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April 15, 2020

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Colorado River Basin Region
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**Subject: Topock IM-3 First Quarter 2020 Monitoring Report
PG&E Topock Compressor Station, Needles, California
Interim Measure No. 3 Groundwater Treatment System**

Dear Ms. Innis and Mr. Stormo:

Enclosed is the First Quarter 2020 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure No. 3 (IM-3) Groundwater Treatment System.

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

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

The IM-3 groundwater extraction and treatment system has extracted and treated approximately 976,227,809 gallons of water and removed approximately 7,910 pounds of total chromium from August 1, 2005 through March 31, 2020.

Pamela S. Innis
Scot Stormo
April 15, 2020
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The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Curt Russell", is positioned above the typed name.

Curt Russell
Topock Site Manager

Enclosures:

Topock IM-3 First Quarter 2020 Monitoring Report

cc: Aaron Yue, California Department of Toxic Substances Control

Topock Project Executive Abstract

<p>Document Title: Topock IM-3 First Quarter 2020 Monitoring Report Submitting Agency/Author: U.S. Department of the Interior and Regional Water Quality Control Board Final Document? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p>Date of Document: April 15, 2020 Who Created this Document?: (i.e. PG&E, DTSC, DOI, Other) PG&E</p>
<p>Priority Status: <input type="checkbox"/> HIGH <input type="checkbox"/> MED <input checked="" type="checkbox"/> LOW</p>	<p>Is this time critical? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Type of Document: <input type="checkbox"/> Draft <input checked="" type="checkbox"/> Report <input type="checkbox"/> Letter <input type="checkbox"/> Memo <input type="checkbox"/> Other / Explain:</p>	<p>Action Required: <input checked="" type="checkbox"/> Information Only <input type="checkbox"/> Review and Input <input type="checkbox"/> Other / Explain:</p>
<p>What does this information pertain to? <input type="checkbox"/> Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA)/Preliminary Assessment (PA) <input type="checkbox"/> RCRA Facility Investigation (RFI)/Remedial Investigation (RI) (including Risk Assessment) <input type="checkbox"/> Corrective Measures Study (CMS)/Feasibility Study (FS) <input type="checkbox"/> Corrective Measures Implementation (CMI)/Remedial Action (RA) <input type="checkbox"/> California Environmental Quality Act (CEQA)/Environmental Impact Report (EIR) <input checked="" type="checkbox"/> Interim Measures <input type="checkbox"/> Other / Explain:</p>	<p>Is this a Regulatory Requirement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, why is the document needed?</p>
<p>What is the consequence of NOT doing this item? What is the consequence of DOING this item? Submittal of this report is a compliance requirement of the ARARs for waste discharge as documented in Attachment A to the Letter Agreement issued July 26, 2011.</p>	<p>Other Justification/s: <input type="checkbox"/> Permit <input type="checkbox"/> Other / Explain:</p>
<p>Brief Summary of attached document: This report covers the Interim Measures No. 3 (IM-3) groundwater treatment system monitoring activities during the First Quarter 2020 period. The groundwater monitoring results for wells OW 1S/M/D, OW 2S/M/D, OW 5S/M/D, CW 1M/D, CW 2M/D, CW 3M/D, and CW 4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program. Written by: Pacific Gas and Electric Company</p>	
<p>Recommendations: This report is for your information only.</p>	
<p>How is this information related to the Final Remedy or Regulatory Requirements? The Topock IM-3 First Quarter 2020 Monitoring Report is related to the Interim Measure. PG&E is currently operating the IM-3 groundwater treatment system as authorized by the U.S. Department of the Interior (DOI) Waste Discharge Applicable or Relevant and Appropriate Requirements (ARARs) as documented in Attachment A to the Letter Agreement issued July 26, 2011 from the Colorado River Basin Regional Water Quality Control Board (Regional Water Board) to DOI, and the subsequent Letter of Concurrence issued August 18, 2011 from DOI to the Regional Water Board.</p>	
<p>Other requirements of this information? None.</p>	



First Quarter 2020 Monitoring Report Interim Measure No. 3 Groundwater Treatment System

**PG&E Topock Compressor Station
Needles, California**

April 15, 2020

Prepared for

Colorado River Basin Regional Water Quality Control Board
and
United States Department of the Interior
on behalf of
Pacific Gas and Electric Company



First Quarter 2020 Monitoring Report
Interim Measure No. 3 Groundwater Treatment System

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April 15, 2020

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



Dennis Fink, P.E.
Project Engineer

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Acronyms and Abbreviations

ARARs	Applicable or Relevant and Appropriate Requirements
ASSET	ASSET Laboratories
DOI	United States Department of the Interior
gpm	gallons per minute
HMI	human-machine interface
IM	Interim Measure
IW	injection well
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
PLC	programmable logic controller
PST	Pacific Standard Time
Regional Water Board	Colorado River Basin Regional Water Quality Control Board
RO	reverse osmosis
Truesdail	Truesdail Laboratories, Inc.
WDR	Waste Discharge Requirements

1. Introduction

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

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

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

This report covers monitoring activities related to operation of the IM-3 groundwater treatment system during the First Quarter 2020. The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

2. Sampling Station Locations

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

3. Description of Activities

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

Influent to the treatment facility, as listed in Attachment A, Waste Discharge ARARs, to the Letter Agreement issued July 26, 2011, includes:

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

During the First Quarter 2020, extraction wells TW-3D, TW-2D and TW-2S were operated at a target pumping rate of 135 gallons per minute (gpm), excluding periods of planned and unplanned downtime. Extraction well PE-01 was not operated during First Quarter 2020. A portion of the piping/conduit for PE-01 at the MW-20 Bench was disconnected from the IM-3 system on December 18, 2019 to allow for remedy construction activities without crossing under the PE-01 piping/conduit. The recorded operational run time for the IM-3 groundwater extraction system (combined or individual pumping), by month, was approximately:

- 96.5 percent during January 2020
- 94.6 percent during February 2020
- 90.5 percent during March 2020

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

- **Treated effluent:** Treated water that is discharged to the injection well(s).
- **Reverse osmosis (RO) concentrate (brine):** Treatment byproduct that is transported and disposed of offsite at a permitted facility.
- **Sludge:** Treatment byproduct that is transported offsite for disposal at a permitted facility. Disposal occurs each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

Activities during the First Quarter 2020 are detailed in Section 4.

4. Groundwater Treatment System Flow Rates

The First Quarter 2020 treatment system monthly average flow rates (influent, effluent, and RO concentrate) are presented in Table 2.

The system influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-PR-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection wells IW-2 and IW-3 (Figure TP-PR-10-10-11).

The RO concentrate flow rate was measured by a flow meter at the piping carrying water from RO concentrate tank T-701 to the truck load-out station (Figure PR-10-04), or from Liquid Environmental Solutions non-hazardous waste manifests (provided in Appendix A). Due to Final Groundwater Remedy construction activities at the MW-20 Bench adjacent to the IM-3 RO concentrate storage tank, the RO concentrate is temporarily being stored and shipped from the RO concentrate process collection tank. Since the flowmeter is located between the RO concentrate process collection tank and the RO concentrate storage tank, the RO concentrate shipped from the process collection tank was not recorded by the flowmeter.

The IM-3 facility treated approximately 16,548,580 gallons of extracted groundwater during the First Quarter 2020. Seven containers of solids (sludge) were transported offsite from the IM-3 facility during First Quarter 2020.

Periods of planned and unplanned extraction system downtime (that together resulted in approximately 6.1 percent downtime during First Quarter 2020) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

4.1 January 2020

During January 2020, extraction well TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D, TW-2S, and PE-01 were not operated during January 2020. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 96.5 percent during the January 2020 reporting period.

The IM-3 facility treated approximately 5,754,306 gallons of extracted groundwater during January 2020. The IM-3 facility also treated 9,500 gallons of Final Groundwater Remedy wastewater, zero gallons of sampling purge water and 40,000 groundwater from injection well backwashing/re-development during January 2020. Two containers of solids from the IM-3 facility were transported offsite during January 2020.

Periods of planned and unplanned extraction system down time (that together resulted an approximately 3.5 percent downtime during January 2020) are summarized below. The times shown are in PST to be consistent with other data collected (e.g., water level data) at the site.

- **January 6, 2020 (unplanned):** The extraction well system was offline from 6:52 p.m. to 8:14 p.m. due to microfilter problems. The basket strainer in the microfilter unit was plugged. The operator shut down extraction to put in a clean strainer and reassemble the basket. Extraction system downtime was 1 hour 22 minutes.
- **January 6, 2020 (unplanned):** The extraction well system was offline from 10:04 p.m. to 10:48 p.m. due to a high-water level in Raw Water Storage Tank (T-100). The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 44 minutes.
- **January 7, 2020 (unplanned):** The extraction well system was offline from 10:34 a.m. to 12:14 p.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 40 minutes.

- **January 8, 2020 (unplanned):** The extraction well system was offline from 4:16 a.m. to 4:32 a.m. due to a City of Needles Power outage. The treatment plant was switched to generator power. Extraction system downtime was 16 minutes.
- **January 9, 2020 (planned):** The extraction well system was offline from 8:12 a.m. to 9:14 a.m. to process remedy wastewater generated from remedy well construction activities. Extraction system downtime was 1 hour 2 minutes.
- **January 10, 2020 (unplanned):** The extraction well system was offline from 9:06 a.m. to 10:42 a.m. to perform maintenance on the microfilter strainer system. Operators cleaned the inside of the Feed Tank (T-501), cleaned the discharge strainer, and cleaned a hand-operated valve. Extraction system downtime was 1 hour 36 minutes.
- **January 12, 2020 (unplanned):** The extraction well system was offline from 9:44 a.m. to 10:50 a.m. due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 6 minutes.
- **January 13, 2020 (unplanned):** The extraction well system was offline from 10:02 a.m. to 11:10 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 8 minutes.
- **January 13-14, 2020 (unplanned):** The extraction well system was offline from 4:34 p.m. to 5:44 p.m. on January 13, 2020; and from 8:32 p.m. to 9:28 p.m. January 14, 2020 due to a high water-level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 6 minutes.
- **January 15, 2020 (unplanned):** The extraction well system was offline from 10:22 a.m. to 11:50 a.m. to replace a failed water-level sensor in the Treated Water Tank (T-700). Extraction system downtime was 1 hour 28 minutes.
- **January 16-21, 2020 (unplanned):** The extraction well system was offline from 2:20 a.m. to 3:36 a.m. on January 16, 2020; from 3:40 a.m. to 4:40 a.m. January 18, 2020; from 11:48 a.m. to 1:14 p.m. January 19, 2020; from 2:12 p.m. to 3:16 p.m. January 20, 2020; and from 12:00 p.m. to 5:00 p.m. January 21, 2020 due to a high-water level in Raw Water Storage Tank (T-100). The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 9 hours 46 minutes.
- **January 23-24, 2020 (unplanned):** The extraction well system was offline from 4:36 a.m. to 5:22 a.m. on January 23, 2020; from 2:56 p.m. to 4:04 p.m. on January 23, 2020; and from 1:04 p.m. to 1:52 p.m. on January 24, 2020 due to Groundwater Partners offloading backwash water from the injection wells. Extraction was shut down due to large backwash water volumes and to control tank levels. Extraction system downtime was 2 hours 42 minutes.
- **January 29, 2020 (unplanned):** The extraction well system was offline from 5:32 p.m. to 6:24 p.m. due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 52 minutes.

4.2 February 2020

During February 2020, extraction well TW-3D operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction wells TW-2D, TW-2S, and PE-01 were not operated during February 2020. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 94.6 percent during the February 2020 reporting period.

The IM-3 facility treated approximately 5,318,999 gallons of extracted groundwater during February 2020. The IM-3 facility also treated zero gallons of Final Groundwater Remedy wastewater, 370 gallons of sampling purge water, and zero gallons of groundwater from injection well backwashing/re-development during February 2020. Two containers of solids from the IM-3 facility were transported offsite during February 2020.

Periods of planned and unplanned extraction system down time (that together resulted an approximately 5.4 percent downtime during February 2020) are summarized below. The times shown are in PST to be consistent with other data collected (e.g., water level data) at the site.

- **February 5, 2020 (unplanned):** The extraction well system was offline from 12:50 p.m. to 1:26 p.m. due to replacing microfilter modules. Extraction system downtime was 36 minutes.
- **February 7, 2020 (unplanned):** The extraction well system was offline from 5:40 a.m. to 6:24 a.m. due to high-water levels in Iron Oxidation Reactor No. 3 (T-301C) and Raw Water Storage Tank (T-100). The high-water levels were caused by blockages in the piping between the oxidation tanks. Extraction system downtime was 44 minutes.
- **February 7, 2020 (unplanned):** The extraction well system was offline from 5:30 p.m. to 6:12 p.m. due to high-water levels in the Chromium Reduction Reactor (T-300A), Iron Oxidation Reactor #2 (T-301B), T-301C, and T-100. There were blockages in the piping between the oxidation tanks causing the high water levels. Extraction system downtime was 42 minutes.
- **February 8-10, 2020 (unplanned):** The extraction well system was offline from 9:44 p.m. to 10:54 p.m. on February 8, 2020; and from 3:38 a.m. to 4:34 a.m. February 10, 2020 due to a high-water level in Raw Water Storage Tank (T-100). The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 6 minutes.
- **February 10, 2020 (unplanned):** The extraction well system was offline from 4:48 p.m. to 9:46 p.m. due to the compressor had a high temperature alarm that caused the extraction system to shutdown. Maintenance was performed on the unit and the plant was returned to service. Extraction system downtime was 4 hours 58 minutes.
- **February 11, 2020 (unplanned):** The extraction well system was offline from 2:58 p.m. to 4:32 p.m. due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 34 minutes.
- **February 12, 2020 (unplanned):** The extraction well system was offline from 8:18 a.m. to 1:38 p.m. to find and remove blockages from piping connecting the oxidation tanks. Two valves were scaled sufficiently to cause the previous flow restrictions. The valves were cleaned and replaced, and the plant returned to service. Extraction system downtime was 5 hours 20 minutes.
- **February 13, 2020 (planned):** The extraction well system was offline from 10:00 a.m. to 11:08 a.m. due to testing of the pipeline critical alarms and leak detection system. Extraction system downtime was 1 hour 8 minutes.
- **February 14, 2020 (unplanned):** The extraction well system was offline from 7:12 a.m. to 8:52 a.m. due to replacing microfilter modules and so T-100 could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 40 minutes.
- **February 15-23, 2020 (unplanned):** The extraction well system was offline from 2:34 p.m. to 3:56 p.m. on February 15, 2020; 6:04 p.m. to 7:10 p.m. on February 17, 2020; 4:44 p.m. to 5:48 p.m. on February 19, 2020; and from 2:34 a.m. to 3:20 a.m. February 23, 2020 due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 4 hour 18 minutes.
- **February 23, 2020 (unplanned):** The extraction well system was offline from 9:22 a.m. to 10:12 a.m. due to replacing microfilter modules. Extraction system downtime was 50 minutes.
- **February 24, 2020 (unplanned):** The extraction well system was offline from 11:58 a.m. to 12:06 p.m. due to a programmable logic controller (PLC) and human machine interface (HMI) connectivity issue. Extraction system downtime was 8 minutes.
- **February 25, 2020 (unplanned):** The extraction well system was offline from 3:06 p.m. to 4:24 p.m. due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 18 minutes.
- **February 27, 2020 (unplanned):** The extraction well system was offline from 7:16 a.m. to 12:04 p.m. due to maintenance at the Clarifier Feed Pump (P-400). During maintenance on a pressure gauge, a

valve broke. The valve and gauge were replaced, and the plant was returned to service. Extraction system downtime was 4 hours 48 minutes.

- **February 29, 2020 (unplanned):** The extraction well system was offline from 4:52 p.m. to 11:58 p.m. due to plant laboratory testing results not detecting ferrous iron and having a slightly elevated hexavalent chromium concentration (0.009 milligrams per liter [mg/L]). The extraction system was shut down and the plant placed into recirculation mode until the ferrous iron was detected and the hexavalent chromium went back down to normal (maximum of 0.008 mg/L with a typical range being between 0.002 mg/L and 0.005 mg/L). Extraction system downtime was 7 hours 6 minutes.

4.3 March 2020

During March 2020, extraction wells TW-3D, TW-2D, TW-2S operated at a target pump rate of 135 gpm excluding periods of planned and unplanned downtime. Extraction well PE-01 was not operated during March 2020. A portion of the piping/conduit for PE-01 at the MW-20 Bench was disconnected from the IM-3 system on December 18, 2019 to allow for remedy construction activities without crossing under the PE-01 piping/conduit. The operational run time for the IM-3 groundwater extraction system (combined or individual pumping) was 90.1 percent during the March 2020 reporting period.

The IM-3 facility treated approximately 5,475,275 gallons of extracted groundwater during March 2020. The IM-3 facility also treated 32,500 gallons of Final Groundwater Remedy wastewater, zero gallons of sampling purge water, and zero gallons of groundwater from injection well backwashing/re-development during March 2020. Three containers of solids from the IM-3 facility were transported offsite during March 2020.

Periods of planned and unplanned extraction system down time (that together resulted in approximately 9.9 percent downtime during March 2020) are summarized below. The times shown are in PST to be consistent with other data collected (e.g., water level data) at the site.

- **March 3, 2020 (unplanned):** The extraction well system was offline from 8:58 a.m. to 10:08 a.m. to treat remedy wastewater generated from remedy well construction activities. Extraction system downtime was 1 hour 10 minutes.
- **March 3, 2020 (unplanned):** The extraction well system was offline from 7:58 p.m. to 9:12 p.m. due to clogged pre-filters in the Primary Reverse Osmosis system. Plugged filters caused the secondary RO to shut down due to safety interlocks. The operator changed the pre-filter cartridges and the plant was returned to service. Extraction system downtime was 1 hour 14 minutes.
- **March 4, 2020 (planned):** The extraction well system was offline from 10:20 a.m. to 10:44 a.m. due to a high-water level in Raw Water Storage Tank (T-100) and due to testing of the pipeline critical alarms and leak detection system. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 24 minutes.
- **March 4, 2020 (unplanned):** The extraction well system was offline from 10:50 a.m. to 10:52 a.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 2 minutes.
- **March 4, 2020 (unplanned):** The extraction well system was offline from 2:04 p.m. to 3:52 p.m. due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 1 hour 48 minutes.
- **March 5, 2020 (unplanned):** The extraction well system was offline from 6:06 p.m. to 11:24 p.m. due to the extraction pump failing at TW-3D. Extraction system downtime was 5 hours 18 minutes.
- **March 6, 2020 (unplanned):** The extraction well system was offline from 2:08 a.m. to 2:10 a.m.; from 2:14 a.m. to 2:16 a.m.; from 2:38 a.m. to 2:40 a.m.; from 2:52 a.m. to 2:54 a.m.; from 3:10 a.m. to 3:12 a.m.; from 3:24 a.m. to 3:26 a.m.; from 3:28 a.m. to 3:30 a.m.; from 4:06 a.m. to 4:08 a.m.; from 4:16 a.m. to 4:20 a.m.; from 4:30 a.m. to 4:32 a.m.; and from 4:36 a.m. to 4:38 a.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 24 minutes.

- **March 6-7, 2020 (planned):** The extraction well system was offline from 5:54 p.m. on March 6, 2020 to 12:24 a.m. on March 7, 2020 due to replacing the failed pump at TW-3D. Extraction system downtime was 6 hours 30 minutes.
- **March 7, 2020 (unplanned):** The extraction well system was offline from 12:28 p.m. to 12:30 p.m. due to a PLC and HMI connectivity issue. Extraction system downtime was 2 minutes.
- **March 9-12, 2020 (unplanned):** The extraction well system was offline from 1:36 a.m. to 2:50 a.m. and from 9:44 p.m. to 10:48 p.m. on March 9, 2020; from 10:16 p.m. to 11:18 p.m. on March 10, 2020; from 10:38 p.m. to 11:42 p.m. on March 11, 2020; and from 11:42 a.m. to 12:42 p.m. on March 12, 2020 due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 4 hours 56 minutes.
- **March 13, 2020 (unplanned):** The extraction well system was offline from 3:08 a.m. to 3:48 a.m. due to a high-water level in T-100. A storm event occurred that had a lot of rain. Rain that hits the rooftop of the IM-3 Treatment Plant drains into the gutters in the facility; the gutters drain into Process Drain Tank T-900, which is then transferred to T-100 for processing. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 40 minutes.
- **March 13, 2020 (unplanned):** The extraction well system was offline from 8:10 a.m. to 10:50 a.m. to install a new water level sensor in T-100. Extraction system downtime was 2 hours 40 minutes.
- **March 14-16, 2020 (unplanned):** The extraction well system was offline from 4:06 p.m. to 5:14 p.m. on March 14, 2020; from 9:40 p.m. to 10:40 p.m. on March 15, 2020; and from 7:58 p.m. to 8:48 p.m. on March 16, 2020 due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 2 hours 58 minutes.
- **March 17, 2020 (unplanned):** The extraction well system was offline from 9:58 a.m. to 11:16 a.m. due to replacing microfilter modules. Extraction system downtime was 1 hour 18 minutes.
- **March 17-25, 2020 (unplanned):** The extraction well system was offline from 11:04 p.m. on March 17, 2020 to 12:14 a.m. on March 18, 2020; from 4:00 p.m. to 5:06 p.m. on March 18, 2020; from 12:12 p.m. to 1:04 p.m. on March 19, 2020; from 12:06 a.m. to 1:04 a.m. on March 20, 2020; from 6:06 p.m. to 7:12 p.m. on March 20, 2020; from 5:12 p.m. to 6:50 p.m. on March 21, 2020; from 3:32 a.m. to 4:18 a.m. on March 22, 2020; from 7:06 a.m. to 8:22 a.m. on March 24, 2020; and from 10:20 p.m. to 11:38 p.m. on March 25, 2020 due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 10 hours 10 minutes.
- **March 25, 2020 (unplanned):** The extraction well system was offline from 11:44 p.m. to 11:28 p.m. due to replacing microfilter modules. Extraction system downtime was 14 minutes.
- **March 26-31, 2020 (unplanned):** The extraction well system was offline from 5:54 p.m. to 7:06 p.m. on March 26, 2020; from 6:04 p.m. to 7:06 p.m. on March 28, 2020; from 2:04 p.m. to 3:02 p.m. on March 29, 2020; from 9:18 a.m. to 10:30 a.m. on March 30, 2020; from 2:40 a.m. to 3:46 a.m. on March 31, 2020; and from 1:58 p.m. to 3:16 p.m. on March 31, 2020 due to a high-water level in T-100. The plant was shut down so the tank could drain below the high-level alarm setpoint. Extraction system downtime was 6 hours 48 minutes.

5. Sampling and Analytical Procedures

With the exception of pH, all samples were collected at the designated sampling locations and placed directly into containers provided by ASSET Laboratories (ASSET) and Truesdail Laboratories, Inc. (Truesdail). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a sealed container chilled with ice and transported to ASSET or Truesdail via courier under chain-of-custody documentation. The laboratories confirmed the samples were received in chilled condition upon arrival.

ASSET is certified by the California Department of Health Services (Certification No. 2676) under the State of California's Environmental Laboratory Accreditation Program. Truesdail is certified by the California Department of Health Services (Certification No. 1237) under the State of California's Environmental Laboratory Accreditation Program. California-certified laboratory analyses were performed in accordance with the latest edition of the *Guidelines Establishing Test Procedures for Analysis of Pollutants* (40 Code of Federal Regulations Part 136), promulgated by the U.S. Environmental Protection Agency.

During the First Quarter 2020, analysis of pH was conducted by field method pursuant to the Regional Water Board letter dated October 16, 2007 (subject: Clarification of Monitoring and Reporting Program Requirements), authorizing pH measurements to be conducted in the field. The field method pH samples were collected at the designated sampling locations and field tested within 15 minutes of sampling.

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

Influent, effluent, RO concentrate, and sludge sampling frequency were in accordance with the MRP.

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

6. Analytical Results

Laboratory reports for samples collected in the First Quarter 2020 were prepared by certified analytical laboratories, and are presented in Appendix B.

Samples were collected in accordance with the ARARs sampling frequency requirements. See Table 3 for sample collection dates.

The influent sampling analytical results are presented in Table 4. The effluent sampling analytical results are presented in Table 5. The RO concentrate sampling analytical results are presented in Table 6. The sludge sampling analytical results are presented in Table 7.

Table 8 identifies the laboratory that performed each analysis and lists the following required information:

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

7. Conclusions

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

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

8. Certification

Certification Statement:

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

Signature: 

Name: Curt Russell

Company: Pacific Gas and Electric Company

Title: Topock Site Manager

Date: April 15, 2020

Tables

Table 1. Sampling Station Descriptions*First Quarter 2020 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Sample Station	Sample ID ^a	Location
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (Figure TP-RP-10-10-04).
Sampling Station B: Groundwater Treatment System Effluent	SC-700B-WDR-###	Sample collected from tap on pipe downstream from T-700 (Figure TP-RP-10-10-04).
Sampling Station D: Groundwater Treatment System Reverse Osmosis Concentrate	SC-701-WDR-###	Sample collected from tap on pipe into T-701 (Figure PR-10-03 and PR-10-04).
Sampling Station E: Groundwater Treatment System Sludge	SC-SLUDGE-WDR-###	Sample collected from sludge accumulated in the phase separator used this quarter (Figure TP-RP-10-10-06).

Note:

= Sequential sample identification number at each sample station.

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

Table 2. Flow Monitoring Results*First Quarter 2020 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	System Influent ^{a,b} (gpm)	System Effluent ^b (gpm)	Reverse Osmosis Concentrate ^{b, c} (gpm)
January 2020 Average Monthly Flowrate	128.9	129.9	0
February 2020 Average Monthly Flowrate	127.4	127.9	0
March 2020 Average Monthly Flowrate	123.4 ^c	124.7	0.3

Notes:

gpm: gallons per minute

^a Extraction wells TW-3D, TW-2D and TW-2S were operated during the First Quarter 2020. Extraction well PE-01 was not operated during First Quarter 2020. A portion of the piping/conduit for PE-01 at the MW-20 Bench was disconnected from the IM-3 system on December 18, 2019 to allow for remedy construction activities without crossing under the PE-01 piping/conduit.

^b The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during the First Quarter 2020 is approximately 0.95 percent without the adjusted rate in March 2020 (see note c below); with the adjusted rate, it is 0.75 percent.

^c The larger than normal amount of purge water and well development water during March 2020 (32,500 gallons) was included in the system influent value shown.

^d Due to Final Groundwater Remedy construction activities at the MW-20 bench, brine (RO) concentrate was no longer sent to the brine tanks since May 8, 2019. The total gallons removed from IM-3 since that date are an estimate from the Liquid Environmental Systems non-hazardous waste manifests. On March 5, 2020, it is estimated that 5,000 gallons were removed; on March 17, 2020 it is estimated that 5,000 gallons were removed; and on March 30, 2020 it is estimated that 4,500 gallons of RO concentrate were removed. Using these estimates, that would make the RO Concentration be 0.3 gpm for March 2020. The brine estimates were not used in calculating the percent difference since the brine did not pass through the flowmeter.

