-100B-WDR-024	12/7/2005	5840	ND (0.1)	8780	7.40	3670	3600	ND (52)	ND (0.5)	ND (3.0)	ND (5.0)	ND (300)	1.46	ND (10)	2.86	ND (2.0)	ND (500)	19.3	ND (20)	---	---	666	ND (300)	43.7	
SC-100B-WDR-024R	12/13/2005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.88	0.012	---	---	---	

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

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

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

TABLE 4
Board Order No. R7-2004-0103 Waste Discharge Requirements (WDRs)
Effluent Monitoring Results^a
December 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

WDRs Effluent Limits ^b	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																	
<div><div></div><div>Analytes Units ^c</div></div>	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	µg/L
SC-700B-WDR-024	12/7/2005	4810	ND (0.1)	7410	7.66	ND (1.0)	ND (1.0)	ND (52)	ND (0.5)	ND (3.0)	ND (5.0)	ND (300)	1.42	ND (10)	2.31	ND (2.0)	ND (500)	12.2	ND (20)	---	---	526	ND (300)	90.5	
SC-700B-WDR-024R	12/13/2005	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	4.18	0.005	---	---	---	
SC-700B-WDR-025	12/14/2005	4590	ND (0.1)	7060	7.81	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-026	12/21/2005	4330	ND (0.1)	8180	7.63	ND (1.0)	ND (1.0)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-027	12/28/2005	4490	ND (0.1)	8230	7.63	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

^a 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)
^b 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.
^c 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 ^a
December 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																						
<div>Sample ID</div>	<div>Analytes Units ^b Date</div>	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-024	12/7/2005	23500	38500	7.72	ND (0.001)	0.0029	ND (0.003)	ND (0.0052)	ND (0.3)	ND (0.0026)	ND (0.0026)	ND (0.0052)	ND (0.01)	10.8	ND (0.0026)	0.0621	ND (0.0002)	ND (0.02)	0.0348	ND (0.0052)	ND (0.0026)	0.0168	ND (0.02)	

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

^a Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)
^b 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^a
December 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Each Time Sludge is Transported Offsite ^{c d}																			
Sample ID	Date	Analytes Units ^b	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			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-026	12/21/2005		34000	130	ND (69)	49.0	93.0	ND (5.7)	ND (5.7)	ND (57)	87.0	11.8	ND (5.7)	93.0	2.30	49.0	ND (5.7)	ND (11)	ND (11)	100	36.0

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

^a Sampling Location for all Sludge Samples is the Sludge Collection Tanks (see attached P&ID TP-PR-10-10-06)
^b Units reported in this table are those units required in the WDR
^c Unless transport is more frequent than monthly, in which case the sampling frequency shall be monthly
^d Quarterly aquatic bioassay test was performed on sludge sample collected November 16, 2005, and reported in the November Monthly Monitoring Report submitted December 15, 2005.

TABLE 7

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

Monitoring Information

December 2005 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-024	Joseph Ledbetter	12/7/2005	1:15:00 PM	TLI	EPA 120.1	SC	12/8/2005	Alex Hernandez
					TLI	EPA 150.1	PH	12/8/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/8/2005	Emilia Haley
					TLI	EPA 180.1	TRB	12/8/2005	Gautam Savani
					TLI	EPA 300.0	FL	12/9/2005	Iordan Stavrev
					TLI	EPA 300.0	SO4	12/9/2005	Iordan Stavrev
					TLI	EPA 350.2	NH3N	12/8/2005	Alex Hernandez
					TLI	EPA 6010B	AL	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	ZN	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	NI	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	MN	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	FE	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	CRT	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	B	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	BA	12/12/2005	Riddhi Patel
					TLI	SW 6020A	SB	12/13/2005	Victoria Than
					TLI	SW 6020A	PB	12/9/2005	Victoria Than
					TLI	SW 6020A	AS	12/9/2005	Victoria Than
					TLI	SW 6020A	CU	12/9/2005	Victoria Than
					TLI	SW 6020A	MO	12/9/2005	Victoria Than
					TLI	SW 7199	CR6	12/8/2005	Jorge Arriaga
SC-100B	SC-100B-WDR-024R	Joseph Ledbetter	12/13/2005	3:00:00 PM	TLI	EPA 300.0	NO3N	12/14/2005	Iordan Stavrev
					TLI	EPA 354.1	NO2N	12/14/2005	Hope Trinidad
SC-700B	SC-700B-WDR-024	Joseph Ledbetter	12/7/2005	1:30:00 PM	TLI	EPA 120.1	SC	12/8/2005	Alex Hernandez
					TLI	EPA 150.1	PH	12/8/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/8/2005	Emilia Haley
					TLI	EPA 180.1	TRB	12/8/2005	Gautam Savani
					TLI	EPA 300.0	FL	12/9/2005	Iordan Stavrev
					TLI	EPA 300.0	SO4	12/9/2005	Iordan Stavrev
					TLI	EPA 350.2	NH3N	12/8/2005	Alex Hernandez
					TLI	EPA 6010B	AL	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	MN	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	FE	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	CRT	12/13/2005	Riddhi Patel
					TLI	EPA 6010B	BA	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	B	12/12/2005	Riddhi Patel

TABLE 7

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

Monitoring Information

December 2005 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-024	Joseph Ledbetter	12/7/2005	1:30:00 PM	TLI	EPA 6010B	ZN	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	NI	12/12/2005	Riddhi Patel
					TLI	SW 6020A	PB	12/9/2005	Victoria Than
					TLI	SW 6020A	SB	12/13/2005	Victoria Than
					TLI	SW 6020A	MO	12/9/2005	Victoria Than
					TLI	SW 6020A	CU	12/9/2005	Victoria Than
					TLI	SW 6020A	AS	12/9/2005	Victoria Than
					TLI	SW 7199	CR6	12/8/2005	Jorge Arriaga
SC-700B	SC-700B-WDR-024R	Joseph Ledbetter	12/13/2005	3:00:00 PM	TLI	EPA 300.0	NO3N	12/14/2005	Iordan Stavrev
					TLI	EPA 354.1	NO2N	12/14/2005	Hope Trinidad
SC-700B	SC-700B-WDR-025	Joseph Ledbetter	12/14/2005	1:20:00 PM	TLI	EPA 120.1	SC	12/15/2005	Emilia Haley
					TLI	EPA 150.1	PH	12/15/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/15/2005	Emilia Haley
					TLI	EPA 180.1	TRB	12/15/2005	Gautam Savani
					TLI	EPA 6010B	CRT	12/19/2005	Riddhi Patel
					TLI	SW 7199	CR6	12/15/2005	Jorge Arriaga
SC-700B	SC-700B-WDR-026	Brian Dobbs	12/21/2005	2:55:00 PM	TLI	EPA 120.1	SC	12/23/2005	Alex Hernandez
					TLI	EPA 150.1	PH	12/22/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/22/2005	Emilia Haley
					TLI	EPA 180.1	TRB	12/22/2005	Gautam Savani
					TLI	EPA 6010B	CRT	12/27/2005	Riddhi Patel
					TLI	SW 7199	CR6	12/22/2005	Jorge Arriaga
SC-700B	SC-700B-WDR-027	Brian Dobbs	12/28/2005	1:30:00 PM	TLI	EPA 120.1	SC	12/29/2005	Alex Hernandez
					TLI	EPA 150.1	PH	12/29/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/29/2005	Emilia Haley
					TLI	EPA 180.1	TRB	12/29/2005	Gautam Savani
					TLI	EPA 6010B	CRT	1/3/2006	Riddhi Patel
					TLI	SW 7199	CR6	12/29/2005	Jorge Arriaga
SC-701	SC-701-WDR-024	Joseph Ledbetter	12/7/2005	1:50:00 PM	TLI	EPA 120.1	SC	12/8/2005	Alex Hernandez
					TLI	EPA 150.1	PH	12/8/2005	Alex Hernandez
					TLI	EPA 160.1	TDS	12/8/2005	Emilia Haley
					TLI	EPA 300.0	FL	12/9/2005	Iordan Stavrev
					TLI	EPA 6010B	ZN	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	NI	12/12/2005	Riddhi Patel
					TLI	EPA 6010B	CRT	12/13/2005	Riddhi Patel

TABLE 7

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

Monitoring Information

December 2005 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-024	Joseph Ledbetter	12/7/2005	1:50:00 PM	TLI	EPA 6010B	BA	12/12/2005	Riddhi Patel
					TLI	EPA 7470A	HG	12/9/2005	Laureen Tan
					TLI	SW 6020A	SB	12/13/2005	Victoria Than
					TLI	SW 6020A	V	12/9/2005	Victoria Than
					TLI	SW 6020A	SE	12/9/2005	Victoria Than
					TLI	SW 6020A	PB	12/9/2005	Victoria Than
					TLI	SW 6020A	MO	12/9/2005	Victoria Than
					TLI	SW 6020A	AG	12/9/2005	Victoria Than
					TLI	SW 6020A	CO	12/9/2005	Victoria Than
					TLI	SW 6020A	CD	12/9/2005	Victoria Than
					TLI	SW 6020A	TL	12/9/2005	Victoria Than
					TLI	SW 6020A	BE	12/9/2005	Victoria Than
					TLI	SW 6020A	AS	12/9/2005	Victoria Than
					TLI	SW 6020A	CU	12/9/2005	Victoria Than
					TLI	SW 7199	CR6	12/8/2005	Jorge Arriaga
SC-Sludge	SC-Sludge-WDR-026	Brian Dobbs	12/21/2005	3:13:00 PM	STL	EPA 160.3	MOIST	12/28/2005	Florian Zimmermann
					TLI	EPA 300.0	FL	12/22/2005	Iordan Stavrev
					STL	EPA 6010B	NI	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	V	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	TL	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	SE	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	SB	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	PB	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	ZN	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	MO	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	CU	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	CRT	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	CO	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	CD	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	BE	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	BA	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	AG	12/29/2005	Josephine Asuncion
					STL	EPA 6010B	AS	12/29/2005	Josephine Asuncion
					STL	EPA 7471A	HG	12/28/2005	Hao Ton
					STL	SW 7199	CR6	12/27/2005	Yuriy Zakhrabov

TABLE 7

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

Monitoring Information

December 2005 Monthly Report for Interim Measures No.3 Groundwater Treatment System

NOTES:

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

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

SC-701 = Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)

TLI = Truesdail Laboratories, Inc.

MBC = MBC Applied Environmental Sciences Laboratory

STL = Severn Trent Laboratories, Inc.

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

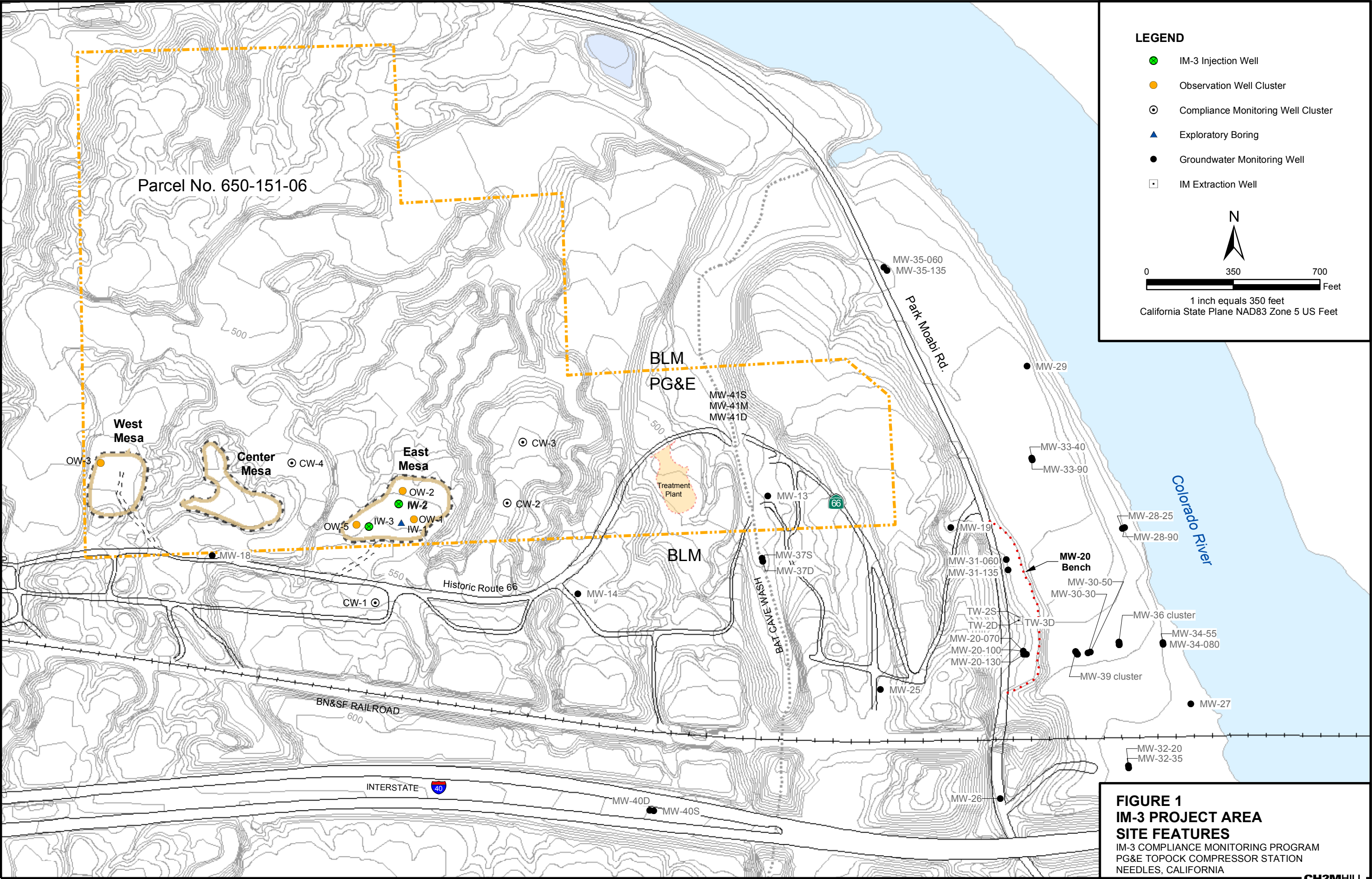
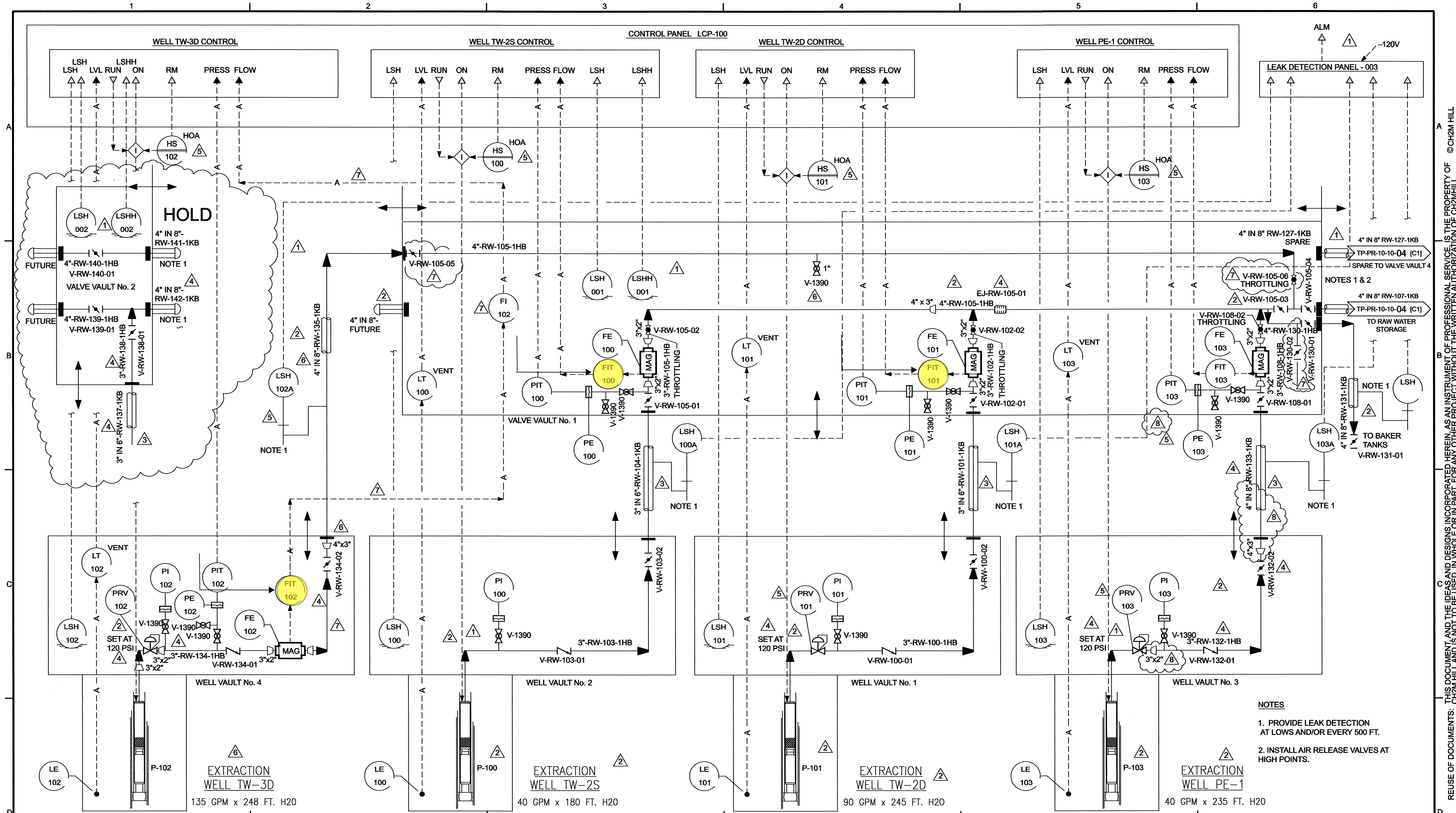


