



SFPP Norwalk Pump Station
Norwalk, California

First Quarter 2019 Remediation Progress Report

Final

April 15, 2019

Kinder Morgan, Inc.



SFPP Norwalk Pump Station, Norwalk, California

Project No: D3193500
Document Title: First Quarter 2019 Remediation Progress Report
Revision: Final
Date: April 15, 2019
Client Name: Kinder Morgan, Inc.
Project Manager: Eric Davis
Author: Vladimir Carino

Jacobs Engineering Group Inc.

2600 Michelson Drive, Suite 500
Irvine, California 92612
United States
T +1.949.224.7500
F +1.949.224.7501
www.jacobs.com

The material and data presented in this report were prepared consistent with current and generally accepted consulting principles and practices. This work was supervised by the following Jacobs licensed professional.



William Breedlove
California Professional Chemical Engineer, No. 5142

April 15, 2019
Date

Contents

Acronyms and Abbreviations	iii
1. Introduction	1-1
2. Remediation Systems.....	2-1
2.1 Soil Vapor Extraction System	2-1
2.2 Groundwater Treatment System.....	2-2
2.3 Horizontal Biosparge System.....	2-2
3. Operations and Maintenance	3-1
4. Summary of Remediation Progress	4-1
5. Soil Vapor Monitoring Results.....	5-1
5.1 Overview	5-1
5.2 Laboratory Results	5-1
6. System Evaluation and Optimization.....	6-1
7. Planned Second Quarter 2019 Activities.....	7-1
8. References.....	8-1

Appendixes

- A Laboratory Analytical Reports
- B Time Series Charts for Select South-Central Area Wells

Tables

- 1 Remediation Well Construction and Status
- 2 Vapor Remediation System Operation Summary
- 3 Remediation Well Vapor Concentrations
- 4 Extracted Vapor Analytical Results
- 5 Groundwater Remediation System Operation Summary
- 6 Extracted Groundwater Analytical Results
- 7 Biosparge System Operation Summary
- 8 Field Measurements and Laboratory Soil Vapor Analytical Results - March 2019
- 9 Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

Figures

- 1 Site Location Map
- 2 Remediation System Layout

Acronyms and Abbreviations

µg/L	microgram(s) per liter
1,2-DCA	1,2-dichloroethane
Air Tech	Air Technology Laboratories
Asset	Asset Laboratories
ASTM	ASTM International
BC	BC Laboratories, Inc.
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CH2M	CH2M HILL Engineers, Inc., now part of Jacobs Engineering Group Inc.
COPC	chemical of potential concern
DAF	dissolved air flotation
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
GWE	groundwater extraction
GWTS	groundwater treatment system
in. H ₂ O	inches of water
Jacobs	Jacobs Engineering Group Inc.
Kinder Morgan	Kinder Morgan, Inc.
LGAC	liquid-phase granular activated carbon
LNAPL	light nonaqueous phase liquid
MTBE	methyl tertiary butyl ether
No.	number
O&M	operations and maintenance
OWS	oil-water separator
PCE	tetrachloroethylene
PID	photoionization detector
PVC	polyvinyl chloride
RTO	regenerative thermal oxidizer
scfm	standard cubic feet per minute
SFPP	SFPP, L.P.
SVE	soil vapor extraction
TBA	tertiary butyl alcohol
TFE	total fluids extraction
THF	tetrahydrofuran
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons quantified as diesel
TPH-g	total petroleum hydrocarbons quantified as gasoline

TPH-o	total petroleum hydrocarbons quantified as oil
TPH-total	total petroleum hydrocarbons quantified as gasoline, diesel, and oil
VOC	volatile organic compound
Water Board	California Regional Water Quality Control Board, Los Angeles Region
WSB	West Side Barrier

1. Introduction

On behalf of Kinder Morgan, Inc. (Kinder Morgan), CH2M HILL Engineers, Inc. (CH2M), now part of Jacobs Engineering Group Inc. (Jacobs), prepared this report to summarize remediation activities performed at the SFPP, L.P. Norwalk Pump Station located within the Defense Fuel Support Point Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1) during the first quarter 2019 reporting period.

This progress report is submitted pursuant to a request from the California Regional Water Quality Control Board, Los Angeles Region (Water Board) in its letter dated October 25, 2006 (Water Board, 2006). Additional site background information can be found in the report titled, *Conceptual Site Model and Proposed Alternate Interim Remedy for Soil, Groundwater, and LNAPL* (CH2M, 2013), and in previously submitted semiannual groundwater monitoring reports.

This report summarizes the remediation systems present at the site and describes remediation activities for the period of January through March 2019 with documentation of the following tasks:

- Operations and maintenance (O&M) of remediation systems performed by Kinder Morgan field personnel
- Remediation system evaluation

The remediation activities performed from January through March 2019 and the progress achieved through those activities are summarized in the following sections.

2. Remediation Systems

Kinder Morgan operates remediation systems consisting of soil vapor extraction (SVE), total fluids extraction (TFE; extraction of free product and/or groundwater using a top-loading pump), groundwater extraction (GWE; extraction of groundwater using a bottom-loading pump), and treatment of extracted soil vapors and groundwater to address the south-central and southeastern areas of the site. Biosparging is also employed in the south-central area to enhance natural attenuation of hydrocarbon constituents.

Operation of the West Side Barrier (WSB) GWE system for remediation of the western offsite area was discontinued in August 2008 based on the reduced lateral extent and low concentrations of volatile organic compounds (VOCs) west of the site.

The objectives of the remediation systems are to contain and control the migration of hydrocarbon constituents in groundwater and soil vapor, and to remove hydrocarbon mass from soil and groundwater. The remediation systems include the following wells:

- South-Central Area
 - 20 TFE wells
 - 24 onsite and 6 offsite SVE wells (most collocated with TFE wells)
 - 2 horizontal SVE wells
 - 1 horizontal biosparge well
- Southeastern Area (24-inch Block Valve Area)
 - 4 TFE wells (GMW-O-15, GMW-O-18, GMW-36, and GMW-SF-9)
 - 3 SVE wells (collocated with TFE wells)
 - 1 GWE well (GMW-SF-10)

A summary of remediation wells in the south-central, southeastern, and WSB areas is presented in Table 1. Table 1 includes well identifications, well construction details, well function, and operational status at the end of the first quarter 2019. The remediation system layout is shown on Figure 2. A brief description of each system is provided in Sections 2.1 through 2.3.

Kinder Morgan currently operates three refined fuel pipelines (two 16-inch and one 24-inch) that traverse the southern border of the site. These pipelines previously supplied fuel products to the former tank farm, and various block valves and other connection points were identified as potential sources of subsurface releases in the south-central and southeastern areas of the site. Between the third quarter of 2016 and the second quarter of 2017, the pipelines were modified to remove all valves and connections so that the pipelines now span across the site in a continuous manner, reducing the potential for future releases that could have occurred at those connection points.

2.1 Soil Vapor Extraction System

SVE is performed using a blower to remove soil vapors from the south-central and southeastern areas of the site. The extracted vapors are conveyed to a knock-out tank that separates entrained moisture from the soil vapors. Accumulated moisture in the knock-out tank is treated by the main groundwater treatment system (GWTS) described in Section 2.2. The soil vapors are then treated in a regenerative thermal oxidizer (RTO) where VOCs are converted to carbon dioxide and water prior to being discharged to the atmosphere. Operation of the GWTS and SVE system is conducted in accordance with Permits to Operate (Permit Number [No.] G46188 A/N 578779 and No. G46187 A/N 578777) issued by the South Coast Air Quality Management District.

2.2 Groundwater Treatment System

The main GWTS processes free product and groundwater recovered from the south-central and southeastern parts of the site. Free product and groundwater recovered by pneumatically operated, top-loading total fluid pumps and bottom-loading groundwater pumps are piped to a dissolved air flotation (DAF) unit (oil-water separator [OWS]). Free product, if any, from the OWS is collected in a storage tank and recycled at an offsite location. Water from the OWS is treated using liquid-phase granular activated carbon (LGAC). Treated water is routed through an onsite 3,000-gallon equalization tank. Two fluidized bed bioreactors installed downstream of the equalization tank treat fuel oxygenates such as tertiary butyl alcohol (TBA) and methyl tertiary butyl ether (MTBE). The treated groundwater then passes through polishing LGAC units prior to discharge to a storm drain that leads to Coyote Creek. Discharge to Coyote Creek is performed in accordance with a National Pollutant Discharge Elimination System permit (Permit No. CA0063509; Order No. R4-2016-0309).

2.3 Horizontal Biosparge System

In December 2015, Kinder Morgan completed installation of a horizontal biosparge system in the south-central area of the site, which consists of a horizontal well and a 500-standard-cubic-foot-per-minute (scfm) compressor. To reduce the potential for off-gassing of VOCs during biosparging, the SVE system has an interlock that will not allow the biosparge to operate without the SVE running. The biosparge well is constructed of 4-inch-diameter Schedule 80 polyvinyl chloride (PVC) casing and screen completed to a vertical depth of approximately 45 feet below ground surface. The lateral distance of the screen interval is 600 feet centered below the central portion of the south-central area hydrocarbon plume. Further details regarding the construction of the biosparge well are documented in the report titled, *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report* (CH2M, 2015).

Pilot testing of the biosparge system commenced in early January 2016 and continued through October 2016. A comprehensive evaluation report that incorporates soil vapor and groundwater data was submitted to the Water Board in August 2017 (CH2M, 2017). Based on the favorable results of the pilot study, a second horizontal biosparge well was installed in the southeastern area of the site in November 2017. The design of the second biosparge well is similar to the south-central biosparge well, consisting of 4-inch-diameter Schedule 80 PVC casing and screen completed to a vertical depth of approximately 45 feet below ground surface. The lateral distance of the screen interval is 240 feet centered below the southeastern area hydrocarbon plume. A construction completion report documenting construction activities and specifications was submitted on July 12, 2018 (Jacobs, 2018). The 500-scfm sparge compressor was turned off temporarily and a new air sparge compressor (883 scfm) was installed in the fourth quarter 2018 to deliver ambient air to both the south-central and southeastern sparge wells. The 500-scfm and 883-scfm compressors are appropriately sized to deliver ambient air to both the south-central and southeastern sparge wells, and to allow for future system expansion.

3. Operations and Maintenance

During the first quarter 2019 reporting period, O&M of the remediation systems included the following tasks:

- Performed ongoing weekly maintenance on the GWTS.
- Removed, inspected, and repaired existing TFE/GWE pumps and associated discharge lines.
- Installed pumps and associated equipment necessary for TFE at select wells with measurable free product.
- Installed the 883-scfm air compressor for the biosparge system in the south-central and southeastern wells.

The remediation systems operated continuously during the first quarter 2019, with the following exceptions:

- The SVE, air sparge system, and GWTS were shut down on December 22, 2018, because the motors and regulators of the two air compressors (a 15-horsepower compressor installed in 2007 and a 10-horsepower compressor installed in 2008) at the groundwater treatment pad required replacement. The 2007 and 2008 air compressors supply air to the GWTS well pumps and the pneumatic valves for the RTO. The SVE and the GWTS were restarted on January 11, 2019.
- The installation of the 883-scfm air sparge system was completed in early January 2019. The system was briefly started on January 14, 2019, and shut down on January 15, 2019. After completion of the U.S. Occupational Safety and Health Administration inspection of the 240-gallon tank, the system was started on February 9, 2019.
- The SVE system was shut down on February 1, 2019, because of a broken belt for the air compressor that supplies air for the pneumatic valves on the SVE system. The spare air compressor was used and the SVE system was restarted on February 2, 2019.
- The SVE and air sparge systems were shut down on February 12, 2019, and restarted on February 21, 2019, to obtain static conditions for soil vapor sampling of soil vapor probes SVP-105 through SVP-109 in the south-central area, that was conducted on February 20, 2019.
- The GWTS was shut down on March 19 and remained off through March 31, 2019, for carbon change-out and repairs to carbon vessels.

During the first quarter 2019, the GWTS was operational approximately 74 percent of the time (89 percent of the time excluding the planned shutdown for the carbon change-out). The SVE system was operational approximately 76 percent of the time (87 percent of the time excluding planned shutdowns). The biosparge system was operational 44 percent of the time (100 percent of the time excluding planned shutdowns). Table 2 presents the SVE system operation summary. Photoionization detector (PID) measurements and analytical results for extracted vapor during the first quarter 2019 are summarized in Tables 3 and 4, respectively. The groundwater remediation system operation activities for the first quarter 2019 are summarized in Table 5. The extracted groundwater analytical results for the first quarter 2019 are summarized in Table 6. Table 7 presents the biosparge system operation summary. Table 8 presents the soil vapor probe analytical results for March 2019. Historical (post-2007) gauging results of select TFE and SVE wells are provided in Table 9. Pre-2007 data can be found in previous semiannual groundwater monitoring reports.

Water samples from the GWTS influent were collected on January 29, February 7, and March 8, 2019. The water samples were delivered to Asset Laboratories (Asset) of Las Vegas, Nevada, and BC Laboratories, Inc. (BC) of Bakersfield, California, for analysis. Asset and BC are certified by the California Department of Public Health Environmental Laboratory Accreditation Program.

Asset analyzed the water samples for VOCs using U.S. Environmental Protection Agency (EPA) Method 8260B, total petroleum hydrocarbons (TPH) quantified as gasoline (TPH-g), TPH quantified as diesel

(TPH-d), and TPH quantified as oil (TPH-o) (collectively referred to as TPH-total) using EPA Method 8015(B). BC analyzed the water samples collected on January 29, 2019 for TPH-g, TPH-d, TPH-o, and TPH-total using EPA method 8015(B).

Vapor samples from the SVE influent were collected on January 11, February 7, and March 12, 2019. The vapor samples were delivered to Air Technology Laboratories (Air Tech), located in City of Industry, California, for analysis.

Air Tech analyzed the vapor samples for the following:

- Fixed gases (methane, carbon dioxide, oxygen, and argon) using ASTM International (ASTM) D1946
- VOCs using EPA Method TO-15
- Total VOCs using EPA Method TO-3

The laboratory analytical reports and chain-of-custody documents for these samples are included in Appendix A.

Soil vapor sampling was conducted from soil vapor probes SVM-1, SVM-2, SVM-3, SVM-5 through SVM-8, and SVM-10 through SVM-16 in the south-central area to ensure that shallow subsurface vapors do not pose an unacceptable human health risk to residents in the offsite area south of the site. The soil vapor probes from each monitoring location were purged and sampled using a vacuum/pressure sampling pump calibrated to a flow rate of 200 milliliters per minute in accordance with recommended flow rates in the *Advisory for Active Soil Gas Investigations* (DTSC, 2015). The American Analytics laboratory of Chatsworth, California, conducted this event on March 18 and 19, 2019. Results of these activities are presented in Table 8.

A soil vapor sample was not collected at the deep probe of SVM-2 and shallow probe of SVM-10 due to flow restrictions (excessive vacuum) observed during purging activities with a hand-held sampling pump. Soil vapor samples also were not collected from the shallow or deep probes of SVM-4 due to property access restrictions.

In accordance with the Advisory (DTSC, 2015), field duplicate samples were collected at a minimum frequency of 1 per every 20 primary samples collected. Duplicate soil vapor samples were collected at SVM-7 (13-foot depth) and SVM-12 (22-foot depth) during the March 2019 event. The duplicate samples were collected and analyzed in the same manner as the primary samples.

Ambient air samples were also collected each day of sampling and analyzed by the laboratory for VOCs and TPH-g. The purpose of the ambient air samples is to quantify background concentrations of chemicals of potential concern (COPCs) near select sampling locations.

The American Analytics laboratory collected and analyzed the soil vapor samples for the following:

- Fixed gases (methane, carbon dioxide, and oxygen) using EPA Method 3CM
- VOCs using EPA Method TO-15
- Gasoline-range organics using EPA Method TO-3

The laboratory analytical reports and chain-of-custody documents for these samples are included in Appendix A.

4. Summary of Remediation Progress

Based on weekly monitoring of the influent vapor concentration, vapor extraction flow rate, and hours of operation, the total mass of VOCs removed by SVE was 3,492 pounds during the first quarter 2019, which is lower than the third and fourth quarter 2018 due to lower uptime of the SVE system and the air sparge system. The cumulative mass of VOCs removed since SVE was implemented in September 1995 is 3,561,340 pounds (Table 2). The cumulative mass removed by SVE does not include the mass removed by naturally occurring in situ biodegradation. The highest VOC concentration measured with a PID is from the south-central area SVE well GMW-O-20 (Table 3). Most of the SVE wells had condensate in the conveyance line; therefore, VOC concentrations could not be measured in those SVE wells. Laboratory analytical data (Table 4) show that the influent VOC concentrations (benzene, toluene, ethylbenzene, and total xylenes [BTEX] and MTBE) decreased from the fourth quarter 2018 to the first quarter 2019.

A total of 574,268 gallons of groundwater was extracted during the first quarter 2019 (Table 5). No water was extracted from the WSB area during the first quarter 2019. Approximately 106 million gallons of groundwater has been extracted from the south-central, southeastern, and WSB areas since GWTS operations first began in 1996.

GWE was discontinued in the WSB region during the third quarter 2008 based on the reduced lateral extent and low concentrations of MTBE and 1,2-dichloroethane (1,2-DCA) west of the site. 1,2-DCA, MTBE, and TBA concentrations in the western area during the semiannual groundwater monitoring event conducted in November 2018 did not warrant restarting the WSB system.

Free product did not accumulate in the product holding tank during the first quarter 2019. Since 1995, a total of 14,426 gallons of product has been removed by TFE, vacuum truck, or manual bailing operations. The estimated mass removal (pounds) of hydrocarbons by the GWTS is shown in Table 5. Mass removal estimates between 1996 and 2005 are based on BTEX and MTBE concentrations in the groundwater influent (TPH data were not available) and total volume of extracted groundwater. Mass removal estimates between 2006 and 2011 are based on groundwater influent concentrations of TPH-g and TPH quantified as fuel product, and the total volume of extracted groundwater. Mass removal estimates between 2012 and the first quarter 2019 are based on groundwater influent TPH-total concentrations (TPH-total includes TPH-g, TPH-d, and TPH-o) and the total volume of extracted groundwater.

Since GWE first began in 1996, hydrocarbon mass removed by the GWTS is estimated to be 18,448 pounds. During the first quarter 2019, the mass removal of hydrocarbons was estimated to be approximately 2 pounds (Table 5). Table 6 shows the extracted groundwater analytical results for the samples collected on January 29, February 7, and March 8, 2019. TPH, BTEX, and MTBE concentrations during the first quarter 2019 were less than the concentrations reported in fourth quarter 2018 and considerably less than the concentrations reported in late 2015 and early 2016 when the south-central biosparge system was started. This reduction in dissolved-phase hydrocarbon concentrations can be attributed to biosparge operations in the south-central area. Appendix B includes time series charts of select wells that show this general decrease in dissolved-phase hydrocarbons in the south-central area.

The biosparge system operated for 906 hours in the first quarter 2019 (Table 7). The biosparge system flow (air injection) rate ranged from 150 to 465 scfm during the first quarter 2019. Soil vapor samples were collected from 14 locations around the south-central area biosparge well on March 18 and 19, 2019, with the biosparge on at an average air flow of 437 scfm.

5. Soil Vapor Monitoring Results

5.1 Overview

During the first quarter 2019, soil vapor samples were collected using 1.4-liter Summa canisters. The samples were analyzed by the American Analytics laboratory for VOCs using EPA Method TO-15, TPH-g using EPA Method TO-3, and fixed gases (carbon dioxide, methane, and oxygen) using EPA Method 3CM. Included in the TO-15 list of analytes were BTEX, MTBE, naphthalene, TBA, 1,2-DCA, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, n-butylbenzene, sec-butylbenzene, isopropylbenzene, n-propylbenzene, and 2-propanol (the leak test compound). These constituents were identified as COPCs based on the results of the 2006 soil gas investigation and human health risk assessment (Geomatrix, 2006).

5.2 Laboratory Results

Table 8 presents the analytical results for samples collected during the March 2019 sampling event. Laboratory analytical reports are included in Appendix A. A summary of results is provided as follows:

- During the first quarter 2019 sampling event, COPCs were only detected at the offsite probe SVM-15 (7-foot depth). The concentrations of the detected COPCs were benzene (0.0089 microgram per liter [$\mu\text{g/L}$]), m- and p-xylenes (0.029 $\mu\text{g/L}$), and toluene (0.044 $\mu\text{g/L}$). All were below the June 2018 Department of Toxic Substances Control (DTSC) modified screening levels (DTSC, 2018).
- During the first quarter 2019 sampling event, COPCs were not detected in any of the offsite soil vapor monitoring probes.
- TPH-g and MTBE were nondetect in all the offsite and onsite probes.
- Other non-COPCs that were detected during this sampling event included: acetone, carbon disulfide, chloroform, ethanol, tetrachloroethylene (PCE), and tetrahydrofuran (THF). There are no established screening levels for ethanol. The detected concentrations for acetone and PCE were all below their respective June 2018 DTSC modified screening levels (DTSC, 2018).
- VOCs detected in the shallow soil vapor in the offsite area do not pose an unacceptable human health risk to residents. The SVE system creates a vacuum in the south-central area to mitigate risk from offsite migration of VOCs. The SVE system will continue to remain online during biosparging operations.

6. System Evaluation and Optimization

During the first quarter 2019, SVE well valves in the south-central area were fully open to ensure maximum vapor extraction from the offsite area. The following repairs and modifications were conducted during this reporting period:

- The motors for the 2007 and 2008 air compressors were repaired during the first quarter 2019.
- Installation of the new 883-scfm air sparge compressor was completed during the first quarter 2019 and was fully operational on February 21, 2019.
- Prior to starting up the south-eastern biosparge well that was installed on November 2017, the SVE well network will have to be expanded to mitigate offsite migration of VOCs in that area. Therefore, three new SVE wells and two new residential soil vapor monitoring probes were installed at the south-eastern area on March 6 through March 8, 2019.
- The air injection pump for the DAF/OWS was installed on March 7, 2019.
- The two 2000-pound LGAC vessels downstream of the DAF/OWS were removed from the site on March 19, 2019, to remove the carbons and replace them. The LGAC vessels were returned on April 2, 2019, and the system was restarted on April 4, 2019.

The SVE wells in the southeastern area were fully open to ensure maximum vapor extraction in that area.

7. Planned Second Quarter 2019 Activities

During the second quarter 2019, Kinder Morgan plans to continue to focus remedial efforts on the south-central and southeastern areas. The following maintenance and other activities are planned:

- Continue to operate the SVE system.
- Continue to operate the 883-scfm biosparge compressor and run the south-central horizontal biosparge well using that compressor.
- Continue with the upgrade of the southeastern SVE wells and conveyance system.
- Conduct one quarterly soil vapor monitoring event for all soil vapor probes in the south-central area.
- Measure weekly VOC concentrations as hexane at the influent and effluent of the RTO system.
- Collect monthly vapor samples at the influent and effluent of the RTO system, and analyze the samples using Methods TO-15 (VOCs), TO-3 (total VOCs as hexane), and ASTM D1946 (fixed gases).
- Continue weekly maintenance and monitoring of the south-central and southeastern SVE and TFE/GWE treatment systems, and the biosparge system.
- Measure quarterly individual well vapor concentrations with a PID at the manifold.
- Conduct first semiannual groundwater monitoring event.
- Conduct semiannual National Pollutant Discharge Elimination System sampling event.
- Collect and analyze system influent vapor and groundwater samples.
- Perform as-needed carbon changeouts of the LGAC vessels.
- Perform as-needed monitoring and remediation well rehabilitation to remove biofouling and sediment occluding the well screens.
- Remove, inspect, and repair existing TFE/GWE pumps and associated discharge lines.
- Install pumps and associated equipment necessary for TFE at select wells with measurable free product.
- Maintain the 2007 and 2008 air compressor monthly, as backup operation for both the SVE and the GWTS pumps.

The TFE, GWE, and SVE systems for the south-central and southeastern areas will continue to operate. Operation of the TFE system in the southeastern area will be monitored closely and adjustments will be made to improve fluid recovery. The horizontal biosparge system will continue to operate at ideal air flow to decrease product thickness in the south-central area. System inspections will continue on a weekly basis; system evaluation parameters will be collected as needed. The remediation activities and progress for the second quarter 2019 will be described in the Second Quarter 2019 Remediation Progress Report, to be submitted by July 15, 2019.

8. References

California Regional Water Quality Control Board, Los Angeles Region (Water Board). 2006. Letter to Mr. Kola Olowu, Defense Energy Support Center, Los Angeles, and Mr. Michael Pitta, Kinder Morgan Energy Partners; Conditional Approval of Revised Remedial Action Plan and Second Addendum to Remedial Action Plan for the Defense Fuel Support Point Norwalk, 15306 Norwalk Boulevard, Norwalk (SLIC No. 0286A, DOD No. 16638). October 25.

CH2M HILL (CH2M). 2013. *Conceptual Site Model and Proposed Alternate Interim Remedy for Soil, Groundwater, and LNAPL*. September 3.

CH2M HILL (CH2M). 2015. *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report, SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California*. February 18.

CH2M HILL (CH2M). 2017. *Evaluation Report for the South-Central Area Horizontal Biosparge Pilot Test; SFPP Norwalk Pump Station, Norwalk, California*. August.

Department of Toxic Substances Control (DTSC). 2015. *Advisory for Active Soil Gas Investigations*. July.

Department of Toxic Substances Control (DTSC). 2018. *Human Health Risk Assessment (HHRA) Note Number 3: DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels (RSLs) in the HHRA Process at Hazardous Waste Sites and Permitted Facilities*. June.
<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-June-2018.pdf>.

Geomatrix. 2006. *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California*. December.

Jacobs. 2018. *Southeastern Horizontal Biosparge Well (BS-02) Completion Report; SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California*. July 12.

Tables

Table 1. Remediation Well Construction and Status

SFPP Norwalk Pump Station, Norwalk, California

Remediation Area	Remediation Well ID	Installation Date	Top of Well Casing Elevation	Well Screen Interval	Remediation Well Function	Well Operation Status During First Quarter 2019	
			(feet msl)	(feet bgs)		SVE/BS	TFE/GWE
South-Central	MW-SF-1	6/18/1990	78.93	25 - 40	SVE	ON	--
	MW-SF-2	6/18/1990	78.53	25 - 40	SVE; TFE	ON	OFF
	MW-SF-3	6/18/1990	78.12	25 - 40	SVE; TFE	ON	ON
	MW-SF-4	6/19/1990	79.38	25 - 40	SVE	ON	--
	MW-SF-5	9/19/1990	79.74	23 - 38	SVE	ON	--
	MW-SF-6	9/19/1990	76.80	25 - 40	SVE; TFE	ON	OFF
	MW-SF-9	6/15/1995	74.10	--	SVE	ON	--
	MW-SF-10	9/23/2003	76.53	10 - 30	SVE	ON	--
	MW-SF-11	6/19/2007	78.56	20 - 40	SVE; TFE	ON	OFF
	MW-SF-12	6/18/2007	78.07	20 - 40	SVE; TFE	ON	OFF
	MW-SF-13	6/19/2007	73.40	20 - 40	SVE; TFE	ON	OFF
	MW-SF-14	6/21/2007	78.16	20 - 40	SVE; TFE	ON	OFF
	MW-SF-15	6/21/2007	78.27	20 - 40	SVE; TFE	ON	ON
	MW-SF-16	6/20/2007	78.21	20 - 40	SVE; TFE	ON	OFF
	MW-SF-17	--	--	--	SVE	--	--
	GMW-9	7/8/1991	77.16	20 - 50	SVE; TFE	ON	ON
	GMW-10	7/8/1991	N/A	25 - 50	SVE; TFE	ON	OFF
	GMW-22	8/2/1991	77.24	25 - 60	SVE; TFE	ON	OFF
	GMW-24	8/5/1991	77.48	25 - 60	SVE; TFE	ON	OFF
	GMW-25	1/10/1992	78.14	20 - 50	SVE; TFE	ON	OFF
	GWR-3	1/10/1992	77.60	20 - 50	SVE; TFE	ON	OFF
	VEW-1	09/19/90	--	5 - 25	SVE	ON	--
	VEW-2	09/19/90	--	5 - 25	SVE	ON	--
	MW-O-1	1/22/1991	75.48	25 - 40	SVE; TFE	ON	OFF
	MW-O-2	1/23/1991	71.90	25 - 40	SVE; TFE	ON	OFF
	GMW-O-11	5/20/1992	74.17	20 - 50	SVE; TFE	ON	ON
	GMW-O-12	5/21/1992	73.49	20 - 50	SVE	ON	--
	GMW-O-20	6/15/1995	73.32	--	SVE; TFE	ON	ON
	GMW-O-21	10/1/1997	71.43	26 - 46	TFE	--	OFF
	GMW-O-23	6/25/2007	73.63	20 - 40	SVE; TFE	ON	ON
	MW-18 (MID)	6/10/1991	75.67	50 - 60	SVE	ON	--
	HW-1	09/06/92	--	--	SVE	ON	--
HW-2	09/06/92	--	--	SVE	ON	--	
BS-01	08/27/14	75.06	--	BIOSPARGE	ON	--	
BS-02	11/21/17	--	--	BIOSPARGE	OFF	--	
Southeastern	GMW-O-15	4/19/1994	74.23	20 - 50	SVE; TFE	ON	ON
	GMW-O-18	7/25/1994	74.36	21 - 40	SVE; TFE	ON	OFF
	GMW-36	4/11/1994	76.66	20 - 50	SVE; TFE	ON	ON
	GMW-SF-9	4/1/2003	73.05	37 - 46	TFE	--	ON
	GMW-SF-10	4/2/2003	75.77	37 - 46	TFE	--	--
West Side Barrier	BW-2	5/20/1996	73.57	27 - 47	GWE	--	OFF
	BW-3	5/17/1996	74.16	31 - 50	GWE	--	OFF
	BW-4	5/20/1996	74.61	28 - 47	GWE	--	OFF
	BW-5	5/23/1996	73.59	27 - 46	GWE	--	OFF
	BW-6	5/22/1996	73.48	28 - 47	GWE	--	OFF
	BW-7	5/22/1996	74.65	27 - 46	GWE	--	OFF
	BW-8	5/21/1996	75.08	27 - 46	GWE	--	OFF
	BW-9	5/21/1996	76.19	27 - 46	GWE	--	OFF

Notes:

-- = information not available or not applicable

BS = biosparge

feet bgs = feet below ground surface

feet msl = feet above mean sea level based on the National Geodetic Vertical Datum of 1929

GWE = groundwater extraction

SVE = soil vapor extraction

TFE = total fluids extraction

Table 2. Vapor Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Influent PID Reading (ppmv as hexane)	System Flow (scfm)	Header Vacuum (in. H ₂ O)	Mass Removed (pounds) ^a
1995 Totals	1,240		--	--	--	281,065
1996 Totals	7,208	5,968	--	--	--	516,717
1997 Totals	12,865	5,657	--	--	--	489,526
1998 Totals	17,877	5,012	--	--	--	223,055
1999 Totals	23,600	5,723	--	--	--	390,836
2000 Totals	29,690	6,090	--	--	--	359,092
2001 Totals	33,671	3,981	--	--	--	224,091
2002 Totals	36,358	2,687	--	--	--	79,363
2003 Totals	39,676	3,319	--	--	--	64,671
2004 Totals	44,193	4,517	--	--	--	120,240
2005 Totals	49,750	5,557	--	--	--	212,175
2006 Totals	52,735	2,985	--	--	--	17,263
2007 Totals	58,319	2,058	--	--	--	7,378
2008 Totals	64,233	5,915	--	--	--	5,878
2009 Totals	68,858	4,625	--	--	--	9,387
2010 Totals	72,369	3,511	--	--	--	1,507
2011 Totals	77,489	5,120	--	--	--	14,629
2012 Totals	84,173	6,684	--	--	--	22,260
2013 Totals	90,414	6,241	--	--	--	90,880
2014 Totals	94,083	3,688	--	--	--	67,744
2015 Totals	98,408	4,325	--	--	--	122,706
2016 Totals	104,405	7,694	--	--	--	156,193
2017 Totals	108,262	3,857	--	--	--	42,194
2018 Totals	115,346	7,084	--	--	--	38,999
1/11/2019	115,360	14	84	1,543	50	20
1/15/2019	115,453	93	112	1,585	50	205
1/22/2019	115,626	173	198	1,465	50	634
1/29/2019	115,793	167	130	1,499	50	419
2/7/2019	115,997	204	96	1,451	50	357
2/12/2019	116,119	122	106	1,455	50	239
2/21/2019	116,120	1	98	1,491	50	1.8
2/28/2019	116,293	173	66	1,548	50	219
3/5/2019	116,404	111	104	1,419	50	221
3/12/2019	116,571	167	111	1,416	50	327
3/19/2019	116,738	167	88	1,448	50	258
3/26/2019	116,906	168	210	1,372	50	591
First Quarter 2019	116,906	1,560	--	--	--	3,492
Cumulative Totals	116,906	--	--	--	--	3,561,340

Notes:

^a The total mass removed is based on influent FID or PID readings, hours of operation, and flow rate.

-- = not applicable or not available

FID = flame ionization detector

in. H₂O = inches of water

PID = photoionization detector

ppmv = parts per million by volume

scfm = standard cubic feet per minute

TPH-g = total petroleum hydrocarbons quantified as gasoline (C4-C12)

Table 3. Remediation Well Vapor Concentrations
SFPP Norwalk Pump Station, Norwalk, California

Remediation Area	Remediation Well ID	Remediation Well Function	03/05/2019 (ppmv as Hexane) ^a
South-Central	MW-SF-1	SVE	100
	MW-SF-2	SVE; TFE	NM
	MW-SF-3	SVE; TFE	512
	MW-SF-4	SVE	12
	MW-SF-5	SVE	NM
	MW-SF-6	SVE; TFE	32
	MW-SF-9	SVE	12
	MW-SF-10	SVE	16
	MW-SF-11	SVE; TFE	134
	MW-SF-12	SVE; TFE	NM
	MW-SF-13	SVE; TFE	NM
	MW-SF-14	SVE; TFE	NM
	MW-SF-15	SVE; TFE	12
	MW-SF-16	SVE; TFE	16
	MW-SF-17	SVE; TFE	--
	GMW-9	SVE; TFE	12
	GMW-10	SVE	NM
	GMW-22	SVE; TFE	12
	GMW-24	SVE; TFE	NM
	GMW-25	SVE; GWE	NM
	GWR-3	SVE; GWE	NM
	VEW-1	SVE	NM
	VEW-2	SVE	134
	MW-O-1	SVE; TFE	NM
	MW-O-2	SVE; TFE	36
	GMW-O-11	SVE; TFE	0
	GMW-O-12	SVE	222
	GMW-O-20	SVE; TFE	3,216
	GMW-O-23	SVE; TFE	NM
	MW-18 (MID)	SVE	NM
HW-1	SVE	NM	
HW-2	SVE	4	
Southeastern	GMW-36	SVE; TFE	NM
	GMW-O-15	SVE; TFE	NM
	GMW-O-18	SVE; TFE	NM

Notes:

^a Vapor readings measured in the field with an Eagle 2 photoionization detector (PID) calibrated using 50 ppmv of hexane.

-- = not applicable or not available

GWE = groundwater extraction

NM = Not measured due to condensation in the pipeline.

ppmv = parts per million by volume

SVE = soil vapor extraction

TFE = total fluids extraction

Table 4. Extracted Vapor Analytical Results^a
SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	ASTM D-1946			EPA TO-3		SCAQMD 25.1	EPA TO-15 (VOCs) ^b				
	Methane (%v)	Carbon Dioxide (%v)	Oxygen and Argon (%v)	TPH-g (ppmv)	TVOC (ppmv)	TGNMOC (ppmv)	Benzene (ppbv)	Ethylbenzene (ppbv)	Toluene (ppbv)	Xylenes (ppbv)	MTBE (ppbv)
8/3/2007	<0.5	<0.5	22.0	63	---	---	650	220	1,100	1,420	55
9/5/2007	<0.5	<0.5	22.0	9	---	---	32	48	140	320	18
10/2/2007	<0.5	<0.5	21.9	27	---	---	250	75	430	610	20
11/2/2007	<0.5	<0.5	22.1	5	---	---	40	10	74	95	7
2/1/2008	<0.5	<0.5	21.8	100	---	---	830	260	2,200	1,850	<50
3/4/2008	<0.5	<0.5	21.7	50	---	---	380	98	570	1,250	36
4/8/2008	<0.5	<0.5	22.2	69	---	---	290	110	480	1,040	41
5/23/2008	<0.5	<0.5	21.8	14	---	---	180	24	190	280	23
6/3/2008	<0.5	<0.5	21.7	30	---	---	380	42	400	330	70
7/2/2008	<0.5	<0.5	21.4	49	---	---	32	6	34	45	10
8/19/2008	<0.5	1.7	20.8	50	---	---	390	63	230	450	40
9/5/2008	<0.5	2.0	21.2	22	---	---	130	39	130	340	42
10/7/2008	<0.5	1.43	21.4	10	---	---	41	15	54	181	6.8
11/4/2008	<0.5	2.08	21.1	7.5	---	---	31	47	190	242	<2.0
3/6/2009	<0.5	<0.5	22.0	83	---	---	1,900	180	990	770	240
4/17/2009	<0.5	<0.5	22.2	3.1	---	---	140	8	37	68	26
5/29/2009	<0.5	1.08	21.0	130	---	---	1,700	640	3,700	3,100	100
8/18/2009	<0.5	0.78	21.7	28	---	---	380	37	290	310	33
8/25/2009	<0.5	0.87	20.6	37	---	---	500	44	320	293	20
9/18/2009	<0.5	0.37	21.6	11	---	---	75	11	39	107	3
10/29/2009	<0.5	1.80	18.2	77	---	---	350	45	250	440	4
11/25/2009	<0.5	<0.5	21.1	14	---	---	110	12	110	164	11
12/15/2009	<0.5	<0.5	21.7	7	---	---	28	3	20	47	<3.2
2/26/2010	<0.5	0.4	21.2	20	---	---	300	18	220	260	21
3/26/2010	<0.5	1.0	20.2	18	---	---	380	20	110	90	5
5/4/2010	<0.5	0.4	21.4	13	---	---	100	42	170	222	3
6/29/2010	<0.5	0.4	21.3	9	---	---	74	13	66	82	<5.0
8/3/2010	<0.5	0.6	20.4	29	---	---	210	13	64	85	9
8/31/2010	0.0039 ^c	<0.5	21.4	11	---	---	72	12	66	87	8
9/14/2010	<0.5	<0.5	21.6	6	---	---	63	15	57	84	<3.2
11/2/2010	--	--	--	11	---	---	140	<10	31	28	<10
11/17/2010	0.00075	0.4	22.0	--	---	---	--	--	--	--	--
12/28/2010	0.0052	0.27	22.0	16	---	---	160	37	230	324	4.5
1/14/2011	0.016	0.20	22.0	68	---	---	340	34	89	183	<10
2/8/2011	0.026	0.24	21.0	210	---	---	3,000	1,700	11,000	7,400	110
3/29/2011	0.013	0.13	20.0	5	---	---	170	15	18	41.5	<2.5
4/26/2011	0.0011	0.079	20.0	1.9	---	---	16	2.4	8.8	7.7	<1.2
5/17/2011	0.021	0.65	22.0	90	---	---	2,600	140	2,200	1,100	220
6/17/2011	0.001	0.20	22.0	3	---	---	59	8.1	31	56	<0.25
7/19/2011	0.0056	0.49	22.0	80	---	---	1,800	130	2,200	1,000	<31
8/16/2011	0.0026	0.31	22.0	140	---	---	3,000	600	4,000	2,330	490
9/20/2011	--	--	--	100	---	---	2,100	740.0	2,700	2,040	660
11/22/2011	0.070	0.70	20.0	11	---	---	150	12.0	67	35	<5.0
12/20/2011	0.020	0.34	22.0	0	---	---	110	<25	260	216	<25
1/10/2012	0.010	0.66	20.0	11	---	---	150	14	86	160	<12
2/28/2012	0.0067	0.90	20.0	27	---	---	140	42	140	224	<25
3/13/2012	0.0044	0.71	20.0	27	---	---	440	38	450	241	<25
4/27/2012	0.0290	0.22	21.0	39	---	---	540	42	630	299	<25
5/22/2012	0.0100	0.31	20.0	65	---	---	590	350	770	2,070	<12
6/19/2012	0.0028	0.41	21.0	17	---	---	130	26	150	162	<12
7/27/2012	0.0059	0.40	21.0	13	---	---	46	<5	33	78	<5
8/30/2012	0.0049	0.56	21.0	69	---	---	150	<25	66	194	<25
9/25/2012	0.0073	0.80	21.0	57	---	---	190	19	120	283	<2.5
10/30/2012	0.0099	0.96	21.0	50	---	---	380	<50	230	130	<50
12/11/2012	0.0074	0.84	21.0	53	---	---	130	17	110	173	<5.0

Table 4. Extracted Vapor Analytical Results^a
SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	ASTM D-1946			EPA TO-3		SCAQMD 25.1	EPA TO-15 (VOCs) ^b				
	Methane (%v)	Carbon Dioxide (%v)	Oxygen and Argon (%v)	TPH-g (ppmv)	TVOC (ppmv)	TGNMOC (ppmv)	Benzene (ppbv)	Ethylbenzene (ppbv)	Toluene (ppbv)	Xylenes (ppbv)	MTBE (ppbv)
1/29/2013	0.0028	0.29	22.0	1.4	---	---	8.7	<1.2	9.4	9.6	<1.2
2/12/2013	0.0057	0.88	21.0	60	---	---	500	<50	440	400	<50
3/19/2013	0.0058	0.80	21.0	77	---	---	560	66	490	520	<40
4/16/2013	0.0079	0.74	21.0	53	---	---	430	29	240	193	<25
5/14/2013	0.017	1.6	19	280	---	---	1,700	190	1,800	840	<12
6/28/2013	0.0068	<0.010	21	22	---	---	190	<25	130	131	<25
SVE system down for repair from July 16, 2013, to September 17, 2013.											
9/20/2013	0.014	1	21	590	---	---	4,200	520	3,600	2,830	<40
10/15/2013	0.011	0.68	21	410	---	---	3,500	360	2,800	1,970	<20
11/12/2013	0.012	0.66	21	430	---	---	2,900	440	2,600	1,930	<15
12/10/2013	0.013	0.92	21	910	---	---	8,400	920	7,200	5,500	<50
1/17/2014	0.0077	0.57	21	350	---	---	6,600	6,800	8,200	23,300	3,000
2/11/2014	0.011	0.60	21	640	---	---	6,600	570	6,000	3,800	<100
3/21/2014	0.0050	0.40	21	390	---	---	4,500	290	4,000	1,930	<50
4/21/2014	0.011	0.65	21	700	---	---	6,900	370	6,900	3,400	<40
SVE system down for repair from April 29, 2014, to May 13, 2014.											
5/27/2014	0.011	0.56	21	530	---	---	6,600	570	8,900	3,820	<50
6/13/2014	0.0076	0.49	21	780	---	---	10,000	1,200	15,000	7,100	<80
SVE system down for repair and permit modification from July 1, 2014, to March 27, 2015.											
3/31/2015	0.090	1.3	20	1,400	---	1,300	12,000	1,000	11,000	7,400	<200
4/7/2015	0.014	0.56	21	---	---	710	8,200	8,200	610	3,260	<160
5/5/2015	---	---	---	---	---	760	6,100	1,100	9,600	7,200	<140
6/30/2015	0.0065	0.37	21	---	---	270	3,100	380	3,800	2,820	<160
7/14/2015	0.0094	0.62	21	---	---	650	7,000	950	7,900	6,100	<200
8/4/2015	0.0053	0.49	21	---	---	560	6,200	710	7,700	4,800	<0.097
8/17/2015 ^c	---	---	---	---	---	470	4,800	500	5,400	3,600	<0.099
8/17/2015 ^c	---	---	---	---	---	470	5,000	520	5,800	3,870	<0.100
8/17/2015 ^c	---	---	---	---	---	480	5,100	580	6,100	4,000	<0.097
8/17/2015 ^c	---	---	---	---	---	480	5,200	580	6,300	4,100	<0.099
9/1/2015 ^c	---	---	---	---	---	670	7,000	850	8,700	6,900	<0.097
9/1/2015 ^c	---	---	---	---	---	930	12,000	1,500	14,000	11,400	<0.140
9/1/2015 ^c	---	---	---	---	---	890	12,000	2,300	20,000	14,300	<0.140
10/6/2015	0.0067	0.43	21	---	---	960	14,000	3,100	25,000	15,900	<200
11/10/2015	0.0028	0.30	21	---	860	---	9,100	1,800	15,000	9,400	<97
12/10/2016	0.004	0.41	21	---	580	---	6,400	1,200	10,000	7,600	<120
1/4/2016 ^c	0.0059	0.27	22	---	750	---	9,600	2,400	20,000	13,500	<220
2/4/2016 ^c	0.0038	0.58	21	---	2,000	---	16,000	2,600	29,000	19,300	<610
3/3/2016 ^c	0.004	0.64	21	---	1,200	---	11,000	3,000	27,000	27,500	<130
4/5/2016	0.033	0.49	21	---	400	---	3,900	5,500	7,300	4,600	<63
5/13/2016	0.0034	0.50	21	---	290	---	2,200	300	4,300	810	<23
6/7/2016	0.0065	0.32	21	---	150	---	1,000	25 J	1,100	117 J	<36
7/7/2016	0.014	0.48	21	---	170	---	1,000	220	2,500	1,630	<51
8/2/2016	0.0047	0.54	21	---	260	---	1,900	720	5,000	7,400	<22
9/7/2016	0.0066	0.53	21	---	250	---	1,600	680	3,800	5,000	<21
10/13/2016	0.0096	0.67	21	---	250	---	2,700	680	3,800	5,200	<36
11/1/2016	0.0025	0.62	21	---	260	---	1,600	540	3,800	4,600	<40
SVE system was offline for installation of new RTO from November 1, 2016, to June 6, 2017.											
6/7/2017	0.029	1.1	21	--	190	--	960	220	1,200	1,170	<42
7/13/2017	0.055	1.3	20	---	550	---	6,800	1,100	6,600	9,900	<44
8/3/2017	0.013	0.85	21	---	340	--	4,200	750	5,600	7,500	<110
9/12/2017	0.0079	0.89	21	--	290	---	3,000	530	4,600	5,500	510
10/13/2017	0.0091	0.85	21	---	280	--	3,400	540	4,100	5,500	830
11/10/2017	0.0064	0.87	21	---	230	---	3,200	320	2,400	3,050	<84
12/8/2017	0.0040	0.77	21	---	250	---	3,600	350	3,000	3,700	<81

Table 4. Extracted Vapor Analytical Results^a
SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	ASTM D-1946			EPA TO-3		SCAQMD 25.1	EPA TO-15 (VOCs) ^b				
	Methane (%v)	Carbon Dioxide (%v)	Oxygen and Argon (%v)	TPH-g (ppmv)	TVOC (ppmv)	TGNMOC (ppmv)	Benzene (ppbv)	Ethylbenzene (ppbv)	Toluene (ppbv)	Xylenes (ppbv)	MTBE (ppbv)
1/4/2018	0.0047	0.72	21	--	230	--	3,900	440	3,100	4,000	970
2/6/2018	0.0042	0.42	22	--	27	--	140	23	150	310	<5.1
3/13/2018	0.0038	0.74	21	--	79	--	680	110	460	1,150	<11
4/15/2018	0.0034	0.49	22	--	33	--	460	53	280	400	<2.0
5/11/2018	0.0046	0.72	21	--	64	--	660	74	410	850	<11
6/7/2018	0.0031	0.65	21	--	58	--	570	83	320	504	<9.7
7/3/2018	0.0063	0.78	21	--	210	--	4,700	570	2,700	3,940	1,100
8/2/2018	0.0048	0.69	22	--	160	--	3,000	320	2,300	2,380	<40
9/6/2018	0.0044	0.81	21	--	190	--	3,900	550	4,000	5,000	<42
10/5/2018	0.0034	0.85	22	--	180	--	1,200	180	1,400	1,850	<42
11/20/2018	0.0088	0.80	21	--	150	--	1,200	270	1,100	1,290	<11
12/7/2018	0.0038	0.75	22	--	190	--	1,700	360	2,100	2,140	<20
1/11/2019	0.0061	1.5	19	--	46	--	190	25	160	350	<11
2/7/2019	0.0023	0.82	21	--	74	--	240	67	280	990	<10
3/12/2019	<0.0034	0.58	22	--	31	--	110	31	130	570	<4.9

Notes:

^a Influent vapor samples were collected from the manifold conveying soil vapors extracted from the south-central and southeastern areas

^b Other detected VOCs are included in the laboratory analytical reports in Appendix A.

^c Influent vapor samples were collected after dilution before entrance into the SVE combustion chamber.

%v = percent by volume

<0.5 = not detected at or above the laboratory reporting limit shown

ASTM = ASTM International

EPA = U.S. Environmental Protection Agency

J = Resulting analyte concentration is between the reporting limit and the method detection limit

MTBE = methyl tertiary butyl ether

ppbv = parts per billion by volume

ppmv = parts per million by volume

SCAQMD = South Coast Air Quality Management District

TGNMOC = total gaseous nonmethane organic carbon

TPH-g = total petroleum hydrocarbons quantified as gasoline (C4-C12)

TVOC = total volatile organic compound

VOC = volatile organic compound

Table 5. Groundwater Remediation System Operation Summary

SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from the South-Central and Southeastern Areas (gallons)	Groundwater Removed from the West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-total (TPH-g, TPH-d, TPH-o) Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from the South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
1996 Totals	1,802,103	0	1,802,103	--	273	4,995
1997 Totals	7,031,533	0	7,031,533	--		2,204
1998 Totals	4,064,700	0	4,064,700	--		856
1999 Totals	3,891,600	2,338,129	6,229,729	--	385	450
2000 Totals	2,290,580	2,454,971	4,745,551	--	295	230
2001 Totals	1,401,473	1,131,700	2,533,173	--	229	0
2002 Totals	1,452,229	2,931,167	4,383,396	--	110	0
2003 Totals	1,607,095	2,281,956	3,889,051	--	65	10
2004 Totals	1,695,361	3,854,470	5,549,831	--	229	0
2005 Totals	1,537,925	4,244,674	5,782,599	--	273	0
2006 Totals	1,699,567	5,089,615	6,789,182	--	684	83
2007 Totals	3,368,481	2,167,724	5,536,205	--		89
2008 Totals ^b	4,283,026	405,954	4,688,980	--	520	0
2009 Totals	2,309,627	0	2,309,627	--	105	0
2010 Totals ^c	3,342,227	2,292	3,344,519	--	363	0
2011 Totals	5,530,317	0	5,530,317	--	585	0
2012 Totals	7,368,318	0	7,368,318	--	699	0
2013 Totals	6,439,733	0	6,439,733	--	568	2
2014 Totals	3,410,427	0	3,410,427	--	2,236	2,335
2015 Totals	4,817,906	0	4,817,906	--	5,959	2,928
2016 Totals	2,428,279	0	2,428,279	--	4,506	242
2017 Totals	3,858,644	0	3,858,644	--	325	2
2018 Totals	2,854,384	0	2,854,384	0	37	0
1/1/2019	0	0	0	460	0.000	0
1/2/2019	0	0	0	460	0.000	0
1/3/2019	0	0	0	460	0.000	0
1/4/2019	762	0	762	460	0.003	0
1/5/2019	48	0	48	460	0.000	0
1/6/2019	0	0	0	460	0.000	0
1/7/2019	0	0	0	460	0.000	0
1/8/2019	422	0	422	460	0.002	0
1/9/2019	4	0	4	460	0.000	0
1/10/2019	1,658	0	1,658	460	0.006	0
1/11/2019	5,956	0	5,956	460	0.023	0

Table 5. Groundwater Remediation System Operation Summary

SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from the South-Central and Southeastern Areas (gallons)	Groundwater Removed from the West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-total (TPH-g, TPH-d, TPH-o) Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from the South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
1/12/2019	9,308	0	9,308	460	0.036	0
1/13/2019	8,930	0	8,930	460	0.034	0
1/14/2019	6,554	0	6,554	460	0.025	0
1/15/2019	6,040	0	6,040	460	0.023	0
1/16/2019	9,660	0	9,660	460	0.037	0
1/17/2019	9,224	0	9,224	460	0.035	0
1/18/2019	8,924	0	8,924	460	0.034	0
1/19/2019	8,792	0	8,792	460	0.034	0
1/20/2019	9,114	0	9,114	460	0.035	0
1/21/2019	8,788	0	8,788	460	0.034	0
1/22/2019	8,894	0	8,894	460	0.034	0
1/23/2019	9,924	0	9,924	460	0.038	0
1/24/2019	9,006	0	9,006	460	0.035	0
1/25/2019	9,134	0	9,134	460	0.035	0
1/26/2019	8,084	0	8,084	460	0.031	0
1/27/2019	7,808	0	7,808	460	0.030	0
1/28/2019	11,720	0	11,720	460	0.045	0
1/29/2019	3,960	0	3,960	410	0.014	0
1/30/2019	7,932	0	7,932	410	0.027	0
1/31/2019	8,912	0	8,912	410	0.030	0
2/1/2019	8,714	0	8,714	410	0.030	0
2/2/2019	9,806	0	9,806	410	0.033	0
2/3/2019	9,048	0	9,048	410	0.031	0
2/4/2019	8,392	0	8,392	410	0.029	0
2/5/2019	8,246	0	8,246	410	0.028	0
2/6/2019	7,650	0	7,650	410	0.026	0
2/7/2019	6,984	0	6,984	340	0.020	0
2/8/2019	6,008	0	6,008	340	0.017	0
2/9/2019	6,138	0	6,138	340	0.017	0
2/10/2019	6,162	0	6,162	340	0.017	0
2/11/2019	6,414	0	6,414	340	0.018	0
2/12/2019	6,362	0	6,362	340	0.018	0
2/13/2019	4,756	0	4,756	340	0.013	0
2/14/2019	8,044	0	8,044	340	0.023	0

Table 5. Groundwater Remediation System Operation Summary

SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from the South-Central and Southeastern Areas (gallons)	Groundwater Removed from the West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-total (TPH-g, TPH-d, TPH-o) Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from the South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
2/15/2019	4,956	0	4,956	340	0.014	0
2/16/2019	5,084	0	5,084	340	0.014	0
2/17/2019	4,964	0	4,964	340	0.014	0
2/18/2019	5,200	0	5,200	340	0.015	0
2/19/2019	6,930	0	6,930	340	0.020	0
2/20/2019	10,478	0	10,478	340	0.030	0
2/21/2019	11,862	0	11,862	340	0.034	0
2/22/2019	12,282	0	12,282	340	0.035	0
2/23/2019	11,806	0	11,806	340	0.033	0
2/24/2019	11,616	0	11,616	340	0.033	0
2/25/2019	11,594	0	11,594	340	0.033	0
2/26/2019	3,532	0	3,532	340	0.010	0
2/27/2019	3,324	0	3,324	340	0.009	0
2/28/2019	2,822	0	2,822	340	0.008	0
3/1/2019	11,514	0	11,514	340	0.033	0
3/2/2019	12,656	0	12,656	340	0.036	0
3/3/2019	11,272	0	11,272	340	0.032	0
3/4/2019	10,892	0	10,892	340	0.031	0
3/5/2019	10,360	0	10,360	340	0.029	0
3/6/2019	11,784	0	11,784	340	0.033	0
3/7/2019	7,390	0	7,390	340	0.021	0
3/8/2019	6,346	0	6,346	420	0.022	0
3/9/2019	10,706	0	10,706	420	0.037	0
3/10/2019	8,138	0	8,138	420	0.028	0
3/11/2019	10,532	0	10,532	420	0.037	0
3/12/2019	6,852	0	6,852	420	0.024	0
3/13/2019	10,718	0	10,718	420	0.038	0
3/14/2019	10,230	0	10,230	420	0.036	0
3/15/2019	10,202	0	10,202	420	0.036	0
3/16/2019	10,152	0	10,152	420	0.036	0
3/17/2019	10,046	0	10,046	420	0.035	0
3/18/2019	9,712	0	9,712	420	0.034	0
3/19/2019	5,790	0	5,790	420	0.020	0
3/20/2019	0	0	0	420	0.000	0

Table 5. Groundwater Remediation System Operation Summary

SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from the South-Central and Southeastern Areas (gallons)	Groundwater Removed from the West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-total (TPH-g, TPH-d, TPH-o) Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from the South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
3/21/2019	0	0	0	420	0.000	0
3/22/2019	0	0	0	420	0.000	0
3/23/2019	0	0	0	420	0.000	0
3/24/2019	0	0	0	420	0.000	0
3/25/2019	0	0	0	420	0.000	0
3/26/2019	244	0	244	420	0.001	0
3/27/2019	0	0	0	420	0.000	0
3/28/2019	0	0	0	420	0.000	0
3/29/2019	0	0	0	420	0.000	0
3/30/2019	0	0	0	420	0.000	0
3/31/2019	0	0	0	420	0.000	0
First Quarter 2019	574,268	0	574,268	--	1.9	0
Cumulative Total	79,059,803	26,902,652	105,962,455	--	18,450	14,426

Notes:

^a Estimated hydrocarbon mass removed (pounds) between 1996 and 2005 is based on concentrations of dissolved BTEX and MTBE in the groundwater influent and volume of groundwater extracted. Estimated hydrocarbon mass removed (pounds) between 2006 and 2011 is based on concentrations of TPH-g and TPH-fp in the groundwater influent and volume of groundwater extracted. Estimated hydrocarbon mass removed (pounds) between 2012 and 2015 is based on concentrations of dissolved TPH-total in the groundwater influent and volume of extracted groundwater.

^b Groundwater removal in the West Side Barrier area was discontinued in August 2008.

^c Groundwater extraction from West Side Barrier area wells BW-3 and BW-6 was resumed on May 14, 2010, to evaluate the efficacy of blending water with lower selenium concentrations from these wells with groundwater extracted from the south-central and southeastern areas. Groundwater removal from the West Side Barrier area was discontinued again on June 22, 2010.