Table 3. Sample Collection Dates*First Quarter 2020 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	Sample Collection Dates	Results
Influent	January 7, 2020 February 4, 2020 March 3, 2020	See Table 4
Effluent	January 7, 2020 February 4, 2020 March 3, 2020	See Table 5
Reverse Osmosis Concentrate	March 18, 2020	See Table 6
Sludge ^a	January 7, 2020	See Table 7

Notes:

^a Sludge samples analysis is required quarterly by composite; sludge samples were collected from each container prior to shipment off-site, and combined for the composite sample of the preceding quarter.

Table 4. Influent Monitoring Results^a
First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Analytes Units ^b MDL		TDS	Turbidity	Specific Conductance	Field ^c pH	Chromium	Hexavalent Chromium	Ammonia (as N)												Nitrate/Nitrite (as N)						Sulfate	Iron	Zinc											
		mg/L	NTU	µmhos/cm	pH units	µg/L	µg/L	Aluminium µg/L	mg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Boron mg/L	Copper µg/L	Fluoride mg/L	Lead µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	mg/L	mg/L	µg/L	µg/L																
		50.0	0.100	0.100	---	0.650	3.30	40.0	0.0200	0.160	0.0810	0.150	0.0740	0.550	0.0480	0.130	0.260	0.210	0.260	0.160	2.00	18.0	2.30																
Sampling Frequency								Monthly																Quarterly															
Sample ID	Date																																						
SC-100B-WDR-597	1/7/2020	4400	0.180	7000	7.3	470	450	ND (50.0)	ND (0.100)	ND (0.500)	0.640	36.0	1.10	ND (1.00)	2.80	ND (1.00)	7.60	20.0	ND (1.00)	2.90	500	ND (20.0)	ND (10.0)																
		RL	50.0	0.100	0.100	---	5.00	20.0	50.0	0.100	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0															
SC-100B-WDR-598	2/4/2020	4600	0.260	8600	7.3	460	450	---	---	---	---	---	---	---	---	---	7.80	---	---	---	---	ND (20.0)	---																
		RL	50.0	0.100	0.100	---	5.00	20.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	20.0	---															
SC-100B-WDR-599	3/3/2020	4800	0.210	6200	7.1	450	430	---	---	---	---	---	---	---	---	---	20.0	---	---	---	---	30.0	---																
		RL	50.0	0.100	0.100	---	5.00	20.0	---	---	---	---	---	---	---	---	---	0.500	---	---	---	---	20.0	---															

Notes:

(---) = not required by the ARARs Monitoring and Reporting Program
J = concentration or reporting limits estimated by laboratory or validation
MDL = method detection limit
mg/L = milligrams per liter
N = nitrogen
ND = parameter not detected at the listed value
NTU = nephelometric turbidity units
RL = project reporting limit
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter

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

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

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

Table 5. Effluent Monitoring Results ^a
First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Analytes Units ^c MDL ^d		TDS mg/L	Turbidity NTU	Specific Conductance µmhos/cm	Field ^e pH pH units	Chromium µg/L	Hexavalent Chromium µg/L	Aluminium µg/L	Ammonia (as N) mg/L	Antimony µg/L	Arsenic µg/L	Barium µg/L	Boron mg/L	Copper µg/L	Fluoride mg/L	Lead µg/L	Manganese µg/L	Molybdenum µg/L	Nickel µg/L	Nitrate/Nitrite (as N) mg/L	Sulfate mg/L	Iron µg/L	Zinc µg/L
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
	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
Sampling Frequency		Monthly																					
Sample ID	Date																						
SC-700B-WDR-597	1/7/2020	4500	0.230	7100	7.1	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.170)	ND (0.500)	ND (0.100)	22.0	1.00	ND (1.00)	2.70	ND (1.00)	13.0	21.0	ND (1.00)	3.10	510	ND (20.0)	ND (10.0)
	RL	50.0	0.100	0.100	---	1.00	0.200	50.0	0.100	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0
SC-700B-WDR-598	2/4/2020	4500	0.140	8500	7.1	ND (1.00)	ND (0.200)	ND (50.0)	0.120	ND (0.500)	ND (0.100)	27.0	1.20	ND (1.00)	2.80	ND (1.00)	51.0	21.0	4.70	3.10	510	ND (20.0)	ND (10.0)
	RL	50.0	0.100	0.100	---	1.00	0.200	50.0	0.100	0.500	0.100	1.00	0.100	1.00	0.500	1.00	0.500	0.500	1.00	0.250	25.0	20.0	10.0
SC-700B-WDR-599	3/3/2020	4700	0.160	7000	7.1	ND (1.00)	ND (0.200)	ND (50.0)	ND (0.0600)	ND (2.50)	ND (0.100)	19.0	1.10	ND (1.00)	2.50	ND (5.00)	13.0	21.0	ND (1.00)	2.90	510	ND (20.0)	ND (10.0)
	RL	50.0	0.100	0.100	---	1.00	0.200	50.0	0.100	2.50	0.100	1.00	0.100	1.00	0.500	5.00	0.500	2.50	1.00	0.100	25.0	20.0	10.0

Notes:

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

J = concentration or reporting limits estimated by laboratory or validation

MDL = method detection limit

mg/L = milligrams per liter

N = nitrogen

NA = not applicable

ND = parameter not detected at the listed value

NTU = nephelometric turbidity units

RL = project reporting limit

µg/L = micrograms per liter

µmhos/cm = micromhos per centimeter

^a Sampling location for all effluent samples is tap on pipe downstream from tank T-700 to injection wells (see attached P&ID TP-PR-10-10-04).

^b In addition to the listed effluent limits, the ARARs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health.

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

^d MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.

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

Table 6. Reverse Osmosis Concentrate Monitoring Results^a
First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Analytes	Units ^b	MDL	TDS	Specific Conductance	Field pH ^c	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
			mg/L	µmhos/cm	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
			500	0.100	---	0.00013	0.00017	0.00078	0.00041	0.00075	0.00021	0.00026	0.000042	0.0027	0.480	0.00064	0.0011	0.00013	0.0013	0.0018	0.0012	0.0048	0.00028	0.0110	
Sampling Frequency			Quarterly																						
Sample ID	Date																								
SC-701-WDR-597a	3/18/2020		32000	39000	7.7	0.00670	ND (0.0010)	ND (0.0025)	ND (0.00050)	0.110	ND (0.0025)	ND (0.0025)	0.000780	ND (0.0050)	19.0	ND (0.0050)	0.140	ND (0.00020)	ND (0.0050)	0.0300	ND (0.0025)	ND (0.0120)	0.00280	ND (0.0500)	
RL			500	0.100	---	0.0010	0.0010	0.0025	0.00050	0.0050	0.0025	0.0025	0.00050	0.0050	5.00	0.0050	0.0025	0.00020	0.0050	0.0025	0.0025	0.0120	0.0010	0.0500	

Notes:
(---) = not required by the ARARs Monitoring and Reporting Program
MDL = method detection limit
mg/L = milligrams per liter
ND = parameter not detected at the listed value
RL = project reporting limit
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter

^a Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).
^b Units reported in this table are those units required in the ARARs.
^c Starting 11/20/2007, analysis of pH was switched from California certified laboratory analysis to field method pursuant to the Water Board letter dated October 16, 2007 – Clarification of Monitoring and Reporting Program Requirements, stating that pH measurements may be conducted in the field.

Table 7. Sludge Monitoring Results^a
First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Analytes	Units ^b	MDL	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	mg/kg
			1.10	1.00	1.10	1.90	1.10	0.750	0.920	0.990	3.10	0.670	1.00	1.00	0.0930	1.20	2.10	2.20	1.20	0.770	1.00	
Sampling Frequency			Quarterly																			
Sample ID	Date																					
Phase Separator-597-Sludge	1/7/2020		3600	85.0	12.0	26.0	87.0	ND (3.50)	ND (3.50)	7.20	210	47.0	ND (3.50)	12.0	ND (0.340)	47.0	ND (3.50)	ND (3.50)	8.90	62.0	70.0	
RL			3.50	3.50	6.90	3.50	3.50	3.50	3.50	3.50	6.90	7.00	3.50	3.50	0.340	3.50	3.50	3.50	6.90	3.50	3.50	

Notes:
(---) = not required by the ARARs Monitoring and Reporting Program
J = concentration or reporting limits estimated by laboratory or validation
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
MDL = method detection limit
ND = parameter not detected at the listed reporting limit
RL = project reporting limit

^a Sampling location for all sludge samples is the sludge collection bin (see attached P&ID TP-PR-10-10-06).
^b Units reported in this table are those units required in the ARARs.
^c Sludge samples analysis is required quarterly by composite; sludge samples were collected from each container prior to shipment off-site, and combined for the composite sample of the preceding quarter.

Table 8. Monitoring Information*First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-597	Ryan Phelps	1/7/2020	7:50:00 AM	ASSET	EPA 120.1	SC	1/8/2020	Lilia Ramit
					ASSET	EPA 200.7	AL	1/9/2020	Diane Jetajobe
					ASSET	EPA 200.7	B	1/10/2020	Diane Jetajobe
					ASSET	EPA 200.7	FE	1/9/2020	Diane Jetajobe
					ASSET	EPA 200.8	AS	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	BA	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	CR	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	CU	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	MN	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	MO	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	NI	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	PB	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	SB	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	ZN	1/10/2020	laire Ignacio
					ASSET	EPA 218.6	CR6	1/8/2020	Ria Abes
					ASSET	EPA 300.0	FL	1/13/2020	Ria Abes
					ASSET	EPA 300.0	SO4	1/13/2020	Ria Abes
					Field	HACH	PH	1/7/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	1/9/2020	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	1/15/2020	Julia Bundalian
					ASSET	SM2130B	TRB	1/8/2020	Lilia Ramit
					CTBERK	SM4500NH3D	NH3N	1/10/2020	Elisa Gonzalez
SC-100B	SC-100B-WDR-598	Ryan Phelps	2/4/2020	9:05:00 AM	ASSET	EPA 120.1	SC	2/5/2020	Lilia Ramit
					ASSET	EPA 200.7	FE	2/6/2020	Diane Jetajobe
					ASSET	EPA 200.8	CR	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	MN	2/7/2020	Claire Ignacio
					ASSET	EPA 218.6	CR6	2/5/2020	Ria Abes
					Field	HACH	PH	2/4/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	2/5/2020	Lilia Ramit
					ASSET	SM2130B	TRB	2/5/2020	Lilia Ramit
SC-100B	SC-100B-WDR-599	Ryan Phelps	3/3/2020	10:15:00 AM	ASSET	EPA 120.1	SC	3/3/2020	Lilia Ramit
					ASSET	EPA 200.7	FE	3/10/2020	Diane Jetajobe
					ASSET	EPA 200.8	CR	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	MN	3/9/2020	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/4/2020	Ria Abes
					Field	HACH	PH	3/3/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	3/4/2020	Lilia Ramit
					ASSET	SM2130B	TRB	3/4/2020	Lilia Ramit

Table 8. Monitoring Information*First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-597	Ryan Phelps	1/7/2020	7:55:00 AM	ASSET	EPA 120.1	SC	1/8/2020	Lilia Ramit
					ASSET	EPA 200.7	AL	1/9/2020	Diane Jetajobe
					ASSET	EPA 200.7	B	1/10/2020	Diane Jetajobe
					ASSET	EPA 200.7	FE	1/9/2020	Diane Jetajobe
					ASSET	EPA 200.8	AS	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	BA	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	CR	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	CU	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	MN	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	MO	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	NI	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	PB	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	SB	1/10/2020	laire Ignacio
					ASSET	EPA 200.8	ZN	1/10/2020	laire Ignacio
					ASSET	EPA 218.6	CR6	1/8/2020	Ria Abes
					ASSET	EPA 300.0	FL	1/13/2020	Ria Abes
					ASSET	EPA 300.0	SO4	1/13/2020	Ria Abes
					Field	HACH	PH	1/7/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	1/9/2020	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	1/17/2020	Julia Bundalian
					ASSET	SM2130B	TRB	1/8/2020	Lilia Ramit
					CTBERK	SM4500NH3D	NH3N	1/10/2020	Elisa Gonzalez
SC-700B	SC-700B-WDR-598	Ryan Phelps	2/4/2020	8:55:00 AM	ASSET	EPA 120.1	SC	2/5/2020	Lilia Ramit
					ASSET	EPA 200.7	AL	2/6/2020	Diane Jetajobe
					ASSET	EPA 200.7	B	2/20/2020	Diane Jetajobe
					ASSET	EPA 200.7	FE	2/6/2020	Diane Jetajobe
					ASSET	EPA 200.8	AS	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	BA	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	CR	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	CU	2/14/2020	Claire Ignacio
					ASSET	EPA 200.8	MN	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	MO	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	NI	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	PB	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	SB	2/7/2020	Claire Ignacio
					ASSET	EPA 200.8	ZN	2/7/2020	Claire Ignacio
					ASSET	EPA 218.6	CR6	2/5/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes
					ASSET	EPA 300.0	FL	2/7/2020	Ria Abes

Table 8. Monitoring Information*First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-598	Ryan Phelps	2/4/2020	8:55:00 AM	ASSET	EPA 300.0	SO4	2/7/2020	Ria Abes
					Field	HACH	PH	2/4/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	2/5/2020	Lilia Ramit
					ASSET	SM 4500-NO3F	NO3NO2N	2/16/2020	Julia Bundalian
					ASSET	SM2130B	TRB	2/5/2020	Lilia Ramit
					CTBERK	SM4500NH3D	NH3N	2/13/2020	Elisa Gonzalez
SC-700B	SC-700B-WDR-599	Ryan Phelps	3/3/2020	10:20:00 AM	ASSET	EPA 120.1	SC	3/3/2020	Lilia Ramit
					ASSET	EPA 200.7	AL	3/11/2020	Diane Jetajobe
					ASSET	EPA 200.7	B	3/10/2020	Diane Jetajobe
					ASSET	EPA 200.7	FE	3/10/2020	Diane Jetajobe
					ASSET	EPA 200.8	AS	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	BA	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	CR	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	CU	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	MN	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	MO	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	NI	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	PB	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	SB	3/9/2020	Claire Ignacio
					ASSET	EPA 200.8	ZN	3/9/2020	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/4/2020	Ria Abes
					ASSET	EPA 300.0	FL	3/6/2020	Ria Abes
					ASSET	EPA 300.0	SO4	3/6/2020	Ria Abes
					Field	HACH	PH	3/3/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	3/4/2020	Lilia Ramit
					ASSET	SM2130B	TRB	3/4/2020	Lilia Ramit
					CTBERK	SM4500NH3D	NH3N	3/9/2020	Elisa Gonzalez
					BCLabs	SM4500NO3-E	NO3NO2N	3/27/2020	Marlon Cartin
SC-701	SC-701-WDR-597a	Ryan Phelps	3/18/2020	1:05:00 PM	ASSET	EPA 120.1	SC	3/19/2020	Lilia Ramit
					ASSET	EPA 200.8	AG	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	AS	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	BA	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	BE	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	CD	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	CO	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	CR	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	CU	3/22/2020	Claire Ignacio
					ASSET	EPA 200.8	MN	3/21/2020	Claire Ignacio

Table 8. Monitoring Information*First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System*

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-597a	Ryan Phelps	3/18/2020	1:05:00 PM	ASSET	EPA 200.8	MO	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	NI	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	PB	3/22/2020	Claire Ignacio
					ASSET	EPA 200.8	SB	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	SE	3/21/2020	Claire Ignacio
					ASSET	EPA 200.8	TL	3/26/2020	Claire Ignacio
					ASSET	EPA 200.8	V	3/22/2020	Claire Ignacio
					ASSET	EPA 200.8	ZN	3/21/2020	Claire Ignacio
					ASSET	EPA 218.6	CR6	3/19/2020	Ria Abes
					ASSET	EPA 245.1	HG	3/20/2020	Claire Ignacio
					ASSET	EPA 300.0	FL	3/23/2020	Ria Abes
					Field	HACH	PH	3/18/2020	Ryan Phelps
					ASSET	SM 2540C	TDS	3/20/2020	Lilia Ramit
Phase Separator	Phase Separator-597-Sludge	Ryan Phelps	1/7/2020	8:15:00 AM	ASSET	EPA 300.0	FL	1/13/2020	Ria Abes
					ASSET	EPA 6010B	AG	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	AS	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	BA	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	BE	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	CD	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	CO	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	CR	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	CU	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	MN	1/14/2020	Diane Jetajobe
					ASSET	EPA 6010B	MO	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	NI	1/14/2020	Diane Jetajobe
					ASSET	EPA 6010B	PB	1/14/2020	Diane Jetajobe
					ASSET	EPA 6010B	SB	1/14/2020	Diane Jetajobe
					ASSET	EPA 6010B	SE	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	TL	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	V	1/13/2020	Diane Jetajobe
					ASSET	EPA 6010B	ZN	1/13/2020	Diane Jetajobe
					ASSET	EPA 7471A	HG	1/10/2020	Julia Bundalian
					ASSET	SW 7199	CR6	1/16/2020	Ria Abes

Table 8. Monitoring Information

First Quarter 2020 Monitoring Report for Interim Measure No.3 Groundwater Treatment System

Notes:

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

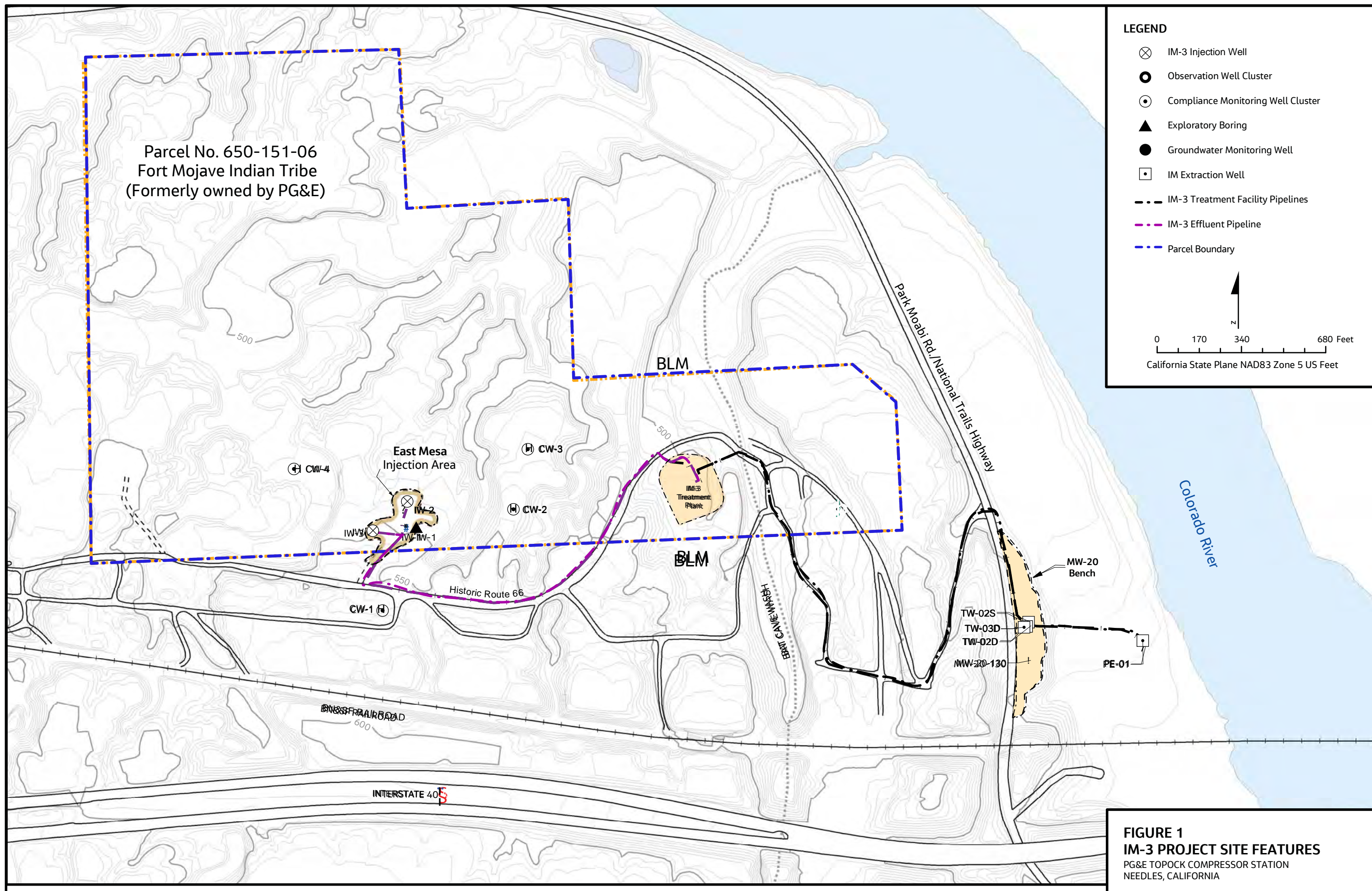
SC-100B = Sampling location for all influent samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04).

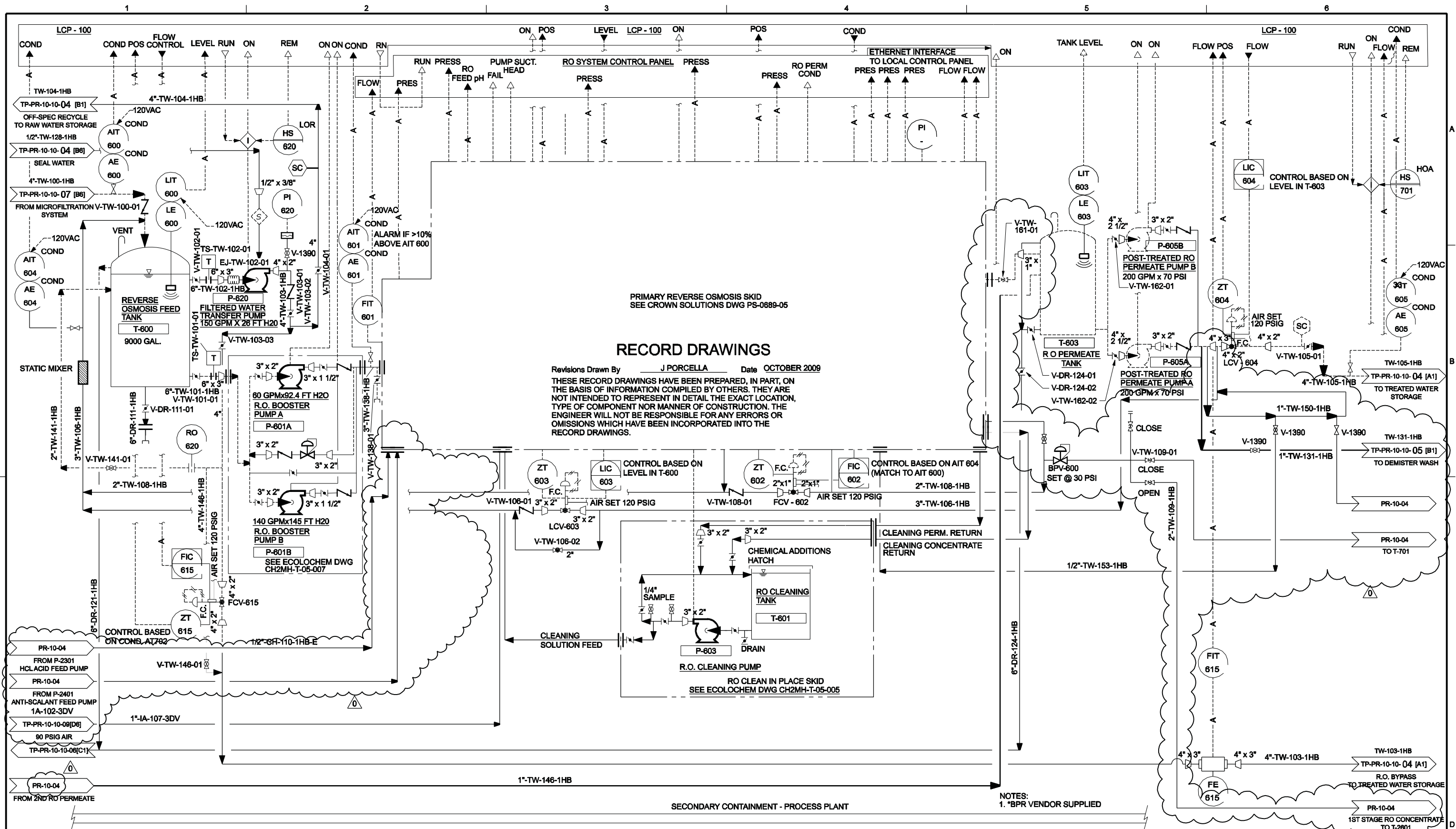
SC-701 = Sampling location for all reverse osmosis samples is tap on pipe T-701 (see attached P&ID PR-10-04).