FIGURE 1
IM-3 PROJECT AREA
SITE FEATURES
IM-3 COMPLIANCE MONITORING PROGRAM
PG&E TOPECO COMPRESSOR STATION
NEEDLES, CALIFORNIA



- 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
1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL	—	ELECTRICAL	—	STATUS
2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL	—	INST & CONTROL	—	REV.
3	03/16/05	DELETED NOTES. APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL	—	ARCHITECTURAL	—	CLIENT
4	07/20/05	RELIEF VALVE SETTINGS, WELL PE-1 LINE TAGS, HOLDS REMOVED. APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS	—	ENVIRONMENTAL	—	FIELD
5	09/27/05	FINAL RECORD ISSUE	EFC	AJ	PIPING	SDH	GEN. ARRANG.	—	INTRA CO.
6	10/06/05	REVISED FINAL RECORD - ADDED TW-3D	EFC	AJ	—	—	—	—	—
7	10/19/05	REVISED AS NOTED	EFC	AJ	—	—	—	—	—

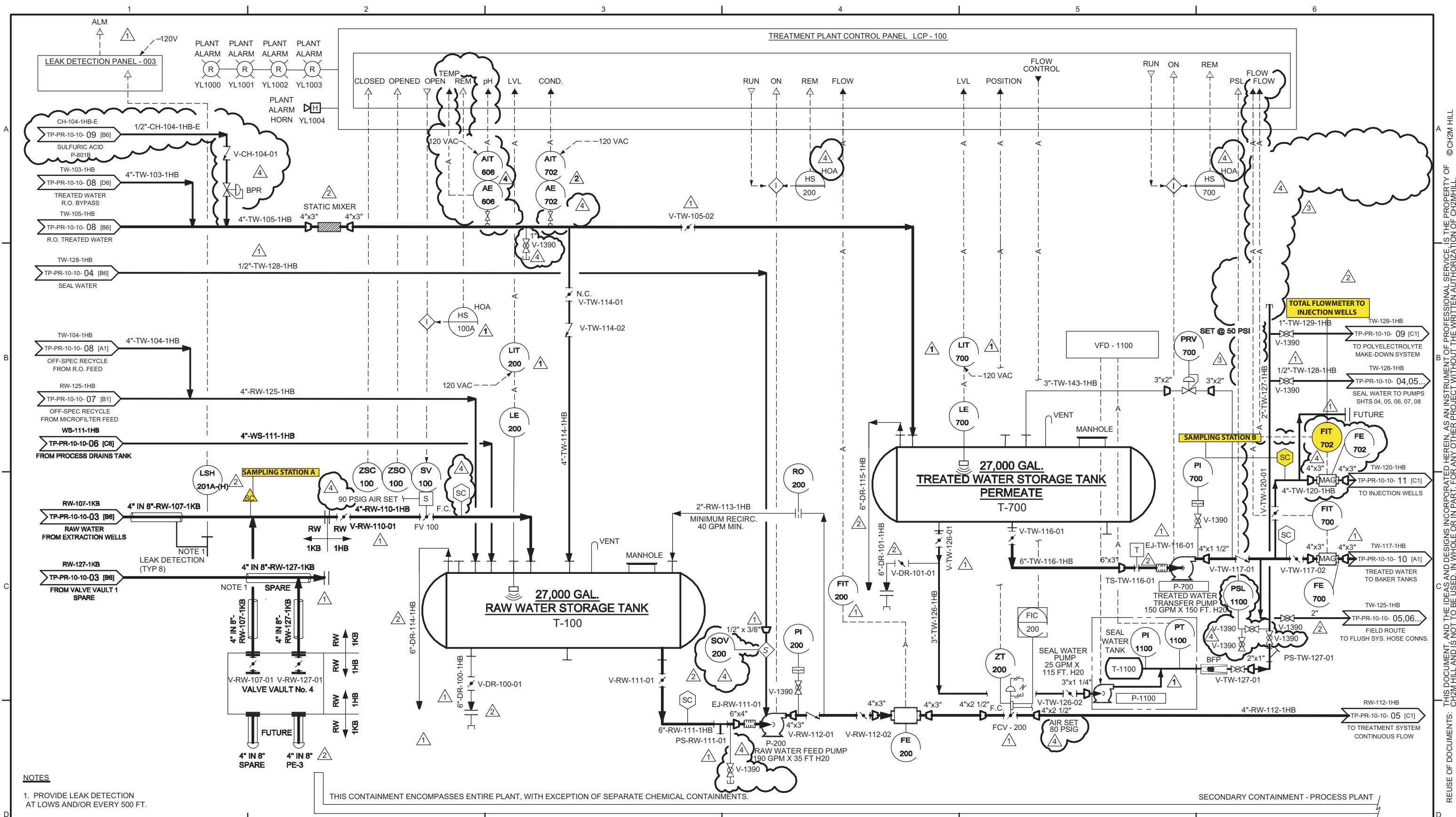
ISSUED	REV	DATE	SDE	PEM
PRELIMINARY				
FOR REVIEW AND APPROVAL	D	07/28/04		
APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP
REVISED & APPROVED FOR CONSTRUCTION	7	12/9/05	for KLM	TP

SCALE NONE

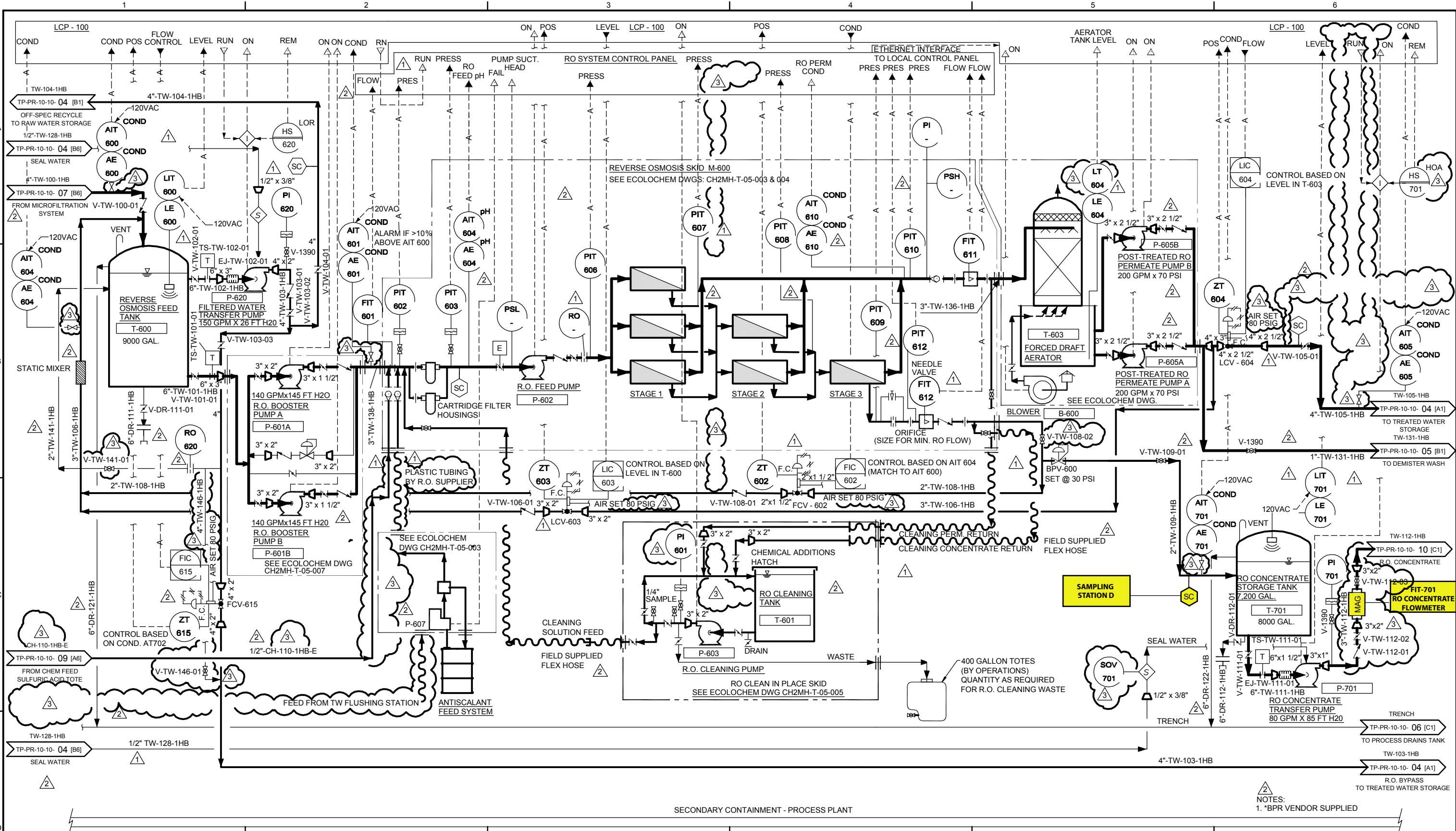
PACIFIC GAS & ELECTRIC CO.
TOPOCK COMPRESSOR STATION
INTERIM MEASURE 3
EXPANDED GROUNDWATER EXTRACTION
AND TREATMENT SYSTEM
PROJ. NO. 315994
CH2MHILL

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

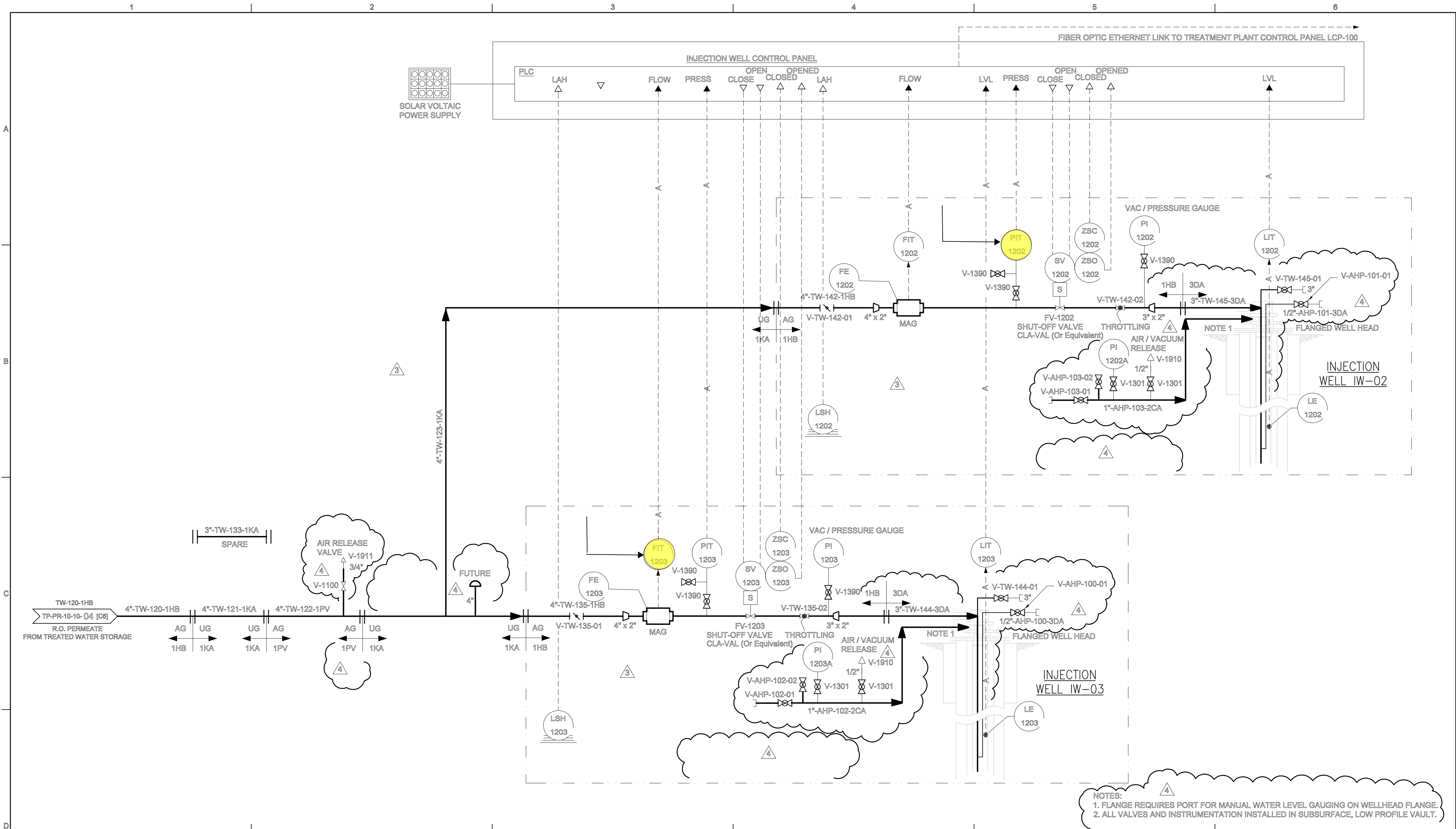
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RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH4876 Exp. 6-30-05	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV. 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994 CH2MHILL	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 04 STORAGE AREA		
	0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM				
	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	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	4	/ /						
	4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.									
																	SCALE	NONE	



RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH43876 Exp. 6-30-06	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 3	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 08 REVERSE OSMOSIS SYSTEM		
	0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE				PEM
	0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL	REVIEWED	STATUS								
	1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	D	07/28/04						
	2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	0	09/03/04	KLM	TP				
	3	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	3	/ /						
						PIPING		GEN. ARRANG.		INTRA CO.								



RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH4876 Exp. 5-30-05	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 03/10/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 11 INJECTION WELLS	
	A	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM		
	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	A	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	02/14/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	4	/ /				
	4	03/10/05	REMOVED HOLD AND APPROVED FOR CONSTRUCTION	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.						DWG. NO. TP-PR-10-10-11	REV. 4
										SCALE NONE		CH2MHILL					

Appendix A
December 2005 Laboratory Analytical Reports

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

CH2M HILL PG&E Topock Project



Laboratory Number: 949622
Received: December 7, 2005

IM3 Plant-WDR-024
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: 949622

<u>ITEM</u>	<u>Section</u>
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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

December 15, 2005

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-024 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 949622

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-024 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Anions, Ammonia, Total Dissolved Solids, Title 22 and metals according to the list provided. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

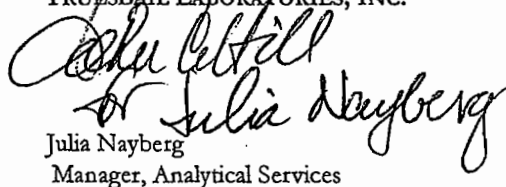
The samples were received and delivered with the chain of custody on December 7, 2005, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

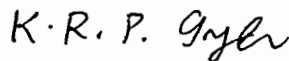
The results for requested Nitrate and Nitrite analyses are not enclosed in this report due to an analyst error, who overlooked the request on COC. We will provide the results for two re-sampled sites (SC-100B-WDR-024 and SC-700B-WDR-024), in a separate report (SDG949835).

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg
Manager, Analytical Services



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

Section 2.0

Summary Table of Final Results

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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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.: 949622

Date Received: December 7, 2005

Analytical Results Summary

Lab I.D.	Sample I.D.	Sample Time	EPA 150.1 pH	EPA 120.1 EC	EPA 160.1 TDS	EPA 180.1 Turbidity	SW 7199 Hexavalent Chromium	EPA 350.2 Ammonia
			Units	μ mhos/cm	mg/L	NTU	mg/L	mg/L
949622-1	SC-100B-WDR-024	13:15	7.40	8780	5840	ND	3.60	ND
949622-2	SC-700B-WDR-024	13:30	7.66	7410	4810	ND	ND	--
949622-3	SC-701-WDR-024	13:50	7.72	38500	23500	---	0.0029	ND

Lab I.D.	Sample I.D.	Sample Time	EPA 300.0 Fluoride	EPA 300.0 Sulfate
			mg/L	mg/L
949622-1	SC-100B-WDR-024	13:15	2.86	666
949622-2	SC-700B-WDR-024	13:30	2.31	526
949622-3	SC-701-WDR-024	13:50	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.

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

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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.: 949622

Date Received: December 7, 2005

Analytical Results Summary

METALS ANALYSIS: Total Metal Analyses as Requested

Lab I.D.	Sample ID	Time Coll.	Aluminum EPA 6010B 12/12/05	Antimony EPA 6020 12/13/05	Arsenic EPA 6020 12/09/05	Barium EPA 6010B 12/12/05	Beryllium EPA 6020 12/09/05	Cadmium EPA 6020 12/09/05	Chromium EPA 6010B 12/12/05	Cobalt EPA 6020 12/09/05	Copper EPA 6020 12/09/05	Lead EPA 6020 12/09/05
949622-1	SC-100B-WDR-024	13:15	ND	ND	---	ND	---	---	3.67	---	ND	ND
949622-2	SC-700B-WDR-024	13:30	ND	ND	---	ND	---	---	ND	---	ND	ND
949622-3	SC-701-WDR-024	13:50	---	ND	ND	ND	ND	ND	ND	ND	ND	ND

Lab I.D.	Sample ID	Time Coll.	Magnesium EPA 6010B ---	Manganese EPA 6010B 12/12/05	Mercury EPA 7470A 12/09/05	Molybdenum EPA 6020 12/09/05	Nickel EPA 6010B 12/12/05	Selenium EPA 6020 12/09/05	Silver EPA 6020 12/09/05	Thallium EPA 6020 12/09/05	Vanadium EPA 6020 12/09/05	Zinc EPA 6010B 12/12/05
949622-1	SC-100B-WDR-024	13:15	---	ND	---	0.0193	ND	---	---	---	---	0.0437
949622-2	SC-700B-WDR-024	13:30	---	ND	---	0.0122	ND	---	---	---	---	0.0905
949622-3	SC-701-WDR-024	13:50	---	---	ND	0.0621	ND	0.0348	ND	ND	0.0168	ND

Lab I.D.	Sample ID	Date of Analysis:		Boron	Calcium	Iron	Potassium	Sodium
		Time Coll.		EPA 6010B 12/12/05	EPA 6010B mg/L	EPA 6010B 12/12/05 mg/L	EPA 6010B mg/L	EPA 6010B mg/L
949622-1	SC-100B-WDR-024	13:15		1.46		ND		
949622-2	SC-700B-WDR-024	13:30		1.42		ND		
949622-3	SC-701-WDR-024	13:50						

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

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

Laboratory No.: 949622

Revised: January 11, 2006
Reported: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Analyzed: December 13, 2005

Analytical Results

SAMPLE ID: SC-100B-WDR-024		Time Collected: 13:15		LAB ID: 949622-1				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	121205C	12/12/05	18:02
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	121305D	12/13/05	19:34
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	120905A	12/09/05	16:51
Barium	EPA 6010B	ND	1.04	mg/L	0.300	121205C	12/12/05	18:02
Chromium	EPA 6010B	3.67	1.04	mg/L	0.0104	121205C	12/12/05	18:02
Copper	EPA 6020	ND	2.08	mg/L	0.0100	120905A	12/09/05	16:51
Lead	EPA 6020	ND	2.08	mg/L	0.0020	120905A	12/09/05	16:51
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	121205C	12/12/05	18:02
Molybdenum	EPA 6020	0.0193	2.08	mg/L	0.0050	120905A	12/09/05	16:51
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	121205C	12/12/05	18:02
Zinc	EPA 6010B	0.0437	1.04	mg/L	0.0200	121205C	12/12/05	18:02
Boron	EPA 6010B	1.46	1.04	mg/L	0.200	121205C	12/12/05	18:02
Iron	EPA 6010B	ND	1.04	mg/L	0.300	121205C	12/12/05	18:02

SAMPLE ID: SC-700B-WDR-024		Time Collected: 13:30		LAB ID: 949622-2				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Aluminum	EPA 6010B	ND	1.04	mg/L	0.0520	121205C	12/12/05	18:19
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	121305D	12/13/05	19:36
Arsenic	EPA 6020	ND	2.08	mg/L	0.0050	120905A	12/09/05	16:46
Barium	EPA 6010B	ND	1.04	mg/L	0.300	121205C	12/12/05	18:19
Chromium	EPA 6010B	ND	1.04	mg/L	0.0010	121305A	12/13/05	12:47
Copper	EPA 6020	ND	2.08	mg/L	0.0100	120905A	12/09/05	16:46
Lead	EPA 6020	ND	2.08	mg/L	0.0020	120905A	12/09/05	16:46
Manganese	EPA 6010B	ND	1.04	mg/L	0.500	121205C	12/12/05	18:19
Molybdenum	EPA 6020	0.0122	2.08	mg/L	0.0050	120905A	12/09/05	16:46
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	121205C	12/12/05	18:19
Zinc	EPA 6010B	0.0905	1.04	mg/L	0.0200	121205C	12/12/05	18:19
Boron	EPA 6010B	1.42	1.04	mg/L	0.200	121205C	12/12/05	18:19
Iron	EPA 6010B	ND	1.04	mg/L	0.300	121205C	12/12/05	18:19

SAMPLE ID: SC-701-WDR-024		Time Collected: 13:50		LAB ID: 949622-3				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 6020	ND	2.08	mg/L	0.0030	121305D	12/13/05	19:40
Arsenic	EPA 6020	ND	5.21	mg/L	0.0052	120905A	12/09/05	16:57
Barium	EPA 6010B	ND	1.04	mg/L	0.300	121205C	12/12/05	18:23
Beryllium	EPA 6020	ND	5.21	mg/L	0.0026	120905A	12/09/05	16:57
Cadmium	EPA 6020	ND	5.21	mg/L	0.0026	120905A	12/09/05	16:57
Chromium	EPA 6010B	ND	1.04	mg/L	0.0010	121305A	12/13/05	12:51
Cobalt	EPA 6020	ND	5.21	mg/L	0.0052	120905A	12/09/05	16:57
Copper	EPA 6020	ND	5.21	mg/L	0.0100	120905A	12/09/05	16:57
Lead	EPA 6020	ND	5.21	mg/L	0.0026	120905A	12/09/05	16:57
Mercury	EPA 7470A	ND	1.00	mg/L	0.00020	120905A	12/09/05	NA
Molybdenum	EPA 6020	0.0621	5.21	mg/L	0.0052	120905A	12/09/05	16:57
Nickel	EPA 6010B	ND	1.04	mg/L	0.0200	121205C	12/12/05	18:23
Selenium	EPA 6020	0.0348	5.21	mg/L	0.0104	120905A	12/09/05	16:57
Silver	EPA 6020	ND	5.21	mg/L	0.0052	120905A	12/09/05	16:57
Thallium	EPA 6020	ND	5.21	mg/L	0.0026	120905A	12/09/05	16:57
Vanadium	EPA 6020	0.0168	5.21	mg/L	0.0052	120905A	12/09/05	16:57
Zinc	EPA 6010B	ND	1.04	mg/L	0.0200	121205C	12/12/05	18:23

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg, Manager
Analytical Services

Section 3.0

Final Reports

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

REPORT

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

Laboratory No.: 949622

Date: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Prep/ Analyzed: December 8, 2005
Analytical Batch: 12PH05J

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>
949622-1	SC-100B-WDR-024	07:00	pH Units	0.0140	0.100	7.40
949622-2	SC-700B-WDR-024	07:05	pH Units	0.0140	0.100	7.66
949622-3	SC-701-WDR-024	07:10	pH Units	0.0140	0.100	7.72

QA/QC Summary

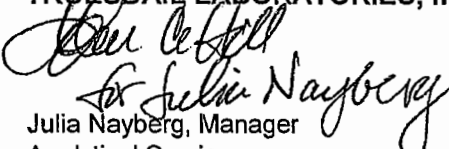
<u>QC STD I.D.</u>	<u>Laboratory Number</u>	<u>Concentration</u>	<u>Duplicate Concentration</u>	<u>Difference (Units)</u>	<u>Acceptance limits</u>	<u>QC Within Control</u>
Duplicate	949622-1	7.40	7.40	0.00	± 0.100 Units	Yes

<u>QC Std I.D.</u>	<u>Measured Concentration</u>	<u>Theoretical Concentration</u>	<u>Difference (Units)</u>	<u>Acceptance Limits</u>	<u>QC Within Control</u>
LCS	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #1	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #2	7.00	7.00	0.00	± 0.100 Units	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, 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.: 949622

Revised: December 30, 2005

Date: December 14, 2005

Collected: December 7, 2005

Received: December 7, 2005

Prep/ Analyzed: December 8, 2005

Analytical Batch: 12EC05E

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>MDL</u>	<u>RL</u>	<u>Results</u>
949622-1	SC-100B-WDR-024	µmhos/cm	EPA 120.1	0.143	2.00	8780
949622-2	SC-700B-WDR-024	µmhos/cm	EPA 120.1	0.143	2.00	7410
949622-3	SC-701-WDR-024	µmhos/cm	EPA 120.1	1.43	20.0	38500

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949622-2	7410	7520	1.47%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	716	706	101%	90% - 110%	Yes
CVS#1	941	996	94.5%	90% - 110%	Yes
CVS#2	938	996	94.2%	90% - 110%	Yes
LCS	703	706	99.6%	90% - 110%	Yes
LCSD	702	706	99.4%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

Established 1931



REPORT

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

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

Laboratory No.: 949622

Date: December 14, 2005

Collected: December 7, 2005

Received: December 7, 2005

Prep/ Analyzed: December 8, 2005

Analytical Batch: 12TDS05D

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>
949622-1	SC-100B-WDR-024	mg/L	EPA 160.1	250	5840
949622-2	SC-700B-WDR-024	mg/L	EPA 160.1	250	4810
949622-3	SC-701-WDR-024	mg/L	EPA 160.1	833	23500

QA/QC Summary

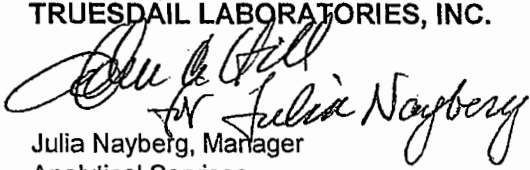
<u>QC STD I.D.</u>	<u>Laboratory Number</u>	<u>Concentration</u>	<u>Duplicate Concentration</u>	<u>Percent Difference</u>	<u>Acceptance limits</u>	<u>QC Within Control</u>
Duplicate	949622-2	4810	4790	0.21%	≤ 5%	Yes

<u>QC Std I.D.</u>	<u>Measured Concentration</u>	<u>Theoretical Concentration</u>	<u>Percent Recovery</u>	<u>Acceptance Limits</u>	<u>QC Within Control</u>
LCS 1	521	500	104%	90% - 110%	Yes
LCS 2	503	500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, 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.: 949622

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

Date: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Prep/ Analyzed: December 8, 2005
Analytical Batch: 12TUC05H

Investigation:

Turbidity by Method EPA 180.1

Analytical Results Turbidity

TLI I.D.	Field I.D.	Sample Time	Units	DF	RL	Results
949622-1	SC-100B-WDR-024	13:15	NTU	1.00	0.100	ND
949622-2	SC-700B-WDR-005	13:30	NTU	1.00	0.100	ND

QA/QC Summary

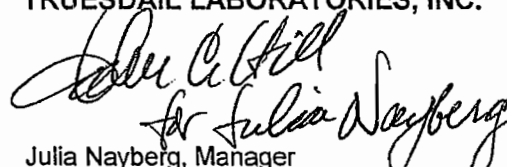
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949615-84	0.168	0.167	0.60%	≤ 20%	Yes

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	8.15	8.00	102%	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.


Julia Nayberg, 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

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: 12CrH05G

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

Laboratory No.: 949622

Date: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Prep/ Analyzed: December 8, 2005
Analytical Batch: 12CrH05G

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
949622-1	SC-100B-WDR-024	13:15	11:26	mg/L	200	0.0400	3.60
949622-2	SC-700B-WDR-024	13:30	11:35	mg/L	5.00	0.0010	ND
949622-3	SC-701-WDR-024	13:50	11:44	mg/L	10.0	0.0020	0.0029

QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949619-5	0.0201	0.0201	0.00%	≤ 20%	Yes

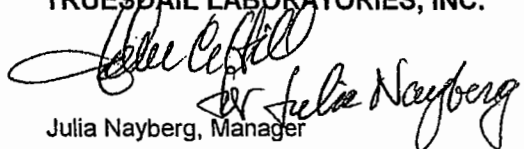
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	949622-1	3.60	200	0.0200	4.00	7.64	7.60	101%	75-125%	Yes
MS	949622-2	0.00	5.00	0.00100	0.00500	0.00550	0.00500	110%	75-125%	Yes
MS	949622-3	0.0029	10.0	0.00100	0.0100	0.0130	0.0129	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00511	0.00500	102%	90% - 110%	Yes
MRCVS#1	0.00989	0.0100	98.9%	90% - 110%	Yes
MRCVS#2	0.00991	0.0100	99.1%	90% - 110%	Yes
MRCVS#3	0.00981	0.0100	98.1%	90% - 110%	Yes
MRCVS#4	0.00987	0.0100	98.7%	90% - 110%	Yes
MRCVS#5	0.00984	0.0100	98.4%	90% - 110%	Yes
LCS	0.00487	0.00500	97.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, Manager
Analytical Services

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Established 1931

REPORT

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

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

Laboratory No.: 949622

Date: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Prep/ Analyzed: December 8, 2005
Analytical Batch: 12NH305C

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
949622-1	SC-100B-WDR-024	13:15	EPA 350.2	mg/L	1.00	0.500	ND
949622-2	SC-700B-WDR-024	13:30	EPA 350.2	mg/L	1.00	0.500	ND

QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		949621-1		ND		ND		0.0%		≤ 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	949621-2	0.00	1.00	10.0	10.0	7.93	10.0	79.3%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	9.69	10.0	96.9%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

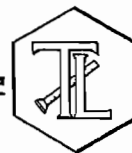
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, Manager
Analytical Services

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REPORT

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

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

Laboratory No.: 949622

Date: December 14, 2005

Collected: December 7, 2005

Received: December 7, 2005

Prep/ Analyzed: December 9, 2005

Analytical Batch: 12AN05H

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
949622-1	SC-100B-WDR-024	13:15	14:24	mg/L	1.00	0.200	2.86
949622-2	SC-700B-WDR-024	13:30	14:45	mg/L	1.00	0.200	2.31
949622-3	SC-701-WDR-024	13:50	15:05	mg/L	50.0	10.0	10.8