-- = not applicable

µg/L = micrograms per liter

BTEX = benzene, toluene, ethylbenzene, and xylenes

MTBE = methyl tertiary butyl ether

TPH-d = total petroleum hydrocarbons quantified as diesel (C13-C22)

TPH-fp = total petroleum hydrocarbons quantified as fuel product (C7-C28)

TPH-g = total petroleum hydrocarbons quantified as gasoline (C4-C12)

TPH-o = total petroleum hydrocarbons quantified as oil (C23-C36)

TPH-total = total petroleum hydrocarbons quantified as gasoline, diesel, and oil (C4-C36)

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
3/6/1996	--	--	--	--	--	2,600	790	7,200	9,100	---	--	--	--	--
7/23/1998	--	--	--	--	--	750	<10	360	300	---	--	--	--	--
8/27/1998	--	--	--	--	--	1,000	71	530	800	---	--	--	--	--
10/1/1998	--	--	--	--	--	1,200	<10	1,400	1,680	---	--	--	--	--
11/19/1998	--	--	--	--	--	1,600	140	2,600	2,900	---	--	--	--	--
12/17/1998	--	--	--	--	--	4,500	380	4,500	3,900	---	--	--	--	--
1/28/1999	--	--	--	--	--	520	79	660	840	---	--	--	--	--
3/25/1999	--	--	--	--	--	540	160	1,800	4,100	---	--	--	--	--
4/2/1999	--	--	--	--	--	620	76	520	1,200	---	--	--	--	--
4/15/1999	--	--	--	--	--	1,400	99	800	1,480	---	--	--	--	--
5/6/1999	--	--	--	--	--	1,340	180	1,240	1,730	---	--	--	--	--
6/3/1999	--	--	--	--	--	3,410	343	2,240	2,770	---	--	--	--	--
8/5/1999	--	--	--	--	--	3,200	780	5,400	5,200	---	--	--	--	--
9/23/1999	--	--	--	--	--	2,700	130	1,200	720	---	--	--	--	--
9/30/1999	--	--	--	--	--	1,300	77	480	560	---	--	--	--	--
10/13/1999	--	--	--	--	--	1,400	100	660	720	---	--	--	--	--
11/4/1999	--	--	--	--	--	3,000	500	5,600	4,500	---	--	--	--	--
12/9/1999	--	--	--	--	--	4,500	280	1,400	1,480	---	--	--	--	--
1/13/2000	--	--	--	--	--	9,000	7,600	14,000	44,000	---	--	--	--	--
2/11/2000	--	--	--	--	--	2,300	<100	1,200	1,240	3,100	--	--	--	--
3/10/2000	--	--	--	--	--	380	20	110	430	740	--	--	--	--
4/13/2000	--	--	--	--	--	1,300	550	450	920	970	--	--	--	--
6/2/2000	--	--	--	--	--	840	56	240	980	920	--	--	--	--
6/15/2000	--	--	--	--	--	1,600	82	900	990	2,700	--	--	--	--
8/3/2000	--	--	--	--	--	1,900	410	3,500	4,400	2,700	--	--	--	--
8/28/2000	--	--	--	--	--	620	33	200	380	1,800	--	--	--	--
9/20/2000	--	--	--	--	--	460	<20	73	255	1,300	--	--	--	--
10/25/2000	--	--	--	--	--	20	<20	<20	216	6,700	--	--	--	--
11/15/2000	--	--	--	--	--	560	24	210	490	3,700	--	--	--	--
3/22/2001	--	--	--	--	--	3,800	360	3,900	3,160	5,500	--	--	--	--
4/30/2001	--	--	--	--	--	4,100	710	5,800	5,600	8,300	--	--	--	--
5/23/2001	--	--	--	--	--	3,400	160	1,100	1,070	3,900	--	--	--	--
6/22/2001	--	--	--	--	--	1,700	85	680	680	2,200	--	--	--	--
7/16/2001	--	--	--	--	--	2,300	130	1,100	1,350	2,100	--	--	--	--
9/5/2001	--	--	--	--	--	1,500	170	1,200	1,890	1,100	--	--	--	--

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
1/23/2002	--	--	--	--	--	<0.5	<1	<1	<2	2	--	--	--	--
2/28/2002	--	--	--	--	--	<0.5	<1	<1	<2	96	--	--	--	--
3/25/2002	--	--	--	--	--	<0.5	<1	<1	<2	87	--	--	--	--
5/1/2002	--	--	--	--	--	1,900	31	190	480	1,100	--	--	--	--
5/17/2002	--	--	--	--	--	1,400	50	180	970	1,000	--	--	--	--
6/4/2002	--	--	--	--	--	2,700	57	280	530	1,300	--	--	--	--
7/18/2002	--	--	--	--	--	3,800	66	530	1,160	330	--	--	--	--
8/8/2002	--	--	--	--	--	4,800	49	610	1,290	460	--	--	--	--
9/3/2002	--	--	--	--	--	260	<5	5	71	600	--	--	--	--
10/18/2002	--	--	--	--	--	1,200	70	490	820	570	--	--	--	--
11/26/2002	--	--	--	--	--	1,300	68	130	590	860	--	--	--	--
12/27/2002	--	--	--	--	--	1	<1	<1	<2	58	--	--	--	--
1/30/2003	--	--	--	--	--	<0.5	<1	<1	<2	37	--	--	--	--
2/26/2003	--	--	--	--	--	4	<1	<1	4	140	--	--	--	--
3/17/2003	--	--	--	--	--	2,800	23	170	480	570	--	--	--	--
4/30/2003	--	--	--	--	--	3,700	350	2,200	4,600	490	--	--	--	--
6/13/2003	--	--	--	--	--	1,200	17	120	510	740	--	--	--	--
6/19/2003	--	--	--	--	--	680	<10	35	239	680	--	--	--	--
7/3/2003	--	--	--	--	--	2,600	160	610	2,290	450	--	--	--	--
7/25/2003	--	--	--	--	--	300	6	3	39	230	--	--	--	--
8/20/2003	--	--	--	--	--	830	19	130	350	290	--	--	--	--
9/11/2003	--	--	--	--	--	270	<10	<10	46	420	--	--	--	--
10/16/2003	--	--	--	--	--	380	<10	<10	121	490	--	--	--	--
11/17/2003	--	--	--	--	--	93	6	22	106	200	--	--	--	--
12/19/2003	--	--	--	--	--	300	27	110	1,010	62	--	--	--	--
1/30/2004	--	--	--	--	--	700	140	740	1,740	22	--	--	--	--
2/17/2004	--	--	--	--	--	300	47	440	1,150	19	--	--	--	--
3/8/2004	--	--	--	--	--	52	<5.0	10	149	23	--	--	--	--
3/21/2004	--	--	--	--	--	420	11	29	318	120	--	--	--	--
6/28/2004	--	--	--	--	--	740	26	46	337	81	--	--	--	--
7/30/2004	--	--	--	--	--	660	18	68	280	87	--	--	--	--
8/27/2004	--	--	--	--	--	1,500	47	140	530	77	--	--	--	--
9/28/2004	--	--	--	--	--	400	10	32	252	64	--	--	--	--
10/15/2004	--	--	--	--	--	950	31	130	316	64	--	--	--	--
11/12/2004	--	--	--	--	--	2,100	1,500	390	15,800	3,000	--	--	--	--
12/10/2004	--	--	--	--	--	700	320	1,100	3,900	110	--	--	--	--

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
1/28/2005	--	--	--	--	--	460	140	520	2,260	610	--	--	--	--
2/25/2005	--	--	--	--	--	5,700	200	650	1,560	1,300	--	--	--	--
3/22/2005	--	--	--	--	--	<5	<10	<10	26	1,000	--	--	--	--
4/21/2005	--	--	--	--	--	680	8	21	108	420	--	--	--	--
5/20/2005	--	--	--	--	--	6	<5	9	50	<5	--	--	--	--
6/28/2005	--	--	--	--	--	450	80	690	1,030	1,600	--	--	--	--
7/27/2005	--	--	--	--	--	2,000	170	1,700	5,000	1,200	--	--	--	--
8/31/2005	--	--	--	--	--	660	34	320	670	220	--	--	--	--
9/28/2005	--	--	--	--	--	1,800	310	2,800	4,700	360	--	--	--	--
10/26/2005	--	--	--	--	--	940	330	1,800	3,600	530	--	--	--	--
11/30/2005	--	--	--	--	--	900	170	900	2,790	760	--	--	--	--
12/20/2005	--	--	--	--	--	2,500	350	2,600	4,100	2,300	--	--	--	--
7/11/2007	--	--	--	--	--	4,800	130	890	1,040	690	--	--	--	--
8/7/2007	14,000	--	--	--	11,000	5,400	140	1,100	770	540	--	--	--	--
9/25/2007	12,000	--	--	--	30,000	3,400	310	1,600	2,390	540	--	--	--	--
10/16/2007	8,900	--	--	--	8,400	3,400	94	520	660	390	--	--	--	--
11/2/2007	44,000	--	--	--	6,500	3,200	130	860	1,160	570	--	--	--	--
11/30/2007	6,000	--	--	--	5,200	1,800	48	170	490	450	--	--	--	--
12/21/2007	7,200	--	--	--	4,200	2,100	41	170	430	750	--	--	--	--
1/4/2008	4,300	--	--	--	7,200	3,300	49	300	540	620	--	--	--	--
1/18/2008	11,000	--	--	--	2,200	3,600	140	650	850	620	--	--	--	--
2/1/2008	8,700	--	--	--	5,700	3,600	100	440	930	560	--	--	--	--
3/4/2008	7,200	--	--	--	4,900	3,900	120	510	770	620	--	--	--	--
4/8/2008	8,100	--	--	--	10,000	2,800	96	280	580	640	--	--	--	--
5/6/2008	5,300	--	--	--	2,800	2,900	76	190	328	430	--	--	--	--
6/3/2008	8,400	--	--	--	6,800	3,700	110	450	480	320	--	--	--	--
7/2/2008	9,200	--	--	--	4,300 ^c	4,500	75	620	650	400	--	--	--	--
8/19/2008	4,000	--	--	--	6,600	2,600	57	76	215	450	--	--	--	--
9/5/2008	160	--	--	--	<500	<12	<25	<25	<25	<25	--	--	--	--
10/7/2008	<100	--	--	--	<500	0.36 J	<1.0	<1.0	1.59	1.7	--	--	--	--
11/4/2008	12,000	--	--	--	660,000	2,500	140	220	760	160	--	--	--	--
12/4/2008	1,300	--	--	--	1,500	600	8.2	28	73	130	--	--	--	--

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
1/6/2009	1,500	--	--	--	980	560	23	41	110	320	--	--	--	--
3/6/2009	2,500	--	--	--	1,500	1,100	33	51	114	65	--	--	--	--
4/7/2009	3,100	--	--	--	6,900	1,100	36	230	207	210	--	--	--	--
5/13/2009	690	--	--	--	1,500	120	3.2	14	60	24	--	--	--	--
6/12/2009	150	--	--	--	<500	<0.50	<1.0	<1.0	0.71 J	44	--	--	--	--
7/10/2009	4,500	--	--	--	560	1,500	41	68	175	150	--	--	--	--
8/4/2009	2,000	--	--	--	1,000	1,200	16	18	64	100	--	--	--	--
9/1/2009	4,800	--	--	--	3,500	380	45	25	328	5.4 J	--	--	--	--
10/6/2009	3,900	--	--	--	4,600	3,200	21	15	35	82	--	--	--	--
10/27/2009	1,000	--	--	--	<500	520	4	15	10	180	--	--	--	--
11/3/2009	120	--	--	--	<500	2	0.55 J	0.61 J	3	40	--	--	--	--
11/25/2009	5,700	--	--	--	4,000	3,100	26	13	48	88	--	--	--	--
2/16/2010	8,000	--	--	--	5,900	4,700	110	1,300	800	1,800	--	--	--	--
3/9/2010	7,000	--	--	--	5,900	6,600	110	460	550	410	--	--	--	--
4/20/2010	10,000	--	--	--	11,000	6,000	44	230	174	130	--	--	--	--
5/14/2010	8,500	--	--	--	2,100	3,600	67	380	400	210	--	--	--	--
6/25/2010	4,600	--	--	--	2,600	2,200	61	540	380	170	--	--	--	--
7/20/2010	21,000	--	--	--	21,000	3,400	370	3,000	2,550	2,300	--	--	--	--
8/3/2010	3,400	--	--	--	1,500	1,400	17	140	161	390	--	--	--	--
8/10/2010	5,800	--	--	--	3,400	2,600	40	190	169	140	--	--	--	--
9/14/2010	9,400	--	--	--	10,000	4,900	170	1,100	1,340	380	--	--	--	--
10/12/2010	5,700	--	--	--	1,000	2,200	43	140	138	120	--	--	--	--
11/16/2010	1,100	--	--	--	1,600	290	4	15	78	84	--	--	--	--
12/14/2010	7,100	--	--	--	3,200	2,600	76	200	315	340	--	--	--	--
1/14/2011	7,400	--	--	--	3,500	3,700	56	110	220	280	--	--	--	--
2/8/2011	5,600	--	--	--	3,500	2,400	43	110	190	420	--	--	--	--
3/25/2011	3,100	--	--	--	1,200	1,300	51	92	200	300	--	--	--	--
4/26/2011	1,400	--	--	--	1,200	610	5.8	5.7	20	130	--	--	--	--
5/17/2011	3,300	--	--	--	1,700	3,600	82	180	300	240	--	--	--	--
6/21/2011	1,200	--	--	--	720	860	9.6	31	82	190	2,200	6.6	<0.07	<0.1
7/27/2011	14,000	10,000	44J	--	-- ^d	2,800	150	490	2,100	350	2,800	27	<0.07	<0.1
8/26/2011	7,400	--	--	--	57,000	1,400	120	480	1,300	270	1,600	16	<0.07	<0.1
9/23/2011	6,400	--	--	--	2,800	2,800	83.0	160	340	300	1,300	22	<0.07	<0.1
10/25/2011	6,000	--	--	--	2,300	3,000	52	93	200	200	970	20	<0.70	<1.0
11/22/2011	5,900	--	--	--	2,000	3,600	62	140	240	300	2,900	26	<0.07	<0.1
12/20/2011	780	--	--	--	2,000	330	8	14	43	160	1,000	18	<0.07	<0.1

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b									
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	
1/10/2012	5,300	--	--	--	1,900	3,400	36	70	170	200	960	26	<0.07	<0.1	
2/21/2012	4,900	--	--	--	<13	3,400	19	16	48	120	2,200	21	<0.07	<0.1	
3/13/2012	6,100	--	--	--	2,100	2,900	43	79	180	120	1,600	23	<0.07	<0.1	
4/27/2012	5,100	--	--	--	2,200	3,800	49	61	150	150	500	38	<0.13	<0.12	
5/22/2012	6,800	--	--	--	31,000	2,800	49	140	262	150	690	30	<0.13	<0.12	
6/19/2012	5,300	--	--	--	36,000	3,200	45	230	200	220	2,800	33	<0.13	<0.12	
7/20/2012	5,600	2,400	210	8,200	--	3,000	71	72	510	170	2,700	26	<0.13	<0.12	
8/21/2012	3,600	1,100	140	4,900	--	2,400	26	41	80	110	1,500	22	<0.13	<0.12	
9/25/2012	2,100	710	71	2,800	--	1,700	25	35	86	150	690	17	<1.0	<1.0	
10/30/2012	2,600	700	74	3,374	--	1,400	15	13	52	54	1,200	14	<0.061	<0.054	
11/30/2012	860	8,200	260	9,320	--	1,100	2.4	4.4	12	23	690	<0.038	<0.061	<0.054	
12/27/2012	6,200	820	86	7,106	--	2,000	39	76	130	120	1,300	20	<0.061	<0.054	
1/15/2013	3,400	14,000	400	17,800	--	800	12	25	130	43	1,200	8.7	<0.061	<0.054	
2/12/2013	9,900	3,100	150	13,150	--	2,100	110	440	820	110	330	22	<0.061	<0.054	
3/5/2013	3,954	970	80	5,004	--	1,400	21	23	87	63	1,200	15	<0.061	<0.054	
3/15/2013	--	--	--	--	--	1,400	25	49	98	74	570	14	<0.061	<0.054	
4/16/2013	1,100	1,300	270	2,670	--	370	6	19	56	73	530	17	<0.061	<0.054	
5/14/2013	4,300	830	99	5,229	--	2,000	52	98	181	61	270	22	<0.061	<0.054	
6/28/2013	2,900	870	150	3,920	--	1,100	18	58	76	92	500	11	<0.061	<0.054	
7/16/2013	3,600	1,000	130	4,730	--	870	19	47	140	100	600	14	<0.061	<0.054	
8/16/2013	3,800	5,900	530	10,230	--	1,400	13	32	85	77	550	27	<0.061	<0.054	
9/24/2013	5,800	12,000	550	18,350	--	990	53	400	630	78	440	20	<0.061	<0.054	
10/15/2013	3,300	650	120	4,070	--	1,400	11	37	150	43	250	15	<0.061	<0.054	
11/12/2013	5,600	3,500	190	9,290	--	570	99	230	660	89	550	20	<0.061	<0.054	
12/13/2013	12,500	14,000	400	26,900	--	560	170	690	1,500	52	220	17	<0.061	<0.054	
1/17/2014	5,900	980	130	7,010	--	4,200	13	18	61	89	810	40	<0.061	<0.054	
2/11/2014	12,000	63,000	2,500	77,500	--	640	130	560	1,990	45	290	12	<0.061	<0.054	
3/21/2014	42,000	77,000	2,000	121,000	--	3,700	440	3,300	3,900	100	360	17	<0.061	<0.054	
4/21/2014	100,000	30,000	880	130,000	--	6,000	1,300	9,800	9,000	<0.098	<1.0	12	<0.061	<0.054	
5/20/2014	33,000	15,000	470	48,000	--	1,400	570	2,700	5,400	30	<0.40	16	<0.061	<0.054	
6/13/2014	77,000	33,000	1,100	110,000	--	7,700	1,900	10,000	13,000	38	<0.40	12	<0.061	<0.054	
7/12/2014	28,000	82	<52	28,082	--	2,800	820	3,700	6,800	34	<0.40	18J	<25	<25	

The GWTS was down between July 29, 2014, and December 1, 2014, to facilitate processing of the modifications to SCAQMD Permit No. F14166 for the GWTS.

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
1/15/2015	8,000	5,600	270	13,870	--	2,200	22	140	430	21	390	11	<0.12	<0.11
2/20/2015	120,000	47,000	1,500	170,000	--	3,000	350	1,600	3,000	43	<0.80	17	<0.12	<0.11
3/3/2015	65,000	480,000	15,000	560,000	--	6,600	1,700	9,300	12,000	670	<0.80	11	<0.12	<0.11
4/7/2015	105,000	92,000	2,900	200,000	--	9,000	2,100	18,000	13,000	1,200	<0.80	8.7	<0.12	17
5/19/2015	73,000	90,000	2,400	165,400	--	8,200	1,600	17,000	12,000	380	<0.60	25	<0.078	<0.078
6/2/2015	78,000	89,000	3,100	170,100	--	3,200	530	3,700	7,100	1,100	<0.60	13	<0.078	8.3
7/30/2015	31,000	16,000	570	47,570	--	3,100	720	5,100	6,200	820	<0.60	27	<0.078	6.2
8/6/2015	30,000	17,000	570	37,570	--	2,600	500	3,100	6,200	700	<0.60	16	<0.078	6.4
9/15/2015	50,000	79,000	2,700	129,000	--	3,200	1,800	6,500	14,000	820	<0.60	15	<0.078	7.7
10/8/2015	51,000	55,000	1,800	107,800	--	5,700	1,400	11,000	11,000	680	<0.60	16	<0.078	6.2
11/24/2015	45,000	74,000	2,800	121,800	--	3,400	1,100	7,000	7,800	<0.31	<1.5	16	<0.20	<0.20
12/3/2015	40,000	120,000	4,000	164,000	--	4,800	1,100	7,700	8,300	580	<1.5	19	<0.20	5.9
1/21/2016	88,000	2,500,000	97,000	2,685,000	--	4,200	1,700	10,000	14,000	380	<0.60	12	<0.078	<0.078
2/2/2016	31,000	110,000	4,700	145,700	--	2,600	750	4,600	9,500	430	<0.60	8.6	<0.078	<0.078
4/5/2016	32,000	31,000	1,100	64,100	--	1,500	450	2,200	12,000	390	<3.0	<0.17	<0.39	<0.39
5/3/2016	2,600	20,000	680	23,280	--	990	18	83	260	6.0	100	7.1	<0.039	<0.039
6/14/2016	1,900	4,400	280	6,580	--	290	21	110	400	8.6	<5.0	6.00	<1.0	<1.0
The GWTS was down between June 24, 2016, and September 9, 2016, to facilitate installation of the new DAF/OWS.														
9/20/2016	32	230	130	390	--	<0.036	0.18 J	0.080 J	2.6	2.2	150	10	<0.039	<0.039
10/21/2016	10,000	9,300	360	20,000	--	320	320	1,100	2,700	5.1	<0.30	5.3	<0.039	<0.039
11/8/2016	1,100	1,500	130	2,800	--	2.5	<0.036	2.6	160	2.4	66	9.1	<0.039	<0.039
12/27/2016	140	390	130	660	--	1.2	<0.042	<0.042	2.0 J	1.4	2200	8.7	<0.039	<0.039
1/19/2017	190	340	120	640	--	6.9	0.24 J	0.15 J	<1.5	2.4	2300	8.1	<0.15	<0.12
2/3/2017	390	490	170	1,000	--	4.2	0.89 J	3.5	30	3.5	1700	5.1	<0.15	<0.12
3/3/2017	790	320	78	1,200	--	180	5	1.7 J	24	4.2	620	3.0	<0.15	<0.12
4/7/2017	1,200	780	140	2,100	--	740	21	23	87	7.5	120	4.8	<0.15	<0.12
5/4/2017	20	300	100	430	--	0.18 J	<0.036	0.12 J	<1.5	1.4	320	<0.017	<0.039	<0.039
6/20/2017	11,000	54,000	3,000	68,000	--	1,400	100	400	2,300	15	<18	8.1 J	<1.5	<1.2
7/20/2017	17 J	400	180	600	--	<1.0	<1.0	<2.0	<2.0	1.2	38	4.2	<1.0	<1.0
8/3/2017	39 J	410	310	760	--	<1.0	<1.0	<2.0	<2.0	1.3	25	4.2	<1.0	<1.0
9/20/2017	940	2,400	1,300	4,600	--	<1.0	0.15 J	0.17 J	4.4	0.59	5.4	0.70 J	<1.0	<1.0
10/10/2017	860	1,200	240	2,300	--	<1.0	5.2	13	120	3.7	26	6.5	<1.0	<1.0
11/8/2017	4,000	27,000	2,000	33,000	--	24	6.7	8.7	690	70	<5.0	8.8	<1.0	<1.0
12/15/2017	1,400	2,300	500	4,200	--	6.0	1.6	5.9	52	120	200	<1.0	<1.0	<1.0

Table 6. Extracted Groundwater Analytical Results^a

SFPP Norwalk Pump Station, Norwalk, California

Date Sampled	EPA 8015M					EPA 8260B Volatile Organic Compounds (VOCs) ^b								
	TPH-g (µg/L)	TPH-d (µg/L)	TPH-o (µg/L)	TPH-total (µg/L)	TPH-fp (µg/L)	Benzene (µg/L)	Ethylbenzene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
1/4/2018	1,800	1,500	560	3,900	--	190	4.9	30	410	160	240	5.4	<1.0	<1.0
2/8/2018	36	640	530	1,200	--	0.53 J	<1.0	0.62 J	2.4	2.4	<5.0	2.1	<1.0	<1.0
2/27/2018	220	560	240	100	--	3.9	0.55 J	1.6 J	9.3	2.3	26	5.5	<1.0	<1.0
3/27/2018	430	380	330	1,100	--	5.3	0.83 J	<2.0	11	43	410	2.1	<1.0	<1.0
4/24/2018	49 J	370	410	830 J	--	<1.0	<1.0	<2.0	<2.0	1.7	230	1.6	<1.0	<1.0
5/22/2018	45 J	120	180	340	--	<1.0	<1.0	<2.0	<2.0	0.94 J	330	0.45 J	<1.0	<1.0
7/3/2018	4,700	1,300	2,300	8,300	--	220	140	35	1,300	92	1,500	0.91 J	<1.0	<1.0
7/31/2018	200	260	220	680	--	14	1.0	<2.0	3.0	27	320	2.6	<1.0	<1.0
8/31/2018	130	200	460	790	--	5.1	0.35 J	1.0 J	4.8	39	610	<1.0	<1.0	<1.0
9/25/2018	<50	280	350	630	--	<1.0	<1.0	<2.0	<2.0	23	52	2.3	<1.0	<1.0
10/23/2018	74	<32	<80	74 J	--	1.2	<1.0	<2.0	<2.0	2.2	38	3.8	<1.0	<1.0
11/12/2018	<50	120	<100	120	--	<1.0	<1.0	<2.0	<2.0	1.4	120	4.1	<1.0	<1.0
12/14/2018	170	210	77	460	--	1.8	0.49 J	0.94 J	5.3	14	180	1.4	<1.0	<1.0
1/29/2019	100	250	64	410	--	<1.0	<1.0	<2.0	<2.0	2.6	<5.0	1.7	<1.0	<1.0
2/7/2019	36 J	210	93	340	--	<1.0	<1.0	<2.0	2.0 J	1.1	22	0.82 J	<1.0	<1.0
3/8/2019	38 J	270	110	420	--	<1.0	<1.0	<2.0	<2.0	1.7	22	3.8	<1.0	<1.0

Notes:

^a Influent samples were collected from the manifold conveying groundwater extracted from the south-central and southeastern areas.

^b Other detected VOCs are included in the laboratory analytical reports in Appendix A.

^c TPH-fp result from extracted groundwater sample collected on July 10, 2008.

^d The July 27, 2011, sample, and samples collected after July 20, 2012, were analyzed for TPH-g, TPH-d, and TPH-o.

-- = not analyzed

<X = Not detected at or above the laboratory reporting limit "X"

J = Analyte detected above the laboratory method detection limit and below the laboratory reporting limit

B = Analyte detected in the associated method blank

µg/L = micrograms per liter

ppm = parts per million

DAF = dissolved air flotation

DIPE = di-isopropyl ether

ETBE = ethyl tertiary butyl ether

GWTS = groundwater treatment system

MTBE = methyl tertiary butyl ether

OWS = oil-water separator

SCAQMD = South Coast Air Quality Management District

TAME = tertiary amyl methyl ether

TBA = tertiary butyl alcohol

TPH-d = total petroleum hydrocarbons quantified as diesel (C13-C22)

TPH-fp = total petroleum hydrocarbons quantified as fuel product (C7-C28)

TPH-g = total petroleum hydrocarbons quantified as gasoline (C4-C12)

TPH-o = total petroleum hydrocarbons quantified as oil (C23-C36)

TPH-total = total petroleum hydrocarbons quantified as gasoline, diesel, and oil (C4-C36)

Table 7. Biosparge System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Incremental Uptime (%)	System Flow ^a (scfm)	BS-01 Sparge Leg Pressure (psi)
1/6/2016	0			60	10
2/16/2016	899	899	91.9	500	13
2/23/2016	1,071	172	99.1	500	14
2/29/2016	1,192	121	85.1	500	13
3/1/2016	1,214	22	98.5	500	13
3/8/2016	1,381	167	99.9	500	14
3/10/2016	1,426	45	98.5	500	14
3/22/2016	1,432	6	2.0	240	7
3/31/2016	1,524	92	42.5	180	8
First Quarter 2016 Totals	1,524	1,524	74.7	--	--
4/5/2016	1,644	120	99.2	120	7
4/15/2016	1,645	1	0.4	120	8
4/19/2016	1,735	90	99.4	240	9
4/25/2016	1,856	121	84.6	120	8
4/26/2016	1,881	25	87.7	240	8
4/29/2016	1,955	74	100.0	240	7
5/10/2016	1,955	0	0.0	240	8
5/17/2016	2,123	168	99.8	240	6
5/19/2016	2,140	17	36.9	120	5
5/24/2016	2,254	114	94.4	360	6
5/31/2016	2,422	168	98.7	360	7
6/7/2016	2,591	169	100.0	420	7
6/14/2016	2,754	163	95.3	420	8
6/21/2016	2,906	152	92.7	420	8
6/24/2016	2,982	76	99.6	420	8
Second Quarter 2016 Totals	2,982	1,458	71.5	--	--

Table 7. Biosparge System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Incremental Uptime (%)	System Flow ^a (scfm)	BS-01 Sparge Leg Pressure (psi)
7/1/2016	2,982	0	0.0	120	5
7/7/2016	3,121	139	97.9	250	8
7/12/2016	3,242	121	100.0	420	5
7/19/2016	3,410	168	97.1	420	8
7/26/2016	3,575	165	99.8	420	8
8/2/2016	3,744	169	99.6	425	8
8/11/2016	3,931	187	88.0	240	7
8/16/2016	3,961	30	24.7	220	8
8/24/2016	4,033	72	36.5	120	4
8/25/2016	4,053	20	89.9	220	8
8/26/2016	4,067	14	66.7	78	5
8/30/2016	4,157	90	96.8	300	9
9/6/2016	4,303	146	84.5	85	5
9/13/2016	4,440	137	81.7	400	8
9/20/2016	4,611	171	100.0	586	14
9/27/2016	4,775	164	100.0	559	13
Third Quarter 2016 Totals	4,775	1,793	78.7	--	--
10/7/2016	4,776	1	0.4	110	4
10/8/2016	4,797	21	98.7	170	6
10/11/2016	4,866	69	99.9	420	11
10/13/2016	4,916	50	99.9	563	15
10/18/2016	4,965	49	42.1	120	8
10/25/2016	5,133	168	100.0	585	14
11/1/2016	5,302	169	99.8	598	14
Fourth Quarter 2016 Totals	5,302	527	62.7	--	--
2016 Totals	5,302	5,302	--	--	--
First Quarter 2017 Totals	5,302	0	--	--	--
6/27/2017	5,302	0	0.0	220	6
6/30/2017	5,368	66	22.0	207	7
Second Quarter 2017 Totals	5,368	66	--	--	--

Table 7. Biosparge System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Incremental Uptime (%)	System Flow ^a (scfm)	BS-01 Sparge Leg Pressure (psi)
7/5/2017	5,490	122	92.7	300	9
7/10/2017	5,610	120	100.0	290	8
7/13/2017	5,679	69	95.8	421	11
7/20/2017	5,850	171	100.0	526	14
7/25/2017	5,971	121	100.0	694	14
8/3/2017	6,183	212	94.4	544	13
8/8/2017	6,302	119	99.1	545	15
8/15/2017	6,417	115	68.8	550	14
8/22/2017	6,588	171	100.0	541	14
8/29/2017	6,753	165	99.1	544	14
9/7/2017	6,826	73	33.1	240	7
9/12/2017	6,941	115	100.0	747	14
9/18/2017	7,065	124	85.2	240	7
9/19/2017	7,089	24	100.0	218	7
9/26/2017	7,255	166	99.3	544	15
Third Quarter 2017 Totals	7,255	1,887	89.1	--	--
10/6/2017	7,260	5	2.1	260	7
10/10/2017	7,354	94	97.9	521	15
10/12/2017	7,397	43	89.6	556	15
10/16/2017	7,482	85	88.5	250	6
11/2/2017	7,485	3	0.7	260	8
11/7/2017	7,604	119	99.2	549	15
11/21/2017	7,652	48	14.3	280	10
11/28/2017	7,751	99	58.9	594	15
12/5/2017	7,914	163	97.0	705	15
12/8/2017	7,964	50	69.4	697	14
12/12/2017	8,081	117	100.0	774	13
12/19/2017	8,247	166	98.8	782	14
1/2/2018	8,580	333	99.1	755	14
Fourth Quarter 2017 Totals	8,580	1,325	56.5		

Table 7. Biosparge System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Incremental Uptime (%)	System Flow ^a (scfm)	BS-01 Sparge Leg Pressure (psi)
1/9/2018	8,751	171	100.0	589	13
1/23/2018	8,823	72	21.4	625	14
1/30/2018	8,932	109	64.9	294	8
2/6/2018	9,005	73	43.5	295	8
2/15/2018	9,219	214	95.4	624	14
2/20/2018	9,342	123	100.0	624	14
2/27/2018	9,490	148	90.2	629	14
3/13/2018	9,751	261	79.3	359	8
3/20/2018	9,911	160	95.2	412	8
3/27/2018	10,078	167	99.4	403	8
First Quarter 2018 Totals	10,078	1,498	74.3	--	--
4/3/2018	10,247	169	100.0	374	8
4/5/2018	10,295	48	100.0	368	8
4/24/2018	10,419	124	27.2	190	7
4/27/2018	10,493	74	100.0	269	8
5/1/2018	10,585	92	95.8	279	8
5/8/2018	10,752	167	99.4	389	8
5/11/2018	10,826	74	100.0	393	9
5/14/2018	10,899	73	100.0	98	5
5/15/2018	10,900	1	4.2	117	5
5/18/2018	10,974	74	100.0	113	5
5/22/2018	11,049	75	78.1	104	5
5/25/2018	11,118	69	95.8	101	5
5/29/2018	11,217	99	100.0	209	6
6/5/2018	11,381	164	97.6	385	8
6/7/2018	11,431	50	100.0	386	9
6/12/2018	11,504	73	60.8	252	7
6/19/2018	11,673	169	100.0	336	8
6/26/2018	11,841	168	100.0	356	8
6/29/2018	11,842	1.0	1.4	101	5
Second Quarter 2018 Totals	11,842	1,764	78.2	--	--

Table 7. Biosparge System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Cumulative Hours of Operation (hours)	Incremental Hours of Operation (hours)	Incremental Uptime (%)	System Flow ^a (scfm)	BS-01 Sparge Leg Pressure (psi)
7/3/2018	11,932	90.0	93.8	203	6
7/12/2018	12,012	80.0	37.0	99	5
7/17/2018	12,127	115.0	95.8	270	8
7/24/2018	12,295	168.0	100.0	379	8
7/31/2018	12,449	154.0	91.7	411	10
8/7/2018	12,613	164.0	97.6	425	8
8/10/2018	12,689	76.0	100.0	406	8
8/14/2018	12,781	92.0	95.8	408	8
8/23/2018	12,869	88.0	40.7	109	5
8/28/2018	12,988	119.0	99.2	411	8
9/4/2018	13,085	97.0	57.7	123	5
9/6/2018	13,129	44.0	91.7	120	5
9/11/2018	13,235	106.0	88.3	340	7
9/18/2018	13,398	163.0	97.0	508	10
9/25/2018	13,567	169.0	100.0	422	9
Third Quarter 2018	13,567	1,725	81.7	--	--
10/5/2018	13,812	245.0	100.0	475	8
10/9/2018	13,905	93.0	96.9	391	8
10/16/2018	14,068	163.0	97.0	114	5
10/22/2018	14,216	148.0	100.0	387	8
10/30/2018	14,216	0.0	0.0	0	0
12/31/2018	14,216	0.0	0.0	0	0
Fourth Quarter 2018	14,216	649	27.9	--	--
1/14/2019	14,219	3	0.9	150	20
1/15/2019	14,241	22	91.7	150	20
1/22/2019	14,241	0	0.0	150	2
2/11/2019	14,311	70	14.6	150	1
2/21/2019	14,335	24	10.0	150	2
2/26/2019	14,453	118	98.3	301	7
3/5/2019	14,620	167	99.4	338	6
3/7/2019	14,671	51	100.0	454	5
3/12/2019	14,788	117	97.5	465	4
3/19/2019	14,954	166	98.8	394	4
3/26/2019	15,122	168	100	350	5
First Quarter 2019	15,122	906	44.4	--	--
Cumulative Totals	15,122	--	53.7	--	--

Notes:

^a Estimated system flow based on header flowmeter.

-- = not applicable or not available

psi = pounds per square inch

scfm = standard cubic feet per minute

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – March 2019

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level ^{a, b}	Current Commercial Soil Gas Screening Level ^{a, b}	SVM-1-5 03/18/2019 SVM-1 5-5.5	SVM-1-14.5 03/18/2019 SVM-1 14.5-15	SVM-2-5 03/18/2019 SVM-2 5-5.5	SVM-3-5 03/18/2019 SVM-3 5-5.5	SVM-3-15 03/18/2019 SVM-3 15-15.5	SVM-5-5 03/19/2019 SVM-5 5-5.5	SVM-5-15.5 03/19/2019 SVM-5 15.5-16	SVM-6-6.5 03/19/2019 SVM-6 6.5-7	SVM-6-15.5 03/19/2019 SVM-6 15.5-16	SVM-7-7 03/19/2019 SVM-7 7-7.5	SVM-7-13.25 03/19/2019 SVM-7 13.25-13.75
Field Measurements	Pressure	inches H ₂ O	---	---	-0.16	-2.02	-0.19	0.00	-0.16	-0.16	-1.10	0.00	-0.37	-0.09	-0.19
	PID	ppmv	---	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COPCs ^c	1,2,4-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	1,2-Dichloroethane	µg/L	0.11	0.47	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
	1,3,5-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	1.4	<0.2	<0.2	<0.2	0.72	<0.2	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Methyl tert-butyl ether (MTBE)	µg/L	11	47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Naphthalene	µg/L	0.083	0.36	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	Toluene	µg/L	5200	22400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Other Detected Compounds	Acetone	µg/L	32000	140000	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.027	<0.02	<0.02	<0.02	<0.02
	Carbon Disulfide	µg/L	730	3100	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Chloroform	µg/L	0.12	0.53	<0.02	<0.02	<0.02	0.021	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Ethanol	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Tetrachloroethylene (PCE)	µg/L	0.46	2.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Tetrahydrofuran (THF)	µg/L	2100	9200	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	TPH-g (C4-C12)	µg/L	630	2600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fixed Gases	Methane	% v/v	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Oxygen	% v/v	---	---	18	18	18	16	17	19	19	19	19	19	18
	Carbon Dioxide	% v/v	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	0.16	0.26	0.43

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2018. *Human Health Risk Assessment (HHRA) Note Number 3: DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels (RSLs) in the HHRA Process at Hazardous Waste Sites and Permitted Facilities.*

<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-June-2018.pdf>

^b Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. October.

http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf

^c Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006. *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California*. December.

SVM-1-5 Light Blue highlighting indicates offsite soil vapor probe locations.
10 Yellow highlighting indicates concentration exceeds human health screening level under residential scenario.

11/12/2018 - 11/14/2018 = sample date

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

µg/L = micrograms per liter

COPCs = chemicals of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – March 2019

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level ^{a, b}	Current Commercial Soil Gas Screening Level ^{a, b}	SVM-7-13.25 DUP 03/19/2019 SVM-7 13.25-13.75	SVM-8-5 03/19/2019 SVM-8 5-5.5	SVM-8-15 03/19/2019 SVM-8 15-15.5	SVM-10-15.5 03/19/2019 SVM-10 15.5-16	SVM-11-7 03/18/2019 SVM-11 7-7.5	SVM-11-15 03/18/2019 SVM-11 15-15.5	SVM-11-21 03/18/2019 SVM-11 21-21.5	SVM-12-7 03/18/2019 SVM-12 7-7.5	SVM-12-15 03/18/2019 SVM-12 15-15.5	SVM-12-22 03/18/2019 SVM-12 22-22.5	SVM-12-22 DUP 03/18/2019 SVM-12 22-22.5
Field Measurements	Pressure	inches H ₂ O	---	---	-0.19	-0.05	-0.24	0.0	-0.30	-0.02	-0.34	0.00	0.0	0.0	0.0
	PID	ppmv	---	---	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.1	0.1
COPCs ^c	1,2,4-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	1,2-Dichloroethane	µg/L	0.11	0.47	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
	1,3,5-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Methyl tert-butyl ether (MTBE)	µg/L	11	47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Naphthalene	µg/L	0.083	0.36	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Toluene	µg/L	5200	22400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Other Detected Compounds	Acetone	µg/L	32000	140000	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Carbon Disulfide	µg/L	730	3100	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Chloroform	µg/L	0.12	0.53	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Ethanol	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Tetrachloroethylene (PCE)	µg/L	0.46	2.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.08	<0.01	<0.01	0.011	0.013
	Tetrahydrofuran (THF)	µg/L	2100	9200	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	TPH-g (C4-C12)	µg/L	630	2600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fixed Gases	Methane	% v/v	---	---	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Oxygen	% v/v	---	---	18	19	19	15	18	15	10	17	16	14	14
	Carbon Dioxide	% v/v	---	---	0.41	<0.1	0.14	3.4	<0.2	0.42	5.3	0.25	0.86	2.2	2.8

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2018. *Human Health Risk Assessment (HHRA) Note Number 3: DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels (RSLs) in the HHRA Process at Hazardous Waste Sites and Permitted Facilities.*

<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-June-2018.pdf>

^b Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. October.

http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf

^c Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006. *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California*. December.

SVM-1-5 Light Blue highlighting indicates offsite soil vapor probe locations.

10 Yellow highlighting indicates concentration exceeds human health screening level under residential scenario.

11/12/2018 - 11/14/2018 = sample date

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

µg/L = micrograms per liter

COPCs = chemicals of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – March 2019

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level ^{a, b}	Current Commercial Soil Gas Screening Level ^{a, b}	SVM-13-7 03/18/2019 SVM-13 7-7.5	SVM-13-15.5 03/18/2019 SVM-13 15.5-16	SVM-13-22.5 03/18/2019 SVM-13 22.5-23	SVM-14R-7 03/18/2019 SVM-14R 7-7.5	SVM-14R-15 03/18/2019 SVM-14R 15-15.5	SVM-14R-22 03/18/2019 SVM-14R 22-22.5	SVM-15-7 03/19/2019 SVM-15 7-7.5	SVM-15-15 03/19/2019 SVM-15 15-15.5	SVM-15-22 03/19/2019 SVM-15 22-22.5	SVM-16-7 03/19/2019 SVM-16 7-7.5	SVM-16-15.5 03/19/2019 SVM-16 15.5-16
Field Measurements	Pressure	inches H ₂ O	---	---	-3.61	-16.71	-18.20	-1.0	-37.2	54	-0.13	-0.24	-3.09	0.0	-0.19
	PID	ppmv	---	---	9.0	1.9	5.4	0.1	0.0	0.7	0.0	0.0	0.0	0.0	0.0
COPCs ^c	1,2,4-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	1,2-Dichloroethane	µg/L	0.11	0.47	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
	1,3,5-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0089	<0.003	<0.003	<0.003	<0.003
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.029	<0.02	<0.02	<0.02
	Methyl tert-butyl ether (MTBE)	µg/L	11	47	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Naphthalene	µg/L	0.083	0.36	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	Toluene	µg/L	5200	22400	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.044	<0.02	<0.02	<0.02
Other Detected Compounds	Acetone	µg/L	32000	140000	<0.02	<0.02	<0.02	0.062	0.024	<0.02	<0.02	<0.02	<0.02	0.021	<0.02
	Carbon Disulfide	µg/L	730	3100	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	<0.02
	Chloroform	µg/L	0.12	0.53	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Ethanol	µg/L	---	---	<0.02	<0.02	<0.02	0.03	0.032	<0.02	0.16	<0.02	<0.02	<0.02	<0.02
	Tetrachloroethylene (PCE)	µg/L	0.46	2.0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Tetrahydrofuran (THF)	µg/L	2100	9200	<0.02	<0.02	0.022	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	TPH-g (C4-C12)	µg/L	630	2600	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Fixed Gases	Methane	% v/v	---	---	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1
	Oxygen	% v/v	---	---	18	17	17	18	17	14	18	19	18	19	18
	Carbon Dioxide	% v/v	---	---	<0.2	<0.2	0.47	<0.2	<0.2	1.9	<0.1	0.1	0.76	0.21	0.5

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2018. *Human Health Risk Assessment (HHRA) Note Number 3: DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels (RSLs) in the HHRA Process at Hazardous Waste Sites and Permitted Facilities.*

<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-June-2018.pdf>

^b Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. October.

http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf

^c Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006. *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California*. December.

SVM-1-5 Light Blue highlighting indicates offsite soil vapor probe locations.

10 Yellow highlighting indicates concentration exceeds human health screening level under residential scenario.

11/12/2018 - 11/14/2018 = sample date

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

µg/L = micrograms per liter

COPCs = chemicals of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – March 2019

SFPP Norwalk Pump Station, Norwalk, California

Analyte Type	Analyte	Unit	Current Residential Soil Gas Screening Level ^{a, b}	Current Commercial Soil Gas Screening Level ^{a, b}	SVM-16-22 03/19/2019 SVM-16 22-22.5	Ambient Air 03/18/2019	Ambient Air 03/19/2019
Field Measurements	Pressure	inches H ₂ O	---	---	-0.27	---	---
	PID	ppmv	---	---	0.0	---	---
COPCs^c	1,2,4-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02
	1,2-Dichloroethane	µg/L	0.11	0.47	<0.004	<0.004	<0.004
	1,3,5-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.003	<0.003	<0.003
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<0.02	<0.02	<0.02
	Methyl tert-butyl ether (MTBE)	µg/L	11	47	<0.02	<0.02	<0.02
	Naphthalene	µg/L	0.083	0.36	<0.003	<0.003	<0.003
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20
Toluene	µg/L	5200	22400	<0.02	<0.02	<0.02	
Other Detected Compounds	Acetone	µg/L	32000	140000	<0.02	0.021	<0.02
	Carbon Disulfide	µg/L	730	3100	<0.02	<0.02	<0.02
	Chloroform	µg/L	0.12	0.53	<0.02	<0.02	<0.02
	Ethanol	µg/L	---	---	<0.02	0.032	<0.02
	Tetrachloroethylene (PCE)	µg/L	0.46	2.0	<0.01	<0.01	<0.01
	Tetrahydrofuran (THF)	µg/L	2100	9200	<0.02	<0.02	<0.02
	TPH-g (C4-C12)	µg/L	630	2600	<20	<20	<20
Fixed Gases	Methane	% v/v	---	---	<0.1	---	---
	Oxygen	% v/v	---	---	3.6	---	---
	Carbon Dioxide	% v/v	---	---	11	---	---

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2018. *Human Health Risk Assessment (HHRA) Note Number 3: DTSC Recommended Methodology for Use of U.S. EPA Regional Screening Levels (RSLs) in the HHRA Process at Hazardous Waste Sites and Permitted Facilities.*

<https://www.dtsc.ca.gov/AssessingRisk/upload/HHRA-Note-3-June-2018.pdf>

^b Attenuation factor for current land use = 0.001. Source for the attenuation factors: DTSC, 2011. *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*. October.

http://www.dtsc.ca.gov/AssessingRisk/upload/Final_VIG_Oct_2011.pdf

^c Chemicals of potential concern identified from the 2006 soil gas investigation and HHRA (Geomatrix, 2006. *Vapor Intrusion Sampling and Human Health Risk Assessment, DFSP Norwalk Facility, Norwalk, California*. December.

SVM-1-5 Light Blue highlighting indicates offsite soil vapor probe locations.
10 Yellow highlighting indicates concentration exceeds human health screening level under residential scenario.

11/12/2018 - 11/14/2018 = sample date

SVM-1 = sample location

SVM-1-5 = sample ID

5-5.5 = sample depth in feet below ground surface

--- = not available

% v/v = percent volume by volume

<0.02 = not detected at the laboratory minimum reporting limit

µg/L = micrograms per liter

COPCs = chemicals of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
GMW-9	4/30/2007	74.44	26.71	---	---	47.73	Secor
	11/12/2007	74.44	27.32	27.04	0.28	47.34	Secor
	8/8/2008	74.44	28.01	27.96	0.05	46.47	Envent
	10/16/2008	74.44	28.36	28.35	0.01	46.09	Envent
	12/17/2008	74.44	27.61	---	---	46.83	Envent
	1/15/2009	74.44	28.91	---	---	45.53	Envent
	3/27/2009	74.44	29.04	---	---	45.40	Envent
	4/21/2009	74.44	28.16	---	---	46.28	Envent
	7/21/2009	74.44	28.31	---	---	46.13	Envent
	10/19/2009	74.44	NM	---	---	NC	Blaine Tech
	5/24/2010	74.44	30.47	---	---	43.97	Blaine Tech
	5/28/2010	74.44	30.35	---	---	44.09	Blaine Tech
	10/4/2010	74.44	30.30	---	---	44.14	Blaine Tech
	1/10/2011	74.44	32.02	---	---	42.42	Blaine Tech
	4/11/2011	74.44	25.41	---	---	49.03	Blaine Tech
	7/11/2011	74.44	NM	---	---	NC	
	10/10/2011	74.44	28.91	---	---	45.53	Blaine Tech
	4/16/2012	74.44	31.15	---	---	43.29	Blaine Tech
	7/9/2012	---	31.64	---	---	NC	Blaine Tech
	10/15/2012	77.16	31.82	---	---	45.34	Blaine Tech
	1/14/2013	77.16	31.88	---	---	45.28	Blaine Tech
	4/8/2013	77.16	31.83	---	---	45.33	Blaine Tech
	10/7/2013	77.16	35.30	31.25	4.05	45.02	Blaine Tech
	4/14/2014	77.16	37.66	31.65	6.01	44.19	Blaine Tech
	5/5/2014	77.16	37.81	31.76	6.05	44.07	Nieto & Sons
	5/12/2014	77.16	37.39	31.83	5.56	44.11	Nieto & Sons
	5/20/2014	77.16	37.70	33.85	3.85	42.46	Nieto & Sons
	5/27/2014	77.16	32.41	28.84	3.57	47.53	Nieto & Sons
	6/4/2014	77.16	33.20	---	---	43.96	Nieto & Sons
	6/10/2014	77.16	37.51	32.77	4.74	43.35	Nieto & Sons
	7/3/2014	77.16	39.26	32.59	6.67	43.10	Nieto & Sons
	7/8/2014	77.16	38.59	32.45	6.14	43.36	Blaine Tech
	7/18/2014	77.16	37.15	32.73	4.42	43.46	Blaine Tech
	7/24/2014	77.16	37.78	32.48	5.30	43.51	Blaine Tech
	8/1/2014	77.16	36.72	32.30	4.42	43.89	Blaine Tech
	8/8/2014	77.16	36.55	32.26	4.29	43.96	Blaine Tech
	8/13/2014	77.16	36.25	32.33	3.92	43.97	Blaine Tech
	8/19/2014	77.16	36.04	32.38	3.66	43.97	Blaine Tech
	8/29/2014	77.16	36.23	32.33	3.90	43.97	Blaine Tech
	9/5/2014	77.16	36.26	32.35	3.91	43.95	Blaine Tech
	9/11/2014	77.16	36.27	32.33	3.94	43.96	Blaine Tech
	9/18/2014	77.16	36.42	32.37	4.05	43.90	Blaine Tech
9/26/2014	77.16	36.39	32.35	4.04	43.92	Blaine Tech	
10/1/2014	77.16	36.11	32.42	3.69	43.93	Blaine Tech	
10/6/2014	77.16	35.99	32.42	3.57	43.95	Blaine Tech	
10/14/2014	77.16	36.24	32.34	3.90	43.96	Blaine Tech	
10/23/2014	77.16	36.32	32.35	3.97	43.94	Blaine Tech	
10/27/2014	77.16	36.04	32.42	3.62	43.94	Blaine Tech	
11/3/2014	77.16	36.40	32.35	4.05	43.92	Blaine Tech	
11/10/2014	77.16	36.32	32.41	3.91	43.89	Blaine Tech	
11/18/2014	77.16	36.28	32.43	3.85	43.88	Blaine Tech	
11/25/2014	77.16	36.21	32.49	3.72	43.85	Blaine Tech	
12/3/2014	77.16	36.18	32.43	3.75	43.90	Blaine Tech	
12/12/2014	77.16	36.58	32.74	3.84	43.58	Blaine Tech	
12/19/2014	77.16	37.05	32.76	4.29	43.46	Blaine Tech	
3/6/2015	77.16	39.40	33.13	6.27	42.65	Kinder Morgan	
4/20/2015	77.16	36.98	32.99	3.99	43.29	Blaine Tech	
10/20/2015	77.16	34.61	34.37	0.24	42.74	Kinder Morgan	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	3/14/2016	77.16	36.10	---	---	41.06	Blaine Tech
	4/11/2016	77.16	36.20	---	---	40.96	Blaine Tech
	6/30/2016	77.16	31.02	---	---	46.14	Kinder Morgan
	8/22/2016	77.16	37.27	---	---	39.89	Kinder Morgan
	10/3/2016	77.16	38.02	---	---	39.14	Blaine Tech
	3/7/2017	77.16	35.13	---	---	42.03	CH2M
	4/17/2017	77.16	33.32	---	---	43.84	Blaine Tech
	10/2/2017	77.16	38.43	---	---	38.73	Blaine Tech
	4/16/2018	77.16	37.98	---	---	39.18	Blaine Tech
	11/5/2018	77.16	33.95	---	---	43.21	Blaine Tech
GMW-10	4/30/2007	74.67	25.90	---	---	48.77	Secor
	11/12/2007	74.67	25.02	25.82	0.83	50.33	Secor
	4/14/2008	74.67	25.38	25.44	0.06	49.34	Secor
	10/13/2008	74.67	24.16	---	---	50.51	Stantec
	4/20/2009	74.67	24.46	---	---	50.21	Blaine Tech
	10/19/2009	74.67	27.20	---	---	47.47	Blaine Tech
	5/24/2010	74.67	26.72	---	---	47.95	Blaine Tech
	5/28/2010	74.67	26.70	---	---	47.97	Blaine Tech
	10/4/2010	74.67	27.15	---	---	47.52	Blaine Tech
	4/11/2011	74.67	25.21	---	---	49.46	Blaine Tech
	10/10/2011	74.67	27.75	---	---	46.92	Blaine Tech
	4/27/2012	74.67	28.47	---	---	46.20	Blaine Tech
	7/9/2012	74.67	NM	---	---	NC	Blaine Tech
	10/15/2012	74.67	29.15	29.02	0.13	45.63	Blaine Tech
	4/8/2013	74.67	33.64	28.12	5.52	45.53	Blaine Tech
	9/26/2013	73.35	36.15	29.25	6.90	42.82	Blaine Tech
	10/7/2013	73.35	31.85	29.32	2.53	43.56	Blaine Tech
	4/14/2014	73.35	29.43	29.01	0.42	44.26	Blaine Tech
	8/19/2014	73.35	29.80	29.53	0.27	43.77	Blaine Tech
	8/29/2014	73.35	29.68	29.25	0.43	44.02	Blaine Tech
	9/26/2014	73.35	29.98	29.23	0.75	43.98	Blaine Tech
	10/1/2014	73.35	29.98	29.19	0.79	44.01	Blaine Tech
	10/6/2014	73.35	30.01	29.16	0.85	44.03	Blaine Tech
	10/14/2014	73.35	30.01	29.18	0.83	44.02	Blaine Tech
	10/23/2014	73.35	30.17	29.15	1.02	44.01	Blaine Tech
	10/27/2014	73.35	30.19	29.12	1.07	44.03	Blaine Tech
	11/3/2014	73.35	30.25	29.13	1.12	44.01	Blaine Tech
	11/10/2014	73.35	29.85	29.28	0.57	43.96	Blaine Tech
	11/18/2014	73.35	29.95	29.28	0.67	43.95	Blaine Tech
	11/25/2014	73.35	30.00	29.27	0.73	43.94	Blaine Tech
	12/3/2014	73.35	30.18	29.27	0.91	43.91	Blaine Tech
	12/12/2014	73.35	30.81	29.45	1.36	43.65	Blaine Tech
	12/19/2014	73.35	30.51	30.35	0.16	42.97	Blaine Tech
	4/20/2015	73.35	34.99	28.42	6.57	43.71	Blaine Tech
	7/17/2015	73.35	36.10	29.41	6.69	42.70	Blaine Tech
	10/20/2015	73.35	32.96	31.02	1.94	41.97	Kinder Morgan
	3/16/2016	73.35	34.47	33.42	1.05	39.74	Kinder Morgan
	4/11/2016	73.35	33.70	32.10	1.60	40.95	Blaine Tech
	6/29/2016	73.35	33.02	---	---	40.33	Blaine Tech
	8/22/2016	73.35	33.82	32.93	0.89	40.26	Blaine Tech
10/3/2016	73.35	35.10	33.65	1.45	39.43	Blaine Tech	
3/8/2017	73.35	32.75	---	---	40.60	CH2M	
04/17/17	73.35	31.15	---	---	42.20	Blaine Tech	
10/2/2017	73.35	33.48	---	---	39.87	Blaine Tech	
4/16/2018	73.35	33.87	33.74	0.13	39.58	Blaine Tech	
11/5/2018	73.35	34.16	34.14	0.02	39.21	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
GMW-22	4/30/2007	74.17	25.79	---	---	48.38	Secor
	11/12/2007	74.17	26.45	25.91	0.54	48.16	Stantec
	8/12/2008	74.17	26.70	---	---	47.47	Envent
	10/31/2008	74.17	28.25	27.04	1.21	46.91	Envent
	11/4/2008	74.17	26.97	---	---	47.20	Envent
	12/17/2008	74.17	26.65	---	---	47.52	Envent
	1/15/2009	74.17	27.18	---	---	46.99	Envent
	3/27/2009	74.17	27.86	---	---	46.31	Envent
	4/21/2009	74.17	27.30	27.20	0.10	46.95	Envent
	7/21/2009	74.17	27.70	---	---	46.47	Envent
	10/19/2009	74.17	NM	---	---	NC	Blaine Tech
	11/6/2009	74.17	28.12	---	---	46.05	Kinder Morgan
	9/3/2010	74.17	28.36	25.10	3.26	48.47	Kinder Morgan
	10/4/2010	74.17	27.65	---	---	46.52	Blaine Tech
	4/11/2011	74.17	26.45	---	---	47.72	Blaine Tech
	10/10/2011	74.17	29.68	---	---	44.49	Blaine Tech
	4/16/2012	74.17	31.15	---	---	43.02	Blaine Tech
	7/9/2012	---	NM	---	---	NC	Blaine Tech
	10/15/2012	77.24	31.05	---	---	46.19	Blaine Tech
	4/8/2013	77.24	31.92	---	---	45.32	Blaine Tech
	10/7/2013	77.24	34.28	31.65	2.63	45.10	Blaine Tech
	4/14/2014	77.24	35.59	32.30	3.29	44.33	Blaine Tech
	5/6/2014	77.24	35.87	32.35	3.52	44.24	Nieto & Sons
	5/12/2014	77.24	35.76	32.28	3.48	44.32	Nieto & Sons
	5/20/2014	77.24	37.90	32.70	5.20	43.58	Nieto & Sons
	5/27/2014	77.24	36.34	32.71	3.63	43.86	Nieto & Sons
	6/4/2014	77.24	33.36	---	---	43.88	Nieto & Sons
	6/10/2014	77.24	36.74	32.82	3.92	43.69	Nieto & Sons
	7/3/2014	77.24	37.66	32.91	4.75	43.45	Nieto & Sons
	7/8/2014	77.24	36.70	32.79	3.91	43.73	Blaine Tech
	7/18/2014	77.24	36.68	32.77	3.91	43.75	Blaine Tech
	7/24/2014	77.24	36.79	32.62	4.17	43.85	Blaine Tech
	8/1/2014	77.24	35.82	32.44	3.38	44.17	Blaine Tech
	8/8/2014	77.24	35.72	32.44	3.28	44.19	Blaine Tech
	8/13/2014	77.24	35.68	32.45	3.23	44.19	Blaine Tech
	8/19/2014	77.24	35.64	32.45	3.19	44.20	Blaine Tech
	8/29/2014	77.24	35.65	32.44	3.21	44.21	Blaine Tech
	9/5/2014	77.24	35.73	32.46	3.27	44.18	Blaine Tech
	9/11/2014	77.24	35.78	32.47	3.31	44.16	Blaine Tech
	9/18/2014	77.24	35.85	32.49	3.36	44.13	Blaine Tech
	9/26/2014	77.24	35.85	32.46	3.39	44.15	Blaine Tech
10/1/2014	77.24	35.76	32.45	3.31	44.18	Blaine Tech	
10/6/2014	77.24	35.72	32.44	3.28	44.19	Blaine Tech	
10/14/2014	77.24	35.75	32.42	3.33	44.20	Blaine Tech	
10/23/2014	77.24	35.84	32.43	3.41	44.18	Blaine Tech	
10/27/2014	77.24	35.74	32.41	3.33	44.21	Blaine Tech	
11/3/2014	77.24	35.89	32.45	3.44	44.15	Blaine Tech	
11/10/2014	77.24	35.94	32.45	3.49	44.14	Blaine Tech	
11/18/2014	77.24	35.97	32.48	3.49	44.11	Blaine Tech	
11/25/2014	77.24	35.97	32.51	3.46	44.09	Blaine Tech	
12/3/2014	77.24	35.84	32.45	3.39	44.16	Blaine Tech	
12/12/2014	77.24	36.44	32.65	3.79	43.89	Blaine Tech	
12/19/2014	77.24	36.80	34.71	2.09	42.14	Blaine Tech	
4/20/2015	77.24	36.64	32.84	3.80	43.70	Blaine Tech	
7/24/2015	77.24	39.80	33.70	6.10	42.41	Northstar	
10/20/2015	77.24	36.10	34.92	1.18	42.10	Kinder Morgan	
3/16/2016	77.24	39.73	37.61	2.12	39.24	Kinder Morgan	
4/11/2016	77.24	38.59	35.50	3.09	41.17	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	6/30/2016	77.24	36.55	---	---	40.69	Blaine Tech
	10/3/2016	77.24	37.70	---	---	39.54	Blaine Tech
	4/17/2017	77.24	34.47	---	---	42.77	Blaine Tech
	10/2/2017	77.24	38.45	---	---	38.79	Blaine Tech
	4/16/2018	77.24	38.23	---	---	39.01	Blaine Tech
	11/5/2018	77.24	38.02	---	---	39.22	Blaine Tech
GMW-24	4/30/2007	74.04	27.07	---	---	46.97	Secor
	11/12/2007	74.04	27.50	27.46	0.04	46.57	Stantec
	8/12/2008	74.04	NM	---	---	NC	Envent
	8/19/2008	74.04	29.34	28.24	1.10	45.58	Envent
	10/17/2008	74.04	30.88	29.90	0.98	43.94	Envent
	10/21/2008	74.04	29.64	28.30	1.34	45.47	Envent
	12/18/2008	74.04	29.04	---	---	45.00	Envent
	1/15/2009	74.04	30.56	29.80	0.76	44.09	Envent
	3/20/2009	74.04	31.28	---	---	42.76	Envent
	3/27/2009	74.04	30.45	---	---	43.59	Envent
	4/21/2009	74.04	29.91	---	---	44.13	Envent
	7/21/2009	74.04	32.78	---	---	41.26	Envent
	10/19/2009	74.04	NM	---	---	NC	Blaine Tech
	2/4/2010	74.04	29.67	29.40	0.27	44.59	Kinder Morgan
	6/22/2010	74.04	29.47	---	---	44.57	Blaine Tech
	9/3/2010	74.04	29.90	---	---	44.14	Kinder Morgan
	10/4/2010	74.04	29.50	---	---	44.54	Blaine Tech
	4/11/2011	74.04	28.21	---	---	45.83	Blaine Tech
	10/10/2011	74.04	28.78	---	---	45.26	Blaine Tech
	4/16/2012	74.04	30.49	30.31	0.18	43.69	Blaine Tech
	7/9/2012	---	NM	---	---	NC	Blaine Tech
	10/15/2012	77.48	31.34	---	---	46.14	Blaine Tech
	4/8/2013	77.48	NM	---	---	NC	Blaine Tech
	6/14/2013	77.48	33.35	32.40	0.95	44.89	Blaine Tech
	10/7/2013	77.48	35.42	31.61	3.81	45.11	Blaine Tech
	4/14/2014	77.48	37.74	32.01	5.73	44.32	Blaine Tech
	5/5/2014	77.48	37.81	32.09	5.72	44.25	Nieto & Sons
	5/12/2014	77.48	37.52	32.14	5.38	44.26	Nieto & Sons
	5/20/2014	77.48	37.39	32.21	5.18	44.23	Nieto & Sons
	5/27/2014	77.48	37.95	32.90	5.05	43.57	Nieto & Sons
	6/4/2014	77.48	37.00	32.70	4.30	43.92	Nieto & Sons
	6/10/2014	77.48	37.85	32.98	4.87	43.53	Nieto & Sons
	7/3/2014	77.48	39.60	33.04	6.56	43.13	Nieto & Sons
	7/8/2014	77.48	38.67	32.89	5.78	43.43	Blaine Tech
7/18/2014	77.48	38.64	32.86	5.78	43.46	Blaine Tech	
7/24/2014	77.48	38.27	32.82	5.45	43.57	Blaine Tech	
8/1/2014	77.48	37.00	32.55	4.45	44.04	Blaine Tech	
8/8/2014	77.48	36.97	32.51	4.46	44.08	Blaine Tech	
8/13/2014	77.48	36.82	32.54	4.28	44.08	Blaine Tech	
8/19/2014	77.48	36.92	32.55	4.37	44.06	Blaine Tech	
8/29/2014	77.48	36.92	32.51	4.41	44.09	Blaine Tech	
9/5/2014	77.48	36.97	32.55	4.42	44.05	Blaine Tech	
9/11/2014	77.48	37.99	32.57	5.42	43.83	Blaine Tech	
9/18/2014	77.48	36.89	32.60	4.29	44.02	Blaine Tech	
9/26/2014	77.48	36.86	32.58	4.28	44.04	Blaine Tech	
10/1/2014	77.48	36.64	32.61	4.03	44.06	Blaine Tech	
10/6/2014	77.48	36.93	32.92	4.01	43.76	Blaine Tech	
10/14/2014	77.48	36.92	32.88	4.04	43.79	Blaine Tech	
10/23/2014	77.48	37.00	32.90	4.10	43.76	Blaine Tech	
10/27/2014	77.48	36.82	32.91	3.91	43.79	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	11/3/2014	77.48	37.01	32.99	4.02	43.69	Blaine Tech
	11/10/2014	77.48	37.33	33.95	3.38	42.85	Blaine Tech
	11/18/2014	77.48	36.96	33.01	3.95	43.68	Blaine Tech
	11/25/2014	77.48	36.91	33.55	3.36	43.26	Blaine Tech
	12/3/2014	77.48	36.87	32.99	3.88	43.71	Blaine Tech
	12/12/2014	77.48	37.36	33.25	4.11	43.41	Blaine Tech
	12/19/2014	77.48	37.75	33.31	4.44	43.28	Blaine Tech
	3/10/2015	77.48	36.25	---	---	41.23	Kinder Morgan
	4/20/2015	77.48	36.29	33.82	2.47	43.17	Blaine Tech
	7/24/2015	77.48	39.80	33.70	6.10	42.56	Blaine Tech
	10/20/2015	77.48	35.44	---	---	42.04	Kinder Morgan
	3/16/2016	77.48	38.83	---	---	38.65	Kinder Morgan
	4/11/2016	77.48	37.10	---	---	40.38	Blaine Tech
	6/29/2016	77.48	38.20	---	---	39.28	Blaine Tech
	8/22/2016	77.48	38.40	---	---	39.08	Blaine Tech
	10/3/2016	77.48	38.70	---	---	39.44	Blaine Tech
	4/17/2017	77.48	35.64	35.09	0.55	42.28	Blaine Tech
	10/2/2017	77.48	39.33	---	---	38.15	Blaine Tech
4/16/2018	77.48	38.98	---	---	38.50	Blaine Tech	
11/5/2018	77.48	38.63	38.19	0.44	39.20	Blaine Tech	
GMW-25	4/30/2007	74.29	26.60	---	---	47.69	Secor
	11/12/2007	74.29	27.30	27.25	0.05	47.03	Stantec
	8/12/2008	74.29	27.81	---	---	46.48	Envent
	10/17/2008	74.29	28.26	---	---	46.03	Envent
	12/18/2008	74.29	29.01	---	---	45.28	Envent
	1/15/2009	74.29	28.62	---	---	45.67	Envent
	3/24/2009	74.29	28.79	---	---	45.50	Envent
	4/21/2009	74.29	28.35	---	---	45.94	Envent
	7/21/2009	74.29	29.80	---	---	44.49	Envent
	10/19/2009	74.29	30.28	---	---	44.01	Blaine Tech
	6/22/2010	74.29	31.64	---	---	42.65	Blaine Tech
	10/4/2010	74.29	29.25	---	---	45.04	Blaine Tech
	4/11/2011	74.29	26.21	---	---	48.08	Blaine Tech
	10/10/2011	74.29	30.02	---	---	44.27	Blaine Tech
	4/16/2012	74.29	31.30	---	---	42.99	Blaine Tech
	7/9/2012	---	NM	---	---	NC	Blaine Tech
	10/15/2012	78.14	31.88	---	---	46.26	Blaine Tech
	4/8/2013	78.14	32.11	---	---	46.03	Blaine Tech
	10/7/2013	78.14	33.23	33.10	0.13	45.01	Blaine Tech
	4/14/2014	78.14	37.40	33.00	4.40	44.13	Blaine Tech
	5/5/2014	78.14	37.51	33.06	4.45	44.06	Nieto & Sons
	5/12/2014	78.14	34.97	33.73	1.24	44.12	Nieto & Sons
	5/20/2014	78.14	36.75	34.30	2.45	43.28	Nieto & Sons
	5/27/2014	78.14	34.64	34.44	0.20	43.65	Nieto & Sons
	6/4/2014	78.14	35.00	---	---	43.14	Nieto & Sons
	6/10/2014	78.14	36.67	34.18	2.49	43.39	Nieto & Sons
	7/3/2014	78.14	34.21	---	---	43.93	Nieto & Sons
	7/24/2014	78.14	34.29	---	---	43.85	Blaine Tech
	8/1/2014	78.14	35.02	33.99	1.03	43.91	Blaine Tech
	8/8/2014	78.14	34.54	34.06	0.48	43.97	Blaine Tech
	8/14/2014	78.14	34.48	34.06	0.42	43.98	Blaine Tech
	8/19/2014	78.14	34.51	34.07	0.44	43.97	Blaine Tech
8/29/2014	78.14	34.65	33.96	0.69	44.02	Blaine Tech	
9/18/2014	78.14	35.21	34.01	1.20	43.85	Blaine Tech	
9/26/2014	78.14	34.87	34.06	0.81	43.89	Blaine Tech	
10/1/2014	78.14	34.92	33.98	0.94	43.94	Blaine Tech	
10/6/2014	78.14	34.93	33.99	0.94	43.93	Blaine Tech	
10/14/2014	78.14	35.10	33.91	1.19	43.96	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/23/2014	78.14	35.34	33.91	1.43	43.90	Blaine Tech
	10/27/2014	78.14	34.78	33.95	0.83	44.00	Blaine Tech
	11/3/2014	78.14	34.92	33.98	0.94	43.94	Blaine Tech
	11/10/2014	78.14	35.12	34.02	1.10	43.87	Blaine Tech
	11/18/2014	78.14	34.90	34.11	0.79	43.85	Blaine Tech
	11/25/2014	78.14	35.07	34.07	1.00	43.84	Blaine Tech
	12/3/2014	78.14	35.10	33.98	1.12	43.90	Blaine Tech
	12/12/2014	78.14	35.22	34.30	0.92	43.63	Blaine Tech
	12/19/2014	78.14	35.05	34.50	0.55	43.51	Blaine Tech
	4/20/2015	78.14	35.19	34.47	0.72	43.50	Blaine Tech
	6/25/2015	78.14	36.35	35.40	0.95	42.52	Blaine Tech
	10/20/2015	78.14	35.40	35.38	0.02	42.76	Kinder Morgan
	3/16/2016	78.14	38.99	---	---	39.15	Kinder Morgan
	4/12/2016	78.14	37.15	---	---	40.99	Kinder Morgan
	6/29/2016	78.14	38.40	---	---	39.74	Blaine Tech
	8/22/2016	78.14	38.44	---	---	39.70	Blaine Tech
	10/3/2016	78.14	38.70	---	---	39.44	Blaine Tech
	4/17/2017	78.14	35.23	---	---	42.91	Blaine Tech
	10/2/2017	78.14	39.22	---	---	38.92	Blaine Tech
	4/16/2018	78.14	38.85	---	---	39.29	Blaine Tech
11/5/2018	78.14	38.70	---	---	39.44	Blaine Tech	
GMW-36	3/12/2007	74.53	24.29	---	---	50.24	Secor
	4/30/2007	74.53	24.40	---	---	50.13	Secor
	8/28/2007	74.53	24.31	---	---	50.22	Stantec
	11/12/2007	74.53	24.86	24.85	0.01	49.68	Stantec
	2/19/2008	74.53	25.50	---	---	49.03	Stantec
	4/14/2008	74.53	24.61	---	---	49.92	Stantec
	8/8/2008	74.53	26.20	26.14	0.06	48.38	Envent
	10/16/2008	74.77	26.11	26.09	0.02	48.68	Envent
	12/18/2008	74.53	28.70	28.65	0.05	45.87	Envent
	1/15/2009	74.53	27.73	27.45	0.28	47.02	Envent
	2/20/2009	74.53	26.39	26.35	0.04	48.17	Envent
	2/23/2009	74.53	26.13	25.80	0.33	48.66	Blaine Tech
	3/24/2009	74.53	29.83	---	---	44.70	Envent
	4/20/2009	74.53	25.63	25.59	0.04	48.93	Blaine Tech
	7/17/2009	74.53	27.40	---	---	47.13	Envent
	7/20/2009	74.53	25.90	---	---	48.63	Blaine Tech
	7/21/2009	74.53	26.03	---	---	48.50	Envent
	7/22/2009	74.53	25.90	---	---	48.63	Blaine Tech
	10/19/2009	74.53	26.56	26.45	0.11	48.06	Blaine Tech
	2/4/2010	74.53	26.93	26.80	0.13	47.70	Kinder Morgan
	3/15/2010	74.53	26.80	---	---	47.73	Blaine Tech
	4/16/2010	74.53	26.90	---	---	47.63	Blaine Tech
	5/24/2010	74.53	25.96	25.90	0.06	48.62	Blaine Tech
	5/28/2010	74.53	25.94	25.88	0.06	48.64	Blaine Tech
	6/22/2010	74.53	25.94	25.91	0.03	48.61	Blaine Tech
	7/12/2010	74.53	NM	---	---	NC	
	8/12/2010	74.53	NM	---	---	NC	
	9/20/2010	74.53	NM	---	---	NC	
	10/4/2010	74.53	26.90	---	---	47.63	
	10/24/2010	74.53	26.90	---	---	47.63	Blaine Tech
	11/23/2010	74.53	27.35	27.10	0.25	47.38	Blaine Tech
	12/22/2010	74.53	28.35	26.84	1.51	47.39	Blaine Tech
1/10/2011	74.53	29.10	27.70	1.40	46.55	Blaine Tech	
2/24/2011	74.53	NM	---	---	NC	Blaine Tech	
3/23/2011	74.53	NM	---	---	NC	Blaine Tech	
4/12/2011	74.53	26.98	25.05	1.93	49.09	Blaine Tech	
5/13/2011	74.53	NM	---	---	NC	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	6/22/2011	74.53	NM	---	---	NC	
	7/11/2011	74.53	NM	---	---	NC	
	8/19/2011	74.53	NM	---	---	NC	
	9/22/2011	74.53	NM	---	---	NC	
	10/10/2011	74.53	25.96	---	---	48.57	Blaine Tech
	11/28/2011	74.53	NM	---	---	NC	
	12/2/2011	74.53	26.71	---	---	47.82	Kinder Morgan
	12/21/2011	74.53	28.17	---	---	46.36	Blaine Tech
	1/9/2012	74.53	27.26	---	---	47.27	Blaine Tech
	2/23/2012	74.53	27.85	---	---	46.68	Blaine Tech
	3/28/2012	74.53	NM	---	---	NC	Blaine Tech
	4/16/2012	74.53	27.34	---	---	47.19	Blaine Tech
	5/25/2012	74.53	NM	---	---	NC	Blaine Tech
	6/15/2012	---	33.27	---	---	NC	Blaine Tech
	7/9/2012	---	33.71	---	---	NC	Blaine Tech
	8/29/2012	---	NM	---	---	NC	Blaine Tech
	9/26/2012	---	NM	---	---	NC	Blaine Tech
	10/15/2012	76.66	32.11	---	---	44.55	Blaine Tech
	11/29/2012	76.66	33.93	31.68	2.25	44.53	Blaine Tech
	12/26/2012	76.66	34.86	30.36	4.50	45.40	Blaine Tech
	1/14/2013	76.66	34.12	30.42	3.70	45.50	Blaine Tech
	2/20/2013	76.66	NM	---	---	NC	Blaine Tech
	4/10/2013	76.66	32.42	29.75	2.67	46.38	Blaine Tech
	10/7/2013	76.66	34.65	30.72	3.93	45.15	Blaine Tech
	4/25/2014	76.66	34.71	31.12	3.59	44.82	Blaine Tech
	5/20/2014	76.66	34.95	31.50	3.45	44.47	Nieto & Sons
	5/27/2014	76.66	34.53	31.29	3.24	44.72	Nieto & Sons
	6/4/2014	76.66	34.93	31.50	3.43	44.47	Nieto & Sons
	8/13/2014	76.66	34.86	31.27	3.59	44.67	Blaine Tech
	8/19/2014	76.66	34.20	31.39	2.81	44.71	Blaine Tech
	8/29/2014	76.66	34.31	31.32	2.99	44.74	Blaine Tech
	9/5/2014	76.66	34.35	31.37	2.98	44.69	Blaine Tech
	9/11/2014	76.66	35.00	31.23	3.77	44.68	Blaine Tech
	9/18/2014	76.66	34.42	31.50	2.92	44.58	Blaine Tech
	9/26/2014	76.66	34.15	31.48	2.67	44.65	Blaine Tech
	10/1/2014	76.66	33.51	31.61	1.90	44.67	Blaine Tech
	10/6/2014	76.66	33.29	31.63	1.66	44.70	Blaine Tech
	10/14/2014	76.66	33.48	31.55	1.93	44.72	Blaine Tech
	10/23/2014	76.66	33.64	31.57	2.07	44.68	Blaine Tech
	10/27/2014	76.66	33.02	31.79	1.23	44.62	Blaine Tech
	11/3/2014	76.66	33.75	31.57	2.18	44.65	Blaine Tech
	11/18/2014	76.66	33.17	31.75	1.42	44.63	Blaine Tech
	11/25/2014	76.66	33.13	31.86	1.27	44.55	Blaine Tech
	12/3/2014	76.66	32.93	31.75	1.18	44.67	Blaine Tech
	4/20/2015	76.66	33.64	32.20	1.44	44.17	Blaine Tech
	10/21/2015	76.66	33.55	33.16	0.39	43.42	Blaine Tech
	4/12/2016	76.66	34.30	34.03	0.27	42.58	Kinder Morgan
	10/3/2016	76.66	35.05	34.65	0.40	41.93	Blaine Tech
	3/9/2017	76.66	33.45	---	---	43.21	CH2M
	4/17/2017	76.66	32.96	---	---	43.70	Blaine Tech
	10/2/2017	76.66	34.10	---	---	42.56	Blaine Tech
	4/16/2018	76.66	35.18	---	---	41.48	Blaine Tech
	11/5/2018	76.66	35.91	---	---	40.75	Blaine Tech
GMW-O-11	4/30/2007	74.17	23.91	23.90	0.01	50.27	Secor
	11/12/2007	74.17	24.40	---	---	49.77	Stantec
	8/15/2008	74.17	29.30	---	---	44.87	Envent
	10/17/2008	74.17	24.45	---	---	49.72	Envent
	12/19/2008	74.17	24.85	---	---	49.32	Envent