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

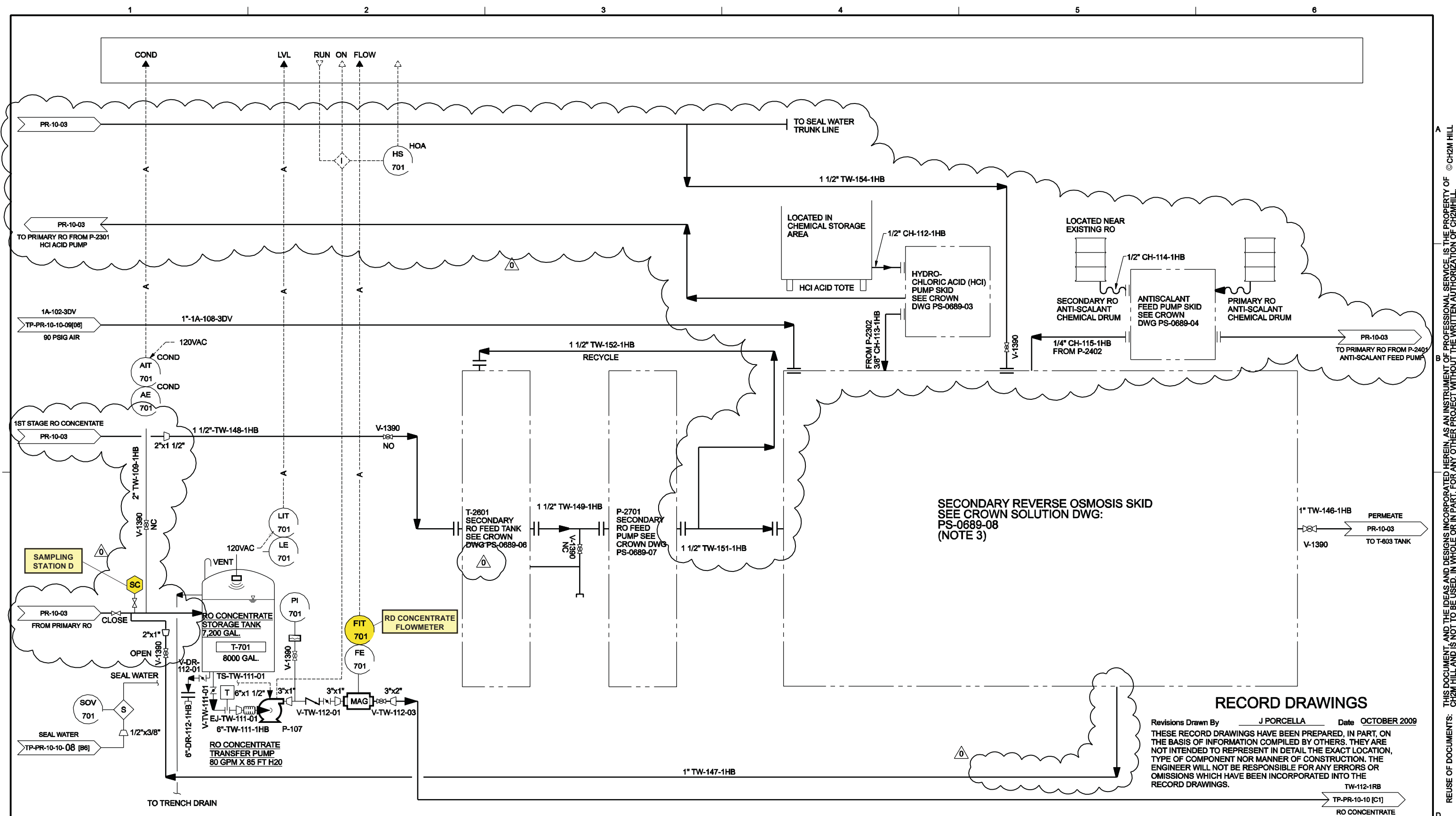
ALKB =	alkalinity, bicarb as CaCO ₃	MO =	molybdenum
ALKC =	alkalinity, carb as CaCO ₃	MOIST =	moisture
AL =	aluminum	NH ₃ N =	ammonia (as N)
Ag =	silver	NI =	nickel
AS =	arsenic	NO ₃ NO ₂ N =	nitrate/nitrite (as N)
B =	boron	PB =	lead
BA =	barium	PH =	pH
BE =	beryllium	SB =	antimony
CD =	cadmium	SC =	specific conductance
CO =	cobalt	SE =	selenium
CR =	chromium	SO ₄ =	sulfate
CR ₆ =	hexavalent chromium	TDS =	total dissolved solids
CU =	copper	TL =	thallium
FE =	iron	TRB =	turbidity
FETD =	iron, dissolved	V =	vanadium
FL =	fluoride	ZN =	zinc
HG =	mercury		
MN =	manganese		
MND =	manganese, dissolved		

Figures





<div>***</div> <div>ORIGINALLY STAMPED</div> <div>AND SIGNED BY:</div> <div>JOHN PORCELLA</div> <div>CALIFORNIA PE NO. C70145</div> <div>ON 04-01-2009</div> <div>***</div>	<div>RESPONSIBLE ENGINEER:</div> <div>John Porcella</div> <div>C70145</div> <div>Exp. 5-30-10</div> <div>PE#</div>	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 PLANT PERFORMANCE IMPROVEMENTS	PROCESS AND INSTRUMENTATION DIAGRAM REVERSE OSMOSIS SYSTEM SHEET ONE OF TWO				
		A	2/12/09	INTERNAL REVIEW			DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED		10/02/09	DATE	ISSUED	REV	DATE					SDE	PEM
		B	2/12/09	CLIENT REVIEW			CIVIL	SJ	ELECTRICAL	FH		10/02/09	STATUS	PRELIMINARY	A	2/12/09					JP	JP
		C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP	STRUCTURAL		INST & CONTROL	JG		10/02/09	REV.	FOR REVIEW AND APPROVAL	C	4/01/09					JP	JP
		D	11/17/09	FINAL RECORD ISSUE	JR	JP	MECHANICAL	SJ	ARCHITECTURAL			10/02/09	CLIENT	APPROVED FOR CONSTRUCTION								
							PROCESS	DF	ENVIRONMENTAL			10/02/09	FIELD	REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	PROJ NO. 362032			
							PIPING	SJ	GEN. ARRANG.	SJ		10/02/09	INTRA CO.									
												SCALE NONE					CH2MHILL		DWG. NO.	PR-10-03	REV.	0



RECORD DRAWINGS

Revisions Drawn By J PORCELLA Date OCTOBER 2009
 THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON
 THE BASIS OF INFORMATION COMPILED BY OTHERS. THEY ARE
 NOT INTENDED TO BE PRESENT IN THE FIELD IN ANY MANNER,
 TYPE OF COMPONENT NOR MANNER OF CONSTRUCTION. THE
 ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR
 OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE
 RECORD DRAWINGS. TW-112-1RB

** ORIGINALLY STAMPED AND SIGNED BY: JOHN PORCELLA CALIFORNIA PE NO. C70145 ON 04-01-2009 **	RESPONSIBLE ENGINEER John Porcella C70145 Exp. 8-30-10 PE #	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL		REV 0	DATE 10/02/09	PRINT DISTRIBUTION		STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 PLANT PERFORMANCE IMPROVEMENTS	PROCESS AND INSTRUMENTATION DIAGRAM REVERSE OSMOSIS SYSTEM SHEET TWO OF TWO		
		A	2/12/09	INTERNAL REVIEW			DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE		ISSUED	REV	DATE	SDE	PEM				
		B	2/12/09	CLIENT REVIEW			CIVIL	SJ	ELECTRICAL	FH	STATUS		PRELIMINARY	A	2/12/09	JP	JP				
		C	4/01/09	FOR REVIEW AND APPROVAL	JR	JP	STRUCTURAL		INST & CONTROL	JG	REV.		FOR REVIEW AND APPROVAL	C	4/01/09	JP	JP				
		D	11/17/09	FINAL RECORD ISSUE	JR	JP	MECHANICAL	SJ	ARCHITECTURAL		CLIENT		APPROVED FOR CONSTRUCTION								
								PROCESS	DF	ENVIRONMENTAL		FIELD		REVISED & APPROVED FOR CONSTRUCTION	0	10/02/09	JP	JP	PROJ NO. 362032		
								PIPING	SJ	GEN. ARRANG.	SJ	INTRA CO.									
												SCALE NONE					CH2MHILL	DWG. NO. PR-10-04	REV. 0		

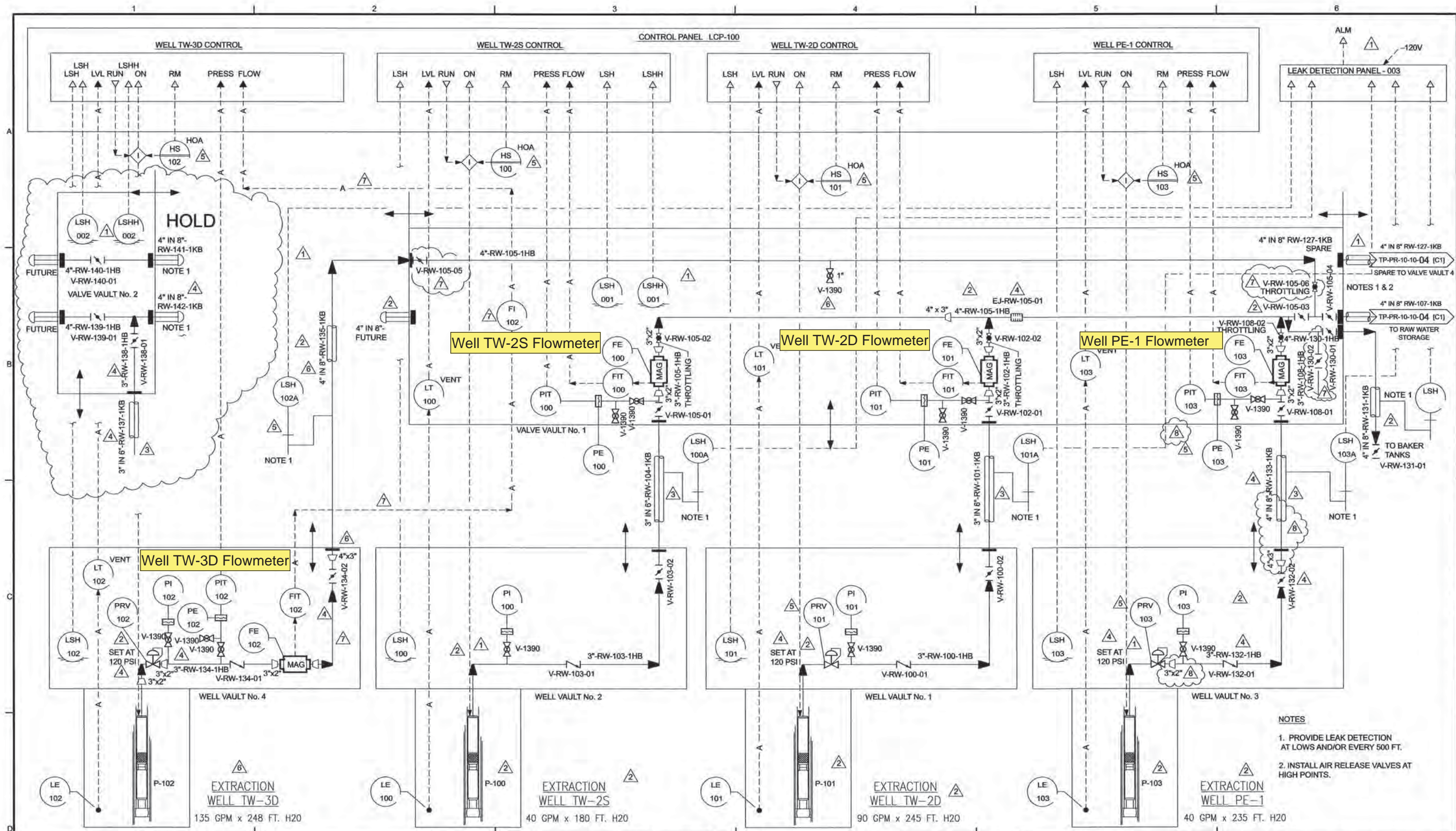
BAR IS ONE INCH ON
ORIGINAL DRAWING.
0 1"

FILENAME: PR-10-04.dgn

PLOT DATE: 11/19/2009

PLOT TIME: 10:28:26 AM

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL.



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



RESPONSIBLE ENGINEER:
Kenneth L. Martins
PE # CH4876 Exp. 6-30-05

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	—	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	—	—	—	—	—

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

FILENAME: tppr101003.dwg

PLOT DATE: 19-OCT-2005

PLOT TIME:

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Appendix A
RO Concentrate Non-Hazardous
Waste Manifests



LIQUID ENVIRONMENTAL SOLUTIONS

P 5452

NON-HAZARDOUS WASTE MANIFEST

Profile Number

15713

Generator Name	PG&E Topock Groundwater Extraction Site Phone: (760) 326-3326 Emergency: (800) 833-7602	Generator Address	15 Mi Southwest of Needles Hwy 140 & Park Moabi Rd. Needles, CA 92363 EPA ID#: CAR000151118
Waste Type	Non Hazardous Waste, Liquid (Brine Water)		
I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.			
Generator Rep. Name (please print)	Scott A. Daniels	Generator Rep. Signature	[Signature]
Transporter Name	MP Environmental Services	Transporter Address	3045 S. 51st Ave. Phoenix, AZ 85043

Vehicle Information

Truck #	Tank#		Inspection Paperwork Verified By:			
782	3346		[Signature]			
Waste Removed (Gallons)	Totalizer Readings (Gallons)	Start	Finish	Date	Time	
5000				3-5-20	0800	
I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.						
Driver must comply with proper PPE requirements. Including: gloves, safety vest, hard hat, steel toes shoes & safety glasses						
Driver Name (please print)	Driver Signature		[Signature]			

Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043	
Waste Received (Gallons)		Date	Time	
Facility Rep. Name (please print)		Facility Rep. Signature	[Signature]	

WHITE - Transporter YELLOW - Second Generator GOLDENROD - Disposal Facility PINK - Generator

Liquid Environmental Solutions of Arizona
5159 West Van Buren Street Phoenix, AZ 85043 (602) 278-3442

www.liquidenviro.com



LIQUID ENVIRONMENTAL SOLUTIONS

P 5453

NON-HAZARDOUS WASTE MANIFEST

Profile Number

15713

Generator Name	PG&E Topock Groundwater Extraction Site Phone: (760) 326-3326 Emergency: (800) 833-7602	Generator Address	15 Mi Southwest of Needles Hwy 140 & Park Moabi Rd. Needles, CA 92363 EPA ID#: CAR000151118
Waste Type	Non Hazardous Waste, Liquid (Brine Water)		
I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.			
Generator Rep. Name (please print)	Byron Phelps	Generator Rep. Signature	
Transporter Name	MP Environmental Services	Transporter Address	3045 S. 51st Ave. Phoenix, AZ 85043

Vehicle Information

Truck #	782	Tank#	3346	Inspection Paperwork Verified By:		
Waste Removed (Gallons)	4,500	Totalizer Readings (Gallons)	Start	Finish	Date	Time
					3-17-20	6:15
I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.						
Driver must comply with proper PPE requirements. Including: gloves, safety vest, hard hat, steel toes shoes & safety glasses						
Driver Name (please print)	Miguel Alvarez		Driver Signature			

Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043		
Waste Received (Gallons)		Date	Time		
Facility Rep. Name (please print)		Facility Rep. Signature			

WHITE - Transporter YELLOW - Second Generator GOLDENROD - Disposal Facility PINK - Generator

Liquid Environmental Solutions of Arizona
5159 West Van Buren Street Phoenix, AZ 85043 (602) 278-3442

www.liquidenviro.com

NON-HAZARDOUS WASTE MANIFEST

Profile Number

15713

Generator Name	PG&E Topock Groundwater Extraction Site Phone: (760) 326-3326 Emergency: (800) 833-7602	Generator Address	15 Mi Southwest of Needles Hwy 140 & Park Moabi Rd. Needles, CA 92363 EPA ID#: CAR000151118
Waste Type	Non Hazardous Waste, Liquid (Brine Water)		
<p>I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.</p>			
Generator Rep. Name (please print)	<i>Ken Phelps</i>	Generator Rep. Signature	<i>[Signature]</i>
Transporter Name	MP Environmental Services	Transporter Address	3045 S. 51st Ave. Phoenix, AZ 85043

Vehicle Information

Truck #	<i>782</i>	Tank#	<i>3346</i>	Inspection Paperwork Verified By:	
Waste Removed (Gallons)	<i>5,000</i>	Totalizer Readings (Gallons)	<i>8</i>	Finish	<i>8</i>
				Date	Time
				<i>3-30-20</i>	<i>9:00</i>
<p>I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.</p>					
<p>Driver must comply with proper PPE requirements. Including: gloves, safety vest, hard hat, steel toes shoes & safety glasses</p>					
Driver Name (please print)	<i>Mauro Arana</i>		Driver Signature	<i>[Signature]</i>	

Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043		
Waste Received (Gallons)		Date			Time
Facility Rep. Name (please print)		Facility Rep. Signature			

WHITE - Transporter YELLOW - Second Generator GOLDENROD - Disposal Facility PINK - Generator

Appendix B
First Quarter
2020 Laboratory Analytical Reports

January 21, 2020

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

Workorder No.: N039041

RE: PG&E Topock, D3184A.EV.05-OM-TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 07, 2020 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucos for

Puri Romualdo
Laboratory Director

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



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CLIENT: CH2M HILL
Project: PG&E Topock, D3184AIEV.05-OM-TS
Lab Order: N039041

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6010B:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N039040-001A-MS1 and N039040-001A-MSD1 possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N039040-001A-MS1 and N039040-001A-MSD1 since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 21-Jan-20

CLIENT: CH2M HILL
Project: PG&E Topock, D3184AIEV.05-OM-TS
Lab Order: N039041
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N039041-001A	Phase Separator-597-Sludge	Soil	1/7/2020 8:15:00 AM	1/7/2020	1/21/2020
N039041-001B	Phase Separator-597-Sludge	Soil	1/7/2020 8:15:00 AM	1/7/2020	1/21/2020



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-597-Sludge
Lab Order:	N039041	Collection Date:	1/7/2020 8:15:00 AM
Project:	PG&E Topock, D3184AI.EV.05-OM-TS	Matrix:	SOIL
Lab ID:	N039041-001		

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200113A	QC Batch: R141892	PrepDate:	Analyst: RAB
Fluoride	47 0.67	7.0	mg/Kg-dry 1/13/2020 01:31 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 300_S**

Sample ID: MB-R141892	SampType: MBLK	TestCode: 300_S	Units: mg/Kg	Prep Date:	RunNo: 141892						
Client ID: PBS	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648177							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	1.0									

Sample ID: LCS-R141892	SampType: LCS	TestCode: 300_S	Units: mg/Kg	Prep Date:	RunNo: 141892						
Client ID: LCSS	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648178							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	12.244	1.0	12.50		98.0	90	110				

Sample ID: N039041-001ADUP	SampType: DUP	TestCode: 300_S	Units: mg/Kg-dry	Prep Date:	RunNo: 141892						
Client ID: ZZZZZZ	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648219							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	46.341	7.0						47.41	2.29	20	

Sample ID: N039041-001AMS	SampType: MS	TestCode: 300_S	Units: mg/Kg-dry	Prep Date:	RunNo: 141892						
Client ID: ZZZZZZ	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648220							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	86.191	7.0	43.48		89.2	80	120				

Sample ID: N039041-001AMSD	SampType: MSD	TestCode: 300_S	Units: mg/Kg-dry	Prep Date:	RunNo: 141892						
Client ID: ZZZZZZ	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648221							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	86.650	7.0	43.48		90.2	80	120	86.19	0.531	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_S

Sample ID: N039041-001APS	SampType: MS	TestCode: 300_S	Units: mg/Kg-dry	Prep Date:	RunNo: 141892						
Client ID: ZZZZZZ	Batch ID: R141892	TestNo: EPA 300.0	Analysis Date: 1/13/2020	SeqNo: 3648222							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	138.404	7.0	86.96		105	80	120				

Qualifiers:

- | | | | | | |
|----|---|---|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | | Calculations are based on raw values | | |



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-597-Sludge
Lab Order:	N039041	Collection Date:	1/7/2020 8:15:00 AM
Project:	PG&E Topock, D3184AI.EV.05-OM-TS	Matrix:	SOIL
Lab ID:	N039041-001		

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
TOTAL METALS BY ICP						
	EPA 3050B		EPA 6010B			
RunID: NV00922-ICP2_200114B	QC Batch: 77765		PrepDate: 1/13/2020		Analyst: DJ	
Antimony	12	1.1	6.9		mg/Kg-dry	1/14/2020 06:16 PM
Arsenic	26	1.9	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Barium	87	1.1	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Beryllium	ND	0.75	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Cadmium	ND	0.92	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Chromium	3600	1.1	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Cobalt	7.2	0.99	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Copper	210	3.1	6.9		mg/Kg-dry	1/13/2020 05:54 PM
Lead	ND	1.0	3.5		mg/Kg-dry	1/14/2020 06:16 PM
Manganese	590	1.8	3.5		mg/Kg-dry	1/14/2020 06:16 PM
Molybdenum	12	1.0	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Nickel	47	1.2	3.5		mg/Kg-dry	1/14/2020 06:16 PM
Selenium	ND	2.1	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Silver	ND	2.2	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Thallium	8.9	1.2	6.9		mg/Kg-dry	1/13/2020 05:54 PM
Vanadium	62	0.77	3.5		mg/Kg-dry	1/13/2020 05:54 PM
Zinc	70	1.0	3.5		mg/Kg-dry	1/13/2020 05:54 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 6010_SPGE**

Sample ID: MB-77765	SampType: MBLK	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 1/13/2020	RunNo: 141821						
Client ID: PBS	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/13/2020	SeqNo: 3645491						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	1.0									
Barium	ND	1.0									
Beryllium	ND	1.0									
Cadmium	ND	1.0									
Chromium	ND	1.0									
Cobalt	ND	1.0									
Copper	ND	2.0									
Molybdenum	ND	1.0									
Selenium	ND	1.0									
Silver	ND	1.0									
Thallium	ND	2.0									
Vanadium	ND	1.0									
Zinc	ND	1.0									

Sample ID: LCS1-77765	SampType: LCS	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 1/13/2020	RunNo: 141821						
Client ID: LCSS	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/13/2020	SeqNo: 3645492						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.688	1.0	25.00		103	85	115				
Barium	26.257	1.0	25.00		105	85	115				
Beryllium	25.580	1.0	25.00		102	85	115				
Cadmium	25.000	1.0	25.00		100	85	115				
Chromium	25.356	1.0	25.00		101	85	115				
Cobalt	25.736	1.0	25.00		103	85	115				
Copper	25.972	2.0	25.00		104	85	115				
Molybdenum	25.065	1.0	25.00		100	85	115				
Selenium	25.311	1.0	25.00		101	85	115				
Silver	26.549	1.0	25.00		106	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out Calculations are based on raw values


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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID: LCS1-77765	SampType: LCS	TestCode: 6010_SPGE	Units: mg/Kg	Prep Date: 1/13/2020	RunNo: 141821						
Client ID: LCSS	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/13/2020	SeqNo: 3645492						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	25.378	2.0	25.00		102	85	115				
Vanadium	25.321	1.0	25.00		101	85	115				
Zinc	26.146	1.0	25.00		105	85	115				

Sample ID: N039040-001A-MS1	SampType: MS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/13/2020	RunNo: 141821						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B	Analysis Date: 1/13/2020	SeqNo: 3645496							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	25.542	1.0	25.22		89.3	75	125				
Barium	181.363	1.0	25.22		268	75	125				S
Beryllium	19.469	1.0	25.22		77.2	75	125				
Cadmium	19.684	1.0	25.22		78.1	75	125				
Chromium	44.452	1.0	25.22		122	75	125				
Cobalt	27.511	1.0	25.22		93.4	75	125				
Copper	33.801	2.0	25.22		105	75	125				
Molybdenum	20.180	1.0	25.22		80.0	75	125				
Selenium	17.224	1.0	25.22		68.3	75	125				S
Silver	17.671	1.0	25.22		70.1	75	125				S
Thallium	19.296	2.0	25.22		75.1	75	125				
Vanadium	57.229	1.0	25.22		132	75	125				S
Zinc	46.087	1.0	25.22		99.3	75	125				

Sample ID: N039040-001A-MSD	SampType: MSD	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/13/2020	RunNo: 141821						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/13/2020	SeqNo: 3645497						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	23.718	1.0	25.23		82.1	75	125	25.54	7.40	20	SR
Barium	146.496	1.0	25.23		130	75	125	181.4	21.3	20	
Beryllium	20.494	1.0	25.23		81.2	75	125	19.47	5.13	20	
Cadmium	20.491	1.0	25.23		81.2	75	125	19.68	4.02	20	

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID: N039040-001A-MSD		SampType: MSD	TestCode: 6010_SPGE		Units: mg/Kg-dry	Prep Date: 1/13/2020		RunNo: 141821			
Client ID: ZZZZZZ		Batch ID: 77765	TestNo: EPA 6010B			Analysis Date: 1/13/2020		SeqNo: 3645497			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	40.899	1.0	25.23		108	75	125	44.45	8.33	20	
Cobalt	27.287	1.0	25.23		92.4	75	125	27.51	0.817	20	
Copper	33.401	2.0	25.23		103	75	125	33.80	1.19	20	
Molybdenum	21.085	1.0	25.23		83.6	75	125	20.18	4.39	20	
Selenium	18.561	1.0	25.23		73.6	75	125	17.22	7.47	20	S
Silver	19.036	1.0	25.23		75.4	75	125	17.67	7.44	20	
Thallium	20.451	2.0	25.23		79.6	75	125	19.30	5.81	20	
Vanadium	50.586	1.0	25.23		106	75	125	57.23	12.3	20	
Zinc	44.018	1.0	25.23		91.0	75	125	46.09	4.59	20	

Sample ID: MB-77765		SampType: MBLK	TestCode: 6010_SPGE		Units: mg/Kg	Prep Date: 1/13/2020		RunNo: 141856			
Client ID: PBS		Batch ID: 77765	TestNo: EPA 6010B			Analysis Date: 1/14/2020		SeqNo: 3646314			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	2.0									
Lead	ND	1.0									
Manganese	ND	1.0									
Nickel	ND	1.0									

Sample ID: LCS1-77765		SampType: LCS	TestCode: 6010_SPGE		Units: mg/Kg	Prep Date: 1/13/2020		RunNo: 141856			
Client ID: LCSS		Batch ID: 77765	TestNo: EPA 6010B			Analysis Date: 1/14/2020		SeqNo: 3646315			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	25.044	2.0	25.00		100	85	115				
Lead	24.900	1.0	25.00		99.6	85	115				
Manganese	49.437	1.0	50.00		98.9	85	115				
Nickel	24.817	1.0	25.00		99.3	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_SPGE

Sample ID: N039040-001A-MS1	SampType: MS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/13/2020	RunNo: 141856						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/14/2020	SeqNo: 3646319						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	14.801	2.0	25.22		58.7	75	125				S
Lead	29.525	1.0	25.22		88.2	75	125				
Manganese	355.031	1.0	50.44		229	75	125				S
Nickel	33.830	1.0	25.22		98.1	75	125				

Sample ID: N039040-001A-MSD	SampType: MSD	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date: 1/13/2020	RunNo: 141856						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/14/2020	SeqNo: 3646320						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	15.922	2.0	25.23		63.1	75	125	14.80	7.29	20	S
Lead	28.633	1.0	25.23		84.7	75	125	29.52	3.07	20	
Manganese	292.162	1.0	50.46		104	75	125	355.0	19.4	20	
Nickel	33.269	1.0	25.23		95.8	75	125	33.83	1.67	20	

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 6010_SPGE**

Sample ID: N039040-001A-PS	SampType: PS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date:	RunNo: 141821						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B	Analysis Date: 1/13/2020	SeqNo: 3645495							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.411	1.0	25.21		105	80	120				
Barium	147.757	1.0	25.21		135	80	120				S
Beryllium	25.026	1.0	25.21		99.3	80	120				
Cadmium	24.418	1.0	25.21		96.9	80	120				
Chromium	39.259	1.0	25.21		102	80	120				
Cobalt	29.417	1.0	25.21		101	80	120				
Copper	36.210	2.0	25.21		114	80	120				
Molybdenum	25.354	1.0	25.21		101	80	120				
Selenium	23.295	1.0	25.21		92.4	80	120				
Silver	25.836	1.0	25.21		102	80	120				
Thallium	24.781	2.0	25.21		96.9	80	120				
Vanadium	50.928	1.0	25.21		107	80	120				
Zinc	47.324	1.0	25.21		104	80	120				