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949621-1	0.292	0.284	2.78%	≤ 20%	Yes

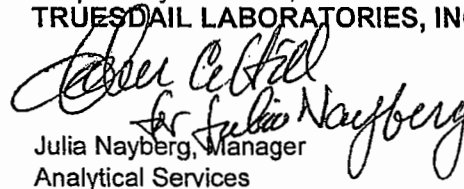
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	949621-1	0.292	1.00	2.00	2.00	2.32	2.29	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.06	4.00	102%	90% - 110%	Yes
MRCVS#1	3.12	3.00	104%	90% - 110%	Yes
MRCVS#2	3.09	3.00	103%	90% - 110%	Yes
MRCVS#3	3.13	3.00	104%	90% - 110%	Yes
LCS	4.06	4.00	102%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, Manager
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

REPORT

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

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

Laboratory No.: 949622

Date: December 14, 2005
Collected: December 7, 2005
Received: December 7, 2005
Prep/ Analyzed: December 9, 2005
Analytical Batch: 12AN05H

Investigation:

Sulfate by Method EPA 300.0

Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
949622-1	SC-100B-WDR-024	13:15	14:34	mg/L	50.0	25.0	666
949622-2	SC-700B-WDR-024	13:30	14:55	mg/L	50.0	25.0	526

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949621-1	286	288	0.70%	≤ 20%	Yes

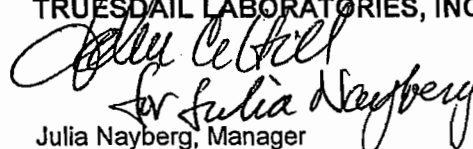
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	949621-1	286	50.0	6.00	300	587	586	100%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	20.0	20.0	100%	90% - 110%	Yes
MRCVS#1	15.0	15.0	100%	90% - 110%	Yes
MRCVS#2	15.0	15.0	100%	90% - 110%	Yes
MRCVS#3	15.2	15.0	101%	90% - 110%	Yes
LCS	20.0	20.0	100%	90% - 110%	Yes

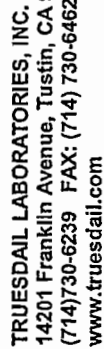
ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, Manager
Analytical Services

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949622

[IM3Plant-WDR-024]

COC Number

TURNAROUND TIME . . . 5 Days

DATE 12-7-05 PAGE 1 OF 1

COMPANY	PROJECT NAME	PHONE	ADDRESS	P.O. NUMBER	SAMPLERS (SIGNATURE)	SAMPLE I.D.	DATE	TIME	DESCRIPTION	CR6 (7199) Lab Filtered	Total Met (6010B) Tide 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, SO ₄ , NO ₂ , NO ₃	Ammonia (350.2)	Turbidity (180.1)	NUMBER OF CONTAINERS	COMMENTS
CH2M HILL	PG&E Topock	(510) 251-2888	155 Grand Ave Ste 1000 Oakland, CA 94612	334168.IM.04.00	[Signature]	SC-100B-WDR-024	12-7-05	1315	Groundwater	X	X	X	X	X	X	X	X	X	X	X	4	pu=2
						SC-700B-WDR-024	12-7-05	1330	Groundwater	X	X	X	X	X	X	X	X	X	X	X	4	pu=2
						SC-701-WDR-024	12-7-05	1350	Groundwater	X	X	X	X	X	X	X	X	X	X	X	4	pu=2
																					21	TOTAL NUMBER OF CONTAINERS

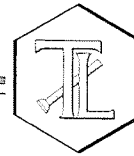
ALERT!!
Level III Q

CHAIN OF CUSTODY SIGNATURE RECORD

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS			
Signature (Relinquished)	Printed Name <i>Joseph Ledbetter</i>	Company/ Agency <i>OMT Inc</i>	Date/ Time <i>12-7-05 / 1400</i>	RECEIVED	COOL <input type="checkbox"/>	WARM <input type="checkbox"/>	°F _____
Signature (Received)	Printed Name <i>L. Shadberry</i>	Company/ Agency <i>Shadberry</i>	Date/ Time <i>12/7/05 20:00</i>	CUSTODY SEALED YES <input type="checkbox"/> NO <input type="checkbox"/>			
Signature (Relinquished)				SPECIAL REQUIREMENTS:			
Signature (Received)				<div style="border: 2px solid black; padding: 10px; text-align: center;"> For Sample Conditions See Form Attached </div>			
Signature (Relinquished)							
Signature (Received)							

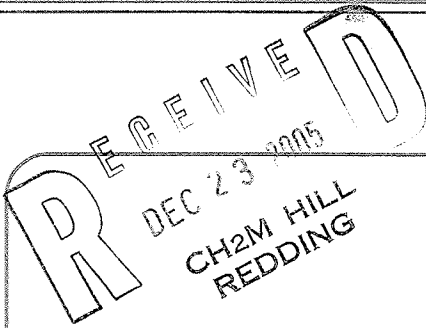
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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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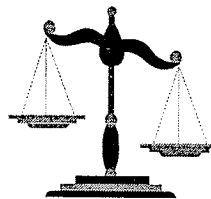
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TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com



CH2M HILL PG&E Topock Project

Laboratory Number: 949835
Received: December 13, 2005

IM3 Plant-WDR-024
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: 949835

<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



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December 22, 2005

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-024 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 949835

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-024 project groundwater monitoring for Nitrates and Nitrites. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

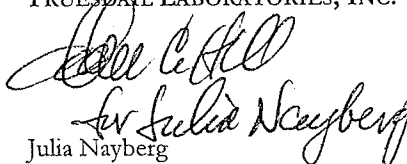
The samples were received and delivered with the chain of custody on December 13, 2005, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The results for requested Nitrate and Nitrite analyses were not enclosed in report for SDG 949622 due to an analyst error, who overlooked the request for Nitrites on COC and passed holding time. Two samples (SC-100B-WDR-024 and SC-700B-WDR-024) were re-sampled on Dec.13, 2005 and we report results for them in this report.

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

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

Respectfully Submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg
Manager, Analytical Services



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

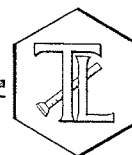
CC: Mr. Mark Cichy, CH2M HILL Redding CA

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

Laboratory No.: 949835
Date Received: December 13, 2005

■ 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 300.0</u> <i>Nitrate</i>	<u>EPA 354.1</u> <i>Nitrite</i>
			<i>mg/L</i>	<i>mg/L</i>
949835-1	SC-100B-WDR-024R	15:00	4.88	0.0120
949835-2	SC-700B-WDR-024R	15:00	4.18	0.0050

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.

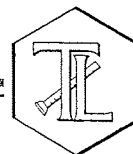
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Section 3.0

Final Reports

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

REPORT

Client: CH2M HILL

155 Grand Ave. Suite 1000
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 334168.IM.04.00

P.O. No.: 911248

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

Laboratory No.: 949835

Date: December 20, 2005

Collected: December 13, 2005

Received: December 13, 2005

Prep/ Analyzed: December 14, 2005

Analytical Batch: 12AN05L

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
949835-1	SC-100B-WDR-024R	15:00	04:45	mg/L	1.00	0.200	4.88
949835-2	SC-700B-WDR-024R	15:00	04:56	mg/L	1.00	0.200	4.18

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949821-2	3.630	3.620	0.28%	≤ 20%	Yes

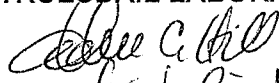

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	949821-2	3.630	1.00	4.00	4.00	7.59	7.63	99.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	3.98	4.00	99.5%	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
LCS	3.98	4.00	99.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.



Julia Nayberg, Manager
Analytical Services

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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

REPORT

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

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples

Project Name: PG&E Topock Project

Project No.: 334168.IM.04.00

P.O. No.: 911248

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

Laboratory No.: 949835

Date: December 20, 2005

Collected: December 13, 2005

Received: December 13, 2005

Prep/ Analyzed: December 14, 2005

Analytical Batch: 12NO205G

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>
949835-1	SC-100B-WDR-024F	15:00	15:52	mg/L	1.00	0.0050	0.0120
949835-2	SC-700B-WDR-024F	15:00	15:53	mg/L	1.00	0.0050	0.0050

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949835-2	0.0050	0.0050	0.0%	≤ 20%	Yes

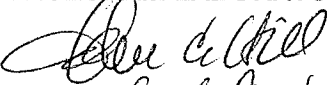
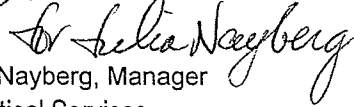
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	949835-2	0.0050	1.00	0.120	0.120	0.142	0.125	114%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0609	0.060	102%	90% - 110%	Yes
MRCVS#1	0.0969	0.100	96.9%	90% - 110%	Yes
LCS	0.129	0.120	108%	90% - 110%	Yes

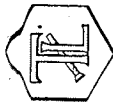
ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.



Julia Nayberg, Manager
Analytical Services

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CHAIN OF CUSTODY RECORD

☐ TURNAROUND TIME 5 Days

DATE 12/13/05 PAGE 1 OF 1

949835

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 334168.1m.04.00

SAMPLERS (SIGNATURE) _____

METHODS

COMMENTS

Rec'd 12/13/05
1514 # 9835

N02
N03

SAMPLE ID. DATE TIME DESCRIPTION

SC-100B-WDR-024R 12/13/05 15:00 Groundwater

SC-100B-WDR-024R 12/13/05 15:00 Groundwater

SC-701-WDR-024R 12/13/05 15:00 Groundwater

RUSH!

ALERT!!
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	<u>Joseph Ledbetter</u>	Printed Name	<u>Joseph Ledbetter</u>	Company/Agency	<u>CH2M Hill</u>	Date/Time	<u>12-13-05 1510</u>
Signature (Received)	<u>L. Shabunina</u>	Printed Name	<u>L. Shabunina</u>	Company/Agency	<u>721</u>	Date/Time	<u>12/13/05 10:20</u>
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time	
Signature (Received)		Printed Name		Company/Agency		Date/Time	
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time	
Signature (Received)		Printed Name		Company/Agency		Date/Time	
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time	
Signature (Received)		Printed Name		Company/Agency		Date/Time	
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time	
Signature (Received)		Printed Name		Company/Agency		Date/Time	

TOTAL NUMBER OF CONTAINERS

3

SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

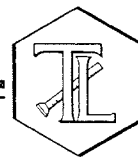
CUSTODY SEALED YES ☐ NO ☐

SPECIAL REQUIREMENTS:

For Sample Conditions
See Form Attached

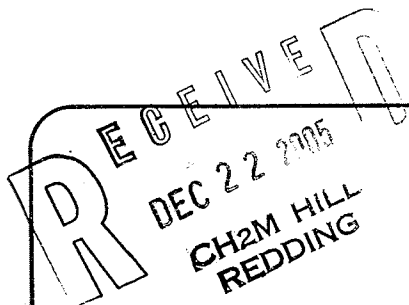
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INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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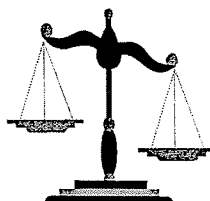
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TUSTIN, CALIFORNIA 92780-7008
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CH2M HILL PG&E Topock Project

Laboratory Number: 949885
Received: December 14, 2005

IM3Plant-WDR-025
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: 949885

<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

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December 20, 2005

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-025 PROJECT, GROUNDWATER
MONITORING,
TLI NO.: 949885

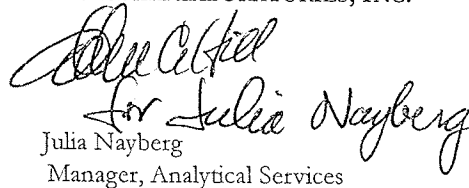
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-025 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

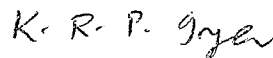
The samples were received and delivered with the chain of custody on December 14, 2005, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.


Julia Nayberg
Manager, Analytical Services



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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

Section 2.0

Summary Table of Final Results

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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.: 949885

Date Received: December 14, 2005

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
949885	SC-700B-WDR-025	13:20	ND	ND	ND	7.81	7060	4590

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.

Section 3.0

Final Reports

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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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

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

Laboratory No.: 949885

Date: December 20, 2005
Collected: December 14, 2005
Received: December 14, 2005
Prep/ Analyzed: December 15, 2005
Analytical Batch: 12CrH05Q

Investigation:

Hexavalent Chromium by SW 7199

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
949885	SC-700B-WDR-025	13:20	10:18	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	949904	0.808	0.805	0.37%	< 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	949885	0.00	5.00	0.00100	0.00500	0.00527	0.00500	105% ✓	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00496	0.00500	99.2%	90% - 110%	Yes
MRCVS#1	0.00979	0.0100	97.9%	90% - 110%	Yes
MRCVS#2	0.00974	0.0100	97.4%	90% - 110%	Yes
MRCVS#3	0.00988	0.0100	98.8%	90% - 110%	Yes
MRCVS#4	0.00983	0.0100	98.3%	90% - 110%	Yes
MRCVS#5	0.00971	0.0100	97.1%	90% - 110%	Yes
LCS	0.00492	0.00500	98.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

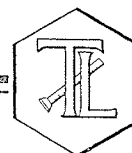
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia C. Hill
for *Julia Nayberg*
Julia Nayberg, Manager
Analytical Services

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REPORT

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

Attention: Shawn Duffy

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

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

Laboratory No.: 949885

Date: December 20, 2005
Collected: December 14, 2005
Received: December 14, 2005
Prep/ Analyzed: December 15, 2005
Analytical Batch: 12EC05H

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>
949885	SC-700B-WDR-025	µmhos/cm	EPA 120.1	1.00	2.00	7060

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949883-2	7620	7550	0.92%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	720	706	102%	90% - 110%	Yes
CVS#1	921	996	92.5%	90% - 110%	Yes
CVS#2	919	996	92.3%	90% - 110%	Yes
LCS	729	706	103%	90% - 110%	Yes
LCSD	725	706	103%	90% - 110%	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg
for *Julia Nayberg*
Julia Nayberg, Manager
Analytical Services

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

Attention: Shawn Duffy

REPORT

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

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 121905A

Laboratory No.: 949885

Date: December 20, 2005
Collected: December 14, 2005
Received: December 14, 2005
Prep/ Analyzed: December 19, 2005
Analytical Batch: 121905A

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

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
949885	SC-700B-WDR-025	mg/L	SW 6010B	11:48	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	949884-2	0.0286	0.0282	1.41%	≤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	949770	0.00	1.04	0.0100	0.0104	0.00811	0.0104	78.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00981	0.0100	98.1%	90% - 110%	Yes
MRCVS#1	0.00927	0.0100	92.7%	90% - 110%	Yes
MRCVS#2	0.00908	0.0100	90.8%	90% - 110%	Yes
ICS	0.00929	0.0100	92.9%	80% - 120%	Yes
LCS	0.00976	0.0100	97.6%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

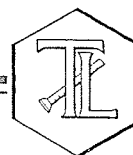
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


for Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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Oakland, CA 94612

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

Attention: Shawn Duffy

Laboratory No.: 949885

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

Date: December 20, 2005
Collected: December 14, 2005
Received: December 14, 2005
Prep/ Analyzed: December 15, 2005
Analytical Batch: 12PH050

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>
949885	SC-700B-WDR-025	13:20	08:40	pH Units	0.0140	0.100	7.81

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	949883-2	7.39	7.39	0.00	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	+ 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	+ 0.100 Units	Yes
LCS #2	7.00	7.00	0.00	+ 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia C. Hill
for *Julia Nayberg*
Julia Nayberg, Manager
Analytical Services

TRUESDAIL LABORATORIES, INC.