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	1/15/2009	74.17	26.87	24.38	2.49	49.29	Envent
	2/24/2009	74.17	24.31	24.21	0.10	49.94	Envent
	3/27/2009	74.17	31.08	---	---	43.09	Envent
	4/21/2009	74.17	25.36	25.34	0.02	48.83	Envent
	7/21/2009	74.17	26.18	---	---	47.99	Envent
	10/19/2009	74.17	NM	---	---	NC	Blaine Tech
	11/6/2009	74.17	26.33	26.18	0.15	47.96	Kinder Morgan
	10/4/2010	74.17	30.00	---	---	44.17	Blaine Tech
	4/13/2011	74.17	24.19	---	---	49.98	Blaine Tech
	10/10/2011	74.17	24.38	---	---	49.79	Blaine Tech
	4/16/2012	74.17	NM	---	---	NC	Blaine Tech
	7/9/2012	74.17	NM	---	---	NC	Blaine Tech
	10/15/2012	74.17	28.12	---	---	46.05	Blaine Tech
	4/8/2013	74.17	NM	---	---	NC	Blaine Tech
	9/24/2013	74.17	31.25	28.15	3.10	45.40	Blaine Tech
	10/7/2013	74.17	31.19	27.69	3.50	45.78	Blaine Tech
	4/25/2014	74.17	28.96	28.62	0.34	45.48	Blaine Tech
	9/5/2014	74.17	31.13	27.89	3.24	45.63	Blaine Tech
	9/11/2014	74.17	31.12	27.85	3.27	45.67	Blaine Tech
	9/18/2014	74.17	31.22	27.85	3.37	45.65	Blaine Tech
	9/26/2014	74.17	31.34	27.91	3.43	45.57	Blaine Tech
	10/1/2014	74.17	31.19	27.84	3.35	45.66	Blaine Tech
	10/6/2014	74.17	32.19	27.84	4.35	45.46	Blaine Tech
	10/14/2014	74.17	31.18	28.85	2.33	44.85	Blaine Tech
	10/23/2014	74.17	31.34	27.85	3.49	45.62	Blaine Tech
	10/27/2014	74.17	31.28	28.89	2.39	44.80	Blaine Tech
	11/3/2014	74.17	32.34	27.83	4.51	45.44	Blaine Tech
	11/10/2014	74.17	31.46	27.97	3.49	45.50	Blaine Tech
	11/18/2014	74.17	31.41	27.88	3.53	45.58	Blaine Tech
	11/25/2014	74.17	31.48	27.87	3.61	45.58	Blaine Tech
	12/3/2014	74.17	33.34	29.95	3.39	43.54	Blaine Tech
	12/12/2014	74.17	33.25	29.08	4.17	44.26	Blaine Tech
	12/19/2014	74.17	32.52	28.09	4.43	45.19	Blaine Tech
	4/22/2015	74.17	31.54	28.10	3.44	45.38	Blaine Tech
	10/22/2015	74.17	33.08	29.23	3.85	44.17	Kinder Morgan
	3/16/2016	74.17	33.39	33.16	0.23	40.96	Kinder Morgan
4/12/2016	74.17	33.33	33.12	0.21	41.01	Kinder Morgan	
6/30/2016	74.17	31.50	---	---	42.67	Kinder Morgan	
8/22/2016	74.17	32.75	32.74	0.01	41.43	Kinder Morgan	
10/3/2016	74.17	32.72	32.71	0.01	41.46	Kinder Morgan	
3/24/2017	74.17	31.50	30.45	1.05	43.51	CH2M	
4/17/2017	74.17	30.12	29.96	0.16	44.18	Blaine Tech	
10/2/2017	74.17	33.54	---	---	40.63	Blaine Tech	
4/16/2018	74.17	NM	---	---	NC	Blaine Tech	
11/5/2018	74.17	33.22	33.11	0.11	41.04	Blaine Tech	
GMW-O-12	4/30/2007	73.49	22.81	---	---	50.68	Secor
	11/12/2007	73.49	23.13	---	---	50.36	Stantec
	4/14/2008	73.49	23.36	---	---	50.13	Stantec
	10/13/2008	73.49	24.20	---	---	49.29	Stantec
	4/20/2009	73.49	24.21	---	---	49.28	Blaine Tech
	10/19/2009	73.49	25.08	---	---	48.41	Blaine Tech
	5/24/2010	73.49	24.80	---	---	48.69	Blaine Tech
	5/28/2010	73.49	24.74	---	---	48.75	Blaine Tech
	10/4/2010	73.49	25.31	25.20	0.11	48.27	Blaine Tech
	1/10/2011	73.49	26.42	26.32	0.10	47.15	Blaine Tech
	4/11/2011	73.49	24.04	---	---	49.45	Blaine Tech
	7/11/2011	73.49	NM	---	---	NC	
10/10/2011	73.49	24.68	---	---	48.81	Blaine Tech	
1/9/2012	73.49	25.12	---	---	48.37	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	4/16/2012	73.49	25.40	---	---	48.09	Blaine Tech
	7/9/2012	73.49	26.96	---	---	46.53	Blaine Tech
	10/15/2012	73.49	25.48	25.44	0.04	48.04	Blaine Tech
	1/14/2013	73.49	25.62	25.58	0.04	47.90	Blaine Tech
	4/8/2013	73.49	26.60	26.51	0.09	46.96	Blaine Tech
	9/24/2013	73.49	27.90	27.74	0.16	45.72	Blaine Tech
	10/7/2013	73.49	27.34	27.28	0.06	46.20	Blaine Tech
	4/14/2014	73.49	30.34	26.80	3.54	45.96	Blaine Tech
	5/6/2014	73.49	30.93	26.74	4.19	45.89	Nieto & Sons
	5/12/2014	73.49	30.81	26.82	3.99	45.85	Nieto & Sons
	5/20/2014	73.49	31.78	27.32	4.46	45.26	Nieto & Sons
	5/27/2014	73.49	33.04	26.78	6.26	45.43	Nieto & Sons
	6/4/2014	73.49	33.00	27.75	5.25	44.66	Nieto & Sons
	6/10/2014	73.49	34.53	26.81	7.72	45.10	Nieto & Sons
	7/3/2014	73.49	34.27	26.94	7.33	45.05	Blaine Tech
	7/8/2014	73.49	33.87	26.87	7.00	45.19	Blaine Tech
	7/18/2014	73.49	33.36	27.07	6.29	45.13	Blaine Tech
	7/24/2014	73.49	33.00	26.98	6.02	45.28	Blaine Tech
	8/1/2014	73.49	31.80	26.83	4.97	45.64	Blaine Tech
	8/8/2014	73.49	31.26	26.91	4.35	45.69	Blaine Tech
	8/13/2014	73.49	31.18	26.88	4.30	45.73	Blaine Tech
	8/19/2014	73.49	31.01	26.86	4.15	45.78	Blaine Tech
	8/29/2014	73.49	31.03	26.89	4.14	45.75	Blaine Tech
	9/5/2014	73.49	31.19	26.88	4.31	45.73	Blaine Tech
	9/18/2014	73.49	31.30	26.82	4.48	45.75	Blaine Tech
	9/26/2014	73.49	31.33	26.89	4.44	45.69	Blaine Tech
	10/1/2014	73.49	31.21	26.85	4.36	45.75	Blaine Tech
	10/6/2014	73.49	31.20	29.84	1.36	43.37	Blaine Tech
	10/14/2014	73.49	31.14	26.86	4.28	45.75	Blaine Tech
	10/23/2014	73.49	31.30	26.85	4.45	45.73	Blaine Tech
	10/27/2014	73.49	31.28	26.90	4.38	45.69	Blaine Tech
	11/3/2014	73.49	32.30	26.84	5.46	45.53	Blaine Tech
	11/10/2014	73.49	31.45	26.91	4.54	45.65	Blaine Tech
	11/18/2014	73.49	32.34	26.90	5.44	45.47	Blaine Tech
	11/25/2014	73.49	31.57	27.87	3.70	44.86	Blaine Tech
	12/3/2014	73.49	33.87	28.81	5.06	43.64	Blaine Tech
	12/19/2014	73.49	32.78	26.97	5.81	45.33	Blaine Tech
	4/20/2015	73.49	33.35	26.91	6.44	45.26	Blaine Tech
	4/22/2015	73.49	33.35	26.91	6.44	45.26	Blaine Tech
	5/21/2015	73.49	34.31	27.35	6.96	44.71	Northstar
	5/29/2015	73.49	34.15	27.24	6.91	44.83	Northstar
	6/2/2015	73.49	34.00	27.27	6.73	44.84	Northstar
	6/5/2015	73.49	34.00	27.50	6.50	44.66	Northstar
	6/12/2015	73.49	33.96	27.35	6.61	44.78	Northstar
	6/19/2015	73.49	33.98	27.58	6.40	44.60	Northstar
	6/26/2015	73.49	33.97	28.15	5.82	44.15	Northstar
	7/2/2015	73.49	33.83	28.20	5.63	44.14	Northstar
	7/7/2015	73.49	33.60	27.93	5.67	44.40	Northstar
	7/17/2015	73.49	33.57	27.85	5.72	44.47	Northstar
	7/24/2015	73.49	33.15	28.25	4.90	44.24	Northstar
	7/29/2015	73.49	33.02	28.10	4.92	44.38	Northstar
	8/11/2015	73.49	33.00	28.90	4.10	43.75	Northstar
	8/18/2015	73.49	32.65	28.23	4.42	44.35	Northstar
	8/28/2015	73.49	32.41	28.17	4.24	44.45	Kinder Morgan
	9/1/2015	73.49	33.18	28.65	4.53	43.91	Kinder Morgan
	9/25/2015	73.49	34.69	28.03	6.66	44.09	Kinder Morgan
	10/16/2015	73.49	34.63	27.83	6.80	44.27	Kinder Morgan
	10/19/2015	73.49	34.65	27.82	6.83	44.27	Blaine Tech
	10/30/2015	73.49	39.38	28.11	11.27	43.07	Kinder Morgan

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By	
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)		
	3/14/2016	73.49	32.40	31.60	0.80	41.73	Blaine Tech	
	4/11/2016	73.49	33.35	26.86	6.49	45.30	Blaine Tech	
	6/29/2016	73.49	33.90	33.10	0.80	40.23	Blaine Tech	
	8/22/2016	73.49	33.56	31.07	2.49	41.91	Blaine Tech	
	10/3/2016	73.49	34.20	31.90	2.30	41.12	Blaine Tech	
	4/17/2017	73.49	32.90	28.70	4.20	43.95	Blaine Tech	
	10/2/2017	73.49	33.20	32.00	1.20	41.25	Blaine Tech	
	4/16/2018	73.49	33.04	31.89	1.15	41.37	Blaine Tech	
11/5/2018	73.49	32.65	32.31	0.34	41.11	Blaine Tech		
GMW-O-15	4/30/2007	74.23	23.41	23.30	0.11	50.91	Secor	
	11/12/2007	74.23	23.95	23.85	0.10	50.36	Stantec	
	4/14/2008	74.23	23.64	---	---	50.59	Stantec	
	8/8/2008	74.23	24.60	---	---	49.63	Envent	
	8/11/2008	74.23	24.40	24.34	0.06	49.88	Stantec	
	10/16/2008	74.23	24.53	---	---	49.70	Envent	
	12/18/2008	74.23	24.86	---	---	49.37	Envent	
	1/2/2009	74.23	24.82	---	---	49.41	Envent	
	1/15/2009	74.23	26.01	---	---	48.22	Envent	
	2/20/2009	74.23	24.80	---	---	49.43	Envent	
	2/23/2009	74.23	24.76	24.74	0.02	49.49	Blaine Tech	
	3/24/2009	74.23	25.55	---	---	48.68	Envent	
	4/20/2009	74.23	24.66	24.61	0.05	49.61	Blaine Tech	
	7/17/2009	74.23	25.01	---	---	49.22	Envent	
	7/20/2009	74.23	24.99	24.94	0.05	49.28	Blaine Tech	
	7/22/2009	74.23	24.99	24.94	0.05	49.28	Blaine Tech	
	10/19/2009	74.23	25.55	25.43	0.12	48.78	Blaine Tech	
	2/4/2010	74.23	25.50	25.48	0.02	48.75	Kinder Morgan	
	3/15/2010	74.23	NM	---	---	---	NC	
	4/16/2010	74.23	23.10	---	---	---	51.13	Blaine Tech
	5/24/2010	74.23	25.67	---	---	---	48.56	Blaine Tech
	5/28/2010	74.23	25.35	---	---	---	48.88	Blaine Tech
	6/22/2010	74.23	25.81	---	---	---	48.42	Blaine Tech
	7/12/2010	74.23	NM	---	---	---	NC	
	8/12/2010	74.23	NM	---	---	---	NC	
	9/20/2010	74.23	NM	---	---	---	NC	
	10/4/2010	74.23	25.85	25.80	0.05	48.42	Blaine Tech	
	11/23/2010	74.23	NM	---	---	---	NC	Blaine Tech
	12/22/2010	74.23	26.31	---	---	---	47.92	Blaine Tech
	1/10/2011	74.23	25.97	---	---	---	48.26	Blaine Tech
	2/24/2011	74.23	NM	---	---	---	NC	Blaine Tech
	3/23/2011	74.23	NM	---	---	---	NC	Blaine Tech
	4/12/2011	74.23	22.55	22.53	0.02	51.70	Blaine Tech	
	5/13/2011	74.23	NM	---	---	---	NC	Blaine Tech
	6/22/2011	74.23	NM	---	---	---	NC	
	7/11/2011	74.23	NM	---	---	---	NC	
	8/19/2011	74.23	NM	---	---	---	NC	
	9/22/2011	74.23	NM	---	---	---	NC	
	10/10/2011	74.23	23.79	23.22	0.57	50.90	Blaine Tech	
	11/28/2011	74.23	NM	---	---	---	NC	
12/2/2011	74.23	23.92	23.86	0.06	50.36	Kinder Morgan		
12/21/2011	74.23	31.13	---	---	---	43.10	Blaine Tech	
1/9/2012	74.23	27.67	---	---	---	46.56	Blaine Tech	
2/23/2012	74.23	31.82	---	---	---	42.41	Blaine Tech	
3/28/2012	74.23	30.30	---	---	---	43.93	Blaine Tech	
4/16/2012	74.23	26.56	26.51	0.05	47.71	Blaine Tech		
5/25/2012	74.23	26.64	---	---	---	47.59	Blaine Tech	
6/15/2012	74.23	26.93	---	---	---	47.30	Blaine Tech	
7/9/2012	74.23	25.47	---	---	---	48.76	Blaine Tech	
8/29/2012	74.23	NM	---	---	---	NC	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	9/26/2012	74.23	30.64	---	---	43.59	Blaine Tech
	10/15/2012	74.23	31.82	---	---	42.41	Blaine Tech
	11/29/2012	74.23	NM	---	---	NC	Blaine Tech
	12/26/2012	74.23	27.41	---	---	46.82	Blaine Tech
	1/14/2013	74.23	27.62	---	---	46.61	Blaine Tech
	2/20/2013	74.23	NM	---	---	NC	Blaine Tech
	4/10/2013	74.23	NM	---	---	NC	Blaine Tech
	4/26/2013	74.23	27.90	---	---	46.33	Kinder Morgan
	10/7/2013	74.23	29.03	28.26	0.77	45.82	Blaine Tech
	4/18/2014	74.23	28.40	28.08	0.32	46.09	Blaine Tech
	8/14/2014	74.23	32.59	28.26	4.33	45.10	Blaine Tech
	8/19/2014	74.23	32.34	28.23	4.11	45.18	Blaine Tech
	8/29/2014	74.23	31.84	28.25	3.59	45.26	Blaine Tech
	9/5/2014	74.23	31.91	28.29	3.62	45.22	Blaine Tech
	9/11/2014	74.23	32.16	28.79	3.37	44.77	Blaine Tech
	9/18/2014	74.23	32.50	28.23	4.27	45.15	Blaine Tech
	9/26/2014	74.23	32.20	28.27	3.93	45.17	Blaine Tech
	10/1/2014	74.23	31.93	28.28	3.65	45.22	Blaine Tech
	10/6/2014	74.23	31.91	28.27	3.64	45.23	Blaine Tech
	10/14/2014	74.23	31.85	28.29	3.56	45.23	Blaine Tech
	10/23/2014	74.23	32.10	28.30	3.80	45.17	Blaine Tech
	10/27/2014	74.23	31.89	28.30	3.59	45.21	Blaine Tech
	11/18/2014	74.23	31.86	28.39	3.47	45.15	Blaine Tech
	11/25/2014	74.23	32.36	28.35	4.01	45.08	Blaine Tech
	12/3/2014	74.23	31.73	28.36	3.37	45.20	Blaine Tech
	12/12/2014	74.23	32.61	28.54	4.07	44.88	Blaine Tech
	12/19/2014	74.23	32.62	28.37	4.25	45.01	Blaine Tech
	4/20/2015	74.23	31.93	28.82	3.11	44.79	Blaine Tech
	10/19/2015	74.23	31.91	28.89	3.02	44.74	Blaine Tech
	4/12/2016	74.23	29.78	---	---	44.45	Kinder Morgan
10/3/2016	74.86	31.00	30.92	0.08	43.92	Kinder Morgan	
3/9/2017	74.86	29.94	---	---	44.92	CH2M	
4/17/2017	74.86	29.65	29.52	0.13	45.31	Blaine Tech	
10/2/2017	74.86	31.92	30.33	1.59	44.21	Blaine Tech	
4/16/2018	74.86	31.79	31.67	0.12	43.17	Blaine Tech	
11/5/2018	74.86	32.38	--	--	42.48	Blaine Tech	
GMW-O-18	4/30/2007	74.36	24.21	---	---	50.15	Secor
	11/12/2007	74.36	22.46	---	---	51.90	Secor
	4/14/2008	74.36	24.50	---	---	49.86	Secor
	10/13/2008	74.36	25.46	---	---	48.90	Stantec
	4/20/2009	74.36	25.59	---	---	48.77	Blaine Tech
	10/19/2009	74.36	26.31	---	---	48.05	Blaine Tech
	3/15/2010	74.36	26.54	---	---	47.82	Blaine Tech
	4/16/2010	74.36	24.25	---	---	50.11	Blaine Tech
	5/24/2010	74.36	26.26	---	---	48.10	Blaine Tech
	5/28/2010	74.36	26.03	---	---	48.33	Blaine Tech
	6/22/2010	74.36	26.41	---	---	47.95	
	7/12/2010	74.36	NM	---	---	NC	
	8/12/2010	74.36	NM	---	---	NC	
	9/20/2010	74.36	NM	---	---	NC	
	10/4/2010	74.36	29.95	---	---	44.41	Blaine Tech
	11/16/2010	74.36	NM	---	---	NC	
	12/22/2010	74.36	NM	---	---	NC	
	1/10/2011	74.36	NM	---	---	NC	
	2/24/2011	74.36	NM	---	---	NC	Blaine Tech
	3/23/2011	74.36	NM	---	---	NC	Blaine Tech
4/12/2011	74.36	NM	---	---	NC	Blaine Tech	
5/13/2011	74.36	NM	---	---	NC	Blaine Tech	
6/22/2011	74.36	NM	---	---	NC		

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	7/11/2011	74.36	NM	---	---	NC	
	8/19/2011	74.36	NM	---	---	NC	
	9/22/2011	74.36	NM	---	---	NC	
	10/10/2011	74.36	23.68	---	---	50.68	Blaine Tech
	11/28/2011	74.36	NM	---	---	NC	
	12/2/2011	74.36	24.22	---	---	50.14	Blaine Tech
	12/21/2011	74.36	27.14	---	---	47.22	Blaine Tech
	2/23/2012	74.36	31.18	---	---	43.18	Blaine Tech
	3/28/2012	74.36	NM	---	---	NC	Blaine Tech
	4/16/2012	74.36	27.10	---	---	47.26	Blaine Tech
	5/25/2012	74.36	27.31	---	---	47.05	Blaine Tech
	6/15/2012	74.36	35.13	---	---	39.23	Blaine Tech
	7/9/2012	74.36	29.51	---	---	44.85	Blaine Tech
	8/29/2012	74.36	NM	---	---	NC	Blaine Tech
	9/26/2012	74.36	30.83	---	---	43.53	Blaine Tech
	10/15/2012	74.36	29.73	---	---	44.63	Blaine Tech
	11/29/2012	74.36	NM	---	---	NC	Blaine Tech
	12/26/2012	74.36	28.87	---	---	45.49	Blaine Tech
	1/14/2013	74.36	28.92	---	---	45.44	Blaine Tech
	2/20/2013	74.36	NM	---	---	NC	Blaine Tech
	4/10/2013	74.36	28.10	---	---	46.26	Blaine Tech
	10/7/2013	74.36	26.67	---	---	47.69	Blaine Tech
	4/18/2014	74.36	29.43	29.37	0.06	44.98	Blaine Tech
	8/14/2014	74.36	29.87	29.45	0.42	44.83	Blaine Tech
	8/19/2014	74.36	29.97	29.58	0.39	44.70	Blaine Tech
	8/29/2014	74.36	29.77	29.34	0.43	44.93	Blaine Tech
	9/11/2014	74.36	29.96	29.61	0.35	44.68	Blaine Tech
	9/18/2014	74.36	29.95	29.56	0.39	44.72	Blaine Tech
	9/26/2014	74.36	29.97	29.55	0.42	44.73	Blaine Tech
	10/1/2014	74.36	29.90	29.52	0.38	44.76	Blaine Tech
	10/6/2014	74.36	29.94	29.56	0.38	44.72	Blaine Tech
	10/14/2014	74.36	29.94	29.58	0.36	44.71	Blaine Tech
	10/23/2014	74.36	30.00	29.62	0.38	44.66	Blaine Tech
	10/27/2014	74.36	29.95	29.52	0.43	44.75	Blaine Tech
	4/20/2015	74.36	28.53	---	---	45.83	Blaine Tech
	10/19/2015	74.36	30.90	---	---	43.46	Blaine Tech
	4/12/2016	74.36	31.63	---	---	42.73	Blaine Tech
	12/13/2016	74.32	35.95	31.01	4.94	42.32	Blaine Tech
	12/14/2016	74.32	32.60	---	---	41.72	Blaine Tech
	3/6/2017	74.32	33.40	32.60	0.80	41.56	CH2M
	4/17/2017	74.32	31.83	31.80	0.03	42.51	Blaine Tech
	10/2/2017	74.32	31.32	31.30	0.02	43.02	Blaine Tech
	4/16/2018	74.32	NM	--	--	NC	Blaine Tech
	11/5/2018	74.32	33.03	32.90	0.13	41.39	Blaine Tech
GMW-O-20	8/15/2008	73.32	25.90	---	---	47.42	Envent
	10/17/2008	73.32	25.82	---	---	47.50	Envent
	12/19/2008	73.32	27.15	---	---	46.17	Envent
	1/15/2009	73.32	26.53	26.09	0.44	47.15	Envent
	2/24/2009	73.32	27.85	---	---	45.47	Envent
	3/20/2009	73.32	28.81	---	---	44.51	Envent
	3/27/2009	73.32	27.84	---	---	45.48	Envent
	4/21/2009	73.32	28.70	---	---	44.62	Envent
	7/21/2009	73.32	24.10	---	---	49.22	Envent
	10/19/2009	73.32	NM	---	---	NC	Blaine Tech
	11/9/2009	73.32	25.60	25.40	0.20	47.88	Kinder Morgan
	6/22/2010	73.32	24.76	24.66	0.10	48.64	Blaine Tech
	10/4/2010	73.32	31.20	31.10	0.10	42.20	Blaine Tech
	1/10/2011	73.32	26.62	26.48	0.14	46.81	Blaine Tech
	4/11/2011	73.32	23.82	---	---	49.50	Blaine Tech

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	7/11/2011	73.32	NM	---	---	NC	
	10/10/2011	73.32	24.05	---	---	49.27	Blaine Tech
	1/9/2012	73.32	24.68	---	---	48.64	Blaine Tech
	4/16/2012	73.32	26.18	---	---	47.14	Blaine Tech
	7/9/2012	73.32	32.92	---	---	40.40	Blaine Tech
	10/15/2012	73.32	32.97	32.95	0.02	40.37	Blaine Tech
	1/14/2013	73.32	32.98	32.93	0.05	40.38	Blaine Tech
	4/8/2013	73.32	29.63	26.46	3.17	46.27	Blaine Tech
	9/24/2013	73.32	31.10	27.20	3.90	45.40	Blaine Tech
	10/7/2013	73.32	32.09	27.06	5.03	45.33	Blaine Tech
	4/25/2014	73.32	28.48	28.40	0.08	44.91	Blaine Tech
	9/18/2014	73.32	30.71	27.72	2.99	45.05	Blaine Tech
	9/26/2014	73.32	30.87	27.75	3.12	44.99	Blaine Tech
	10/1/2014	73.32	30.52	27.65	2.87	45.14	Blaine Tech
	10/6/2014	73.32	30.50	27.66	2.84	45.13	Blaine Tech
	10/14/2014	73.32	30.63	27.62	3.01	45.14	Blaine Tech
	10/23/2014	73.32	30.80	27.70	3.10	45.05	Blaine Tech
	10/27/2014	73.32	30.70	27.76	2.94	45.02	Blaine Tech
	11/3/2014	73.32	30.81	27.62	3.19	45.11	Blaine Tech
	11/10/2014	73.32	30.94	27.75	3.19	44.98	Blaine Tech
	11/18/2014	73.32	30.91	27.65	3.26	45.07	Blaine Tech
	11/25/2014	73.32	30.95	27.65	3.30	45.06	Blaine Tech
	12/3/2014	73.32	32.56	27.83	4.73	44.61	Blaine Tech
	12/19/2014	73.32	31.72	27.93	3.79	44.69	Blaine Tech
	4/22/2015	73.32	32.25	27.98	4.27	44.55	Blaine Tech
	10/22/2015	73.32	31.36	29.38	1.98	43.57	Kinder Morgan
	3/16/2016	73.32	32.54	---	---	40.78	Kinder Morgan
	4/12/2016	73.32	32.48	---	---	40.84	Kinder Morgan
	6/29/2016	73.32	32.50	---	---	40.82	Blaine Tech
	8/22/2016	73.32	32.18	---	---	41.14	Blaine Tech
	10/3/2016	73.32	33.12	---	---	40.20	Blaine Tech
	3/23/2017	73.32	30.35	---	---	42.97	CH2M
	4/17/2017	73.32	29.70	---	---	43.62	Blaine Tech
	10/2/2017	73.32	33.03	---	---	40.29	Blaine Tech
	4/16/2018	73.32	32.67	---	---	40.65	Blaine Tech
	11/5/2018	73.32	32.92	---	---	40.40	Blaine Tech
GMW-O-21	12/28/2007	71.43	27.67	---	---	43.76	Geomatrix
	8/15/2008	73.94	NM	---	---	NC	Envent
	10/17/2008	71.43	26.00	---	---	45.43	Envent
	12/19/2008	71.43	24.82	---	---	46.61	Envent
	3/27/2009	71.43	26.41	---	---	45.02	Envent
	7/21/2009	71.43	24.88	---	---	46.55	Envent
	10/19/2009	71.43	NM	---	---	NC	Blaine Tech
	11/9/2009	71.43	25.02	---	---	46.41	Kinder Morgan
	10/4/2010	71.43	25.40	---	---	46.03	Blaine Tech
	4/13/2011	71.43	23.72	---	---	47.71	Blaine Tech
	10/10/2011	71.43	24.65	---	---	46.78	Blaine Tech
	4/16/2012	71.43	NM	---	---	NC	Blaine Tech
	7/9/2012	71.43	NM	---	---	NC	Blaine Tech
	10/15/2012	71.43	32.50	---	---	38.93	Blaine Tech
	4/8/2013	71.43	NM	---	---	NC	Blaine Tech
	9/25/2013	71.43	29.25	---	---	42.18	Blaine Tech
	10/7/2013	71.43	NM	---	---	NC	Blaine Tech
	4/14/2014	71.43	28.65	28.61	0.04	42.81	Blaine Tech
	9/5/2014	71.43	29.61	28.78	0.83	42.48	Blaine Tech
	9/26/2014	71.43	29.85	28.77	1.08	42.44	Blaine Tech
	10/1/2014	71.43	29.79	28.64	1.15	42.56	Blaine Tech
	10/6/2014	71.43	29.40	28.72	0.68	42.57	Blaine Tech
	10/27/2014	71.43	29.75	28.93	0.82	42.34	Blaine Tech

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	11/10/2014	71.43	29.98	28.95	1.03	42.27	Blaine Tech
	11/18/2014	71.43	30.05	28.92	1.13	42.28	Blaine Tech
	11/25/2014	71.43	29.73	28.85	0.88	42.40	Blaine Tech
	12/12/2014	71.43	30.61	29.02	1.59	42.09	Blaine Tech
	12/19/2014	71.43	30.62	29.04	1.58	42.07	Blaine Tech
	4/20/2015	71.43	30.15	28.99	1.16	42.21	Blaine Tech
	6/10/2015	71.43	31.00	30.70	0.30	40.67	Blaine Tech
	7/2/2015	71.43	32.30	29.88	2.42	41.07	Northstar
	7/7/2015	71.43	30.65	30.06	0.59	41.25	Northstar
	7/17/2015	71.43	30.40	30.10	0.30	41.27	Northstar
	7/29/2015	71.43	30.40	30.10	0.30	41.27	Northstar
	8/11/2015	71.43	31.00	30.70	0.30	40.67	Northstar
	10/19/2015	71.43	31.43	31.20	0.23	40.18	Blaine Tech
	3/14/2016	71.43	33.20	33.17	0.03	38.25	Blaine Tech
	4/11/2016	71.43	32.17	31.84	0.33	39.52	Blaine Tech
	6/29/2016	71.43	33.03	32.83	0.20	38.56	Blaine Tech
	8/22/2016	71.43	33.72	---	---	37.71	Blaine Tech
	10/3/2016	71.43	33.45	---	---	37.98	Blaine Tech
4/17/2017	71.43	30.48	---	---	40.95	Blaine Tech	
10/2/2017	71.43	33.45	---	---	37.98	Blaine Tech	
4/16/2018	71.43	33.13	---	---	38.30	Blaine Tech	
11/5/2018	71.43	33.68	---	---	37.75	Blaine Tech	
GMW-O-23	8/14/2007	73.63	23.33	---	---	50.30	Geomatrix
	8/21/2007	73.63	23.31	---	---	50.32	Geomatrix
	8/28/2007	73.63	23.00	---	---	50.63	Stantec
	9/11/2007	73.63	23.42	---	---	50.21	Geomatrix
	10/5/2007	73.63	27.79	---	---	45.84	Geomatrix
	11/2/2007	73.63	25.15	---	---	48.48	Geomatrix
	11/13/2007	73.63	23.90	---	---	49.73	Stantec
	12/28/2007	73.63	24.91	---	---	48.72	Geomatrix
	8/15/2008	73.63	26.28	---	---	47.35	Envent
	10/17/2008	73.63	27.16	---	---	46.47	Envent
	12/19/2008	73.63	27.60	---	---	46.03	Envent
	1/15/2009	73.63	27.54	---	---	46.09	Envent
	2/24/2009	73.63	26.19	---	---	47.44	Envent
	3/27/2009	73.63	23.74	---	---	49.89	Envent
	4/21/2009	73.63	27.30	---	---	46.33	Envent
	10/19/2009	73.63	NM	---	---	NC	Blaine Tech
	11/9/2009	73.63	27.50	---	---	46.13	Kinder Morgan
	6/22/2010	73.63	32.10	---	---	41.53	Blaine Tech
	10/4/2010	73.63	25.92	---	---	47.71	Blaine Tech
	1/10/2011	73.63	27.45	---	---	46.18	Blaine Tech
	4/11/2011	73.63	25.03	---	---	48.60	Blaine Tech
	7/11/2011	73.63	NM	---	---	NC	
	10/10/2011	73.63	25.25	---	---	48.38	Blaine Tech
	1/9/2012	73.63	25.91	---	---	47.72	Blaine Tech
	4/16/2012	73.63	27.38	---	---	46.25	Blaine Tech
	7/9/2012	73.63	27.41	---	---	46.22	Blaine Tech
	10/15/2012	73.63	26.48	---	---	47.15	Blaine Tech
	1/14/2013	73.63	29.35	---	---	44.28	Blaine Tech
	4/8/2013	73.63	29.81	27.74	2.07	45.48	Blaine Tech
	9/23/2013	73.63	29.90	---	---	43.73	Blaine Tech
	10/7/2013	73.63	32.86	28.30	4.56	44.42	Blaine Tech
	4/25/2014	73.63	29.81	29.66	0.15	43.94	Blaine Tech
9/5/2014	73.63	32.57	28.76	3.81	44.11	Blaine Tech	
9/11/2014	73.63	32.94	28.63	4.31	44.14	Blaine Tech	
9/18/2014	73.63	32.80	28.65	4.15	44.15	Blaine Tech	
9/26/2014	73.63	32.87	28.70	4.17	44.10	Blaine Tech	
10/1/2014	73.63	32.56	28.75	3.81	44.12	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/6/2014	73.63	32.50	28.73	3.77	44.15	Blaine Tech
	10/14/2014	73.63	32.75	28.20	4.55	44.52	Blaine Tech
	10/23/2014	73.63	32.80	28.69	4.11	44.12	Blaine Tech
	10/27/2014	73.63	32.51	28.80	3.71	44.09	Blaine Tech
	11/3/2014	73.63	32.82	29.68	3.14	43.32	Blaine Tech
	11/10/2014	73.63	32.80	28.78	4.02	44.05	Blaine Tech
	11/18/2014	73.63	32.78	29.78	3.00	43.25	Blaine Tech
	11/25/2014	73.63	32.64	28.78	3.86	44.08	Blaine Tech
	12/3/2014	73.63	33.25	28.94	4.31	43.83	Blaine Tech
	12/12/2014	73.63	32.58	29.33	3.25	43.65	Blaine Tech
	12/19/2014	73.63	32.71	29.37	3.34	43.59	Blaine Tech
	3/17/2015	73.63	30.40	30.00	0.40	43.55	Kinder Morgan
	4/22/2015	73.63	33.08	30.36	2.72	42.73	Blaine Tech
	10/22/2015	73.63	32.82	30.46	2.36	42.70	Kinder Morgan
	3/16/2016	73.63	34.43	---	---	39.20	Kinder Morgan
	4/12/2016	73.63	32.59	---	---	41.04	Kinder Morgan
	6/29/2016	73.63	33.90	---	---	39.73	Blaine Tech
	8/22/2016	73.63	33.89	---	---	39.74	Blaine Tech
	10/3/2016	73.63	34.90	---	---	38.73	Blaine Tech
	3/23/2017	73.63	31.65	---	---	41.98	CH2M
4/17/2017	73.63	30.88	---	---	42.75	Blaine Tech	
10/2/2017	73.63	34.70	---	---	38.93	Blaine Tech	
4/16/2018	73.63	34.05	---	---	39.58	Blaine Tech	
11/5/2018	73.63	34.31	---	---	39.32	Blaine Tech	
GMW-SF-9	4/21/2009	73.00	24.19	---	---	48.81	Envent
	5/24/2010	73.00	28.31	---	---	44.69	Blaine Tech
	5/28/2010	73.00	28.37	---	---	44.63	Blaine Tech
	10/4/2010	73.00	25.28	---	---	47.72	Blaine Tech
	4/11/2011	73.00	23.90	---	---	49.10	Blaine Tech
	10/10/2011	73.00	24.70	---	---	48.30	Blaine Tech
	4/16/2012	73.00	26.99	---	---	46.01	Blaine Tech
	7/9/2012	73.00	NM	---	---	NC	Blaine Tech
	10/15/2012	73.05	34.21	---	---	38.84	Blaine Tech
	1/14/2013	73.05	34.32	---	---	38.73	Blaine Tech
	4/10/2013	73.05	27.37	---	---	45.68	Blaine Tech
	8/14/2014	73.05	29.35	28.37	0.98	44.48	Blaine Tech
	8/19/2014	73.05	28.46	28.44	0.02	44.61	Blaine Tech
	8/29/2014	73.05	29.32	28.31	1.01	44.54	Blaine Tech
	9/5/2014	73.05	29.33	28.29	1.04	44.55	Blaine Tech
	9/11/2014	73.05	29.49	28.47	1.02	44.38	Blaine Tech
	9/18/2014	73.05	28.95	28.91	0.04	44.13	Blaine Tech
	9/26/2014	73.05	28.93	28.59	0.34	44.39	Blaine Tech
	4/20/2015	73.05	29.01	---	---	44.04	Blaine Tech
	10/21/2015	73.05	29.69	---	---	43.36	Blaine Tech
3/6/2017	73.05	28.88	---	---	44.17	CH2M	
GMW-SF-10	4/21/2009	75.77	27.10	---	---	48.67	Envent
	10/4/2010	75.77	28.03	---	---	47.74	Blaine Tech
	4/11/2011	75.77	26.80	---	---	48.97	Blaine Tech
	10/10/2011	75.77	27.60	---	---	48.17	Blaine Tech
	4/16/2012	75.77	28.81	---	---	46.96	Blaine Tech
	7/9/2012	75.77	NM	---	---	NC	Blaine Tech
	10/15/2012	75.77	29.88	---	---	45.89	Blaine Tech
	4/8/2013	75.77	DRY	---	---	NC	Blaine Tech
GWR-3	4/30/2007	74.93	27.97	---	---	46.96	Secor
	11/12/2007	74.93	27.90	---	---	47.03	Stantec
	10/17/2008	74.93	29.88	---	---	45.05	Envent
	12/17/2008	74.93	19.71	---	---	55.22	Envent
	1/15/2009	74.93	29.27	29.26	0.26	45.88	Envent
	3/27/2009	74.93	27.18	---	---	47.75	Envent

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	4/21/2009	74.93	29.97	---	---	44.96	Envent
	7/21/2009	74.93	28.77	---	---	46.16	Envent
	10/19/2009	74.93	NM	---	---	NC	Blaine Tech
	10/4/2010	74.93	30.67	---	---	44.26	Blaine Tech
	4/11/2011	74.93	29.94	---	---	44.99	Blaine Tech
	10/10/2011	74.93	29.22	---	---	45.71	Blaine Tech
	4/16/2012	74.93	29.56	---	---	45.37	Blaine Tech
	7/9/2012	---	NM	---	---	NC	Blaine Tech
	10/15/2012	77.6	31.21	---	---	46.39	Blaine Tech
	4/8/2013	77.6	29.21	29.18	0.03	48.41	Blaine Tech
	10/7/2013	77.6	36.20	31.67	4.53	45.16	Blaine Tech
	4/14/2014	77.6	38.80	32.23	6.57	44.25	Blaine Tech
	5/5/2014	77.6	38.81	32.31	6.50	44.18	Nieto & Sons
	5/12/2014	77.6	36.34	32.77	3.57	44.22	Nieto & Sons
	5/27/2014	77.6	36.11	33.20	2.91	43.91	Nieto & Sons
	6/4/2014	77.6	34.57	31.61	2.96	45.49	Nieto & Sons
	8/8/2014	77.6	37.92	33.38	4.54	43.45	Blaine Tech
	8/13/2014	77.6	35.38	33.18	2.20	44.05	Blaine Tech
	8/19/2014	77.6	35.28	33.25	2.03	44.00	Blaine Tech
	8/29/2014	77.6	35.72	33.12	2.60	44.04	Blaine Tech
	9/5/2014	77.6	35.68	33.19	2.49	43.99	Blaine Tech
	9/11/2014	77.6	36.05	33.04	3.01	44.05	Blaine Tech
	9/18/2014	77.60	35.34	33.27	2.07	43.98	Blaine Tech
	9/26/2014	77.60	35.25	33.24	2.01	44.02	Blaine Tech
	10/1/2014	77.60	36.44	34.01	2.43	43.18	Blaine Tech
	10/6/2014	77.60	34.71	33.33	1.38	44.04	Blaine Tech
	10/14/2014	77.60	35.15	33.20	1.95	44.07	Blaine Tech
	10/23/2014	77.60	35.36	33.20	2.16	44.03	Blaine Tech
	10/27/2014	77.60	34.68	33.49	1.19	43.91	Blaine Tech
	11/3/2014	77.60	35.43	33.18	2.25	44.04	Blaine Tech
	11/10/2014	77.60	35.02	33.32	1.70	43.99	Blaine Tech
	11/18/2014	77.60	35.05	33.34	1.71	43.97	Blaine Tech
	11/25/2014	77.60	35.04	33.36	1.68	43.95	Blaine Tech
	12/3/2014	77.60	34.95	33.34	1.61	43.99	Blaine Tech
	12/12/2014	77.60	35.11	33.64	1.47	43.71	Blaine Tech
	12/19/2014	77.60	35.55	33.67	1.88	43.61	Blaine Tech
	4/20/2015	77.60	37.25	33.34	3.91	43.60	Blaine Tech
	7/24/2015	77.60	41.30	33.95	7.35	42.40	Northstar
	8/12/2015	77.60	37.03	34.42	2.61	42.74	Northstar
	10/20/2015	77.60	35.98	34.65	1.33	42.72	Blaine Tech
	3/16/2016	77.60	38.60	---	---	39.00	Kinder Morgan
	4/11/2016	77.60	36.90	---	---	40.70	Blaine Tech
	6/29/2016	77.60	37.77	---	---	39.83	Blaine Tech
	8/22/2016	77.60	38.24	---	---	39.36	Blaine Tech
	10/3/2016	77.60	39.20	39.15	0.05	38.44	Blaine Tech
	3/7/2017	77.60	35.62	---	---	41.98	CH2M
	4/17/2017	77.60	34.88	--	--	42.72	Blaine Tech
	10/2/2017	77.60	38.92	---	---	38.68	Blaine Tech
	4/16/2018	77.60	38.73	---	---	38.87	Blaine Tech
	11/5/2018	77.60	38.42	---	---	39.18	Blaine Tech
MW-18 (MID)	4/30/2007	75.67	29.77	---	---	45.90	Secor
	11/12/2007	75.67	30.23	---	---	45.44	Secor
	4/14/2008	75.67	30.45	---	---	45.22	Secor
	10/13/2008	75.67	31.15	---	---	44.52	Stantec
	4/20/2009	75.67	31.49	---	---	44.18	Blaine Tech
	10/19/2009	75.67	32.62	---	---	43.05	Blaine Tech
	5/24/2010	75.67	32.26	---	---	43.41	Blaine Tech
	5/28/2010	75.67	32.17	---	---	43.50	Blaine Tech
	10/4/2010	75.67	32.30	---	---	43.37	Blaine Tech