Sample ID: N039040-001A-PS	SampType: PS	TestCode: 6010_SPGE	Units: mg/Kg-dry	Prep Date:	RunNo: 141856						
Client ID: ZZZZZZ	Batch ID: 77765	TestNo: EPA 6010B		Analysis Date: 1/14/2020	SeqNo: 3646318						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	18.632	2.0	25.21		73.9	80	120				S
Lead	31.548	1.0	25.21		96.3	80	120				
Manganese	338.892	1.0	50.41		197	80	120				S
Nickel	33.239	1.0	25.21		95.8	80	120				

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-597-Sludge
Lab Order:	N039041	Collection Date:	1/7/2020 8:15:00 AM
Project:	PG&E Topock, D3184AI.EV.05-OM-TS	Matrix:	SOIL
Lab ID:	N039041-001		

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
HEXAVALENT CHROMIUM BY IC						
	EPA 3060A		EPA 7199			
RunID: NV00922-IC6_200116A	QC Batch: 77807		PrepDate: 1/15/2020		Analyst: RAB	
Hexavalent Chromium	85	1.0	3.5		mg/Kg-dry	1/16/2020 03:07 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 7199_S_PGE**

Sample ID: MB-77807	SampType: MBLK	TestCode: 7199_S_PGE	Units: mg/Kg	Prep Date: 1/15/2020	RunNo: 141931
Client ID: PBS	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650393
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	ND	0.20			

Sample ID: LCS-77807	SampType: LCS	TestCode: 7199_S_PGE	Units: mg/Kg	Prep Date: 1/15/2020	RunNo: 141931
Client ID: LCSS	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650394
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	3.833	0.20	4.000		95.8 80 120

Sample ID: N039040-001B-REP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931
Client ID: ZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650396
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	ND	0.20			0 0 20

Sample ID: N039040-001B-DUP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931
Client ID: ZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650397
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	ND	0.20			0 0 20

Sample ID: N039040-001B-MS	SampType: MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931
Client ID: ZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650398
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Hexavalent Chromium	3.572	0.20	4.033		88.6 75 125

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID: N039040-001B-MSD	SampType: MSD	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650399						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	3.528	0.20	4.039		87.3	75	125	3.572	1.23	20	
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Sample ID: N039040-001B-MS I	SampType: MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650400						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	595.347	10	668.3		89.1	75	125				
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Sample ID: N039040-002B-REP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650402						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	0.134	0.44						0.1355	0	20	
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Sample ID: N039041-001A-REP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650406						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	84.063	3.5						84.86	0.941	20	
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Sample ID: N039063-001A-REP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650407						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	ND	0.23						0	0	20	
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Qualifiers:

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|----|---|--------------------------------------|--------------------------------------|---|--|
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| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_S_PGE

Sample ID: N039079-001A-REP	SampType: DUP	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date: 1/15/2020	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650409						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	ND	0.27						0	0	20	
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Sample ID: N039040-001B-PS	SampType: MS	TestCode: 7199_S_PGE	Units: mg/Kg-dry	Prep Date:	RunNo: 141931						
Client ID: ZZZZZZ	Batch ID: 77807	TestNo: EPA 7199		Analysis Date: 1/16/2020	SeqNo: 3650420						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	4.017	0.20	4.037		99.5	75	125				
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Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-597-Sludge
Lab Order:	N039041	Collection Date:	1/7/2020 8:15:00 AM
Project:	PG&E Topock, D3184AI.EV.05-OM-TS	Matrix:	SOIL
Lab ID:	N039041-001		

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL MERCURY BY COLD VAPOR TECHNIQUE
EPA 7471A

RunID: NV00922-AA2_200110A	QC Batch: 77733	PrepDate: 1/9/2020	Analyst: JBB
Mercury	ND	0.093	0.34
		mg/Kg-dry	1/10/2020 10:21 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 7471_S_PGE**

Sample ID: MB-77733	SampType: MBLK	TestCode: 7471_S_PGE	Units: mg/Kg	Prep Date: 1/9/2020	RunNo: 141800
Client ID: PBS	Batch ID: 77733	TestNo: EPA 7471A		Analysis Date: 1/10/2020	SeqNo: 3642011
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.10			

Sample ID: LCS-77733	SampType: LCS	TestCode: 7471_S_PGE	Units: mg/Kg	Prep Date: 1/9/2020	RunNo: 141800
Client ID: LCSS	Batch ID: 77733	TestNo: EPA 7471A		Analysis Date: 1/10/2020	SeqNo: 3642012
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.438	0.10	0.4167		105 75 125

Sample ID: N039040-001A-MS	SampType: MS	TestCode: 7471_S_PGE	Units: mg/Kg-dry	Prep Date: 1/9/2020	RunNo: 141800
Client ID: ZZZZZZ	Batch ID: 77733	TestNo: EPA 7471A		Analysis Date: 1/10/2020	SeqNo: 3642013
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.486	0.10	0.4188		116 75 125

Sample ID: N039040-001A-MSD	SampType: MSD	TestCode: 7471_S_PGE	Units: mg/Kg-dry	Prep Date: 1/9/2020	RunNo: 141800
Client ID: ZZZZZZ	Batch ID: 77733	TestNo: EPA 7471A		Analysis Date: 1/10/2020	SeqNo: 3642014
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	0.503	0.10	0.4216		119 75 125 0.4858 3.55 20

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT:	CH2M HILL	Client Sample ID:	Phase Separator-597-Sludge
Lab Order:	N039041	Collection Date:	1/7/2020 8:15:00 AM
Project:	PG&E Topock, D3184AI.EV.05-OM-TS	Matrix:	SOIL
Lab ID:	N039041-001		

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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PERCENT MOISTURE
D2216

RunID: NV00922-WC_200108G	QC Batch: R140756	PrepDate:	Analyst: LR
Percent Moisture	71.25 0.1000 0.1000	wt%	1/8/2020 12:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039041
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: PMOIST**

Sample ID: MB-R140756	SampType: MBLK	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 140756						
Client ID: PBS	Batch ID: R140756	TestNo: D2216		Analysis Date: 1/8/2020	SeqNo: 3639934						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	ND	0.1000									

Sample ID: N039041-001BDUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 140756						
Client ID: ZZZZZZ	Batch ID: R140756	TestNo: D2216		Analysis Date: 1/8/2020	SeqNo: 3639938						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	71.220	0.1000						71.25	0.0451	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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N039041-002A

**CH2MHILL**

CHAIN OF CUSTODY RECORD

Project Name PG&E Topock				Container:		Glass Jar(8 oz)		Glass Jar(8 oz)		4 oz jar		Number of Containers	COMMENTS
Location PG&E Topock				Preservatives:		none		none		4°C			
Project Number D3184A1.EV.05-OM-TS				Filtered:		NA		NA		NA			
Project Manager Scott O'Donnell				Holding Time:		NA		NA		180			
Sample Manager Shawn Duffy				Task Order		Metals (6010B_Soil) Title 22, Mercury, Mn		Anions (E300_Soil) FI		Metals (7199)			
Project IM3PLANT-ARAR-WDR-597-SLUDGE				Turnaround Time 10 Days		Shipping Date:		COC Number: 597s					
				DATE		TIME		Matrix					
Phase Separator-597-Sludge				1-7-20		8:15		Soil		X X X		N039041-01	
TOTAL NUMBER OF CONTAINERS												3	

Signatures Approved by  Sampled by  Relinquished by  Received by <u>Shawn Duffy</u> Relinquished by <u>Shawn Duffy</u> Received by <u>Shawn Duffy</u>		Date/Time 1-7-20 7:00 1-7-20 8:15 1-7-20 14:10 1/7/2020 14:10 1/7/2020 1745 1/7/2020 1745		Shipping Details Method of Shipment: FedEx On Ice: <input checked="" type="radio"/> yes <input type="radio"/> no Airbill No: 3-82 #122 Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659		ATTN: Sample Custody and Marlon Cartin		Special Instructions: Report Copy to Shawn Duffy (970) 731-0636	
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ASSET Laboratories

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

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 1/7/2020 Workorder: N039041

Rep sample Temp (Deg C): 3.8 IR Gun ID: 2

Temp Blank: ☒ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

☒ ☐ ☐ ☐ ☐

Sample Receipt Checklist

- | | | | |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| 16. Were there Non-Conformance issues at login? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Was Client notified? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: YR YRJ 1/8/2020

Reviewed By:

MBC 1/10/2020

ASSET Laboratories

WORK ORDER Summary

08-Jan-20

WorkOrder: N039041

Client ID: CH2HI01

Project: PG&E Topock, D3184AI.EV.05-OM-TS

QC Level: Level IV

Date Received: 1/7/2020

Comments: Report Copy to Shawn Duffy

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039041-001A	Phase Separator-597-Sludge	1/7/2020 8:15:00 AM	1/21/2020	Soil	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020		EPA 3060A	Prep for Hexavalend Chromium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020		EPA 7199	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N039041-001B			1/21/2020		EPA 3050B	SOPREP TOTAL METALS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020		EPA 6010B	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020			MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020		EPA 7471A	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
			1/21/2020		D2216	PERCENT MOISTURE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WS
N039041-002A	FOLDER	1/21/2020	1/21/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			1/21/2020		Folder	Level IV Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			1/21/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

List of Analysts

ASSET Laboratories Work Order: N039041

NAME	TEST METHOD
Lilia Ramit	ASTM D2216
Ria Abes	EPA 300.0, EPA 7199
Diane Jetajobe	EPA 6010B
Julia Bundalian	EPA 7471A



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"Serving Clients with Passion and Professionalism"

January 21, 2020

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

Workorder No.: N039042

RE: PG&E Topock, D3184A1.EV.05-OM-TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on January 07, 2020 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucano For

Puri Romualdo
Laboratory Director

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CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039042

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Enthalpy Analytical- Berkeley, CA.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nickel in QC samples N039045-018BMS and N039045-018BMSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

The second set of Matrix Spike (MS) is outside recovery criteria for Zinc in QC sample N039047-001A-MS since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

RPD for Sample Duplicate N039061-001CDUP is outside criteria; however, the associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 21-Jan-20

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039042
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N039042-001A	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-001B	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-001C	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-001D	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-001E	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-001F	SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	1/7/2020	1/21/2020
N039042-002A	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020
N039042-002B	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020
N039042-002C	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020
N039042-002D	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020
N039042-002E	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020
N039042-002F	SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	1/7/2020	1/21/2020



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200108D	QC Batch: R140753			PrepDate:		Analyst: LR
Specific Conductance	7000	0.10	0.10		umhos/cm	1/8/2020 11:15 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
SPECIFIC CONDUCTANCE						
EPA 120.1						
RunID: NV00922-WC_200108D	QC Batch: R140753		PrepDate:		Analyst: LR	
Specific Conductance	7100	0.10	0.10		umhos/cm	1/8/2020 11:15 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified	
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 120.1_WPGE**

Sample ID	N039042-001BDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	140753
Client ID:	ZZZZZZ	Batch ID:	R140753	TestNo:	EPA 120.1			Analysis Date:	1/8/2020	SeqNo:	3639928
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		7080.000		0.10						7050	0.425 2

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200109F	QC Batch: 77736			PrepDate: 1/9/2020	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4400	50	50	mg/L	1/9/2020 01:21 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200109F	QC Batch: 77736			PrepDate: 1/9/2020	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4500	50	50	mg/L	1/9/2020 01:21 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 160.1_2540C_W**

Sample ID	LCS-77736	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/9/2020	RunNo:	140793			
Client ID:	LCSW	Batch ID:	77736	TestNo:	SM2540C			Analysis Date:	1/9/2020	SeqNo:	3641623			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		966.000		10	1000			96.6	80	120				

Sample ID	MB-77736	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/9/2020	RunNo:	140793			
Client ID:	PBW	Batch ID:	77736	TestNo:	SM2540C			Analysis Date:	1/9/2020	SeqNo:	3641624			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		ND		10										

Sample ID	N039061-001BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	1/9/2020	RunNo:	140793			
Client ID:	ZZZZZZ	Batch ID:	77736	TestNo:	SM2540C			Analysis Date:	1/9/2020	SeqNo:	3641635			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		5995.000		50							5965	0.502	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200109D	QC Batch: 77730	PrepDate: 1/9/2020	Analyst: DJ
Aluminum	ND 40	50	µg/L 1/9/2020 09:13 PM
Boron	1100 74	100	µg/L 1/10/2020 09:21 AM
Iron	ND 18	20	µg/L 1/9/2020 09:13 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
----------	--------	-----	-----	------	-------	---------------

TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200109D	QC Batch: 77730	PrepDate: 1/9/2020	Analyst: DJ
Aluminum	ND 40	50	µg/L 1/9/2020 09:40 PM
Boron	1000 74	100	µg/L 1/10/2020 09:42 AM
Iron	ND 18	20	µg/L 1/9/2020 09:40 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
 Work Order: N039042
 Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPB

Sample ID	MB-77730	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140783		
Client ID:	PBW	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/9/2020	SeqNo:	3640864		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	ND	50												
Iron	ND	20												

Sample ID	LCS1-77730	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140783		
Client ID:	LCSW	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/9/2020	SeqNo:	3640865		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9961.275	50	10000					99.6	85	115				
Iron	94.006	20	100.0					94.0	85	115				

Sample ID	N039042-001E-MS1	SampType:	MS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140783		
Client ID:	ZZZZZZ	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/9/2020	SeqNo:	3640869		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9749.285	50	10000					97.5	75	125				
Iron	99.662	20	100.0					99.7	75	125				

Sample ID	N039042-001E-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140783					
Client ID: ZZZZZZ	Batch ID: 77730	TestNo: EPA 200.7	Analysis Date: 1/9/2020	SeqNo: 3640870							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10396.767	50	10000					104	75	125	9749	6.43	20	
Iron	102.011	20	100.0					102	75	125	99.66	2.33	20	

Sample ID	MB-77730	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140786		
Client ID:	PBW	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/10/2020	SeqNo:	3641297		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPB

Sample ID	MB-77730	SampType:	MBLK	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140786		
Client ID:	PBW	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/10/2020	SeqNo:	3641297		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron ND 100

Sample ID	LCS1-77730	SampType:	LCS	TestCode:	200.7_WPGE	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140786		
Client ID:	LCSW	Batch ID:	77730	TestNo:	EPA 200.7			Analysis Date:	1/10/2020	SeqNo:	3641298		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 4770.583 100 5000 95.4 85 115

Sample ID	N039042-001E-MS1	SampType: MS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140786					
Client ID:	ZZZZZZ	Batch ID: 77730	TestNo: EPA 200.7		Analysis Date: 1/10/2020	SeqNo: 3641302					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 5763.704 100 5000 93.7 75 125

Sample ID	N039042-001E-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140786					
Client ID: ZZZZZZ	Batch ID: 77730	TestNo: EPA 200.7		Analysis Date: 1/10/2020	SeqNo: 3641303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron 6072.424 100 5000 99.9 75 125 5764 5.22 20

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200110A	QC Batch: 77723	PrepDate: 1/9/2020	Analyst: CEI		
Antimony	ND	0.16	0.50	µg/L	1/10/2020 04:43 AM
Arsenic	0.64	0.081	0.10	µg/L	1/10/2020 04:43 AM
Barium	36	0.15	1.0	µg/L	1/10/2020 04:43 AM
Copper	ND	0.55	1.0	µg/L	1/10/2020 04:43 AM
Lead	ND	0.13	1.0	µg/L	1/10/2020 04:43 AM
Manganese	7.6	0.26	0.50	µg/L	1/10/2020 04:43 AM
Molybdenum	20	0.21	0.50	µg/L	1/10/2020 04:43 AM
Nickel	ND	0.26	1.0	µg/L	1/10/2020 04:43 AM
Zinc	ND	2.3	10	µg/L	1/10/2020 04:43 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200110A	QC Batch: 77723	PrepDate: 1/9/2020	Analyst: CEI		
Antimony	ND	0.16	0.50	µg/L	1/10/2020 05:11 AM
Arsenic	ND	0.081	0.10	µg/L	1/10/2020 05:11 AM
Barium	22	0.15	1.0	µg/L	1/10/2020 05:11 AM
Copper	ND	0.55	1.0	µg/L	1/10/2020 05:11 AM
Lead	ND	0.13	1.0	µg/L	1/10/2020 05:11 AM
Manganese	13	0.26	0.50	µg/L	1/10/2020 05:11 AM
Molybdenum	21	0.21	0.50	µg/L	1/10/2020 05:11 AM
Nickel	ND	0.26	1.0	µg/L	1/10/2020 05:11 AM
Zinc	ND	2.3	10	µg/L	1/10/2020 05:11 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W**

Sample ID	MB-77723	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788		
Client ID:	PBW	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641503		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		ND		0.50									
Arsenic		ND		0.10									
Barium		ND		1.0									
Lead		ND		1.0									
Manganese		ND		0.50									
Molybdenum		ND		0.50									
Nickel		ND		1.0									
Zinc		ND		10									

Sample ID	LCS-77723	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788		
Client ID:	LCSW	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641504		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		10.451		0.50	10.00		105	85	115				
Arsenic		10.872		0.10	10.00		109	85	115				
Barium		10.508		1.0	10.00		105	85	115				
Copper		10.508		1.0	10.00		105	85	115				
Lead		10.614		1.0	10.00		106	85	115				
Manganese		100.524		0.50	100.0		101	85	115				
Molybdenum		10.302		0.50	10.00		103	85	115				
Nickel		10.534		1.0	10.00		105	85	115				
Zinc		10.649		10	10.00		106	85	115				

Sample ID	N039045-018BMS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788			
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641508			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		9.811		0.50	10.00			98.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N039045-018BMS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641508
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.432	0.10	10.00		105	75	125				
Barium	63.901	1.0	10.00		93.4	75	125				
Copper	8.053	1.0	10.00		80.5	75	125				
Lead	10.103	1.0	10.00		101	75	125				
Manganese	90.468	0.50	100.0		90.5	75	125				
Molybdenum	11.866	0.50	10.00		106	75	125				
Nickel	7.275	1.0	10.00		72.7	75	125				S
Zinc	8.875	10	10.00		88.8	75	125				

Sample ID	N039045-018BMSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641509
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.804	0.50	10.00		98.0	75	125	9.811	0.0755	20	
Arsenic	11.265	0.10	10.00		103	75	125	11.43	1.47	20	
Barium	64.011	1.0	10.00		94.5	75	125	63.90	0.173	20	
Copper	7.997	1.0	10.00		80.0	75	125	8.053	0.693	20	
Lead	10.106	1.0	10.00		101	75	125	10.10	0.0340	20	
Manganese	90.109	0.50	100.0		90.1	75	125	90.47	0.397	20	
Molybdenum	11.806	0.50	10.00		105	75	125	11.87	0.502	20	
Nickel	7.314	1.0	10.00		73.1	75	125	7.275	0.538	20	S
Zinc	8.879	10	10.00		88.8	75	125	8.875	0	20	

Sample ID	N039047-001A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641515
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.831	0.50	10.00		98.3	75	125				
Arsenic	10.800	0.10	10.00		101	75	125				
Barium	126.967	1.0	10.00		99.3	75	125				

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N039047-001A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	140788			
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641515			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		10.214		1.0	10.00			84.7	75	125				
Lead		10.095		1.0	10.00			101	75	125				
Manganese		94.120		0.50	100.0			92.2	75	125				
Molybdenum		11.236		0.50	10.00			104	75	125				
Nickel		8.845		1.0	10.00			88.5	75	125				

Sample ID	MB-77723	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	141801			
Client ID:	PBW	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641822			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		ND		1.0										

Sample ID	N039047-001A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	1/9/2020	RunNo:	141801		
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641826		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Zinc		1119.466		100	10.00		-38.7	75	125				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W**

Sample ID	N039045-018B-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	140788
Client ID:	ZZZZZZ	Batch ID:	77723	TestNo:	EPA 200.8			Analysis Date:	1/10/2020	SeqNo:	3641507
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.854	0.50	10.00		98.5	80	120				
Arsenic	11.177	0.10	10.00		102	80	120				
Barium	64.205	1.0	10.00		96.4	80	120				
Copper	8.029	1.0	10.00		80.3	80	120				
Lead	9.903	1.0	10.00		99.0	80	120				
Manganese	89.686	0.50	100.0		89.7	80	120				
Molybdenum	11.967	0.50	10.00		107	80	120				
Nickel	7.179	1.0	10.00		71.8	80	120				S
Zinc	9.120	10	10.00		91.2	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
HEXAVALENT CHROMIUM BY IC						
EPA 218.6						
RunID: NV00922-IC7_200108B	QC Batch: R140770			PrepDate:		Analyst: RAB
Hexavalent Chromium	450	3.3	20		µg/L	1/8/2020 03:53 PM
TOTAL METALS BY ICPMS						
EPA 200.8						
RunID: NV00922-ICP8_200110A	QC Batch: 77723			PrepDate:	1/9/2020	Analyst: CEI
Chromium	470	0.65	5.0		µg/L	1/10/2020 04:48 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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HEXAVALENT CHROMIUM BY IC
EPA 218.6

RunID: NV00922-IC7_200108B	QC Batch: R140770				PrepDate:	Analyst: RAB
Hexavalent Chromium	ND	0.033	0.20		µg/L	1/8/2020 04:22 PM

TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200110A	QC Batch: 77723				PrepDate: 1/9/2020	Analyst: CEI
Chromium	ND	0.13	1.0		µg/L	1/10/2020 05:11 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID MB-77723	SampType: MBLK	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140788
Client ID: PBW	Batch ID: 77723	TestNo: EPA 200.8		Analysis Date: 1/10/2020	SeqNo: 3641408
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	ND	1.0			

Sample ID LCS-77723	SampType: LCS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140788
Client ID: LCSW	Batch ID: 77723	TestNo: EPA 200.8		Analysis Date: 1/10/2020	SeqNo: 3641409
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	9.758	1.0	10.00		97.6 85 115

Sample ID N039045-018BMS	SampType: MS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140788
Client ID: ZZZZZZ	Batch ID: 77723	TestNo: EPA 200.8		Analysis Date: 1/10/2020	SeqNo: 3641413
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	46.973	1.0	10.00		89.9 75 125

Sample ID N039045-018BMSD	SampType: MSD	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140788
Client ID: ZZZZZZ	Batch ID: 77723	TestNo: EPA 200.8		Analysis Date: 1/10/2020	SeqNo: 3641414
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	46.486	1.0	10.00		85.0 75 125 46.97 1.04 20

Sample ID N039047-001A-MS	SampType: MS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 1/9/2020	RunNo: 140788
Client ID: ZZZZZZ	Batch ID: 77723	TestNo: EPA 200.8		Analysis Date: 1/10/2020	SeqNo: 3641420
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	9.533	1.0	10.00		89.6 75 125

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	LCS-R140770	SampType:	LCS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	140770		
Client ID:	LCSW	Batch ID:	R140770	TestNo:	EPA 218.6			Analysis Date:	1/8/2020	SeqNo:	3640461		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	4.848	0.20	5.000	97.0	90	110								
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Sample ID	MB-R140770	SampType:	MBLK	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	140770		
Client ID:	PBW	Batch ID:	R140770	TestNo:	EPA 218.6			Analysis Date:	1/8/2020	SeqNo:	3640464		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	ND	0.20												
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Sample ID	N039042-001CMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	140770		
Client ID:	ZZZZZZ	Batch ID:	R140770	TestNo:	EPA 218.6			Analysis Date:	1/8/2020	SeqNo:	3640466		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	940.960	20	500.0	97.9	90	110								
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Sample ID	N039042-001CMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 140770					
Client ID: ZZZZZZ	Batch ID: R140770	TestNo: EPA 218.6	Analysis Date: 1/8/2020	SeqNo: 3640467							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	941.940	20	500.0	98.1	90	110	941.0	0.104	20					
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Sample ID	N039042-002CMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	140770		
Client ID:	ZZZZZZ	Batch ID:	R140770	TestNo:	EPA 218.6			Analysis Date:	1/8/2020	SeqNo:	3640469		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.065	0.20	1.000	98.0	90	110								
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Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N039046-001ADUP	SampType:	DUP	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	140770		
Client ID:	ZZZZZZ	Batch ID:	R140770	TestNo:	EPA 218.6			Analysis Date:	1/8/2020	SeqNo:	3640471		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		4.889		0.20						4.880	0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_200108B	QC Batch: R140751	PrepDate:	Analyst: LR
Turbidity	0.18 0.10 0.10	NTU	1/8/2020 04:20 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified



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ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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TURBIDITY

SM 2130B

RunID: NV00922-WC_200108B	QC Batch: R140751	PrepDate:	Analyst: LR
Turbidity	0.23 0.10 0.10	NTU	1/8/2020 04:20 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out
E Value above quantitation range
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 2130_W**

Sample ID	MB-R140751	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	140751
Client ID:	PBW	Batch ID:	R140751	TestNo:	SM 2130B			Analysis Date:	1/8/2020	SeqNo:	3639920
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Turbidity		ND		0.10							

Sample ID	N039042-002BDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	140751
Client ID:	ZZZZZZ	Batch ID:	R140751	TestNo:	SM 2130B			Analysis Date:	1/8/2020	SeqNo:	3639923
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Turbidity		0.220		0.10						0.2300	4.44 30

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200113B	QC Batch: R141893				PrepDate:	Analyst: RAB
Fluoride	2.8	0.048	0.50		mg/L	1/13/2020 10:59 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200113B	QC Batch: R141893				PrepDate:	Analyst: RAB
Sulfate	500	2.0	25		mg/L	1/13/2020 09:58 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200113B	QC Batch: R141893				PrepDate:	Analyst: RAB
Fluoride	2.7	0.048	0.50		mg/L	1/13/2020 11:14 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200113B	QC Batch: R141893				PrepDate:	Analyst: RAB
Sulfate	510	2.0	25		mg/L	1/13/2020 10:13 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 300_W_FPGE**

Sample ID	MB-R141893_F	SampType:	MBLK	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	141893		
Client ID:	PBW	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648253		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10									

Sample ID	LCS-R141893_F	SampType:	LCS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	141893		
Client ID:	LCSW	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648254		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.237		0.10	1.250		99.0	90	110				

Sample ID	N039078-001BMS	SampType:	MS	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	141893		
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648261		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		7.196		0.50	6.250		105	80	120				

Sample ID	N039078-001BMSD	SampType:	MSD	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	141893		
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648262		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		6.942		0.50	6.250		101	80	120	7.196	3.59	20	

Sample ID	N039061-001BDUP	SampType:	DUP	TestCode:	300_W_FPG	Units:	mg/L	Prep Date:		RunNo:	141893		
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648263		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.935		1.0						2.572	13.2	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R141893_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	141893
Client ID:	PBW	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648332
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate ND 0.50

Sample ID	LCS-R141893_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	141893
Client ID:	LCSW	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648333
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 3.925 0.50 4.000 98.1 90 110

Sample ID	N039045-016CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	141893
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648337
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 261.652 10 80.00 101 80 120

Sample ID	N039045-016CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	141893
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648338
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 260.748 10 80.00 100 80 120 261.7 0.346 20

Sample ID	N039061-001BDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	141893
Client ID:	ZZZZZZ	Batch ID:	R141893	TestNo:	EPA 300.0			Analysis Date:	1/13/2020	SeqNo:	3648342
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sulfate 810.350 50 812.5 0.270 20

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-001

Client Sample ID: SC-100B-WDR-597
Collection Date: 1/7/2020 7:50:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
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NITRATE/NITRITE-N BY CADMIUM REDUCTION
SM4500-NO3F

RunID: NV00922-WC_200115B	QC Batch: R141877			PrepDate:		Analyst: JBB
Nitrate/Nitrite as N	2.9	0.16	0.25	mg/L		1/15/2020 02:10 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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"Serving Clients with Passion and Professionalism"

ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Jan-20

CLIENT: CH2M HILL
Lab Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039042-002

Client Sample ID: SC-700B-WDR-597
Collection Date: 1/7/2020 7:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION						
SM4500-NO3F						
RunID: NV00922-WC_200117A	QC Batch: R141935		PrepDate:		Analyst: JBB	
Nitrate/Nitrite as N	3.1	0.16	0.25		mg/L	1/17/2020 03:56 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 4500N03F_W**

Sample ID MB-R141877	SampType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141877
Client ID: PBW	Batch ID: R141877	TestNo: SM4500-NO3		Analysis Date: 1/15/2020	SeqNo: 3647611
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	ND	0.050			

Sample ID LCS-R141877	SampType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141877
Client ID: LCSW	Batch ID: R141877	TestNo: SM4500-NO3		Analysis Date: 1/15/2020	SeqNo: 3647612
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.473	0.050	0.5000	94.5	85 115

Sample ID N039061-001CDUP	SampType: DUP	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141877
Client ID: ZZZZZ	Batch ID: R141877	TestNo: SM4500-NO3		Analysis Date: 1/15/2020	SeqNo: 3647614
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.074	0.050		0.1047	34.0 20 R

Sample ID N039078-001CMS	SampType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141877
Client ID: ZZZZZ	Batch ID: R141877	TestNo: SM4500-NO3		Analysis Date: 1/15/2020	SeqNo: 3647616
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.594	0.050	0.5000	112	75 125

Sample ID N039078-001CMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141877
Client ID: ZZZZZ	Batch ID: R141877	TestNo: SM4500-NO3		Analysis Date: 1/15/2020	SeqNo: 3647617
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	93.7	75 125 0.5944 16.9 20

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


ASSET LABORATORIES
ANALYTICAL SERVICES PROVIDED BY PROFESSIONAL, SCIENTIFIC, AND TECHNICAL STAFF
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039042
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R141935	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	141935		
Client ID:	PBW	Batch ID:	R141935	TestNo:	SM4500-NO3			Analysis Date:	1/17/2020	SeqNo:	3650465		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N ND 0.050

Sample ID	LCS-R141935	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	141935		
Client ID:	LCSW	Batch ID:	R141935	TestNo:	SM4500-NO3			Analysis Date:	1/17/2020	SeqNo:	3650466		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.493 0.050 0.5000 98.6 85 115

Sample ID	N039061-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	141935		
Client ID:	ZZZZZZ	Batch ID:	R141935	TestNo:	SM4500-NO3			Analysis Date:	1/17/2020	SeqNo:	3650468		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 0.079 0.050 0.08540 7.41 20

Sample ID	N039042-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	141935		
Client ID:	ZZZZZZ	Batch ID:	R141935	TestNo:	SM4500-NO3			Analysis Date:	1/17/2020	SeqNo:	3650470		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 5.692 0.25 2.500 102 75 125

Sample ID	N039042-002DMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 141935					
Client ID:	ZZZZZZ	Batch ID: R141935	TestNo: SM4500-NO3		Analysis Date: 1/17/2020	SeqNo: 3650471					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrate/Nitrite as N 5.773 0.25 2.500 105 75 125 5.692 1.41 20

Qualifiers:

- | | | |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out | Calculations are based on raw values | |









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A standard linear barcode located at the bottom right of the document page.