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

Attention: Shawn Duffy

Laboratory No.: 949885

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

Date: December 20, 2005
Collected: December 14, 2005
Received: December 14, 2005
Prep/ Analyzed: December 15, 2005
Analytical Batch: 12TDS05G

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>
949885	SC-700B-WDR-025	mg/L	EPA 160.1	250	4590

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	949885	4590	4590	0.00%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	526	500	105%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

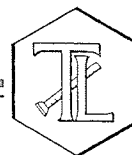

for Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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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

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

Laboratory No.: 949885

Date: December 20, 2005

Collected: December 14, 2005

Received: December 14, 2005

Prep/ Analyzed: December 15, 2005

Analytical Batch: 12TUC05L

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>
949885	SC-700B-WDR-025	13:20	NTU	1.00	0.100	ND

QA/QC Summary

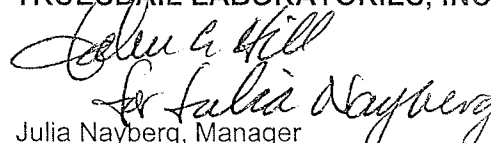
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	949866-95	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.50	8.00	106%	90% - 110%	Yes
LCS	8.50	8.00	106%	90% - 110%	Yes
LCS	8.60	8.00	108%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.


Julia Nayberg, Manager
Analytical Services

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949885



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CHAIN OF CUSTODY RECORD

[IM3]Plant-WDR-025]

COC Number
TURNAROUND TIME 5 Days
DATE 12-14-05 PAGE 1 OF 1

COMPANY	CH2M HILL	DATE	TIME	DESCRIPTION	SAMPLE I.D.	COMMENTS
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		 TURBIDITY (780.1) TDS (160.1) pH (150.1) Specific Conductance (120.1) Total Met (6010B) Total Chromium CR6 (7199) Lab Filtered				
SC-700B-WDR-025						
12-14-05 1320						
Groundwater						

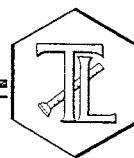
Levee III QC
FERTII
2005
TOTAL NUMBER OF CONTAINERS
3

Rec'd 12/14/05
Date 949885

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	RECEIVED	COOL
	Joseph Ledbetter	OMI Inc.	12-14-05 1330	<input type="checkbox"/>	WARM <input type="checkbox"/>
Signature (Received)	Printed Name	Company/Agency	Date/Time	CUSTODY SEALED YES <input type="checkbox"/> NO <input type="checkbox"/>	
	Joseph Ledbetter	OMI Inc.	12-14-05 1330	See Form Attached	
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS	
	Joseph Ledbetter	OMI Inc.	12-14-05 1330		
Signature (Received)	Printed Name	Company/Agency	Date/Time	°F	
	Joseph Ledbetter	OMI Inc.	12-14-05 1330		
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time		
	Joseph Ledbetter	OMI Inc.	12-14-05 1330		
Signature (Received)	Printed Name	Company/Agency	Date/Time		
	Joseph Ledbetter	OMI Inc.	12-14-05 1330		

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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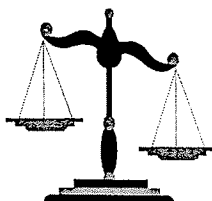
14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
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CH2M HILL PG&E Topock Project

RECEIVED
DEC 30 2005
CH2M HILL
REDDING

Laboratory Number: 950116
Received: December 21, 2005

IM3Plant-WDR-026
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: 950116

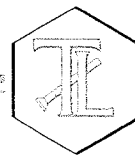
<u>ITEM</u>	<u>Section</u>
Case Narrative	1.0
Summary Table of Final Results	2.0
Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

Section 1.0

Case Narrative

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December 28, 2005

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-026 PROJECT, GROUNDWATER
MONITORING,
TLI No.: 950116

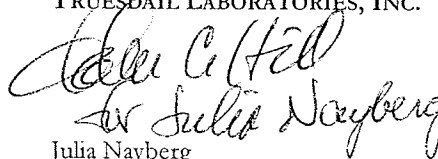
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-026 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this laboratory number is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

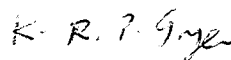
The samples were received and delivered with the chain of custody on December 21, 2005, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.


Julia Nayberg
Manager, Analytical Services



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

CC: Mr. Mark Cichy, CH2M HILL Redding CA

Section 2.0

Summary Table of Final Results

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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.: 950116

Date Received: December 21, 2005

Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 7199</u> <i>Chromium</i> <i>Hexavalent</i>	<u>EPA 180.1</u> <i>Turbidity</i>	<u>EPA 150.1</u> <i>pH</i>	<u>EPA 120.1</u> <i>EC</i>	<u>EPA 160.1</u> <i>TDS</i>
			<i>mg/L</i>	<i>NTU</i>	<i>Unit</i>	<i>μmhos/cm</i>	<i>mg/L</i>
950116	SC-700B-WDR-026	14:55	ND	ND	7.63	8180	4330

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.

Section 3.0

Final Reports

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

REPORT

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

Attention: Shawn Duffy

Laboratory No.: 950116

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

Date: December 27, 2005
Collected: December 21, 2005
Received: December 21, 2005
Prep/ Analyzed: December 22, 2005
Analytical Batch: 12PH05Y

Investigation:

pH by EPA 150.1

Analytical Results pH

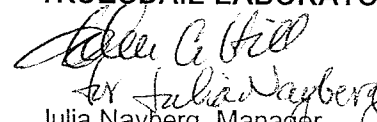
<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
950116	SC-700B-WDR-026	14:55	07:05	pH Units	0.0140	0.100	7.63

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	950116	7.63	7.64	0.01	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #1	7.00	7.00	0.00	± 0.100 Units	Yes

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

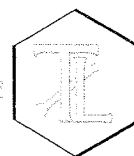

Julia Nayberg, Manager
Analytical Services

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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

P.O. No.: 911248

REPORT

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780-7008
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Laboratory No.: 950116

Date: December 27, 2005

Collected: December 21, 2005

Received: December 21, 2005

Prep/ Analyzed: December 23, 2005

Analytical Batch: 12EC05P

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>
950116	SC-700B-WDR-026	µmhos/cm	EPA 120.1	10.0	20.0	8180

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	950116	8180	8200	0.24%	≤ 10%	Yes
	QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
	CCS	721	706	102%	90% - 110%	Yes
	CVS#1	921	996	92.5%	90% - 110%	Yes
	LCS	728	706	103%	90% - 110%	Yes
	LCSD	731	706	104%	90% - 110%	Yes

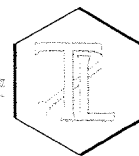
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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REPORT

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

Attention: Shawn Duffy

Laboratory No.: 950116

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

Date: December 27, 2005
Collected: December 21, 2005
Received: December 21, 2005
Prep/ Analyzed: December 22, 2005
Analytical Batch: 12TDS05J

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>
950116	SC-700B-WDR-026	mg/L	EPA 160.1	250	4330

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	950116	4330	4310	0.23%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	494	500	98.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

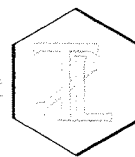
Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia C. Hill
for Julia Nayberg
Julia Nayberg, 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.: 950116

Date: December 27, 2005

Collected: December 21, 2005

Received: December 21, 2005

Prep/ Analyzed: December 22, 2005

Analytical Batch: 12TUC05S

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>
950116	SC-700B-WDR-026	14:55	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	950112-2	0.185	0.184	0.54%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.60	8.00	95.0%	90% - 110%	Yes
LCS	7.58	8.00	94.8%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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

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

Attention: Shawn Duffy

Laboratory No.: 950116

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

Date: December 27, 2005
Collected: December 21, 2005
Received: December 21, 2005
Prep/ Analyzed: December 22, 2005
Analytical Batch: 12CrH05Y

Investigation: Hexavalent Chromium by SW 7199

Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
950116	SC-700B-WDR-026	14:55	08:49	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	950115-1	0.0030	0.0030	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	950116	0.00	5.00	0.00100	0.00500	0.00495	0.00500	99.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00498	0.00500	99.6%	90% - 110%	Yes
MRCVS#1	0.00974	0.0100	97.4%	90% - 110%	Yes
MRCVS#2	0.00947	0.0100	94.7%	90% - 110%	Yes
LCS	0.00488	0.00500	97.6%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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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.: 950116

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 122705B

Date: December 27, 2005
Collected: December 21, 2005
Received: December 21, 2005
Prep/ Analyzed: December 27, 2005
Analytical Batch: 122705B

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>
950116	SC-700B-WDR-026	mg/L	SW 6010B	16:22	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	949972-4	0.0065	0.0065	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	949972-7	0.0065	1.04	0.0100	0.0104	0.0167	0.0169	98.1%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0104	0.0100	104%	90% - 110%	Yes
MRCVS#1	0.00989	0.0100	98.9%	90% - 110%	Yes
MRCVS#2	0.00953	0.0100	95.3%	90% - 110%	Yes
ICS	0.00983	0.0100	98.3%	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.

Julia Nayberg
for *Julia Nayberg*
Julia Nayberg, Manager
Analytical Services

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950116



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

[IM3Plant-WDR-026]

COC Number

5 Days

TURNAROUND TIME

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 Oakley</i>	DATE	12-21-05	TIME	14:55	DESCRIPTION	Groundwater	CR6 (7199) Lab Filtered	x	Total Met (6010B) Total Chromium	x	Specific Conductance (120.1)	x	PH (150.1)	x	TDS (160.1)	x	Turbidity (180.1)	x	NUMBER OF CONTAINERS	3	COMMENTS
																			TOTAL NUMBER OF CONTAINERS		950116													

Rec'd 12/21/05

950116

For Sample Conditions
See Form Attached

RUSH

CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)		Printed Name	Company/Agency	Date/Time	SAMPLE CONDITIONS	
<i>Bill Oakley</i>		Bill Oakley	CH2M HILL	12-21-05	RECEIVED	COOL <input type="checkbox"/> WARM <input type="checkbox"/>
Signature (Received)		Printed Name	Company/Agency	Date/Time	CUSTODY SEALED	YES <input type="checkbox"/> NO <input type="checkbox"/>
<i>J. Brown</i>		J. Brown	CH2M HILL	12-21-05		
Signature (Relinquished)		Printed Name	Company/Agency	Date/Time	SPECIAL REQUIREMENTS:	
<i>J. Brown</i>		J. Brown	CH2M HILL	12-21-05		
Signature (Received)		Printed Name	Company/Agency	Date/Time		
<i>J. Brown</i>		J. Brown	CH2M HILL	12-21-05		
Signature (Relinquished)		Printed Name	Company/Agency	Date/Time		
<i>J. Brown</i>		J. Brown	CH2M HILL	12-21-05		
Signature (Received)		Printed Name	Company/Agency	Date/Time		
<i>J. Brown</i>		J. Brown	CH2M HILL	12-21-05		

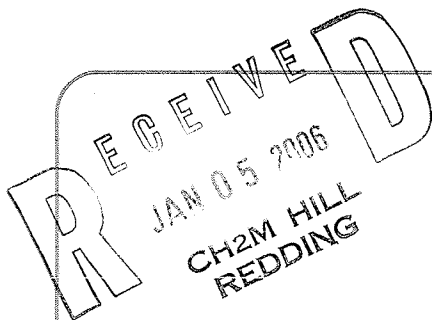
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CH2M HILL PG&E Topock Project

Laboratory Number: 950270
Received: December 28, 2005

IM3Plant-WDR-027
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: 950270

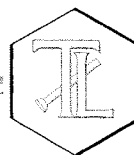
<u>ITEM</u>	<u>Section</u>
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Final Reports	3.0
Wet Chem Analysis/ Raw Data, Standard, Quality Control and Chain of Custody Records	4.0
Established Retention Time Window and Analytical Raw Data	5.0

Section 1.0

Case Narrative

TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

January 3, 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 IM3 PLANT-WDR-027 PROJECT, GROUNDWATER MONITORING.

TLI No.: 950270

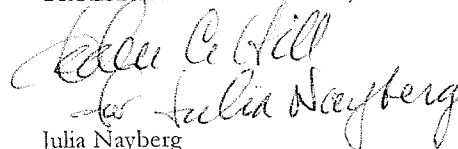
Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3 Plant-WDR-027 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this laboratory number is included in Section 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.

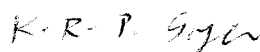
The sample was received and delivered with the chain of custody on December 28, 2005, intact and in chilled condition. The sample will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

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.

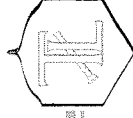

Julia Nayberg
Manager, Analytical Services



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

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.: 950270

Date Received: December 28, 2005

Analytical Results Summary

<u>Lab I.D.</u>	<u>Sample I.D.</u>	<u>Sample Time</u>	<u>SW 7199</u> Chromium Hexavalent	<u>EPA 180.1</u> Turbidity	<u>EPA 150.1</u> pH	<u>EPA 120.1</u> EC	<u>EPA 160.1</u> TDS
			mg/L	NTU	Unit	µmhos/cm	mg/L
950270	SC-700B-WDR-027	13:30	ND	ND	7.63	8230	4490

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.

Section 3.0

Final Reports

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.: 950270

Sample: One (1) Groundwater Sample
Project Name: PG&E Topock Project
Project No.: 334168.IM.04.00
P.O. No.: 911248
Prep. Batch: 010306A

Date: January 3, 2006
Collected: December 28, 2005
Received: December 28, 2005
Prep/ Analyzed: January 3, 2006
Analytical Batch: 010306A

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

Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
950270	SC-700B-WDR-027	mg/L	SW 6010B	14:29	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	950270	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	950270	0.00	1.04	0.0100	0.0104	0.00957	0.0104	92.0%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.00967	0.0100	96.7%	90% - 110%	Yes
MRCVS#1	0.00980	0.0100	98.0%	90% - 110%	Yes
ICS	0.0105	0.0100	105%	80% - 120%	Yes
LCS	0.00947	0.0100	94.7%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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www.truesdail.com

Attention: Shawn Duffy

Laboratory No.: 950270

Sample: One (1) Groundwater Sample

Date: January 3, 2006

Project Name: PG&E Topock Project

Collected: December 28, 2005

Project No.: 334168.IM.04.00

Received: December 28, 2005

P.O. No.: 911248

Prep/ Analyzed: December 29, 2005

Analytical Batch: 12TDS05K

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>
950270	SC-700B-WDR-027	mg/L	EPA 160.1	250	4490

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	950270	4490	4420	0.79%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	502	500	100%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

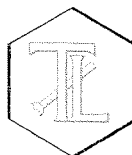
Julia Nayberg
for Julia Nayberg
Julia Nayberg, Manager
Analytical Services

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www.truesdail.com

Attention: Shawn Duffy

Laboratory No.: 950270

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

Date: January 3, 2006
Collected: December 28, 2005
Received: December 28, 2005
Prep/ Analyzed: December 29, 2005
Analytical Batch: 12EC05Q

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>
950270	SC-700B-WDR-027	µmhos/cm	EPA 120.1	10.0	20.0	8230

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	950249-2	479	476	0.63%	≤ 10%	Yes
QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control	
CCS	723	706	102%	90% - 110%	Yes	
CVS#1	921	996	92.5%	90% - 110%	Yes	
CVS#2	923	996	92.7%	90% - 110%	Yes	
LCS	732	706	104%	90% - 110%	Yes	
LCSD	729	706	103%	90% - 110%	Yes	

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Julia Nayberg, Manager
Analytical Services

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Oakland, CA 94612

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

Attention: Shawn Duffy

Laboratory No.: 950270

Sample: One (1) Groundwater Sample

Date: January 3, 2006

Project Name: PG&E Topock Project

Collected: December 28, 2005

Project No.: 334168.IM.04.00

Received: December 28, 2005

P.O. No.: 911248

Prep/ Analyzed: December 29, 2005

Analytical Batch: 12PH05AC

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>
950270	SC-700B-WDR-027	13:30	07:05	pH Units	0.0140	0.100	7.63

QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	950270	7.63	7.64	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	+ 0.100 Units	Yes
LCS #1	7.01	7.00	0.01	+ 0.100 Units	Yes

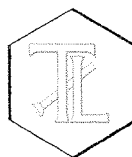
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155 Grand Ave. Suite 1000