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	4/11/2011	75.67	31.28	---	---	44.39	Blaine Tech
	10/10/2011	75.67	31.51	---	---	44.16	Blaine Tech
	4/16/2012	75.67	31.75	---	---	43.92	Blaine Tech
	7/9/2012	75.67	NM	---	---	NC	Blaine Tech
	10/15/2012	75.67	33.41	---	---	42.26	Blaine Tech
	4/8/2013	75.67	30.68	---	---	44.99	Blaine Tech
	10/7/2013	75.67	35.33	---	---	40.34	Blaine Tech
	4/14/2014	75.67	35.40	---	---	40.27	Blaine Tech
	10/27/2014	75.67	35.81	---	---	39.86	Blaine Tech
	4/20/2015	75.67	36.29	---	---	39.38	Blaine Tech
	10/19/2015	75.67	36.99	---	---	38.68	Blaine Tech
	3/14/2016	75.67	40.70	---	---	34.97	Blaine Tech
	4/11/2016	75.67	38.89	---	---	36.78	Blaine Tech
	6/29/2016	75.67	39.94	---	---	35.73	Blaine Tech
	8/22/2016	75.67	40.14	---	---	35.53	Blaine Tech
	10/3/2016	75.67	40.93	---	---	34.74	Blaine Tech
4/17/2017	75.67	37.50	---	---	38.17	Blaine Tech	
10/2/2017	75.67	40.26	---	---	35.41	Blaine Tech	
4/16/2018	75.67	40.46	---	---	35.21	Blaine Tech	
11/5/2018	75.67	40.50	---	---	35.17	Blaine Tech	
MW-O-1	4/30/2007	75.48	24.10	23.98	0.12	51.48	Secor
	8/14/2007	75.48	25.31	23.78	1.53	51.39	Geomatrix
	8/21/2007	75.48	23.84	23.58	0.26	51.85	Geomatrix
	8/28/2007	75.48	23.07	23.06	0.01	52.42	Stantec
	9/11/2007	75.48	23.86	23.48	0.38	51.92	Geomatrix
	10/5/2007	75.48	24.67	---	---	50.81	Geomatrix
	11/2/2007	75.48	24.25	---	---	51.23	Geomatrix
	11/12/2007	75.48	24.27	24.25	0.02	51.23	Stantec
	12/28/2007	75.48	25.54	25.51	0.03	49.96	Geomatrix
	8/15/2008	75.48	NM	---	---	NC	Envent
	8/19/2008	75.48	25.18	25.13	0.05	50.34	Envent
	10/17/2008	75.48	25.30	---	---	50.18	Envent
	12/19/2008	75.48	26.31	---	---	49.17	Envent
	1/15/2009	75.48	25.84	---	---	49.64	Envent
	4/21/2009	75.48	25.41	---	---	50.07	Envent
	10/19/2009	75.48	26.30	---	---	49.18	Blaine Tech
	10/4/2010	75.48	26.90	---	---	48.58	Blaine Tech
	4/11/2011	75.48	25.59	---	---	49.89	Blaine Tech
	10/10/2011	75.48	26.52	---	---	48.96	Blaine Tech
	4/16/2012	75.48	27.25	---	---	48.23	Blaine Tech
	7/9/2012	75.48	NM	---	---	NC	Blaine Tech
	10/15/2012	75.48	28.94	---	---	46.54	Blaine Tech
	4/8/2013	75.48	28.81	---	---	46.67	Blaine Tech
	10/7/2013	75.48	29.21	---	---	46.27	Blaine Tech
	4/14/2014	75.48	29.82	---	---	45.66	Blaine Tech
	10/27/2014	75.48	29.92	---	---	45.56	Blaine Tech
	4/20/2015	75.48	30.39	---	---	45.09	Blaine Tech
	10/27/2015	75.48	27.67	---	---	47.81	Blaine Tech
3/14/2016	75.48	DRY	---	---	NC	Blaine Tech	
4/11/2016	75.48	DRY	---	---	NC	Blaine Tech	
6/29/2016	75.48	DRY	---	---	NC	Blaine Tech	
8/22/2016	75.48	DRY	---	---	NC	Blaine Tech	
10/3/2016	75.48	DRY	---	---	NC	Blaine Tech	
4/17/2017	75.48	DRY	---	---	NC	Blaine Tech	
10/2/2017	75.48	DRY	---	---	NC	Blaine Tech	
4/16/2018	75.48	DRY	---	---	NC	Blaine Tech	
11/5/2018	75.48	DRY	---	---	NC	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
MW-O-2	4/30/2007	74.31	22.53	---	---	51.78	Secor
	11/12/2007	71.90	23.10	---	---	48.80	Stantec
	8/15/2008	71.90	NM	---	---	NC	Envent
	10/17/2008	71.90	24.85	---	---	47.05	Envent
	12/19/2008	71.90	25.51	---	---	46.39	Envent
	3/27/2009	71.90	25.22	---	---	46.68	Envent
	4/21/2009	71.90	NM	---	---	NC	Envent
	7/21/2009	71.90	23.63	---	---	48.27	Envent
	10/19/2009	71.90	NM	---	---	NC	Blaine Tech
	11/9/2009	71.90	25.39	---	---	46.51	Kinder Morgan
	10/4/2010	71.90	26.05	---	---	45.85	Blaine Tech
	4/13/2011	71.9	23.31	---	---	48.59	Blaine Tech
	10/10/2011	71.9	27.53	---	---	44.37	Blaine Tech
	1/9/2012	71.9	28.13	---	---	43.77	Blaine Tech
	4/16/2012	71.9	NM	---	---	NC	Blaine Tech
	7/9/2012	71.9	26.53	---	---	45.37	Blaine Tech
	10/15/2012	71.9	26.89	---	---	45.01	Blaine Tech
	1/14/2013	71.9	26.93	---	---	44.97	Blaine Tech
	4/8/2013	71.9	NM	---	---	NC	Blaine Tech
	6/6/2013	71.9	28.99	---	---	42.91	Blaine Tech
	10/7/2013	71.9	29.06	---	---	42.84	Blaine Tech
	4/14/2014	71.9	29.36	---	---	42.54	Blaine Tech
	10/27/2014	71.9	29.81	29.65	0.16	42.22	Blaine Tech
	4/20/2015	71.9	30.94	29.34	1.60	42.24	Blaine Tech
	5/21/2015	71.9	32.50	27.31	5.19	43.55	Northstar
	5/29/2015	71.9	31.52	30.20	1.32	41.44	Northstar
	6/5/2015	71.9	31.45	30.57	0.88	41.15	Northstar
	6/12/2015	71.9	31.05	30.60	0.45	41.21	Northstar
	6/19/2015	71.9	31.10	30.90	0.20	40.96	Northstar
	6/26/2015	71.9	31.66	31.37	0.29	40.47	Northstar
	10/19/2015	71.9	32.39	30.53	1.86	41.00	Blaine Tech
	3/14/2016	71.9	35.49	34.86	0.63	36.91	Blaine Tech
4/11/2016	71.9	33.03	32.54	0.49	39.26	Blaine Tech	
6/30/2016	71.9	34.20	---	---	37.70	Kinder Morgan	
8/22/2016	71.9	33.93	---	---	37.97	Kinder Morgan	
10/3/2016	71.9	34.30	34.22	0.08	37.66	Blaine Tech	
4/17/2017	71.9	30.91	30.85	0.06	41.04	Blaine Tech	
10/2/2017	71.9	34.67	---	---	37.23	Blaine Tech	
4/16/2018	71.9	34.18	34.16	0.02	37.74	Blaine Tech	
11/5/2018	71.9	34.30	---	---	37.60	Blaine Tech	
MW-SF-1	3/12/2007	78.93	28.71	---	---	50.22	Secor
	4/30/2007	78.93	28.44	---	---	50.49	Secor
	8/28/2007	78.93	27.94	---	---	50.99	Stantec
	11/12/2007	78.93	28.76	---	---	50.17	Stantec
	2/19/2008	78.93	29.50	---	---	49.43	Stantec
	4/14/2008	78.93	29.16	---	---	49.77	Stantec
	8/11/2008	78.93	29.75	---	---	49.18	Stantec
	10/13/2008	78.93	29.86	---	---	49.07	Stantec
	2/23/2009	78.93	30.00	---	---	48.93	Blaine Tech
	4/20/2009	78.93	29.97	---	---	48.96	Blaine Tech
	7/20/2009	78.93	30.98	---	---	47.95	Blaine Tech
	7/22/2009	78.93	30.98	---	---	47.95	Blaine Tech
	10/19/2009	78.93	31.11	---	---	47.82	Blaine Tech
	3/15/2010	78.93	31.74	---	---	47.19	Blaine Tech
	5/24/2010	78.93	30.79	---	---	48.14	Blaine Tech
	5/28/2010	78.93	30.57	---	---	48.36	Blaine Tech
	6/22/2010	78.93	30.84	---	---	48.09	Blaine Tech
7/12/2010	78.93	30.51	---	---	48.42	Blaine Tech	
10/4/2010	78.93	30.88	---	---	48.05	Blaine Tech	
1/10/2011	78.93	32.51	---	---	46.42	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	4/11/2011	78.93	29.87	---	---	49.06	Blaine Tech
	7/11/2011	78.93	29.84	---	---	49.09	Blaine Tech
	10/10/2011	78.93	29.60	---	---	49.33	Blaine Tech
	1/9/2012	78.93	31.25	---	---	47.68	Blaine Tech
	4/16/2012	78.93	32.59	---	---	46.34	Blaine Tech
	7/9/2012	78.93	31.24	---	---	47.69	Blaine Tech
	10/15/2012	78.93	32.23	---	---	46.70	Blaine Tech
	1/14/2013	78.93	33.88	---	---	45.05	Blaine Tech
	4/8/2013	78.93	33.38	---	---	45.55	Blaine Tech
	10/7/2013	78.93	37.14	31.72	5.42	46.13	Blaine Tech
	4/14/2014	78.93	37.40	32.69	4.71	45.30	Blaine Tech
	5/6/2014	78.93	39.99	32.82	7.17	44.68	Nieto & Sons
	5/12/2014	78.93	37.31	33.55	3.76	44.63	Nieto & Sons
	5/20/2014	78.93	37.10	34.60	2.50	43.83	Nieto & Sons
	5/27/2014	78.93	36.62	34.30	2.32	44.17	Nieto & Sons
	6/4/2014	78.93	35.98	35.27	0.71	43.52	Nieto & Sons
	6/10/2014	78.93	36.91	34.48	2.43	43.96	Nieto & Sons
	7/3/2014	78.93	36.72	34.71	2.01	43.82	Nieto & Sons
	7/8/2014	78.93	36.60	34.45	2.15	44.05	Blaine Tech
	7/18/2014	78.93	35.18	34.77	0.41	44.08	Blaine Tech
	7/24/2014	78.93	35.30	34.62	0.68	44.17	Blaine Tech
	8/1/2014	78.93	34.74	34.44	0.30	44.43	Blaine Tech
	8/14/2014	78.93	34.75	34.41	0.34	44.45	Blaine Tech
	8/19/2014	78.93	34.66	34.37	0.29	44.50	Blaine Tech
	8/29/2014	78.93	35.65	35.38	0.27	43.50	Blaine Tech
	9/18/2014	78.93	34.85	34.49	0.36	44.37	Blaine Tech
	9/26/2014	78.93	34.78	34.45	0.33	44.41	Blaine Tech
	10/1/2014	78.93	34.77	34.41	0.36	44.45	Blaine Tech
	10/6/2014	78.93	34.78	34.42	0.36	44.44	Blaine Tech
	10/14/2014	78.93	34.65	34.41	0.24	44.47	Blaine Tech
	10/23/2014	78.93	34.84	34.45	0.39	44.40	Blaine Tech
	10/27/2014	78.93	34.80	34.43	0.37	44.43	Blaine Tech
	11/10/2014	78.93	34.91	34.51	0.40	44.34	Blaine Tech
	11/18/2014	78.93	34.80	34.43	0.37	44.43	Blaine Tech
	11/25/2014	78.93	34.53	34.51	0.02	44.42	Blaine Tech
	12/12/2014	78.93	35.18	34.78	0.40	44.07	Blaine Tech
	12/19/2014	78.93	35.34	34.88	0.46	43.96	Blaine Tech
	4/20/2015	78.93	34.89	34.48	0.41	44.37	Blaine Tech
	5/19/2015	78.93	38.45	34.55	3.90	43.60	Northstar
	5/29/2015	78.93	36.36	35.22	1.14	43.48	Northstar
	6/5/2015	78.93	36.50	35.43	1.07	43.29	Northstar
	6/12/2015	78.93	35.80	35.41	0.39	43.44	Northstar
	6/19/2015	78.93	36.02	35.42	0.60	43.39	Northstar
	6/26/2015	78.93	36.60	36.45	0.15	42.45	Northstar
	10/19/2015	78.93	36.35	35.53	0.82	43.24	Blaine Tech
	11/17/2015	78.93	35.65	---	---	43.28	Kinder Morgan
	3/14/2016	78.93	40.40	---	---	38.53	Blaine Tech
	4/11/2016	78.93	37.96	---	---	40.97	Blaine Tech
	6/29/2016	78.93	39.05	---	---	39.88	Blaine Tech
	8/22/2016	78.93	39.04	---	---	39.87	Blaine Tech
	10/3/2016	78.93	39.20	---	---	39.73	Blaine Tech
	4/17/2017	78.93	35.75	---	---	43.18	Blaine Tech
	10/2/2017	78.93	39.98	---	---	38.95	Blaine Tech
	4/16/2018	78.93	39.43	---	---	39.50	Blaine Tech
	11/5/2018	78.93	39.20	---	---	39.73	Blaine Tech
MW-SF-2	4/30/2007	78.45	28.35	28.34	0.01	50.11	Secor
	11/12/2007	78.45	29.18	28.71	0.47	49.65	Stantec
	8/12/2008	78.45	31.11	---	---	47.34	Envent
	10/17/2008	78.45	31.55	31.50	0.05	46.94	Envent

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	12/18/2008	78.53	32.75	32.55	0.20	45.94	Envent
	1/15/2009	78.53	30.84	30.57	0.27	47.91	Envent
	3/24/2009	78.53	28.85	---	---	49.68	Envent
	4/21/2009	78.53	29.98	---	---	48.55	Envent
	7/21/2009	78.53	29.85	---	---	48.68	Envent
	10/19/2009	78.53	NM	---	---	NC	Blaine Tech
	12/9/2009	78.53	31.45	---	---	47.08	Kinder Morgan
	10/4/2010	78.53	30.96	30.75	0.21	47.74	Blaine Tech
	1/10/2011	78.53	32.62	32.50	0.12	46.01	Blaine Tech
	4/11/2011	78.53	29.83	---	---	48.70	Blaine Tech
	7/11/2011	78.53	NM	---	---	NC	
	10/10/2011	78.53	29.82	---	---	48.71	Blaine Tech
	1/9/2012	78.53	30.52	---	---	48.01	Blaine Tech
	4/16/2012	78.53	31.28	---	---	47.25	Blaine Tech
	7/9/2012	78.53	33.18	---	---	45.35	Blaine Tech
	10/15/2012	78.53	32.11	---	---	46.42	Blaine Tech
	1/14/2013	78.53	33.59	---	---	44.94	Blaine Tech
	4/8/2013	78.53	33.32	---	---	45.21	Blaine Tech
	10/7/2013	78.53	34.58	33.08	1.50	45.15	Blaine Tech
	4/14/2014	78.53	37.50	33.27	4.23	44.41	Blaine Tech
	5/6/2014	78.53	37.71	33.24	4.47	44.40	Nieto & Sons
	5/12/2014	78.53	37.53	33.34	4.19	44.35	Nieto & Sons
	5/20/2014	78.53	37.62	33.51	4.11	44.20	Nieto & Sons
	5/27/2014	78.53	38.24	33.77	4.47	43.87	Nieto & Sons
	6/4/2014	78.53	34.63	---	---	43.90	Nieto & Sons
	6/10/2014	78.53	38.49	34.00	4.49	43.63	Nieto & Sons
	8/8/2014	78.53	36.23	33.82	2.41	44.23	Blaine Tech
	8/13/2014	78.53	36.75	33.59	3.16	44.31	Blaine Tech
	8/19/2014	78.53	36.90	33.60	3.30	44.27	Blaine Tech
	8/29/2014	78.53	37.11	33.53	3.58	44.28	Blaine Tech
	9/5/2014	78.53	37.09	33.51	3.58	44.30	Blaine Tech
	9/11/2014	78.53	37.12	33.51	3.61	44.30	Blaine Tech
	9/18/2014	78.53	36.89	33.60	3.29	44.27	Blaine Tech
	9/26/2014	78.53	37.28	33.54	3.74	44.24	Blaine Tech
	10/1/2014	78.53	37.18	33.56	3.62	44.25	Blaine Tech
	10/6/2014	78.53	37.16	33.59	3.57	44.23	Blaine Tech
	10/14/2014	78.53	37.15	33.64	3.51	44.19	Blaine Tech
	10/23/2014	78.53	37.24	33.61	3.63	44.19	Blaine Tech
	10/27/2014	78.53	37.04	33.54	3.50	44.29	Blaine Tech
	11/3/2014	78.53	37.14	33.55	3.59	44.26	Blaine Tech
	11/10/2014	78.53	37.33	33.56	3.77	44.22	Blaine Tech
	11/18/2014	78.53	37.21	33.64	3.57	44.18	Blaine Tech
	11/25/2014	78.53	37.40	33.69	3.71	44.10	Blaine Tech
	12/3/2014	78.53	37.16	33.60	3.56	44.22	Blaine Tech
	12/12/2014	78.53	38.05	33.91	4.14	43.79	Blaine Tech
	12/19/2014	78.53	38.40	33.95	4.45	43.69	Blaine Tech
	4/20/2015	78.53	36.15	34.73	1.42	43.52	Blaine Tech
	6/25/2015	78.53	38.95	35.57	3.38	42.28	Blaine Tech
	10/21/2015	78.53	36.32	36.13	0.19	42.36	Kinder Morgan
	3/16/2016	78.53	39.27	---	---	39.26	Kinder Morgan
	4/11/2016	78.53	37.47	---	---	41.06	Blaine Tech
	6/29/2016	78.53	38.08	---	---	40.45	Blaine Tech
	8/22/2016	78.53	38.83	---	---	39.70	Blaine Tech
	10/3/2016	78.53	39.60	---	---	38.93	Blaine Tech
	3/10/2017	78.53	36.47	---	---	42.06	CH2M
	4/17/2017	78.53	35.78	---	---	42.75	Blaine Tech
	10/2/2017	78.53	39.68	---	---	38.85	Blaine Tech
	4/16/2018	78.53	39.47	---	---	39.06	Blaine Tech
	11/5/2018	78.53	39.55	---	---	38.98	Blaine Tech

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
MW-SF-3	4/30/2007	77.62	27.72	27.45	0.27	50.12	Secor
	11/12/2007	77.62	29.34	28.28	1.06	49.13	Stantec
	8/12/2008	77.62	30.30	29.05	1.25	48.32	Envent
	10/17/2008	77.62	29.45	---	---	48.17	Envent
	12/18/2008	78.12	31.08	30.82	0.26	47.25	Envent
	1/15/2009	78.12	29.96	29.94	0.02	48.18	Envent
	3/20/2009	78.12	31.10	---	---	47.02	Envent
	3/24/2009	78.12	27.82	---	---	50.30	Envent
	4/21/2009	78.12	29.51	29.50	0.01	48.62	Envent
	7/21/2009	78.12	30.07	---	---	48.05	Envent
	10/19/2009	78.12	NM	---	---	NC	Blaine Tech
	11/6/2009	78.12	30.37	30.35	0.02	47.77	Kinder Morgan
	12/9/2009	78.12	30.53	---	---	47.59	Kinder Morgan
	9/3/2010	78.12	30.97	30.42	0.55	47.59	Kinder Morgan
	10/4/2010	78.12	30.88	30.30	0.58	47.70	Blaine Tech
	4/12/2011	78.12	29.44	---	---	48.68	Blaine Tech
	10/10/2011	78.12	30.75	---	---	47.37	Blaine Tech
	4/16/2012	78.12	NM	---	---	NC	Blaine Tech
	7/9/2012	78.12	NM	---	---	NC	Blaine Tech
	10/15/2012	78.12	32.47	---	---	45.65	Blaine Tech
	5/24/2013	78.12	33.35	32.51	0.84	45.44	Blaine Tech
	9/25/2013	78.12	34.40	---	---	43.72	Blaine Tech
	10/7/2013	78.12	NM	---	---	NC	Blaine Tech
	11/14/2013	78.12	33.26	---	---	44.86	Blaine Tech
	4/18/2014	78.12	33.72	33.62	0.10	44.48	Blaine Tech
	8/8/2014	78.12	34.07	33.71	0.36	44.34	Blaine Tech
	10/14/2014	78.12	34.55	33.92	0.63	44.07	Blaine Tech
	10/23/2014	78.12	34.57	33.94	0.63	44.05	Blaine Tech
	10/27/2014	78.12	34.49	33.85	0.64	44.14	Blaine Tech
	11/10/2014	78.12	34.65	33.94	0.71	44.04	Blaine Tech
	11/18/2014	78.12	34.62	33.88	0.74	44.09	Blaine Tech
	11/25/2014	78.12	34.22	33.94	0.28	44.12	Blaine Tech
	12/12/2014	78.12	34.89	34.38	0.51	43.64	Blaine Tech
12/19/2014	78.12	35.04	34.43	0.61	43.57	Blaine Tech	
4/20/2015	78.12	34.52	---	---	43.60	Blaine Tech	
10/21/2015	78.12	35.18	---	---	42.94	Kinder Morgan	
3/14/2016	78.12	39.43	39.40	0.03	38.71	Blaine Tech	
4/11/2016	78.12	37.17	---	---	40.95	Blaine Tech	
6/30/2016	78.12	38.28	---	---	39.84	Kinder Morgan	
8/22/2016	78.12	38.33	---	---	39.79	Kinder Morgan	
10/3/2016	78.12	39.40	---	---	38.72	Kinder Morgan	
3/8/2017	78.12	35.75	---	---	42.37	CH2M	
4/17/2017	78.12	35.15	---	---	42.97	Blaine Tech	
10/2/2017	78.12	39.20	---	---	38.92	Blaine Tech	
4/16/2018	78.12	38.81	---	---	39.31	Blaine Tech	
11/5/2018	78.12	38.69	---	---	39.43	Blaine Tech	
MW-SF-4	3/12/2007	79.38	30.01	29.41	0.60	49.85	Secor
	4/30/2007	79.38	29.96	29.11	0.85	50.10	Secor
	8/14/2007	79.38	30.34	28.38	1.96	50.60	Geomatrix
	8/28/2007	79.38	29.95	28.30	1.65	50.74	Stantec
	9/11/2007	79.38	29.98	28.43	1.55	50.63	Geomatrix
	10/5/2007	79.38	30.68	28.85	1.83	50.15	Geomatrix
	10/12/2007	79.38	30.27	29.96	0.31	49.36	Geomatrix
	10/19/2007	79.38	30.28	---	---	49.10	Geomatrix
	10/26/2007	79.38	30.52	---	---	48.86	Geomatrix
	11/2/2007	79.38	30.68	---	---	48.70	Geomatrix
	11/12/2007	79.38	29.70	29.69	0.01	49.69	Stantec
12/21/2007	79.38	30.69	---	---	48.69	Geomatrix	
2/19/2008	79.38	30.22	---	---	49.16	Stantec	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	3/21/2008	79.38	30.07	---	---	49.31	Envent
	4/14/2008	79.38	29.95	---	---	49.43	Stantec
	8/8/2008	79.38	30.51	---	---	48.87	Envent
	8/11/2008	79.38	30.57	---	---	48.81	Stantec
	10/16/2008	79.38	30.77	---	---	48.61	Envent
	1/15/2009	79.38	31.14	---	---	48.24	Envent
	2/20/2009	79.38	30.84	---	---	48.54	Envent
	2/23/2009	79.38	30.96	---	---	48.42	Blaine Tech
	4/20/2009	79.38	30.02	29.94	0.08	49.42	Blaine Tech
	4/28/2009	79.38	30.78	---	---	48.60	Envent
	7/17/2009	79.38	31.85	---	---	47.53	Envent
	7/20/2009	79.38	31.65	31.61	0.04	47.76	Blaine Tech
	7/22/2009	79.38	31.65	31.61	0.04	47.76	Blaine Tech
	10/19/2009	79.38	31.93	31.90	0.03	47.47	Blaine Tech
	3/15/2010	79.38	31.95	31.91	0.04	47.46	Blaine Tech
	5/24/2010	79.38	31.60	---	---	47.78	Blaine Tech
	5/28/2010	79.38	26.40	---	---	52.98	Blaine Tech
	6/22/2010	79.38	31.63	---	---	47.75	Blaine Tech
	7/12/2010	79.38	31.37	---	---	48.01	Blaine Tech
	10/4/2010	79.38	31.81	---	---	47.57	Blaine Tech
	1/10/2011	79.38	32.99	---	---	46.39	Blaine Tech
	4/11/2011	79.38	30.85	---	---	48.53	Blaine Tech
	7/11/2011	79.38	30.35	---	---	49.03	Blaine Tech
	10/10/2011	79.38	NM	---	---	NC	Blaine Tech
	1/9/2012	79.38	32.07	---	---	47.31	Blaine Tech
	4/16/2012	79.38	33.35	---	---	46.03	Blaine Tech
	7/9/2012	79.38	32.11	---	---	47.27	Blaine Tech
	10/15/2012	79.38	34.04	---	---	45.34	Blaine Tech
	1/14/2013	79.38	34.52	---	---	44.86	Blaine Tech
	4/8/2013	79.38	DRY	---	---	NC	Blaine Tech
	10/7/2013	79.38	DRY	---	---	NC	Blaine Tech
	4/25/2014	79.38	40.03	34.23	5.80	43.96	Blaine Tech
	5/6/2014	79.38	39.78	33.91	5.87	44.27	Nieto & Sons
	5/12/2014	79.38	37.02	34.64	2.38	44.25	Nieto & Sons
	5/20/2014	79.38	36.60	35.60	1.00	43.58	Nieto & Sons
	5/27/2014	79.38	36.12	35.45	0.67	43.79	Nieto & Sons
	6/4/2014	79.38	36.54	35.91	0.63	43.34	Nieto & Sons
	6/10/2014	79.38	37.02	35.38	1.64	43.66	Nieto & Sons
	7/3/2014	79.38	36.98	35.63	1.35	43.47	Nieto & Sons
	7/8/2014	79.38	36.78	35.34	1.44	43.74	Blaine Tech
	7/18/2014	79.38	35.88	35.55	0.33	43.76	Blaine Tech
	7/24/2014	79.38	35.98	35.42	0.56	43.85	Blaine Tech
	8/1/2014	79.38	35.57	35.30	0.27	44.02	Blaine Tech
	8/14/2014	79.38	35.42	35.23	0.19	44.11	Blaine Tech
	8/19/2014	79.38	35.36	35.21	0.15	44.14	Blaine Tech
	8/29/2014	79.38	35.32	35.20	0.12	44.16	Blaine Tech
	9/18/2014	79.38	35.55	35.30	0.25	44.03	Blaine Tech
	9/26/2014	79.38	35.56	35.30	0.26	44.03	Blaine Tech
	10/1/2014	79.38	35.56	35.24	0.32	44.07	Blaine Tech
	10/6/2014	79.38	35.48	35.22	0.26	44.11	Blaine Tech
	10/14/2014	79.38	35.33	35.20	0.13	44.15	Blaine Tech
	10/23/2014	79.38	35.51	35.22	0.29	44.10	Blaine Tech
	10/27/2014	79.38	35.54	35.25	0.29	44.07	Blaine Tech
	11/18/2014	79.38	35.56	35.25	0.31	44.07	Blaine Tech
	11/25/2014	79.38	35.66	35.32	0.34	43.99	Blaine Tech
	12/12/2014	79.38	35.81	35.58	0.23	43.75	Blaine Tech
	12/19/2014	79.38	35.75	35.62	0.13	43.73	Blaine Tech
	4/20/2015	79.38	37.78	35.29	2.49	43.58	Blaine Tech
	5/19/2015	79.38	39.22	35.28	3.94	43.29	Northstar

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	5/29/2015	79.38	37.10	35.80	1.30	43.31	Northstar
	6/5/2015	79.38	36.85	36.15	0.70	43.09	Northstar
	6/12/2015	79.38	36.55	36.15	0.40	43.15	Northstar
	6/19/2015	79.38	36.68	36.42	0.26	42.91	Northstar
	6/26/2015	79.38	37.23	36.96	0.27	42.36	Northstar
	10/19/2015	79.38	38.12	36.25	1.87	42.75	Blaine Tech
	11/17/2015	79.38	37.83	35.98	1.85	43.02	Kinder Morgan
	3/14/2016	79.38	40.80	---	---	38.58	Kinder Morgan
	4/11/2016	79.38	37.76	---	---	41.62	Blaine Tech
	6/29/2016	79.38	39.54	---	---	39.84	Blaine Tech
	8/22/2016	79.38	39.76	---	---	39.62	Blaine Tech
	10/3/2016	79.38	41.05	---	---	38.33	Blaine Tech
	4/17/2017	79.38	36.67	---	---	42.71	Blaine Tech
	10/2/2017	79.38	40.07	---	---	39.31	Blaine Tech
4/16/2018	79.38	39.90	---	---	39.48	Blaine Tech	
11/5/2018	79.38	39.78	---	---	39.60	Blaine Tech	
MW-SF-5	4/30/2007	79.74	29.54	---	---	50.20	Secor
	8/21/2007	79.74	28.36	---	---	51.38	Geomatrix
	8/28/2007	79.74	28.84	---	---	50.90	Stantec
	10/5/2007	79.74	29.50	---	---	50.24	Geomatrix
	11/2/2007	79.74	31.50	---	---	48.24	Geomatrix
	11/12/2007	79.74	29.93	---	---	49.81	Stantec
	12/21/2007	79.74	31.00	---	---	48.74	Geomatrix
	4/14/2008	79.74	30.20	---	---	49.54	Stantec
	8/11/2008	79.74	30.85	---	---	48.89	Stantec
	10/13/2008	79.74	30.93	---	---	48.81	Stantec
	4/20/2009	79.74	30.99	---	---	48.75	Blaine Tech
	10/19/2009	79.74	NM	---	---	NC	Blaine Tech
	5/24/2010	79.74	31.55	---	---	48.19	Blaine Tech
	5/28/2010	79.74	31.44	---	---	48.30	Blaine Tech
	6/22/2010	79.74	31.57	---	---	48.17	Blaine Tech
	10/4/2010	79.74	31.39	---	---	48.35	Blaine Tech
	1/10/2011	79.74	33.80	---	---	45.94	Blaine Tech
	4/11/2011	79.74	31.03	---	---	48.71	Blaine Tech
	7/11/2011	79.74	NM	---	---	NC	
	10/10/2011	79.74	31.28	---	---	48.46	Blaine Tech
	1/9/2012	79.74	32.12	---	---	47.62	Blaine Tech
	4/16/2012	79.74	33.30	---	---	46.44	Blaine Tech
	7/9/2012	79.74	34.45	---	---	45.29	Blaine Tech
	10/15/2012	79.74	33.28	---	---	46.46	Blaine Tech
	1/14/2013	79.74	33.37	---	---	46.37	Blaine Tech
	4/8/2013	79.74	34.28	---	---	45.46	Blaine Tech
	10/7/2013	79.74	34.58	---	---	45.16	Blaine Tech
	4/14/2014	79.74	35.33	---	---	44.41	Blaine Tech
	10/27/2014	79.74	35.48	---	---	44.26	Blaine Tech
	4/20/2015	79.74	36.05	---	---	43.69	Blaine Tech
	10/19/2015	79.74	36.82	---	---	42.92	Blaine Tech
	3/14/2016	79.74	DRY	---	---	NC	Blaine Tech
4/11/2016	79.74	DRY	---	---	NC	Blaine Tech	
6/29/2016	79.74	DRY	---	---	NC	Blaine Tech	
8/22/2016	79.74	DRY	---	---	NC	Blaine Tech	
10/3/2016	79.74	DRY	---	---	NC	Blaine Tech	
4/17/2017	79.74	36.88	---	---	42.86	Blaine Tech	
10/2/2017	79.74	DRY	---	---	NC	Blaine Tech	
4/16/2018	79.74	DRY	---	---	NC	Blaine Tech	
11/5/2018	79.74	DRY	---	---	NC	Blaine Tech	
MW-SF-6	4/30/2007	79.96	27.44	27.20	0.24	52.71	Secor
	11/12/2007	79.96	27.14	---	---	52.82	Stantec
	8/12/2008	79.96	29.82	---	---	50.14	Envent
	10/17/2008	79.96	29.75	---	---	50.21	Envent

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	12/18/2008	76.8	30.73	---	---	46.07	Envent
	1/15/2009	76.8	31.35	---	---	45.45	Envent
	3/24/2009	76.80	30.50	---	---	46.30	Envent
	4/21/2009	76.80	28.45	---	---	48.35	Envent
	7/21/2009	76.80	27.22	---	---	49.58	Envent
	10/19/2009	76.80	NM	---	---	NC	Blaine Tech
	11/6/2009	76.80	29.10	---	---	47.70	Kinder Morgan
	12/9/2009	76.80	31.35	---	---	45.45	Kinder Morgan
	10/4/2010	76.80	29.09	---	---	47.71	Blaine Tech
	1/10/2011	76.80	30.87	---	---	45.93	Blaine Tech
	4/11/2011	76.80	28.16	---	---	48.64	Blaine Tech
	7/11/2011	76.80	NM	---	---	NC	
	10/10/2011	76.80	28.21	---	---	48.59	Blaine Tech
	1/9/2012	76.80	29.03	---	---	47.77	Blaine Tech
	4/16/2012	76.80	29.66	---	---	47.14	Blaine Tech
	7/9/2012	76.80	31.46	---	---	45.34	Blaine Tech
	10/15/2012	76.80	31.44	---	---	45.36	Blaine Tech
	1/14/2013	76.80	31.53	---	---	45.27	Blaine Tech
	4/8/2013	76.80	30.21	28.81	1.40	47.71	Blaine Tech
	10/7/2013	76.80	NM	---	---	NC	Blaine Tech
	11/14/2013	76.80	31.90	---	---	44.90	Blaine Tech
	4/18/2014	76.80	33.30	32.15	1.15	44.42	Blaine Tech
	8/8/2014	76.8	34.50	33.31	1.19	43.25	Blaine Tech
	8/13/2014	76.8	32.95	32.54	0.41	44.18	Blaine Tech
	8/19/2014	76.8	32.87	32.62	0.25	44.13	Blaine Tech
	8/29/2014	76.8	32.79	32.56	0.23	44.19	Blaine Tech
	9/5/2014	76.8	32.81	32.59	0.22	44.17	Blaine Tech
	9/18/2014	76.8	32.95	32.65	0.30	44.09	Blaine Tech
	9/26/2014	76.8	32.94	32.61	0.33	44.12	Blaine Tech
	10/1/2014	76.8	32.91	32.60	0.31	44.14	Blaine Tech
	10/6/2014	76.8	32.90	32.61	0.29	44.13	Blaine Tech
	10/14/2014	76.8	33.72	33.60	0.12	43.18	Blaine Tech
	10/23/2014	76.8	34.57	33.94	0.63	42.73	Blaine Tech
	10/27/2014	76.8	32.92	32.58	0.34	44.15	Blaine Tech
	11/18/2014	76.8	32.99	32.62	0.37	44.11	Blaine Tech
	11/25/2014	76.8	32.66	32.58	0.08	44.20	Blaine Tech
	12/12/2014	76.8	33.45	33.07	0.38	43.65	Blaine Tech
	12/19/2014	76.8	33.60	33.15	0.45	43.56	Blaine Tech
	4/20/2015	76.8	33.23	33.11	0.12	43.67	Blaine Tech
	10/21/2015	76.8	34.28	---	---	42.52	Kinder Morgan
	3/14/2016	76.8	38.10	38.08	0.02	38.72	Blaine Tech
	4/11/2016	76.8	35.83	---	---	40.97	Blaine Tech
	6/29/2016	76.8	36.89	---	---	39.91	Blaine Tech
	8/22/2016	76.8	37.11	---	---	39.69	Blaine Tech
	10/3/2016	76.8	38.45	---	---	38.35	Blaine Tech
	4/17/2017	76.8	34.03	---	---	42.77	Blaine Tech
	10/2/2017	76.8	37.89	---	---	38.91	Blaine Tech
	4/16/2018	76.8	37.65	---	---	39.15	Blaine Tech
	11/5/2018	76.8	37.70	---	---	39.10	Blaine Tech
MW-SF-9	4/30/2007	74.1	22.66	---	---	51.44	Secor
	8/14/2007	74.1	28.73	28.61	0.12	45.47	Geomatrix
	8/21/2007	74.1	26.55	---	---	47.55	Geomatrix
	8/28/2007	74.1	20.55	---	---	53.55	Stantec
	9/11/2007	74.1	19.40	---	---	54.70	Geomatrix
	10/5/2007	74.1	26.84	---	---	47.26	Geomatrix
	11/2/2007	74.1	22.76	---	---	51.34	Geomatrix
	11/12/2007	74.1	22.96	---	---	51.14	Stantec
	12/21/2007	74.1	24.05	---	---	50.05	Geomatrix
	4/14/2008	74.1	24.23	---	---	49.87	Stantec

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/13/2008	74.1	24.83	---	---	49.27	Stantec
	4/20/2009	74.10	25.27	---	---	48.83	Blaine Tech
	10/19/2009	74.10	26.45	---	---	47.65	Blaine Tech
	5/24/2010	74.10	25.80	---	---	48.30	Blaine Tech
	5/28/2010	74.10	25.66	---	---	48.44	Blaine Tech
	6/22/2010	74.10	25.84	---	---	48.26	Blaine Tech
	10/4/2010	74.10	26.10	---	---	48.00	Blaine Tech
	1/10/2011	74.10	27.41	---	---	46.69	Blaine Tech
	4/11/2011	74.10	24.16	---	---	49.94	Blaine Tech
	7/11/2011	74.10	NM	---	---	NC	
	10/10/2011	74.10	25.02	---	---	49.08	Blaine Tech
	1/9/2012	74.10	25.98	---	---	48.12	Blaine Tech
	4/16/2012	74.10	25.92	---	---	48.18	Blaine Tech
	7/9/2012	74.10	26.44	---	---	47.66	Blaine Tech
	10/15/2012	74.10	NM	---	---	NC	Blaine Tech
	4/8/2013	74.10	DRY	---	---	NC	Blaine Tech
	6/6/2013	74.10	28.53	---	---	45.57	Blaine Tech
	10/7/2013	74.10	28.95	---	---	45.15	Blaine Tech
	4/25/2014	74.10	34.75	27.95	6.80	44.89	Blaine Tech
	5/5/2014	74.10	37.81	31.76	6.05	41.22	Nieto & Sons
	5/12/2014	74.10	32.32	29.11	3.21	44.40	Nieto & Sons
	5/20/2014	74.10	30.75	29.95	0.80	44.00	Nieto & Sons
	5/27/2014	74.1	38.08	32.32	5.76	40.71	Nieto & Sons
	6/4/2014	74.1	32.19	28.61	3.58	44.83	Nieto & Sons
	6/10/2014	74.1	36.27	28.85	7.42	43.88	Nieto & Sons
	7/3/2014	74.1	39.26	32.59	6.67	40.28	Nieto & Sons
	7/8/2014	74.1	36.40	28.60	7.80	44.06	Blaine Tech
	7/18/2014	74.1	31.04	29.66	1.38	44.18	Blaine Tech
	7/24/2014	74.1	31.15	29.85	1.30	44.01	Blaine Tech
	8/1/2014	74.1	30.25	29.85	0.40	44.18	Blaine Tech
	8/14/2014	74.1	30.13	29.82	0.31	44.22	Blaine Tech
	8/19/2014	74.1	30.08	29.85	0.23	44.21	Blaine Tech
	8/29/2014	74.1	30.10	29.81	0.29	44.24	Blaine Tech
	9/5/2014	74.1	30.13	29.84	0.29	44.21	Blaine Tech
	9/11/2014	74.1	29.49	28.47	1.02	45.44	Blaine Tech
	9/18/2014	74.1	30.29	29.90	0.39	44.13	Blaine Tech
	9/26/2014	74.1	30.25	29.84	0.41	44.18	Blaine Tech
	10/1/2014	74.1	30.24	29.84	0.40	44.19	Blaine Tech
	10/6/2014	74.1	30.24	29.83	0.41	44.19	Blaine Tech
	10/14/2014	74.1	30.12	29.81	0.31	44.23	Blaine Tech
	10/23/2014	74.1	30.27	29.85	0.42	44.17	Blaine Tech
	10/27/2014	74.1	30.29	29.89	0.40	44.14	Blaine Tech
	11/18/2014	74.1	30.35	29.86	0.49	44.15	Blaine Tech
	11/25/2014	74.1	30.42	29.91	0.51	44.10	Blaine Tech
	12/12/2014	74.1	30.65	30.10	0.55	43.90	Blaine Tech
	12/19/2014	74.1	30.80	30.13	0.67	43.85	Blaine Tech
	4/20/2015	74.1	36.69	27.67	9.02	44.76	Blaine Tech
	5/19/2015	74.1	35.68	26.83	8.85	45.63	Blaine Tech
	5/21/2015	74.1	32.50	27.31	5.19	45.83	Northstar
	5/29/2015	74.1	32.95	30.10	2.85	43.47	Northstar
	6/2/2015	74.1	31.67	30.45	1.22	43.42	Northstar
	6/5/2015	74.10	31.85	30.60	1.25	43.27	Northstar
	6/12/2015	74.10	31.28	30.75	0.53	43.25	Northstar
	6/19/2015	74.10	31.30	31.00	0.30	43.04	Northstar
	6/26/2015	74.10	31.20	29.50	1.70	44.29	Northstar
	8/11/2015	74.10	36.90	29.90	7.00	42.90	Northstar
	8/18/2015	74.10	35.19	30.25	4.94	42.94	Northstar
	8/28/2015	74.10	31.60	30.75	0.85	43.19	Kinder Morgan
	9/1/2015	74.10	31.78	30.90	0.88	43.04	Kinder Morgan

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/16/2015	74.10	31.60	31.09	0.51	42.92	Blaine Tech
	10/19/2015	74.10	31.44	31.04	0.40	42.99	Kinder Morgan
	10/30/2015	74.10	32.60	32.06	0.54	41.94	Kinder Morgan
	11/17/2015	74.10	31.71	31.68	0.03	42.41	Kinder Morgan
	3/14/2016	74.10	34.14	---	---	39.96	Blaine Tech
	4/11/2016	74.10	32.89	---	---	41.21	Blaine Tech
MW-SF-10	6/29/2016	74.10	34.00	---	---	40.10	Blaine Tech
	10/17/2008	76.53	27.49	---	---	49.04	Envent
	10/19/2009	76.53	28.61	---	---	47.92	Blaine Tech
	10/4/2010	76.53	28.50	28.36	0.14	48.14	Blaine Tech
	4/11/2011	76.53	27.41	27.37	0.04	49.15	Blaine Tech
	10/10/2011	76.53	27.60	---	---	48.93	Blaine Tech
	4/16/2012	76.53	28.81	---	---	47.72	Blaine Tech
	7/9/2012	76.53	NM	---	---	NC	Blaine Tech
	10/15/2012	76.53	29.27	---	---	47.26	Blaine Tech
	4/8/2013	76.53	DRY	---	---	NC	Blaine Tech
	10/7/2013	76.53	DRY	---	---	NC	Blaine Tech
	4/14/2014	76.53	DRY	---	---	NC	Blaine Tech
	10/27/2014	76.53	DRY	---	---	NC	Blaine Tech
	4/20/2015	76.53	DRY	---	---	NC	Blaine Tech
	10/19/2015	76.53	DRY	---	---	NC	Blaine Tech
	3/14/2016	76.53	DRY	---	---	NC	Blaine Tech
	4/11/2016	76.53	DRY	---	---	NC	Blaine Tech
	6/29/2016	76.53	DRY	---	---	NC	Blaine Tech
	8/22/2016	76.53	DRY	---	---	NC	Blaine Tech
	10/3/2016	76.53	DRY	---	---	NC	Blaine Tech
	4/17/2017	76.53	DRY	---	---	NC	Blaine Tech
10/2/2017	76.53	DRY	---	---	NC	Blaine Tech	
4/16/2018	76.53	DRY	---	---	NC	Blaine Tech	
11/5/2018	76.53	DRY	---	---	NC	Blaine Tech	
MW-SF-11	8/14/2007	78.56	28.58	28.30	0.28	50.20	Geomatrix
	8/21/2007	78.56	28.76	28.63	0.13	49.90	Geomatrix
	8/28/2007	78.56	28.22	---	---	50.34	Stantec
	9/11/2007	78.56	26.90	---	---	51.66	Geomatrix
	10/5/2007	78.56	28.43	---	---	50.13	Geomatrix
	11/2/2007	78.56	29.48	29.38	0.10	49.16	Geomatrix
	11/12/2007	78.56	29.03	---	---	49.53	Stantec
	8/15/2008	78.56	30.13	---	---	48.43	Envent
	10/17/2008	78.56	30.50	---	---	48.06	Envent
	12/18/2008	78.56	29.92	---	---	48.64	Envent
	1/15/2009	78.56	30.32	---	---	48.24	Envent
	3/24/2009	78.56	31.05	---	---	47.51	Envent
	4/21/2009	78.56	30.03	---	---	48.53	Envent
	7/21/2009	78.56	30.89	---	---	47.67	Envent
	10/19/2009	78.56	NM	---	---	NC	Blaine Tech
	11/9/2009	78.56	31.00	---	---	47.56	Kinder Morgan
	9/3/2010	78.56	31.22	---	---	47.34	Kinder Morgan
	10/4/2010	78.56	30.94	---	---	47.62	Blaine Tech
	4/12/2011	78.56	30.82	---	---	47.74	Blaine Tech
	10/10/2011	78.56	30.10	---	---	48.46	Blaine Tech
	4/16/2012	78.56	NM	---	---	NC	Blaine Tech
	7/9/2012	78.56	NM	---	---	NC	Blaine Tech
	10/15/2012	78.56	33.28	---	---	45.28	Blaine Tech
	4/8/2013	78.56	33.11	---	---	45.45	Blaine Tech
	10/7/2013	78.56	33.91	---	---	44.65	Blaine Tech
	4/14/2014	78.56	35.20	34.95	0.25	43.56	Blaine Tech
	5/5/2014	78.56	36.52	33.71	2.81	44.29	Nieto & Sons
5/12/2014	78.56	35.45	33.87	1.58	44.37	Nieto & Sons	
5/27/2014	78.56	35.38	34.65	0.73	43.76	Nieto & Sons	
6/4/2014	78.56	35.40	35.32	0.08	43.22	Nieto & Sons	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	8/8/2014	78.56	36.22	33.11	3.11	44.83	Blaine Tech
	8/13/2014	78.56	36.22	33.47	2.75	44.54	Blaine Tech
	8/19/2014	78.56	36.46	33.94	2.52	44.12	Blaine Tech
	8/29/2014	78.56	36.68	33.83	2.85	44.16	Blaine Tech
	9/5/2014	78.56	36.62	33.80	2.82	44.20	Blaine Tech
	9/11/2014	78.56	37.15	33.78	3.37	44.11	Blaine Tech
	9/18/2014	78.56	36.79	33.93	2.86	44.06	Blaine Tech
	9/26/2014	78.56	36.89	33.88	3.01	44.08	Blaine Tech
	10/1/2014	78.56	34.95	33.32	1.63	44.91	Blaine Tech
	10/6/2014	78.56	36.36	33.95	2.41	44.13	Blaine Tech
	10/14/2014	78.56	36.67	33.86	2.81	44.14	Blaine Tech
	10/23/2014	78.56	36.86	33.86	3.00	44.10	Blaine Tech
	10/27/2014	78.56	36.20	33.99	2.21	44.13	Blaine Tech
	11/3/2014	78.56	36.91	33.84	3.07	44.11	Blaine Tech
	11/18/2014	78.56	36.78	33.95	2.83	44.04	Blaine Tech
	11/25/2014	78.56	36.65	34.03	2.62	44.01	Blaine Tech
	12/3/2014	78.56	36.71	33.94	2.77	44.07	Blaine Tech
	12/12/2014	78.56	37.29	34.08	3.21	43.84	Blaine Tech
	12/19/2014	78.56	38.03	34.04	3.99	43.72	Blaine Tech
	3/17/2015	78.56	35.94	35.50	0.44	42.97	Kinder Morgan
	4/20/2015	78.56	38.89	34.86	4.03	42.89	Kinder Morgan
	10/20/2015	78.56	37.42	35.38	2.04	42.77	Kinder Morgan
	3/16/2016	78.56	39.56	---	---	39.00	Kinder Morgan
	4/11/2016	78.56	37.62	---	---	40.94	Blaine Tech
	6/29/2016	78.56	37.06	---	---	41.50	Blaine Tech
	8/22/2016	78.56	39.25	---	---	39.31	Blaine Tech
	10/3/2016	78.56	40.05	---	---	38.51	Blaine Tech
	3/10/2017	78.56	36.56	---	---	42.00	CH2M
	4/17/2017	78.56	35.91	---	---	42.65	Blaine Tech
	10/2/2017	78.56	40.09	---	---	38.47	Blaine Tech
4/16/2018	78.56	39.90	---	---	38.66	Blaine Tech	
11/5/2018	78.56	39.52	---	---	39.04	Blaine Tech	
MW-SF-12	8/14/2007	78.07	27.76	---	---	50.31	Geomatrix
	8/21/2007	78.07	27.43	---	---	50.64	Geomatrix
	8/28/2007	78.07	27.58	---	---	50.49	Stantec
	9/11/2007	78.07	27.73	---	---	50.34	Geomatrix
	10/5/2007	78.07	28.06	---	---	50.01	Geomatrix
	11/2/2007	78.07	29.59	---	---	48.48	Geomatrix
	11/12/2007	78.07	28.33	---	---	49.74	Stantec
	8/12/2008	78.07	30.02	---	---	48.05	Envent
	10/17/2008	78.07	30.42	---	---	47.65	Envent
	12/18/2008	78.07	31.55	---	---	46.52	Envent
	1/15/2009	78.07	30.11	---	---	47.96	Envent
	3/24/2009	78.07	29.41	---	---	48.66	Envent
	4/21/2009	78.07	29.52	---	---	48.55	Envent
	7/21/2009	78.07	28.58	---	---	49.49	Envent
	10/19/2009	78.07	NM	---	---	NC	Blaine Tech
	11/4/2009	78.07	30.36	---	---	47.71	Kinder Morgan
	2/4/2010	78.07	29.20	---	---	48.87	Kinder Morgan
	10/4/2010	78.07	30.70	---	---	47.37	Blaine Tech
	4/11/2011	78.07	29.47	---	---	48.60	Blaine Tech
	10/10/2011	78.07	26.60	---	---	51.47	Blaine Tech
	4/16/2012	78.07	31.40	---	---	46.67	Blaine Tech
	7/9/2012	78.07	NM	---	---	NC	Blaine Tech
	10/15/2012	78.07	32.12	---	---	45.95	Blaine Tech
	4/8/2013	78.07	DRY	---	---	NC	Blaine Tech
	10/7/2013	78.07	NM	---	---	NC	Blaine Tech
4/14/2014	78.07	38.04	32.67	5.37	44.33	Blaine Tech	
5/20/2014	78.07	37.80	32.90	4.90	44.19	Nieto & Sons	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	5/27/2014	78.07	33.27	---	---	44.80	Nieto & Sons
	6/4/2014	78.07	32.78	---	---	45.29	Nieto & Sons
	6/10/2014	78.07	33.76	---	---	44.31	Nieto & Sons
	7/3/2014	78.07	NM	---	---	NC	Nieto & Sons
	7/24/2014	78.07	NM	33.35	3.97	NC	Blaine Tech
	8/1/2014	78.07	37.20	33.17	4.03	44.09	Blaine Tech
	9/5/2014	78.07	38.52	32.93	5.59	44.02	Blaine Tech
	9/11/2014	78.07	38.56	32.98	5.58	43.97	Blaine Tech
	9/18/2014	78.07	38.25	33.09	5.16	43.95	Blaine Tech
	9/26/2014	78.07	38.03	33.03	5.00	44.04	Blaine Tech
	10/1/2014	78.07	37.82	33.08	4.74	44.04	Blaine Tech
	10/6/2014	78.07	37.63	33.07	4.56	44.09	Blaine Tech
	10/14/2014	78.07	37.56	33.13	4.43	44.05	Blaine Tech
	10/23/2014	78.07	37.56	33.06	4.50	44.11	Blaine Tech
	10/27/2014	78.07	37.40	33.08	4.32	44.13	Blaine Tech
	11/3/2014	78.07	37.48	33.09	4.39	44.10	Blaine Tech
	11/18/2014	78.07	37.44	33.15	4.29	44.06	Blaine Tech
	11/25/2014	78.07	37.35	33.21	4.14	44.03	Blaine Tech
	12/3/2014	78.07	37.31	33.12	4.19	44.11	Blaine Tech
	12/12/2014	78.07	37.92	33.45	4.47	43.73	Blaine Tech
	12/19/2014	78.07	38.25	33.50	4.75	43.62	Blaine Tech
	3/17/2015	78.07	36.42	34.05	2.37	43.55	Kinder Morgan
	4/20/2015	78.07	36.42	34.05	2.37	43.55	Blaine Tech
	10/20/2015	78.07	36.78	34.84	1.94	42.84	Kinder Morgan
	3/16/2016	78.07	39.03	---	---	39.04	Kinder Morgan
	4/11/2016	78.07	37.13	---	---	40.94	Blaine Tech
	6/29/2016	78.07	38.34	38.28	0.06	39.78	Blaine Tech
	8/22/2016	78.07	38.60	---	---	39.47	Blaine Tech
	10/3/2016	78.07	39.45	---	---	38.62	Blaine Tech
	3/10/2017	78.07	36.09	---	---	41.98	CH2M
4/17/2017	78.07	35.12	---	---	42.95	Blaine Tech	
10/2/2017	78.07	39.31	---	---	38.76	Blaine Tech	
4/16/2018	78.07	39.09	---	---	38.98	Blaine Tech	
11/5/2018	78.07	38.96	---	---	39.11	Blaine Tech	
MW-SF-13	8/14/2007	73.40	22.98	---	---	50.42	Geomatrix
	8/21/2007	73.40	23.11	---	---	50.29	Geomatrix
	8/28/2007	73.40	22.85	---	---	50.55	Stantec
	9/11/2007	73.40	23.10	---	---	50.30	Geomatrix
	10/5/2007	73.40	28.11	---	---	45.29	Geomatrix
	11/2/2007	73.40	25.43	25.41	0.02	47.99	Geomatrix
	11/12/2007	73.40	23.70	---	---	49.70	Stantec
	12/21/2007	73.40	24.45	24.42	0.03	48.97	Geomatrix
	8/15/2008	73.40	27.38	24.11	3.27	48.47	Envent
	10/17/2008	73.40	27.28	24.33	2.95	48.33	Envent
	10/21/2008	73.40	27.14	24.26	2.88	48.42	Envent
	12/17/2008	73.40	26.21	24.70	1.51	48.32	Envent
	1/15/2009	73.40	26.90	24.80	2.10	48.08	Envent
	3/27/2009	73.40	26.46	25.49	0.97	47.67	Envent
	4/21/2009	73.40	24.86	24.78	0.08	48.60	Envent
	7/21/2009	73.40	25.72	25.48	0.24	47.86	Envent
	10/19/2009	73.40	NM	---	---	NC	Blaine Tech
	11/6/2009	73.40	25.72	---	---	47.68	Kinder Morgan
	2/4/2010	73.40	25.43	25.30	0.13	48.07	Kinder Morgan
	9/3/2010	73.40	27.40	25.71	1.69	47.27	Kinder Morgan
10/4/2010	73.40	26.95	25.92	1.03	47.22	Blaine Tech	
4/12/2011	73.40	24.79	24.78	0.01	48.62	Blaine Tech	
10/10/2011	73.40	26.00	---	---	47.40	Blaine Tech	
4/16/2012	73.40	27.19	---	---	46.21	Blaine Tech	
7/9/2012	73.40	NM	---	---	NC	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/15/2012	73.40	27.01	---	---	46.39	Blaine Tech
	4/8/2013	73.40	27.90	---	---	45.50	Blaine Tech
	10/7/2013	73.40	NM	---	---	NC	Blaine Tech
	11/14/2013	73.40	29.95	28.25	1.70	44.73	Blaine Tech
	4/14/2014	73.40	31.36	28.47	2.89	44.21	Blaine Tech
	5/5/2014	73.40	31.62	28.49	3.13	44.13	Nieto & Sons
	5/12/2014	73.40	30.02	28.88	1.14	44.24	Nieto & Sons
	5/20/2014	73.40	31.10	29.77	1.33	43.30	Nieto & Sons
	5/27/2014	73.40	30.17	29.48	0.69	43.75	Nieto & Sons
	6/4/2014	73.40	30.22	---	---	43.18	Nieto & Sons
	6/10/2014	73.40	30.20	29.76	0.44	43.53	Nieto & Sons
	7/3/2014	73.40	30.49	29.88	0.61	43.37	Nieto & Sons
	7/24/2014	73.40	30.50	29.54	0.96	43.62	Blaine Tech
	8/1/2014	73.40	29.82	29.25	0.57	44.01	Blaine Tech
	8/8/2014	73.40	34.07	33.71	0.36	39.60	Blaine Tech
	8/14/2014	73.40	29.96	29.13	0.83	44.06	Blaine Tech
	8/19/2014	73.40	29.91	29.15	0.76	44.06	Blaine Tech
	8/29/2014	73.40	30.15	29.02	1.13	44.10	Blaine Tech
	9/5/2014	73.40	30.19	29.08	1.11	44.04	Blaine Tech
	9/11/2014	73.40	30.66	28.91	1.75	44.05	Blaine Tech
	9/18/2014	73.40	30.41	29.15	1.26	43.94	Blaine Tech
	9/26/2014	73.40	30.18	29.14	1.04	44.00	Blaine Tech
	10/1/2014	73.40	30.38	29.05	1.33	44.02	Blaine Tech
	10/6/2014	73.40	30.10	29.12	0.98	44.04	Blaine Tech
	10/13/2014	73.40	30.28	29.07	1.21	44.03	Blaine Tech
	10/23/2014	73.40	30.72	28.95	1.77	44.01	Blaine Tech
	10/27/2014	73.40	30.21	29.06	1.15	44.05	Blaine Tech
	11/3/2014	73.40	30.62	28.93	1.69	44.05	Blaine Tech
	11/18/2014	73.40	30.54	29.11	1.43	43.93	Blaine Tech
	11/25/2014	73.40	29.48	29.14	0.34	44.18	Blaine Tech
	12/3/2014	73.40	31.02	28.93	2.09	43.95	Blaine Tech
	12/12/2014	73.40	31.05	29.40	1.65	43.59	Blaine Tech
	12/19/2014	73.40	31.11	29.40	1.71	43.57	Blaine Tech
	4/20/2015	73.40	32.44	29.04	3.40	43.51	Blaine Tech
10/19/2015	73.40	35.16	29.31	5.85	42.63	Blaine Tech	
3/14/2016	73.40	34.72	---	---	38.68	Blaine Tech	
4/11/2016	73.40	32.28	---	---	41.12	Blaine Tech	
6/29/2016	73.40	33.62	---	---	39.78	Blaine Tech	
8/22/2016	73.40	33.66	---	---	39.74	Blaine Tech	
10/3/2016	73.40	34.20	---	---	39.20	Blaine Tech	
3/24/2017	73.40	31.25	---	---	42.15	CH2M	
4/17/2017	73.40	30.40	---	---	43.00	Blaine Tech	
10/2/2017	73.40	34.52	---	---	38.88	Blaine Tech	
4/16/2018	73.40	34.26	---	---	39.14	Blaine Tech	
11/5/2018	73.40	34.43	---	---	38.97	Blaine Tech	
MW-SF-14	8/14/2007	78.16	27.68	---	---	50.48	Geomatrix
	8/21/2007	78.16	27.60	---	---	50.56	Geomatrix
	8/28/2007	78.16	27.53	---	---	50.63	Stantec
	9/11/2007	78.16	27.66	---	---	50.50	Geomatrix
	10/5/2007	78.16	27.75	---	---	50.41	Geomatrix
	11/2/2007	78.16	29.83	---	---	48.33	Geomatrix
	11/12/2007	78.16	NM	---	---	NC	Secor
	8/15/2008	78.16	29.77	29.24	0.53	48.81	Envent
	10/17/2008	78.16	29.52	29.50	0.02	48.66	Envent
	12/18/2008	78.16	30.62	---	---	47.54	Envent
	1/15/2009	78.16	30.08	---	---	48.08	Envent
3/24/2009	78.16	29.73	---	---	48.43	Envent	
4/21/2009	78.16	29.61	---	---	48.55	Envent	
7/21/2009	78.16	29.20	---	---	48.96	Envent	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/19/2009	78.16	NM	---	---	NC	Blaine Tech
	11/6/2009	78.16	30.48	---	---	47.68	Kinder Morgan
	12/9/2009	78.16	30.68	---	---	47.48	Kinder Morgan
	6/22/2010	78.16	26.17	---	---	51.99	Blaine Tech
	10/4/2010	78.16	30.54	---	---	47.62	Blaine Tech
	4/12/2011	78.16	29.55	---	---	48.61	Blaine Tech
	10/10/2011	78.16	29.84	---	---	48.32	Blaine Tech
	4/16/2012	78.16	NM	---	---	NC	Blaine Tech
	7/9/2012	78.16	NM	---	---	NC	Blaine Tech
	10/15/2012	78.16	30.02	---	---	48.14	Blaine Tech
	4/8/2013	78.16	32.75	---	---	45.41	Blaine Tech
	5/24/2013	78.16	32.75	---	---	45.41	Blaine Tech
	9/26/2013	78.16	34.50	34.25	0.25	43.86	Blaine Tech
	10/7/2013	78.16	NM	---	---	NC	Blaine Tech
	11/14/2013	78.16	33.57	33.19	0.38	44.89	Blaine Tech
	4/14/2014	78.16	34.81	33.56	1.25	44.35	Blaine Tech
	8/8/2014	78.16	34.24	33.98	0.26	44.13	Blaine Tech
	10/14/2014	78.16	34.36	33.80	0.56	44.25	Blaine Tech
	10/23/2014	78.16	34.49	34.43	0.06	43.72	Blaine Tech
	10/27/2014	78.16	34.40	33.97	0.43	44.10	Blaine Tech
	11/18/2014	78.16	34.27	34.07	0.20	44.05	Blaine Tech
	4/20/2015	78.16	34.48	---	---	43.68	Blaine Tech
	10/21/2015	78.16	35.25	---	---	42.91	Blaine Tech
	3/14/2016	78.16	36.21	---	---	41.95	Blaine Tech
	4/11/2016	78.16	37.14	---	---	41.02	Blaine Tech
	6/29/2016	78.16	37.36	---	---	40.80	Blaine Tech
	8/22/2016	78.16	DRY	---	---	NC	Blaine Tech
	10/3/2016	78.16	DRY	---	---	NC	Blaine Tech
	4/17/2017	78.16	35.40	---	---	42.76	Blaine Tech
	10/2/2017	78.16	DRY	---	---	NC	Blaine Tech
4/16/2018	78.16	DRY	---	---	NC	Blaine Tech	
11/5/2018	78.16	DRY	---	---	NC	Blaine Tech	
MW-SF-15	8/14/2007	78.27	27.78	27.75	0.03	50.51	Geomatrix
	8/21/2007	78.27	27.69	27.65	0.04	50.61	Geomatrix
	8/28/2007	78.27	27.65	27.61	0.04	50.65	Stantec
	9/11/2007	78.27	27.62	---	---	50.65	Geomatrix
	10/5/2007	78.27	28.15	---	---	50.12	Geomatrix
	11/2/2007	78.27	30.45	30.20	0.25	48.02	Geomatrix
	11/12/2007	78.27	28.75	---	---	49.52	Stantec
	8/15/2008	78.27	30.12	29.35	0.77	48.77	Envent
	10/17/2008	78.27	30.80	29.44	1.36	48.56	Envent
	10/21/2008	78.27	30.80	29.31	1.49	48.66	Envent
	12/18/2008	78.27	32.11	30.56	1.55	47.40	Envent
	1/15/2009	78.27	31.75	29.70	2.05	48.16	Envent
	3/24/2009	78.27	30.32	29.93	0.39	48.26	Envent
	4/21/2009	78.27	29.96	29.60	0.36	48.60	Envent
	7/21/2009	78.27	30.45	---	---	47.82	Envent
	10/19/2009	78.27	NM	---	---	NC	Blaine Tech
	11/4/2009	78.27	31.10	30.45	0.36	47.46	Kinder Morgan
	12/9/2009	78.27	30.87	---	---	47.40	Kinder Morgan
	10/4/2010	78.27	30.66	30.65	0.01	47.62	Blaine Tech
	4/12/2011	78.27	30.50	29.40	1.10	48.65	Blaine Tech
	10/10/2011	78.27	29.60	---	---	48.67	Blaine Tech
	12/2/2011	78.27	31.40	30.05	1.35	47.95	Blaine Tech
	4/16/2012	78.27	32.48	32.39	0.09	45.86	Blaine Tech
7/9/2012	78.27	NM	---	---	NC	Blaine Tech	
10/15/2012	78.16	33.04	---	---	45.12	Blaine Tech	
4/8/2013	78.27	33.90	---	---	44.37	Blaine Tech	
5/24/2013	78.27	33.90	---	---	44.37	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/7/2013	78.27	NM	---	---	NC	Blaine Tech
	11/14/2013	78.27	33.41	33.38	0.03	44.88	Blaine Tech
	4/18/2014	78.27	33.85	---	---	44.42	Blaine Tech
	8/8/2014	78.27	34.87	33.96	0.91	44.13	Blaine Tech
	8/13/2014	78.27	34.89	33.95	0.94	44.13	Blaine Tech
	8/19/2014	78.27	34.90	33.94	0.96	44.14	Blaine Tech
	8/29/2014	78.27	35.65	35.38	0.27	42.84	Blaine Tech
	10/27/2014	78.27	35.82	---	---	42.45	Blaine Tech
	4/20/2015	78.27	36.63	34.12	2.51	43.65	Blaine Tech
	10/19/2015	78.27	37.90	34.87	3.03	42.79	Blaine Tech
	11/17/2015	78.27	37.71	35.36	2.35	42.44	Kinder Morgan
	3/14/2016	78.27	39.70	---	---	38.57	Blaine Tech
	4/11/2016	78.27	37.24	---	---	41.03	Blaine Tech
	6/29/2016	78.27	38.70	---	---	39.57	Blaine Tech
	8/22/2016	78.27	38.78	---	---	39.49	Blaine Tech
	10/3/2016	78.27	39.56	---	---	38.71	Blaine Tech
	3/23/2017	78.27	36.10	---	---	42.17	CH2M
	4/17/2017	78.27	35.39	---	---	42.88	Blaine Tech
	10/2/2017	78.27	39.40	---	---	38.87	Blaine Tech
	4/16/2018	78.27	39.10	---	---	39.17	Blaine Tech
11/5/2018	78.27	39.00	---	---	39.27	Blaine Tech	
MW-SF-16	8/14/2007	78.21	27.68	---	---	50.53	Geomatrix
	8/21/2007	78.21	27.33	---	---	50.88	Geomatrix
	8/28/2007	78.21	27.51	---	---	50.70	Stantec
	9/11/2007	78.21	27.59	---	---	50.62	Geomatrix
	10/5/2007	78.21	28.10	---	---	50.11	Geomatrix
	11/2/2007	78.21	29.81	---	---	48.40	Geomatrix
	11/12/2007	78.21	28.40	---	---	49.81	Stantec
	8/15/2008	78.21	29.36	---	---	48.85	Envent
	10/17/2008	78.21	29.51	---	---	48.70	Envent
	12/18/2008	78.21	30.94	---	---	47.27	Envent
	1/15/2009	78.21	30.01	30.00	0.01	48.21	Envent
	3/24/2009	78.21	29.82	---	---	48.39	Envent
	4/21/2009	78.21	29.60	---	---	48.61	Envent
	7/21/2009	78.21	30.36	---	---	47.85	Envent
	10/19/2009	78.21	NM	---	---	NC	Blaine Tech
	11/4/2009	78.21	30.58	---	---	47.63	Kinder Morgan
	2/4/2010	78.21	30.36	---	---	47.85	Kinder Morgan
	9/3/2010	78.21	30.25	---	---	47.96	Kinder Morgan
	10/4/2010	78.21	30.49	---	---	47.72	Blaine Tech
	4/12/2011	78.21	29.52	---	---	48.69	Blaine Tech
	10/10/2011	78.21	29.85	---	---	48.36	Blaine Tech
	4/16/2012	78.21	NM	---	---	NC	Blaine Tech
	7/9/2012	78.21	NM	---	---	NC	Blaine Tech
	10/15/2012	78.21	32.47	---	---	45.74	Blaine Tech
	4/8/2013	78.21	32.97	32.73	0.24	45.43	Blaine Tech
	5/24/2013	78.21	32.97	32.73	0.24	45.43	Blaine Tech
	10/7/2013	78.21	NM	---	---	NC	Blaine Tech
	11/14/2013	78.21	33.80	33.21	0.59	44.88	Blaine Tech
	4/18/2014	78.21	34.20	33.65	0.55	44.45	Blaine Tech
	8/8/2014	78.21	34.06	34.05	0.01	44.16	Blaine Tech
	10/27/2014	78.21	34.25	---	---	43.96	Blaine Tech
	4/20/2015	78.21	34.52	---	---	43.69	Blaine Tech
	6/8/2015	78.21	35.17	35.00	0.17	43.18	Blaine Tech
	10/21/2015	78.21	34.56	---	---	43.65	Kinder Morgan
	3/14/2016	78.21	39.60	---	---	38.61	Blaine Tech
	4/11/2016	78.21	37.15	---	---	41.06	Blaine Tech
6/29/2016	78.21	38.35	---	---	39.86	Blaine Tech	
8/22/2016	78.21	38.51	---	---	39.70	Blaine Tech	

Table 9. Groundwater and Product Measurements and Elevations for Total Fluids, Groundwater, and Soil Vapor Extraction Wells

SFPP Norwalk Pump Station, Norwalk, California

Well ID	Date Gauged	Top of Well Casing Elevation	Measured Depth to Groundwater	Measured Depth to Product	Apparent Product Thickness	Corrected Groundwater Elevation	Gauged By
		(feet msl)	(feet btoc)	(feet btoc)	(feet)	(feet msl)	
	10/3/2016	78.21	39.35	---	---	38.86	Blaine Tech
	4/17/2017	78.21	35.20	---	---	43.01	Blaine Tech
	10/2/2017	78.21	DRY	---	---	NC	Blaine Tech
	4/16/2018	78.21	DRY	---	---	NC	Blaine Tech
	11/5/2018	78.21	DRY	---	---	NC	Blaine Tech

Notes:

Corrected groundwater elevations are based on specific gravity data collected during baildown testing, or a default value of 0.8 foot msl was used for wells not tested.