Signatures Approved by  Sampled by  Relinquished by  Received by  Relinquished by  Received by 		Date/Time 1-7-20 7:00 1-7-20 7:50 1-7-20 1410 1/7/2020 1410 1/7/2020 1745 1/7/2020 1745	Shipping Details Method of Shipment: FedEx On Ice: <u>yes</u> no 582 12#2 Airbill No. Lab Name: ASSET Laboratories Lab Phone: (702) 307-2659	ATTN: Sample Custody and Marlon Cartin	Special Instructions: Report Copy to Shawn Duffy (970) 731-0636
--	--	--	--	--	---

ASSET Laboratories

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

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 1/7/2020 Workorder: N039042
 Rep sample Temp (Deg C): 3.8 IR Gun ID: 2
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
☒ ☐ ☐ ☐ ☐

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.
 Samples for Total Metals were lab preserved with HNO3 and for Ammonia/NO3- with H2SO4.

Checklist Completed By: YR *YRJ* 1/8/2020

Reviewed By: *ABC* 1/10/2020

ASSET Laboratories

WORK ORDER Summary

08-Jan-20

WorkOrder: N039042

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 1/7/2020

Comments: Report Copy to Shawn Duffy

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039042-001A	SC-100B-WDR-597	1/7/2020 7:50:00 AM	1/21/2020	Water	SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N039042-001B			1/21/2020		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N039042-001C			1/21/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-001D			1/21/2020		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-001E			1/21/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-001F							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-002A	SC-700B-WDR-597	1/7/2020 7:55:00 AM	1/21/2020		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N039042-002B			1/21/2020		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			1/21/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR

ASSET Laboratories

WORK ORDER Summary

08-Jan-20

WorkOrder: N039042

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 1/7/2020

Comments: Report Copy to Shawn Duffy

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039042-002B	SC-700B-WDR-597	1/7/2020 7:55:00 AM	1/21/2020	Water	EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N039042-002C			1/21/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-002D			1/21/2020		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-002E			1/21/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/21/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-002F							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039042-003A	FOLDER	1/21/2020	1/21/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			1/21/2020		Folder	Level IV Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			1/21/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

Subcontractor:

Enthalpy Analytical
2323 5th St
Berkeley, CA 94710

TEL: (510) 486-0900

FAX:

Acct #:

Field Sampler: SIGNED

08-Jan-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N039042-001A /	Water	1/7/2020 7:50:00 AM	32OZP	1		
N039042-002A /	Water	1/7/2020 7:55:00 AM	32OZP	1		

General Comments:

Please email sample receipt acknowledgement to the PM.

Please cc andrea.gallartdo@assetlaboratories.com

Please use PO#:N39042A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD requirement ILabspec7 edata.

GSO #: 547548456

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	1/8/2020 17:00	Received by: _____	
Relinquished by: _____		Received by: _____	

List of Analysts

ASSET Laboratories Work Order: N039042

NAME	TEST METHOD
Claire Ignacio	EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Ria Abes	EPA 218.6, EPA 300.0
Diane Jetajobe	EPA 200.7
Julia Bundalian	SM 4500-NO3F



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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NEVADA
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P: 702.307.2659 F: 702.307.2691

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Enthalpy Analytical
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900

enthalpy.com

Lab Job Number: 317288
Report Level: IV
Report Date: 01/21/2020

Wet Chemistry

Analytical Report *prepared for:*

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Authorized for release by:

Tracy Babjar, Project Manager
(510) 204-2226 Ext 13107
tracy.babjar@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 2896, NELAP# 4044-001

Sample Summary

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Lab Job #: 317288
Date Received: 01/09/20

Sample ID	Lab ID	Collected	Matrix
N039042-001A/SC-100B-WDR-597	317288-001	01/07/20 07:50	Water
N039042-002A/SC-700B-WDR-597	317288-002	01/07/20 07:55	Water

Case Narrative

WET CHEMISTRY (SM4500NH3-D)

ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118
Andrea Gallardo

Lab Job Number: 317288
Date Received: 01/09/20

This data package contains sample and QC results for two water samples, requested for the above referenced project on 01/09/20. See attached cooler receipt form for any sample receipt problems or discrepancies.

Ammonia Nitrogen (SM4500NH3-D):

Ammonia-N was detected between the MDL and the RL in the method blank for batch 277552; this analyte was not detected in samples at or above the RL.

No other analytical problems were encountered.



ASSET Laboratories

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www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

Subcontractor:

Enthalpy Analytical
2323 5th St
Berkeley, CA 94710

TEL: (510) 486-0900
FAX:
Acct #:

Field Sampler: SIGNED

08-Jan-20

				Requested Tests		
Sample ID	Matrix	Date Collected	Bottle Type	SM4500-NH3D		
N039042-001A / SC-100B-WDR-597	Water	1/7/2020 7:50:00 AM	32OZP	1		
N039042-002A / SC-700B-WDR-597	Water	1/7/2020 7:55:00 AM	32OZP	1		

General Comments:

Please email sample receipt acknowledgement to the PM.

Please cc andrea.gallartdo@assetlaboratories.com

Please use PO#: N39042A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD requirement ILabspec7 edata.

GSO #: 547548456

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	1/8/2020 17:00	Received by: <u>[Signature]</u>	1-9-20 1004
Relinquished by: _____	_____	Received by: _____	_____

SAMPLE RECEIPT CHECKLIST



Section 1: Login # 317288
Date Received: 1.9

Client: Asset Labs
Project: _____

Section 2: Shipping info (if applicable) GSO #547548456
Are custody seals present? ☒ No, or ☐ Yes. If yes, where? ☐ on cooler, ☐ on samples, ☐ on package
☐ Date: _____ How many _____ ☐ Signature, ☐ Initials, ☐ None
Were custody seals intact upon arrival? ☐ Yes ☐ No ☐ N/A
Samples received in a cooler? ☒ Yes, how many? 1 ☐ No (skip Section 3 below)
If no cooler Sample Temp (°C): _____ using IR Gun # ☐ B, or ☐ C
☐ Samples received on ice directly from the field. Cooling process had begun
If in cooler: Date Opened 1/9 By (print) Bri (sign) BM

Section 3: Important : Notify PM if temperature exceeds 6°C or arrive frozen.

Packing in cooler: (if other, describe) _____
☐ Bubble Wrap, ☐ Foam blocks, ☒ Bags, ☐ None, ☐ Cloth material, ☐ Cardboard, ☐ Styrofoam, ☐ Paper towels
☐ Samples received on ice directly from the field. Cooling process had begun
Type of ice used: ☒ Wet, ☐ Blue/Gel, ☐ None Temperature blank(s) included? ☐ Yes, ☒ No
Temperature measured using ☐ Thermometer ID: _____, or IR Gun # ☐ B ☒ C
Cooler Temp (°C): #1: 2.2, #2: _____, #3: _____, #4: _____, #5: _____, #6: _____, #7: _____

Section 4:	YES	NO	N/A
Were custody papers dry, filled out properly, and the project identifiable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were Method 5035 sampling containers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If YES, what time were they transferred to freezer? _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did all bottles arrive unbroken/unopened?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there any missing / extra samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are samples in the appropriate containers for indicated tests?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are sample labels present, in good condition and complete?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the container count match the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the sample labels agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sufficient amount of sample sent for tests requested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you change the hold time in LIMS for unpreserved VOAs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Did you change the hold time in LIMS for preserved terracores?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are bubbles > 6mm present in VOA samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Was the client contacted concerning this sample delivery?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If YES, who was called? _____ By _____ Date: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5:	YES	NO	N/A
Are the samples appropriately preserved? (if N/A, skip the rest of section 5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Did you check preservatives for all bottles for each sample?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you document your preservative check?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pH strip lot# _____, pH strip lot# _____, pH strip lot# _____			
Preservative added:			
<input type="checkbox"/> H2SO4 lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> HCL lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> HNO3 lot# _____ added to samples _____ on/at _____			
<input type="checkbox"/> NaOH lot# _____ added to samples _____ on/at _____			

Section 6:
Explanations/Comments: _____

Date Logged in 1/9/20 By (print) ZH (sign) [Signature]
Date Labeled 1/10/20 By (print) Bri (sign) BM

Ammonia Nitrogen

Lab #: 317288

Project#: STANDARD

Client: ASSET LABS

Location:
Field ID: N039042-001A/SC-100B-WDR-597

Diln Fac: 1.000

Prepared: 01/10/20 11:25

Type: SAMPLE

Batch#: 277552

Analyzed: 01/10/20 14:30

Lab ID: 317288-001

Sampled: 01/07/20 07:50

Prep: SM4500NH3-B

Matrix: Water

Received: 01/09/20

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.10	0.10	0.020	mg/L

Field ID: N039042-002A/SC-700B-WDR-597

Diln Fac: 1.000

Prepared: 01/10/20 11:25

Type: SAMPLE

Batch#: 277552

Analyzed: 01/10/20 14:30

Lab ID: 317288-002

Sampled: 01/07/20 07:55

Prep: SM4500NH3-B

Matrix: Water

Received: 01/09/20

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.17	0.10	0.020	mg/L

Type: BLANK

Diln Fac: 1.000

Analyzed: 01/10/20 14:30

Lab ID: QC1004930

Batch#: 277552

Prep: SM4500NH3-B

Matrix: Water

Prepared: 01/10/20 11:25

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.040 J	0.10	0.020	mg/L

Legend

J: Estimated value

MDL: Method Detection Limit

RL: Reporting Limit

Ammonia Nitrogen: Batch QC

Lab #: 317288

Project#: STANDARD

Client: ASSET LABS

Location:
Type: LCS

Diln Fac: 1.000

Analyzed: 01/10/20 14:30

Lab ID: QC1004931

Batch#: 277552

Prep: SM4500NH3-B

Matrix: Water

Prepared: 01/10/20 11:25

Analysis: SM4500NH3-D

Analyte	Spiked	Result	%REC	Limits	Units
Ammonia-N	5.000	4.100	82	80-120	mg/L

Field ID: N039042-001A/SC-100B-WDR-597

Diln Fac: 1.000

Analyzed: 01/10/20 14:30

Type: MS

Batch#: 277552

Prep: SM4500NH3-B

MSS Lab ID: 317288-001

Sampled: 01/07/20 07:50

Analysis: SM4500NH3-D

Lab ID: QC1004932

Received: 01/09/20

Matrix: Water

Prepared: 01/10/20 11:25

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Ammonia-N	0.1000	5.000	4.200	82	28-120	mg/L

Field ID: N039042-001A/SC-100B-WDR-597

Diln Fac: 1.000

Analyzed: 01/10/20 14:30

Type: MSD

Batch#: 277552

Prep: SM4500NH3-B

MSS Lab ID: 317288-001

Sampled: 01/07/20 07:50

Analysis: SM4500NH3-D

Lab ID: QC1004933

Received: 01/09/20

Matrix: Water

Prepared: 01/10/20 11:25

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Ammonia-N	5.000	4.400	86	28-120	mg/L	5	30

Legend

RPD: Relative Percent Difference

February 21, 2020

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303

FAX: (530) 339-3303

Workorder No.: N039397

RE: PG&E Topock, D3184A1.EV.05-OM-TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on February 04, 2020 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy S. Romualdo

Puri Romualdo
Laboratory Director

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CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039397

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Enthalpy Analytical- Berkeley, CA.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N039397-001C-MS and N039397-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N039397-001C-MS and N039397-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.



ASSET Laboratories

Date: 21-Feb-20

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039397
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N039397-001A	SC-100B-WDR-598	Water	2/4/2020 9:05:00 AM	2/4/2020	2/21/2020
N039397-001B	SC-100B-WDR-598	Water	2/4/2020 9:05:00 AM	2/4/2020	2/21/2020
N039397-001C	SC-100B-WDR-598	Water	2/4/2020 9:05:00 AM	2/4/2020	2/21/2020
N039397-001D	SC-100B-WDR-598	Water	2/4/2020 9:05:00 AM	2/4/2020	2/21/2020
N039397-002A	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020
N039397-002B	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020
N039397-002C	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020
N039397-002D	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020
N039397-002E	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020
N039397-002F	SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	2/4/2020	2/21/2020



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200205C	QC Batch: R142250			PrepDate:		Analyst: LR
Specific Conductance	8600	0.10	0.10	umhos/cm	1	2/5/2020 10:25 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200205C	QC Batch: R142250			PrepDate:		Analyst: LR
Specific Conductance	8500	0.10	0.10	umhos/cm	1	2/5/2020 10:25 AM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 120.1_WPGE**

Sample ID: N039397-001ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 142250						
Client ID: ZZZZZZ	Batch ID: R142250	TestNo: EPA 120.1		Analysis Date: 2/5/2020	SeqNo: 3672190						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	8590.000	0.10						8620	0.349	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200205I	QC Batch: 78067			PrepDate: 2/5/2020		Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4600	50	50	mg/L	1	2/5/2020 01:14 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

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

TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200205I	QC Batch: 78067			PrepDate: 2/5/2020		Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4500	50	50	mg/L	1	2/5/2020 01:14 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 160.1_2540C_W**

Sample ID: LCS-78067	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 2/5/2020	RunNo: 142265						
Client ID: LCSW	Batch ID: 78067	TestNo: SM2540C		Analysis Date: 2/5/2020	SeqNo: 3673015						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	973.000	10	1000	0	97.3	80	120				

Sample ID: MB-78067	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 2/5/2020	RunNo: 142265						
Client ID: PBW	Batch ID: 78067	TestNo: SM2540C		Analysis Date: 2/5/2020	SeqNo: 3673016						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: N039397-001ADUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 2/5/2020	RunNo: 142265						
Client ID: ZZZZZZ	Batch ID: 78067	TestNo: SM2540C		Analysis Date: 2/5/2020	SeqNo: 3673018						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4755.000	50						4615	2.99	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200206A	QC Batch: 78071	PrepDate: 2/6/2020	Analyst: DJ
Iron	ND 18	20	2/6/2020 02:15 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200206A	QC Batch: 78071			PrepDate: 2/6/2020	Analyst: DJ
Aluminum	ND	40	50	µg/L	1 2/6/2020 03:06 PM
Boron	1200	74	100	µg/L	1 2/20/2020 09:48 AM
Iron	ND	18	20	µg/L	1 2/6/2020 03:06 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.7_WPGEPB**

Sample ID: MB-78071	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142270						
Client ID: PBW	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/6/2020	SeqNo: 3673718						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	ND	50									
Iron	ND	20									

Sample ID: LCS1-78071	SampType: LCS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142270						
Client ID: LCSW	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/6/2020	SeqNo: 3673719						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	9687.511	50	10000	0	96.9	85	115				
Iron	88.879	20	100.0	0	88.9	85	115				

Sample ID: N039397-001C-MS1		SampType: MS	TestCode: 200.7_WPGE		Units: µg/L	Prep Date: 2/6/2020			RunNo: 142270		
Client ID: ZZZZZZ		Batch ID: 78071	TestNo: EPA 200.7			Analysis Date: 2/6/2020			SeqNo: 3673723		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10803.719	50	10000	0	108	75	125				
Iron	119.976	20	100.0	0	120	75	125				

Sample ID: N039397-001C-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142270						
Client ID: ZZZZZZ	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/6/2020	SeqNo: 3673727						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10474.675	50	10000	0	105	75	125	10800	3.09	20	
Iron	124.146	20	100.0	0	124	75	125	120.0	3.42	20	

Sample ID: MB-78071	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142527						
Client ID: PBW	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/20/2020	SeqNo: 3686147						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPB

Sample ID: MB-78071	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142527						
Client ID: PBW	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/20/2020	SeqNo: 3686147						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	ND	100									
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Sample ID: LCS1-78071	SampType: LCS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142527						
Client ID: LCSW	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/20/2020	SeqNo: 3686149						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	5071.856	100	5000	0	101	85	115				
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Sample ID: N039397-001C-MS1	SampType: MS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142527						
Client ID: ZZZZZZ	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/20/2020	SeqNo: 3686155						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	6036.255	100	5000	1144	97.8	75	125				
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Sample ID: N039397-001C-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142527						
Client ID: ZZZZZZ	Batch ID: 78071	TestNo: EPA 200.7		Analysis Date: 2/20/2020	SeqNo: 3686156						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Boron	6142.141	100	5000	1144	100	75	125	6036	1.74	20	
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Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200207C	QC Batch: 78078	PrepDate: 2/6/2020	Analyst: CEI
Manganese	7.8 0.26 0.50	µg/L	1 2/7/2020 07:48 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200207C	QC Batch: 78078	PrepDate: 2/6/2020	Analyst: CEI			
Antimony	ND	0.16	0.50	µg/L	1	2/7/2020 08:38 PM
Arsenic	ND	0.081	0.10	µg/L	1	2/7/2020 08:38 PM
Barium	27	0.15	1.0	µg/L	1	2/7/2020 08:38 PM
Copper	ND	0.55	1.0	µg/L	1	2/14/2020 03:35 PM
Lead	ND	0.13	1.0	µg/L	1	2/7/2020 08:38 PM
Manganese	51	0.26	0.50	µg/L	1	2/7/2020 08:38 PM
Molybdenum	21	0.21	0.50	µg/L	1	2/7/2020 08:38 PM
Nickel	4.7	0.26	1.0	µg/L	1	2/7/2020 08:38 PM
Zinc	ND	2.3	10	µg/L	1	2/7/2020 08:38 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W**

Sample ID: MB-78078		SampType: MBLK	TestCode: 200.8_W		Units: µg/L	Prep Date: 2/6/2020			RunNo: 142313		
Client ID: PBW		Batch ID: 78078	TestNo: EPA 200.8			Analysis Date: 2/7/2020			SeqNo: 3675762		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Zinc	ND	10									

Sample ID: LCS-78078	SampType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: LCSW	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675763						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.504	0.50	10.00	0	105	85	115				
Arsenic	10.362	0.10	10.00	0	104	85	115				
Barium	10.465	1.0	10.00	0	105	85	115				
Copper	10.002	1.0	10.00	0	100	85	115				
Lead	10.662	1.0	10.00	0	107	85	115				
Manganese	108.003	0.50	100.0	0	108	85	115				
Molybdenum	9.924	0.50	10.00	0	99.2	85	115				
Nickel	10.047	1.0	10.00	0	100	85	115				
Zinc	10.044	10	10.00	0	100	85	115				

Sample ID: N039397-001C-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675769						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out Calculations are based on raw values


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: N039397-001C-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675769						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.091	0.50	10.00	0	101	75	125				
Arsenic	10.743	0.10	10.00	0.4963	102	75	125				
Barium	41.609	1.0	10.00	33.58	80.2	75	125				
Copper	8.816	1.0	10.00	0	88.2	75	125				
Lead	10.214	1.0	10.00	0	102	75	125				
Manganese	107.459	0.50	100.0	7.839	99.6	75	125				
Molybdenum	28.637	0.50	10.00	18.55	101	75	125				
Nickel	ND	1.0	10.00	0	0	75	125				S
Zinc	2.301	10	10.00	0	23.0	75	125				S

Sample ID: N039397-001C-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675773						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.986	0.50	10.00	0	99.9	75	125	10.09	1.05	20	
Arsenic	10.860	0.10	10.00	0.4963	104	75	125	10.74	1.08	20	
Barium	42.069	1.0	10.00	33.58	84.8	75	125	41.61	1.10	20	
Copper	8.695	1.0	10.00	0	87.0	75	125	8.816	1.37	20	
Lead	10.297	1.0	10.00	0	103	75	125	10.21	0.807	20	
Manganese	106.301	0.50	100.0	7.839	98.5	75	125	107.5	1.08	20	
Molybdenum	28.606	0.50	10.00	18.55	101	75	125	28.64	0.107	20	
Nickel	ND	1.0	10.00	0	0	75	125	0	0	20	S
Zinc	2.333	10	10.00	0	23.3	75	125	2.301	0	20	S

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W**

Sample ID: N039397-001C-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675769						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.091	0.50	10.00	0	101	75	125				
Arsenic	10.743	0.10	10.00	0.4963	102	75	125				
Barium	41.609	1.0	10.00	33.58	80.2	75	125				
Copper	8.816	1.0	10.00	0	88.2	75	125				
Lead	10.214	1.0	10.00	0	102	75	125				
Manganese	107.459	0.50	100.0	7.839	99.6	75	125				
Molybdenum	28.637	0.50	10.00	18.55	101	75	125				
Nickel	ND	1.0	10.00	0	0	75	125				S
Zinc	2.301	10	10.00	0	23.0	75	125				S

Qualifiers:

B Analyte detected in the associated Method Blank
 ND Not Detected at the Reporting Limit
 DO Surrogate Diluted Out
 E Value above quantitation range
 R RPD outside accepted recovery limits
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference

Calculations are based on raw values

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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_200205A	QC Batch: R142269		PrepDate:		Analyst: RAB		
Hexavalent Chromium	450	3.3	20		µg/L	100	2/5/2020 11:57 AM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: NV00922-ICP8_200207C	QC Batch: 78078		PrepDate: 2/6/2020		Analyst: CEI		
Chromium	460	0.65	5.0		µg/L	5	2/7/2020 07:53 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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 ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_200205A	QC Batch: R142269			PrepDate:		Analyst: RAB	
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	2/5/2020 12:16 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: NV00922-ICP8_200207C	QC Batch: 78078			PrepDate:	2/6/2020	Analyst: CEI	
Chromium	ND	0.13	1.0		µg/L	1	2/7/2020 08:38 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID: MB-78078	SampType: MBLK	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: PBW	Batch ID: 78078	TestNo: EPA 200.8	Analysis Date: 2/7/2020	SeqNo: 3675656							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID: LCS-78078	SampType: LCS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: LCSW	Batch ID: 78078	TestNo: EPA 200.8	Analysis Date: 2/7/2020	SeqNo: 3675657							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.202	1.0	10.00	0	102	85	115				

Sample ID: N039397-001C-MS	SampType: MS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8	Analysis Date: 2/7/2020	SeqNo: 3675664							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	456.311	5.0	10.00	464.5	-82.0	75	125				S

Sample ID: N039397-001C-MSD	SampType: MSD	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 2/6/2020	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8	Analysis Date: 2/7/2020	SeqNo: 3675668							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	459.383	5.0	10.00	464.5	-51.3	75	125	456.3	0.671	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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ANALYTICAL QUALITY SERVICES FOR ENVIRONMENTAL, INDUSTRIAL, AND FOODS

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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID: MB-R142269	SampType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: PBW	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673276						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium ND 0.20

Sample ID: LCS-R142269	SampType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: LCSW	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673277						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.930 0.20 5.000 0 98.6 90 110

Sample ID: N039401-001ADUP	SampType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: ZZZZZZ	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673283						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 7.847 0.20 7.882 0.449 20

Sample ID: N039402-001AMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: ZZZZZZ	Batch ID: R142269	TestNo: EPA 218.6	Analysis Date: 2/5/2020	SeqNo: 3673284							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 9.084 0.20 5.000 4.020 101 90 110

Sample ID: N039402-001AMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: ZZZZZZ	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673285						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 9.130 0.20 5.000 4.020 102 90 110 9.084 0.501 20

Qualifiers:

- | | | |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out | Calculations are based on raw values | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID: N039397-001BMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: ZZZZZZ	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673292						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	955.820	20	500.0	453.5	100	90	110				
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Sample ID: N039397-002CMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142269						
Client ID: ZZZZZZ	Batch ID: R142269	TestNo: EPA 218.6		Analysis Date: 2/5/2020	SeqNo: 3673294						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				
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Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID: N039397-001C-PS	SampType: PS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date:	RunNo: 142313						
Client ID: ZZZZZZ	Batch ID: 78078	TestNo: EPA 200.8		Analysis Date: 2/7/2020	SeqNo: 3675662						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	456.939	5.0	10.00	464.5	-75.8	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-001

Client Sample ID: SC-100B-WDR-598
Collection Date: 2/4/2020 9:05:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: NV00922-WC_200205F	QC Batch: R142253	PrepDate:	Analyst: LR
Turbidity	0.26 0.10 0.10	NTU	1 2/5/2020 04:00 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: NV00922-WC_200205F	QC Batch: R142253	PrepDate:	Analyst: LR
Turbidity	0.14 0.10 0.10	NTU	1 2/5/2020 04:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	ND Not Detected at the Reporting Limit
	S Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified
	DO Surrogate Diluted Out	



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 2130_W**

Sample ID: MB-R142253	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 142253						
Client ID: PBW	Batch ID: R142253	TestNo: SM 2130B		Analysis Date: 2/5/2020	SeqNo: 3672196						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID: N039397-001ADUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 142253						
Client ID: ZZZZZZ	Batch ID: R142253	TestNo: SM 2130B		Analysis Date: 2/5/2020	SeqNo: 3672198						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.260	0.10						0.2600	0	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200207B	QC Batch: R142299			PrepDate:		Analyst: RAB
Fluoride	2.8	0.048	0.50	mg/L	5	2/7/2020 10:53 PM

ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200207B	QC Batch: R142299			PrepDate:		Analyst: RAB
Sulfate	510	2.0	25	mg/L	50	2/7/2020 10:38 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 300_W_FPGE**

Sample ID: LCS-R142299_F	SampType: LCS	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142299		
Client ID: LCSW	Batch ID: R142299	TestNo: EPA 300.0				Analysis Date: 2/7/2020			SeqNo: 3675171		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.282	0.10	1.250	0	103	90	110				

Sample ID: MB-R142299_F	SampType: MBLK	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142299		
Client ID: PBW	Batch ID: R142299	TestNo: EPA 300.0				Analysis Date: 2/7/2020			SeqNo: 3675172		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID: N039397-002BDUP	SampType: DUP	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142299		
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0				Analysis Date: 2/7/2020			SeqNo: 3675176		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.812	0.50						2.849	1.32	20	

Sample ID: N039397-002BMS	SampType: MS	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142299		
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0				Analysis Date: 2/7/2020			SeqNo: 3675179		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	9.202	0.50	6.250	2.849	102	80	120				

Sample ID: N039397-002BMS	SampType: MSD	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142299		
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0				Analysis Date: 2/8/2020			SeqNo: 3675180		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	9.334	0.50	6.250	2.849	104	80	120	9.202	1.42	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: LCS-R142299_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142299						
Client ID: LCSW	Batch ID: R142299	TestNo: EPA 300.0	Analysis Date: 2/7/2020	SeqNo: 3675187							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 3.909 0.50 4.000 0 97.7 90 110

Sample ID: MB-R142299_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142299						
Client ID: PBW	Batch ID: R142299	TestNo: EPA 300.0		Analysis Date: 2/7/2020	SeqNo: 3675188						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate ND 0.50

Sample ID: N039428-004CMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142299						
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0	Analysis Date: 2/7/2020	SeqNo: 3675195							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 25.770 1.0 8.000 17.63 102 80 120

Sample ID: N039428-004CMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142299						
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0	Analysis Date: 2/7/2020	SeqNo: 3675196							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 25.687 1.0 8.000 17.63 101 80 120 25.77 0.323 20

Sample ID: N039428-013CDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142299						
Client ID: ZZZZZZ	Batch ID: R142299	TestNo: EPA 300.0	Analysis Date: 2/7/2020	SeqNo: 3675200							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 180.908 10 179.6 0.717 20

Qualifiers:

- | | | |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out | Calculations are based on raw values | |



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 21-Feb-20

CLIENT: CH2M HILL
Lab Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039397-002

Client Sample ID: SC-700B-WDR-598
Collection Date: 2/4/2020 8:55:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
SM4500-NO3F							
RunID: NV00922-WC_200216A	QC Batch: R142444		PrepDate:		Analyst: JBB		
Nitrate/Nitrite as N	3.1	0.16	0.25		mg/L	5	2/16/2020 10:41 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039397
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 4500N03F_W_PGE**

Sample ID: MB-R142444	SampType: MBLK	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 142444						
Client ID: PBW	Batch ID: R142444	TestNo: SM4500-NO3	Analysis Date: 2/16/2020	SeqNo: 3680986							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID: LCS-R142444	SampType: LCS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 142444						
Client ID: LCSW	Batch ID: R142444	TestNo: SM4500-NO3	Analysis Date: 2/16/2020	SeqNo: 3680987							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.950	0.050	1.000	0	95.0	85	115				

Sample ID: N039304-005BDUP	SampType: DUP	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 142444						
Client ID: ZZZZZZ	Batch ID: R142444	TestNo: SM4500-NO3	Analysis Date: 2/16/2020	SeqNo: 3680989							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.759	0.050						0.7427	2.14	20	

Sample ID: N039304-004BMS	SampType: MS	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 142444						
Client ID: ZZZZZZ	Batch ID: R142444	TestNo: SM4500-NO3	Analysis Date: 2/16/2020	SeqNo: 3680991							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.099	0.050	1.000	0	110	75	125				

Sample ID: N039304-004BMSD	SampType: MSD	TestCode: 4500N03F_W	Units: mg/L	Prep Date:	RunNo: 142444						
Client ID: ZZZZZZ	Batch ID: R142444	TestNo: SM4500-NO3	Analysis Date: 2/16/2020	SeqNo: 3680992							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	1.086	0.050	1.000	0	109	75	125	1.099	1.19	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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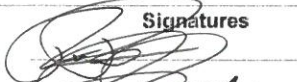


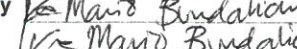


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CH2MHILL

CHAIN OF CUSTODY RECORD

Page 1 OF 1

Project Name PG&E Topock Location PG&E Topock Project Number D3184A1.EV.05-OM-TS Project Manager Scott O'Donnell Sample Manager Shawn Duffy Task Order Project IM3PLANT-ARAR-WDR-598 Turnaround Time 10 Days Shipping Date: COC Number: 598				Container: 1 Liter Poly 1 Liter Poly 1 Liter Poly 250 ml Poly 1 Liter Poly 1 Liter Poly 500 ml Poly 500 ml Poly 1 Liter Poly		Preservatives: 4°C Lab H2SO4 4°C 4°C 4°C 4°C Lab H2SO4 4°C 4°C 4°C 4°C		Filtered: NA NA NA NA NA NA NA NA NA		Holding Time: 28 7 7 1 28 7 180 180 7		AMMONIA (SM4500NH3D) Anions (E300.0) F-, SO4 CONDUCTIVITY (E120.1) E218.6 Lab Filtered Nitrate/Nitrite (SM4500NO3-E) TDS (SM2540C) Total Metals (E200.7 and E200.8) Total Metals (E200.8) Cr, Mn, Fe Turbidity (SM2130)		Number of Containers COMMENTS	
DATE TIME Matrix															
SC-100B-WDR-598				2-4-20 0905		Water								N039397-01 3 pH = 7.30	
SC-700B-WDR-598				2-4-20 0855		Water		X		X		X		-02 4 pH = 7.06	
TOTAL NUMBER OF CONTAINERS												7			

Signatures		Date/Time		Shipping Details		ATTN:		Special Instructions:	
Approved by 		2-4-20 0700		Method of Shipment: FedEx		Sample Custody		Report Copy to	
Sampled by 		2-4-20 0855		On Ice: <input checked="" type="checkbox"/> yes 4-1°C 1P#1		and		Shawn Duffy	
Relinquished by 		2-4-20 1545		Airbill No:		Marlon Cartin			
Received by 		2-4-20 1545		Lab Name: ASSET Laboratories					
Relinquished by 		2/4/20 1814		Lab Phone: (702) 307-2659					
Received by 		2/4/20 1814							

ASSET Laboratories

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

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 2/4/2020 Workorder: N039397
 Rep sample Temp (Deg C): 4.1 IR Gun ID: 1
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.
 Samples for Total Metals were lab preserved with HNO3 and for Ammonia/NO3- with H2SO4.

Checklist Completed By: YR YRJ 2/6/2020

Reviewed By: ABC 2/13/2020

ASSET Laboratories

WORK ORDER Summary

05-Feb-20

WorkOrder: N039397

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 2/4/2020

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039397-001A	SC-100B-WDR-598	2/4/2020 9:05:00 AM	2/14/2020	Water	EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-001B			2/14/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-001C			2/14/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-001D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-002A	SC-700B-WDR-598	2/4/2020 8:55:00 AM	2/14/2020		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N039397-002B			2/14/2020		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-002C			2/14/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-002D			2/14/2020		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-002E			2/14/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

05-Feb-20

WorkOrder: N039397

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 2/4/2020

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039397-002E	SC-700B-WDR-598	2/4/2020 8:55:00 AM	2/14/2020	Water	EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-002F							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039397-003A	FOLDER	2/18/2020	2/14/2020		Folder	Level IV Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			2/14/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			2/18/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

Subcontractor:

Enthalpy Analytical
2323 5th St
Berkeley, CA 94710

TEL: (510) 486-0900
FAX:
Acct #:

Field Sampler: SIGNED

06-Feb-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N039397-002A / SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N39397A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

	Date/Time	GSO #: 547889099	Date/Time
Relinquished by: <u>YRJ</u>	2/6/2020 16:30	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____

List of Analysts

ASSET Laboratories Work Order: N039397

NAME	TEST METHOD
Claire Ignacio	EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Ria Abes	EPA 218.6, EPA 300.0
Diane Jetajobe	EPA 200.7
Julia Bundalian	SM 4500-NO3F



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Enthalpy Analytical
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900

enthalpy.com

Lab Job Number: 318134
Report Level: IV
Report Date: 02/21/2020

Wet Chemistry

Analytical Report *prepared for:*

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Authorized for release by:

Patrick McCarthy, Project Manager
(510) 204-2236 ext 13115
patrick.mccarthy@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 2896, NELAP# 4044-001

Sample Summary

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Lab Job #: 318134
Date Received: 02/07/20

Sample ID	Lab ID	Collected	Matrix
N039397-002A / SC-700B-WDR-598	318134-001	02/04/20 08:55	Water

Case Narrative

WET CHEMISTRY (SM4500NH3-D)

ASSET LABS

3151-3153 W Post Road

Las Vegas, NV 89118

Andrea Gallardo

Lab Job Number: 318134

Date Received: 02/07/20

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/07/20. See attached cooler receipt form for any sample receipt problems or discrepancies.

Ammonia Nitrogen (SM4500NH3-D):

No analytical problems were encountered.

318139


ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV
Subcontractor:

Enthalpy Analytical

2323 5th St

Berkeley, CA 94710

TEL: (510) 486-0900

FAX:

Acct #:

Field Sampler: SIGNED

06-Feb-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N039397-002A / SC-700B-WDR-598	Water	2/4/2020 8:55:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#: N39397A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

		Date/Time	GSO #: 547889099			Date/Time
Relinquished by:	<i>YLT</i>	2/6/2020 16:30	Received by:	<i>[Signature]</i>	2/7/20	9:15
Relinquished by:			Received by:			

SAMPLE RECEIPT CHECKLIST

Section 1: Login #

318134

Client:

Asset

Date Received:

2/7/20

Project:



Section 2: Shipping info (if applicable)

Are custody seals present? ☒ No, or ☐ Yes. If yes, where? ☐ on cooler, ☐ on samples, ☐ on package

☐ Date: _____ How many _____ ☐ Signature, ☐ Initials, ☐ None

Were custody seals intact upon arrival? ☐ Yes ☐ No ☐ N/A

Samples received in a cooler? ☒ Yes, how many? 1 ☐ No (skip Section 3 below)

If no cooler Sample Temp (°C): _____ using IR Gun # ☐ B, or ☐ C

☐ Samples received on ice directly from the field. Cooling process had begun

If in cooler: Date Opened

2/7/20

By (print)

ZA

(sign)

[Signature]

Section 3:

Important: Notify PM if temperature exceeds 6°C or arrive frozen.

Packing in cooler: (if other, describe)

☒ Bubble Wrap, ☐ Foam blocks, ☒ Bags, ☐ None, ☐ Cloth material, ☐ Cardboard, ☐ Styrofoam, ☐ Paper towels

☐ Samples received on ice directly from the field. Cooling process had begun

Type of ice used: ☒ Wet, ☐ Blue/Gel, ☐ None

Temperature blank(s) included? ☐ Yes, ☐ No

Temperature measured using ☐ Thermometer ID: _____, or IR Gun # ☐ B ☒ C

Cooler Temp (°C): #1: 1-1, #2: _____, #3: _____, #4: _____, #5: _____, #6: _____, #7: _____

Section 4:

Were custody papers dry, filled out properly, and the project identifiable

YES

NO

N/A

Were Method 5035 sampling containers present?

YES

NO

N/A

If YES, what time were they transferred to freezer? _____

Did all bottles arrive unbroken/unopened?

YES

NO

N/A

Are there any missing / extra samples?

YES

NO

N/A

Are samples in the appropriate containers for indicated tests?

YES

NO

N/A

Are sample labels present, in good condition and complete?

YES

NO

N/A

Does the container count match the COC?

YES

NO

N/A

Do the sample labels agree with custody papers?

YES

NO

N/A

Was sufficient amount of sample sent for tests requested?

YES

NO

N/A

Did you change the hold time in LIMS for unpreserved VOAs?

YES

NO

N/A

Did you change the hold time in LIMS for preserved terracores?

YES

NO

N/A

Are bubbles > 6mm present in VOA samples?

YES

NO

N/A

Was the client contacted concerning this sample delivery?

YES

NO

N/A

If YES, who was called? _____ By _____ Date: _____

Section 5:

Are the samples appropriately preserved? (if N/A, skip the rest of section 5)

YES

NO

N/A

Did you check preservatives for all bottles for each sample?

YES

NO

N/A

Did you document your preservative check?

YES

NO

N/A

pH strip lot# 806043191, pH strip lot# _____, pH strip lot# _____

Preservative added:

☐ H2SO4 lot# _____ added to samples _____ on/at _____

☐ HCL lot# _____ added to samples _____ on/at _____

☐ HNO3 lot# _____ added to samples _____ on/at _____

☐ NaOH lot# _____ added to samples _____ on/at _____

Section 6:

Explanations/Comments:

Date Logged in

2/7/20

By (print)

ZA

(sign)

[Signature]

Date Labeled

2/7/20

By (print)

ZA

(sign)

[Signature]

Ammonia Nitrogen

Lab #: 318134

Project#: STANDARD

Client: ASSET LABS

Location:
Field ID: N039397-002A / SC-700B-WDR-598

Diln Fac: 1.000

Prepared: 02/13/20 10:30

Type: SAMPLE

Batch#: 278579

Analyzed: 02/13/20 12:15

Lab ID: 318134-001

Sampled: 02/04/20 08:55

Prep: SM4500NH3-B

Matrix: Water

Received: 02/07/20

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.12	0.10	0.020	mg/L

Type: BLANK

Diln Fac: 1.000

Analyzed: 02/13/20 12:15

Lab ID: QC1009352

Batch#: 278579

Prep: SM4500NH3-B

Matrix: Water

Prepared: 02/13/20 10:30

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	ND	0.10	0.020	mg/L

Legend

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

Ammonia Nitrogen: Batch QC

Lab #: 318134

Project#: STANDARD

Client: ASSET LABS

Location:
Type: LCS

Diln Fac: 1.000

Analyzed: 02/13/20 12:15

Lab ID: QC1009353

Batch#: 278579

Prep: SM4500NH3-B

Matrix: Water

Prepared: 02/13/20 10:30

Analysis: SM4500NH3-D

Analyte	Spiked	Result	%REC	Limits	Units
Ammonia-N	5.000	4.200	84	80-120	mg/L

Field ID: N039336-003F / MW-75-202-0120

Diln Fac: 1.000

Analyzed: 02/13/20 12:15

Type: MS

Batch#: 278579

Prep: SM4500NH3-B

MSS Lab ID: 318058-003

Sampled: 01/30/20 13:31

Analysis: SM4500NH3-D

Lab ID: QC1009354

Received: 02/05/20

Matrix: Water

Prepared: 02/13/20 10:30

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Ammonia-N	0.1500	5.000	4.300	83	28-120	mg/L

Field ID: N039336-003F / MW-75-202-0120

Diln Fac: 1.000

Analyzed: 02/13/20 12:15

Type: MSD

Batch#: 278579

Prep: SM4500NH3-B

MSS Lab ID: 318058-003

Sampled: 01/30/20 13:31

Analysis: SM4500NH3-D

Lab ID: QC1009355

Received: 02/05/20

Matrix: Water

Prepared: 02/13/20 10:30

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Ammonia-N	5.000	4.400	85	28-120	mg/L	2	30

Legend

RPD: Relative Percent Difference

March 17, 2020

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303

FAX: (530) 339-3303

Workorder No.: N039766

RE: PG&E Topock, D3184A1.EV.05-OM-TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 03, 2020 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Libucano for

Puri Romualdo
Laboratory Director

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



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ORELAP/NELAP Cert 4046

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039766

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Subcontracted Analyses:

Ammonia was subcontracted to Enthalpy Analytical- Berkeley, CA.

NO3/NO2 was subcontracted to BC Labs-Bakersfield, CA.

Analytical Comments for EPA 200.7:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Iron in QC samples N039813-001A-MS and N039813-001A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8:

Dilution was necessary on some analytes for sample N039766-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meets internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N039766-001C-MS and N039766-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.



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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039766

CASE NARRATIVE

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Nickel in QC samples N039766-001C-MS and N039766-001C-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.



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ASSET Laboratories

Date: 17-Mar-20

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039766
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N039766-001A	SC-100B-WDR-599	Water	3/3/2020 10:15:00 AM	3/3/2020	3/17/2020
N039766-001B	SC-100B-WDR-599	Water	3/3/2020 10:15:00 AM	3/3/2020	3/17/2020
N039766-001C	SC-100B-WDR-599	Water	3/3/2020 10:15:00 AM	3/3/2020	3/17/2020
N039766-001D	SC-100B-WDR-599	Water	3/3/2020 10:15:00 AM	3/3/2020	3/17/2020
N039766-002A	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020
N039766-002B	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020
N039766-002C	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020
N039766-002D	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020
N039766-002E	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020
N039766-002F	SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	3/3/2020	3/17/2020



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:15:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200303D	QC Batch: R142825	PrepDate:	Analyst: LR
Specific Conductance	6200	0.10	0.10
		umhos/cm	1
			3/3/2020 03:05 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200303D	QC Batch: R142825	PrepDate:	Analyst: LR
Specific Conductance	7000	0.10	0.10
		umhos/cm	1
			3/3/2020 03:05 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 120.1_WPGE**

Sample ID: N039766-001ADUP	SampType: DUP	TestCode: 120.1_WPGE	Units: umhos/cm	Prep Date:	RunNo: 142825						
Client ID: ZZZZZZ	Batch ID: R142825	TestNo: EPA 120.1		Analysis Date: 3/3/2020	SeqNo: 3706692						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	6200.000	0.10						6160	0.647	2	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:15:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200304C	QC Batch: 78421	PrepDate: 3/4/2020	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4800	50	50
		mg/L	1
			3/4/2020 01:01 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200304C	QC Batch: 78421	PrepDate: 3/4/2020	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	4700	50	50
		mg/L	1
			3/4/2020 01:01 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 160.1_2540C_W**

Sample ID: LCS-78421	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/4/2020	RunNo: 142849						
Client ID: LCSW	Batch ID: 78421	TestNo: SM2540C		Analysis Date: 3/4/2020	SeqNo: 3707838						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	985.000	10	1000	0	98.5	80	120				

Sample ID: MB-78421	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/4/2020	RunNo: 142849						
Client ID: PBW	Batch ID: 78421	TestNo: SM2540C		Analysis Date: 3/4/2020	SeqNo: 3707839						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID: N039766-002BDUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/4/2020	RunNo: 142849						
Client ID: ZZZZZZ	Batch ID: 78421	TestNo: SM2540C		Analysis Date: 3/4/2020	SeqNo: 3707847						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4685.000	50						4700	0.320	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:15:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200310B	QC Batch: 78466	PrepDate: 3/9/2020	Analyst: DJ
Iron	30 18	20	µg/L 1 3/10/2020 12:52 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICP
EPA 200.7

RunID: NV00922-ICP2_200311A	QC Batch: 78466	PrepDate: 3/9/2020	Analyst: DJ			
Aluminum	ND	40	50	µg/L	1	3/11/2020 11:31 AM
Boron	1100	74	100	µg/L	1	3/10/2020 12:57 PM
Iron	ND	18	20	µg/L	1	3/10/2020 12:57 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.7_WPGEPB**

Sample ID: LCS1-78466	SampType: LCS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142933
Client ID: LCSW	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/10/2020	SeqNo: 3714702
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	4929.572	100	5000	0	98.6	85	115				
Iron	95.218	20	100.0	0	95.2	85	115				

Sample ID: N039813-001A-MS	SampType: MS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142933
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/10/2020	SeqNo: 3714706
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	6676.681	100	5000	1607	101	75	125				
Iron	1057.536	20	100.0	1033	24.9	75	125				S

Sample ID: N039813-001A-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142933
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/10/2020	SeqNo: 3714707
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	6828.049	100	5000	1607	104	75	125	6677	2.24	20	
Iron	1225.438	20	100.0	1033	193	75	125	1058	14.7	20	S

Sample ID: MB-78466	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142933
Client ID: PBW	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/10/2020	SeqNo: 3714713
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	ND	100									
Iron	ND	20									

Sample ID: MB-78466	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142945
Client ID: PBW	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715045
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPB

Sample ID: MB-78466	SampType: MBLK	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142945						
Client ID: PBW	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715045						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	ND	50									
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Sample ID: LCS1-78466	SampType: LCS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142945						
Client ID: LCSW	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715046						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10771.172	50	10000	0	108	85	115				
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Sample ID: N039813-001A-MS	SampType: MS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142945						
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715050						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10889.835	50	10000	443.1	104	75	125				
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Sample ID: N039813-001A-MSD	SampType: MSD	TestCode: 200.7_WPGE	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142945						
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715051						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum	10948.781	50	10000	443.1	105	75	125	10890	0.540	20	
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Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.7_WPGEPB**

Sample ID: N039813-001A-PS	SampType: PS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date:	RunNo: 142933						
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/10/2020	SeqNo: 3714705						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	6787.145	100	5000	1607	104	80	120				
Iron	1164.354	20	100.0	1033	132	80	120				S

Sample ID: N039813-001A-PS	SampType: PS	TestCode: 200.7_WPGE	Units: µg/L	Prep Date:	RunNo: 142945						
Client ID: ZZZZZZ	Batch ID: 78466	TestNo: EPA 200.7		Analysis Date: 3/11/2020	SeqNo: 3715049						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	10961.249	50	10000	443.1	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:15:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200309C	QC Batch: 78454	PrepDate: 3/9/2020	Analyst: CEI
Manganese	20 0.26 0.50	µg/L	1 3/9/2020 06:18 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200309C	QC Batch: 78454	PrepDate: 3/9/2020	Analyst: CEI			
Antimony	ND	0.78	2.5	µg/L	5	3/9/2020 07:50 PM
Arsenic	ND	0.081	0.10	µg/L	1	3/9/2020 07:04 PM
Barium	19	0.15	1.0	µg/L	1	3/9/2020 07:04 PM
Copper	ND	0.55	1.0	µg/L	1	3/9/2020 07:04 PM
Lead	ND	0.64	5.0	µg/L	5	3/9/2020 07:50 PM
Manganese	13	0.26	0.50	µg/L	1	3/9/2020 07:04 PM
Molybdenum	21	1.1	2.5	µg/L	5	3/9/2020 07:50 PM
Nickel	ND	0.26	1.0	µg/L	1	3/9/2020 07:04 PM
Zinc	ND	2.3	10	µg/L	1	3/9/2020 07:04 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: MB-78454	SampType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929						
Client ID: PBW	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3714004						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	ND	0.50									
Arsenic	ND	0.10									
Barium	ND	1.0									
Chromium	ND	0.50									
Copper	ND	1.0									
Lead	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Nickel	ND	1.0									
Zinc	ND	10									

Sample ID: LCS-78454	SampType: LCS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929						
Client ID: LCSW	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3714005						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	10.442	0.50	10.00	0	104	85	115				
Arsenic	10.740	0.10	10.00	0	107	85	115				
Barium	11.077	1.0	10.00	0	111	85	115				
Chromium	9.797	0.50	10.00	0	98.0	85	115				
Copper	10.172	1.0	10.00	0	102	85	115				
Lead	10.659	1.0	10.00	0	107	85	115				
Manganese	101.313	0.50	100.0	0	101	85	115				
Molybdenum	10.236	0.50	10.00	0	102	85	115				
Nickel	10.237	1.0	10.00	0	102	85	115				
Zinc	10.355	10	10.00	0	104	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: N039766-001C-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3714017						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.909	0.50	10.00	0	99.1	75	125				
Arsenic	11.062	0.10	10.00	0.7274	103	75	125				
Barium	40.841	1.0	10.00	32.44	84.1	75	125				
Copper	7.869	1.0	10.00	0	78.7	75	125				
Manganese	101.577	0.50	100.0	19.93	81.6	75	125				
Molybdenum	28.808	0.50	10.00	19.02	97.9	75	125				
Nickel	ND	1.0	10.00	0	0	75	125				S
Zinc	11.305	10	10.00	0	113	75	125				

Sample ID: N039766-001C-MS	SampType: MS	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3714018						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	438.923	2.5	10.00	445.5	-66.1	75	125				S
Lead	10.698	5.0	10.00	0	107	75	125				

Sample ID: N039766-001C-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8	Analysis Date: 3/9/2020	SeqNo: 3714019							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.957	0.50	10.00	0	99.6	75	125	9.909	0.484	20	
Arsenic	11.003	0.10	10.00	0.7274	103	75	125	11.06	0.535	20	
Barium	41.150	1.0	10.00	32.44	87.1	75	125	40.84	0.754	20	
Copper	7.875	1.0	10.00	0	78.7	75	125	7.869	0.0661	20	
Manganese	101.547	0.50	100.0	19.93	81.6	75	125	101.6	0.0295	20	
Molybdenum	28.470	0.50	10.00	19.02	94.5	75	125	28.81	1.18	20	
Nickel	ND	1.0	10.00	0	0	75	125	0	0	20	S
Zinc	11.193	10	10.00	0	112	75	125	11.30	0.993	20	

Qualifiers:

B Analyte detected in the associated Method Blank
 ND Not Detected at the Reporting Limit
 DO Surrogate Diluted Out
 E Value above quantitation range
 R RPD outside accepted recovery limits
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference

Calculations are based on raw values



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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: N039766-001C-MSD		SampType: MSD		TestCode: 200.8_W		Units: µg/L		Prep Date: 3/9/2020		RunNo: 142929	
Client ID: ZZZZZZ		Batch ID: 78454		TestNo: EPA 200.8		Analysis Date: 3/9/2020		SeqNo: 3714020			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	431.778	2.5	10.00	445.5	-138	75	125	438.9	1.64	20	S
Lead	10.722	5.0	10.00	0	107	75	125	10.70	0.221	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
 Work Order: N039766
 Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID: N039766-001C-PS	SampType: PS	TestCode: 200.8_W	Units: µg/L	Prep Date:	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8	Analysis Date: 3/9/2020	SeqNo: 3714012							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.854	0.50	10.00	0	98.5	80	120				
Arsenic	11.192	0.10	10.00	0.7274	105	80	120				
Barium	40.008	1.0	10.00	32.44	75.7	80	120				S
Copper	7.809	1.0	10.00	0	78.1	80	120				S
Manganese	97.631	0.50	100.0	19.93	77.7	80	120				S
Molybdenum	28.816	0.50	10.00	19.02	98.0	80	120				
Nickel	ND	1.0	10.00	0	0	80	120				S
Zinc	3.363	10	10.00	0	33.6	80	120				S

Sample ID: N039766-001C-PS	SampType: PS	TestCode: 200.8_W	Units: µg/L	Prep Date:	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3714013						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	441.699	2.5	10.00	445.5	-38.4	80	120				S
Lead	10.740	5.0	10.00	0	107	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
 ND Not Detected at the Reporting Limit
 DO Surrogate Diluted Out
 E Value above quantitation range
 R RPD outside accepted recovery limits
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference

Calculations are based on raw values



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT: CH2M HILL
Lab Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039766-001

Client Sample ID: SC-100B-WDR-599
Collection Date: 3/3/2020 10:15:00 AM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_200304B	QC Batch: R142833		PrepDate:		Analyst: RAB		
Hexavalent Chromium	430	3.3	20		µg/L	100	3/4/2020 12:22 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: NV00922-ICP8_200309C	QC Batch: 78454		PrepDate: 3/9/2020		Analyst: CEI		
Chromium	450	0.65	5.0		µg/L	5	3/9/2020 06:08 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference	Results are wet unless otherwise specified	
	DO	Surrogate Diluted Out		



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_200304B	QC Batch: R142833			PrepDate:		Analyst: RAB	
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	3/4/2020 12:41 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: NV00922-ICP8_200309C	QC Batch: 78454			PrepDate:	3/9/2020	Analyst: CEI	
Chromium	ND	0.13	1.0		µg/L	1	3/9/2020 07:04 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID: MB-78454	SampType: MBLK	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929
Client ID: PBW	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3713825
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	ND	1.0			

Sample ID: LCS-78454	SampType: LCS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929
Client ID: LCSW	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3713826
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	9.797	1.0	10.00	0	98.0 85 115

Sample ID: N039766-001C-MS	SampType: MS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3713839
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	438.923	5.0	10.00	445.5	-66.1 75 125 S

Sample ID: N039766-001C-MSD	SampType: MSD	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/9/2020	RunNo: 142929
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3713841
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	431.778	5.0	10.00	445.5	-138 75 125 438.9 1.64 20 S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID: MB-R142833	SampType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: PBW	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706813						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium ND 0.20

Sample ID: LCS-R142833	SampType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: LCSW	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706814						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 4.804 0.20 5.000 0 96.1 90 110

Sample ID: N039761-004AMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: ZZZZZZ	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706820						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 67.730 1.0 25.00 42.67 100 90 110

Sample ID: N039761-004AMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: ZZZZZZ	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706821						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 67.708 1.0 25.00 42.67 100 90 110 67.73 0.0317 20

Sample ID: N039761-002ADUP	SampType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: ZZZZZZ	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706822						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium 10.475 0.20 10.48 0.0115 20

Qualifiers:

- | | | |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out | Calculations are based on raw values | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID: N039766-001BMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: ZZZZZZ	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706826						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	924.080	20	500.0	434.2	98.0	90	110				
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Sample ID: N039766-002CMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 142833						
Client ID: ZZZZZZ	Batch ID: R142833	TestNo: EPA 218.6		Analysis Date: 3/4/2020	SeqNo: 3706828						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Hexavalent Chromium	1.115	0.20	1.000	0.09330	102	90	110				
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Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID: N039766-001C-PS	SampType: PS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date:	RunNo: 142929						
Client ID: ZZZZZZ	Batch ID: 78454	TestNo: EPA 200.8		Analysis Date: 3/9/2020	SeqNo: 3713834						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	441.699	5.0	10.00	445.5	-38.4	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-100B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:15:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: NV00922-WC_200304A	QC Batch: R142832	PrepDate:	Analyst: LR
Turbidity	0.21 0.10 0.10	NTU	1 3/4/2020 02:55 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TURBIDITY
SM 2130B

RunID: NV00922-WC_200304A	QC Batch: R142832	PrepDate:	Analyst: LR
Turbidity	0.16 0.10 0.10	NTU	1 3/4/2020 02:55 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 2130_W**

Sample ID: MB-R142832	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 142832						
Client ID: PBW	Batch ID: R142832	TestNo: SM 2130B		Analysis Date: 3/4/2020	SeqNo: 3706773						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID: N039766-002BDUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 142832						
Client ID: ZZZZZZ	Batch ID: R142832	TestNo: SM 2130B		Analysis Date: 3/4/2020	SeqNo: 3706776						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.150	0.10						0.1600	6.45	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 17-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-700B-WDR-599
Lab Order:	N039766	Collection Date:	3/3/2020 10:20:00 AM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039766-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_200306A	QC Batch: R142888		PrepDate:		Analyst: RAB		
Fluoride	2.5	0.048	0.50		mg/L	5	3/6/2020 02:51 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: NV00922-IC8_200306A	QC Batch: R142888		PrepDate:		Analyst: RAB		
Sulfate	510	2.0	25		mg/L	50	3/6/2020 03:07 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 300_W_FPGE**

Sample ID: MB-R142888_F	SampType: MBLK	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142888		
Client ID: PBW	Batch ID: R142888	TestNo: EPA 300.0				Analysis Date: 3/6/2020			SeqNo: 3710922		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.10									

Sample ID: LCS-R142888_F	SampType: LCS	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142888		
Client ID: LCSW	Batch ID: R142888	TestNo: EPA 300.0				Analysis Date: 3/6/2020			SeqNo: 3710923		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.251	0.10	1.250	0	100	90	110				

Sample ID: N039724-001BDUP	SampType: DUP	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142888		
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0				Analysis Date: 3/6/2020			SeqNo: 3710925		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.398	1.0						2.343	2.32	20	

Sample ID: N039724-001BMS	SampType: MS	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142888		
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0				Analysis Date: 3/6/2020			SeqNo: 3710926		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	14.837	1.0	12.50	2.343	100	80	120				

Sample ID: N039724-001BMSD	SampType: MSD	TestCode: 300_W_FPGE Units: mg/L				Prep Date:			RunNo: 142888		
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0				Analysis Date: 3/6/2020			SeqNo: 3710927		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	14.722	1.0	12.50	2.343	99.0	80	120	14.84	0.778	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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CLIENT: CH2M HILL
Work Order: N039766
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: MB-R142888_SO4	SampType: MBLK	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142888						
Client ID: PBW	Batch ID: R142888	TestNo: EPA 300.0		Analysis Date: 3/6/2020	SeqNo: 3710981						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate ND 0.50

Sample ID: LCS-R142888_SO4	SampType: LCS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142888						
Client ID: LCSW	Batch ID: R142888	TestNo: EPA 300.0		Analysis Date: 3/6/2020	SeqNo: 3710982						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 3.946 0.50 4.000 0 98.7 90 110

Sample ID: N039724-001BMS	SampType: MS	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142888						
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0		Analysis Date: 3/6/2020	SeqNo: 3710984						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 993.000 50 400.0 601.8 97.8 80 120

Sample ID: N039724-001BMSD	SampType: MSD	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142888						
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0		Analysis Date: 3/6/2020	SeqNo: 3710985						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 980.190 50 400.0 601.8 94.6 80 120 993.0 1.30 20

Sample ID: N039711-001BDUP	SampType: DUP	TestCode: 300_W_SO4P	Units: mg/L	Prep Date:	RunNo: 142888						
Client ID: ZZZZZZ	Batch ID: R142888	TestNo: EPA 300.0		Analysis Date: 3/6/2020	SeqNo: 3710989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate 1118.250 50 1109 0.803 20

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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Project Name PG&E Topock Location PG&E Topock Project Number D3184A1.EV.05-OM-TS Project Manager Scott O'Donnell Sample Manager Shawn Duffy Task Order Project IM3PLANT-ARAR-WDR-599 Turnaround Time 10 Days Shipping Date: COC Number: 599				Container:		1 Liter Poly	1 Liter Poly	1 Liter Poly	250 ml Poly	1 Liter Poly	1 Liter Poly	500 ml Poly	500 ml Poly	1 Liter Poly						
				Preservatives:		4°C Lab H2SO4	4°C	4°C	4°C	4°C Lab H2SO4	4°C	4°C	4°C	4°C			4°C			
				Filtered:		NA	NA	NA	NA	NA	NA	NA	NA	NA			NA			
				Holding Time:		28	7	7	1	28	7	180	180	7						
						AMMONIA (SM4500NH3D)	Anions (E300.0) FI, SO4		CONDUCTIVITY (E120.1)		E218.6 Lab Filtered		Nitrate/Nitrite (SM4500NO3-E)				TDS (SM2540C)		Total Metals (E200.7 and E200.8)	
				DATE	TIME	Matrix														
SC-100B-WDR-599				3-3-20	10:15	Water			X	X		X		X				N039766-01	3	
SC-700B-WDR-599				3-3-20	10:20	Water	X	X	X	X	X	X		X				-02	4	
																	TOTAL NUMBER OF CONTAINERS		7	

Signatures		Date/Time	Shipping Details		ATTN: Sample Custody and Marlon Cartin	Special Instructions: SC-700B Total metals List: Cr,Al,Sb,As,Ba,B,Cu,Pb,Mn,Mo,Ni,Fe,Zn Report Copy to Shawn Duffy
Approved by	<i>Scott O'Donnell</i>	3-3-20	Method of Shipment:	ExdEx ASSET		
Sampled by	<i>[Signature]</i>	3-3-20 10:30	On Ice: <input checked="" type="radio"/> yes / <input type="radio"/> no	2.72 J2 #2		
Relinquished by	<i>[Signature]</i>	3-3-20 11:50	Airbill No:			
Received by	<i>Mr. Bundarian</i>	3/3/20 1150	Lab Name: ASSET Laboratories			
Relinquished by	<i>Mr. Bundarian</i>	3/3/20 1430	Lab Phone: (702) 307-2659			
Received by	<i>Mr. Bundarian</i>	3/3/20 1430				

ASSET Laboratories

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

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 3/3/2020 Workorder: N039766
 Rep sample Temp (Deg C): 2.7 IR Gun ID: 2
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Samples for Cr 6+ were lab filtered and then preserved with Ammonium buffer.
 Samples for Total Metals were lab preserved with HNO3 and for Ammonia/NO3- with H2SO4.

Checklist Completed By: YR YRT 3/3/2020

Reviewed By: MBC 3/5/2020

ASSET Laboratories

WORK ORDER Summary

21-Mar-20

WorkOrder: N039766

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 3/3/2020

Comments: SC-700B Total metals List:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039766-001A	SC-100B-WDR-599	3/3/2020 10:15:00 AM	3/17/2020	Water	EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-001B			3/17/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-001C			3/17/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-001D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-002A	SC-700B-WDR-599	3/3/2020 10:20:00 AM	3/17/2020		SM4500-NH3D	AMMONIA-N BY ION SELECTIVE ELECTRODE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N039766-002B			3/17/2020		EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-002C			3/17/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-002D			3/17/2020		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N039766-002E			3/17/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW

ASSET Laboratories

WORK ORDER Summary

21-Mar-20

WorkOrder: N039766

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 3/3/2020

Comments: SC-700B Total metals List:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039766-002E	SC-700B-WDR-599	3/3/2020 10:20:00 AM	3/17/2020	Water	EPA 200.7	TOTAL METALS BY ICP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/17/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-002F							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039766-003A	FOLDER	3/17/2020	3/17/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			3/17/2020		Folder	Level IV Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			3/17/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

Subcontractor:

Enthalpy Analytical
2323 5th St
Berkeley, CA 94710

TEL: (510) 486-0900
FAX:
Acct #:

Field Sampler: SIGNED

03-Mar-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				SM4500-NH3D		
N039766-002A / SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	32OZP	1		

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO#:N39766A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

		Date/Time	GSO #: 548182138	Date/Time
Relinquished by:	<u>YRJ</u>	<u>3/3/2020 16:30</u>	Received by:	
Relinquished by:			Received by:	



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: SIGNED

20-Mar-20

Sample ID	Matrix	Date Collected	Bottle Type	353.2	Requested Tests		
				SM4500-NO3F			
N039766-002D / SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	8OZP	1			

General Comments: Please email sample receipt acknowledgement to the PM. Please cc sonny.lorenzo@assetlaboratories.com

Please use PO#:N39766B Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 5-day TAT.

Please analyze for NO2/NO3 as N by EPA 353.2. EDD requirement Labspec7 edata.

	Date/Time	GSO #: 548395072	Date/Time
Relinquished by: <u>YAT</u>	3/20/2020 14:45	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____

List of Analysts

ASSET Laboratories Work Order: N039766

NAME	TEST METHOD
Claire Ignacio	EPA 200.8
Lilia Ramit	EPA 120.1, SM 2540C, SM 2130B
Ria Abes	EPA 218.6, EPA 300.0
Diane Jetajobe	EPA 200.7



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"



Enthalpy Analytical
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900

enthalpy.com

Lab Job Number: 318696
Report Level: IV
Report Date: 03/13/2020

Wet Chemistry

Analytical Report *prepared for:*

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Authorized for release by:

Patrick McCarthy, Project Manager
(510) 204-2236 ext 13115
patrick.mccarthy@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 2896, NELAP# 4044-001

Sample Summary

Andrea Gallardo
ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118

Lab Job #: 318696
Date Received: 03/04/20

Sample ID	Lab ID	Collected	Matrix
N039766-002A / SC-700B-WDR-599	318696-001	03/03/20 10:20	Water

Case Narrative

WET CHEMISTRY (SM4500NH3-D)

ASSET LABS
3151-3153 W Post Road
Las Vegas, NV 89118
Andrea Gallardo

Lab Job Number: 318696
Date Received: 03/04/20

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/04/20. See attached cooler receipt form for any sample receipt problems or discrepancies.

Ammonia Nitrogen (SM4500NH3-D):

No analytical problems were encountered.

318696


ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

QC Level: Level IV
Subcontractor:

 Enthalpy Analytical
 2323 5th St
 Berkeley, CA 94710

TEL: (510) 486-0900

FAX:

Acct #:

Field Sampler: SIGNED

03-Mar-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				SM4500-NH3D	
N039766-002A / SC-700B-WDR-599	Water	3/3/2020 10:20:00 AM	32OZP	1	

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com

Please use PO# N39766A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Ammonia by SM4500NH3D. EDD Requirement Labspec7 edata.

		Date/Time	GSO #: 548182138		Date/Time
Relinquished by:	<u>YLT</u>	3/3/2020 16:30	Received by:	<u>[Signature]</u>	3/3 3/4/20 10:09
Relinquished by:			Received by:		

SAMPLE RECEIPT CHECKLIST



Section 1: Login # 318696 Client: Asset
 Date Received: 3/4/20 Project: _____

Section 2: Shipping info (if applicable) CLS 548182182138
 Are custody seals present? ☒ No, or ☐ Yes. If yes, where? ☐ on cooler, ☐ on samples, ☐ on package
☐ Date: _____ How many _____ ☐ Signature, ☐ Initials, ☐ None
 Were custody seals intact upon arrival? ☐ Yes ☐ No ☐ N/A
 Samples received in a cooler? ☒ Yes, how many? 1 ☐ No (skip Section 3 below)
 If no cooler Sample Temp (°C): _____ using IR Gun # ☐ B, or ☐ C
☐ Samples received on ice directly from the field. Cooling process had begun
 If in cooler: Date Opened 3/4/20 By (print) ZA (sign) [Signature]

Section 3: **Important: Notify PM if temperature exceeds 6°C or arrive frozen.**
 Packing in cooler: (if other, describe) _____
☐ Bubble Wrap, ☐ Foam blocks, ☒ Bags, ☐ None, ☐ Cloth material, ☐ Cardboard, ☒ Styrofoam, ☐ Paper towels
☐ Samples received on ice directly from the field. Cooling process had begun
 Type of ice used: ☒ Wet, ☐ Blue/Gel, ☐ None Temperature blank(s) included? ☐ Yes, ☐ No
 Temperature measured using ☐ Thermometer ID: _____, or IR Gun # ☐ B ☒ C
 Cooler Temp (°C): #1: 1.1, #2: _____, #3: _____, #4: _____, #5: _____, #6: _____, #7: _____

Section 4:	YES	NO	N/A
Were custody papers dry, filled out properly, and the project identifiable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were Method 5035 sampling containers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If YES, what time were they transferred to freezer? _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did all bottles arrive unbroken/unopened?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are there any missing / extra samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are samples in the appropriate containers for indicated tests?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are sample labels present, in good condition and complete?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the container count match the COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do the sample labels agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was sufficient amount of sample sent for tests requested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you change the hold time in LIMS for unpreserved VOAs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Did you change the hold time in LIMS for preserved terracores?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are bubbles > 6mm present in VOA samples?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the client contacted concerning this sample delivery?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If YES, who was called? _____ By _____ Date: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 5:

YES	NO	N/A
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

 Are the samples appropriately preserved? (if N/A, skip the rest of section 5)
 Did you check preservatives for all bottles for each sample?
 Did you document your preservative check?
 pH strip lot# 80BDH3191, pH strip lot# _____, pH strip lot# _____
 Preservative added:
☐ H2SO4 lot# _____ added to samples _____ on/at _____
☐ HCL lot# _____ added to samples _____ on/at _____
☐ HNO3 lot# _____ added to samples _____ on/at _____
☐ NaOH lot# _____ added to samples _____ on/at _____

Section 6:
 Explanations/Comments: _____

Date Logged in 3/4/20 By (print) ZA (sign) [Signature]
 Date Labeled 3/5/20 By (print) Bri (sign) [Signature]

Ammonia Nitrogen

Lab #: 318696

Project#: STANDARD

Client: ASSET LABS

Location:
Field ID: N039766-002A / SC-700B-WDR-599

Diln Fac: 1.000

Prepared: 03/09/20 10:42

Type: SAMPLE

Batch#: 279178

Analyzed: 03/09/20 12:50

Lab ID: 318696-001

Sampled: 03/03/20 10:20

Prep: SM4500NH3-B

Matrix: Water

Received: 03/04/20

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	0.060 J	0.10	0.020	mg/L

Type: BLANK

Diln Fac: 1.000

Analyzed: 03/09/20 12:50

Lab ID: QC1011836

Batch#: 279178

Prep: SM4500NH3-B

Matrix: Water

Prepared: 03/09/20 10:42

Analysis: SM4500NH3-D

Analyte	Result	RL	MDL	Units
Ammonia-N	ND	0.10	0.020	mg/L

Legend

J: Estimated value

MDL: Method Detection Limit

ND: Not Detected at or above MDL

RL: Reporting Limit

Ammonia Nitrogen: Batch QC

Lab #: 318696

Project#: STANDARD

Client: ASSET LABS

Location:
Type: LCS

Diln Fac: 1.000

Analyzed: 03/09/20 12:50

Lab ID: QC1011837

Batch#: 279178

Prep: SM4500NH3-B

Matrix: Water

Prepared: 03/09/20 10:42

Analysis: SM4500NH3-D

Analyte	Spiked	Result	%REC	Limits	Units
Ammonia-N	5.000	4.500	90	80-120	mg/L

Field ID: N039723-002F / MW-82-112-0220

Diln Fac: 1.000

Analyzed: 03/09/20 12:50

Type: MS

Batch#: 279178

Prep: SM4500NH3-B

MSS Lab ID: 318665-002

Sampled: 02/27/20 12:39

Analysis: SM4500NH3-D

Lab ID: QC1011838

Received: 03/03/20

Matrix: Water

Prepared: 03/09/20 10:42

Analyte	MSS Result	Spiked	Result	%REC	Limits	Units
Ammonia-N	0.1200	5.000	4.700	92	28-120	mg/L

Field ID: N039723-002F / MW-82-112-0220

Diln Fac: 1.000

Analyzed: 03/09/20 12:50

Type: MSD

Batch#: 279178

Prep: SM4500NH3-B

MSS Lab ID: 318665-002

Sampled: 02/27/20 12:39

Analysis: SM4500NH3-D

Lab ID: QC1011839

Received: 03/03/20

Matrix: Water

Prepared: 03/09/20 10:42

Analyte	Spiked	Result	%REC	Limits	Units	RPD	Lim
Ammonia-N	5.000	4.700	92	28-120	mg/L	0	30

Legend

RPD: Relative Percent Difference



Laboratories, Inc.

Environmental Testing Laboratory Since 1949



Date of Report: 03/30/2020

Marlon B. Cartin

ASSET Laboratories- Las Vegas

3151-3153 W. Post Rd
Las Vegas, NV 89118

Client Project: N039766

BCL Project: Level IV + labSpec7

BCL Work Order: 2008723

Invoice ID: B375787

Enclosed are the results of analyses for samples received by the laboratory on 3/21/2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Stuart Buttram
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Chain of Custody and Cooler Receipt Form for 2008723 Page 1 of 2

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

ASSET Laboratories
3151-3153 W Post Rd., Las Vegas, NV 89118
www.aff-labs.com
TEL: 702.307.2659 FAX: 702.307.2691



Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

QC Level: Level IV

Field Sampler: SIGNED

20-Mar-20

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N039766-002D / SC-700B-WDR-599	-1	3/3/2020 10:20:00 AM	802P	353.2 SM4500-NO3F
				1

CHK BY	DISTRIBUTION
	SUB OUT <input type="checkbox"/>

General Comments:

Please email sample receipt acknowledgement to the PM. Please cc sonny.lorenzo@assellaboratories.com

Please use PO#N39766B. Please email Invoices and Account Receivable Statements to elvira@assellaboratories.com. For questions, call Marion at (702)-307-2659. Please e-mail results to reports.lv@assellaboratories.com by: 5-day TAT.

Please analyze for NO2/NO3 as N by EPA 353.2. EDD requirement Labspec7 edela.

Relinquished by:	Date/Time	Received by:	Date/Time
	3/20/2020 14:45		
Relinquished by:		Received by:	

GSO #: 548395072



Laboratories, Inc.

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 2008723 Page 2 of 2

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 1							
Submission #: <u>20-08723</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input type="checkbox"/> Other <input checked="" type="checkbox"/> (Specify) <u>650</u>			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: <u>0.98</u>	Container: <u>PE</u>	Thermometer ID: <u>208</u>	Date/Time: <u>3/21/10</u>						
<input type="checkbox"/> YES <input type="checkbox"/> NO		Temperature: (A) <u>2.9</u> °C / (C) <u>2.8</u> °C		Analyst Init: <u>GSP</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr ¹⁶											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS <u>802</u>		<u>A</u>									
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
10 ml VOA VIAL- 504											
QT EPA 508/508/508											
QT EPA 515/515/515											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
5ml EPA 547											
5ml EPA 531.1											
5ml EPA 548											
PT EPA 549											
PT EPA 8015M											
PT EPA 8270											
12 / 16oz / 32oz AMBER											
12 / 16oz / 32oz IAR											
OIL SLEEVE											
CB VIAL											
LASTIC BAG											
SOLAR BAG											
IRONOUS IRON											
VCORE											
PART KIT											
MMA CANISTER											

Comments:

Sample Numbering Completed By: EWR

A = Actual / C = Corrected

Date/Time: 3-23-20

0901

Rev 21 05/23/2016

(S:\WPDec\WastePerfectLAB_COCS\FORMS\SANREC\rev 20)

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ASSET Laboratories- Las Vegas
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 03/30/2020 12:24
Project: Level IV + labSpec7
Project Number: N039766
Project Manager: Marlon B. Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2008723-01	COC Number:	---	Receive Date:	03/21/2020 11:00
	Project Number:	---	Sampling Date:	03/03/2020 10:20
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N039766-002D / SC-700B-WDR-599	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Water



Laboratories, Inc.

Environmental Testing Laboratory Since 1949



ASSET Laboratories- Las Vegas
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 03/30/2020 12:24
Project: Level IV + labSpec7
Project Number: N039766
Project Manager: Marlon B. Cartin

Water Analysis (General Chemistry)

BCL Sample ID:	2008723-01	Client Sample Name:	N039766-002D / SC-700B-WDR-599, 3/3/2020 10:20:00AM				
Constituent	Result	Units	RL	Method	MB Bias	Lab Quals	Run #
Nitrate/Nitrite as N	2.9	mg/L	0.10	EPA-353.2	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-353.2	03/27/20 12:00	03/27/20 12:31	MC1	SC-2	1	B074195	No Prep

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Laboratories, Inc.

Environmental Testing Laboratory Since 1949



ASSET Laboratories- Las Vegas
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 03/30/2020 12:24
Project: Level IV + labSpec7
Project Number: N039766
Project Manager: Marlon B. Cartin

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	RL	Lab Quals
QC Batch ID: B074195					
Nitrate/Nitrite as N	B074195-BLK1	ND	mg/L	0.10	

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Laboratories, Inc.

Environmental Testing Laboratory Since 1949



ASSET Laboratories- Las Vegas
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 03/30/2020 12:24
Project: Level IV + labSpec7
Project Number: N039766
Project Manager: Marlon B. Cartin

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

								<u>Control Limits</u>		
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab
Quals										
QC Batch ID: B074195										
	Nitrate/Nitrite as N	B074195-BS1	LCS	2.1218	2.1053	mg/L	101		90 - 110	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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ASSET Laboratories- Las Vegas
3151-3153 W. Post Rd
Las Vegas, NV 89118

Reported: 03/30/2020 12:24
Project: Level IV + labSpec7
Project Number: N039766
Project Manager: Marlon B. Cartin

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		
									RPD	Percent Recovery	Lab Quals
QC Batch ID: B074195		Used client sample: N									
Nitrate/Nitrite as N	DUP	2008000-01	ND	ND		mg/L			10		
	MS	2008000-01	ND	2.0747	2.0000	mg/L		104		90 - 110	
	MSD	2008000-01	ND	2.1276	2.1053	mg/L	2.5	101	10	90 - 110	

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March 31, 2020

Shawn P. Duffy
CH2M HILL
155 Grand Avenue, Suite 1000
Oakland, CA 94612

TEL: (530) 229-3303

FAX: (530) 339-3303

Workorder No.: N039990

RE: PG&E Topock, D3184A1.EV.05-OM-TS

Attention: Shawn P. Duffy

Enclosed are the results for sample(s) received on March 18, 2020 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

 Puri Romualdo

Puri Romualdo
Laboratory Director

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



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

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ELAP Cert 2921
EPA ID CA01638

NEVADA | P: 702.307.2659 F: 702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039990

CASE NARRATIVE**SAMPLE RECEIVING/GENERAL COMMENTS:**

All sample containers were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 200.8:

Dilution was necessary on some analytes due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meets internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes in QC samples N040006-002A-MS and N040006-002A-MSD possibly due to matrix interference. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium in QC samples N040006-002A-MS and N040006-002A-MSD since the analyte concentration in the sample is disproportionate to the spike level. Post Spike (PS) and Dilution Test (DT) were performed however, PS failed acceptance criteria. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Dilution was necessary due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meets matrix spike recovery limit and the detected peak within retention time window.