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

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

Laboratory No.: 950270

Date: January 3, 2006

Collected: December 28, 2005

Received: December 28, 2005

Prep/ Analyzed: December 29, 2005

Analytical Batch: 12CrH05AC

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>
950270	SC-700B-WDR-027	13:30	07:27	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	950270	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	950270	0.00	5.00	0.00100	0.00500	0.00522	0.00500	104%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00490	0.00500	98.0%	90% - 110%	Yes
MRCVS#1	0.00995	0.0100	99.5%	90% - 110%	Yes
LCS	0.00494	0.00500	98.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

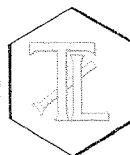
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Julia Nayberg, Manager
Analytical Services

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REPORT

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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

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

Laboratory No.: 950270

Date: January 3, 2006

Collected: December 28, 2005

Received: December 28, 2005

Prep/ Analyzed: December 29, 2005

Analytical Batch: 12TUC05V

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>
950270	SC-700B-WDR-027	13:30	NTU	1.00	0.100	ND

QA/QC Summary

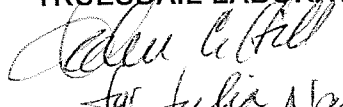
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	950200-12	0.106	0.105	0.95%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.45	8.00	106%	90% - 110%	Yes
LCS	8.54	8.00	107%	90% - 110%	Yes
LCS	8.47	8.00	106%	90% - 110%	Yes

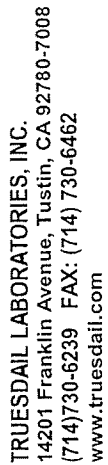
ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

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[IM3Plant-WDR-027]

COC Number

5 Days

TURNAROUND TIME

DATE _____

PAGE 1

1

SC-700B-WDR-027						DATE	TIME	DESCRIPTION
						12-28-05	13:20	Groundwater
SAMPLE I.D.								
SAMPLERS SIGNATURE								
P.O. NUMBER	334168.IM.04.00							
ADDRESS	155 Grand Ave Site 1000 Oakland, CA 94612							
PHONE	(510) 251-2888	FAX	(510) 622-7086					
PROJECT NAME	PG&E Topock							
COMPANY	CH2M HILL							

COMMENTS

TOTAL NUMBER OF CONTAINERS

Rec'd 12/28/05
sl7a 950270

CR6 (7199) Lab Filtered x

Total Met (6070B) Total Chromium x

Specific Conductance (120. T) x

pH (150. T) x

TDS (160. T) x

Turbidity (180. T) x

NUMBER OF CONTAINERS

3

3

PH = 2

TOTAL NUMBER OF CONTAINERS

TRIAL

COFFEE

See Form Attached

CHAIN OF CUSTODY SIGNATURE RECORD

CHAIN OF CUSTODY SIGNATURE RECORD				SAMPLE CONDITIONS		
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	RECEIVED	COOL <input type="checkbox"/>	WARM <input type="checkbox"/>
Signature (Received)	Printed Name	Company/ Agency	Date/ Time	CUSTODY SEALED	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time	SPECIAL REQUIREMENTS:		
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time			
Signature (Received)	Printed Name	Company/ Agency	Date/ Time			

ANALYTICAL REPORT

PG&E TOPOCK GWM

Lot #: E5L230328

Shawn Duffy

CH2M Hill Inc

SEVERN TRENT LABORATORIES, INC.

Marisol Tabirara
Project Manager

December 30, 2005

EXECUTIVE SUMMARY - Detection Highlights

E5L230328

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
SC-SLUDGE-WDR-026 12/21/05 15:13 001				
Mercury	2.3	0.57	mg/kg	SW846 7471A
Arsenic	49	11	mg/kg	SW846 6010B
Barium	93	23	mg/kg	SW846 6010B
Chromium	34000	11	mg/kg	SW846 6010B
Copper	87	29	mg/kg	SW846 6010B
Molybdenum	93	46	mg/kg	SW846 6010B
Nickel	49	46	mg/kg	SW846 6010B
Vanadium	100	57	mg/kg	SW846 6010B
Zinc	36	23	mg/kg	SW846 6010B
Percent Moisture	82	0.10	%	MCAWW 160.3 MOD
Hexavalent Chromium	130	4.6	mg/kg	SW846 7199

METHODS SUMMARY

E5L230328

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Hexavalent Chromium	SW846 7199	
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.

SAMPLE SUMMARY

E5L230328

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
HTRQW	001	SC-SLUDGE-WDR-026	12/21/05	15:13

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-026

TOTAL Metals

Lot-Sample #...: E5L230328-001

Matrix.....: SO

Date Sampled...: 12/21/05 15:13 Date Received...: 12/23/05 11:20

% Moisture.....: 82

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 5361240						
Arsenic	49	11	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AD
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Antimony	ND G	69	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AE
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Barium	93	23	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AF
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Cadmium	ND G	5.7	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AG
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Chromium	34000	11	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AH
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Beryllium	ND G	5.7	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AJ
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Lead	ND G	5.7	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AK
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Selenium	ND G	5.7	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AL
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Silver	ND G	11	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AM
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		

(Continued on next page)

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-026

TOTAL Metals

Lot-Sample #...: E5L230328-001

Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	ND G	57	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AN
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Copper	87	29	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AP
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Molybdenum	93	46	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AQ
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Nickel	49	46	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AR
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Thallium	ND G	11	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AT
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Vanadium	100	57	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AU
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Zinc	36	23	mg/kg	SW846 6010B	12/27-12/29/05	HTRQW1AV
		Dilution Factor: 2		Analysis Time..: 11:57	Analyst ID.....: 021088	
		Instrument ID..: M01		MS Run #.....: 5361120		
Prep Batch #...: 5361245						
Mercury	2.3	0.57	mg/kg	SW846 7471A	12/27-12/28/05	HTRQW1AW
		Dilution Factor: 1		Analysis Time..: 16:46	Analyst ID.....: 000023	
		Instrument ID..: M04		MS Run #.....: 5361122		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-026

General Chemistry

Lot-Sample #...: E5L230328-001 Work Order #...: HTRQW Matrix.....: SO
Date Sampled...: 12/21/05 15:13 Date Received..: 12/23/05 11:20
% Moisture.....: 82

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	130	4.6	mg/kg	SW846 7199	12/24-12/27/05	5358021
				Dilution Factor: 2 Instrument ID..: W18	Analysis Time..: 10:08 MS Run #.....: 5358004	Analyst ID.....: 000022
Percent Moisture	82	0.10	%	MCAWW 160.3 MOD	12/27-12/28/05	5361300
				Dilution Factor: 1 Instrument ID..: W15	Analysis Time..: 12:05 MS Run #.....:	Analyst ID.....: 0000644

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

Appendix B

Flowmeter Calibration Records

Flow Calibration with Adjustment

30057866-1275190

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

PROMAG 23 P 2"

Transmitter/Sensor

6A021F16000

Serial N°

FIT-100

Tag N°

FCP-6.C

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9178

Calibration factor

0

Zero point

72.9 °F

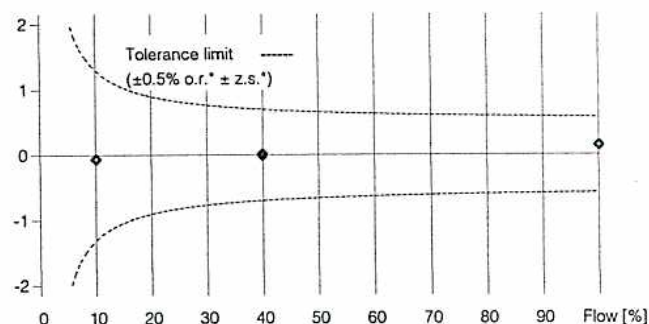
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.5	30.0	7.7502	7.7457	-0.06	5.59
39.9	62.1	30.0	31.071	31.070	0.00	10.38
39.9	62.1	30.0	31.073	31.078	0.02	10.38
100.2	156.0	30.0	78.041	78.156	0.15	20.06
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004

Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143



Tim Swick

Operator

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

Parameter Setting

1275190

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

6A021F16000

Serial N°

PROMAG 23 P

Transm./Sensor

2"

Nominal diameter

FIT-100

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

75 USgal/min

4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004

Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

CH2M HILL INSTRUMENT CALIBRATION SHEET

Rev.06.05.92

COMPONENT			MANUFACTURER			PROJECT						
Code:			Name: <i>Endress + Hauser</i>			Number:						
Name:			Model: <i>23P50-AL1A1RA022AW</i>			Name: <i>TOPOCIC IM3</i>						
			Serial #: <i>6A024F16000</i>									
FUNCTIONS												
	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y/N			CONTROL? Y/N					
Indicate? <i>(Y/N)</i>	Chart:			Describe:			Action? direct / reverse					
Record? <i>(Y/N)</i>	Scale:	<i>0-50</i>	<i>gpm</i>				Modes? P/I/D					
Transmit/Convert? <i>(Y/N)</i>	Input:	<i>0-50</i>	<i>gpm</i>				SWITCH? <i>(Y/N)</i>					
	Output:	<i>4-20</i>	<i>MA</i>				Unit Range:					
							Differential: <i>fixed/adjustable</i>					
							Reset? automatic / manual					
ANALOG CALIBRATIONS						DISCRETE CALIBRATIONS				Note. No		
REQUIRED			AS CALIBRATED			REQUIRED			AS CALIBRATED			
Input	Indicated	Output	Increasing Input		Decreasing Input		Number	Trip Point	Reset Pt.		Trip Point	Reset Pt.
			Indicated	Output	Indicated	Output		(note rising or falling)			(note rising or falling)	
<i>0.0</i>	<i>0.0</i>	<i>4.0</i>	<i>0</i>	<i>4.00</i>			<i>1.</i>					
<i>25.0</i>	<i>25.0</i>	<i>12.0</i>					<i>2.</i>					
<i>50.0</i>	<i>50.0</i>	<i>20.0</i>					<i>3.</i>					
							<i>4.</i>					
							<i>5.</i>					
							<i>6.</i>					
CONTROL MODE SETTINGS:			P:	I:	D:		<i>7.</i>					
#	NOTES:								Component Calibrated and Ready for Start-up			
	<i>Verified Model No & Tag.</i>								By: <i>C. Hastings</i>			
	<i>Programmed Tag & Description</i>								Date: <i>4-18-05</i>			
	<i>Re-ranged from 0-75 gpm to 0-50 gpm</i>								Tag No.: <i>FIT-100</i>			
	<i>Simulated Current output 4, 8, 12, 16, & 20</i>											

Flow Calibration with Adjustment

30057870-1275191

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

PROMAG 23 P 2"

Transmitter/Sensor

6A022016000

Serial N°

FIT-101

Tag N°

FCP-6.C

Calibration rig

155.6102 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9207

Calibration factor

0

Zero point

74.1 °F

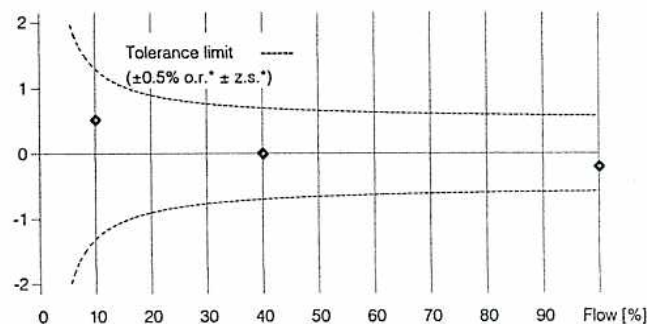
Water temperature

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

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004

Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143



Tim Swick

Operator

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

Parameter Setting

1275191

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

6A022016000

Serial N°

PROMAG 23 P

Transm./Sensor

2"

Nominal diameter

FIT-101

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

75 USgal/min

4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004

Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

CH2M HILL INSTRUMENT CALIBRATION SHEET

Rev.06.05.92

COMPONENT			MANUFACTURER			PROJECT						
Code:			Name: <u>Endress + Hauser</u>			Number:						
Name:			Model: <u>23P50-AL1ARA022AW</u>			Name: <u>Topock IM3</u>						
			Serial #: <u>6A022016000</u>									
FUNCTIONS												
Indicate? <u>Y/N</u> Record? <u>Y/N</u>	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y/N			CONTROL? <u>Y/N</u> Action? direct / reverse Modes? P / I / D					
	Chart:			Describe:			SWITCH? <u>Y/N</u> Unit Range: Differential: <u>fixed/adjustable</u> Reset? automatic / manual					
Transmit/ Convert? <u>Y/N</u>	Input:	<u>0-120</u>	<u>GPM</u>									
	Output:	<u>4-20</u>	<u>MA</u>									
ANALOG CALIBRATIONS						DISCRETE CALIBRATIONS				Note. No		
REQUIRED			AS CALIBRATED				REQUIRED				AS CALIBRATED	
Input	Indicated	Output	Increasing Input		Decreasing Input		Number	Trip Point	Reset Pt.		Trip Point	Reset Pt.
			Indicated	Output	Indicated	Output		(note rising or falling)			(note rising or falling)	
<u>0.0</u>		<u>4.0</u>	<u>0</u>	<u>4.0</u>			1.					
<u>30.0</u>		<u>8.0</u>					2.					
<u>60.0</u>		<u>12.0</u>					3.					
<u>90.0</u>		<u>16.0</u>					4.					
<u>120.0</u>		<u>20.0</u>					5.					
							6.					
CONTROL MODE SETTINGS:			P:	I:	D:		7.					
#	NOTES:								Component Calibrated and Ready for Start-up			
	<u>Verified Model No. & Tag.</u>								By: <u>C. Hastings</u>			
	<u>ReRanged from 0-75 gpm to 0-120 gpm</u>								Date: <u>4-18-05</u>			
	<u>Programmed Tag & Description</u>								Tag No.: <u>FIT-101</u>			
	<u>Simulated mA output 4, 8, 12, 16, & 20</u>											

Flow Calibration with Adjustment

30057871-1275192

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

PROMAG 23 P 2"

Transmitter/Sensor

6A022116000

Serial N°

FIT-102

Tag N°

FCP-6.C

Calibration rig

155.6102 GPM (\triangleq 100%)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9214

Calibration factor

0

Zero point

74.9 °F

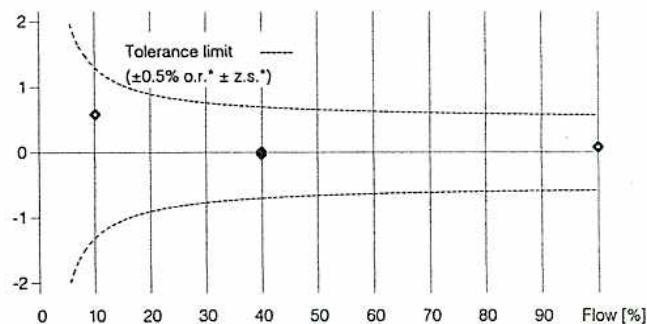
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.0	15.6	30.0	7.7896	7.8356	0.59	5.61
39.9	62.1	30.0	31.069	31.073	0.01	10.38
39.9	62.1	30.0	31.070	31.063	-0.02	10.38
100.2	155.9	30.0	78.008	78.072	0.08	20.04
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

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

11-29-2004

Date of calibration

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143



Tim Swick

Operator

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

Parameter Setting

Endress+Hauser



People for Process Automation

1275192

41724888

Purchase Order Number

USA-49310090-40 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1RA022AW

Order Code

6A022116000

Serial N°

PROMAG 23 P

Transm./Sensor

2"

Nominal diameter

FIT-102

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

75 USgal/min

4-20mA HART US

The above parameters are set according to your order. Please refer to the Operating Manual for any parameters not mentioned.