--- = not detected or not applicable

DRY = No measurable water observed in the well.

feet btoc = feet below top of casing

foot/feet msl = feet above mean sea level based on National Geodetic Vertical Datum of 1929

NC = not calculated

NM = not measured

Figures

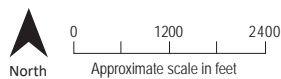
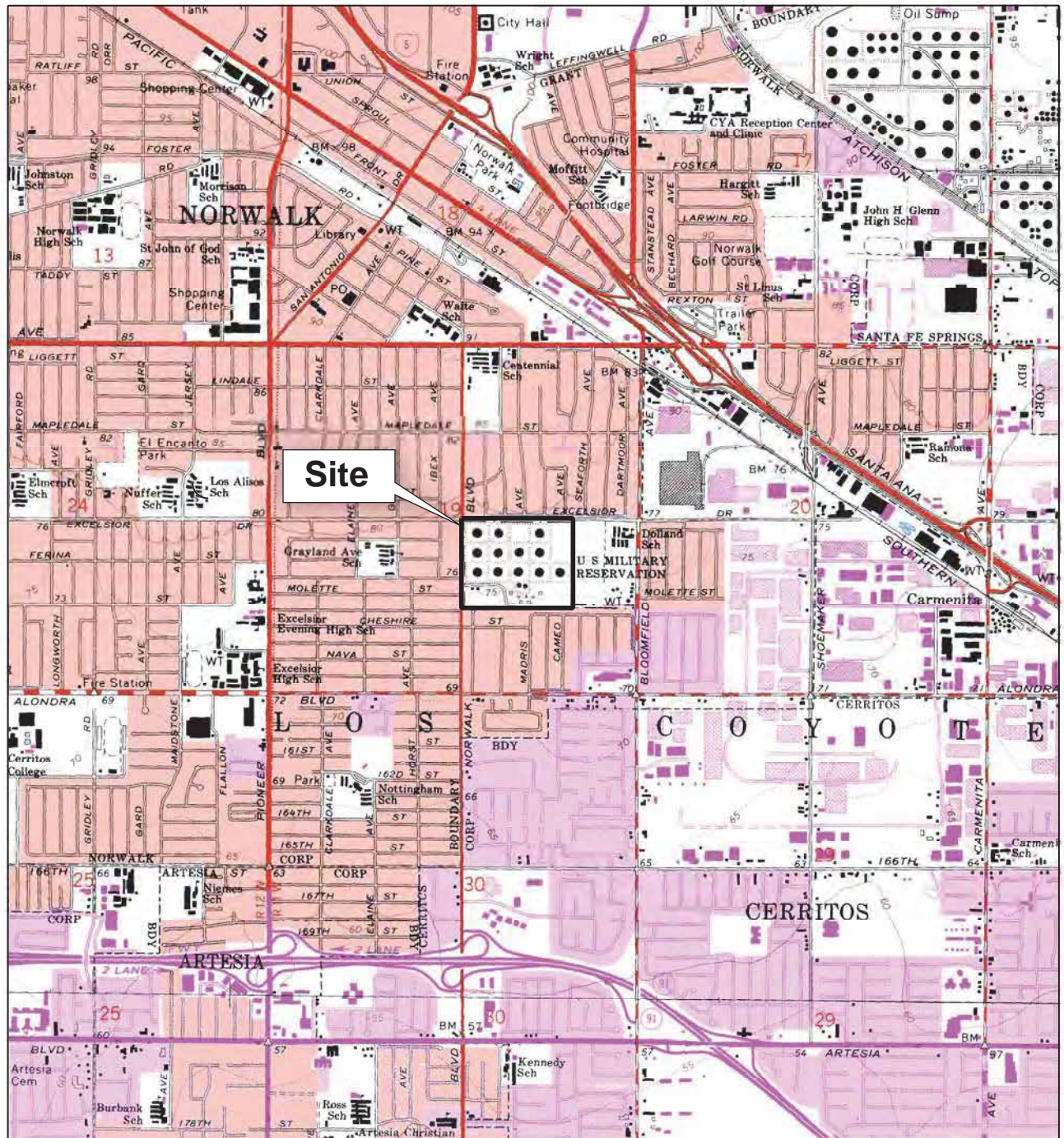
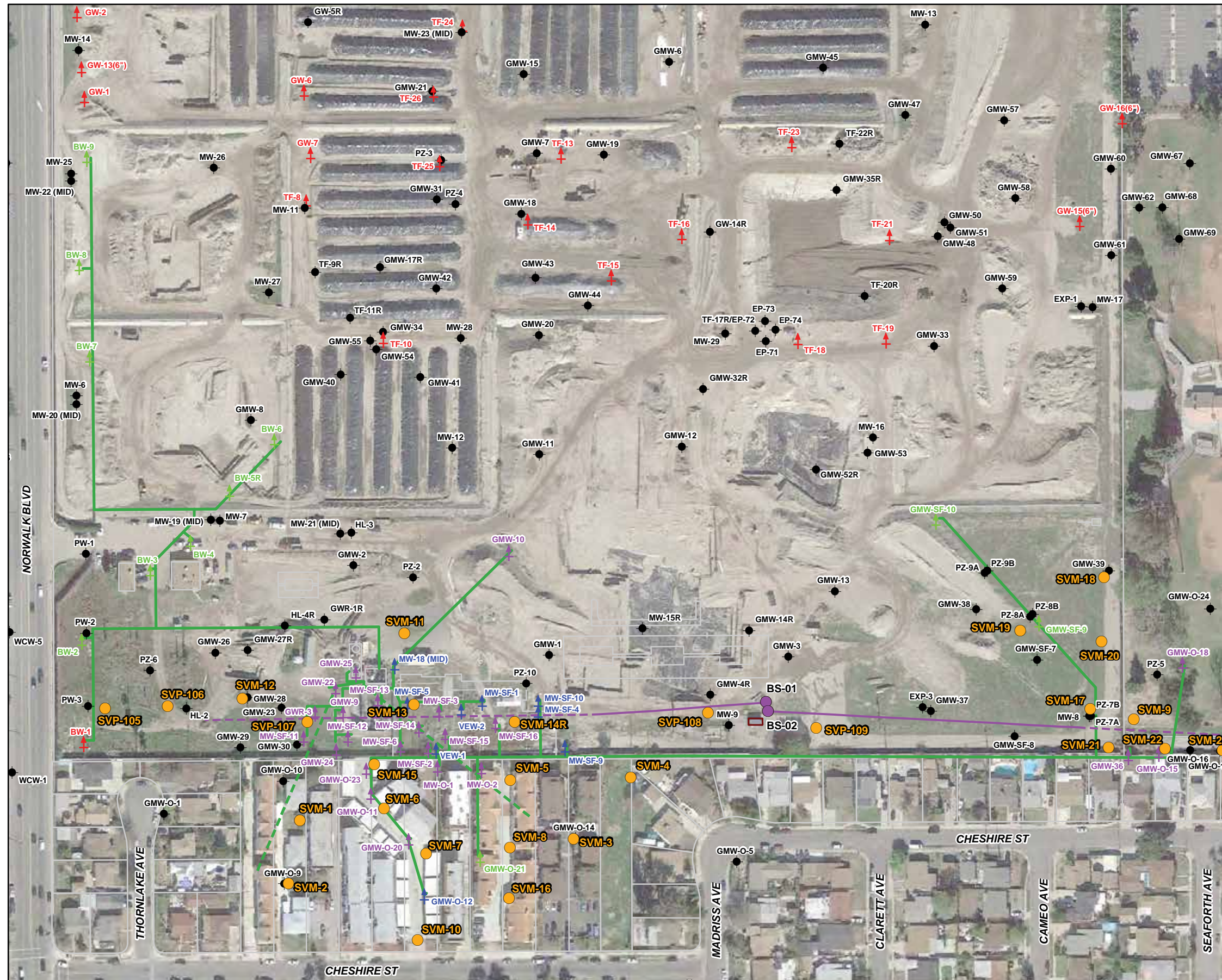


Figure 1. Site Location Map
SFPP Norwalk Pump Station
Norwalk, California

BASEMAP MODIFIED FROM U.S.G.S. 7.5 MINUTE QUADRANGLE MAP
LOS ALAMITOS 1964, CALIFORNIA. PHOTO-REVISED 1981.
WHITTIER 1965, CALIFORNIA. PHOTO-REVISED 1981.



- LEGEND**
- Soil Vapor Probe/Soil Vapor Monitoring Probe
 - Horizontal Biosparge Well Entry Point
 - Existing Groundwater Monitoring Well
 - ↑ Existing Remediation Well
 - ↑ Kinder Morgan Combined Soil Vapor and Total Fluids Extraction Wells
 - ↑ Kinder Morgan Soil Vapor Extraction Wells
 - ↑ Kinder Morgan Total Fluids and/or Groundwater Extraction Wells
 - Kinder Morgan Remediation Piping Layout (Above Ground and Below Ground)
 - - - Horizontal Vapor Extraction Well Piping
 - - - Horizontal Biosparge Well (Dashed Line Depicts Approximate Lateral Extent of Well Screen)
 - Air Compressor System

Imagery Source:
Google Earth October 18, 2016.

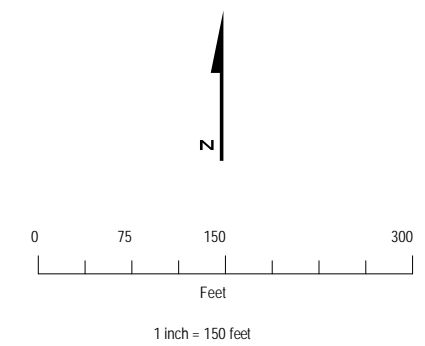


Figure 2. Remediation System Layout
SFPP Norwalk Pump Station
Norwalk, California

Appendix A
Laboratory Analytical Reports



February 27, 2019

CH2M Hill
ATTN: Eric Davis
1000 Wilshire Blvd., Suite 2100
Los Angeles, CA 90017



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: SFPP Norwalk
Lab Number: K011401-01/04

Enclosed are **revised** results for sample(s) received 1/14/19 by Air Technology Laboratories. This revision replaces the report dated 2/13/19 in its entirety. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Report revised to include Method Detection Limits and associated J values for EPA TO3 and ASTM D1946, per client's request.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Eric Davis, Vladimir Carino and Nils Orliczky on 2/05/19.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

CHAIN OF CUSTODY RECORD
DATE: 11/11/19
PAGE: 1 of 1

K011401-01/04

Air Technology Laboratories, Inc.
18501 Gale Ave. #130
City of Industry, CA 91748
Tel: 626-964-4032
Joann De La Ossa (JDeLaOssa@airtechlabs.com)

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Section D Sanitor Information:	
Company: CH2M HILL	Report To: Eric Davis (eric.davis@ch2m.com)	Attention: Eric Davis	Company Name: CH2M	Sampler Name: James Dye	Sampler Name: James Dye	Sample Signature:	Sample Date: 11/11/19
Address: 1000 Wilshire Blvd, Suite 2100 Los Angeles, CA 90017	Copy To: Vladimir Carino (vcarino@ch2m.com)	Project Name: SFPP Norwalk	Address: 1000 Wilshire Blvd, Suite 2100 Los Angeles, CA 90017	Project Manager: Joann De La Ossa			
Email To: jdeossa@airtechlabs.com	Purchase Order No.:						
Phone: 404-323-1600	Fax:						

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	CONTAINER TYPE		DATE	TIME	TOTAL # OF CONTAINERS	Analyte Test		Comments
					# OF CONTAINERS	PRESERVATIVE VOLUME (mL)				TO-3 (Total VOCs as Hexane)	TO-15 (VOCs, Target Analytes)	
1	VEFF-01-01	Effluent (stack)	Vapor	G			11/11/19	1140	1		X	Individually Certified 6-Liter SUMMA
2	VEFF-01-11-D	Effluent (stack) (duplicate)	Vapor	G			11/11/19	1140	1		X	Individually Certified 6-Liter SUMMA
3	VPOST-01-11	Influent (post-dilution)	Vapor	G			11/11/19	1245	1		X	Individually Certified 1-Liter SUMMA
4	VINF-01-11	Influent (pre-dilution)	Vapor	G			11/11/19	1255	1		X	Batch Certified 1-Liter Summa
5												Target analytes includes Historical VOCs and remaining ATU list per subcontract
6												
7												
8												
9												

Relinquished by (Signature and Printed Name):	Date / Time: 11/11/19 1530	Relinquished by (Signature and Printed Name): FED EX	Date / Time: 11/11/19 1530
Relinquished by (Signature and Printed Name):	Date / Time: 11/11/19 1530	Relinquished by (Signature and Printed Name):	Date / Time: 11/11/19 1530
Relinquished by (Signature and Printed Name):	Date / Time: 11/11/19 1530	Relinquished by (Signature and Printed Name):	Date / Time: 11/11/19 1530

Special Instructions:
 A = Same Day
 B = 24 Hours
 C = 48 Hours
 D = 72 Hours
 E = 5 Workdays
 E = 10 Workdays
 TAT Starts at 8 AM the following day if sampler received after 3:00 PM.

Preservatives:
 H = HCl
 N = HNO3
 O = NaOH
 Z = Zn/AC/2

Container Type:
 T = Tube
 J = Jar
 M = Metal
 P = Pint
 V = VOA
 B = Tedlar
 G = Glass
 C = Can

Matrix:
 W = Water
 D = Oil
 Others/Specify:

61
07
10
KR

Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K011401-01			K011401-02			K011401-03			K011401-04		
Client Sample I.D.:	VEFF-01-11			VEFF-01-11D			VPOST-01-11			VINP-01-11		
Date/Time Sampled:	1/11/19 11:40			1/11/19 11:40			1/11/19 12:45			1/11/19 12:55		
Date/Time Analyzed:	1/25/19 20:30			1/25/19 21:09			2/1/19 19:14			2/1/19 19:53		
QC Batch No.:	190125MS2A1			190125MS2A1			190131MS2A1			190131MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			11			11		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Dichlorodifluoromethane (12)	ND	0.0021	0.00032	ND	0.0021	0.00032	ND	0.011	0.0016	ND	0.011	0.0016
Chloromethane	0.0026 J	0.0042	0.00046	0.0026 J	0.0042	0.00046	ND	0.021	0.0023	ND	0.021	0.0023
1,2-CI-1,1,2,2-F ethane (114)	ND	0.0021	0.00042	ND	0.0021	0.00042	ND	0.011	0.0021	ND	0.011	0.0021
Vinyl Chloride	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.011	0.0017	ND	0.011	0.0017
Bromomethane	ND	0.0021	0.00062	ND	0.0021	0.00062	ND	0.011	0.0031	ND	0.011	0.0031
Chloroethane	ND	0.0021	0.0018	ND	0.0021	0.0018	ND	0.011	0.0088	ND	0.011	0.0089
Trichlorofluoromethane (11)	ND	0.0021	0.00045	ND	0.0021	0.00045	ND	0.011	0.0023	ND	0.011	0.0023
1,1-Dichloroethene	ND	0.0021	0.00048	ND	0.0021	0.00048	ND	0.011	0.0024	ND	0.011	0.0024
Carbon Disulfide	0.038	0.011	0.00050	0.041	0.011	0.00050	0.028 J	0.053	0.0025	0.014 J	0.053	0.0026
1,1,2-CI 1,2,2-F ethane (113)	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.011	0.0028	ND	0.011	0.0029
Acetone	0.0097 J	0.011	0.00061	0.028	0.011	0.00061	0.024 J	0.053	0.0030	0.022 J	0.053	0.0031
Methylene Chloride	ND	0.0021	0.00060	ND	0.0021	0.00060	ND	0.011	0.0030	ND	0.011	0.0030
t-1,2-Dichloroethene	ND	0.0021	0.00063	ND	0.0021	0.00063	ND	0.011	0.0031	ND	0.011	0.0032
1,1-Dichloroethane	ND	0.0021	0.00029	ND	0.0021	0.00029	ND	0.011	0.0014	ND	0.011	0.0014
c-1,2-Dichloroethene	ND	0.0021	0.00041	ND	0.0021	0.00041	ND	0.011	0.0020	ND	0.011	0.0021
2-Butanone	0.0048	0.0021	0.0013	0.0080	0.0021	0.0013	0.015	0.011	0.0065	ND	0.011	0.0066
t-Butyl Methyl Ether (MTBE)	ND	0.0021	0.00047	ND	0.0021	0.00047	ND	0.011	0.0024	ND	0.011	0.0024
Chloroform	ND	0.0021	0.00029	ND	0.0021	0.00029	ND	0.011	0.0015	0.0022 J	0.011	0.0015
1,1,1-Trichloroethane	ND	0.0021	0.00021	ND	0.0021	0.00021	ND	0.011	0.0011	ND	0.011	0.0011
Carbon Tetrachloride	ND	0.0021	0.00037	ND	0.0021	0.00037	ND	0.011	0.0018	ND	0.011	0.0019
Benzene	0.0024	0.0021	0.00020	0.0023	0.0021	0.00020	0.16	0.011	0.0010	0.19	0.011	0.0010
1,2-Dichloroethane	ND	0.0021	0.00016	ND	0.0021	0.00016	ND	0.011	0.00078	ND	0.011	0.00079
Trichloroethene	ND	0.0021	0.00030	ND	0.0021	0.00030	ND	0.011	0.0015	ND	0.011	0.0015
1,2-Dichloropropane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.011	0.0019	ND	0.011	0.0019
Bromodichloromethane	ND	0.0021	0.00013	ND	0.0021	0.00013	ND	0.011	0.00063	ND	0.011	0.00064
c-1,3-Dichloropropene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.011	0.0013	ND	0.011	0.0013
4-Methyl-2-Pentanone	ND	0.0021	0.00014	ND	0.0021	0.00014	ND	0.011	0.00071	ND	0.011	0.00072
Toluene	0.0018 J	0.0021	0.00017	0.0018 J	0.0021	0.00017	0.14	0.011	0.00084	0.16	0.011	0.00085
t-1,3-Dichloropropene	ND	0.0021	0.00022	ND	0.0021	0.00022	ND	0.011	0.0011	ND	0.011	0.0011
1,1,2-Trichloroethane	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.011	0.0017	ND	0.011	0.0017
1,3-Dichloropropane	ND	0.0021	0.00010	ND	0.0021	0.00010	ND	0.011	0.00052	ND	0.011	0.00053
Tetrachloroethene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.011	0.0013	ND	0.011	0.0013
2-Hexanone	ND	0.0021	0.00043	ND	0.0021	0.00043	ND	0.011	0.0022	ND	0.011	0.0022
Dibromochloromethane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.011	0.0019	ND	0.011	0.0019
1,2-Dibromoethane	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.011	0.00096	ND	0.011	0.00097
Chlorobenzene	ND	0.0021	0.00016	ND	0.0021	0.00016	ND	0.011	0.00082	ND	0.011	0.00083
Ethylbenzene	0.00038 J	0.0021	0.00012	0.00031 J	0.0021	0.00012	0.020	0.011	0.00061	0.025	0.011	0.00061
p,&m-Xylene	0.0039	0.0021	0.00024	0.0038	0.0021	0.00024	0.27	0.011	0.0012	0.32	0.011	0.0012
o-Xylene	0.0031	0.0021	0.00026	0.0029	0.0021	0.00026	0.18	0.011	0.0013	0.030	0.011	0.0013



Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K011401-01			K011401-02			K011401-03			K011401-04		
Client Sample I.D.:	VEFF-01-11			VEFF-01-11D			VPOST-01-11			VINP-01-11		
Date/Time Sampled:	1/11/19 11:40			1/11/19 11:40			1/11/19 12:45			1/11/19 12:55		
Date/Time Analyzed:	1/25/19 20:30			1/25/19 21:09			2/1/19 19:14			2/1/19 19:53		
QC Batch No.:	190125MS2A1			190125MS2A1			190131MS2A1			190131MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			11			11		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Styrene	ND	0.0021	0.00027	ND	0.0021	0.00027	0.0073 J	0.011	0.0014	ND	0.011	0.0014
Bromoform	ND	0.0021	0.00012	ND	0.0021	0.00012	ND	0.011	0.00059	ND	0.011	0.00059
Isopropyl benzene	ND	0.0021	0.00022	ND	0.0021	0.00022	ND	0.011	0.0011	ND	0.011	0.0011
1,1,2,2-Tetrachloroethane	ND	0.0042	0.00013	ND	0.0042	0.00013	ND	0.021	0.00064	ND	0.021	0.00065
Benzyl Chloride	ND	0.0021	0.00039	ND	0.0021	0.00039	ND	0.011	0.0019	ND	0.011	0.0020
1,2,3-Trichloropropane	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.011	0.0028	ND	0.011	0.0029
n-Propyl Benzene	ND	0.0021	0.00012	ND	0.0021	0.00012	0.0035 J	0.011	0.00061	0.0040 J	0.011	0.00062
4-Ethyl Toluene	0.0023	0.0021	0.00013	0.0021	0.0021	0.00013	0.070	0.011	0.00067	0.087	0.011	0.00067
1,3,5-Trimethylbenzene	0.0016 J	0.0042	0.00036	0.0015 J	0.0042	0.00036	0.072	0.021	0.0018	0.089	0.021	0.0018
4-Chlorotoluene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.011	0.0013	ND	0.011	0.0013
tert-Butylbenzene	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.011	0.00095	ND	0.011	0.00096
1,2,4-Trimethylbenzene	0.0027 J	0.0042	0.00024	0.0025 J	0.0042	0.00024	0.046	0.021	0.0012	0.0091 J	0.021	0.0012
sec-Butylbenzene	ND	0.0021	0.00020	ND	0.0021	0.00020	0.0012 J	0.011	0.0010	ND	0.011	0.0010
p-Isopropyltoluene	ND	0.0021	0.00027	0.00051 J	0.0021	0.00027	0.0023 J	0.011	0.0014	ND	0.011	0.0014
1,3-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.011	0.0013	ND	0.011	0.0013
1,4-Dichlorobenzene	ND	0.0021	0.00031	ND	0.0021	0.00031	ND	0.011	0.0015	ND	0.011	0.0016
n-Butylbenzene	0.0014 J	0.0021	0.00015	0.0016 J	0.0021	0.00015	ND	0.011	0.00077	ND	0.011	0.00078
1,2-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.011	0.0013	ND	0.011	0.0013
1,2,4-Trichlorobenzene	ND	0.0042	0.00035	ND	0.0042	0.00035	ND	0.021	0.0017	ND	0.021	0.0018
Hexachlorobutadiene	ND	0.0021	0.00012	ND	0.0021	0.00012	ND	0.011	0.00062	ND	0.011	0.00062
t-Butanol	0.0024 J	0.011	0.00040	0.0023 J	0.011	0.00040	0.019 J	0.053	0.0020	0.021 J	0.053	0.0020
n-Hexane	0.0087 J	0.011	0.00028	0.0084 J	0.011	0.00028	0.83	0.053	0.0014	1.0	0.053	0.0014
Isopropyl ether	ND	0.011	0.00023	ND	0.011	0.00023	ND	0.053	0.0012	ND	0.053	0.0012
t-Butyl ethyl ether	ND	0.011	0.00042	ND	0.011	0.00042	ND	0.053	0.0021	ND	0.053	0.0021
2,2-Dichloropropane	ND	0.011	0.00020	ND	0.011	0.00020	ND	0.053	0.0010	ND	0.053	0.0010
t-Amyl methyl ether	ND	0.011	0.00015	ND	0.011	0.00015	ND	0.053	0.00074	ND	0.053	0.00075
1,4-Dioxane	ND	0.011	0.00037	ND	0.011	0.00037	ND	0.053	0.0018	ND	0.053	0.0019
Naphthalene	ND	0.011	0.00081	ND	0.011	0.00081	ND	0.053	0.0040	ND	0.053	0.0041
1,2,3-Trichlorobenzene (TIC)	ND	--	--	ND	--	--	ND	--	--	ND	--	--

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/5/19

The cover letter is an integral part of this analytical report.



Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	-			-								
Date/Time Sampled:	-			-								
Date/Time Analyzed:	1/25/19 12:35			2/1/19 17:18								
QC Batch No.:	190125MS2A1			190131MS2A1								
Analyst Initials:	DT			DT								
Dilution Factor:	0.20			0.20								
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv						
Dichlorodifluoromethane (12)	ND	0.00020	0.000031	ND	0.00020	0.000031						
Chloromethane	ND	0.00040	0.000044	ND	0.00040	0.000044						
1,2-CI-1,1,2,2-F ethane (114)	ND	0.00020	0.000040	ND	0.00020	0.000040						
Vinyl Chloride	ND	0.00020	0.000032	ND	0.00020	0.000032						
Bromomethane	ND	0.00020	0.000059	ND	0.00020	0.000059						
Chloroethane	ND	0.00020	0.00017	ND	0.00020	0.00017						
Trichlorofluoromethane (11)	ND	0.00020	0.000043	ND	0.00020	0.000043						
1,1-Dichloroethene	ND	0.00020	0.000045	ND	0.00020	0.000045						
Carbon Disulfide	ND	0.0010	0.000048	ND	0.0010	0.000048						
1,1,2-CI 1,2,2-F ethane (113)	ND	0.00020	0.000054	ND	0.00020	0.000054						
Acetone	ND	0.0010	0.000058	ND	0.0010	0.000058						
Methylene Chloride	ND	0.00020	0.000057	ND	0.00020	0.000057						
t-1,2-Dichloroethene	ND	0.00020	0.000060	ND	0.00020	0.000060						
1,1-Dichloroethane	ND	0.00020	0.000027	ND	0.00020	0.000027						
c-1,2-Dichloroethene	ND	0.00020	0.000039	ND	0.00020	0.000039						
2-Butanone	ND	0.00020	0.00012	ND	0.00020	0.00012						
t-Butyl Methyl Ether (MTBE)	ND	0.00020	0.000045	ND	0.00020	0.000045						
Chloroform	ND	0.00020	0.000028	ND	0.00020	0.000028						
1,1,1-Trichloroethane	ND	0.00020	0.000020	ND	0.00020	0.000020						
Carbon Tetrachloride	ND	0.00020	0.000035	ND	0.00020	0.000035						
Benzene	ND	0.00020	0.000019	0.00024	0.00020	0.000019						
1,2-Dichloroethane	ND	0.00020	0.000015	ND	0.00020	0.000015						
Trichloroethene	ND	0.00020	0.000028	ND	0.00020	0.000028						
1,2-Dichloropropane	ND	0.00020	0.000036	ND	0.00020	0.000036						
Bromodichloromethane	ND	0.00020	0.000012	ND	0.00020	0.000012						
c-1,3-Dichloropropene	ND	0.00020	0.000024	ND	0.00020	0.000024						
4-Methyl-2-Pentanone	ND	0.00020	0.000013	ND	0.00020	0.000013						
Toluene	ND	0.00020	0.000016	0.000035 J	0.00020	0.000016						
t-1,3-Dichloropropene	ND	0.00020	0.000021	ND	0.00020	0.000021						
1,1,2-Trichloroethane	ND	0.00020	0.000032	ND	0.00020	0.000032						
1,3-Dichloropropane	ND	0.00020	0.0000099	ND	0.00020	0.0000099						
Tetrachloroethene	ND	0.00020	0.000024	ND	0.00020	0.000024						
2-Hexanone	ND	0.00020	0.000041	ND	0.00020	0.000041						
Dibromochloromethane	ND	0.00020	0.000036	ND	0.00020	0.000036						
1,2-Dibromoethane	ND	0.00020	0.000018	ND	0.00020	0.000018						
Chlorobenzene	ND	0.00020	0.000016	ND	0.00020	0.000016						
Ethylbenzene	ND	0.00020	0.000011	ND	0.00020	0.000011						
p,&m-Xylene	ND	0.00020	0.000023	ND	0.00020	0.000023						
o-Xylene	ND	0.00020	0.000024	ND	0.00020	0.000024						



Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	-			-								
Date/Time Sampled:	-			-								
Date/Time Analyzed:	1/25/19 12:35			2/1/19 17:18								
QC Batch No.:	190125MS2A1			190131MS2A1								
Analyst Initials:	DT			DT								
Dilution Factor:	0.20			0.20								
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv						
Styrene	ND	0.00020	0.000026	ND	0.00020	0.000026						
Bromoform	ND	0.00020	0.000011	ND	0.00020	0.000011						
Isopropyl benzene	ND	0.00020	0.000021	ND	0.00020	0.000021						
1,1,2,2-Tetrachloroethane	ND	0.00040	0.000012	ND	0.00040	0.000012						
Benzyl Chloride	ND	0.00020	0.000037	ND	0.00020	0.000037						
1,2,3-Trichloropropane	ND	0.00020	0.000054	ND	0.00020	0.000054						
n-Propyl Benzene	ND	0.00020	0.000012	ND	0.00020	0.000012						
4-Ethyl Toluene	ND	0.00020	0.000013	ND	0.00020	0.000013						
1,3,5-Trimethylbenzene	ND	0.00040	0.000035	ND	0.00040	0.000035						
4-Chlorotoluene	ND	0.00020	0.000024	ND	0.00020	0.000024						
tert-Butylbenzene	ND	0.00020	0.000018	ND	0.00020	0.000018						
1,2,4-Trimethylbenzene	ND	0.00040	0.000023	ND	0.00040	0.000023						
sec-Butylbenzene	ND	0.00020	0.000019	ND	0.00020	0.000019						
p-Isopropyltoluene	ND	0.00020	0.000026	ND	0.00020	0.000026						
1,3-Dichlorobenzene	ND	0.00020	0.000024	ND	0.00020	0.000024						
1,4-Dichlorobenzene	ND	0.00020	0.000029	ND	0.00020	0.000029						
n-Butylbenzene	ND	0.00020	0.000015	ND	0.00020	0.000015						
1,2-Dichlorobenzene	ND	0.00020	0.000025	ND	0.00020	0.000025						
1,2,4-Trichlorobenzene	ND	0.00040	0.000033	ND	0.00040	0.000033						
Hexachlorobutadiene	ND	0.00020	0.000012	ND	0.00020	0.000012						
t-Butanol	ND	0.0010	0.000038	ND	0.0010	0.000038						
n-Hexane	ND	0.0010	0.000027	ND	0.0010	0.000027						
Isopropyl ether	ND	0.0010	0.000022	ND	0.0010	0.000022						
t-Butyl ethyl ether	ND	0.0010	0.000040	ND	0.0010	0.000040						
2,2-Dichloropropane	ND	0.0010	0.000019	ND	0.0010	0.000019						
t-Amyl methyl ether	ND	0.0010	0.000014	ND	0.0010	0.000014						
1,4-Dioxane	ND	0.0010	0.000035	ND	0.0010	0.000035						
Naphthalene	ND	0.0010	0.000077	ND	0.0010	0.000077						
1,2,3-Trichlorobenzene (TIC)	ND	--	--	ND	--	--						

MDL = Method Detection Limit
 ND = Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/5/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190125MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	1/25/19 12:35		1/25/19 10:36		1/25/19 11:15						
Data File ID:	25JAN006.D		25JAN003.D		25JAN004.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0		Limits				
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/Fail
1,1-Dichloroethene	0.0	10.0	9.5	95	8.5	85	11.7	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.9	99	9.2	92	7.1	70	130	30	Pass
Trichloroethene	0.0	10.0	7.9	79	7.9	79	0.2	70	130	30	Pass
Toluene	0.0	10.0	8.6	86	8.3	83	3.7	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.2	92	9.1	91	1.0	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/5/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190131MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	2/1/19 13:38		2/1/19 8:37		2/1/19 10:36						
Data File ID:	31JAN019.D		31JAN015.D		31JAN016.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0	Limits					
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/Fail
1,1-Dichloroethene	0.0	10.0	9.7	97	9.3	93	3.8	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.5	95	10.0	100	5.3	70	130	30	Pass
Trichloroethene	0.0	10.0	8.7	87	9.0	90	3.3	70	130	30	Pass
Toluene	0.0	10.0	9.2	92	9.3	93	1.1	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.3	93	9.3	93	0.1	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/5/19

The cover letter is an integral part of this analytical report

Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K011401-01			K011401-02			K011401-03			K011401-04		
Client Sample I.D.:	VEFF-01-11			VEFF-01-11D			VPOST-01-11			VINP-01-11		
Date/Time Sampled:	1/11/19 11:40			1/11/19 11:40			1/11/19 12:45			1/11/19 12:55		
Date/Time Analyzed:	1/15/19 15:34			1/15/19 15:56			1/15/19 16:19			1/15/19 16:41		
QC Batch No.:	190115GC11A1			190115GC11A1			190115GC11A1			190115GC11A1		
Analyst Initials:	VM			VM			VM			VM		
Dilution Factor:	2.1			2.1			2.1			2.1		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
TVOC as Hexane	ND	2.1	0.37	ND	2.1	0.37	39	2.1	0.37	46	2.1	0.37

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Operations Manager

Date: 2/22/19

The cover letter is an integral part of this analytical report.



QC Batch No: 190115GC11A1
Matrix: Air
Reporting Units: ppmv

EPA METHOD TO3
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK	LCS	LCSD								
Date Analyzed:	1/15/19 13:33	1/15/19 12:59	1/15/19 13:10								
Analyst Initials:	VM	VM	VM								
Dilution Factor:	1.0	1.0	1.0								
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Hexane	ND	1.0	0.18	4.50	90	4.45	89	1.1	70	130	25

MDL = Method Detection Limit
ND = Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 2/27/19

The cover letter is an integral part of this analytical report



Client: CH2M Hill
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 01/14/19
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	K011401-04												
Client Sample I.D.:	VINP-01-11												
Date/Time Sampled:	1/11/19 12:55												
Date/Time Analyzed:	1/18/19 15:23												
QC Batch No.:	190118GC8A1												
Analyst Initials:	CM/MJ												
Dilution Factor:	2.1												
ANALYTE	Result % v/v	RL % v/v	MDL % v/v										
Carbon Dioxide	1.5	0.021	0.00089										
Oxygen/Argon	19	1.1	0.077										
Nitrogen	79	2.1	0.31										
Methane	0.0061	0.0021	0.000096										

Results normalized including non-methane hydrocarbons
 MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Operations Manager

Date: 2/27/19

The cover letter is an integral part of this analytical report



QC Batch No: 190118GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK	LCS	LCSD
Date Analyzed:	1/18/19 10:09	1/18/19 9:40	1/18/19 9:55
Analyst Initials:	CM/MJ	CM/MJ	CM/MJ
Dilution Factor:	1.0	1.0	1.0

ANALYTE	Result	RL	MDL	SPIKE	Result	% Rec.	Result	% Rec.	RPD	Limits		
	% v/v	% v/v	% v/v	AMT. % v/v	% v/v		% v/v		%	Low %Rec	High %Rec	Max. RPD
Carbon Dioxide	ND	0.010	0.00042	10	9.23	92	9.32	93	0.9	70	130	30
Oxygen/Argon	0.12 J	0.50	0.037	15	15.9	107	16.1	108	0.7	70	130	30
Nitrogen	ND	1.0	0.14	70	71.3	102	72.1	103	1.0	70	130	30
Methane	0.000075 J	0.0010	0.000046	0.10	0.112	112	0.110	110	1.9	70	130	30

MDL = Method Detection Limit
 ND= Not Detected (below MDL.)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: _____
Mark Johnson
 Mark Johnson
 Operations Manager

Date 2/27/19

The cover letter is an integral part of this analytical report.





February 26, 2019

Jacobs
ATTN: Eric Davis
1000 Wilshire Blvd., Suite 2100
Los Angeles, CA 90017



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: SFPP Norwalk
Lab Number: K020803-01/04

Enclosed are results for sample(s) received 2/08/19 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Eric Davis, Vladimir Carino and Nils Orliczky on 2/25/19.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink that reads "mjd. 1".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

K020803-04/04

CHAIN OF CUSTODY RECORD
DATE: 2/7/19
PAGE: 1 of 1

Air Technology Laboratories, Inc.
18501 Gale Ave. #130
City of Industry, CA 91748
Tel: 626-964-4032
Joann De La Ossa (JDeLaOssa@airtechlabs.com)

Section A
Required Client Information:
Company: CH2M HILL
Attention: Eric Davis
Address: 1000 Wilshire Blvd, Suite 2100
Los Angeles, CA 90017
Email To: eric.davis@ch2m.com
vcarrino@ch2m.com
Phone: 404-323-1600 Fax:

Section B
Required Project Information:
Report To: Eric Davis (eric.davis@ch2m.com)
Copy To: Vladimir Carino (vcarrino@ch2m.com)
Purchase Order No.:
Project Name: SFPP Norwalk

Section C
Invoice Information:
Attention: Eric Davis
Company: CH2M
Name: 1000 Wilshire Blvd, Suite 2100
Address: Los Angeles, CA 90017
Project Manager: Joann De La Ossa

Section D
Sampler Information:
Sampler Name: James Dye
Signature: [Signature]
Date: 2/7/19

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G-GRAB C-COMP)	CONTAINER TYPE		DATE	TIME	TOTAL # OF CONTAINERS	Analysis Test	Comments
					# OF CONTAINERS	PRESERVATIVE					
1	VEFF-02-07	Effluent (stack)	Vapor	G		02/07/19	1235	1	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
2	VEFF-01-07 D	Effluent (stack) (duplicate)	Vapor	G		02/07/19	1235	1	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
3	VPOST-02-07	Influent (post-dilution)	Vapor	G		02/07/19	1245	1	TO-15 (VOCs, Target Analytes)		Individually Certified 1-Liter SUMMA
4	VINF-02-07	Influent (pre-dilution)	Vapor	G		02/07/19	1255	1	TO-15 (VOCs, Target Analytes)		Batch Certified 1-Liter SUMMA
5											Target analytes includes Historical VOCs and remaining ATU list per subcontract
6											
7											
8											
9											
10											
11											
12											

Section E
Required Sample Information:
Signature and Printed Name: [Signature] Date / Time: 2/7/19 1500
Signature and Printed Name: [Signature] Date / Time: 2/7/19 1500
Signature and Printed Name: [Signature] Date / Time: 2/8/19 1949

Turn Around Time (TAT):
 A = Same Day
 B = 24 Hours
 C = 48 Hours
 D = 72 Hours
 E = 5 Workdays
 F = 10 Workdays
 TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

Matrix:
 W = Water
 P = Product
 S = Soil
 Others/Specify:

Preservative:
 H = HCl
 Z = Zn/AC2
 Others/Specify:

Container Type:
 T = Tube
 V = VOA
 J = Jar
 B = Tedlar
 M = Metal
 P = Plastic
 G = Glass
 C = Can
 A = Amber

11 02 04

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K020803-01			K020803-02			K020803-03			K020803-04		
Client Sample I.D.:	VEFF-02-07			VEFF-02-07D			VPOST-02-07			VINP-02-07		
Date/Time Sampled:	2/7/19 12:35			2/7/19 12:35			2/7/19 12:45			2/7/19 12:55		
Date/Time Analyzed:	2/13/19 22:30			2/13/19 23:08			2/14/19 11:00			2/14/19 11:39		
QC Batch No.:	190213MS2A1			190213MS2A1			190214MS2A1			190214MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			10			10		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Dichlorodifluoromethane (12)	ND	0.0021	0.00032	ND	0.0021	0.00032	ND	0.010	0.0016	ND	0.010	0.0016
Chloromethane	ND	0.0042	0.00046	ND	0.0042	0.00046	ND	0.020	0.0022	ND	0.020	0.0022
1,2-Ci-1,1,2,2-F ethane (114)	ND	0.0021	0.00042	ND	0.0021	0.00042	ND	0.010	0.0020	ND	0.010	0.0020
Vinyl Chloride	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.010	0.0016	ND	0.010	0.0016
Bromomethane	ND	0.0021	0.00062	ND	0.0021	0.00062	ND	0.010	0.0030	ND	0.010	0.0030
Chloroethane	ND	0.0021	0.0018	ND	0.0021	0.0018	ND	0.010	0.0085	ND	0.010	0.0085
Trichlorofluoromethane (11)	ND	0.0021	0.00045	ND	0.0021	0.00045	ND	0.010	0.0022	ND	0.010	0.0022
1,1-Dichloroethene	ND	0.0021	0.00048	ND	0.0021	0.00048	ND	0.010	0.0023	ND	0.010	0.0023
Carbon Disulfide	0.042	0.011	0.00050	0.025	0.011	0.00050	ND	0.051	0.0024	ND	0.051	0.0024
1,1,2-Ci 1,2,2-F ethane (113)	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.010	0.0027	ND	0.010	0.0027
Acetone	0.022	0.011	0.00061	0.015	0.011	0.00061	ND	0.051	0.0029	ND	0.051	0.0029
Methylene Chloride	ND	0.0021	0.00060	ND	0.0021	0.00060	ND	0.010	0.0029	ND	0.010	0.0029
t-1,2-Dichloroethene	ND	0.0021	0.00063	ND	0.0021	0.00063	ND	0.010	0.0030	ND	0.010	0.0030
1,1-Dichloroethane	ND	0.0021	0.00029	ND	0.0021	0.00029	ND	0.010	0.0014	ND	0.010	0.0014
c-1,2-Dichloroethene	ND	0.0021	0.00041	ND	0.0021	0.00041	ND	0.010	0.0020	ND	0.010	0.0020
2-Butanone	0.018	0.0021	0.0013	0.0077	0.0021	0.0013	ND	0.010	0.0062	0.012	0.010	0.0062
t-Butyl Methyl Ether (MTBE)	ND	0.0021	0.00047	ND	0.0021	0.00047	ND	0.010	0.0023	ND	0.010	0.0023
Chloroform	ND	0.0021	0.00029	ND	0.0021	0.00029	ND	0.010	0.0014	ND	0.010	0.0014
1,1,1-Trichloroethane	ND	0.0021	0.00021	ND	0.0021	0.00021	ND	0.010	0.0010	ND	0.010	0.0010
Carbon Tetrachloride	ND	0.0021	0.00037	ND	0.0021	0.00037	ND	0.010	0.0018	ND	0.010	0.0018
Benzene	0.0044	0.0021	0.00020	0.0045	0.0021	0.00020	0.23	0.010	0.00097	0.24	0.010	0.00097
1,2-Dichloroethane	ND	0.0021	0.00016	ND	0.0021	0.00016	0.0032 J	0.010	0.00075	0.0030 J	0.010	0.00075
Trichloroethene	ND	0.0021	0.00030	ND	0.0021	0.00030	ND	0.010	0.0014	ND	0.010	0.0014
1,2-Dichloropropane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.010	0.0018	ND	0.010	0.0018
Bromodichloromethane	ND	0.0021	0.00013	ND	0.0021	0.00013	ND	0.010	0.00061	ND	0.010	0.00061
c-1,3-Dichloropropene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.010	0.0012	ND	0.010	0.0012
4-Methyl-2-Pentanone	ND	0.0021	0.00014	ND	0.0021	0.00014	ND	0.010	0.00068	ND	0.010	0.00068
Toluene	0.0052	0.0021	0.00017	0.0054	0.0021	0.00017	0.25	0.010	0.00080	0.28	0.010	0.00080
t-1,3-Dichloropropene	ND	0.0021	0.00022	ND	0.0021	0.00022	ND	0.010	0.0010	ND	0.010	0.0010
1,1,2-Trichloroethane	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.010	0.0016	ND	0.010	0.0016
1,3-Dichloropropane	ND	0.0021	0.00010	ND	0.0021	0.00010	ND	0.010	0.00050	ND	0.010	0.00050
Tetrachloroethene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.010	0.0012	ND	0.010	0.0012
2-Hexanone	ND	0.0021	0.00043	ND	0.0021	0.00043	ND	0.010	0.0021	ND	0.010	0.0021
Dibromochloromethane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.010	0.0018	ND	0.010	0.0018
1,2-Dibromoethane	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.010	0.00092	ND	0.010	0.00092
Chlorobenzene	ND	0.0021	0.00016	ND	0.0021	0.00016	ND	0.010	0.00079	0.0088 J	0.010	0.00079
Ethylbenzene	0.0021	0.0021	0.00012	0.0016 J	0.0021	0.00012	0.057	0.010	0.00058	0.067	0.010	0.00058
p,&m-Xylene	0.021	0.0021	0.00024	0.018	0.0021	0.00024	0.73	0.010	0.0011	0.88	0.010	0.0011
o-Xylene	0.013	0.0021	0.00026	0.012	0.0021	0.00026	0.091	0.010	0.0012	0.11	0.010	0.0012



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K020803-01			K020803-02			K020803-03			K020803-04		
Client Sample I.D.:	VEFF-02-07			VEFF-02-07D			VPOST-02-07			VINP-02-07		
Date/Time Sampled:	2/7/19 12:35			2/7/19 12:35			2/7/19 12:45			2/7/19 12:55		
Date/Time Analyzed:	2/13/19 22:30			2/13/19 23:08			2/14/19 11:00			2/14/19 11:39		
QC Batch No.:	190213MS2AI			190213MS2AI			190214MS2AI			190214MS2AI		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			10			10		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Styrene	0.0013 J	0.0021	0.00027	0.00089 J	0.0021	0.00027	0.0031 J	0.010	0.0013	0.0040 J	0.010	0.0013
Bromoform	ND	0.0021	0.00012	ND	0.0021	0.00012	ND	0.010	0.00056	ND	0.010	0.00056
Isopropyl benzene	ND	0.0021	0.00022	0.00068 J	0.0021	0.00022	0.0058 J	0.010	0.0011	ND	0.010	0.0011
1,1,2,2-Tetrachloroethane	ND	0.0042	0.00013	ND	0.0042	0.00013	ND	0.020	0.00062	ND	0.020	0.00062
Benzyl Chloride	ND	0.0021	0.00039	ND	0.0021	0.00039	ND	0.010	0.0019	ND	0.010	0.0019
1,2,3-Trichloropropane	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.010	0.0027	ND	0.010	0.0027
n-Propyl Benzene	ND	0.0021	0.00012	ND	0.0021	0.00012	0.0098 J	0.010	0.00059	ND	0.010	0.00059
4-Ethyl Toluene	0.0073	0.0021	0.00013	0.0063	0.0021	0.00013	0.14	0.010	0.00064	0.076	0.010	0.00064
1,3,5-Trimethylbenzene	0.0044	0.0042	0.00036	0.0041 J	0.0042	0.00036	0.12	0.020	0.0017	0.071	0.020	0.0017
4-Chlorotoluene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.010	0.0012	ND	0.010	0.0012
tert-Butylbenzene	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.010	0.00092	ND	0.010	0.00092
1,2,4-Trimethylbenzene	0.0044	0.0042	0.00024	0.0042	0.0042	0.00024	0.018 J	0.020	0.0011	0.019 J	0.020	0.0011
sec-Butylbenzene	ND	0.0021	0.00020	ND	0.0021	0.00020	ND	0.010	0.00098	ND	0.010	0.00098
p-Isopropyltoluene	0.0043	0.0021	0.00027	0.0093	0.0021	0.00027	0.0022 J	0.010	0.0013	ND	0.010	0.0013
1,3-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.010	0.0012	ND	0.010	0.0012
1,4-Dichlorobenzene	ND	0.0021	0.00031	ND	0.0021	0.00031	ND	0.010	0.0015	ND	0.010	0.0015
n-Butylbenzene	0.00086 J	0.0021	0.00015	ND	0.0021	0.00015	ND	0.010	0.00074	ND	0.010	0.00074
1,2-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.010	0.0013	ND	0.010	0.0013
1,2,4-Trichlorobenzene	ND	0.0042	0.00035	ND	0.0042	0.00035	0.0037 J	0.020	0.0017	ND	0.020	0.0017
Hexachlorobutadiene	ND	0.0021	0.00012	ND	0.0021	0.00012	0.0016 J	0.010	0.00059	ND	0.010	0.00059
t-Butanol	0.0018 J	0.011	0.00040	0.0010 J	0.011	0.00040	0.013 J	0.051	0.0019	0.020 J	0.051	0.0019
n-Hexane	0.015	0.011	0.00028	0.015	0.011	0.00028	1.2	0.051	0.0014	1.5	0.051	0.0014
Isopropyl ether	ND	0.011	0.00023	ND	0.011	0.00023	ND	0.051	0.0011	ND	0.051	0.0011
t-Butyl ethyl ether	ND	0.011	0.00042	ND	0.011	0.00042	ND	0.051	0.0020	ND	0.051	0.0020
2,2-Dichloropropane	ND	0.011	0.00020	ND	0.011	0.00020	ND	0.051	0.00096	ND	0.051	0.00096
t-Amyl methyl ether	ND	0.011	0.00015	ND	0.011	0.00015	ND	0.051	0.00071	ND	0.051	0.00071
1,4-Dioxane	ND	0.011	0.00037	ND	0.011	0.00037	ND	0.051	0.0018	ND	0.051	0.0018
Naphthalene	ND	0.011	0.00081	ND	0.011	0.00081	0.0093 J	0.051	0.0039	ND	0.051	0.0039
1,2,3-Trichlorobenzene (TIC)	ND	-	-	ND	-	-	ND	-	-	ND	-	-

MDL = Method Detection Limit
 ND = Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson Date 2/25/19
 Mark Johnson
 Operations Manager

The cover letter is an integral part of this analytical report



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	VEFF3-09-01			POST3-09-01								
Date/Time Sampled:	9/1/15 12:46			9/1/15 12:46								
Date/Time Analyzed:	2/13/19 12:54			2/14/19 5:36								
QC Batch No.:	190213MS2A1			190214MS2A1								
Analyst Initials:												
Dilution Factor:	0.20			0.20								
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv						
Dichlorodifluoromethane (12)	ND	0.00020	0.000031	ND	0.00020	0.000031						
Chloromethane	ND	0.00040	0.000044	ND	0.00040	0.000044						
1,2-CI-1,1,2,2-F ethane (114)	ND	0.00020	0.000040	ND	0.00020	0.000040						
Vinyl Chloride	ND	0.00020	0.000032	ND	0.00020	0.000032						
Bromomethane	ND	0.00020	0.000059	ND	0.00020	0.000059						
Chloroethane	ND	0.00020	0.00017	ND	0.00020	0.00017						
Trichlorofluoromethane (11)	ND	0.00020	0.000043	ND	0.00020	0.000043						
1,1-Dichloroethene	ND	0.00020	0.000045	ND	0.00020	0.000045						
Carbon Disulfide	ND	0.0010	0.000048	ND	0.0010	0.000048						
1,1,2-CI 1,2,2-F ethane (113)	ND	0.00020	0.000054	ND	0.00020	0.000054						
Acetone	ND	0.0010	0.000058	ND	0.0010	0.000058						
Methylene Chloride	ND	0.00020	0.000057	ND	0.00020	0.000057						
t-1,2-Dichloroethene	ND	0.00020	0.000060	ND	0.00020	0.000060						
1,1-Dichloroethane	ND	0.00020	0.000027	ND	0.00020	0.000027						
c-1,2-Dichloroethene	ND	0.00020	0.000039	ND	0.00020	0.000039						
2-Butanone	ND	0.00020	0.00012	ND	0.00020	0.00012						
t-Butyl Methyl Ether (MTBE)	ND	0.00020	0.000045	ND	0.00020	0.000045						
Chloroform	ND	0.00020	0.000028	ND	0.00020	0.000028						
1,1,1-Trichloroethane	ND	0.00020	0.000020	ND	0.00020	0.000020						
Carbon Tetrachloride	ND	0.00020	0.000035	ND	0.00020	0.000035						
Benzene	ND	0.00020	0.000019	0.000023 J	0.00020	0.000019						
1,2-Dichloroethane	ND	0.00020	0.000015	ND	0.00020	0.000015						
Trichloroethene	ND	0.00020	0.000028	ND	0.00020	0.000028						
1,2-Dichloropropane	ND	0.00020	0.000036	ND	0.00020	0.000036						
Bromodichloromethane	ND	0.00020	0.000012	ND	0.00020	0.000012						
c-1,3-Dichloropropene	ND	0.00020	0.000024	ND	0.00020	0.000024						
4-Methyl-2-Pentanone	ND	0.00020	0.000013	ND	0.00020	0.000013						
Toluene	ND	0.00020	0.000016	0.000022 J	0.00020	0.000016						
t-1,3-Dichloropropene	ND	0.00020	0.000021	ND	0.00020	0.000021						
1,1,2-Trichloroethane	ND	0.00020	0.000032	ND	0.00020	0.000032						
1,3-Dichloropropane	ND	0.00020	0.000009	ND	0.00020	0.000009						
Tetrachloroethene	ND	0.00020	0.000024	ND	0.00020	0.000024						
2-Hexanone	ND	0.00020	0.000041	ND	0.00020	0.000041						
Dibromochloromethane	ND	0.00020	0.000036	ND	0.00020	0.000036						
1,2-Dibromoethane	ND	0.00020	0.000018	0.000028 J	0.00020	0.000018						
Chlorobenzene	ND	0.00020	0.000016	ND	0.00020	0.000016						
Ethylbenzene	ND	0.00020	0.000011	ND	0.00020	0.000011						
p,&m-Xylene	ND	0.00020	0.000023	0.000052 J	0.00020	0.000023						
o-Xylene	ND	0.00020	0.000024	ND	0.00020	0.000024						



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK									
Client Sample I.D.:	VEFF3-09-01			POST3-09-01									
Date/Time Sampled:	9/1/15 12:46			9/1/15 12:46									
Date/Time Analyzed:	2/13/19 12:54			2/14/19 5:36									
QC Batch No.:	190213MS2A1			190214MS2A1									
Analyst Initials:													
Dilution Factor:	0.20			0.20									
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv							
Styrene	ND	0.00020	0.000026	ND	0.00020	0.000026							
Bromoform	ND	0.00020	0.000011	ND	0.00020	0.000011							
Isopropyl benzene	ND	0.00020	0.000021	ND	0.00020	0.000021							
1,1,2,2-Tetrachloroethane	ND	0.00040	0.000012	ND	0.00040	0.000012							
Benzyl Chloride	ND	0.00020	0.000037	ND	0.00020	0.000037							
1,2,3-Trichloropropane	ND	0.00020	0.000054	ND	0.00020	0.000054							
n-Propyl Benzene	ND	0.00020	0.000012	0.000059 J	0.00020	0.000012							
4-Ethyl Toluene	ND	0.00020	0.000013	0.000043 J	0.00020	0.000013							
1,3,5-Trimethylbenzene	ND	0.00040	0.000035	ND	0.00040	0.000035							
4-Chlorotoluene	ND	0.00020	0.000024	0.000091 J	0.00020	0.000024							
tert-Butylbenzene	ND	0.00020	0.000018	ND	0.00020	0.000018							
1,2,4-Trimethylbenzene	ND	0.00040	0.000023	0.000055 J	0.00040	0.000023							
sec-Butylbenzene	ND	0.00020	0.000019	0.000061 J	0.00020	0.000019							
p-Isopropyltoluene	ND	0.00020	0.000026	ND	0.00020	0.000026							
1,3-Dichlorobenzene	ND	0.00020	0.000024	0.00010 J	0.00020	0.000024							
1,4-Dichlorobenzene	ND	0.00020	0.000029	0.00015 J	0.00020	0.000029							
n-Butylbenzene	ND	0.00020	0.000015	0.000023 J	0.00020	0.000015							
1,2-Dichlorobenzene	ND	0.00020	0.000025	0.00010 J	0.00020	0.000025							
1,2,4-Trichlorobenzene	ND	0.00040	0.000033	0.00018 J	0.00040	0.000033							
Hexachlorobutadiene	ND	0.00020	0.000012	0.000050 J	0.00020	0.000012							
t-Butanol	ND	0.0010	0.000038	ND	0.0010	0.000038							
n-Hexane	ND	0.0010	0.000027	ND	0.0010	0.000027							
Isopropyl ether	ND	0.0010	0.000022	ND	0.0010	0.000022							
t-Butyl ethyl ether	ND	0.0010	0.000040	ND	0.0010	0.000040							
2,2-Dichloropropane	ND	0.0010	0.000019	ND	0.0010	0.000019							
t-Amyl methyl ether	ND	0.0010	0.000014	ND	0.0010	0.000014							
1,4-Dioxane	ND	0.0010	0.000035	ND	0.0010	0.000035							
Naphthalene	ND	0.0010	0.000077	ND	0.0010	0.000077							
1,2,3-Trichlorobenzene (TIC)	ND	--	--	ND	--	--							