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ASSET Laboratories

Date: 31-Mar-20

CLIENT: CH2M HILL
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab Order: N039990
Contract No: IM3PLANT-AR

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N039990-001A	SC-701-WDR-597a	Water	3/18/2020 1:05:00 PM	3/18/2020	3/31/2020
N039990-001B	SC-701-WDR-597a	Water	3/18/2020 1:05:00 PM	3/18/2020	3/31/2020
N039990-001C	SC-701-WDR-597a	Water	3/18/2020 1:05:00 PM	3/18/2020	3/31/2020
N039990-001D	SC-701-WDR-597a	Water	3/18/2020 1:05:00 PM	3/18/2020	3/31/2020



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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 31-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-597a
Lab Order:	N039990	Collection Date:	3/18/2020 1:05:00 PM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039990-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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SPECIFIC CONDUCTANCE
EPA 120.1

RunID: NV00922-WC_200319C	QC Batch: R143151	PrepDate:	Analyst: LR
Specific Conductance	39000	0.10	0.10
		umhos/cm	1
			3/19/2020 11:15 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 120.1_WPGE**

Sample ID	N039990-001ADUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	143151
Client ID:	ZZZZZZ	Batch ID:	R143151	TestNo:	EPA 120.1			Analysis Date:	3/19/2020	SeqNo:	3729309
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Specific Conductance		38900.000		0.10						38800	0.257 2

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 31-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-597a
Lab Order:	N039990	Collection Date:	3/18/2020 1:05:00 PM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039990-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL FILTERABLE RESIDUE
SM2540C

RunID: NV00922-WC_200320C	QC Batch: 78632	PrepDate: 3/20/2020	Analyst: LR
Total Dissolved Solids (Residue, Filterable)	32000	500	500
		mg/L	1
			3/20/2020 01:36 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 160.1_2540C_W**

Sample ID LCS-78632	SampType: LCS	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/20/2020	RunNo: 143171
Client ID: LCSW	Batch ID: 78632	TestNo: SM2540C		Analysis Date: 3/20/2020	SeqNo: 3730367
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	985.000	10	1000	0	98.5 80 120

Sample ID MB-78632	SampType: MBLK	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/20/2020	RunNo: 143171
Client ID: PBW	Batch ID: 78632	TestNo: SM2540C		Analysis Date: 3/20/2020	SeqNo: 3730368
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	ND	10			

Sample ID N039990-001ADUP	SampType: DUP	TestCode: 160.1_2540C	Units: mg/L	Prep Date: 3/20/2020	RunNo: 143171
Client ID: ZZZZZZ	Batch ID: 78632	TestNo: SM2540C		Analysis Date: 3/20/2020	SeqNo: 3730370
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	32550.000	500			32300 0.771 5

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ANALYTICAL RESULTS

Print Date: 31-Mar-20

CLIENT: CH2M HILL
Lab Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039990-001

Client Sample ID: SC-701-WDR-597a
Collection Date: 3/18/2020 1:05:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL METALS BY ICPMS
EPA 200.8

RunID: NV00922-ICP8_200321A	QC Batch: 78622	PrepDate: 3/20/2020	Analyst: CEI			
Antimony	ND	0.78	2.5	µg/L	5	3/21/2020 12:06 PM
Arsenic	ND	0.41	0.50	µg/L	5	3/21/2020 12:06 PM
Barium	110	0.75	5.0	µg/L	5	3/21/2020 12:06 PM
Beryllium	ND	0.21	2.5	µg/L	5	3/21/2020 12:06 PM
Cadmium	ND	0.26	2.5	µg/L	5	3/21/2020 12:06 PM
Cobalt	0.78	0.042	0.50	µg/L	1	3/21/2020 12:01 PM
Copper	ND	2.7	5.0	µg/L	5	3/22/2020 12:48 PM
Lead	ND	0.64	5.0	µg/L	5	3/22/2020 12:48 PM
Manganese	170	0.26	0.50	µg/L	1	3/21/2020 12:01 PM
Molybdenum	140	1.1	2.5	µg/L	5	3/21/2020 12:06 PM
Nickel	ND	1.3	5.0	µg/L	5	3/21/2020 12:06 PM
Selenium	30	1.8	2.5	µg/L	5	3/21/2020 12:06 PM
Silver	ND	1.2	2.5	µg/L	5	3/21/2020 12:06 PM
Thallium	ND	4.8	12	µg/L	25	3/26/2020 10:38 AM
Vanadium	2.8	0.28	1.0	µg/L	1	3/22/2020 12:53 PM
Zinc	ND	11	50	µg/L	5	3/21/2020 12:06 PM

Qualifiers: B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out
 E Value above quantitation range
 ND Not Detected at the Reporting Limit
 Results are wet unless otherwise specified



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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W**

Sample ID	MB-78622	SampType:	MBLK	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143208	
Client ID:	PBW	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732470	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		ND	0.50									
Arsenic		ND	0.10									
Barium		ND	1.0									
Beryllium		ND	0.50									
Cadmium		ND	0.50									
Cobalt		ND	0.50									
Lead		ND	1.0									
Manganese		ND	0.50									
Molybdenum		ND	0.50									
Nickel		ND	1.0									
Selenium		ND	0.50									
Silver		ND	0.50									
Thallium		ND	0.50									
Zinc		ND	10									

Sample ID	LCS-78622	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143208
Client ID:	LCSW	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732471
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.706	0.50	10.00	0	97.1	85	115				
Arsenic	10.157	0.10	10.00	0	102	85	115				
Barium	9.689	1.0	10.00	0	96.9	85	115				
Beryllium	9.238	0.50	10.00	0	92.4	85	115				
Cadmium	9.806	0.50	10.00	0	98.1	85	115				
Cobalt	9.563	0.50	10.00	0	95.6	85	115				
Lead	9.662	1.0	10.00	0	96.6	85	115				
Manganese	98.629	0.50	100.0	0	98.6	85	115				
Molybdenum	9.616	0.50	10.00	0	96.2	85	115				

Qualifiers:

B Analyte detected in the associated Method Blank E Value above quantitation range H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike/Surrogate outside of limits due to matrix interference
 DO Surrogate Diluted Out Calculations are based on raw values


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	LCS-78622	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143208
Client ID:	LCSW	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732471
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	9.946	1.0	10.00	0	99.5	85	115				
Selenium	9.737	0.50	10.00	0	97.4	85	115				
Silver	9.953	0.50	10.00	0	99.5	85	115				
Thallium	9.216	0.50	10.00	0	92.2	85	115				
Zinc	9.756	10	10.00	0	97.6	85	115				

Sample ID	N040006-002A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143208
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732478
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.258	0.50	10.00	0	92.6	75	125				
Arsenic	9.295	0.10	10.00	0	92.9	75	125				
Barium	67.532	1.0	10.00	57.70	98.3	75	125				
Cadmium	8.692	0.50	10.00	0	86.9	75	125				
Cobalt	8.207	0.50	10.00	0.6040	76.0	75	125				
Molybdenum	42.168	0.50	10.00	31.19	110	75	125				
Nickel	ND	1.0	10.00	0	0	75	125				S
Selenium	14.142	0.50	10.00	5.014	91.3	75	125				
Silver	8.604	0.50	10.00	0	86.0	75	125				
Zinc	85.231	10	10.00	77.72	75.1	75	125				

Sample ID	N040006-002A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143208
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732479
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.383	2.5	10.00	0	93.8	75	125				
Lead	9.929	5.0	10.00	0	99.3	75	125				
Manganese	346.016	2.5	100.0	246.9	99.1	75	125				
Thallium	8.470	2.5	10.00	0	84.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N040006-002A-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208					
Client ID:	ZZZZZZ	Batch ID: 78622	TestNo: EPA 200.8	Analysis Date: 3/21/2020	SeqNo: 3732482						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	9.406	0.50	10.00	0	94.1	75	125	9.258	1.59	20	
Arsenic	8.996	0.10	10.00	0	90.0	75	125	9.295	3.26	20	
Barium	68.211	1.0	10.00	57.70	105	75	125	67.53	1.00	20	
Cadmium	8.785	0.50	10.00	0	87.8	75	125	8.692	1.06	20	
Cobalt	8.292	0.50	10.00	0.6040	76.9	75	125	8.207	1.02	20	
Molybdenum	41.448	0.50	10.00	31.19	103	75	125	42.17	1.72	20	
Nickel	ND	1.0	10.00	0	0	75	125	0	0	20	S
Selenium	14.136	0.50	10.00	5.014	91.2	75	125	14.14	0.0420	20	
Silver	8.687	0.50	10.00	0	86.9	75	125	8.604	0.959	20	
Zinc	83.994	10	10.00	77.72	62.7	75	125	85.23	1.46	20	S

Sample ID	N040006-002A-MSD	SampType: MSD	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208					
Client ID: ZZZZZZ	Batch ID: 78622	TestNo: EPA 200.8	Analysis Date: 3/21/2020	SeqNo: 3732483							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.511	2.5	10.00	0	95.1	75	125	9.383	1.36	20	
Lead	9.871	5.0	10.00	0	98.7	75	125	9.929	0.585	20	
Manganese	344.762	2.5	100.0	246.9	97.8	75	125	346.0	0.363	20	
Thallium	7.972	2.5	10.00	0	79.7	75	125	8.470	6.06	20	

Sample ID	MB-78622	SampType: MBLK	TestCode: 200.8_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143211					
Client ID:	PBW	Batch ID: 78622	TestNo: EPA 200.8	Analysis Date: 3/22/2020	SeqNo: 3732509						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	1.0									
Vanadium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	LCS-78622	SampType:	LCS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143211
Client ID:	LCSW	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/22/2020	SeqNo:	3732510
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.701	1.0	10.00	0	97.0	85	115				
Vanadium	9.724	1.0	10.00	0	97.2	85	115				

Sample ID	N040006-002A-MS	SampType:	MS	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143211
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/22/2020	SeqNo:	3732514
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.474	1.0	10.00	0	74.7	75	125				S
Vanadium	11.777	1.0	10.00	2.889	88.9	75	125				

Sample ID	N040006-002A-MSD	SampType:	MSD	TestCode:	200.8_W	Units:	µg/L	Prep Date:	3/20/2020	RunNo:	143211
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/22/2020	SeqNo:	3732515
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.383	1.0	10.00	0	73.8	75	125	7.474	1.21	20	S
Vanadium	11.887	1.0	10.00	2.889	90.0	75	125	11.78	0.928	20	

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
| DO | Surrogate Diluted Out | Calculations are based on raw values | | | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
 Work Order: N039990
 Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W

Sample ID	N040006-002A-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	143208
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732484
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Antimony	9.335	0.50	10.00	0	93.4	80	120				
Arsenic	9.261	0.10	10.00	0	92.6	80	120				
Barium	66.953	1.0	10.00	57.70	92.5	80	120				
Cadmium	8.711	0.50	10.00	0	87.1	80	120				
Cobalt	8.232	0.50	10.00	0.6040	76.3	80	120				S
Molybdenum	41.476	0.50	10.00	31.19	103	80	120				
Nickel	ND	1.0	10.00	0	0	80	120				S
Selenium	14.416	0.50	10.00	5.014	94.0	80	120				
Silver	8.869	0.50	10.00	0	88.7	80	120				
Zinc	84.778	10	100.0	77.72	7.06	80	120				S

Sample ID	N040006-002A-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	143208
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732485
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	9.569	2.5	10.00	0	95.7	80	120				
Lead	9.865	5.0	10.00	0	98.7	80	120				
Manganese	346.383	2.5	100.0	246.9	99.5	80	120				
Thallium	7.968	2.5	10.00	0	79.7	80	120				S

Sample ID	N040006-002A-PS	SampType:	PS	TestCode:	200.8_W	Units:	µg/L	Prep Date:		RunNo:	143211
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/22/2020	SeqNo:	3732513
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	7.504	1.0	10.00	0	75.0	80	120				S
Vanadium	11.735	1.0	10.00	2.889	88.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			



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ASSET Laboratories
ANALYTICAL RESULTS

Print Date: 31-Mar-20

CLIENT: CH2M HILL
Lab Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS
Lab ID: N039990-001

Client Sample ID: SC-701-WDR-597a
Collection Date: 3/18/2020 1:05:00 PM
Matrix: WATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: NV00922-IC7_200319A	QC Batch: R143150			PrepDate:		Analyst: RAB	
Hexavalent Chromium	ND	0.17	1.0		µg/L	5	3/19/2020 04:22 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: NV00922-ICP8_200321A	QC Batch: 78622			PrepDate:	3/20/2020	Analyst: CEI	
Chromium	6.7	0.13	1.0		µg/L	1	3/21/2020 12:01 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		



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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID MB-78622	SampType: MBLK	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208
Client ID: PBW	Batch ID: 78622	TestNo: EPA 200.8		Analysis Date: 3/21/2020	SeqNo: 3732418
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	ND	1.0			

Sample ID LCS-78622	SampType: LCS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208
Client ID: LCSW	Batch ID: 78622	TestNo: EPA 200.8		Analysis Date: 3/21/2020	SeqNo: 3732419
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	9.750	1.0	10.00	0	97.5 85 115

Sample ID N040006-002A-MS	SampType: MS	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208
Client ID: ZZZZZZ	Batch ID: 78622	TestNo: EPA 200.8		Analysis Date: 3/21/2020	SeqNo: 3732427
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	228.894	5.0	10.00	213.5	154 75 125 S

Sample ID N040006-002A-MSD	SampType: MSD	TestCode: 200.8_W_CR	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143208
Client ID: ZZZZZZ	Batch ID: 78622	TestNo: EPA 200.8		Analysis Date: 3/21/2020	SeqNo: 3732431
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chromium	228.460	5.0	10.00	213.5	150 75 125 228.9 0.190 20 S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID MB-R143150	SampType: MBLK	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 143150
Client ID: PBW	Batch ID: R143150	TestNo: EPA 218.6	Analysis Date: 3/19/2020	SeqNo: 3729251	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium ND 0.20

Sample ID LCS-R143150	SampType: LCS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 143150
Client ID: LCSW	Batch ID: R143150	TestNo: EPA 218.6	Analysis Date: 3/19/2020	SeqNo: 3729252	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 4.802 0.20 5.000 0 96.0 90 110

Sample ID N039988-001AMS	SampType: MS	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 143150
Client ID: ZZZZZZ	Batch ID: R143150	TestNo: EPA 218.6	Analysis Date: 3/19/2020	SeqNo: 3729264	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 53.000 1.0 25.00 29.05 95.8 90 110

Sample ID N039988-001AMSD	SampType: MSD	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 143150
Client ID: ZZZZZZ	Batch ID: R143150	TestNo: EPA 218.6	Analysis Date: 3/19/2020	SeqNo: 3729265	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 53.425 1.0 25.00 29.05 97.5 90 110 53.00 0.799 20

Sample ID N039988-003ADUP	SampType: DUP	TestCode: 218.6_WU_P	Units: µg/L	Prep Date:	RunNo: 143150
Client ID: ZZZZZZ	Batch ID: R143150	TestNo: EPA 218.6	Analysis Date: 3/19/2020	SeqNo: 3729266	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Hexavalent Chromium 0.498 0.20 0.4964 0.221 20

Qualifiers:

- | | | |
|---|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits | S Spike/Surrogate outside of limits due to matrix interference |
| DO Surrogate Diluted Out | Calculations are based on raw values | |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WU_PGE

Sample ID	N039990-001BMS	SampType:	MS	TestCode:	218.6_WU_P	Units:	µg/L	Prep Date:		RunNo:	143150			
Client ID:	ZZZZZZ	Batch ID:	R143150	TestNo:	EPA 218.6			Analysis Date:	3/19/2020	SeqNo:	3729277			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.143		1.0	5.000	0		103	90	110				

Qualifiers:

- | | | | | | |
|----|---|--------------------------------------|--------------------------------------|---|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits | S | Spike/Surrogate outside of limits due to matrix interference |
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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 200.8_W_CRPGE**

Sample ID	N040006-002A-PS	SampType:	PS	TestCode:	200.8_W_CR	Units:	µg/L	Prep Date:		RunNo:	143208
Client ID:	ZZZZZZ	Batch ID:	78622	TestNo:	EPA 200.8			Analysis Date:	3/21/2020	SeqNo:	3732433
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chromium		230.599		5.0	10.00	213.5	171	80	120		S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			

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ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 31-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-597a
Lab Order:	N039990	Collection Date:	3/18/2020 1:05:00 PM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039990-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL MERCURY BY COLD VAPOR TECHNIQUE
EPA 245.1

RunID: NV00922-AA2_200320A	QC Batch: 78624	PrepDate: 3/20/2020	Analyst: CEI
Mercury	ND	0.13	0.20
		µg/L	1
			3/20/2020 04:19 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 245.1_W**

Sample ID MB-78624	SampType: MBLK	TestCode: 245.1_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143149
Client ID: PBW	Batch ID: 78624	TestNo: EPA 245.1		Analysis Date: 3/20/2020	SeqNo: 3729833
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	ND	0.20			

Sample ID LCS-78624	SampType: LCS	TestCode: 245.1_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143149
Client ID: LCSW	Batch ID: 78624	TestNo: EPA 245.1		Analysis Date: 3/20/2020	SeqNo: 3729834
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	9.390	0.20	10.00	0	93.9 85 115

Sample ID N040006-002A-MS	SampType: MS	TestCode: 245.1_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143149
Client ID: ZZZZZZ	Batch ID: 78624	TestNo: EPA 245.1		Analysis Date: 3/20/2020	SeqNo: 3729855
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	8.140	0.20	10.00	0	81.4 75 125

Sample ID N040006-002A-MSD	SampType: MSD	TestCode: 245.1_W	Units: µg/L	Prep Date: 3/20/2020	RunNo: 143149
Client ID: ZZZZZZ	Batch ID: 78624	TestNo: EPA 245.1		Analysis Date: 3/20/2020	SeqNo: 3729856
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Mercury	8.050	0.20	10.00	0	80.5 75 125 8.140 1.11 20

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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"Serving Clients with Passion and Professionalism"

ASSET Laboratories
ANALYTICAL RESULTS
Print Date: 31-Mar-20

CLIENT:	CH2M HILL	Client Sample ID:	SC-701-WDR-597a
Lab Order:	N039990	Collection Date:	3/18/2020 1:05:00 PM
Project:	PG&E Topock, D3184A1.EV.05-OM-TS	Matrix:	WATER
Lab ID:	N039990-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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ANIONS BY ION CHROMATOGRAPHY
EPA 300.0

RunID: NV00922-IC8_200323A	QC Batch: R143199	PrepDate:	Analyst: RAB
Fluoride	19 0.48	5.0	mg/L 50 3/23/2020 04:05 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		


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"Serving Clients with Passion and Professionalism"

CLIENT: CH2M HILL
Work Order: N039990
Project: PG&E Topock, D3184A1.EV.05-OM-TS

ANALYTICAL QC SUMMARY REPORT**TestCode: 300_W_FPGE**

Sample ID	MB-R143199_F	SampType:	MBLK	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	143199		
Client ID:	PBW	Batch ID:	R143199	TestNo:	EPA 300.0			Analysis Date:	3/23/2020	SeqNo:	3731995		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		ND		0.10									

Sample ID	LCS-R143199_F	SampType:	LCS	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	143199		
Client ID:	LCSW	Batch ID:	R143199	TestNo:	EPA 300.0			Analysis Date:	3/23/2020	SeqNo:	3731996		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.240		0.10	1.250	0	99.2	90	110				

Sample ID	N039990-001ADUP	SampType:	DUP	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	143199		
Client ID:	ZZZZZZ	Batch ID:	R143199	TestNo:	EPA 300.0			Analysis Date:	3/23/2020	SeqNo:	3732004		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		17.875		5.0						18.78	4.96	20	

Sample ID	N039990-001AMS	SampType:	MS	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	143199		
Client ID:	ZZZZZZ	Batch ID:	R143199	TestNo:	EPA 300.0			Analysis Date:	3/23/2020	SeqNo:	3732005		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		78.180		5.0	62.50	18.78	95.0	80	120				

Sample ID	N039990-001AMSD	SampType:	MSD	TestCode:	300_W_FPGE	Units:	mg/L	Prep Date:		RunNo:	143199		
Client ID:	ZZZZZZ	Batch ID:	R143199	TestNo:	EPA 300.0			Analysis Date:	3/23/2020	SeqNo:	3732006		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		78.440		5.0	62.50	18.78	95.4	80	120	78.18	0.332	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out	Calculations are based on raw values			


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 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CH2MHILL

CHAIN OF CUSTODY RECORD

Page 1 OF 1

Project Name PG&E Topock Location PG&E Topock Project Number D3184A1.EV.05-OM-TS Project Manager Scott O'Donnell Sample Manager Shawn Duffy Task Order Project IM3PLANT-ARAR-WDR-597A Turnaround Time 10 Days Shipping Date: COC Number: 597a			Container: 1 Liter Poly 1 Liter Poly 250 ml Poly 1 Liter Poly 500 ml Poly 500 ml Poly Preservatives: 4°C 4°C 4°C 4°C 4°C 4°C Filtered: NA NA NA NA NA NA Holding Time: 7 7 1 7 180 180		Anions (E300.0) Fluoride CONDUCTIVITY (E120.1) E218.6 Lab Filtered TDS (SM2540C) Total Metals (E200.8 Mn) Total Title2Metals		Number of Containers COMMENTS	
DATE	TIME	Matrix						
SC-701-WDR-597a	3-18-20	1305	Water	X	X	X	X	X
N039990-01							3	
TOTAL NUMBER OF CONTAINERS							3	

Signatures Date/Time		Shipping Details		ATTN: Sample Custody and Marlon Cartin	Special Instructions: Report Copy to Shawn Duffy	
Approved by	<i>Scott O'Donnell</i>	3-18-20	1310			Method of Shipment: FedEx
Sampled by	<i>[Signature]</i>	3-18-20	1315			On Ice: <input checked="" type="radio"/> yes / no 4.6°C 1st 2
Relinquished by	<i>[Signature]</i>	3-18-20	1554			Airbill No:
Received by	<i>R.M. Bundarian</i>	3/18/20	1554			Lab Name: ASSET Laboratories
Relinquished by	<i>R.M. Bundarian</i>	3/18/20	1837			Lab Phone: (702) 307-2659
Received by	<i>R.M. Bundarian</i>	3/18/20	1837			

ASSET Laboratories

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

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 3/18/2020 Workorder: N039990
 Rep sample Temp (Deg C): 4.6 IR Gun ID: 2
 Temp Blank: ☒ Yes ☐ No
 Carrier name: ASSET
 Last 4 digits of Tracking No.: NA Packing Material Used: None
 Cooling process: ☒ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
2. Custody seals intact, signed, dated on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
3. Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
4. Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
5. Sampler's name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
6. Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
7. Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
8. Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
9. Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
10. Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
11. All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
13. Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
15. Did the bottle labels indicate correct preservatives used?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
16. Were there Non-Conformance issues at login?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Was Client notified?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: Sample for Cr 6+ was lab filtered and then preserved with Ammonium buffer.
 Sample for Total Metals was lab preserved with HNO3.

Checklist Completed By: YR *YR* 3/19/2020

Reviewed By:

ABC 3/23/2020

ASSET Laboratories

WORK ORDER Summary

19-Mar-20

WorkOrder: N039990

Client ID: CH2HI01

Project: PG&E Topock, D3184A1.EV.05-OM-TS

QC Level: Level IV

Date Received: 3/18/2020

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N039990-001A	SC-701-WDR-597a	3/18/2020 1:05:00 PM	4/1/2020	Water	EPA 120.1	SPECIFIC CONDUCTANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			4/1/2020		SM2540C	TOTAL FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			4/1/2020			Total Dissolved Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
			4/1/2020		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LSR
N039990-001B			4/1/2020		EPA 218.6	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039990-001C			4/1/2020			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2020		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2020		EPA 245.1	TOTAL MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2020			MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039990-001D							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N039990-002A	FOLDER	4/1/2020	4/1/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			4/1/2020		Folder	Level IV Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			4/1/2020		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB

List of Analysts

ASSET Laboratories Work Order: N039990

NAME	TEST METHOD
Claire Ignacio	EPA 200.8, EPA 245.1
Lilia Ramit	EPA 120.1, SM 2540C
Ria Abes	EPA 218.6, EPA 300.0



ASSET LABORATORIES
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Analytical Bench Log Book

WDR pH Results

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

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
1 SC-100B-596	12-3-19	10:20	12-3-19	10:27	HQ440D	12-3-19	0000	-57.82		7.17

Notes:

2 SC-700B-596	12-3-19	10:25	12-3-19	10:29	HQ440D	12-3-19	0000	-57.82		6.97
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Notes:

3 SC-100B-597	1-7-20	7:50	1-7-20	8:00	HQ440D	1-7-20	0000	-55.98	Ryan Phelps	7.28
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Notes:

4 SC-700B-597	1-7-20	7:55	1-7-20	8:05	HQ440D	1-7-20	0000	-55.98	Ryan Phelps	7.12
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Notes: SC 701 No Sample due to No brine being made at this Time - SR

5 SC-100B-598	2-4-20	0905	2-4-20	0910	HQ440D	2-4-20	0000	-57.48	Ryan Phelps	7.30
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Notes:

6 SC-700B-598	2-4-20	0855	2-4-20	0900	HQ440D	2-4-20	0000	-57.48	Ryan Phelps	7.06
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Notes:

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Notes:

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


Analytical Bench Log Book

WDR pH Results


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

Sample Name	Date of sampling	Time of sampling	Date of analysis	Time of analysis	pH Meter #1, #2, or #3 etc. See cover Sheet for Serial Number	Date pH meter Calibrated	Time pH meter Calibrated	Slope of the Curve	Analyst Name (for the pH result)	pH Result
1 SC-100B-WDR 599	3-3-20	10:15	3-3-20	10:22	HQ440D	3-3-20	0000	-55.82		7.10

Notes:

2 SC-700B-WDR 599	3-3-20	10:20	3-3-20	10:24	HQ440D	3-3-20	0000	-55.82		7.13
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Notes:

3 SC-701-WDR 599	3-18-20	1805	3-18-20	1308	HQ440D	3-18-20	0000	-53.53		7.74
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Notes:

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Notes:

7										
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Notes:

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