11-29-2004

Date

Endress+Hauser
2350 Endress Place
Greenwood, IN 46143

CH2M HILL INSTRUMENT CALIBRATION SHEET

Rev.06.05.92

COMPONENT			MANUFACTURER			PROJECT						
Code:			Name: <i>Endress + Hauser</i>			Number:						
Name:			Model:			Name: <i>Topock IM3</i>						
			Serial #: <i>6A0221160000</i>									
FUNCTIONS												
Indicate? <i>Y/N</i>	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? <i>Y/N</i>			CONTROL? <i>Y/N</i>					
Record? <i>Y/N</i>	Chart:			Describe:			Action? <i>direct/reverse</i>					
	Scale:						Modes? <i>P/I/D</i>					
Transmit/Convert? <i>Y/N</i>	Input:	<i>0-50</i>	<i>GPM</i>				SWITCH? <i>Y/N</i>					
	Output:	<i>4-20</i>	<i>mA</i>				Unit Range:					
							Differential: <i>fixed/adjustable</i>					
							Reset? <i>automatic / manual</i>					
ANALOG CALIBRATIONS					DISCRETE CALIBRATIONS					Note. No		
REQUIRED			AS CALIBRATED				REQUIRED				AS CALIBRATED	
Input	Indicated	Output	Increasing Input		Decreasing Input		Number	Trip Point	Reset Pt.		Trip Point	Reset Pt.
			Indicated	Output	Indicated	Output		(note rising or falling)			(note rising or falling)	
<i>0.0</i>	<i>0</i>	<i>4.00</i>	<i>0</i>	<i>4.0</i>			<i>1.</i>					
<i>12.5</i>	<i>12.5</i>	<i>8.00</i>					<i>2.</i>					
<i>25.00</i>	<i>25.0</i>	<i>12.00</i>					<i>3.</i>					
<i>37.5</i>	<i>37.5</i>	<i>16.00</i>					<i>4.</i>					
<i>50.0</i>	<i>50.0</i>	<i>20.00</i>					<i>5.</i>					
							<i>6.</i>					
CONTROL MODE SETTINGS:			P:	I:	D:		<i>7.</i>					
#	NOTES:								Component Calibrated and Ready for Start-up			
	<i>Verified, Model No & tag.</i>								By: <i>C. Hastings</i>			
	<i>Re-ranged from 0-75 gpm to 0-50 gpm</i>								Date: <i>4-18-05</i>			
	<i>Programmed tag & description</i>								Tag No.: <i>FIT-102</i>			
	<i>Simulated mA output: 4, 8, 12, 16, & 20 mA</i>											

Flow Calibration with Adjustment

30060317-1304709

41729921

Purchase order number

US-49311914-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037316000

Serial N°

~~FIT-1205~~ ^{AR} ~~FIT-701~~ (put into service as FIT-701)

Tag N°

FCP-20 SMALL

Calibration rig

155.6102 GPM ($\triangleq 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9152

Calibration factor

0

Zero point

72.0 °F

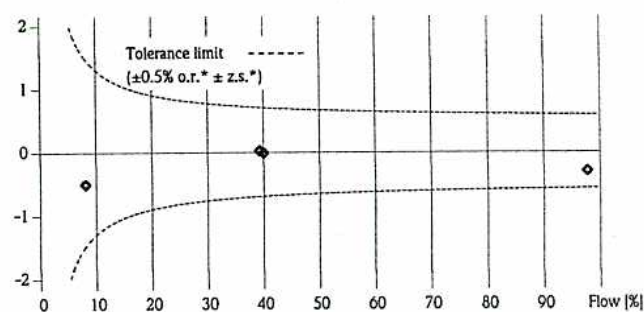
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
8.2	12.7	61.3	13.009	12.942	-0.51	5.30
39.5	61.4	61.6	63.049	63.061	0.02	10.32
40.2	62.5	60.9	63.388	63.377	-0.02	10.43
97.9	152.4	62.1	157.766	157.275	-0.31	19.62
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

01-31-2005

Date of calibration

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

Jim Baase

Jim Baase

Operator

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

Parameter Setting

1304709

41729921

Purchase order number

US-49311914-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

6C037316000

Serial N°

PROMAG 23 P

Transmitter/Sensor

2"

Nominal diameter

~~FIT-1205~~ ^{AR} *FIT-701 (put into service)
as FIT-701*

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

75 USgal/min

4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

01-31-2005

Date

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

CH2M HILL INSTRUMENT CALIBRATION SHEET

Rev.06.05.92

COMPONENT			MANUFACTURER			PROJECT						
Code:			Name: <u>Endress + Hauser</u>			Number:						
Name:			Model: <u>23P50-AL1A1AA022AW</u>			Name: <u>Topock IM3</u>						
			Serial #: <u>6C037316000</u>									
FUNCTIONS												
	RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y / N			CONTROL? Y / (N)					
Indicate? Y / (N)	Chart:			Describe:			Action? direct / reverse					
Record? Y / (N)	Scale:	<u>0-25</u>	<u>GPM</u>				Modes? P / I / D					
Transmit/Convert? Y / (N)	Input:	<u>0-25</u>	<u>GPM</u>				SWITCH? Y / (N)					
	Output:	<u>4-20</u>	<u>mA</u>				Unit Range:					
							Differential: fixed/adjustable					
							Reset? automatic / manual					
ANALOG CALIBRATIONS					DISCRETE CALIBRATIONS					Note. No		
REQUIRED			AS CALIBRATED				REQUIRED				AS CALIBRATED	
Input	Indicated	Output	Increasing Input		Decreasing Input		Number	Trip Point	Reset Pt.		Trip Point	Reset Pt.
			Indicated	Output	Indicated	Output		(note rising or falling)		(note rising or falling)		
<u>0.0</u>	<u>0.0</u>	<u>4.0</u>	<u>0.0</u>	<u>4.0</u>			1.					
<u>6.25</u>	<u>6.25</u>	<u>8.0</u>					2.					
<u>12.5</u>	<u>12.50</u>	<u>12.0</u>					3.					
<u>18.75</u>	<u>18.75</u>	<u>16.0</u>					4.					
<u>25.0</u>	<u>25.00</u>	<u>20.0</u>					5.					
							6.					
CONTROL MODE SETTINGS:			P:	I:	D:		7.					
#	NOTES:							Component Calibrated and Ready for Start-up				
	<u>Re-ranged from 0-75 gpm to 0-25 gpm</u> <u>Programmed, tag & description</u> <u>Simulated Output 04, 8, 12, 16, & 20 ma</u>							By: <u>C. Hastings</u>				
								Date:				
								Tag No.: <u>FIT-1205</u>				

(AR) FIT-701
 (put into service
 as FIT-701)

Flow Calibration with Adjustment

Replica 30067967-1385113

41743399

Purchase order number

US-49316500-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P80-AL1A1AA022AW

Order code

PROMAG 23 P 3"

Transmitter/Sensor

7700C616000

Serial N°

- FIT-702 (AR)

Tag N°

FCP-20 MEDIUM

Calibration rig

398.3621 GPM ($\pm 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

1.1476

Calibration factor

35

Zero point

77.1 °F

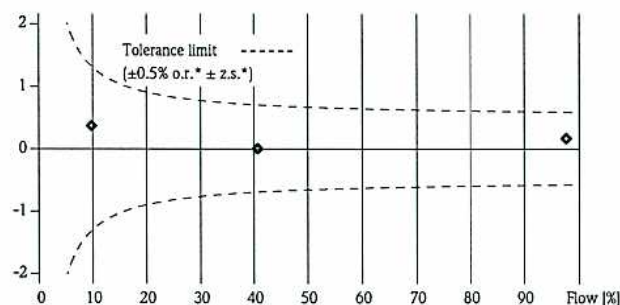
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
9.9	39.5	120.5	79.279	79.569	0.36	5.59
40.8	162.7	60.9	165.107	165.096	-0.01	10.53
40.9	162.7	60.5	164.200	164.202	0.00	10.54
97.9	390.1	60.8	395.561	396.199	0.16	19.69
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

07-27-2005

Date of calibration

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



John Redmon

Operator

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

Parameter Setting

Replica 1385113

41743399

Purchase order number

US-49316500-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P80-AL1A1AA022AW

Order code

7700C616000

Serial N°

PROMAG 23 P

Transmitter/Sensor

3"

Nominal diameter

- FIT-702 (R)

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

200 USgal/min

4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

07-27-2005

Date

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

Flow Calibration with Adjustment

30060305-1304706

41729921

Purchase order number

US-49311914-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

PROMAG 23 P 2"

Transmitter/Sensor

6C037016000

Serial N°

FIT-1202

Tag N°

FCP-20 SMALL

Calibration rig

155.6102 GPM ($\triangleq 100\%$)

Calibrated full scale

Current 4 - 20 mA

Calibrated output

0.9212

Calibration factor

0

Zero point

71.6 °F

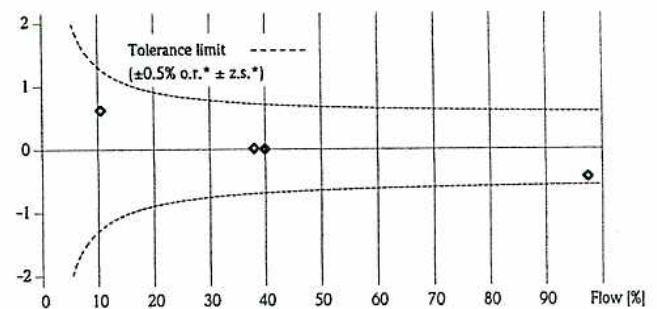
Water temperature

Flow [%]	Flow [GPM]	Duration [sec]	V target [US GAL]	V meas. [US GAL]	Δ o.r.* [%]	Outp.** [mA]
10.6	16.5	58.3	16.013	16.111	0.61	5.71
38.1	59.3	64.6	63.940	63.944	0.01	10.10
40.1	62.3	61.2	63.602	63.598	-0.01	10.41
97.6	151.9	61.2	154.838	154.134	-0.45	19.55
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-

*o.r.: of rate

**Calculated value (4 - 20 mA)

Measured error % o.r.



*z.s.: Zero stability

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

01-31-2005

Date of calibration

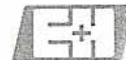
Endress+Hauser Flowtec, Division USA
2330 Endress Place
Greenwood, IN 46143



Jim Baase

Operator

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



Parameter Setting

1304706

41729921

Purchase order number

US-49311914-10 / Endress+Hauser Flowtec

Order N°/Manufacturer

23P50-AL1A1AA022AW

Order code

6C037016000

Serial N°

PROMAG 23 P

Transmitter/Sensor

2"

Nominal diameter

FIT-1202

Tag N°

Current Output 1

Value for 0/4mA

Value for 20mA

Current Span

0 USgal/min

75 USgal/min

4-20mA HART US

The above parameters are set according to your order.
Please refer to the Operating Manual for any parameters not mentioned.

01-31-2005

Date

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

CH2M HILL INSTRUMENT CALIBRATION SHEET

Rev.06.05.92

COMPONENT			MANUFACTURER			PROJECT						
Code:			Name: <i>Endress + Hauser</i>			Number:						
Name:			Model: <i>23P50-AL1AA022AW</i>			Name: <i>Topock IM3</i>						
			Serial #: <i>6C037016000</i>									
FUNCTIONS												
		RANGE	VALUE	UNITS	COMPUTING FUNCTIONS? Y <input checked="" type="checkbox"/> N		CONTROL? Y <input checked="" type="checkbox"/> N					
Indicate? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N		Chart:			Describe:		Action? direct / reverse					
Record? Y <input checked="" type="checkbox"/> N		Scale:	<i>0-25</i>	<i>GPM</i>			Modes? P / I / D					
Transmit/		Input:	<i>0-25</i>	<i>GPM</i>			SWITCH? Y <input checked="" type="checkbox"/> N					
Convert? <input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N		Output:	<i>4-20</i>	<i>MA</i>			Unit Range:					
							Differential: fixed/adjustable					
							Reset? automatic / manual					
ANALOG CALIBRATIONS					DISCRETE CALIBRATIONS					Note. No		
REQUIRED			AS CALIBRATED				REQUIRED				AS CALIBRATED	
Input	Indicated	Output	Increasing Input		Decreasing Input		Number	Trip Point	Reset Pt.		Trip Point	Reset Pt.
			Indicated	Output	Indicated	Output		(note rising or falling)		(note rising or falling)		
<i>0.0</i>	<i>0.0</i>	<i>4.0</i>	<i>0</i>	<i>4.00</i>			1.					
<i>6.25</i>	<i>6.25</i>	<i>8.0</i>					2.					
<i>12.5</i>	<i>12.50</i>	<i>12.0</i>					3.					
<i>18.75</i>	<i>18.75</i>	<i>16.0</i>					4.					
<i>25.0</i>	<i>25.0</i>	<i>20.0</i>					5.					
							6.					
CONTROL MODE SETTINGS:			P:	I:	D:		7.					
#	NOTES:								Component Calibrated and Ready for Start-up			
	<i>Verified Model No. & Tag</i>								By: <i>C. Hastings</i>			
	<i>Re-ranged from 0-75 gpm to 0-25 gpm</i>								Date: <i>4-20-05</i>			
	<i>Programmed tag & Description</i>								Tag No.: <i>FIT-1202</i>			

Appendix C
Daily Volumes of Groundwater Treated

August 2005 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles California

Month	Day	Year	Extraction Well System			Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	Total (gallons)	IW-01 (gallons)	IM-02 (gallons)	Total (gallons)	(gallons)
August	1	2005	-9	92,984	92,975	---	74,498	74,498	See Note 1
August	2	2005	-7	73,981	73,974	---	64,381	64,381	See Note 1
August	3	2005	-8	73,490	73,482	---	54,624	54,624	See Note 1
August	4	2005	-10	100,232	100,222	---	90,779	90,779	See Note 1
August	5	2005	-14	98,882	98,868	---	65,414	65,414	See Note 1
August	6	2005	-14	106,226	106,212	---	106,672	106,672	See Note 1
August	7	2005	-15	99,260	99,245	---	73,523	73,523	See Note 1
August	8	2005	-17	100,725	100,709	---	83,413	83,413	See Note 1
August	9	2005	-18	85,615	85,597	---	73,001	73,001	See Note 1
August	10	2005	-19	101,267	101,248	---	76,021	76,021	See Note 1
August	11	2005	-14	93,814	93,800	---	75,522	75,522	See Note 1
August	12	2005	-13	93,261	93,248	---	79,552	79,552	See Note 1
August	13	2005	-15	98,119	98,104	---	84,414	84,414	See Note 1
August	14	2005	-8	43,401	43,393	---	37,390	37,390	See Note 1
August	15	2005	-4	26,357	26,354	---	23,372	23,372	See Note 1
August	16	2005	-17	98,958	98,941	---	98,030	98,030	See Note 1
August	17	2005	-17	99,081	99,064	---	87,814	87,814	See Note 1
August	18	2005	-18	104,744	104,726	---	82,092	82,092	See Note 1
August	19	2005	-13	101,003	100,989	---	81,505	81,505	See Note 1
August	20	2005	-12	101,783	101,771	---	80,240	80,240	See Note 1
August	21	2005	-12	94,411	94,399	---	71,714	71,714	See Note 1
August	22	2005	-15	94,628	94,614	---	97,350	97,350	See Note 1
August	23	2005	-13	98,382	98,369	---	68,336	68,336	See Note 1
August	24	2005	-16	95,450	95,435	---	87,340	87,340	See Note 1
August	25	2005	-12	103,172	103,160	---	88,748	88,748	See Note 1
August	26	2005	-12	99,055	99,043	---	89,444	89,444	See Note 1
August	27	2005	-12	101,050	101,038	---	77,721	77,721	See Note 1
August	28	2005	-14	97,409	97,395	---	87,475	87,475	See Note 1
August	29	2005	36,359	111,253	147,612	---	131,711	131,711	See Note 1
August	30	2005	53,981	123,157	177,138	---	175,080	175,080	See Note 1
August	31	2005	57,484	128,162	185,647	---	159,186	159,186	See Note 1
Total Monthly Volumes (gal)			147,455	2,939,314	3,086,769	0	2,626,360	2,626,360	See Note 1
Average Pump/Injection Rates (gpm)			3.3	65.8	69.1	0.0	58.8	60.8	10.0

NOTES:

gal: gallons

gpm: gallons per minute

RO: Reverse Osmosis

¹The reverse osmosis concentrate (i.e., brine) flow meter was not correctly logging flow rates from August 1 to August 18, 2005. The flow meter was repaired on August 18, 2005. The average flow rate for August 2005 was estimated to be 10.0 gpm based on flow rate data from August 18 to August 31, 2005.