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 2/25/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190213MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	2/13/19 12:54		2/13/19 11:32	% Rec	2/13/19 12:11	% Rec					
Data File ID:	13FEB007.D		13FEB005.D		13FEB006.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0		Limits				
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/Fail
1,1-Dichloroethene	0.0	10.0	10.8	108	10.7	107	0.3	70	130	30	Pass
Methylene Chloride	0.0	10.0	11.9	119	11.2	112	6.5	70	130	30	Pass
Trichloroethene	0.0	10.0	10.4	104	10.4	104	0.3	70	130	30	Pass
Toluene	0.0	10.0	10.5	105	10.7	107	1.1	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.0	90	9.1	91	0.4	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/25/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190214MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	2/14/19 5:36		2/14/19 3:37		2/14/19 4:15						
Data File ID:	14FEB008.D		14FEB005.D		14FEB006.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0		Limits				
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/Fail
1,1-Dichloroethene	0.0	10.0	11.2	112	11.2	112	0.1	70	130	30	Pass
Methylene Chloride	0.0	10.0	11.3	113	11.4	114	1.1	70	130	30	Pass
Trichloroethene	0.0	10.0	10.4	104	10.6	106	2.1	70	130	30	Pass
Toluene	0.0	10.0	10.5	105	10.7	107	2.0	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.1	91	9.1	91	1.0	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/25/19

The cover letter is an integral part of this analytical report



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K020803-01			K020803-02			K020803-03			K020803-04		
Client Sample I.D.:	VEFF-02-07			VEFF-02-07D			VPOST-02-07			VINP-02-07		
Date/Time Sampled:	2/7/19 12:35			2/7/19 12:35			2/7/19 12:45			2/7/19 12:55		
Date/Time Analyzed:	2/12/19 14:17			2/12/19 15:27			2/12/19 16:58			2/12/19 17:21		
QC Batch No.:	190212GC11A1			190212GC11A1			190212GC11A1			190212GC11A1		
Analyst Initials:	AS			AS			AS			AS		
Dilution Factor:	2.1			2.1			2.0			2.0		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
TVOC as Hexane	0.63	J 2.1	0.37	0.64	J 2.1	0.37	66	2.0	0.36	74	2.0	0.36

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 2/25/19

The cover letter is an integral part of this analytical report



QC Batch No: 190212GC11A1
Matrix: Air
Reporting Units: ppmv

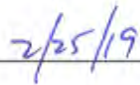
**EPA METHOD TO3
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK	LCS	LCSD								
Date Analyzed:	2/12/19 13:09	2/12/19 12:24	2/12/19 12:46								
Analyst Initials:	AS	AS	AS								
Dilution Factor:	1.0	1.0	1.0								
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Hexane	ND	1.0	0.18	9.88	99	9.90	99	0.2	70	130	25

MDL = Method Detection Limit
ND= Not Detected (below MDL)
RL = Reporting Limit
J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: _____

 Mark Johnson
 Operations Manager

Date: _____


The cover letter is an integral part of this analytical report



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 02/08/19
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	K020803-04							
Client Sample I.D.:	VINP-02-07							
Date/Time Sampled:	2/7/19 12:55							
Date/Time Analyzed:	2/13/19 14:17							
QC Batch No.:	190213GC8A1							
Analyst Initials:	CM/AS							
Dilution Factor:	2.0							
ANALYTE	Result % v/v	RL % v/v	MDL % v/v					
Carbon Dioxide	0.82	0.020	0.00086					
Oxygen/Argon	21	1.0	0.074					
Nitrogen	78	2.0	0.29					
Methane	0.0023	0.0020	0.000092					

Results normalized including non-methane hydrocarbons
 MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 2/25/19

The cover letter is an integral part of this analytical report



QC Batch No: 190213GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
 LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK				LCS		LCSD					
Date Analyzed:	2/13/19 9:03				2/13/19 9:31		2/13/19 9:46					
Analyst Initials:	CM/AS				CM/AS		CM/AS					
Dilution Factor:	1.0				1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	MDL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Carbon Dioxide	ND	0.010	0.00042	10	7.90	79	9.20	92	15.2	70	130	30
Oxygen/Argon	0.13 J	0.50	0.037	15	13.5	90	15.7	105	15.0	70	130	30
Nitrogen	ND	1.0	0.14	70	60.9	87	70.8	101	15.1	70	130	30
Methane	0.000047 J	0.0010	0.000046	0.10	0.113	113	0.111	111	1.6	70	130	30

MDL = Method Detection Limit
 ND = Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: _____ *[Signature]* f
 Mark Jof Mark Johnson
 Operation Operations Manager
 Date: 2/25/19

The cover letter is an integral part of this analytical report



March 29, 2019

Jacobs
ATTN: Eric Davis
1000 Wilshire Blvd., Suite 2100
Los Angeles, CA 90017



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: SFPP Norwalk
Lab Number: K031406-01/04

Enclosed are results for sample(s) received 3/14/19 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Eric Davis, Vladimir Carino and Nils Orliczky on 3/28/19.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

K031406-01/04

CHAIN OF CUSTODY RECORD
DATE: 3/12/19
PAGE: 1 of 1

Air Technology Laboratories, Inc.
18501 Gale Ave. #130
City of Industry, CA 91748
Tel: 626-964-4032
Joann De La Ossa (JoDeLaOssa@airtechlabs.com)

Section A Required Client Information:	Section B Required Project Information:	Section C Inspector Information:	Section D Sampler Information:
Company: CH2M HILL	Report To: Eric Davis (eric.davis@ch2m.com)	Attention: Eric Davis	Sampler Name: James Dye
Address: 1000 Wilshire Blvd. Suite 2100 Los Angeles, CA 90017	Copy To: Vladimir Carino (vcarino@ch2m.com)	Company Name: CH2M	Sampler Name: <i>[Signature]</i>
Email To: Joann De La Ossa (JoDeLaOssa@airtechlabs.com)	Purchase Order No.: SPPP Norwalk	Address: 1000 Wilshire Blvd. Suite 2100 Los Angeles, CA 90017	Sampler Address: 312/19
Phone: 404-323-1600	Project Name: SPPP Norwalk	Project Manager: Joann De La Ossa	Date: 3/12/19

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLER TYPE (G-GRAB, C-COMP)	CONTAINER TYPE		DATE	TIME	TOTAL # OF CONTAINERS	Analysis Test	Comments
					# OF CONTAINERS	PRESERVATIVE VOLUME (mL)					
01	VEEF-03-12	Effluent (stack)	Vapor G	G		3/12/19	1155	1	TO-15 (VOCs, Target Analytes)	ASTM-D 1946 (Oz/gy, CO2, CH4, H2)	Individually Certified 6-Liter SUMMA
02	VEEF-03-12-D	Effluent (stack) (duplicate)	Vapor G	G		3/12/19	1155	1	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
03	VPOST-03-12	Influent (post-dilution)	Vapor G	G		3/12/19	1210	1	TO-15 (VOCs, Target Analytes)		Individually Certified 1-Liter SUMMA
04	VINF-03-12	Influent (pre-dilution)	Vapor G	G		3/12/19	1220	1	TO-15 (VOCs, Target Analytes)		Batch Certified 1-Liter Summa
5											
6											
7											
8											
9											
10											

Section E Required Signatures and Printed Names:	Section F Required Signatures and Printed Names:	Section G Required Signatures and Printed Names:	Section H Required Signatures and Printed Names:
<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500
<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500
<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500	<i>[Signature]</i> 3/12/19 1500

Turn Around Time (TAT):
 A = Same Day
 B = 24 Hours
 C = 48 Hours
 D = 72 Hours
 E = 5 Workdays
 F = 10 Workdays
 TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Preservatives:
 H = HCl
 N = HNO3
 S = H2SO4
 Z = Zn/AC2
 O = NaOH
 T = Na2SO3
 Others/Specify: _____

Matrix:
 W = Water
 WM = Wastewater
 P = Product
 S = Soil
 Others/Specify: _____

Container Type:
 T = Tuck
 V = VOA
 J = Jar
 B = Tecklar
 M = Metal
 P = Plastic
 C = Can
 P = Pint
 G = Gallon
 L = Liter

Special Instructions:
 Target analytes includes Historical VOCs and remaining ATU list per subcontract

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 03/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K031406-01			K031406-02			K031406-03			K031406-04		
Client Sample I.D.:	VEFF-03-12			VEFF-03-12D			VPOST-03-12			VINP-03-12		
Date/Time Sampled:	3/12/19 11:55			3/12/19 11:55			3/12/19 12:10			3/12/19 12:20		
Date/Time Analyzed:	3/20/19 20:23			3/20/19 21:02			3/20/19 14:02			3/20/19 14:41		
QC Batch No.:	190320MS2A1			190320MS2A1			190320MS2A1			190320MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			6.1			4.9		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Dichlorodifluoromethane (12)	ND	0.0021	0.00032	ND	0.0021	0.00032	ND	0.0061	0.00093	ND	0.0049	0.00075
Chloromethane	ND	0.0042	0.00046	ND	0.0042	0.00046	ND	0.012	0.0013	ND	0.0097	0.0011
1,2-Di-1,1,2,2-F ethane (114)	ND	0.0021	0.00042	ND	0.0021	0.00042	ND	0.0061	0.0012	ND	0.0049	0.00098
Vinyl Chloride	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.0061	0.00098	ND	0.0049	0.00079
Bromomethane	ND	0.0021	0.00062	ND	0.0021	0.00062	ND	0.0061	0.0018	ND	0.0049	0.0014
Chloroethane	ND	0.0021	0.0018	ND	0.0021	0.0018	ND	0.0061	0.0051	ND	0.0049	0.0041
Trichlorofluoromethane (11)	ND	0.0021	0.00045	ND	0.0021	0.00045	ND	0.0061	0.0013	ND	0.0049	0.0010
1,1-Dichloroethene	ND	0.0021	0.00048	ND	0.0021	0.00048	ND	0.0061	0.0014	ND	0.0049	0.0011
Carbon Disulfide	0.064	0.011	0.00050	0.075	0.011	0.00050	0.017 J	0.030	0.0015	0.016 J	0.024	0.0012
1,1,2-Di-1,1,2,2-F ethane (113)	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.0061	0.0016	ND	0.0049	0.0013
Acetone	0.027	0.011	0.00061	0.020	0.011	0.00061	0.025 J	0.030	0.0017	0.0088 J	0.024	0.0014
Methylene Chloride	ND	0.0021	0.00060	ND	0.0021	0.00060	ND	0.0061	0.0017	ND	0.0049	0.0014
t-1,2-Dichloroethene	ND	0.0021	0.00063	ND	0.0021	0.00063	ND	0.0061	0.0018	ND	0.0049	0.0015
1,1-Dichloroethane	ND	0.0021	0.00029	ND	0.0021	0.00029	0.00086 J	0.0061	0.00083	ND	0.0049	0.00066
c-1,2-Dichloroethene	ND	0.0021	0.00041	ND	0.0021	0.00041	ND	0.0061	0.0012	ND	0.0049	0.00094
2-Butanone	0.014	0.0021	0.0013	0.012	0.0021	0.0013	0.0086	0.0061	0.0037	0.0094	0.0049	0.0030
t-Butyl Methyl Ether (MTBE)	ND	0.0021	0.00047	ND	0.0021	0.00047	ND	0.0061	0.0014	ND	0.0049	0.0011
Chloroform	ND	0.0021	0.00029	ND	0.0021	0.00029	ND	0.0061	0.00085	ND	0.0049	0.00068
1,1,1-Trichloroethane	ND	0.0021	0.00021	ND	0.0021	0.00021	ND	0.0061	0.00061	ND	0.0049	0.00049
Carbon Tetrachloride	ND	0.0021	0.00037	ND	0.0021	0.00037	ND	0.0061	0.0011	ND	0.0049	0.00085
Benzene	0.0020 J	0.0021	0.00020	0.0020 J	0.0021	0.00020	0.13	0.0061	0.00058	0.11	0.0049	0.00047
1,2-Dichloroethane	ND	0.0021	0.00016	ND	0.0021	0.00016	0.0019 J	0.0061	0.00045	ND	0.0049	0.00036
Trichloroethene	ND	0.0021	0.00030	ND	0.0021	0.00030	ND	0.0061	0.00086	ND	0.0049	0.00069
1,2-Dichloropropane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.0061	0.0011	ND	0.0049	0.00088
Bromodichloromethane	ND	0.0021	0.00013	ND	0.0021	0.00013	ND	0.0061	0.00036	ND	0.0049	0.00029
c-1,3-Dichloropropene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.0061	0.00073	ND	0.0049	0.00058
4-Methyl-2-Pentanone	ND	0.0021	0.00014	ND	0.0021	0.00014	ND	0.0061	0.00041	ND	0.0049	0.00033
Toluene	0.0036	0.0021	0.00017	0.0030	0.0021	0.00017	0.15	0.0061	0.00048	0.13	0.0049	0.00039
t-1,3-Dichloropropene	ND	0.0021	0.00022	ND	0.0021	0.00022	ND	0.0061	0.00063	ND	0.0049	0.00050
1,1,2-Trichloroethane	ND	0.0021	0.00034	ND	0.0021	0.00034	ND	0.0061	0.00098	ND	0.0049	0.00079
1,3-Dichloropropane	ND	0.0021	0.00010	ND	0.0021	0.00010	ND	0.0061	0.00030	ND	0.0049	0.00024
Tetrachloroethene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.0061	0.00073	ND	0.0049	0.00058
2-Hexanone	ND	0.0021	0.00043	ND	0.0021	0.00043	ND	0.0061	0.0012	ND	0.0049	0.0010
Dibromochloromethane	ND	0.0021	0.00038	ND	0.0021	0.00038	ND	0.0061	0.0011	ND	0.0049	0.00089
1,2-Dibromoethane	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.0061	0.00055	ND	0.0049	0.00044
Chlorobenzene	ND	0.0021	0.00016	ND	0.0021	0.00016	ND	0.0061	0.00047	0.0048 J	0.0049	0.00038
Ethylbenzene	0.0013 J	0.0021	0.00012	0.0010 J	0.0021	0.00012	0.029	0.0061	0.00035	0.031	0.0049	0.00028
p,&m-Xylene	0.012	0.0021	0.00024	0.011	0.0021	0.00024	0.38	0.0061	0.00069	0.31	0.0049	0.00055
o-Xylene	0.0065	0.0021	0.00026	0.0057	0.0021	0.00026	0.11	0.0061	0.00074	0.26	0.0049	0.00059



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 03/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K031406-01			K031406-02			K031406-03			K031406-04		
Client Sample I.D.:	VEFF-03-12			VEFF-03-12D			VPOST-03-12			VINP-03-12		
Date/Time Sampled:	3/12/19 11:55			3/12/19 11:55			3/12/19 12:10			3/12/19 12:20		
Date/Time Analyzed:	3/20/19 20:23			3/20/19 21:02			3/20/19 14:02			3/20/19 14:41		
QC Batch No.:	190320MS2A1			190320MS2A1			190320MS2A1			190320MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.1			2.1			6.1			4.9		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv	Result ppmv	RL ppmv	MDL ppmv
Styrene	0.00053 J	0.0021	0.00027	0.00054 J	0.0021	0.00027	0.0037 J	0.0061	0.00078	0.0083	0.0049	0.00063
Bromoform	ND	0.0021	0.00012	ND	0.0021	0.00012	ND	0.0061	0.00034	ND	0.0049	0.00027
Isopropyl benzene	0.00086 J	0.0021	0.00022	0.00081 J	0.0021	0.00022	0.0042 J	0.0061	0.00063	0.0046 J	0.0049	0.00051
1,1,2,2-Tetrachloroethane	ND	0.0042	0.00013	ND	0.0042	0.00013	ND	0.012	0.00037	ND	0.0097	0.00030
Benzyl Chloride	ND	0.0021	0.00039	ND	0.0021	0.00039	ND	0.0061	0.0011	ND	0.0049	0.00090
1,2,3-Trichloropropane	ND	0.0021	0.00057	ND	0.0021	0.00057	ND	0.0061	0.0016	0.0040 J	0.0049	0.0013
n-Propyl Benzene	ND	0.0021	0.00012	ND	0.0021	0.00012	0.0046 J	0.0061	0.00035	0.0054	0.0049	0.00028
4-Ethyl Toluene	0.0041	0.0021	0.00013	0.0037	0.0021	0.00013	0.099	0.0061	0.00038	0.14	0.0049	0.00031
1,3,5-Trimethylbenzene	0.0020 J	0.0042	0.00036	0.0019 J	0.0042	0.00036	0.074	0.012	0.0010	0.100	0.0097	0.00084
4-Chlorotoluene	ND	0.0021	0.00025	ND	0.0021	0.00025	ND	0.0061	0.00072	ND	0.0049	0.00058
tert-Butylbenzene	ND	0.0021	0.00019	ND	0.0021	0.00019	ND	0.0061	0.00055	ND	0.0049	0.00044
1,2,4-Trimethylbenzene	0.0028 J	0.0042	0.00024	0.0026 J	0.0042	0.00024	0.0056 J	0.012	0.00069	0.058	0.0097	0.00055
sec-Butylbenzene	ND	0.0021	0.00020	ND	0.0021	0.00020	ND	0.0061	0.00059	0.0011 J	0.0049	0.00047
p-Isopropyltoluene	0.0033	0.0021	0.00027	0.0023	0.0021	0.00027	0.0014 J	0.0061	0.00079	0.0026 J	0.0049	0.00063
1,3-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.0061	0.00074	ND	0.0049	0.00059
1,4-Dichlorobenzene	ND	0.0021	0.00031	ND	0.0021	0.00031	ND	0.0061	0.00089	ND	0.0049	0.00071
n-Butylbenzene	0.00036 J	0.0021	0.00015	ND	0.0021	0.00015	ND	0.0061	0.00044	ND	0.0049	0.00036
1,2-Dichlorobenzene	ND	0.0021	0.00026	ND	0.0021	0.00026	ND	0.0061	0.00075	ND	0.0049	0.00061
1,2,4-Trichlorobenzene	ND	0.0042	0.00035	ND	0.0042	0.00035	ND	0.012	0.0010	ND	0.0097	0.00081
Hexachlorobutadiene	ND	0.0021	0.00012	ND	0.0021	0.00012	ND	0.0061	0.00036	ND	0.0049	0.00029
t-Butanol	0.0037 J	0.011	0.00040	0.0029 J	0.011	0.00040	0.017 J	0.030	0.0012	0.016 J	0.024	0.00093
n-Hexane	0.0070 J	0.011	0.00028	0.0063 J	0.011	0.00028	0.93	0.030	0.00082	0.82	0.024	0.00065
Isopropyl ether	ND	0.011	0.00023	ND	0.011	0.00023	ND	0.030	0.00067	ND	0.024	0.00054
t-Butyl ethyl ether	ND	0.011	0.00042	ND	0.011	0.00042	ND	0.030	0.0012	ND	0.024	0.00097
2,2-Dichloropropane	ND	0.011	0.00020	ND	0.011	0.00020	ND	0.030	0.00058	ND	0.024	0.00046
t-Amyl methyl ether	ND	0.011	0.00015	ND	0.011	0.00015	ND	0.030	0.00043	ND	0.024	0.00034
1,4-Dioxane	ND	0.011	0.00037	ND	0.011	0.00037	ND	0.030	0.0011	ND	0.024	0.00085
Naphthalene	ND	0.011	0.00081	ND	0.011	0.00081	ND	0.030	0.0023	ND	0.024	0.0019
1,2,3-Trichlorobenzene (TIC)	ND	--	--	ND	--	--	ND	--	--	ND	--	--

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 3/26/19

The cover letter is an integral part of this analytical report



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 03/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK																		
Client Sample I.D.:	-																		
Date/Time Sampled:	-																		
Date/Time Analyzed:	3/20/19 10:24																		
QC Batch No.:	190320MS2A1																		
Analyst Initials:	DT																		
Dilution Factor:	0.20																		
ANALYTE	Result ppmv	RL ppmv	MDL ppmv																
Dichlorodifluoromethane (12)	ND	0.00020	0.000031																
Chloromethane	ND	0.00040	0.000044																
1,2-CI-1,1,2,2-F ethane (114)	ND	0.00020	0.000040																
Vinyl Chloride	ND	0.00020	0.000032																
Bromomethane	ND	0.00020	0.000059																
Chloroethane	ND	0.00020	0.00017																
Trichlorofluoromethane (11)	ND	0.00020	0.000043																
1,1-Dichloroethene	ND	0.00020	0.000045																
Carbon Disulfide	ND	0.0010	0.000048																
1,1,2-CI 1,2,2-F ethane (113)	ND	0.00020	0.000054																
Acetone	ND	0.0010	0.000058																
Methylene Chloride	ND	0.00020	0.000057																
t-1,2-Dichloroethene	ND	0.00020	0.000060																
1,1-Dichloroethane	ND	0.00020	0.000027																
c-1,2-Dichloroethene	ND	0.00020	0.000039																
2-Butanone	ND	0.00020	0.00012																
t-Butyl Methyl Ether (MTBE)	ND	0.00020	0.000045																
Chloroform	ND	0.00020	0.000028																
1,1,1-Trichloroethane	ND	0.00020	0.000020																
Carbon Tetrachloride	ND	0.00020	0.000035																
Benzene	0.000039 J	0.00020	0.000019																
1,2-Dichloroethane	ND	0.00020	0.000015																
Trichloroethene	ND	0.00020	0.000028																
1,2-Dichloropropane	ND	0.00020	0.000036																
Bromodichloromethane	ND	0.00020	0.000012																
c-1,3-Dichloropropene	ND	0.00020	0.000024																
4-Methyl-2-Pentanone	ND	0.00020	0.000013																
Toluene	ND	0.00020	0.000016																
t-1,3-Dichloropropene	ND	0.00020	0.000021																
1,1,2-Trichloroethane	ND	0.00020	0.000032																
1,3-Dichloropropane	ND	0.00020	0.0000099																
Tetrachloroethene	ND	0.00020	0.000024																
2-Hexanone	NC	0.00020	0.000041																
Dibromochloromethane	ND	0.00020	0.000036																
1,2-Dibromoethane	ND	0.00020	0.000018																
Chlorobenzene	ND	0.00020	0.000016																
Ethylbenzene	ND	0.00020	0.000011																
p,&m-Xylene	ND	0.00020	0.000023																
o-Xylene	ND	0.00020	0.000024																



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 03/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK													
Client Sample I.D.:	-													
Date/Time Sampled:	-													
Date/Time Analyzed:	3/20/19 10:24													
QC Batch No.:	190320MS2A1													
Analyst Initials:	DT													
Dilution Factor:	0.20													
ANALYTE	Result ppmv	RL ppmv	MDL ppmv											
Styrene	ND	0.00020	0.000026											
Bromoform	ND	0.00020	0.000011											
Isopropyl benzene	ND	0.00020	0.000021											
1,1,2,2-Tetrachloroethane	ND	0.00040	0.000012											
Benzyl Chloride	ND	0.00020	0.000037											
1,2,3-Trichloropropane	ND	0.00020	0.000054											
n-Propyl Benzene	ND	0.00020	0.000012											
4-Ethyl Toluene	ND	0.00020	0.000013											
1,3,5-Trimethylbenzene	ND	0.00040	0.000035											
4-Chlorotoluene	ND	0.00020	0.000024											
tert-Butylbenzene	ND	0.00020	0.000018											
1,2,4-Trimethylbenzene	ND	0.00040	0.000023											
sec-Butylbenzene	ND	0.00020	0.000019											
p-Isopropyltoluene	ND	0.00020	0.000026											
1,3-Dichlorobenzene	ND	0.00020	0.000024											
1,4-Dichlorobenzene	ND	0.00020	0.000029											
n-Butylbenzene	ND	0.00020	0.000015											
1,2-Dichlorobenzene	ND	0.00020	0.000025											
1,2,4-Trichlorobenzene	ND	0.00040	0.000033											
Hexachlorobutadiene	ND	0.00020	0.000012											
t-Butanol	ND	0.0010	0.000038											
n-Hexane	ND	0.0010	0.000027											
Isopropyl ether	ND	0.0010	0.000022											
t-Butyl ethyl ether	ND	0.0010	0.000040											
2,2-Dichloropropane	ND	0.0010	0.000019											
t-Amyl methyl ether	ND	0.0010	0.000014											
1,4-Dioxane	ND	0.0010	0.000035											
Naphthalene	ND	0.0010	0.000077											
1,2,3-Trichlorobenzene (TIC)	ND	--	--											

MDL = Method Detection Limit
 ND= Not Detected (below MDL)
 RL = Reporting Limit
 J = Trace amount. Analyte concentration between RL and MDL.

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 3/20/19

The cover letter is an integral part of this analytical report



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 03/14/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K031406-01	K031406-02	K031406-03	K031406-04				
Client Sample I.D.:	VEFF-03-12	VEFF-03-12D	VPOST-03-12	VINF-03-12				
Date/Time Sampled:	3/12/19 11:55	3/12/19 11:55	3/12/19 12:10	3/12/19 12:20				
Date/Time Analyzed:	3/19/19 11:15	3/19/19 11:38	3/19/19 12:00	3/19/19 12:23				
QC Batch No.:	190319GC11A1	190319GC11A1	190319GC11A1	190319GC11A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.1	2.1	2.0	2.0				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Hexane	0.76	2.1	0.57	2.1	53	2.0	31	2.0

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 3/26/19

The cover letter is an integral part of this analytical report



QC Batch No: 190319GC11A1

Matrix: Air

Reporting Units: ppmv

**EPA METHOD TO3
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK	LCS	LCSD							
Date Analyzed:	3/19/19 10:52	3/19/19 9:20	3/19/19 9:43							
Analyst Initials:	AS	AS	AS							
Dilution Factor:	1.0	1.0	1.0							
ANALYTE	Result ppmv	RL ppmv	Result ppmv	% Rec.	Result ppmv	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
TVOC as Hexane	ND	1.0	5.06	101	5.02	100	0.8	70	130	25

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____



Mark Johnson
Operations Manager

Date: 3/20/19

The cover letter is an integral part of this analytical report

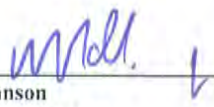


QC Batch No: 190320GC8A2
Matrix: Air
Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	3/20/19 11:28			3/20/19 10:42		3/20/19 10:57					
Analyst Initials:	CM/AS			CM/AS		CM/AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Carbon Dioxide	ND	0.010	10	9.31	93	9.26	92	0.6	70	130	30
Oxygen/Argon	ND	0.50	15	15.4	104	15.3	103	0.7	70	130	30
Nitrogen	ND	1.0	70	69.8	100	69.4	99	0.5	70	130	30
Methane	ND	0.0010	0.10	0.123	123	0.118	118	3.8	70	130	30

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: 
Mark Johnson
Operations Manager

Date 3/28/19

The cover letter is an integral part of this analytical report



February 11, 2019

Eric Davis
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:

FAX:

Workorder No.: N033955

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on January 30, 2019 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,



Quennie Manimtim
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"

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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: CH2MHill
Project: SFPP Norwalk
Lab Order: N033955

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.

Sample was analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Subcontracted Analyses:

EPA 8015B for DRO, ORO and GRO was subcontracted to BC Laboratories, Bakersfield, CA. Total TPH was calculated and reported in the lab based on Subcon Lab's result.

Analytical Comments for EPA 8260B:

Laboratory Control Sample (LCS) outside recovery criteria for Di-isopropyl ether and 4-Isopropyltoluene. NELAC standard allows for three analytes in marginal exceedence based on 51-70 analytes.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for some analytes possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N033955
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N033955-001A	INF-01-29	Wastewater	1/29/2019 12:30:00 PM	1/30/2019	2/11/2019
N033955-001B	INF-01-29	Wastewater	1/29/2019 12:30:00 PM	1/30/2019	2/11/2019
N033955-001C	INF-01-29	Wastewater	1/29/2019 12:30:00 PM	1/30/2019	2/11/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 11-Feb-19

CLIENT: CH2MHill
Lab Order: N033955
Project: SFPP Norwalk
Lab ID: N033955-001

Client Sample ID: INF-01-29
Collection Date: 1/29/2019 12:30:00 PM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	CA01638-MS10_190204A	QC Batch:	CA19VW011	PrepDate:	Analyst:	GAC
1,1,1,2-Tetrachloroethane	ND	0.38	1.0	ug/L	1	2/4/2019 03:13 PM
1,1,1-Trichloroethane	ND	0.38	1.0	ug/L	1	2/4/2019 03:13 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0	ug/L	1	2/4/2019 03:13 PM
1,1,2-Trichloroethane	ND	0.29	1.0	ug/L	1	2/4/2019 03:13 PM
1,1-Dichloroethane	ND	0.45	0.50	ug/L	1	2/4/2019 03:13 PM
1,1-Dichloroethene	ND	0.34	1.0	ug/L	1	2/4/2019 03:13 PM
1,1-Dichloropropene	ND	0.32	1.0	ug/L	1	2/4/2019 03:13 PM
1,2,3-Trichlorobenzene	ND	0.28	1.0	ug/L	1	2/4/2019 03:13 PM
1,2,3-Trichloropropane	ND	0.26	1.0	ug/L	1	2/4/2019 03:13 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0	ug/L	1	2/4/2019 03:13 PM
1,2,4-Trimethylbenzene	ND	0.33	1.0	ug/L	1	2/4/2019 03:13 PM
1,2-Dibromo-3-chloropropane	ND	0.67	2.0	ug/L	1	2/4/2019 03:13 PM
1,2-Dibromoethane	ND	0.31	1.0	ug/L	1	2/4/2019 03:13 PM
1,2-Dichlorobenzene	ND	0.29	1.0	ug/L	1	2/4/2019 03:13 PM
1,2-Dichloroethane	ND	0.29	0.50	ug/L	1	2/4/2019 03:13 PM
1,2-Dichloropropane	ND	0.24	1.0	ug/L	1	2/4/2019 03:13 PM
1,3,5-Trimethylbenzene	ND	0.27	1.0	ug/L	1	2/4/2019 03:13 PM
1,3-Dichlorobenzene	ND	0.28	1.0	ug/L	1	2/4/2019 03:13 PM
1,3-Dichloropropane	ND	0.32	1.0	ug/L	1	2/4/2019 03:13 PM
1,4-Dichlorobenzene	ND	0.32	1.0	ug/L	1	2/4/2019 03:13 PM
2,2-Dichloropropane	ND	0.32	1.0	ug/L	1	2/4/2019 03:13 PM
2-Butanone	ND	4.9	10	ug/L	1	2/4/2019 03:13 PM
2-Chlorotoluene	ND	0.28	1.0	ug/L	1	2/4/2019 03:13 PM
4-Chlorotoluene	ND	0.30	1.0	ug/L	1	2/4/2019 03:13 PM
4-Isopropyltoluene	ND	0.33	1.0	ug/L	1	2/4/2019 03:13 PM
4-Methyl-2-pentanone	ND	3.2	10	ug/L	1	2/4/2019 03:13 PM
Acetone	ND	9.7	10	ug/L	1	2/4/2019 03:13 PM
Benzene	ND	0.34	1.0	ug/L	1	2/4/2019 03:13 PM
Bromobenzene	ND	0.25	1.0	ug/L	1	2/4/2019 03:13 PM
Bromochloromethane	ND	0.41	1.0	ug/L	1	2/4/2019 03:13 PM
Bromodichloromethane	ND	0.38	1.0	ug/L	1	2/4/2019 03:13 PM
Bromoform	ND	0.39	1.0	ug/L	1	2/4/2019 03:13 PM
Bromomethane	ND	0.79	1.0	ug/L	1	2/4/2019 03:13 PM
Carbon disulfide	ND	0.81	1.0	ug/L	1	2/4/2019 03:13 PM
Carbon tetrachloride	ND	0.40	0.50	ug/L	1	2/4/2019 03:13 PM
Chlorobenzene	ND	0.30	1.0	ug/L	1	2/4/2019 03:13 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 11-Feb-19

CLIENT: CH2MHill
Lab Order: N033955
Project: SFPP Norwalk
Lab ID: N033955-001

Client Sample ID: INF-01-29
Collection Date: 1/29/2019 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: CA01638-MS10_190204A	QC Batch: CA19VW011	PrepDate:			Analyst: GAC		
Chloroethane	ND	0.97	1.0		ug/L	1	2/4/2019 03:13 PM
Chloroform	ND	0.27	1.0		ug/L	1	2/4/2019 03:13 PM
Chloromethane	ND	0.36	1.0		ug/L	1	2/4/2019 03:13 PM
cis-1,2-Dichloroethene	ND	0.32	1.0		ug/L	1	2/4/2019 03:13 PM
cis-1,3-Dichloropropene	ND	0.28	1.0		ug/L	1	2/4/2019 03:13 PM
Di-isopropyl ether	1.7	0.079	1.0		ug/L	1	2/4/2019 03:13 PM
Dibromochloromethane	ND	0.41	1.0		ug/L	1	2/4/2019 03:13 PM
Dibromomethane	ND	0.28	1.0		ug/L	1	2/4/2019 03:13 PM
Dichlorodifluoromethane	ND	0.29	1.0		ug/L	1	2/4/2019 03:13 PM
Ethyl tert-butyl ether	ND	0.30	1.0		ug/L	1	2/4/2019 03:13 PM
Ethylbenzene	ND	0.31	1.0		ug/L	1	2/4/2019 03:13 PM
Freon-113	ND	0.35	1.0		ug/L	1	2/4/2019 03:13 PM
Hexachlorobutadiene	ND	0.30	1.0		ug/L	1	2/4/2019 03:13 PM
Isopropylbenzene	ND	0.26	1.0		ug/L	1	2/4/2019 03:13 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	2/4/2019 03:13 PM
Methylene chloride	ND	1.9	2.0		ug/L	1	2/4/2019 03:13 PM
MTBE	2.6	0.34	1.0		ug/L	1	2/4/2019 03:13 PM
n-Butylbenzene	ND	0.34	1.0		ug/L	1	2/4/2019 03:13 PM
n-Propylbenzene	ND	0.32	1.0		ug/L	1	2/4/2019 03:13 PM
Naphthalene	ND	0.42	1.0		ug/L	1	2/4/2019 03:13 PM
o-Xylene	ND	0.31	1.0		ug/L	1	2/4/2019 03:13 PM
sec-Butylbenzene	ND	0.32	1.0		ug/L	1	2/4/2019 03:13 PM
Styrene	ND	0.21	1.0		ug/L	1	2/4/2019 03:13 PM
Tert-amyl methyl ether	ND	0.26	1.0		ug/L	1	2/4/2019 03:13 PM
Tert-Butanol	ND	2.4	5.0		ug/L	1	2/4/2019 03:13 PM
tert-Butylbenzene	ND	0.28	1.0		ug/L	1	2/4/2019 03:13 PM
Tetrachloroethene	ND	0.30	1.0		ug/L	1	2/4/2019 03:13 PM
Toluene	ND	0.46	2.0		ug/L	1	2/4/2019 03:13 PM
trans-1,2-Dichloroethene	ND	0.40	1.0		ug/L	1	2/4/2019 03:13 PM
trans-1,3-Dichloropropene	ND	0.25	1.0		ug/L	1	2/4/2019 03:13 PM
Trichloroethene	ND	0.37	1.0		ug/L	1	2/4/2019 03:13 PM
Trichlorofluoromethane	ND	0.37	1.0		ug/L	1	2/4/2019 03:13 PM
Vinyl chloride	ND	0.29	0.50		ug/L	1	2/4/2019 03:13 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	2/4/2019 03:13 PM
Surr: 1,2-Dichloroethane-d4	89.2	0	72-119		%REC	1	2/4/2019 03:13 PM
Surr: 4-Bromofluorobenzene	88.3	0	76-119		%REC	1	2/4/2019 03:13 PM

Qualifiers: B Analyte detected in the associated Method Blank E Value above quantitation range
H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits
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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 11-Feb-19

CLIENT: CH2MHill
Lab Order: N033955
Project: SFPP Norwalk
Lab ID: N033955-001

Client Sample ID: INF-01-29
Collection Date: 1/29/2019 12:30:00 PM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: CA01638-MS10_190204A	QC Batch: CA19VW011						Analyst: GAC
Surr: Dibromofluoromethane	98.8	0	85-115		%REC	1	2/4/2019 03:13 PM
Surr: Toluene-d8	103	0	81-120		%REC	1	2/4/2019 03:13 PM

TOTAL TPH

EPA 8015B

RunID: SUBCONTRACT_190211A	QC Batch: R131738						Analyst: admin
Total TPH	410	13	100		ug/L	1	2/11/2019

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	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

CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R131738	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 131738						
Client ID: PBW	Batch ID: R131738	TestNo: EPA 8015B		Analysis Date: 2/11/2019	SeqNo: 3285490						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	100									

Qualifiers:

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



CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: LCSW	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279897						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	19.590	1.0	20.00	0	98.0	81	129				
1,1,1-Trichloroethane	20.370	1.0	20.00	0	102	67	132				
1,1,2,2-Tetrachloroethane	20.060	1.0	20.00	0	100	63	128				
1,1,2-Trichloroethane	21.980	1.0	20.00	0	110	75	125				
1,1-Dichloroethane	19.220	0.50	20.00	0	96.1	69	133				
1,1-Dichloroethene	16.370	1.0	20.00	0	81.8	68	130				
1,1-Dichloropropene	21.580	1.0	20.00	0	108	73	132				
1,2,3-Trichlorobenzene	22.150	1.0	20.00	0	111	67	137				
1,2,3-Trichloropropane	19.410	1.0	20.00	0	97.0	73	124				
1,2,4-Trichlorobenzene	21.480	1.0	20.00	0	107	66	134				
1,2,4-Trimethylbenzene	22.180	1.0	20.00	0	111	74	132				
1,2-Dibromo-3-chloropropane	20.000	2.0	20.00	0	100	50	132				
1,2-Dibromoethane	20.580	1.0	20.00	0	103	80	121				
1,2-Dichlorobenzene	21.150	1.0	20.00	0	106	71	122				
1,2-Dichloroethane	18.650	0.50	20.00	0	93.3	69	132				
1,2-Dichloropropane	18.450	1.0	20.00	0	92.2	75	125				
1,3,5-Trimethylbenzene	24.430	1.0	20.00	0	122	74	131				
1,3-Dichlorobenzene	20.530	1.0	20.00	0	103	75	124				
1,3-Dichloropropane	18.950	1.0	20.00	0	94.8	73	126				
1,4-Dichlorobenzene	21.530	1.0	20.00	0	108	74	123				
2,2-Dichloropropane	19.700	1.0	20.00	0	98.5	69	137				
2-Butanone	195.770	10	200.0	0	97.9	49	136				
2-Chlorotoluene	20.710	1.0	20.00	0	104	73	126				
4-Chlorotoluene	21.230	1.0	20.00	0	106	74	128				
4-Isopropyltoluene	27.040	1.0	20.00	0	135	73	130				S
4-Methyl-2-pentanone	180.180	10	200.0	0	90.1	58	134				
Acetone	231.010	10	200.0	0	116	40	135				
Benzene	20.440	1.0	20.00	0	102	81	122				
Bromobenzene	20.910	1.0	20.00	0	105	76	124				
Bromochloromethane	20.650	1.0	20.00	0	103	65	129				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-LCS	SampType: LCS	TestCode: 8260_WP_SF Units: ug/L				Prep Date:			RunNo: 131573		
Client ID: LCSW	Batch ID: CA19VW011	TestNo: EPA 8260B				Analysis Date: 2/4/2019			SeqNo: 3279897		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	20.560	1.0	20.00	0	103	76	121				
Bromoform	21.500	1.0	20.00	0	108	69	128				
Bromomethane	18.540	1.0	20.00	0	92.7	53	141				
Carbon disulfide	15.850	1.0	20.00	0	79.2	75	125				
Carbon tetrachloride	19.340	0.50	20.00	0	96.7	66	138				
Chlorobenzene	21.130	1.0	20.00	0	106	81	122				
Chloroethane	17.260	1.0	20.00	0	86.3	58	133				
Chloroform	18.400	1.0	20.00	0	92.0	69	128				
Chloromethane	17.240	1.0	20.00	0	86.2	56	131				
cis-1,2-Dichloroethene	19.820	1.0	20.00	0	99.1	72	126				
cis-1,3-Dichloropropene	18.410	1.0	20.00	0	92.0	69	131				
Di-isopropyl ether	13.910	1.0	20.00	0	69.6	70	130				S
Dibromochloromethane	19.420	1.0	20.00	0	97.1	66	133				
Dibromomethane	19.270	1.0	20.00	0	96.4	76	125				
Dichlorodifluoromethane	20.930	1.0	20.00	0	105	53	153				
Ethyl tert-butyl ether	16.580	1.0	20.00	0	82.9	70	130				
Ethylbenzene	21.810	1.0	20.00	0	109	73	127				
Freon-113	17.920	1.0	20.00	0	89.6	75	125				
Hexachlorobutadiene	24.050	1.0	20.00	0	120	67	131				
Isopropylbenzene	21.520	1.0	20.00	0	108	75	127				
m,p-Xylene	44.290	1.0	40.00	0	111	76	128				
Methylene chloride	18.160	2.0	20.00	0	90.8	63	137				
MTBE	16.050	1.0	20.00	0	80.2	65	123				
n-Butylbenzene	22.340	1.0	20.00	0	112	69	137				
n-Propylbenzene	21.880	1.0	20.00	0	109	72	129				
Naphthalene	18.720	1.0	20.00	0	93.6	54	138				
o-Xylene	19.820	1.0	20.00	0	99.1	80	121				
sec-Butylbenzene	23.510	1.0	20.00	0	118	72	127				
Styrene	22.540	1.0	20.00	0	113	65	134				
Tert-amyl methyl ether	18.550	1.0	20.00	0	92.8	70	130				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 N000922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: LCSW	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279897						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	74.980	5.0	100.0	0	75.0	70	130				
tert-Butylbenzene	22.810	1.0	20.00	0	114	70	129				
Tetrachloroethene	21.240	1.0	20.00	0	106	66	128				
Toluene	22.100	2.0	20.00	0	110	77	122				
trans-1,2-Dichloroethene	17.660	1.0	20.00	0	88.3	63	137				
trans-1,3-Dichloropropene	19.830	1.0	20.00	0	99.2	59	135				
Trichloroethene	22.770	1.0	20.00	0	114	70	127				
Trichlorofluoromethane	20.220	1.0	20.00	0	101	57	129				
Vinyl chloride	17.490	0.50	20.00	0	87.5	50	134				
Xylenes, Total	64.110	2.0	60.00	0	107	75	125				
Surr: 1,2-Dichloroethane-d4	20.680		25.00		82.7	72	119				
Surr: 4-Bromofluorobenzene	25.540		25.00		102	76	119				
Surr: Dibromofluoromethane	23.330		25.00		93.3	85	115				
Surr: Toluene-d8	27.030		25.00		108	81	120				

Sample ID: CA190204-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: PBW	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279899						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	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 |
| J Analyte detected below quantitation limits | 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 FOR THE OIL AND GAS INDUSTRY

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: PBW	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279899						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	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 |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573
Client ID: PBW	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279899

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethyl tert-butyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	2.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	23.480		25.00		93.9	72	119				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190204-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: PBW	Batch ID: CA19VW011	TestNo: EPA 8260B	Analysis Date: 2/4/2019	SeqNo: 3279899							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	21.570		25.00		86.3	76	119				
Surr: Dibromofluoromethane	26.490		25.00		106	85	115				
Surr: Toluene-d8	25.240		25.00		101	81	120				

Sample ID: N033955-001A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: ZZZZZ	Batch ID: CA19VW011	TestNo: EPA 8260B	Analysis Date: 2/4/2019	SeqNo: 3279918							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.800	1.0	20.00	0	94.0	81	129				
1,1,1-Trichloroethane	18.870	1.0	20.00	0	94.4	67	132				
1,1,2,2-Tetrachloroethane	22.520	1.0	20.00	0	113	63	128				
1,1,2-Trichloroethane	23.920	1.0	20.00	0	120	75	125				
1,1-Dichloroethane	17.600	0.50	20.00	0	88.0	69	133				
1,1-Dichloroethene	14.420	1.0	20.00	0	72.1	68	130				
1,1-Dichloropropene	18.280	1.0	20.00	0	91.4	73	132				
1,2,3-Trichlorobenzene	21.000	1.0	20.00	0	105	67	137				
1,2,3-Trichloropropane	22.870	1.0	20.00	0	114	73	124				
1,2,4-Trichlorobenzene	19.850	1.0	20.00	0	99.2	66	134				
1,2,4-Trimethylbenzene	20.300	1.0	20.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	22.870	2.0	20.00	0	114	50	132				
1,2-Dibromoethane	21.730	1.0	20.00	0	109	80	121				
1,2-Dichlorobenzene	18.990	1.0	20.00	0	95.0	71	122				
1,2-Dichloroethane	18.570	0.50	20.00	0	92.8	69	132				
1,2-Dichloropropane	17.260	1.0	20.00	0	86.3	75	125				
1,3,5-Trimethylbenzene	22.030	1.0	20.00	0	110	74	131				
1,3-Dichlorobenzene	18.990	1.0	20.00	0	95.0	75	124				
1,3-Dichloropropane	20.060	1.0	20.00	0	100	73	126				
1,4-Dichlorobenzene	18.970	1.0	20.00	0	94.8	74	123				
2,2-Dichloropropane	17.450	1.0	20.00	0	87.2	69	137				
2-Butanone	180.020	10	200.0	0	90.0	49	136				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & WATER

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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 NVO0922
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033955-001A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: ZZZZZ	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279918						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	19.160	1.0	20.00	0	95.8	73	126				
4-Chlorotoluene	19.990	1.0	20.00	0	100	74	128				
4-Isopropyltoluene	23.590	1.0	20.00	0	118	73	130				
4-Methyl-2-pentanone	222.320	10	200.0	0	111	58	134				
Acetone	197.490	10	200.0	0	98.7	40	135				
Benzene	18.570	1.0	20.00	0	92.8	81	122				
Bromobenzene	19.090	1.0	20.00	0	95.4	76	124				
Bromochloromethane	22.000	1.0	20.00	0	110	65	129				
Bromodichloromethane	19.160	1.0	20.00	0	95.8	76	121				
Bromoform	24.330	1.0	20.00	0	122	69	128				
Bromomethane	11.880	1.0	20.00	0	59.4	53	141				
Carbon disulfide	14.050	1.0	20.00	0	70.2	75	125				S
Carbon tetrachloride	16.320	0.50	20.00	0	81.6	66	138				
Chlorobenzene	19.940	1.0	20.00	0	99.7	81	122				
Chloroethane	16.380	1.0	20.00	0	81.9	58	133				
Chloroform	17.140	1.0	20.00	0	85.7	69	128				
Chloromethane	15.790	1.0	20.00	0	79.0	56	131				
cis-1,2-Dichloroethene	18.860	1.0	20.00	0	94.3	72	126				
cis-1,3-Dichloropropene	18.000	1.0	20.00	0	90.0	69	131				
Di-isopropyl ether	16.870	1.0	20.00	1.720	75.8	70	130				
Dibromochloromethane	19.120	1.0	20.00	0	95.6	66	133				
Dibromomethane	20.310	1.0	20.00	0	102	76	125				
Dichlorodifluoromethane	19.490	1.0	20.00	0	97.5	53	153				
Ethyl tert-butyl ether	17.350	1.0	20.00	0	86.8	70	130				
Ethylbenzene	20.830	1.0	20.00	0	104	73	127				
Freon-113	16.360	1.0	20.00	0	81.8	75	125				
Hexachlorobutadiene	19.360	1.0	20.00	0	96.8	67	131				
Isopropylbenzene	19.880	1.0	20.00	0	99.4	75	127				
m,p-Xylene	42.410	1.0	40.00	0	106	76	128				
Methylene chloride	17.430	2.0	20.00	0	87.2	63	137				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033955-001A-MS		SampType: MS		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 131573	
Client ID: ZZZZZ		Batch ID: CA19VW011		TestNo: EPA 8260B		Analysis Date: 2/4/2019				SeqNo: 3279918	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	19.840	1.0	20.00	2.570	86.4	65	123				
n-Butylbenzene	19.760	1.0	20.00	0	98.8	69	137				
n-Propylbenzene	19.930	1.0	20.00	0	99.7	72	129				
Naphthalene	21.770	1.0	20.00	0	109	54	138				
o-Xylene	20.220	1.0	20.00	0	101	80	121				
sec-Butylbenzene	20.420	1.0	20.00	0	102	72	127				
Styrene	21.590	1.0	20.00	0	108	65	134				
Tert-amyl methyl ether	19.450	1.0	20.00	0	97.3	70	130				
Tert-Butanol	109.130	5.0	100.0	0	109	70	130				
tert-Butylbenzene	20.430	1.0	20.00	0	102	70	129				
Tetrachloroethene	18.930	1.0	20.00	0	94.6	66	128				
Toluene	20.280	2.0	20.00	0	101	77	122				
trans-1,2-Dichloroethene	15.830	1.0	20.00	0	79.2	63	137				
trans-1,3-Dichloropropene	20.370	1.0	20.00	0	102	59	135				
Trichloroethene	19.340	1.0	20.00	0	96.7	70	127				
Trichlorofluoromethane	18.190	1.0	20.00	0	91.0	57	129				
Vinyl chloride	16.390	0.50	20.00	0	82.0	50	134				
Xylenes, Total	62.630	2.0	60.00	0	104	75	125				
Surr: 1,2-Dichloroethane-d4	21.760		25.00		87.0	72	119				
Surr: 4-Bromofluorobenzene	27.490		25.00		110	76	119				
Surr: Dibromofluoromethane	23.560		25.00		94.2	85	115				
Surr: Toluene-d8	25.400		25.00		102	81	120				

Sample ID: N033955-001A-MSD		SampType: MSD		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 131573	
Client ID: ZZZZZ		Batch ID: CA19VW011		TestNo: EPA 8260B		Analysis Date: 2/4/2019				SeqNo: 3279919	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.280	1.0	20.00	0	91.4	81	129	18.80	2.80	20	
1,1,1-Trichloroethane	18.940	1.0	20.00	0	94.7	67	132	18.87	0.370	20	
1,1,2,2-Tetrachloroethane	22.910	1.0	20.00	0	115	63	128	22.52	1.72	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 NVO0922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N033955
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033955-001A-MSD		SampType: MSD		TestCode: 8260_WP_SF Units: ug/L			Prep Date:			RunNo: 131573		
Client ID: ZZZZZZ		Batch ID: CA19VW011		TestNo: EPA 8260B			Analysis Date: 2/4/2019			SeqNo: 3279919		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1,2-Trichloroethane	21.970	1.0	20.00	0	110	75	125	23.92	8.50	20		
1,1-Dichloroethane	16.750	0.50	20.00	0	83.8	69	133	17.60	4.95	20		
1,1-Dichloroethene	16.100	1.0	20.00	0	80.5	68	130	14.42	11.0	20		
1,1-Dichloropropene	18.880	1.0	20.00	0	94.4	73	132	18.28	3.23	20		
1,2,3-Trichlorobenzene	21.110	1.0	20.00	0	106	67	137	21.00	0.522	20		
1,2,3-Trichloropropane	22.770	1.0	20.00	0	114	73	124	22.87	0.438	20		
1,2,4-Trichlorobenzene	21.030	1.0	20.00	0	105	66	134	19.85	5.77	20		
1,2,4-Trimethylbenzene	21.130	1.0	20.00	0	106	74	132	20.30	4.01	20		
1,2-Dibromo-3-chloropropane	24.860	2.0	20.00	0	124	50	132	22.87	8.34	20		
1,2-Dibromoethane	21.490	1.0	20.00	0	107	80	121	21.73	1.11	20		
1,2-Dichlorobenzene	20.500	1.0	20.00	0	103	71	122	18.99	7.65	20		
1,2-Dichloroethane	17.040	0.50	20.00	0	85.2	69	132	18.57	8.59	20		
1,2-Dichloropropane	16.500	1.0	20.00	0	82.5	75	125	17.26	4.50	20		
1,3,5-Trimethylbenzene	23.660	1.0	20.00	0	118	74	131	22.03	7.14	20		
1,3-Dichlorobenzene	19.550	1.0	20.00	0	97.8	75	124	18.99	2.91	20		
1,3-Dichloropropane	19.650	1.0	20.00	0	98.2	73	126	20.06	2.06	20		
1,4-Dichlorobenzene	19.620	1.0	20.00	0	98.1	74	123	18.97	3.37	20		
2,2-Dichloropropane	17.010	1.0	20.00	0	85.0	69	137	17.45	2.55	20		
2-Butanone	179.910	10	200.0	0	90.0	49	136	180.0	0.0611	20		
2-Chlorotoluene	20.290	1.0	20.00	0	101	73	126	19.16	5.73	20		
4-Chlorotoluene	21.030	1.0	20.00	0	105	74	128	19.99	5.07	20		
4-Isopropyltoluene	25.480	1.0	20.00	0	127	73	130	23.59	7.70	20		
4-Methyl-2-pentanone	213.970	10	200.0	0	107	58	134	222.3	3.83	20		
Acetone	187.080	10	200.0	0	93.5	40	135	197.5	5.41	20		
Benzene	18.010	1.0	20.00	0	90.1	81	122	18.57	3.06	20		
Bromobenzene	19.990	1.0	20.00	0	100	76	124	19.09	4.61	20		
Bromochloromethane	20.670	1.0	20.00	0	103	65	129	22.00	6.23	20		
Bromodichloromethane	18.320	1.0	20.00	0	91.6	76	121	19.16	4.48	20		
Bromoform	22.540	1.0	20.00	0	113	69	128	24.33	7.64	20		
Bromomethane	12.350	1.0	20.00	0	61.8	53	141	11.88	3.88	20		

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 NVO0922
 ORELAP/NELAP Cert 4046

CLIENT: CH2MHill
 Work Order: N033955
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033955-001A-MSD		SampType: MSD		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 131573	
Client ID: ZZZZZZ		Batch ID: CA19VW011		TestNo: EPA 8260B		Analysis Date: 2/4/2019		SeqNo: 3279919			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon disulfide	15.440	1.0	20.00	0	77.2	75	125	14.05	9.43	20	
Carbon tetrachloride	16.750	0.50	20.00	0	83.8	66	138	16.32	2.60	20	
Chlorobenzene	19.590	1.0	20.00	0	98.0	81	122	19.94	1.77	20	
Chloroethane	16.220	1.0	20.00	0	81.1	58	133	16.38	0.982	20	
Chloroform	16.300	1.0	20.00	0	81.5	69	128	17.14	5.02	20	
Chloromethane	15.770	1.0	20.00	0	78.8	56	131	15.79	0.127	20	
cis-1,2-Dichloroethene	17.900	1.0	20.00	0	89.5	72	126	18.86	5.22	20	
cis-1,3-Dichloropropene	17.470	1.0	20.00	0	87.4	69	131	18.00	2.99	20	
Di-isopropyl ether	15.590	1.0	20.00	1.720	69.4	70	130	16.87	7.89	20	S
Dibromochloromethane	18.550	1.0	20.00	0	92.8	66	133	19.12	3.03	20	
Dibromomethane	18.610	1.0	20.00	0	93.0	76	125	20.31	8.74	20	
Dichlorodifluoromethane	19.110	1.0	20.00	0	95.6	53	153	19.49	1.97	20	
Ethyl tert-butyl ether	16.050	1.0	20.00	0	80.2	70	130	17.35	7.78	20	
Ethylbenzene	20.820	1.0	20.00	0	104	73	127	20.83	0.0480	20	
Freon-113	16.570	1.0	20.00	0	82.8	75	125	16.36	1.28	20	
Hexachlorobutadiene	21.500	1.0	20.00	0	108	67	131	19.36	10.5	20	
Isopropylbenzene	21.490	1.0	20.00	0	107	75	127	19.88	7.78	20	
m,p-Xylene	42.320	1.0	40.00	0	106	76	128	42.41	0.212	20	
Methylene chloride	16.530	2.0	20.00	0	82.6	63	137	17.43	5.30	20	
MTBE	19.650	1.0	20.00	2.570	85.4	65	123	19.84	0.962	20	
n-Butylbenzene	21.320	1.0	20.00	0	107	69	137	19.76	7.59	20	
n-Propylbenzene	21.500	1.0	20.00	0	108	72	129	19.93	7.58	20	
Naphthalene	22.380	1.0	20.00	0	112	54	138	21.77	2.76	20	
o-Xylene	20.460	1.0	20.00	0	102	80	121	20.22	1.18	20	
sec-Butylbenzene	21.940	1.0	20.00	0	110	72	127	20.42	7.18	20	
Styrene	21.380	1.0	20.00	0	107	65	134	21.59	0.977	20	
Tert-amyl methyl ether	18.590	1.0	20.00	0	93.0	70	130	19.45	4.52	20	
Tert-Butanol	99.260	5.0	100.0	0	99.3	70	130	109.1	9.47	20	
tert-Butylbenzene	21.880	1.0	20.00	0	109	70	129	20.43	6.85	20	
Tetrachloroethene	19.370	1.0	20.00	0	96.9	66	128	18.93	2.30	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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: CH2MHill
Work Order: N033955
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033955-001A-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131573						
Client ID: ZZZZZ	Batch ID: CA19VW011	TestNo: EPA 8260B		Analysis Date: 2/4/2019	SeqNo: 3279919						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	19.490	2.0	20.00	0	97.5	77	122	20.28	3.97	20	
trans-1,2-Dichloroethene	15.140	1.0	20.00	0	75.7	63	137	15.83	4.46	20	
trans-1,3-Dichloropropene	18.670	1.0	20.00	0	93.4	59	135	20.37	8.71	20	
Trichloroethene	18.760	1.0	20.00	0	93.8	70	127	19.34	3.04	20	
Trichlorofluoromethane	18.550	1.0	20.00	0	92.8	57	129	18.19	1.96	20	
Vinyl chloride	16.230	0.50	20.00	0	81.2	50	134	16.39	0.981	20	
Xylenes, Total	62.780	2.0	60.00	0	105	75	125	62.63	0.239	20	
Surr: 1,2-Dichloroethane-d4	20.590		25.00		82.4	72	119		0		
Surr: 4-Bromofluorobenzene	25.720		25.00		103	76	119		0		
Surr: Dibromofluoromethane	22.110		25.00		88.4	85	115		0		
Surr: Toluene-d8	24.130		25.00		96.5	81	120		0		

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR ENVIRONMENTAL SCIENCE

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

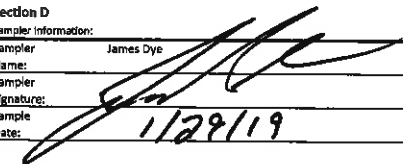
"Serving Clients with Passion and Professionalism"

Asset Laboratories
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2659 Fax: 702-307-2691
 Marlon Cartin (marlon@assetlaboratories.com)



CH2H103
 FOLDER
 N033955-002A
 C: 2/6/2019 12:00 AM
 R: 1/30/2019
 1 of 1

CHAIN OF CUSTODY RECORD

DATE: 1/29/19
 PAGE: () of ()

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Section D Sampler Information:	
Company: Kinder Morgan Energy Partners Attention: Steve Defibaugh	Address: 1100 Town & Country Road Orange, CA 92868	Report To: Eric Davis	Copy To: Steve Defibaugh	Attention: Steve Defibaugh - Ref. AFE# 61195	Company: Kinder Morgan Energy Partners	Sampler Name: James Dye	 1/29/19
Email To: steve_defibaugh@kindermorgan.com eric_davis@ch2m.com	Phone: 714-560-4802 Fax: 714-560-4801	Purchase Order No.:	Project Name: SFPP Norwalk	Address: 1100 Town & Country Road Orange, CA 92868	ATL Project Manager: Marlon Cartin	Sampler Signature:	
						Sample Date:	

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	CONTAINER TYPE		DATE	TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	PRESERVATIVE			Analysis Test	Full VOCs + Organics List (82008)	TPH-gas (C4-C12) (80156)	TPH-L (C13-C25), TPH-oil (C24), Total TPH (80158)	Comments
					# OF CONTAINERS	VOLUME (mL)					H	H	A					
1	INF-01-29	INFLUENT	WW	G			1/29/19	1825	9					X	X	X		N033955-01
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Relinquished by (Signature and Printed Name):  Date / Time: 1/29/19 1305	Relinquished by (Signature and Printed Name): Kleinilla Date / Time: 1/30/19 1500	Turn Around Time (TAT): <input type="checkbox"/> A = Same Day <input type="checkbox"/> B = 24 Hours <input type="checkbox"/> C = 48 Hours <input type="checkbox"/> D = 72 Hours <input checked="" type="checkbox"/> E = 5 Workdays <input type="checkbox"/> E = 10 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction:
Relinquished by (Signature and Printed Name): Kleinilla Date / Time: 1/30/19 1825	Relinquished by (Signature and Printed Name): Kleinilla Date / Time: 1/30/19 1825		
Relinquished by (Signature and Printed Name): Kleinilla Date / Time: 1/30/19 2040	Relinquished by (Signature and Printed Name):  Date / Time: 1/31/19 08:00		
Matrix: W = Water WW = Wastewater O = Oil P = Product S = Soil		Preservatives: H = HCl N = HNO3 S = H2SO4 Z = Zn(Ac)2 O = NaOH T = Na2S2O3	
Others/Specify: 1.8°C JR #2 650 3748		Container Type: T = Tube V = VOA P = Pint A = Amber J = Jar B = Tedlar G = Glass M = Metal P = Plastic C = Can	

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: 1/30/2019 Workorder: N033955
 Rep sample Temp (Deg C): 1.8 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 3148 Packing Material Used: Bubble Wrap
 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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: RM2 1/31/2019

Reviewed By: 1/31/2019

ASSET Laboratories

WORK ORDER Summary

31-Jan-19

WorkOrder: N033955

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 1/30/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N033955-001A	INF-01-29	1/29/2019 12:30:00 PM	2/6/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	V-CA
N033955-001B			2/6/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N033955-001C			2/6/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
			2/6/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SUB
N033955-002A	FOLDER	2/6/2019	2/6/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			2/6/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



CHAIN OF CUSTODY RECORD

Client: ASSET Laboratories		Report to: Marlon Cartin		Bill to: Elvira Allegaert				EDD Requirement		QA/QC		Sampe Receipt Condition							
Address: 11110 Artesia Blvd Ste B		Company: Same		Address: Same				Excel EDD <input type="checkbox"/>		RTNE <input type="checkbox"/>		Y N							
Address: Cerritos, CA 90703		Email: marlon@assetlaboratories.com reports.lv@assetlaboratories.com		Labspec7 <input checked="" type="checkbox"/>				Geotracker <input type="checkbox"/>		RWQCB <input type="checkbox"/>									
Phone: 562.219.7435 Fax:		Address: Same		Email to: elvira@assetlaboratories.com		PO# N33955A		Others <input type="checkbox"/>		Level III <input type="checkbox"/>		1. Chilled <input type="checkbox"/>							
Submitted By: Marlon Cartin				Phone:		Fax:		Specify:		LEVEL IV <input type="checkbox"/>		2. Headspace <input type="checkbox"/>							
Title:		Phone:		Fax:		Global ID:				Regulatory <input type="checkbox"/>		3. Container Intact <input type="checkbox"/>							
Signature: _____ Date: _____		Sampled by: _____		Matrix				Analyses Requested											
I hereby authorize ASSET Labs to perform the tests indicated below: Project Name: SFPP Norwalk Project Number:		Signature: _____		Ground <input type="checkbox"/>		Sediment <input type="checkbox"/>		TPH-GAS TPH-d, TPH-oil		Turn Around Time No. of container Container Type PRESERVATION		Courier: Tracking No.							
				Potable <input type="checkbox"/>		Soil <input type="checkbox"/>													
		NPDES <input type="checkbox"/>		Other Solid <input type="checkbox"/>															
		Surface <input type="checkbox"/>																	
Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	TPH-GAS	TPH-d, TPH-oil			Remarks							
1		INF - 01-29	1/29/19	12:50	WW			X	X	E									
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Relinquished by (Signature and Printed Name): 1/30/19 1630		Date / Time		Received by (Signature and Printed Name):		Date / Time		Turn Around Time (TAT)		Special Instruction: Please analyze for TPHg (C4-C12), TPHd (C13-C22), TPHo (C23+), & Total TPH Report format: MDL/PQL "J"-flagged". EDD Requirement: "CH2MHILL" LabSpec7. Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com			
Relinquished by (Signature and Printed Name):		Date / Time		Received by (Signature and Printed Name):		Date / Time		<input type="checkbox"/> A < 24 Hrs or Same Day TAT <input type="checkbox"/> B = Next Workday <input type="checkbox"/> C = 2 Workdays <input type="checkbox"/> D = 3 Workdays <input checked="" type="checkbox"/> E = Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.					
Relinquished by (Signature and Printed Name):		Date / Time		Received by (Signature and Printed Name):		Date / Time							

Terms
1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT & 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.