September 2005 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles California

Month	Day	Year	Extraction Well System			Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	Total (gallons)	IW-01 (gallons)	IM-02 (gallons)	Total (gallons)	(gallons)
September	1	2005	64,121	130,379	194,499	0	179,330	179,330	See Note 1
September	2	2005	63,572	130,662	194,234	0	182,101	182,101	See Note 1
September	3	2005	24,012	114,966	138,978	0	124,222	124,222	See Note 1
September	4	2005	0	100,621	100,621	0	79,684	79,684	See Note 1
September	5	2005	0	96,934	96,934	0	88,969	88,969	See Note 1
September	6	2005	0	78,646	78,646	0	59,665	59,665	See Note 1
September	7	2005	0	9,914	9,914	0	6,188	6,188	See Note 1
September	8	2005	0	27,758	27,758	0	33,413	33,413	See Note 1
September	9	2005	0	43,082	43,082	0	38,944	38,944	See Note 1
September	10	2005	0	65,371	65,371	0	48,068	48,068	See Note 1
September	11	2005	0	93,206	93,206	0	78,150	78,150	See Note 1
September	12	2005	0	86,583	86,583	0	69,074	69,074	See Note 1
September	13	2005	0	100,733	100,733	0	98,161	98,161	See Note 1
September	14	2005	0	94,905	94,905	0	76,423	76,423	See Note 1
September	15	2005	0	102,861	102,861	0	93,270	93,270	See Note 1
September	16	2005	0	131,020	131,020	0	122,862	122,862	See Note 1
September	17	2005	0	114,673	114,673	0	96,176	96,176	See Note 1
September	18	2005	0	87,800	87,800	0	77,425	77,425	See Note 1
September	19	2005	0	81,299	81,299	0	49,945	49,945	See Note 1
September	20	2005	0	132,945	132,945	0	126,453	126,453	See Note 1
September	21	2005	0	134,398	134,398	0	116,241	116,241	See Note 1
September	22	2005	0	135,157	135,157	0	119,514	119,514	See Note 1
September	23	2005	0	133,825	133,825	0	109,615	109,615	See Note 1
September	24	2005	0	133,275	133,275	0	120,573	120,573	See Note 1
September	25	2005	0	133,586	133,586	0	121,163	121,163	See Note 1
September	26	2005	0	130,791	130,791	0	106,564	106,564	See Note 1
September	27	2005	0	133,692	133,692	0	129,915	129,915	See Note 1
September	28	2005	0	133,851	133,851	0	106,052	106,052	See Note 1
September	29	2005	0	133,463	133,463	0	125,665	125,665	See Note 1
September	30	2005	0	133,774	133,774	0	120,269	120,269	See Note 1
Total Monthly Volumes (gal)			151,704	3,160,171	3,311,875	0	2,904,094	2,904,094	320,500
Average Pump/Injection Rates (gpm)			3.5	73.2	76.7	0.0	67.2	67.2	---

NOTES:

gal: gallons

gpm: gallons per minute

RO: Reverse Osmosis

¹The reverse osmosis concentrate (i.e., brine) flow rate is based on the recorded volume from waste manifests during September 2005. The flow meter that monitors the reverse osmosis concentrate flow rates at the IM-3 facility recorded erroneously low measurements.

October 2005 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles California

Month	Day	Year	Extraction Well System			Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	Total (gallons)	IW-01 (gallons)	IM-02 (gallons)	Total (gallons)	(gallons)
October	1	2005	---	133,357	133,357	---	119,240	119,240	6,944
October	2	2005	---	133,645	133,645	---	118,885	118,885	10,356
October	3	2005	---	133,672	133,672	---	105,191	105,191	12,445
October	4	2005	---	133,804	133,804	---	131,514	131,514	13,016
October	5	2005	---	112,611	112,611	---	92,343	92,343	10,455
October	6	2005	---	133,942	133,942	---	116,322	116,322	14,438
October	7	2005	329	133,495	133,824	---	130,683	130,683	11,990
October	8	2005	---	133,783	133,783	---	119,469	119,469	13,831
October	9	2005	---	132,213	132,213	---	127,743	127,743	11,328
October	10	2005	49,164	36,791	85,955	---	71,495	71,495	9,707
October	11	2005	51,313	40,626	91,939	---	85,754	85,754	0
October	12	2005	---	137,458	137,458	---	117,752	117,752	14,786
October	13	2005	---	135,251	135,251	---	126,875	126,875	14,649
October	14	2005	---	141,268	141,268	---	127,848	127,848	15,835
October	15	2005	---	140,368	140,368	---	107,927	107,927	14,913
October	16	2005	---	140,861	140,861	---	134,491	134,491	17,449
October	17	2005	---	135,602	135,602	---	127,704	127,704	14,647
October	18	2005	---	141,090	141,090	---	119,523	119,523	17,889
October	19	2005	---	140,984	140,984	---	121,447	121,447	14,301
October	20	2005	---	140,361	140,361	---	126,012	126,012	14,319
October	21	2005	---	140,630	140,630	---	122,990	122,990	17,906
October	22	2005	---	140,648	140,648	---	123,428	123,428	14,399
October	23	2005	---	140,598	140,598	---	123,554	123,554	15,852
October	24	2005	---	140,256	140,256	---	124,007	124,007	16,035
October	25	2005	---	140,434	140,434	---	133,297	133,297	9,970
October	26	2005	---	138,292	138,292	---	103,138	103,138	6,453
October	27	2005	---	141,784	141,784	---	138,021	138,021	11,125
October	28	2005	---	123,128	123,128	---	118,685	118,685	13,324
October	29	2005	---	69,810	69,810	---	44,505	44,505	7,338
October	30	2005	---	121,253	121,253	---	106,097	106,097	12,520
October	31	2005	---	126,454	126,454	---	131,333	131,333	10,914
Total Monthly Volumes (gal)			100,921¹	3,934,469	4,035,390	0	3,597,275	3,597,275	389,134
Average Pump/Injection Rates (gpm)			2.3	88.1	90.4	0.0	80.6	80.6	8.7

NOTES:

gal: gallons

gpm: gallons per minute

RO: Reverse Osmosis

¹The total volume shown above is based on flow accumulator totals. A slight discrepancy of 115 gallons is noted on the calculated daily averages.

November 2005 Operational Data

IM-3 Groundwater Extraction and Treatment System

PG&E Topock Compressor Station, Needles California

Month	Day	Year	Extraction Well System			Injection Well System			RO Brine
			TW-2S (gallons)	TW-2D (gallons)	Total (gallons)	IW-01 (gallons)	IM-02 (gallons)	Total (gallons)	(gallons)
November	1	2005	---	99,711	99,711	---	78,739	78,739	7,530
November	2	2005	---	97,337	97,337	---	104,325	104,325	6,735
November	3	2005	---	-157	-157	---	3,386	3,386	-79
November	4	2005	---	38,949	38,949	---	23,679	23,679	4,306
November	5	2005	---	92,374	92,374	---	84,531	84,531	6,741
November	6	2005	---	141,837	141,837	---	138,041	138,041	9,571
November	7	2005	---	141,428	141,428	---	126,959	126,959	6,720
November	8	2005	---	141,630	141,630	---	138,681	138,681	6,482
November	9	2005	---	136,376	136,376	---	113,994	113,994	10,888
November	10	2005	---	141,498	141,498	---	144,432	144,432	9,903
November	11	2005	---	137,975	137,975	---	126,613	126,613	7,082
November	12	2005	---	141,355	141,355	---	118,881	118,881	9,861
November	13	2005	---	141,211	141,211	---	137,027	137,027	9,275
November	14	2005	---	76,335	76,335	---	74,602	74,602	3,802
November	15	2005	---	46,691	46,691	---	43,061	43,061	4,806
November	16	2005	---	140,990	140,990	---	136,684	136,684	10,012
November	17	2005	---	140,556	140,556	---	132,494	132,494	9,843
November	18	2005	---	140,955	140,955	---	131,982	131,982	9,924
November	19	2005	---	140,961	140,961	---	123,732	123,732	9,845
November	20	2005	---	140,888	140,888	---	128,254	128,254	9,937
November	21	2005	---	139,775	139,775	---	136,764	136,764	9,732
November	22	2005	---	101,674	101,674	---	94,343	94,343	6,509
November	23	2005	---	-159	-159	---	-36	-36	-79
November	24	2005	---	132,573	132,573	---	103,423	103,423	14,652
November	25	2005	---	140,567	140,567	---	135,588	135,588	14,413
November	26	2005	---	140,504	140,504	---	128,891	128,891	10,805
November	27	2005	---	140,454	140,454	---	120,260	120,260	7,797
November	28	2005	---	140,354	140,354	---	132,198	132,198	10,432
November	29	2005	---	140,285	140,285	---	130,731	130,731	10,289
November	30	2005	---	140,079	140,079	---	124,720	124,720	9,223
Total Monthly Volumes (gal)			0	3,495,002	3,495,002	0	3,216,979	3,216,979	246,958
Average Pump/Injection Rates (gpm)			0.0	80.9	80.9	0.0	74.5	74.5	5.7

NOTES:

gal: gallons

gpm: gallons per minute

RO: Reverse Osmosis

Appendix D

Operations and Maintenance Log

APPENDIX D

Semi Annual Operations and Maintenance Log July 2005 through December 2005 Interim Measures No. 3 Groundwater Treatment System

Records of IM-3 Operations and Maintenance Activities are maintained onsite using operations software. Periods of treatment system and resulting extraction system downtime between August 2005 after completing system start-up and December 2005 attributed to system operations and maintenance are listed below.

August 2005

- **August 3, 5, 9, 11, 12, 13, 15, 21, 23, and 24, 2005:** The longest shutdown period in August 2005 occurred on August 15, which lasted about 15.5 hours (between 2:07 am and 5:39 pm) in order to troubleshoot and physically inspect the pipeline due a leak detection system alarm that occurred while re-starting the plant after a power outage. The alarm condition was determined to be a communication issue with the control panel and not a leak. The alarm condition was subsequently corrected by the manufacturer in late-August. A portable generator is onsite to provide back-up power during outages.

September 2005

- **September 6 through 9:** Extraction well operations were shut down periodically to conduct a DTSC-approved test to operate the treatment plant at 20 gpm. Extraction well TW-2D was operated at approximately 45 gpm during this time and cycled on and off.
- **September 10:** Extraction well operations were shut down for less than 30 minutes due to a high water level in the receiving tank while maintenance of the reverse osmosis unit was completed.
- **September 12:** Extraction well operations were shut down for approximately 3 hours due to a high water level in the receiving tank while plant maintenance was being completed.
- **September 17:** Extraction well operations were shut down for approximately 2 hours due to a high water level in the receiving tank while correcting a pressure transducer failure on the microfilter unit.
- **September 18 and 19:** Extraction well operations were shut down for approximately 17 hours. A planned performance test to assess the treatment plant response to a total loss of ferrous chloride chemical flow resulted in

partially-treated water with detections of hexavalent chromium downstream of the chrome reduction and iron oxidation process. The test was conducted with the treated water tank, and injection wells were isolated to prevent the potential for injected water not meeting discharge criteria. After conducting the test, re-cycling and re-treatment procedures were implemented; however, it was decided to transfer this partially-treated water to holding tanks on the MW-20 bench so that the extraction well system could be brought back into operation. Approximately 15,000 to 20,000 gallons of non-hazardous (or partially-treated) water were transported to US Filter Corporation as non-hazardous waste in conjunction with the reverse osmosis concentrate.

- **September 23, 25, and 26:** TW-2D was shut down for short periods (under 1 hour) to switch to backup power. The IM No. 3 facility operated on backup power between September 26, 2005 and October 26, 2005 when a transient voltage surge suppressor (TVSS) was replaced at the facility. The TVSS protects the equipment from power surges. It was determined that it would be safer to operate the facility on generator power (less likely to surge) until the TVSS could be replaced.

October 2005

- **October 5, 2005:** Extraction well TW-2D and IM No. 3 treatment system was shut down to install an air line connection for the microfilter system. Extraction well downtime was 4 hours 48 minutes.
- **October 9, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down for 12 minutes due to a low-flow alarm on a sodium hydroxide feed pump.
- **October 10, 2005:** Extraction well TW-2D pump failed at 6:40 a.m. and extraction well TW-2S was brought online at 7:30 a.m. The pump in extraction well TW-2D was replaced on October 11, 2005 and resumed full-time operation at 5:06 p.m. on that day. Extraction well downtime was approximately 50 minutes on October 10 to switch operation from TW-2D to TW-2S.
- **October 12, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down due to a microfilter pressure transducer malfunction. Extraction well downtime was 41 minutes.
- **October 13, 2005:** Extraction well TW-2D was shut down for 49 minutes due to high water level in the raw water receiving tank (T-100).
- **October 17, 2005:** Extraction well TW-2D and IM No. 3 treatment system shut down due to an alarm in the leak detection system following a lightning strike. The leak detection points in the pipeline were inspected and no liquid was observed. The leak detection system control panel was shipped to the manufacturer to repair the apparent lightning damage. Extraction well

downtime was 1 hour. The onsite operators physically inspected leak detection points along the pipeline for the remainder of the month while the control panel was repaired. No liquid was observed in the secondary containment pipe during any inspection. The control panel was re-installed November 7, 2005.

- **October 26, 2005:** Extraction well TW-2D and the IM No. 3 treatment system were shut down for 26 minutes to switch from generator power to City of Needles power. The facility was operating since September 26, 2005 on generator power until the facility TVSS could be replaced.
- **October 26, 28, and 30, 2005:** Extraction well TW-2D and the IM No. 3 facility were shut down to conduct chemical cleaning (i.e., clean in place) of the microfilter membranes. Extraction well TW-2D was shut down for a total of 18 hours 9 minutes while the cleaning activities were completed.
- **October 31, 2005:** Extraction well TW-2D and the IM No. 3 treatment system were shut down due to in-line pH meter readings outside of the operating target range. One pH meter was re-calibrated and returned to service, and one pH meter was replaced with a spare. Extraction well TW-2D downtime was 2 hours 30 minutes.

November 2005

- **November 1, 2005:** Extraction well TW-2D was shut down to replace pump P-201. Extraction system downtime was 7 hours 5 minutes.
- **November 2 to 4, 2005:** Extraction well TW-2D was shut down to complete a chemical cleaning of the microfilter membranes and further development of extraction well TW-3D. Extraction system downtime was 48 hours 52 minutes.
- **November 5, 2005:** Extraction well TW-2D was shut down to conduct a pump test from extraction well TW-3D. Extraction system downtime was 8 hours 2 minutes.
- **November 9, 2005:** Extraction well TW-2D was shut-down to remove an in-line static mixer. Extraction system downtime was 52 minutes.
- **November 11, 2005:** Extraction well TW-2D was shut-down to switch to back-up generator power during a power failure and return to Needles Power after power was restored. Extraction system downtime was 29 minutes.
- **November 14 and 15, 2005:** Extraction well TW-2D was shut down to complete further development and testing of extraction well TW-3D. Extraction system downtime was 27 hours 1 minute.
- **November 22 to 24, 2005:** Extraction well TW-2D was shut down to complete a chemical cleaning of the microfilter membranes. Extraction system downtime was 32 hours

December 2005

- **December 1 and 2, 2005:** Extraction well TW-2D was shut down to connect TW-3D piping in Valve Vault No. 1 and subsequently to repair a broken mixing shaft on the polymer feed system. Extraction system downtime for these events was 8 hours 30 minutes.
- **December 13, 2005:** Extraction well TW-2D was shut down for 27 minutes due to ferrous chloride meter testing at the IM-3 facility.
- **December 15, 2005.** Extraction well TW-2D was intentionally shut down at 2:40 pm to allow the groundwater levels in the Aquifer to return to ambient conditions before starting the TW-3D pump test at 7:39 pm. Extraction system downtime was approximately 4 hours 59 minutes.
- **December 18, 2005:** Extraction well TW-3D was shut down from 2:43 pm to 5:13 pm to a combination of power failure, high turbidity readings during system re-start, and changing out microfilter membrane modules. Extraction system downtime was approximately 2 hours 30 minutes.
- **December 29, 2005:** Extraction wells TW-2D and TW-3D were shut down from approximately 9:30 am to 2:29 pm to complete a partial chemical cleaning of the microfilter membranes. Extraction system downtime was approximately 4 hours 59 minutes.