5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:
H = HCl N = HNO3 S = H2SO4 C = 4°C
Z = Zr(AC)2 O = NaOH T = Na2S2O3
Others/Specify:

Container Type:
V = VOA P = Pint
J = Jar B = Tedlar G = Glass
M = Metal P = Plastic C = Can

White = Laboratory Copy Yellow = Customer's Copy



800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MARIANNE SANTOS
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 543623148

CPS



Ship To
ASSET LABORATORIES
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

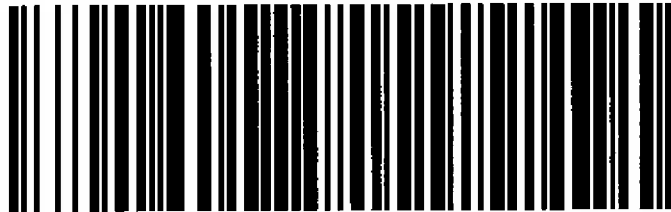
LVS
LAS VEGAS

A

COD: \$0.00
Weight: 0 lb(s)
Reference:

C89102A

Delivery Instructions:
HOLD FOR PICK-UP
Signature Type: STANDARD



97510803

Print Date: 1/30/2019 8:50 PM

Package 1 of 2

LABEL INSTRUCTIONS:

1.8⁰c

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

- Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
- Step 2: Fold this page in half.
- Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.



Date of Report: 02/08/2019

Marlon Cartin

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

Client Project: N033955: SFPP Norwalk
BCL Project: CH2MHILL
BCL Work Order: 1903231
Invoice ID: B330307

Enclosed are the results of analyses for samples received by the laboratory on 1/31/2019. 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

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form.....	3
Laboratory / Client Sample Cross Reference.....	5

Sample Results

1903231-01 - INF-01-29

Purgeable Aromatics and Total Petroleum Hydrocarbons.....	6
Total Petroleum Hydrocarbons.....	7

Quality Control Reports

Purgeable Aromatics and Total Petroleum Hydrocarbons

Method Blank Analysis.....	8
Laboratory Control Sample.....	9
Precision and Accuracy.....	10

Total Petroleum Hydrocarbons

Method Blank Analysis.....	11
Laboratory Control Sample.....	12
Precision and Accuracy.....	13

Notes

Notes and Definitions.....	14
----------------------------	----



BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1903231 Page 1 of 2



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Subcontracted To: BC LABS

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11110 Artesia Blvd., Ste B, Cerritos, CA 90708
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

19-03231

Page 1 of 1

Client: ASSET Laboratories		Report to: Marlon Cartin		Bill to: Elvira Allegaert		EDD Requirement		QA/QC		Sample Receipt Condition	
Address: 11110 Artesia Blvd Ste B		Company: Same		Address: Same		Excel EDD <input type="checkbox"/>		RTNE <input type="checkbox"/>		Y N	
Address: Cerritos, CA 90703		Email: marlon@assetlaboratories.com reports.lv@assetlaboratories.com		Email: elvira@assetlaboratories.com		GeoTracker <input type="checkbox"/>		RWQCB <input type="checkbox"/>		1. Cooled <input type="checkbox"/>	
Phone: 562.219.7435 Fax:		Address: Same		PO# N33955A		LabSpec7 <input checked="" type="checkbox"/>		CalTrans <input type="checkbox"/>		2. Headspace <input type="checkbox"/>	
Submitted By: Marlon Cartin		Phone:		Phone:		Others <input type="checkbox"/>		Level II <input type="checkbox"/>		3. Container Integrity <input type="checkbox"/>	
Title:		Date:		Sampled by:		Specify:		LEVEL IV <input type="checkbox"/>		4. Seal Present <input type="checkbox"/>	
Signature:		Signature:		Label to the validity and authenticity of this sample. I am aware that tampering with or intentionally establishing the sample location, date or time of collection is considered fraud and may be grounds for legal action.		Global ID		Regulatory <input type="checkbox"/>		5. IR number <input type="checkbox"/>	
Project Name: SFPP Norwalk		Project Number:		Matrix		Analyses Requested		Specify State:		6. Method of Cooling <input type="checkbox"/>	
I/We hereby authorize ASSET Labs to perform the tests indicated below:		Signature:		Ground <input type="checkbox"/> Sediment <input type="checkbox"/>		TPH-GAS		Turn Around Time		7. Method of Sealing <input type="checkbox"/>	
Project Name: SFPP Norwalk		Signature:		Possible <input type="checkbox"/> Soil <input type="checkbox"/>		TPH-d, TPH-oil		No. of container		Courier:	
Project Number:		Signature:		HPOES <input type="checkbox"/> Other Solid <input type="checkbox"/>				Container Type		Tracking No.	
		Signature:		Surface <input type="checkbox"/>				PRESERVATION		Remarks	
Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	TPH-GAS	TPH-d, TPH-oil	Turn Around Time	Remarks
1	-/	INF - 01-29	1/29/19	12:50	WW			X	X	PH	
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
Relinquished by (Signature and Printed Name):		Date / Time: 1/30/19 1630		Received by (Signature and Printed Name):		Date / Time: 1:31:19 09:10		Turn Around Time (TAT)		Special Instruction:	
Relinquished by (Signature and Printed Name):		Date / Time:		Received by (Signature and Printed Name):		Date / Time:		<input type="checkbox"/> A < 24 Hrs or Same Day TAT <input type="checkbox"/> B = Next Workday <input type="checkbox"/> C = 2 Workdays <input type="checkbox"/> D = 3 Workdays <input checked="" type="checkbox"/> E = Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.		Please analyze for TPHg (C4-C12), TPHd (C13-C22), TPHo (C23+), & Total TPH Report format: MDL/PQL "J"-flagged". EDD Requirement: "CH2MHILL" LabSpec7. Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com	
Relinquished by (Signature and Printed Name):		Date / Time:		Received by (Signature and Printed Name):		Date / Time:		Preservatives:		Container Types:	
								H = HCl M = HNO3 S = H2SO4 C = 4°C Z = ZnAc2 O = NaOH T = Na2SO3 Others/Specify:		T = Tube V = VOA P = Pint J = Jar B = Tedlar G = Glass M = Metal P = Plastic C = Can	
<p>Terms</p> <p>1. All samples will be stored in AS days upon receipt and records will be destroyed in 5 years upon submission of final report.</p> <p>2. Regular EM is 5-7 business days, rush charges will apply for each analysis.</p> <p>3. Custom EDD format will be an additional 2% of the total project price.</p> <p>4. All test methods are listed in the Methods, SOPs for Local/Off-Site Testing, and are subject to change without notice.</p> <p>5. To Blank and Spiked Blank are initial sample.</p> <p>6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.</p> <p>7. Tests are not 30 days.</p> <p>8. All reports are submitted in electronic format. Please obtain ASSET Laboratories physical copy of report if needed.</p> <p>9. For laboratory analysis, TAT and Submittals will vary.</p> <p>White = Laboratory Copy Yellow = Customer's Copy</p>											

MUSH!

CHK BY: [Signature]
DISTRIBUTION: [Signature]
SUB-CUT

Report ID: 1000849337
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.
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.
4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com
Page 3 of 14



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 of 1

Submission #: 14-03231

SHIPPING INFORMATION
 Fed Ex UPS Ontra Hand Delivery
 BC Lab Field Service Other (Specify) GASO

SHIPPING CONTAINER
 Ice Chest None Box
 Other (Specify) _____

FREE LIQUID
 YES NO
 W / S _____

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals Ice Chest Containers
 Intact? Yes No Intact? Yes No None Comments: _____

All samples received? Yes No All samples containers intact? Yes No

COC Received YES NO Emissivity: OR Container: GLASS Description(s) match COC? Yes No
 Temperature: (A) 5.2 °C / (C) 5.7 °C Thermometer ID: 2314 Date/Time: 1/31/19
 Analyst Init: JAD 09.1

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁶										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL <u>ORW</u>										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.18150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____

Sample Numbering Completed By: [Signature] Date/Time: 1/31/19 1245 Rev 21 06/23/2016

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. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1903231-01	COC Number:	---	Receive Date:	01/31/2019 09:10
	Project Number:	---	Sampling Date:	01/29/2019 12:50
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	INF-01-29	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Wastewater

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1903231-01	Client Sample Name: INF-01-29, 1/29/2019 12:50:00PM, Client
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	100	ug/L	50	8.9	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	95.0	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	01/31/19 12:50	01/31/19 14:17	JBR	GC-V9	1	B036196

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

BCL Sample ID: 1903231-01	Client Sample Name: INF-01-29, 1/29/2019 12:50:00PM, Client
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (C13 - C22)	250	ug/L	40	6.8	EPA-8015CC	ND	A52	1
TPH - Motor Oil (C23 - C36)	64	ug/L	100	13	EPA-8015CC	ND	A57	1
Tetracosane (Surrogate)	72.8	%	37 - 134 (LCL - UCL)		EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	02/01/19 16:50	02/04/19 15:57	RSM	GC-2	1.010	B036866

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B036196						
Gasoline Range Organics (C4 - C12)	B036196-BLK1	ND	ug/L	50	8.9	
a,a,a-Trifluorotoluene (FID Surrogate)	B036196-BLK1	85.8	%	70 - 130 (LCL - UCL)		

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
QC Batch ID: B036196											
Gasoline Range Organics (C4 - C12)	B036196-BS1	LCS	1095.7	1000.0	ug/L	110		85 - 115			
a,a,a-Trifluorotoluene (FID Surrogate)	B036196-BS1	LCS	36.383	40.000	ug/L	91.0		70 - 130			

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent		Lab Quals
								Recovery	RPD	
QC Batch ID: B036196		Used client sample: N								
Gasoline Range Organics (C4 - C12)	MS	1902131-19	ND	1095.1	1000.0	ug/L		110		70 - 130
	MSD	1902131-19	ND	1147.7	1000.0	ug/L	4.7	115	20	70 - 130
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1902131-19	ND	36.047	40.000	ug/L		90.1		70 - 130
	MSD	1902131-19	ND	36.859	40.000	ug/L	2.2	92.1		70 - 130

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B036866						
TPH - Diesel (C13 - C22)	B036866-BLK1	ND	ug/L	40	6.8	
TPH - Motor Oil (C23 - C36)	B036866-BLK1	ND	ug/L	100	13	
Tetracosane (Surrogate)	B036866-BLK1	89.4	%	37 - 134 (LCL - UCL)		

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab	Quals
								Percent Recovery	RPD		
QC Batch ID: B036866											
TPH - Diesel (C13 - C22)	B036866-BS1	LCS	448.90	500.00	ug/L	89.8		52	128		
Tetracosane (Surrogate)	B036866-BS1	LCS	19.116	20.000	ug/L	95.6		37	134		

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent		Lab Quals
								Recovery	RPD	
QC Batch ID: B036866		Used client sample: N								
TPH - Diesel (C13 - C22)	MS	1902131-47	ND	460.44	500.00	ug/L		92.1		50 - 127
	MSD	1902131-47	ND	429.37	500.00	ug/L	7.0	85.9	30	50 - 127
Tetracosane (Surrogate)	MS	1902131-47	ND	18.776	20.000	ug/L		93.9		37 - 134
	MSD	1902131-47	ND	18.209	20.000	ug/L	3.1	91.0		37 - 134

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.

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.



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

Reported: 02/08/2019 12:09
Project: CH2MHILL
Project Number: N033955: SFPP Norwalk
Project Manager: Marlon Cartin

Notes And Definitions

- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A52 Chromatogram not typical of diesel.
- A57 Chromatogram not typical of motor oil.

February 15, 2019

Eric Davis
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:

FAX:

Workorder No.: N034061

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on February 07, 2019 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,



Quennie Manimtim
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"

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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: CH2MHill
Project: SFPP Norwalk
Lab Order: N034061

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.

Sample was analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Analytical Comments for EPA 8260B:

Matrix Spike Duplicate (MSD) is outside recovery criteria for Di-isopropyl ether and 4-Isopropyltoluene possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria for Tert-Butanol possibly due to non-homogeneity of sample; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N034061
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N034061-001A	INF-02-07	Wastewater	2/7/2019 10:25:00 AM	2/7/2019	2/15/2019
N034061-001B	INF-02-07	Wastewater	2/7/2019 10:25:00 AM	2/7/2019	2/15/2019
N034061-001C	INF-02-07	Wastewater	2/7/2019 10:25:00 AM	2/7/2019	2/15/2019
N034061-001D	INF-02-07	Wastewater	2/7/2019 10:25:00 AM	2/7/2019	2/15/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 15-Feb-19

CLIENT: CH2MHill
Lab Order: N034061
Project: SFPP Norwalk
Lab ID: N034061-001

Client Sample ID: INF-02-07
Collection Date: 2/7/2019 10:25:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	CA01638-MS10_190207A	QC Batch:	CA19VW012	PrepDate:	Analyst:	GAC
1,1,1,2-Tetrachloroethane	ND	0.38	1.0	ug/L	1	2/7/2019 04:53 PM
1,1,1-Trichloroethane	ND	0.38	1.0	ug/L	1	2/7/2019 04:53 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0	ug/L	1	2/7/2019 04:53 PM
1,1,2-Trichloroethane	ND	0.29	1.0	ug/L	1	2/7/2019 04:53 PM
1,1-Dichloroethane	ND	0.45	0.50	ug/L	1	2/7/2019 04:53 PM
1,1-Dichloroethene	ND	0.34	1.0	ug/L	1	2/7/2019 04:53 PM
1,1-Dichloropropene	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
1,2,3-Trichlorobenzene	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
1,2,3-Trichloropropane	ND	0.26	1.0	ug/L	1	2/7/2019 04:53 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0	ug/L	1	2/7/2019 04:53 PM
1,2,4-Trimethylbenzene	1.3	0.33	1.0	ug/L	1	2/7/2019 04:53 PM
1,2-Dibromo-3-chloropropane	ND	0.67	2.0	ug/L	1	2/7/2019 04:53 PM
1,2-Dibromoethane	ND	0.31	1.0	ug/L	1	2/7/2019 04:53 PM
1,2-Dichlorobenzene	ND	0.29	1.0	ug/L	1	2/7/2019 04:53 PM
1,2-Dichloroethane	ND	0.29	0.50	ug/L	1	2/7/2019 04:53 PM
1,2-Dichloropropane	ND	0.24	1.0	ug/L	1	2/7/2019 04:53 PM
1,3,5-Trimethylbenzene	0.43	0.27	1.0	J ug/L	1	2/7/2019 04:53 PM
1,3-Dichlorobenzene	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
1,3-Dichloropropane	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
1,4-Dichlorobenzene	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
2,2-Dichloropropane	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
2-Butanone	ND	4.9	10	ug/L	1	2/7/2019 04:53 PM
2-Chlorotoluene	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
4-Chlorotoluene	ND	0.30	1.0	ug/L	1	2/7/2019 04:53 PM
4-Isopropyltoluene	ND	0.33	1.0	ug/L	1	2/7/2019 04:53 PM
4-Methyl-2-pentanone	ND	3.2	10	ug/L	1	2/7/2019 04:53 PM
Acetone	ND	9.7	10	ug/L	1	2/7/2019 04:53 PM
Benzene	ND	0.34	1.0	ug/L	1	2/7/2019 04:53 PM
Bromobenzene	ND	0.25	1.0	ug/L	1	2/7/2019 04:53 PM
Bromochloromethane	ND	0.41	1.0	ug/L	1	2/7/2019 04:53 PM
Bromodichloromethane	ND	0.38	1.0	ug/L	1	2/7/2019 04:53 PM
Bromoform	ND	0.39	1.0	ug/L	1	2/7/2019 04:53 PM
Bromomethane	ND	0.79	1.0	ug/L	1	2/7/2019 04:53 PM
Carbon disulfide	ND	0.81	1.0	ug/L	1	2/7/2019 04:53 PM
Carbon tetrachloride	ND	0.40	0.50	ug/L	1	2/7/2019 04:53 PM
Chlorobenzene	ND	0.30	1.0	ug/L	1	2/7/2019 04:53 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 15-Feb-19

CLIENT: CH2MHill
Lab Order: N034061
Project: SFPP Norwalk
Lab ID: N034061-001

Client Sample ID: INF-02-07
Collection Date: 2/7/2019 10:25:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: CA01638-MS10_190207A	QC Batch: CA19VW012	PrepDate:	Analyst: GAC			
Chloroethane	ND	0.97	1.0	ug/L	1	2/7/2019 04:53 PM
Chloroform	ND	0.27	1.0	ug/L	1	2/7/2019 04:53 PM
Chloromethane	ND	0.36	1.0	ug/L	1	2/7/2019 04:53 PM
cis-1,2-Dichloroethene	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
cis-1,3-Dichloropropene	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
Di-isopropyl ether	0.82	0.079	1.0	J ug/L	1	2/7/2019 04:53 PM
Dibromochloromethane	ND	0.41	1.0	ug/L	1	2/7/2019 04:53 PM
Dibromomethane	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
Dichlorodifluoromethane	ND	0.29	1.0	ug/L	1	2/7/2019 04:53 PM
Ethyl tert-butyl ether	ND	0.30	1.0	ug/L	1	2/7/2019 04:53 PM
Ethylbenzene	ND	0.31	1.0	ug/L	1	2/7/2019 04:53 PM
Freon-113	ND	0.35	1.0	ug/L	1	2/7/2019 04:53 PM
Hexachlorobutadiene	ND	0.30	1.0	ug/L	1	2/7/2019 04:53 PM
Isopropylbenzene	ND	0.26	1.0	ug/L	1	2/7/2019 04:53 PM
m,p-Xylene	0.96	0.23	1.0	J ug/L	1	2/7/2019 04:53 PM
Methylene chloride	ND	1.9	2.0	ug/L	1	2/7/2019 04:53 PM
MTBE	1.1	0.34	1.0	ug/L	1	2/7/2019 04:53 PM
n-Butylbenzene	ND	0.34	1.0	ug/L	1	2/7/2019 04:53 PM
n-Propylbenzene	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
Naphthalene	ND	0.42	1.0	ug/L	1	2/7/2019 04:53 PM
o-Xylene	0.99	0.31	1.0	J ug/L	1	2/7/2019 04:53 PM
sec-Butylbenzene	ND	0.32	1.0	ug/L	1	2/7/2019 04:53 PM
Styrene	ND	0.21	1.0	ug/L	1	2/7/2019 04:53 PM
Tert-amyl methyl ether	ND	0.26	1.0	ug/L	1	2/7/2019 04:53 PM
Tert-Butanol	22	2.4	5.0	ug/L	1	2/7/2019 04:53 PM
tert-Butylbenzene	ND	0.28	1.0	ug/L	1	2/7/2019 04:53 PM
Tetrachloroethene	ND	0.30	1.0	ug/L	1	2/7/2019 04:53 PM
Toluene	ND	0.46	2.0	ug/L	1	2/7/2019 04:53 PM
trans-1,2-Dichloroethene	ND	0.40	1.0	ug/L	1	2/7/2019 04:53 PM
trans-1,3-Dichloropropene	ND	0.25	1.0	ug/L	1	2/7/2019 04:53 PM
Trichloroethene	ND	0.37	1.0	ug/L	1	2/7/2019 04:53 PM
Trichlorofluoromethane	ND	0.37	1.0	ug/L	1	2/7/2019 04:53 PM
Vinyl chloride	ND	0.29	0.50	ug/L	1	2/7/2019 04:53 PM
Xylenes, Total	2.0	1.5	2.0	J ug/L	1	2/7/2019 04:53 PM
Surr: 1,2-Dichloroethane-d4	97.2	0	72-119	%REC	1	2/7/2019 04:53 PM
Surr: 4-Bromofluorobenzene	90.4	0	76-119	%REC	1	2/7/2019 04:53 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 15-Feb-19

CLIENT: CH2MHill	Client Sample ID: INF-02-07
Lab Order: N034061	Collection Date: 2/7/2019 10:25:00 AM
Project: SFPP Norwalk	Matrix: WASTEWATER
Lab ID: N034061-001	

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: CA01638-MS10_190207A	QC Batch: CA19VW012	PrepDate:	Analyst: GAC
Surr: Dibromofluoromethane	107 0	85-115	%REC 1 2/7/2019 04:53 PM
Surr: Toluene-d8	105 0	81-120	%REC 1 2/7/2019 04:53 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: NV00922-GC3_190211A	QC Batch: 72416	PrepDate: 2/8/2019	Analyst: LLR
TPH-Diesel (C13-C22)	210 15	25	ug/L 1 2/14/2019 02:46 PM
TPH-Oil (C23-C36)	93 14	25	ug/L 1 2/14/2019 02:46 PM
Surr: Octacosane	79.9 0	26-152	%REC 1 2/14/2019 02:46 PM
Surr: p-Terphenyl	80.1 0	57-132	%REC 1 2/14/2019 02:46 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: NV00922-GC4_190211A	QC Batch: E19VW007	PrepDate:	Analyst: QBM
TPH-Gasoline (C4-C12)	36 21	50	J ug/L 1 2/11/2019 03:34 PM
Surr: Chlorobenzene - d5	112 0	74-138	%REC 1 2/11/2019 03:34 PM

TOTAL TPH

EPA 8015B

RunID: NV00922-GC3_190211A	QC Batch: R131745	PrepDate:	Analyst: LLR
Total TPH	340 21	100	ug/L 1 2/11/2019

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-72416	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 2/8/2019	RunNo: 131745						
Client ID: PBW	Batch ID: 72416	TestNo: EPA 8015B EPA 3510C		Analysis Date: 2/11/2019	SeqNo: 3285582						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	20.094	25									J
Surr: Octacosane	71.622		80.00		89.5	26	152				
Surr: p-Terphenyl	73.225		80.00		91.5	57	132				

Qualifiers:

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



CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R131745	SampType: MBLK	TestCode: 8015_W_SFP Units: ug/L	Prep Date:	RunNo: 131745							
Client ID: PBW	Batch ID: R131745	TestNo: EPA 8015B	Analysis Date: 2/11/2019	SeqNo: 3285619							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	44.094	100									J

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR CHEMICAL, ENVIRONMENTAL, AND FORENSIC

[CALIFORNIA](#) | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: E190211LCS	SampType: LCS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 131740							
Client ID: LCSW	Batch ID: E19VW007	TestNo: EPA 8015B	Analysis Date: 2/11/2019	SeqNo: 3285500							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	906.000	50	1000	0	90.6	67	136				
Surr: Chlorobenzene - d5	46646.000		50000		93.3	74	138				

Sample ID: E190211MB1	SampType: MBLK	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 131740							
Client ID: PBW	Batch ID: E19VW007	TestNo: EPA 8015B	Analysis Date: 2/11/2019	SeqNo: 3285501							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	24.000	50									J
Surr: Chlorobenzene - d5	41435.000		50000		82.9	74	138				

Sample ID: N034059-001BMS	SampType: MS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 131740							
Client ID: ZZZZZ	Batch ID: E19VW007	TestNo: EPA 8015B	Analysis Date: 2/11/2019	SeqNo: 3285507							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1042.000	50	1000	24.00	102	67	136				
Surr: Chlorobenzene - d5	59755.000		50000		120	74	138				

Sample ID: N034059-001BMSD	SampType: MSD	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 131740							
Client ID: ZZZZZ	Batch ID: E19VW007	TestNo: EPA 8015B	Analysis Date: 2/11/2019	SeqNo: 3285508							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1018.000	50	1000	24.00	99.4	67	136	1042	2.33	30	
Surr: Chlorobenzene - d5	58810.000		50000		118	74	138		0	0	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE OIL AND GAS INDUSTRY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: LCSW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	18.460	1.0	20.00	0	92.3	81	129				
1,1,1-Trichloroethane	19.640	1.0	20.00	0	98.2	67	132				
1,1,2,2-Tetrachloroethane	18.330	1.0	20.00	0	91.7	63	128				
1,1,2-Trichloroethane	18.990	1.0	20.00	0	95.0	75	125				
1,1-Dichloroethane	18.240	0.50	20.00	0	91.2	69	133				
1,1-Dichloroethene	16.620	1.0	20.00	0	83.1	68	130				
1,1-Dichloropropene	19.230	1.0	20.00	0	96.2	73	132				
1,2,3-Trichlorobenzene	19.800	1.0	20.00	0	99.0	67	137				
1,2,3-Trichloropropane	18.840	1.0	20.00	0	94.2	73	124				
1,2,4-Trichlorobenzene	20.980	1.0	20.00	0	105	66	134				
1,2,4-Trimethylbenzene	21.190	1.0	20.00	0	106	74	132				
1,2-Dibromo-3-chloropropane	19.130	2.0	20.00	0	95.7	50	132				
1,2-Dibromoethane	18.880	1.0	20.00	0	94.4	80	121				
1,2-Dichlorobenzene	18.880	1.0	20.00	0	94.4	71	122				
1,2-Dichloroethane	16.590	0.50	20.00	0	83.0	69	132				
1,2-Dichloropropane	16.540	1.0	20.00	0	82.7	75	125				
1,3,5-Trimethylbenzene	23.930	1.0	20.00	0	120	74	131				
1,3-Dichlorobenzene	19.530	1.0	20.00	0	97.6	75	124				
1,3-Dichloropropane	17.360	1.0	20.00	0	86.8	73	126				
1,4-Dichlorobenzene	19.870	1.0	20.00	0	99.4	74	123				
2,2-Dichloropropane	19.950	1.0	20.00	0	99.8	69	137				
2-Butanone	156.490	10	200.0	0	78.2	49	136				
2-Chlorotoluene	19.830	1.0	20.00	0	99.2	73	126				
4-Chlorotoluene	21.150	1.0	20.00	0	106	74	128				
4-Isopropyltoluene	25.750	1.0	20.00	0	129	73	130				
4-Methyl-2-pentanone	159.250	10	200.0	0	79.6	58	134				
Acetone	175.550	10	200.0	0	87.8	40	135				
Benzene	18.610	1.0	20.00	0	93.0	81	122				
Bromobenzene	18.900	1.0	20.00	0	94.5	76	124				
Bromochloromethane	20.130	1.0	20.00	0	101	65	129				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 NVO0922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: LCSW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	17.770	1.0	20.00	0	88.8	76	121				
Bromoform	19.980	1.0	20.00	0	99.9	69	128				
Bromomethane	14.500	1.0	20.00	0	72.5	53	141				
Carbon disulfide	16.110	1.0	20.00	0	80.6	75	125				
Carbon tetrachloride	18.100	0.50	20.00	0	90.5	66	138				
Chlorobenzene	19.720	1.0	20.00	0	98.6	81	122				
Chloroethane	15.270	1.0	20.00	0	76.4	58	133				
Chloroform	16.770	1.0	20.00	0	83.9	69	128				
Chloromethane	16.540	1.0	20.00	0	82.7	56	131				
cis-1,2-Dichloroethene	18.290	1.0	20.00	0	91.4	72	126				
cis-1,3-Dichloropropene	16.840	1.0	20.00	0	84.2	69	131				
Di-isopropyl ether	13.370	1.0	20.00	0	66.8	70	130				S
Dibromochloromethane	17.810	1.0	20.00	0	89.0	66	133				
Dibromomethane	17.680	1.0	20.00	0	88.4	76	125				
Dichlorodifluoromethane	19.610	1.0	20.00	0	98.0	53	153				
Ethyl tert-butyl ether	15.360	1.0	20.00	0	76.8	70	130				
Ethylbenzene	21.350	1.0	20.00	0	107	73	127				
Freon-113	17.290	1.0	20.00	0	86.5	75	125				
Hexachlorobutadiene	23.350	1.0	20.00	0	117	67	131				
Isopropylbenzene	20.950	1.0	20.00	0	105	75	127				
m,p-Xylene	43.680	1.0	40.00	0	109	76	128				
Methylene chloride	16.800	2.0	20.00	0	84.0	63	137				
MTBE	14.650	1.0	20.00	0	73.2	65	123				
n-Butylbenzene	21.840	1.0	20.00	0	109	69	137				
n-Propylbenzene	21.390	1.0	20.00	0	107	72	129				
Naphthalene	17.900	1.0	20.00	0	89.5	54	138				
o-Xylene	19.740	1.0	20.00	0	98.7	80	121				
sec-Butylbenzene	22.590	1.0	20.00	0	113	72	127				
Styrene	21.530	1.0	20.00	0	108	65	134				
Tert-amyl methyl ether	17.330	1.0	20.00	0	86.7	70	130				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436 | NEVADA | P: 702.307.2659 | F: 702.307.2691
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 | 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2921 | ELAP Cert 2676 | NV Cert N000922
 EPA ID CA01638 | ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: LCSW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283825						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	70.220	5.0	100.0	0	70.2	70	130				
tert-Butylbenzene	21.710	1.0	20.00	0	109	70	129				
Tetrachloroethene	19.910	1.0	20.00	0	99.6	66	128				
Toluene	20.310	2.0	20.00	0	102	77	122				
trans-1,2-Dichloroethene	16.060	1.0	20.00	0	80.3	63	137				
trans-1,3-Dichloropropene	17.490	1.0	20.00	0	87.5	59	135				
Trichloroethene	20.040	1.0	20.00	0	100	70	127				
Trichlorofluoromethane	18.600	1.0	20.00	0	93.0	57	129				
Vinyl chloride	16.390	0.50	20.00	0	82.0	50	134				
Xylenes, Total	63.420	2.0	60.00	0	106	75	125				
Surr: 1,2-Dichloroethane-d4	19.300		25.00		77.2	72	119				
Surr: 4-Bromofluorobenzene	23.870		25.00		95.5	76	119				
Surr: Dibromofluoromethane	21.830		25.00		87.3	85	115				
Surr: Toluene-d8	24.030		25.00		96.1	81	120				

Sample ID: CA190207-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: PBW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	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 |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: PBW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	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 |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: PBW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethyl tert-butyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	2.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	ND	1.0									
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	23.790		25.00		95.2	72	119				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND PETROLEUM INDUSTRIES

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190207-MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: PBW	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283829						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	22.940		25.00		91.8	76	119				
Surr: Dibromofluoromethane	25.590		25.00		102	85	115				
Surr: Toluene-d8	25.190		25.00		101	81	120				

Sample ID: N033988-009BMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: ZZZZZ	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	185.000	10	200.0	0	92.5	81	129				
1,1,1-Trichloroethane	197.800	10	200.0	0	98.9	67	132				
1,1,2,2-Tetrachloroethane	190.700	10	200.0	0	95.4	63	128				
1,1,2-Trichloroethane	201.100	10	200.0	0	101	75	125				
1,1-Dichloroethane	190.400	5.0	200.0	0	95.2	69	133				
1,1-Dichloroethene	169.500	10	200.0	0	84.8	68	130				
1,1-Dichloropropene	191.800	10	200.0	0	95.9	73	132				
1,2,3-Trichlorobenzene	192.400	10	200.0	0	96.2	67	137				
1,2,3-Trichloropropane	176.700	10	200.0	0	88.4	73	124				
1,2,4-Trichlorobenzene	191.900	10	200.0	0	96.0	66	134				
1,2,4-Trimethylbenzene	203.400	10	200.0	10.00	96.7	74	132				
1,2-Dibromo-3-chloropropane	193.200	20	200.0	0	96.6	50	132				
1,2-Dibromoethane	203.800	10	200.0	0	102	80	121				
1,2-Dichlorobenzene	184.100	10	200.0	0	92.0	71	122				
1,2-Dichloroethane	172.200	5.0	200.0	0	86.1	69	132				
1,2-Dichloropropane	174.800	10	200.0	0	87.4	75	125				
1,3,5-Trimethylbenzene	222.100	10	200.0	0	111	74	131				
1,3-Dichlorobenzene	194.900	10	200.0	0	97.5	75	124				
1,3-Dichloropropane	177.700	10	200.0	0	88.8	73	126				
1,4-Dichlorobenzene	188.400	10	200.0	0	94.2	74	123				
2,2-Dichloropropane	189.300	10	200.0	0	94.6	69	137				
2-Butanone	1740.500	100	2000	0	87.0	49	136				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & WATER

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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 NVO0922
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033988-009BMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: ZZZZZ	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	190.700	10	200.0	0	95.4	73	126				
4-Chlorotoluene	197.400	10	200.0	0	98.7	74	128				
4-Isopropyltoluene	248.800	10	200.0	0	124	73	130				
4-Methyl-2-pentanone	1656.000	100	2000	0	82.8	58	134				
Acetone	2499.200	100	2000	0	125	40	135				
Benzene	197.000	10	200.0	0	98.5	81	122				
Bromobenzene	181.900	10	200.0	0	91.0	76	124				
Bromochloromethane	220.200	10	200.0	0	110	65	129				
Bromodichloromethane	190.500	10	200.0	0	95.2	76	121				
Bromoform	203.400	10	200.0	0	102	69	128				
Bromomethane	153.200	10	200.0	0	76.6	53	141				
Carbon disulfide	165.200	10	200.0	0	82.6	75	125				
Carbon tetrachloride	184.900	5.0	200.0	0	92.5	66	138				
Chlorobenzene	202.000	10	200.0	0	101	81	122				
Chloroethane	169.500	10	200.0	0	84.8	58	133				
Chloroform	268.700	10	200.0	111.7	78.5	69	128				
Chloromethane	174.100	10	200.0	0	87.0	56	131				
cis-1,2-Dichloroethene	183.000	10	200.0	0	91.5	72	126				
cis-1,3-Dichloropropene	166.700	10	200.0	0	83.4	69	131				
Di-isopropyl ether	132.800	10	200.0	0	66.4	70	130				S
Dibromochloromethane	175.200	10	200.0	0	87.6	66	133				
Dibromomethane	183.700	10	200.0	0	91.9	76	125				
Dichlorodifluoromethane	208.900	10	200.0	0	104	53	153				
Ethyl tert-butyl ether	162.100	10	200.0	0	81.1	70	130				
Ethylbenzene	211.000	10	200.0	0	106	73	127				
Freon-113	190.500	10	200.0	0	95.2	75	125				
Hexachlorobutadiene	210.900	10	200.0	0	105	67	131				
Isopropylbenzene	193.900	10	200.0	0	97.0	75	127				
m,p-Xylene	431.700	10	400.0	0	108	76	128				
Methylene chloride	169.000	20	200.0	0	84.5	63	137				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENTAL SCIENCE INDUSTRY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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 NVO0922
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033988-009BMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: ZZZZZ	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	147.900	10	200.0	0	74.0	65	123				
n-Butylbenzene	206.600	10	200.0	0	103	69	137				
n-Propylbenzene	204.400	10	200.0	0	102	72	129				
Naphthalene	159.200	10	200.0	0	79.6	54	138				
o-Xylene	195.800	10	200.0	0	97.9	80	121				
sec-Butylbenzene	217.400	10	200.0	0	109	72	127				
Styrene	217.500	10	200.0	0	109	65	134				
Tert-amyl methyl ether	181.600	10	200.0	0	90.8	70	130				
Tert-Butanol	863.900	50	1000	0	86.4	70	130				
tert-Butylbenzene	204.600	10	200.0	0	102	70	129				
Tetrachloroethene	212.700	10	200.0	0	106	66	128				
Toluene	214.700	20	200.0	0	107	77	122				
trans-1,2-Dichloroethene	169.600	10	200.0	0	84.8	63	137				
trans-1,3-Dichloropropene	191.000	10	200.0	0	95.5	59	135				
Trichloroethene	212.000	10	200.0	5.200	103	70	127				
Trichlorofluoromethane	210.700	10	200.0	0	105	57	129				
Vinyl chloride	183.200	5.0	200.0	0	91.6	50	134				
Xylenes, Total	627.500	20	600.0	0	105	75	125				
Surr: 1,2-Dichloroethane-d4	198.300		250.0		79.3	72	119				
Surr: 4-Bromofluorobenzene	251.400		250.0		101	76	119				
Surr: Dibromofluoromethane	229.600		250.0		91.8	85	115				
Surr: Toluene-d8	251.700		250.0		101	81	120				

Sample ID: N033988-009BMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 131693						
Client ID: ZZZZZ	Batch ID: CA19VW012	TestNo: EPA 8260B		Analysis Date: 2/7/2019	SeqNo: 3283841						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	192.900	10	200.0	0	96.5	81	129	185.0	4.18	20	
1,1,1-Trichloroethane	210.500	10	200.0	0	105	67	132	197.8	6.22	20	
1,1,2,2-Tetrachloroethane	193.400	10	200.0	0	96.7	63	128	190.7	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 |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 NVO0922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034061
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033988-009BMSD		SampType: MSD		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 131693	
Client ID: ZZZZZZ		Batch ID: CA19VW012		TestNo: EPA 8260B		Analysis Date: 2/7/2019		SeqNo: 3283841			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	218.000	10	200.0	0	109	75	125	201.1	8.06	20	
1,1-Dichloroethane	191.600	5.0	200.0	0	95.8	69	133	190.4	0.628	20	
1,1-Dichloroethene	177.500	10	200.0	0	88.8	68	130	169.5	4.61	20	
1,1-Dichloropropene	200.200	10	200.0	0	100	73	132	191.8	4.29	20	
1,2,3-Trichlorobenzene	206.800	10	200.0	0	103	67	137	192.4	7.21	20	
1,2,3-Trichloropropane	198.800	10	200.0	0	99.4	73	124	176.7	11.8	20	
1,2,4-Trichlorobenzene	208.600	10	200.0	0	104	66	134	191.9	8.34	20	
1,2,4-Trimethylbenzene	214.100	10	200.0	10.00	102	74	132	203.4	5.13	20	
1,2-Dibromo-3-chloropropane	194.100	20	200.0	0	97.0	50	132	193.2	0.465	20	
1,2-Dibromoethane	205.600	10	200.0	0	103	80	121	203.8	0.879	20	
1,2-Dichlorobenzene	202.600	10	200.0	0	101	71	122	184.1	9.57	20	
1,2-Dichloroethane	181.900	5.0	200.0	0	91.0	69	132	172.2	5.48	20	
1,2-Dichloropropane	169.100	10	200.0	0	84.6	75	125	174.8	3.31	20	
1,3,5-Trimethylbenzene	242.300	10	200.0	0	121	74	131	222.1	8.70	20	
1,3-Dichlorobenzene	208.900	10	200.0	0	104	75	124	194.9	6.93	20	
1,3-Dichloropropane	187.200	10	200.0	0	93.6	73	126	177.7	5.21	20	
1,4-Dichlorobenzene	208.000	10	200.0	0	104	74	123	188.4	9.89	20	
2,2-Dichloropropane	189.700	10	200.0	0	94.8	69	137	189.3	0.211	20	
2-Butanone	1753.500	100	2000	0	87.7	49	136	1740	0.744	20	
2-Chlorotoluene	202.100	10	200.0	0	101	73	126	190.7	5.80	20	
4-Chlorotoluene	212.600	10	200.0	0	106	74	128	197.4	7.41	20	
4-Isopropyltoluene	266.200	10	200.0	0	133	73	130	248.8	6.76	20	S
4-Methyl-2-pentanone	1670.100	100	2000	0	83.5	58	134	1656	0.848	20	
Acetone	2562.200	100	2000	0	128	40	135	2499	2.49	20	
Benzene	195.100	10	200.0	0	97.6	81	122	197.0	0.969	20	
Bromobenzene	195.000	10	200.0	0	97.5	76	124	181.9	6.95	20	
Bromochloromethane	212.400	10	200.0	0	106	65	129	220.2	3.61	20	
Bromodichloromethane	198.300	10	200.0	0	99.2	76	121	190.5	4.01	20	
Bromoform	204.000	10	200.0	0	102	69	128	203.4	0.295	20	
Bromomethane	166.600	10	200.0	0	83.3	53	141	153.2	8.38	20	

Qualifiers:

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



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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 NVO0922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034061
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N033988-009BMSD	SampType: MSD	TestCode: 8260_WP_SF Units: ug/L				Prep Date:			RunNo: 131693		
Client ID: ZZZZZZ	Batch ID: CA19VW012	TestNo: EPA 8260B				Analysis Date: 2/7/2019			SeqNo: 3283841		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon disulfide	173.200	10	200.0	0	86.6	75	125	165.2	4.73	20	
Carbon tetrachloride	184.200	5.0	200.0	0	92.1	66	138	184.9	0.379	20	
Chlorobenzene	210.600	10	200.0	0	105	81	122	202.0	4.17	20	
Chloroethane	184.800	10	200.0	0	92.4	58	133	169.5	8.64	20	
Chloroform	280.800	10	200.0	111.7	84.6	69	128	268.7	4.40	20	
Chloromethane	175.700	10	200.0	0	87.8	56	131	174.1	0.915	20	
cis-1,2-Dichloroethene	194.200	10	200.0	0	97.1	72	126	183.0	5.94	20	
cis-1,3-Dichloropropene	179.000	10	200.0	0	89.5	69	131	166.7	7.12	20	
Di-isopropyl ether	138.400	10	200.0	0	69.2	70	130	132.8	4.13	20	S
Dibromochloromethane	187.500	10	200.0	0	93.8	66	133	175.2	6.78	20	
Dibromomethane	193.300	10	200.0	0	96.7	76	125	183.7	5.09	20	
Dichlorodifluoromethane	217.000	10	200.0	0	108	53	153	208.9	3.80	20	
Ethyl tert-butyl ether	164.400	10	200.0	0	82.2	70	130	162.1	1.41	20	
Ethylbenzene	214.600	10	200.0	0	107	73	127	211.0	1.69	20	
Freon-113	187.900	10	200.0	0	94.0	75	125	190.5	1.37	20	
Hexachlorobutadiene	227.000	10	200.0	0	114	67	131	210.9	7.35	20	
Isopropylbenzene	213.600	10	200.0	0	107	75	127	193.9	9.67	20	
m,p-Xylene	450.400	10	400.0	0	113	76	128	431.7	4.24	20	
Methylene chloride	173.800	20	200.0	0	86.9	63	137	169.0	2.80	20	
MTBE	152.400	10	200.0	0	76.2	65	123	147.9	3.00	20	
n-Butylbenzene	226.800	10	200.0	0	113	69	137	206.6	9.32	20	
n-Propylbenzene	216.600	10	200.0	0	108	72	129	204.4	5.80	20	
Naphthalene	171.200	10	200.0	0	85.6	54	138	159.2	7.26	20	
o-Xylene	200.600	10	200.0	0	100	80	121	195.8	2.42	20	
sec-Butylbenzene	230.000	10	200.0	0	115	72	127	217.4	5.63	20	
Styrene	217.900	10	200.0	0	109	65	134	217.5	0.184	20	
Tert-amyl methyl ether	181.800	10	200.0	0	90.9	70	130	181.6	0.110	20	
Tert-Butanol	705.900	50	1000	0	70.6	70	130	863.9	20.1	20	R
tert-Butylbenzene	217.200	10	200.0	0	109	70	129	204.6	5.97	20	
Tetrachloroethene	209.100	10	200.0	0	105	66	128	212.7	1.71	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & CHEMICALS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034061
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sample ID: N033988-009BMSD SampType: MSD TestCode: 8260_WP_SF Units: ug/L Prep Date: RunNo: 131693 Client ID: ZZZZZZ Batch ID: CA19VW012 TestNo: EPA 8260B Analysis Date: 2/7/2019 SeqNo: 3283841											
Toluene	210.100	20	200.0	0	105	77	122	214.7	2.17	20	
trans-1,2-Dichloroethene	176.900	10	200.0	0	88.4	63	137	169.6	4.21	20	
trans-1,3-Dichloropropene	192.100	10	200.0	0	96.1	59	135	191.0	0.574	20	
Trichloroethene	228.200	10	200.0	5.200	112	70	127	212.0	7.36	20	
Trichlorofluoromethane	223.100	10	200.0	0	112	57	129	210.7	5.72	20	
Vinyl chloride	185.200	5.0	200.0	0	92.6	50	134	183.2	1.09	20	
Xylenes, Total	651.000	20	600.0	0	108	75	125	627.5	3.68	20	
Surr: 1,2-Dichloroethane-d4	213.500		250.0		85.4	72	119		0		
Surr: 4-Bromofluorobenzene	245.100		250.0		98.0	76	119		0		
Surr: Dibromofluoromethane	247.500		250.0		99.0	85	115		0		
Surr: Toluene-d8	256.700		250.0		103	81	120		0		

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR ENVIRONMENTAL SCIENCE

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 ELAP Cert 2921
 EPA ID CA01638

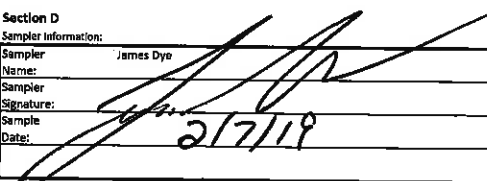
NEVADA | P: 702.307.2659 F: 702.307.2691
 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

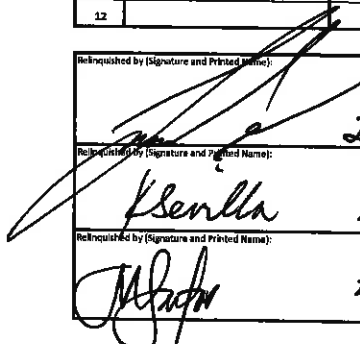
Asset Laboratories
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2659 Fax: 702-307-2691
 Marlon Cartin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

DATE: 2/7/19
 PAGE: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Section D Sampler Information:	
Company: Kinder Morgan Energy Partners Attention: Steve Defibaugh		Report To: Eric Davis		Attention: Steve Defibaugh - Ref. AFE# 81195		Sampler Name: James Dye	
Address: 1100 Town & Country Road Orange, CA 92868		Copy To: Steve Defibaugh		Company: Kinder Morgan Energy Partners		Sampler Signature: 	
Email To: steve_defibaugh@kindermorgan.com eric_davis@krm.com		Purchase Order No.:		Address: 1100 Town & Country Road Orange, CA 92868		Sample Date: <u>2/7/19</u>	
Phone: 714-560-4802 Fax: 714-560-4801		Project Name: SFPP Norwalk		ATL Project Manager: Marlon Cartin			

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING		TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test	V	V	A	Comments
					DATE	TIME							
1	INF-02-07	INFLUENT	WW	G			9		Full VOCs + Organometals (62508)	X	X	X	N034061-01
2									TPH-gas (C4-C12) (80159)				
3									TPH-l (C13-C22), TPH-oil (C13+), Total TPH (80159)				
4													
5													
6													
7													
8													
9													
10													
11													
12													

Relinquished by (Signature and Printed Name):  Date / Time: <u>2/7/19 1100</u>	Relinquished by (Signature and Printed Name): <u>Klevella</u> Date / Time: <u>2/7/19 1108</u>	Turn Around Time (TAT): <input type="checkbox"/> A = Same Day <input type="checkbox"/> B = 24 Hours <input type="checkbox"/> C = 48 Hours <input type="checkbox"/> D = 72 Hours <input checked="" type="checkbox"/> E = 5 Workdays <input type="checkbox"/> F = 10 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction:
Relinquished by (Signature and Printed Name): <u>Klevella</u> Date / Time: <u>2/7/19 1530</u>	Relinquished by (Signature and Printed Name): <u>Morgan</u> Date / Time: <u>2/7/19 1530</u>		
Relinquished by (Signature and Printed Name): <u>Morgan</u> Date / Time: <u>2/7/19 1600</u>	Relinquished by (Signature and Printed Name): <u>JORGAN LOI</u> Date / Time: <u>2/8/19 0800</u>		

Matrix:		Preservatives:			Container Type:				
W = Water	WW = Wastewater	H = HCl	N = HNO3	S = H2SO4	T = Tube	V = VOA	P = Pint	A = Amber	
O = Oil	P = Product	S = Soil	Z = Zn(AC)2	O = NaOH	T = Na2S2O3	J = Jar	B = Tedlar	G = Glass	
Others/Specify:		Others/Specify:			M = Metal			P = Plastic	C = Can

3.1% 1R242 ICE

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.

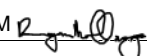
If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 2/7/2019 Workorder: N034061
 Rep sample Temp (Deg C): 3.1 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 9858 Packing Material Used: Bubble Wrap
 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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: RM  2/8/2019

Reviewed By: MBC 2/10/2019

ASSET Laboratories

WORK ORDER Summary

08-Feb-19

WorkOrder: N034061

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 2/7/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N034061-001A	INF-02-07	2/7/2019 10:25:00 AM	2/14/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	V-CA
N034061-001B			2/14/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N034061-001C			2/14/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/14/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N034061-001D			2/14/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N034061-002A	FOLDER	2/14/2019	2/14/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			2/14/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



CHAIN OF CUSTODY RECORD

Client: ASSET Laboratories		Report to: Marlon Cartin	Bill to: Elvira Allegaert	EDD Requirement	QA/QC	Sample Receipt Condition	
Address: 11110 Artesia Blvd Ste B		Company: Same	Address: Same	Excel EDD <input type="checkbox"/>	RTNE <input type="checkbox"/>	1. Chilled <input type="checkbox"/> Y <input type="checkbox"/> N	
Address: Cerritos, CA 90703		Email: marlon@assetlaboratories.com reports.lv@assetlaboratories.com		GeoTracker <input type="checkbox"/>	RWQCB <input type="checkbox"/>	2. Headspace <input type="checkbox"/>	
Phone: 562.219.7435	Fax:	Address: Same	Email to: elvira@assetlaboratories.com	Labspec7 <input checked="" type="checkbox"/>	CalTrans <input type="checkbox"/>	3. Container Intact <input type="checkbox"/>	
Submitted By: Marlon Cartin			PO# N34061A	Others <input type="checkbox"/>	Level III <input type="checkbox"/>	4. Seal Present <input type="checkbox"/>	
Title:	Phone:	Fax:	Phone:	Specify:	LEVEL IV <input type="checkbox"/>	5. IR number	
Signature:	Date:	Sampled by:	Matrix	Global ID:	Regulatory <input type="checkbox"/>	6. Method of Cooling	
I hereby authorize ASSET Labs to perform the tests indicated below:		I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.	Potable <input type="checkbox"/>	Specify State:	Sample Temp:		
Project Name: SFPP Norwalk	Signature:		NPDES <input type="checkbox"/>		Courier:		
Project Number:			Surface <input type="checkbox"/>		Tracking No.		
					Remarks		

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1		INF-02-07	2/7/14	1025	WW				2	V	H	Please hold until further instructions
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Relinquished by (Signature and Printed Name):	Date / Time: 2/7/14 1734	Received by (Signature and Printed Name):	Date / Time:	Turn Around Time (TAT) <input type="checkbox"/> A < 24 Hrs or Same Day TAT <input type="checkbox"/> B = Next Workday <input type="checkbox"/> C = 2 Workdays <input type="checkbox"/> D = 3 Workdays <input checked="" type="checkbox"/> E = Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction: Please analyze for TPHg (C4-C12) Report format: MDL/PCL "J-flagged". EDD Requirement: "CH2MHILL" LabSpec7. Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:		
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:		

Terms
 1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
 2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
 Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
 3. Custom EDD formats will be an additional 3% of the total project price.
 4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
 5. Trip Blanks and Equipment Blanks are billable sample.
 6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
 7. Terms are net 30 Days.
 8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
 9. For subcontract analysis, TAT and Surcharges will vary.
 White = Laboratory Copy
 Yellow = Customer's Copy



800-322-5555
www.gso.com

Ship From

ASSET LABORATORIES
MARIANNE SANTOS
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 543719858

CPS



Ship To

ASSET LABORATORIES
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

COD: \$0.00

Weight: 0 lb(s)

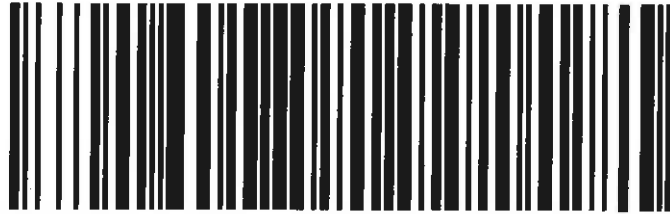
Reference:

C89102A

Delivery Instructions:

HOLD FOR PICK-UP

Signature Type: STANDARD



97915521

Print Date: 2/7/2019 5:38 PM

Package 2 of 2

3.1^oc

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.

Step 2: Fold this page in half.

Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

March 18, 2019

Eric Davis
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:

FAX:

Workorder No.: N034518

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on March 08, 2019 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,

 for

Quennie Manimtim
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"

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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: CH2MHill
Project: SFPP Norwalk
Lab Order: N034518

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.

Sample was analyzed within method holding time.

Results were J-Flag. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" Flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.

Analytical comments for EPA 8260B:

Laboratory Control Sample (LCS) outside recovery criteria for batch P19VW029 on analytes Carbon tetrachloride and Bromomethane also for batch P19VW030 on analyte Bromomethane. NELAC standard allows for three analytes in marginal exceedence based on 51-70 analytes.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) for batch P19VW029 and P19VW030 are outside recovery on some analytes criteria possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) for batch P19VW029 is outside criteria on analytes 1,2,4-Trimethylbenzene and Styrene also for batch P19VW030 on analyte Styrene; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N034518
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N034518-001A	INF-03-08	Wastewater	3/8/2019 10:05:00 AM	3/8/2019	3/18/2019
N034518-001B	INF-03-08	Wastewater	3/8/2019 10:05:00 AM	3/8/2019	3/18/2019
N034518-001C	INF-03-08	Wastewater	3/8/2019 10:05:00 AM	3/8/2019	3/18/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 18-Mar-19

CLIENT: CH2MHill
Lab Order: N034518
Project: SFPP Norwalk
Lab ID: N034518-001

Client Sample ID: INF-03-08
Collection Date: 3/8/2019 10:05:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_190311A	QC Batch: P19VW030	PrepDate:	Analyst: QBM			
1,1,1,2-Tetrachloroethane	ND	0.38	1.0	ug/L	1	3/11/2019 04:34 PM
1,1,1-Trichloroethane	ND	0.38	1.0	ug/L	1	3/11/2019 04:34 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0	ug/L	1	3/11/2019 04:34 PM
1,1,2-Trichloroethane	ND	0.29	1.0	ug/L	1	3/11/2019 04:34 PM
1,1-Dichloroethane	ND	0.45	0.50	ug/L	1	3/11/2019 04:34 PM
1,1-Dichloroethene	ND	0.34	1.0	ug/L	1	3/11/2019 04:34 PM
1,1-Dichloropropene	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
1,2,3-Trichlorobenzene	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
1,2,3-Trichloropropane	ND	0.26	1.0	ug/L	1	3/11/2019 04:34 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0	ug/L	1	3/11/2019 04:34 PM
1,2,4-Trimethylbenzene	ND	0.33	1.0	ug/L	1	3/11/2019 04:34 PM
1,2-Dibromo-3-chloropropane	ND	0.67	2.0	ug/L	1	3/11/2019 04:34 PM
1,2-Dibromoethane	ND	0.31	1.0	ug/L	1	3/11/2019 04:34 PM
1,2-Dichlorobenzene	ND	0.29	1.0	ug/L	1	3/11/2019 04:34 PM
1,2-Dichloroethane	ND	0.29	0.50	ug/L	1	3/11/2019 04:34 PM
1,2-Dichloropropane	ND	0.24	1.0	ug/L	1	3/11/2019 04:34 PM
1,3,5-Trimethylbenzene	ND	0.27	1.0	ug/L	1	3/11/2019 04:34 PM
1,3-Dichlorobenzene	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
1,3-Dichloropropane	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
1,4-Dichlorobenzene	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
2,2-Dichloropropane	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
2-Butanone	ND	4.9	10	ug/L	1	3/11/2019 04:34 PM
2-Chlorotoluene	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
4-Chlorotoluene	ND	0.30	1.0	ug/L	1	3/11/2019 04:34 PM
4-Isopropyltoluene	ND	0.33	1.0	ug/L	1	3/11/2019 04:34 PM
4-Methyl-2-pentanone	ND	3.2	10	ug/L	1	3/11/2019 04:34 PM
Acetone	ND	9.7	10	ug/L	1	3/11/2019 04:34 PM
Benzene	ND	0.34	1.0	ug/L	1	3/11/2019 04:34 PM
Bromobenzene	ND	0.25	1.0	ug/L	1	3/11/2019 04:34 PM
Bromochloromethane	ND	0.41	1.0	ug/L	1	3/11/2019 04:34 PM
Bromodichloromethane	ND	0.38	1.0	ug/L	1	3/11/2019 04:34 PM
Bromoform	ND	0.39	1.0	ug/L	1	3/11/2019 04:34 PM
Bromomethane	ND	0.79	1.0	ug/L	1	3/11/2019 04:34 PM
Carbon disulfide	ND	0.81	1.0	ug/L	1	3/11/2019 04:34 PM
Carbon tetrachloride	ND	0.40	0.50	ug/L	1	3/11/2019 04:34 PM
Chlorobenzene	ND	0.30	1.0	ug/L	1	3/11/2019 04:34 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 18-Mar-19

CLIENT: CH2MHill
Lab Order: N034518
Project: SFPP Norwalk
Lab ID: N034518-001

Client Sample ID: INF-03-08
Collection Date: 3/8/2019 10:05:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	QC Batch:	PrepDate:	Analyst:			
NV00922-MS5_190311A	P19VW030		QBM			
Chloroethane	ND	0.97	1.0	ug/L	1	3/11/2019 04:34 PM
Chloroform	ND	0.27	1.0	ug/L	1	3/11/2019 04:34 PM
Chloromethane	ND	0.36	1.0	ug/L	1	3/11/2019 04:34 PM
cis-1,2-Dichloroethene	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
cis-1,3-Dichloropropene	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
Di-isopropyl ether	3.8	0.079	1.0	ug/L	1	3/11/2019 04:34 PM
Dibromochloromethane	ND	0.41	1.0	ug/L	1	3/11/2019 04:34 PM
Dibromomethane	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
Dichlorodifluoromethane	ND	0.29	1.0	ug/L	1	3/11/2019 04:34 PM
Ethyl tert-butyl ether	ND	0.30	1.0	ug/L	1	3/11/2019 04:34 PM
Ethylbenzene	ND	0.31	1.0	ug/L	1	3/11/2019 04:34 PM
Freon-113	ND	0.35	1.0	ug/L	1	3/11/2019 04:34 PM
Hexachlorobutadiene	ND	0.30	1.0	ug/L	1	3/11/2019 04:34 PM
Isopropylbenzene	ND	0.26	1.0	ug/L	1	3/11/2019 04:34 PM
m,p-Xylene	0.25	0.23	1.0	J ug/L	1	3/11/2019 04:34 PM
Methylene chloride	ND	1.9	2.0	ug/L	1	3/11/2019 04:34 PM
MTBE	1.7	0.34	1.0	ug/L	1	3/11/2019 04:34 PM
n-Butylbenzene	ND	0.34	1.0	ug/L	1	3/11/2019 04:34 PM
n-Propylbenzene	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
Naphthalene	ND	0.42	1.0	ug/L	1	3/11/2019 04:34 PM
o-Xylene	ND	0.31	1.0	ug/L	1	3/11/2019 04:34 PM
sec-Butylbenzene	ND	0.32	1.0	ug/L	1	3/11/2019 04:34 PM
Styrene	ND	0.21	1.0	ug/L	1	3/11/2019 04:34 PM
Tert-amyl methyl ether	ND	0.26	1.0	ug/L	1	3/11/2019 04:34 PM
Tert-Butanol	22	2.4	5.0	ug/L	1	3/11/2019 04:34 PM
tert-Butylbenzene	ND	0.28	1.0	ug/L	1	3/11/2019 04:34 PM
Tetrachloroethene	ND	0.30	1.0	ug/L	1	3/11/2019 04:34 PM
Toluene	ND	0.46	2.0	ug/L	1	3/11/2019 04:34 PM
trans-1,2-Dichloroethene	ND	0.40	1.0	ug/L	1	3/11/2019 04:34 PM
trans-1,3-Dichloropropene	ND	0.25	1.0	ug/L	1	3/11/2019 04:34 PM
Trichloroethene	ND	0.37	1.0	ug/L	1	3/11/2019 04:34 PM
Trichlorofluoromethane	ND	0.37	1.0	ug/L	1	3/11/2019 04:34 PM
Vinyl chloride	ND	0.29	0.50	ug/L	1	3/11/2019 04:34 PM
Xylenes, Total	ND	1.5	2.0	ug/L	1	3/11/2019 04:34 PM
Surr: 1,2-Dichloroethane-d4	109	0	72-119	%REC	1	3/11/2019 04:34 PM
Surr: 4-Bromofluorobenzene	104	0	76-119	%REC	1	3/11/2019 04:34 PM

Qualifiers: B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
Results are wet unless otherwise specified

E Value above quantitation range
J Analyte detected below quantitation limits
S Spike/Surrogate outside of limits due to matrix interference
DO Surrogate Diluted Out



CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 18-Mar-19

CLIENT: CH2MHill	Client Sample ID: INF-03-08
Lab Order: N034518	Collection Date: 3/8/2019 10:05:00 AM
Project: SFPP Norwalk	Matrix: WASTEWATER
Lab ID: N034518-001	

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: NV00922-MS5_190311A	QC Batch: P19VW030	PrepDate:	Analyst: QBM
Surr: Dibromofluoromethane	108 0	85-115	%REC 1 3/11/2019 04:34 PM
Surr: Toluene-d8	105 0	81-120	%REC 1 3/11/2019 04:34 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: NV00922-GC3_190311A	QC Batch: 72827	PrepDate: 3/11/2019	Analyst: MGB
TPH-Diesel (C13-C22)	270 16	26	ug/L 1 3/11/2019 10:31 PM
TPH-Oil (C23-C36)	110 14	26	ug/L 1 3/11/2019 10:31 PM
Surr: Octacosane	86.0 0	26-152	%REC 1 3/11/2019 10:31 PM
Surr: p-Terphenyl	83.2 0	57-132	%REC 1 3/11/2019 10:31 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: NV00922-GC4_190311A	QC Batch: E19VW013	PrepDate:	Analyst: QBM
TPH-Gasoline (C4-C12)	38 21	50	J ug/L 1 3/11/2019 06:06 PM
Surr: Chlorobenzene - d5	112 0	74-138	%REC 1 3/11/2019 06:06 PM

TOTAL TPH

EPA 8015B

RunID: NV00922-GC3_190311A	QC Batch: R132415	PrepDate:	Analyst: MGB
Total TPH	420 21	100	ug/L 1 3/11/2019

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	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

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-72827	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 3/11/2019	RunNo: 132415						
Client ID: PBW	Batch ID: 72827	TestNo: EPA 8015B EPA 3510C		Analysis Date: 3/11/2019	SeqNo: 3314350						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	ND	25									
Surr: Octacosane	64.101		80.00		80.1	26	152				
Surr: p-Terphenyl	67.496		80.00		84.4	57	132				

Qualifiers:

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



ASSET LABORATORIES
ANALYTICAL SERVICES FOR CHEMICAL, ENVIRONMENTAL, AND FORENSIC

CALIFORNIA | P:562.219.7435 F:562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R132415	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 132415						
Client ID: PBW	Batch ID: R132415	TestNo: EPA 8015B		Analysis Date: 3/11/2019	SeqNo: 3315041						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	29.000	100									J

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034518
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: E190311LCS	SampType: LCS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 132411							
Client ID: LCSW	Batch ID: E19VW013	TestNo: EPA 8015B	Analysis Date: 3/11/2019	SeqNo: 3314291							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	985.000	50	1000	0	98.5	67	136				
Surr: Chlorobenzene - d5	50351.000		50000		101	74	138				

Sample ID: E190311MB1	SampType: MBLK	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 132411							
Client ID: PBW	Batch ID: E19VW013	TestNo: EPA 8015B	Analysis Date: 3/11/2019	SeqNo: 3314292							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	29.000	50									J
Surr: Chlorobenzene - d5	55239.000		50000		110	74	138				

Sample ID: N034519-005BMS	SampType: MS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 132411							
Client ID: ZZZZZ	Batch ID: E19VW013	TestNo: EPA 8015B	Analysis Date: 3/11/2019	SeqNo: 3314299							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	939.000	50	1000	25.00	91.4	67	136				
Surr: Chlorobenzene - d5	52948.000		50000		106	74	138				

Sample ID: N034519-005BMSD	SampType: MSD	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 132411							
Client ID: ZZZZZ	Batch ID: E19VW013	TestNo: EPA 8015B	Analysis Date: 3/11/2019	SeqNo: 3314300							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	994.000	50	1000	25.00	96.9	67	136	939.0	5.69	30	
Surr: Chlorobenzene - d5	51757.000		50000		104	74	138		0	0	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND PETROLEUM INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398
Client ID: LCSW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	23.250	1.0	20.00	0	116	81	129				
1,1,1-Trichloroethane	22.480	1.0	20.00	0	112	67	132				
1,1,2,2-Tetrachloroethane	19.690	1.0	20.00	0	98.4	63	128				
1,1,2-Trichloroethane	19.490	1.0	20.00	0	97.5	75	125				
1,1-Dichloroethane	20.590	0.50	20.00	0	103	69	133				
1,1-Dichloroethene	19.450	1.0	20.00	0	97.3	68	130				
1,1-Dichloropropene	20.880	1.0	20.00	0	104	73	132				
1,2,3-Trichlorobenzene	20.430	1.0	20.00	0	102	67	137				
1,2,3-Trichloropropane	19.260	1.0	20.00	0	96.3	73	124				
1,2,4-Trichlorobenzene	20.360	1.0	20.00	0	102	66	134				
1,2,4-Trimethylbenzene	20.470	1.0	20.00	0	102	74	132				
1,2-Dibromo-3-chloropropane	19.640	2.0	20.00	0	98.2	50	132				
1,2-Dibromoethane	20.380	1.0	20.00	0	102	80	121				
1,2-Dichlorobenzene	20.320	1.0	20.00	0	102	71	122				
1,2-Dichloroethane	20.510	0.50	20.00	0	103	69	132				
1,2-Dichloropropane	20.850	1.0	20.00	0	104	75	125				
1,3,5-Trimethylbenzene	21.840	1.0	20.00	0	109	74	131				
1,3-Dichlorobenzene	20.490	1.0	20.00	0	102	75	124				
1,3-Dichloropropane	19.680	1.0	20.00	0	98.4	73	126				
1,4-Dichlorobenzene	20.450	1.0	20.00	0	102	74	123				
2,2-Dichloropropane	21.770	1.0	20.00	0	109	69	137				
2-Butanone	239.690	10	200.0	0	120	49	136				
2-Chlorotoluene	21.140	1.0	20.00	0	106	73	126				
4-Chlorotoluene	20.910	1.0	20.00	0	105	74	128				
4-Isopropyltoluene	20.870	1.0	20.00	0	104	73	130				
4-Methyl-2-pentanone	215.110	10	200.0	0	108	58	134				
Acetone	252.900	10	200.0	0	126	40	135				
Benzene	20.520	1.0	20.00	0	103	81	122				
Bromobenzene	19.880	1.0	20.00	0	99.4	76	124				
Bromochloromethane	19.570	1.0	20.00	0	97.9	65	129				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 • CHEMISTRY • ENVIRONMENTAL • MICROBIOLOGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398
Client ID: LCSW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313432

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	23.490	1.0	20.00	0	117	76	121				
Bromoform	21.520	1.0	20.00	0	108	69	128				
Bromomethane	30.430	1.0	20.00	0	152	53	141				S
Carbon disulfide	20.510	1.0	20.00	0	103	75	125				
Carbon tetrachloride	28.180	0.50	20.00	0	141	66	138				S
Chlorobenzene	20.170	1.0	20.00	0	101	81	122				
Chloroethane	21.110	1.0	20.00	0	106	58	133				
Chloroform	19.460	1.0	20.00	0	97.3	69	128				
Chloromethane	25.550	1.0	20.00	0	128	56	131				
cis-1,2-Dichloroethene	18.940	1.0	20.00	0	94.7	72	126				
cis-1,3-Dichloropropene	20.760	1.0	20.00	0	104	69	131				
Di-isopropyl ether	20.470	1.0	20.00	0	102	70	130				
Dibromochloromethane	22.030	1.0	20.00	0	110	66	133				
Dibromomethane	19.280	1.0	20.00	0	96.4	76	125				
Dichlorodifluoromethane	20.750	1.0	20.00	0	104	53	153				
Ethyl tert-butyl ether	20.020	1.0	20.00	0	100	70	130				
Ethylbenzene	20.310	1.0	20.00	0	102	73	127				
Freon-113	21.270	1.0	20.00	0	106	75	125				
Hexachlorobutadiene	21.180	1.0	20.00	0	106	67	131				
Isopropylbenzene	21.030	1.0	20.00	0	105	75	127				
m,p-Xylene	43.050	1.0	40.00	0	108	76	128				
Methylene chloride	20.080	2.0	20.00	0	100	63	137				
MTBE	18.240	1.0	20.00	0	91.2	65	123				
n-Butylbenzene	21.560	1.0	20.00	0	108	69	137				
n-Propylbenzene	21.400	1.0	20.00	0	107	72	129				
Naphthalene	18.530	1.0	20.00	0	92.6	54	138				
o-Xylene	20.780	1.0	20.00	0	104	80	121				
sec-Butylbenzene	21.140	1.0	20.00	0	106	72	127				
Styrene	19.960	1.0	20.00	0	99.8	65	134				
Tert-amyl methyl ether	19.230	1.0	20.00	0	96.2	70	130				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT AND ENERGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034518
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: LCSW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313432						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	93.900	5.0	100.0	0	93.9	70	130				
tert-Butylbenzene	20.880	1.0	20.00	0	104	70	129				
Tetrachloroethene	21.540	1.0	20.00	0	108	66	128				
Toluene	20.540	2.0	20.00	0	103	77	122				
trans-1,2-Dichloroethene	21.980	1.0	20.00	0	110	63	137				
trans-1,3-Dichloropropene	21.590	1.0	20.00	0	108	59	135				
Trichloroethene	20.270	1.0	20.00	0	101	70	127				
Trichlorofluoromethane	21.730	1.0	20.00	0	109	57	129				
Vinyl chloride	20.160	0.50	20.00	0	101	50	134				
Xylenes, Total	63.830	2.0	60.00	0	106	75	125				
Surr: 1,2-Dichloroethane-d4	26.880		25.00		108	72	119				
Surr: 4-Bromofluorobenzene	25.700		25.00		103	76	119				
Surr: Dibromofluoromethane	25.780		25.00		103	85	115				
Surr: Toluene-d8	26.060		25.00		104	81	120				

Sample ID: N034519-004AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313433						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.460	1.0	20.00	0	122	81	129				
1,1,1-Trichloroethane	22.800	1.0	20.00	0	114	67	132				
1,1,2,2-Tetrachloroethane	20.920	1.0	20.00	0	105	63	128				
1,1,2-Trichloroethane	20.460	1.0	20.00	0	102	75	125				
1,1-Dichloroethane	21.470	0.50	20.00	0	107	69	133				
1,1-Dichloroethene	19.850	1.0	20.00	0	99.2	68	130				
1,1-Dichloropropene	21.590	1.0	20.00	0	108	73	132				
1,2,3-Trichlorobenzene	21.550	1.0	20.00	0	108	67	137				
1,2,3-Trichloropropane	20.220	1.0	20.00	0	101	73	124				
1,2,4-Trichlorobenzene	20.800	1.0	20.00	0	104	66	134				
1,2,4-Trimethylbenzene	16.780	1.0	20.00	0	83.9	74	132				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & CHEMICALS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034518
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034519-004AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	20.070	2.0	20.00	0	100	50	132				
1,2-Dibromoethane	20.900	1.0	20.00	0	104	80	121				
1,2-Dichlorobenzene	21.090	1.0	20.00	0	105	71	122				
1,2-Dichloroethane	21.700	0.50	20.00	0	108	69	132				
1,2-Dichloropropane	21.560	1.0	20.00	0	108	75	125				
1,3,5-Trimethylbenzene	20.600	1.0	20.00	0	103	74	131				
1,3-Dichlorobenzene	20.840	1.0	20.00	0	104	75	124				
1,3-Dichloropropane	20.350	1.0	20.00	0	102	73	126				
1,4-Dichlorobenzene	20.530	1.0	20.00	0	103	74	123				
2,2-Dichloropropane	23.740	1.0	20.00	0	119	69	137				
2-Butanone	149.240	10	200.0	0	74.6	49	136				
2-Chlorotoluene	21.310	1.0	20.00	0	107	73	126				
4-Chlorotoluene	21.140	1.0	20.00	0	106	74	128				
4-Isopropyltoluene	20.960	1.0	20.00	0	105	73	130				
4-Methyl-2-pentanone	224.790	10	200.0	0	112	58	134				
Acetone	103.240	10	200.0	0	51.6	40	135				
Benzene	21.760	1.0	20.00	0	109	81	122				
Bromobenzene	19.960	1.0	20.00	0	99.8	76	124				
Bromochloromethane	19.890	1.0	20.00	0	99.4	65	129				
Bromodichloromethane	24.570	1.0	20.00	0	123	76	121				S
Bromoform	22.290	1.0	20.00	0	111	69	128				
Bromomethane	30.440	1.0	20.00	0	152	53	141				S
Carbon disulfide	21.250	1.0	20.00	0	106	75	125				
Carbon tetrachloride	29.430	0.50	20.00	0	147	66	138				S
Chlorobenzene	20.620	1.0	20.00	0	103	81	122				
Chloroethane	22.000	1.0	20.00	0	110	58	133				
Chloroform	19.710	1.0	20.00	0	98.6	69	128				
Chloromethane	26.530	1.0	20.00	0	133	56	131				S
cis-1,2-Dichloroethene	19.240	1.0	20.00	0	96.2	72	126				
cis-1,3-Dichloropropene	21.800	1.0	20.00	0	109	69	131				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034519-004AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313433						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	21.320	1.0	20.00	0	107	70	130				
Dibromochloromethane	23.070	1.0	20.00	0	115	66	133				
Dibromomethane	20.960	1.0	20.00	0	105	76	125				
Dichlorodifluoromethane	22.370	1.0	20.00	0	112	53	153				
Ethyl tert-butyl ether	21.130	1.0	20.00	0	106	70	130				
Ethylbenzene	20.770	1.0	20.00	0	104	73	127				
Freon-113	22.070	1.0	20.00	0	110	75	125				
Hexachlorobutadiene	21.750	1.0	20.00	0	109	67	131				
Isopropylbenzene	20.820	1.0	20.00	0	104	75	127				
m,p-Xylene	42.650	1.0	40.00	0	107	76	128				
Methylene chloride	20.550	2.0	20.00	0	103	63	137				
MTBE	19.540	1.0	20.00	0	97.7	65	123				
n-Butylbenzene	21.940	1.0	20.00	0	110	69	137				
n-Propylbenzene	21.690	1.0	20.00	0	108	72	129				
Naphthalene	18.330	1.0	20.00	0	91.7	54	138				
o-Xylene	20.760	1.0	20.00	0	104	80	121				
sec-Butylbenzene	21.650	1.0	20.00	0	108	72	127				
Styrene	12.790	1.0	20.00	0	64.0	65	134				S
Tert-amyl methyl ether	20.230	1.0	20.00	0	101	70	130				
Tert-Butanol	103.750	5.0	100.0	0	104	70	130				
tert-Butylbenzene	21.440	1.0	20.00	0	107	70	129				
Tetrachloroethene	21.490	1.0	20.00	0	107	66	128				
Toluene	21.260	2.0	20.00	0	106	77	122				
trans-1,2-Dichloroethene	24.410	1.0	20.00	0	122	63	137				
trans-1,3-Dichloropropene	22.710	1.0	20.00	0	114	59	135				
Trichloroethene	21.430	1.0	20.00	0	107	70	127				
Trichlorofluoromethane	22.800	1.0	20.00	0	114	57	129				
Vinyl chloride	21.520	0.50	20.00	0	108	50	134				
Xylenes, Total	63.410	2.0	60.00	0	106	75	125				
Surr: 1,2-Dichloroethane-d4	27.700		25.00		111	72	119				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & CHEMICALS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034519-004AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B	Analysis Date: 3/9/2019	SeqNo: 3313433							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.400		25.00		106	76	119				
Surr: Dibromofluoromethane	26.810		25.00		107	85	115				
Surr: Toluene-d8	27.150		25.00		109	81	120				

Sample ID: N034519-004AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B	Analysis Date: 3/9/2019	SeqNo: 3313434							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.680	1.0	20.00	0	123	81	129	24.46	0.895	20	
1,1,1-Trichloroethane	25.030	1.0	20.00	0	125	67	132	22.80	9.32	20	
1,1,2,2-Tetrachloroethane	21.170	1.0	20.00	0	106	63	128	20.92	1.19	20	
1,1,2-Trichloroethane	20.550	1.0	20.00	0	103	75	125	20.46	0.439	20	
1,1-Dichloroethane	22.590	0.50	20.00	0	113	69	133	21.47	5.08	20	
1,1-Dichloroethene	20.130	1.0	20.00	0	101	68	130	19.85	1.40	20	
1,1-Dichloropropene	22.410	1.0	20.00	0	112	73	132	21.59	3.73	20	
1,2,3-Trichlorobenzene	20.580	1.0	20.00	0	103	67	137	21.55	4.60	20	
1,2,3-Trichloropropane	19.790	1.0	20.00	0	99.0	73	124	20.22	2.15	20	
1,2,4-Trichlorobenzene	20.660	1.0	20.00	0	103	66	134	20.80	0.675	20	
1,2,4-Trimethylbenzene	10.470	1.0	20.00	0	52.4	74	132	16.78	46.3	20	SR
1,2-Dibromo-3-chloropropane	19.840	2.0	20.00	0	99.2	50	132	20.07	1.15	20	
1,2-Dibromoethane	21.600	1.0	20.00	0	108	80	121	20.90	3.29	20	
1,2-Dichlorobenzene	20.780	1.0	20.00	0	104	71	122	21.09	1.48	20	
1,2-Dichloroethane	22.120	0.50	20.00	0	111	69	132	21.70	1.92	20	
1,2-Dichloropropane	21.480	1.0	20.00	0	107	75	125	21.56	0.372	20	
1,3,5-Trimethylbenzene	19.200	1.0	20.00	0	96.0	74	131	20.60	7.04	20	
1,3-Dichlorobenzene	21.180	1.0	20.00	0	106	75	124	20.84	1.62	20	
1,3-Dichloropropane	20.780	1.0	20.00	0	104	73	126	20.35	2.09	20	
1,4-Dichlorobenzene	20.980	1.0	20.00	0	105	74	123	20.53	2.17	20	
2,2-Dichloropropane	25.090	1.0	20.00	0	125	69	137	23.74	5.53	20	
2-Butanone	149.790	10	200.0	0	74.9	49	136	149.2	0.368	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND ENVIRONMENTAL INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034519-004AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313434						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	21.860	1.0	20.00	0	109	73	126	21.31	2.55	20	
4-Chlorotoluene	22.290	1.0	20.00	0	111	74	128	21.14	5.30	20	
4-Isopropyltoluene	20.500	1.0	20.00	0	103	73	130	20.96	2.22	20	
4-Methyl-2-pentanone	223.180	10	200.0	0	112	58	134	224.8	0.719	20	
Acetone	104.670	10	200.0	0	52.3	40	135	103.2	1.38	20	
Benzene	22.360	1.0	20.00	0	112	81	122	21.76	2.72	20	
Bromobenzene	20.530	1.0	20.00	0	103	76	124	19.96	2.82	20	
Bromochloromethane	19.450	1.0	20.00	0	97.3	65	129	19.89	2.24	20	
Bromodichloromethane	24.210	1.0	20.00	0	121	76	121	24.57	1.48	20	S
Bromoform	23.800	1.0	20.00	0	119	69	128	22.29	6.55	20	
Bromomethane	32.530	1.0	20.00	0	163	53	141	30.44	6.64	20	S
Carbon disulfide	22.580	1.0	20.00	0	113	75	125	21.25	6.07	20	
Carbon tetrachloride	32.120	0.50	20.00	0	161	66	138	29.43	8.74	20	S
Chlorobenzene	21.640	1.0	20.00	0	108	81	122	20.62	4.83	20	
Chloroethane	22.480	1.0	20.00	0	112	58	133	22.00	2.16	20	
Chloroform	20.350	1.0	20.00	0	102	69	128	19.71	3.20	20	
Chloromethane	27.790	1.0	20.00	0	139	56	131	26.53	4.64	20	S
cis-1,2-Dichloroethene	20.260	1.0	20.00	0	101	72	126	19.24	5.16	20	
cis-1,3-Dichloropropene	21.760	1.0	20.00	0	109	69	131	21.80	0.184	20	
Di-isopropyl ether	21.610	1.0	20.00	0	108	70	130	21.32	1.35	20	
Dibromochloromethane	22.740	1.0	20.00	0	114	66	133	23.07	1.44	20	
Dibromomethane	21.140	1.0	20.00	0	106	76	125	20.96	0.855	20	
Dichlorodifluoromethane	23.830	1.0	20.00	0	119	53	153	22.37	6.32	20	
Ethyl tert-butyl ether	21.080	1.0	20.00	0	105	70	130	21.13	0.237	20	
Ethylbenzene	22.050	1.0	20.00	0	110	73	127	20.77	5.98	20	
Freon-113	23.650	1.0	20.00	0	118	75	125	22.07	6.91	20	
Hexachlorobutadiene	22.860	1.0	20.00	0	114	67	131	21.75	4.98	20	
Isopropylbenzene	22.340	1.0	20.00	0	112	75	127	20.82	7.04	20	
m,p-Xylene	43.090	1.0	40.00	0	108	76	128	42.65	1.03	20	
Methylene chloride	19.990	2.0	20.00	0	100	63	137	20.55	2.76	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & CHEMICALS

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034519-004AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: ZZZZZ	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313434						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	19.500	1.0	20.00	0	97.5	65	123	19.54	0.205	20	
n-Butylbenzene	22.740	1.0	20.00	0	114	69	137	21.94	3.58	20	
n-Propylbenzene	23.120	1.0	20.00	0	116	72	129	21.69	6.38	20	
Naphthalene	16.860	1.0	20.00	0	84.3	54	138	18.33	8.35	20	
o-Xylene	21.690	1.0	20.00	0	108	80	121	20.76	4.38	20	
sec-Butylbenzene	22.710	1.0	20.00	0	114	72	127	21.65	4.78	20	
Styrene	5.840	1.0	20.00	0	29.2	65	134	12.79	74.6	20	SR
Tert-amyl methyl ether	20.200	1.0	20.00	0	101	70	130	20.23	0.148	20	
Tert-Butanol	100.350	5.0	100.0	0	100	70	130	103.8	3.33	20	
tert-Butylbenzene	23.050	1.0	20.00	0	115	70	129	21.44	7.24	20	
Tetrachloroethene	23.490	1.0	20.00	0	117	66	128	21.49	8.89	20	
Toluene	21.760	2.0	20.00	0	109	77	122	21.26	2.32	20	
trans-1,2-Dichloroethene	23.030	1.0	20.00	0	115	63	137	24.41	5.82	20	
trans-1,3-Dichloropropene	21.860	1.0	20.00	0	109	59	135	22.71	3.81	20	
Trichloroethene	22.090	1.0	20.00	0	110	70	127	21.43	3.03	20	
Trichlorofluoromethane	25.150	1.0	20.00	0	126	57	129	22.80	9.80	20	
Vinyl chloride	22.590	0.50	20.00	0	113	50	134	21.52	4.85	20	
Xylenes, Total	64.780	2.0	60.00	0	108	75	125	63.41	2.14	20	
Surr: 1,2-Dichloroethane-d4	27.340		25.00		109	72	119		0		
Surr: 4-Bromofluorobenzene	25.860		25.00		103	76	119		0		
Surr: Dibromofluoromethane	26.590		25.00		106	85	115		0		
Surr: Toluene-d8	26.440		25.00		106	81	120		0		

Sample ID: P190309MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: PBW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313437						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	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 |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND PETROLEUM INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: PBW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313437						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	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 |
| J Analyte detected below quantitation limits | 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 FOR CHEMICAL, ENVIRONMENTAL, AND FORENSIC

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: PBW	Batch ID: P19VW029	TestNo: EPA 8260B		Analysis Date: 3/9/2019	SeqNo: 3313437						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	0.280	1.0									J
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethyl tert-butyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	2.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	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 |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND ENVIRONMENTAL INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190309MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132398						
Client ID: PBW	Batch ID: P19VW029	TestNo: EPA 8260B	Analysis Date: 3/9/2019	SeqNo: 3313437							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	28.330		25.00		113	72	119				
Surr: 4-Bromofluorobenzene	25.070		25.00		100	76	119				
Surr: Dibromofluoromethane	27.750		25.00		111	85	115				
Surr: Toluene-d8	26.470		25.00		106	81	120				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR CHEMICAL, ENVIRONMENTAL, AND FORENSIC

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: LCSW	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314751						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	23.430	1.0	20.00	0	117	81	129				
1,1,1-Trichloroethane	21.240	1.0	20.00	0	106	67	132				
1,1,2,2-Tetrachloroethane	19.600	1.0	20.00	0	98.0	63	128				
1,1,2-Trichloroethane	19.450	1.0	20.00	0	97.3	75	125				
1,1-Dichloroethane	20.650	0.50	20.00	0	103	69	133				
1,1-Dichloroethene	19.140	1.0	20.00	0	95.7	68	130				
1,1-Dichloropropene	19.830	1.0	20.00	0	99.2	73	132				
1,2,3-Trichlorobenzene	20.400	1.0	20.00	0	102	67	137				
1,2,3-Trichloropropane	18.980	1.0	20.00	0	94.9	73	124				
1,2,4-Trichlorobenzene	20.050	1.0	20.00	0	100	66	134				
1,2,4-Trimethylbenzene	19.750	1.0	20.00	0	98.8	74	132				
1,2-Dibromo-3-chloropropane	19.600	2.0	20.00	0	98.0	50	132				
1,2-Dibromoethane	20.920	1.0	20.00	0	105	80	121				
1,2-Dichlorobenzene	19.820	1.0	20.00	0	99.1	71	122				
1,2-Dichloroethane	21.490	0.50	20.00	0	107	69	132				
1,2-Dichloropropane	20.610	1.0	20.00	0	103	75	125				
1,3,5-Trimethylbenzene	20.190	1.0	20.00	0	101	74	131				
1,3-Dichlorobenzene	19.710	1.0	20.00	0	98.6	75	124				
1,3-Dichloropropane	19.700	1.0	20.00	0	98.5	73	126				
1,4-Dichlorobenzene	19.850	1.0	20.00	0	99.2	74	123				
2,2-Dichloropropane	20.570	1.0	20.00	0	103	69	137				
2-Butanone	200.090	10	200.0	0	100	49	136				
2-Chlorotoluene	20.250	1.0	20.00	0	101	73	126				
4-Chlorotoluene	19.920	1.0	20.00	0	99.6	74	128				
4-Isopropyltoluene	19.130	1.0	20.00	0	95.7	73	130				
4-Methyl-2-pentanone	214.950	10	200.0	0	107	58	134				
Acetone	195.440	10	200.0	0	97.7	40	135				
Benzene	20.410	1.0	20.00	0	102	81	122				
Bromobenzene	19.380	1.0	20.00	0	96.9	76	124				
Bromochloromethane	19.280	1.0	20.00	0	96.4	65	129				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 • CHEMISTRY • ENVIRONMENTAL • MICROBIOLOGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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 NVO0922
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: LCSW	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314751						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	23.560	1.0	20.00	0	118	76	121				
Bromoform	21.720	1.0	20.00	0	109	69	128				
Bromomethane	32.430	1.0	20.00	0	162	53	141				S
Carbon disulfide	19.760	1.0	20.00	0	98.8	75	125				
Carbon tetrachloride	25.760	0.50	20.00	0	129	66	138				
Chlorobenzene	19.770	1.0	20.00	0	98.8	81	122				
Chloroethane	19.820	1.0	20.00	0	99.1	58	133				
Chloroform	19.360	1.0	20.00	0	96.8	69	128				
Chloromethane	24.570	1.0	20.00	0	123	56	131				
cis-1,2-Dichloroethene	19.160	1.0	20.00	0	95.8	72	126				
cis-1,3-Dichloropropene	21.250	1.0	20.00	0	106	69	131				
Di-isopropyl ether	20.880	1.0	20.00	0	104	70	130				
Dibromochloromethane	21.790	1.0	20.00	0	109	66	133				
Dibromomethane	20.470	1.0	20.00	0	102	76	125				
Dichlorodifluoromethane	19.490	1.0	20.00	0	97.5	53	153				
Ethyl tert-butyl ether	20.310	1.0	20.00	0	102	70	130				
Ethylbenzene	19.060	1.0	20.00	0	95.3	73	127				
Freon-113	20.020	1.0	20.00	0	100	75	125				
Hexachlorobutadiene	19.670	1.0	20.00	0	98.4	67	131				
Isopropylbenzene	19.310	1.0	20.00	0	96.6	75	127				
m,p-Xylene	40.280	1.0	40.00	0	101	76	128				
Methylene chloride	19.930	2.0	20.00	0	99.7	63	137				
MTBE	19.120	1.0	20.00	0	95.6	65	123				
n-Butylbenzene	19.430	1.0	20.00	0	97.2	69	137				
n-Propylbenzene	19.740	1.0	20.00	0	98.7	72	129				
Naphthalene	18.480	1.0	20.00	0	92.4	54	138				
o-Xylene	19.710	1.0	20.00	0	98.6	80	121				
sec-Butylbenzene	19.510	1.0	20.00	0	97.6	72	127				
Styrene	19.610	1.0	20.00	0	98.0	65	134				
Tert-amyl methyl ether	19.890	1.0	20.00	0	99.4	70	130				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT AND ENERGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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 NVO0922
ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: LCSW	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314751						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	101.940	5.0	100.0	0	102	70	130				
tert-Butylbenzene	19.450	1.0	20.00	0	97.3	70	129				
Tetrachloroethene	19.830	1.0	20.00	0	99.2	66	128				
Toluene	20.180	2.0	20.00	0	101	77	122				
trans-1,2-Dichloroethene	22.430	1.0	20.00	0	112	63	137				
trans-1,3-Dichloropropene	21.860	1.0	20.00	0	109	59	135				
Trichloroethene	19.320	1.0	20.00	0	96.6	70	127				
Trichlorofluoromethane	20.400	1.0	20.00	0	102	57	129				
Vinyl chloride	20.100	0.50	20.00	0	101	50	134				
Xylenes, Total	59.990	2.0	60.00	0	100	75	125				
Surr: 1,2-Dichloroethane-d4	27.230		25.00		109	72	119				
Surr: 4-Bromofluorobenzene	25.340		25.00		101	76	119				
Surr: Dibromofluoromethane	27.310		25.00		109	85	115				
Surr: Toluene-d8	26.400		25.00		106	81	120				

Sample ID: N034505-003AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: ZZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314752						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	24.170	1.0	20.00	0	121	81	129				
1,1,1-Trichloroethane	22.940	1.0	20.00	0	115	67	132				
1,1,2,2-Tetrachloroethane	19.980	1.0	20.00	0	99.9	63	128				
1,1,2-Trichloroethane	20.450	1.0	20.00	0	102	75	125				
1,1-Dichloroethane	22.090	0.50	20.00	0	110	69	133				
1,1-Dichloroethene	19.260	1.0	20.00	0	96.3	68	130				
1,1-Dichloropropene	20.540	1.0	20.00	0	103	73	132				
1,2,3-Trichlorobenzene	19.890	1.0	20.00	0	99.4	67	137				
1,2,3-Trichloropropane	19.210	1.0	20.00	0	96.0	73	124				
1,2,4-Trichlorobenzene	20.770	1.0	20.00	0	104	66	134				
1,2,4-Trimethylbenzene	16.700	1.0	20.00	0	83.5	74	132				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034505-003AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420
Client ID: ZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	19.430	2.0	20.00	0	97.2	50	132				
1,2-Dibromoethane	20.940	1.0	20.00	0	105	80	121				
1,2-Dichlorobenzene	20.030	1.0	20.00	0	100	71	122				
1,2-Dichloroethane	22.020	0.50	20.00	0	110	69	132				
1,2-Dichloropropane	21.000	1.0	20.00	0	105	75	125				
1,3,5-Trimethylbenzene	20.000	1.0	20.00	0	100	74	131				
1,3-Dichlorobenzene	20.600	1.0	20.00	0	103	75	124				
1,3-Dichloropropane	20.370	1.0	20.00	0	102	73	126				
1,4-Dichlorobenzene	20.710	1.0	20.00	0	104	74	123				
2,2-Dichloropropane	23.360	1.0	20.00	0	117	69	137				
2-Butanone	149.480	10	200.0	0	74.7	49	136				
2-Chlorotoluene	20.510	1.0	20.00	0	103	73	126				
4-Chlorotoluene	20.790	1.0	20.00	0	104	74	128				
4-Isopropyltoluene	19.970	1.0	20.00	0	99.8	73	130				
4-Methyl-2-pentanone	216.990	10	200.0	0	108	58	134				
Acetone	117.670	10	200.0	0	58.8	40	135				
Benzene	21.120	1.0	20.00	0	106	81	122				
Bromobenzene	20.030	1.0	20.00	0	100	76	124				
Bromochloromethane	20.810	1.0	20.00	0	104	65	129				
Bromodichloromethane	24.290	1.0	20.00	0	121	76	121				S
Bromoform	21.900	1.0	20.00	0	110	69	128				
Bromomethane	32.780	1.0	20.00	0	164	53	141				S
Carbon disulfide	21.220	1.0	20.00	0	106	75	125				
Carbon tetrachloride	27.970	0.50	20.00	0	140	66	138				S
Chlorobenzene	20.620	1.0	20.00	0	103	81	122				
Chloroethane	20.600	1.0	20.00	0	103	58	133				
Chloroform	28.440	1.0	20.00	8.200	101	69	128				
Chloromethane	26.820	1.0	20.00	0	134	56	131				S
cis-1,2-Dichloroethene	20.120	1.0	20.00	0	101	72	126				
cis-1,3-Dichloropropene	21.990	1.0	20.00	0	110	69	131				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT AND ENERGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034505-003AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420
Client ID: ZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314752

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	22.050	1.0	20.00	0	110	70	130				
Dibromochloromethane	22.500	1.0	20.00	0	112	66	133				
Dibromomethane	20.230	1.0	20.00	0	101	76	125				
Dichlorodifluoromethane	21.050	1.0	20.00	0	105	53	153				
Ethyl tert-butyl ether	21.620	1.0	20.00	0	108	70	130				
Ethylbenzene	20.210	1.0	20.00	0	101	73	127				
Freon-113	21.490	1.0	20.00	0	107	75	125				
Hexachlorobutadiene	20.790	1.0	20.00	0	104	67	131				
Isopropylbenzene	20.110	1.0	20.00	0	101	75	127				
m,p-Xylene	42.050	1.0	40.00	0	105	76	128				
Methylene chloride	25.460	2.0	20.00	0	127	63	137				
MTBE	20.350	1.0	20.00	0	102	65	123				
n-Butylbenzene	20.360	1.0	20.00	0	102	69	137				
n-Propylbenzene	20.620	1.0	20.00	0	103	72	129				
Naphthalene	15.880	1.0	20.00	0	79.4	54	138				
o-Xylene	21.170	1.0	20.00	0	106	80	121				
sec-Butylbenzene	20.370	1.0	20.00	0	102	72	127				
Styrene	14.220	1.0	20.00	0	71.1	65	134				
Tert-amyl methyl ether	20.580	1.0	20.00	0	103	70	130				
Tert-Butanol	100.930	5.0	100.0	0	101	70	130				
tert-Butylbenzene	20.380	1.0	20.00	0	102	70	129				
Tetrachloroethene	20.340	1.0	20.00	0	102	66	128				
Toluene	20.810	2.0	20.00	0	104	77	122				
trans-1,2-Dichloroethene	26.900	1.0	20.00	0	134	63	137				
trans-1,3-Dichloropropene	22.440	1.0	20.00	0	112	59	135				
Trichloroethene	19.690	1.0	20.00	0	98.4	70	127				
Trichlorofluoromethane	22.150	1.0	20.00	0	111	57	129				
Vinyl chloride	20.660	0.50	20.00	0	103	50	134				
Xylenes, Total	63.220	2.0	60.00	0	105	75	125				
Surr: 1,2-Dichloroethane-d4	28.820		25.00		115	72	119				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT, ENERGY & CHEMICALS

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034518
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034505-003AMS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: ZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B	Analysis Date: 3/11/2019	SeqNo: 3314752							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.540		25.00		106	76	119				
Surr: Dibromofluoromethane	27.510		25.00		110	85	115				
Surr: Toluene-d8	27.160		25.00		109	81	120				

Sample ID: N034505-003AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: ZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B	Analysis Date: 3/11/2019	SeqNo: 3314753							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	23.730	1.0	20.00	0	119	81	129	24.17	1.84	20	
1,1,1-Trichloroethane	24.780	1.0	20.00	0	124	67	132	22.94	7.71	20	
1,1,2,2-Tetrachloroethane	20.410	1.0	20.00	0	102	63	128	19.98	2.13	20	
1,1,2-Trichloroethane	20.370	1.0	20.00	0	102	75	125	20.45	0.392	20	
1,1-Dichloroethane	22.560	0.50	20.00	0	113	69	133	22.09	2.11	20	
1,1-Dichloroethene	20.650	1.0	20.00	0	103	68	130	19.26	6.97	20	
1,1-Dichloropropene	22.380	1.0	20.00	0	112	73	132	20.54	8.57	20	
1,2,3-Trichlorobenzene	20.620	1.0	20.00	0	103	67	137	19.89	3.60	20	
1,2,3-Trichloropropane	19.720	1.0	20.00	0	98.6	73	124	19.21	2.62	20	
1,2,4-Trichlorobenzene	20.440	1.0	20.00	0	102	66	134	20.77	1.60	20	
1,2,4-Trimethylbenzene	14.920	1.0	20.00	0	74.6	74	132	16.70	11.3	20	
1,2-Dibromo-3-chloropropane	20.290	2.0	20.00	0	101	50	132	19.43	4.33	20	
1,2-Dibromoethane	20.960	1.0	20.00	0	105	80	121	20.94	0.0955	20	
1,2-Dichlorobenzene	20.630	1.0	20.00	0	103	71	122	20.03	2.95	20	
1,2-Dichloroethane	21.690	0.50	20.00	0	108	69	132	22.02	1.51	20	
1,2-Dichloropropane	21.370	1.0	20.00	0	107	75	125	21.00	1.75	20	
1,3,5-Trimethylbenzene	20.630	1.0	20.00	0	103	74	131	20.00	3.10	20	
1,3-Dichlorobenzene	21.250	1.0	20.00	0	106	75	124	20.60	3.11	20	
1,3-Dichloropropane	20.040	1.0	20.00	0	100	73	126	20.37	1.63	20	
1,4-Dichlorobenzene	20.890	1.0	20.00	0	104	74	123	20.71	0.865	20	
2,2-Dichloropropane	24.790	1.0	20.00	0	124	69	137	23.36	5.94	20	
2-Butanone	146.900	10	200.0	0	73.4	49	136	149.5	1.74	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND ENVIRONMENTAL INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034505-003AMSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: ZZZZZZ	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314753						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	21.700	1.0	20.00	0	108	73	126	20.51	5.64	20	
4-Chlorotoluene	22.000	1.0	20.00	0	110	74	128	20.79	5.66	20	
4-Isopropyltoluene	21.290	1.0	20.00	0	106	73	130	19.97	6.40	20	
4-Methyl-2-pentanone	218.010	10	200.0	0	109	58	134	217.0	0.469	20	
Acetone	109.590	10	200.0	0	54.8	40	135	117.7	7.11	20	
Benzene	21.880	1.0	20.00	0	109	81	122	21.12	3.53	20	
Bromobenzene	20.370	1.0	20.00	0	102	76	124	20.03	1.68	20	
Bromochloromethane	20.280	1.0	20.00	0	101	65	129	20.81	2.58	20	
Bromodichloromethane	24.200	1.0	20.00	0	121	76	121	24.29	0.371	20	
Bromoform	22.290	1.0	20.00	0	111	69	128	21.90	1.77	20	
Bromomethane	35.730	1.0	20.00	0	179	53	141	32.78	8.61	20	S
Carbon disulfide	23.070	1.0	20.00	0	115	75	125	21.22	8.35	20	
Carbon tetrachloride	31.320	0.50	20.00	0	157	66	138	27.97	11.3	20	S
Chlorobenzene	20.750	1.0	20.00	0	104	81	122	20.62	0.628	20	
Chloroethane	23.600	1.0	20.00	0	118	58	133	20.60	13.6	20	
Chloroform	27.560	1.0	20.00	8.200	96.8	69	128	28.44	3.14	20	
Chloromethane	27.830	1.0	20.00	0	139	56	131	26.82	3.70	20	S
cis-1,2-Dichloroethene	20.700	1.0	20.00	0	104	72	126	20.12	2.84	20	
cis-1,3-Dichloropropene	22.400	1.0	20.00	0	112	69	131	21.99	1.85	20	
Di-isopropyl ether	21.800	1.0	20.00	0	109	70	130	22.05	1.14	20	
Dibromochloromethane	22.520	1.0	20.00	0	113	66	133	22.50	0.0888	20	
Dibromomethane	20.290	1.0	20.00	0	101	76	125	20.23	0.296	20	
Dichlorodifluoromethane	23.730	1.0	20.00	0	119	53	153	21.05	12.0	20	
Ethyl tert-butyl ether	21.420	1.0	20.00	0	107	70	130	21.62	0.929	20	
Ethylbenzene	21.050	1.0	20.00	0	105	73	127	20.21	4.07	20	
Freon-113	23.610	1.0	20.00	0	118	75	125	21.49	9.40	20	
Hexachlorobutadiene	22.620	1.0	20.00	0	113	67	131	20.79	8.43	20	
Isopropylbenzene	22.230	1.0	20.00	0	111	75	127	20.11	10.0	20	
m,p-Xylene	42.960	1.0	40.00	0	107	76	128	42.05	2.14	20	
Methylene chloride	20.840	2.0	20.00	0	104	63	137	25.46	20.0	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR THE ENVIRONMENT AND ENERGY

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N034518
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N034505-003AMSD		SampType: MSD		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 132420	
Client ID: ZZZZZZ		Batch ID: P19VW030		TestNo: EPA 8260B		Analysis Date: 3/11/2019		SeqNo: 3314753			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	19.850	1.0	20.00	0	99.2	65	123	20.35	2.49	20	
n-Butylbenzene	22.420	1.0	20.00	0	112	69	137	20.36	9.63	20	
n-Propylbenzene	22.410	1.0	20.00	0	112	72	129	20.62	8.32	20	
Naphthalene	14.680	1.0	20.00	0	73.4	54	138	15.88	7.85	20	
o-Xylene	21.090	1.0	20.00	0	105	80	121	21.17	0.379	20	
sec-Butylbenzene	22.850	1.0	20.00	0	114	72	127	20.37	11.5	20	
Styrene	10.350	1.0	20.00	0	51.8	65	134	14.22	31.5	20	SR
Tert-amyl methyl ether	20.080	1.0	20.00	0	100	70	130	20.58	2.46	20	
Tert-Butanol	102.140	5.0	100.0	0	102	70	130	100.9	1.19	20	
tert-Butylbenzene	22.280	1.0	20.00	0	111	70	129	20.38	8.91	20	
Tetrachloroethene	21.670	1.0	20.00	0	108	66	128	20.34	6.33	20	
Toluene	21.480	2.0	20.00	0	107	77	122	20.81	3.17	20	
trans-1,2-Dichloroethene	27.550	1.0	20.00	0	138	63	137	26.90	2.39	20	S
trans-1,3-Dichloropropene	22.530	1.0	20.00	0	113	59	135	22.44	0.400	20	
Trichloroethene	21.820	1.0	20.00	0	109	70	127	19.69	10.3	20	
Trichlorofluoromethane	25.220	1.0	20.00	0	126	57	129	22.15	13.0	20	
Vinyl chloride	22.790	0.50	20.00	0	114	50	134	20.66	9.80	20	
Xylenes, Total	64.050	2.0	60.00	0	107	75	125	63.22	1.30	20	
Surr: 1,2-Dichloroethane-d4	27.670		25.00		111	72	119		0		
Surr: 4-Bromofluorobenzene	25.530		25.00		102	76	119		0		
Surr: Dibromofluoromethane	26.590		25.00		106	85	115		0		
Surr: Toluene-d8	26.740		25.00		107	81	120		0		

Sample ID: P190311MB3		SampType: MBLK		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 132420	
Client ID: PBW		Batch ID: P19VW030		TestNo: EPA 8260B		Analysis Date: 3/11/2019		SeqNo: 3314756			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.0									
1,1,1-Trichloroethane	ND	1.0									
1,1,2,2-Tetrachloroethane	ND	1.0									

Qualifiers:

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



ASSET LABORATORIES
ANALYTICAL SERVICES FOR THE ENERGY, PETROCHEMICAL, AND ENVIRONMENTAL INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: PBW	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314756						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0									
1,1-Dichloroethane	ND	0.50									
1,1-Dichloroethene	ND	1.0									
1,1-Dichloropropene	ND	1.0									
1,2,3-Trichlorobenzene	ND	1.0									
1,2,3-Trichloropropane	ND	1.0									
1,2,4-Trichlorobenzene	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
1,2-Dibromoethane	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,3-Dichloropropane	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2,2-Dichloropropane	ND	1.0									
2-Butanone	ND	10									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
4-Isopropyltoluene	ND	1.0									
4-Methyl-2-pentanone	ND	10									
Acetone	ND	10									
Benzene	ND	1.0									
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	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 |
| J Analyte detected below quantitation limits | 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 |



CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: PBW	Batch ID: P19VW030	TestNo: EPA 8260B		Analysis Date: 3/11/2019	SeqNo: 3314756						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Carbon disulfide	ND	1.0									
Carbon tetrachloride	ND	0.50									
Chlorobenzene	ND	1.0									
Chloroethane	ND	1.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
cis-1,2-Dichloroethene	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
Di-isopropyl ether	ND	1.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Dichlorodifluoromethane	ND	1.0									
Ethyl tert-butyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
Freon-113	ND	1.0									
Hexachlorobutadiene	ND	1.0									
Isopropylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	2.0									
MTBE	ND	1.0									
n-Butylbenzene	ND	1.0									
n-Propylbenzene	ND	1.0									
Naphthalene	ND	1.0									
o-Xylene	ND	1.0									
sec-Butylbenzene	ND	1.0									
Styrene	0.230	1.0									J
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
tert-Butylbenzene	ND	1.0									
Tetrachloroethene	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 |
| J Analyte detected below quantitation limits | 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 FOR THE ENERGY AND ENVIRONMENTAL INDUSTRIES

CALIFORNIA | P: 562.219.7435 F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 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

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N034518
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190311MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 132420						
Client ID: PBW	Batch ID: P19VW030	TestNo: EPA 8260B	Analysis Date: 3/11/2019	SeqNo: 3314756							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	2.0									
trans-1,2-Dichloroethene	ND	1.0									
trans-1,3-Dichloropropene	ND	1.0									
Trichloroethene	ND	1.0									
Trichlorofluoromethane	ND	1.0									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	28.240		25.00		113	72	119				
Surr: 4-Bromofluorobenzene	25.790		25.00		103	76	119				
Surr: Dibromofluoromethane	28.530		25.00		114	85	115				
Surr: Toluene-d8	26.840		25.00		107	81	120				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | 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 FOR CHEMICAL, ENVIRONMENTAL, AND FORENSIC

CALIFORNIA | P: 562.219.7435 | F: 562.219.7436
 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
 ELAP Cert 2921
 EPA ID CA01638

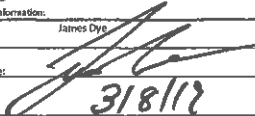
NEVADA | P: 702.307.2659 | F: 702.307.2691
 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

"Serving Clients with Passion and Professionalism"

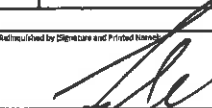
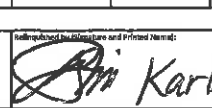


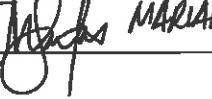
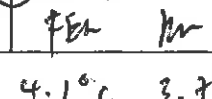
Asset Laboratories
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2659 Fax: 702-307-2691
 Marlon Cartin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

DATE: 3/8/19
 PAGE: 1 of 1

Section A Required Client Information: Company: Kinder Morgan Energy Partners Attention: Steve Deffbaugh Address: 1100 Town & Country Road Orange, CA 92868 Email To: steve_defbaugh@kindermorgan.com eric.davis@ch2m.com Phone: 714-560-4802 Fax: 714-560-4801		Section B Required Project Information: Report To: Eric Davis Copy To: Steve Deffbaugh Purchase Order No.: Project Name: SPPP Norwalk		Section C Invoice Information: Attention: Steve Deffbaugh - Ref. AFEP 81195 Company: Kinder Morgan Energy Partners Name: Address: 1100 Town & Country Road Orange, CA 92868 ATL Project Manager: Marlon Cartin		Section D Sampler Information: Sampler: James Dye Name: Signature:  Sample Date: <u>3/8/19</u>	
--	--	---	--	--	--	---	--

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING		TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test	CONTAINER TYPE			PRESERVATIVE			VOLUME (mL)	Comments
					DATE	TIME				V	V	A	H	H	H		
1	INF-03-08	INFLUENT	WW	G	3/8/19	1005	9		Full VOCs + Organics Lic (8008)	X	X	X					N034518 - 01
2									TPH-gas (C=C12) (8005H)								
3									TPH-l (C13-C22), TPH-all (C28+), Total TPH (8005H)								
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Retrieved by (Signature and Printed Name):  Date / Time: 3/8/19 1100	Retrieved by (Signature and Printed Name):  Karla Sevilla Date / Time: 3/8/19 1620	Turn Around Time (TAT): <input type="checkbox"/> A = Same Day <input type="checkbox"/> B = 24 Hours <input type="checkbox"/> C = 48 Hours <input type="checkbox"/> D = 72 Hours <input checked="" type="checkbox"/> E = 5 Workdays <input type="checkbox"/> F = 10 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction:
Retrieved by (Signature and Printed Name):  MARIANNE SANTOS Date / Time: 3/8/19 1650	Retrieved by (Signature and Printed Name):  MARIANNE SANTOS Date / Time: 3/8/19 1650		
Retrieved by (Signature and Printed Name):  MARIANNE SANTOS Date / Time: 3/8/19 1700	Retrieved by (Signature and Printed Name):  FER Date / Time: 3/9/19 09N		
Matrix: W = Water WW = Wastewater H = HCl N = HNO3 S = H2SO4 O = Oil P = Product S = Soil Z = Zn(Ac)2 O = NaOH T = Na2S2O3 Others/Specify:		Container Type: T = Tube V = VOA P = Pint A = Amber J = Jar B = Tedlar G = Glass M = Metal P = Plastic C = Can	

in #2 4.1°C, 3.7°C
 650 4921
 4919

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: 3/8/2019 Workorder: N034518
 Rep sample Temp (Deg C): 4.1/3.7 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 4921/4919 Packing Material Used: Bubble Wrap
 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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 checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input 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:

For:  3/11/2019
 Checklist Completed By: FR _____

Reviewed By: MBC 3/13/2019

ASSET Laboratories

WORK ORDER Summary

11-Mar-19

WorkOrder: N034518

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 3/8/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N034518-001A	INF-03-08	3/8/2019 10:05:00 AM	3/15/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
N034518-001B			3/15/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N034518-001C			3/15/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/15/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			3/15/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N034518-002A	FOLDER	3/15/2019	3/15/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			3/15/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MARIANNE SANTOS
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 544044921

SDS



Ship To
ASSET LABORATORIES
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

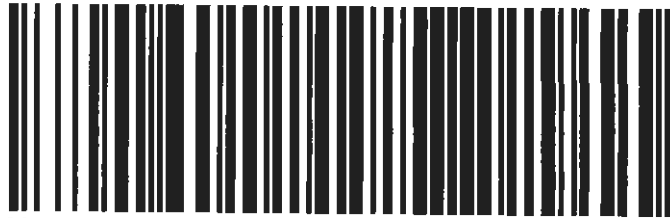
LVS
LAS VEGAS

A

COD: \$0.00
Weight: 0 lb(s)
Reference:

C89102A

Delivery Instructions:
HOLD FOR PICK-UP
Signature Type: STANDARD



99354796

Print Date: 3/8/2019 6:33 PM

Package 4 of 4

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

- Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
- Step 2: Fold this page in half.
- Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

IN #2 4.14



800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MARIANNE SANTOS
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

Tracking #: 544044919

SDS



Ship To
ASSET LABORATORIES
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

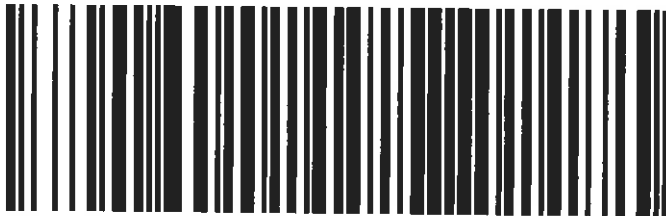
LVS
LAS VEGAS

A

COD: \$0.00
Weight: 0 lb(s)
Reference:

C89102A

Delivery Instructions:
HOLD FOR PICK-UP
Signature Type: STANDARD



99354793

Print Date: 3/8/2019 6:33 PM

Package 2 of 4

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

- Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
- Step 2: Fold this page in half.
- Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all of the GSO service terms & conditions including, but not limited to; limits of liability, declared value conditions, and claim procedures which are available on our website at www.gso.com.

*12# 2
3.700*



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

March 28, 2019

Vladimir Carino
CH2M Hill, Inc.
P.O. Box 241329
Denver, CO 80224

Re : KMEP Norwalk Biosparge Startup / 693142
MB187326 / 9C19010

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 03/19/19 15:06 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analyticals.

Sincerely,

A handwritten signature in black ink, appearing to read 'Allen A.', is written above the printed name.

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
<u>Fixed Gases - Field</u>					
SVM-11-7	9C19010-01	Vapor	5	03/18/19 08:07	03/19/19 15:06
SVM-11-15	9C19010-02	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-11-22	9C19010-03	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-13-7	9C19010-04	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-15.5	9C19010-05	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-22.5	9C19010-06	Vapor	5	03/18/19 08:35	03/19/19 15:06
SVM-12-7	9C19010-07	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-15	9C19010-08	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-22	9C19010-09	Vapor	5	03/18/19 08:49	03/19/19 15:06
SVM-12-22DUP	9C19010-10	Vapor	5	03/18/19 08:49	03/19/19 15:06
SVM-14R-7	9C19010-12	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-14R-16	9C19010-13	Vapor	5	03/18/19 09:25	03/19/19 15:06
SVM-14R-22	9C19010-14	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-2-5	9C19010-15	Vapor	5	03/18/19 10:14	03/19/19 15:06
SVM-1-5	9C19010-16	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-1-15	9C19010-17	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-3-5	9C19010-18	Vapor	5	03/18/19 10:55	03/19/19 15:06
SVM-3-15	9C19010-19	Vapor	5	03/18/19 10:55	03/19/19 15:06

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
<u>TO-15 (Mid Level)</u>					
SVM-11-7	9C19010-01	Vapor	5	03/18/19 08:07	03/19/19 15:06
SVM-11-15	9C19010-02	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-11-22	9C19010-03	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-13-7	9C19010-04	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-15.5	9C19010-05	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-22.5	9C19010-06	Vapor	5	03/18/19 08:35	03/19/19 15:06
SVM-12-7	9C19010-07	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-15	9C19010-08	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-22	9C19010-09	Vapor	5	03/18/19 08:49	03/19/19 15:06
SVM-12-22DUP	9C19010-10	Vapor	5	03/18/19 08:49	03/19/19 15:06
Ambient Air	9C19010-11	Vapor	5	03/18/19 08:50	03/19/19 15:06
SVM-14R-7	9C19010-12	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-14R-16	9C19010-13	Vapor	5	03/18/19 09:25	03/19/19 15:06
SVM-14R-22	9C19010-14	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-2-5	9C19010-15	Vapor	5	03/18/19 10:14	03/19/19 15:06
SVM-1-5	9C19010-16	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-1-15	9C19010-17	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-3-5	9C19010-18	Vapor	5	03/18/19 10:55	03/19/19 15:06
SVM-3-15	9C19010-19	Vapor	5	03/18/19 10:55	03/19/19 15:06

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
<u>TO-3</u>					
SVM-11-7	9C19010-01	Vapor	5	03/18/19 08:07	03/19/19 15:06
SVM-11-15	9C19010-02	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-11-22	9C19010-03	Vapor	5	03/18/19 08:10	03/19/19 15:06
SVM-13-7	9C19010-04	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-15.5	9C19010-05	Vapor	5	03/18/19 08:27	03/19/19 15:06
SVM-13-22.5	9C19010-06	Vapor	5	03/18/19 08:35	03/19/19 15:06
SVM-12-7	9C19010-07	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-15	9C19010-08	Vapor	5	03/18/19 08:48	03/19/19 15:06
SVM-12-22	9C19010-09	Vapor	5	03/18/19 08:49	03/19/19 15:06
SVM-12-22DUP	9C19010-10	Vapor	5	03/18/19 08:49	03/19/19 15:06
Ambient Air	9C19010-11	Vapor	5	03/18/19 08:50	03/19/19 15:06
SVM-14R-7	9C19010-12	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-14R-16	9C19010-13	Vapor	5	03/18/19 09:25	03/19/19 15:06
SVM-14R-22	9C19010-14	Vapor	5	03/18/19 09:28	03/19/19 15:06
SVM-2-5	9C19010-15	Vapor	5	03/18/19 10:14	03/19/19 15:06
SVM-1-5	9C19010-16	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-1-15	9C19010-17	Vapor	5	03/18/19 10:20	03/19/19 15:06
SVM-3-5	9C19010-18	Vapor	5	03/18/19 10:55	03/19/19 15:06
SVM-3-15	9C19010-19	Vapor	5	03/18/19 10:55	03/19/19 15:06

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Fixed Gases by TCD								
Oxygen	SVM-11-7	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-11-15	15	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-11-15	0.42	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-11-22	10	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-11-22	5.3	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-13-7	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-13-15.5	17	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-13-22.5	17	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-13-22.5	0.47	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-12-7	17	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Carbon Dioxide	SVM-12-7	0.25	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-12-15	16	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-12-15	0.86	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-12-22	14	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-12-22	2.2	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-12-22DUP	14	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-12-22DUP	2.8	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-14R-7	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-14R-16	17	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-14R-22	14	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Carbon Dioxide	SVM-14R-22	1.9	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-2-5	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-1-5	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-1-15	18	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-3-5	16	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM
Oxygen	SVM-3-15	17	0.20	% by Volume	2	03/25/19	03/25/19	EPA 3CM

VOCs by EPA TO-3**VOCs by GCMS EPA TO-15 (Mid Level)**

Tetrachloroethylene (PCE)	SVM-11-22	0.080	0.010	ug/L	1	03/22/19	03/22/19	TO-15
Tetrahydrofuran (THF)	SVM-13-22.5	0.022	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Tetrachloroethylene (PCE)	SVM-12-22	0.011	0.010	ug/L	1	03/22/19	03/22/19	TO-15
Tetrachloroethylene (PCE)	SVM-12-22DUP	0.013	0.010	ug/L	1	03/22/19	03/22/19	TO-15
Acetone	Ambient Air	0.021	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Ethanol	Ambient Air	0.032	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Acetone	SVM-14R-7	0.062 E	0.020	ug/L	1	03/25/19	03/25/19	TO-15
Ethanol	SVM-14R-7	0.030	0.020	ug/L	1	03/25/19	03/25/19	TO-15
Isopropanol (IPA)	SVM-14R-7	2.9	0.20	ug/L	1	03/25/19	03/25/19	TO-15
Acetone	SVM-14R-16	0.024	0.020	ug/L	1	03/25/19	03/25/19	TO-15
Ethanol	SVM-14R-16	0.032	0.020	ug/L	1	03/25/19	03/25/19	TO-15
Isopropanol (IPA)	SVM-2-5	1.4 E	0.20	ug/L	1	03/22/19	03/22/19	TO-15
Chloroform	SVM-3-5	0.021	0.020	ug/L	1	03/25/19	03/25/19	TO-15

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-01	9C19010-02	9C19010-03	9C19010-04	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	105%	103%	105%	105%	%REC Limits 70-130
----------------------	------	------	------	------	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-05	9C19010-06	9C19010-07	9C19010-08	
Client ID No:	SVM-13-15.5	SVM-13-22.5	SVM-12-7	SVM-12-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	102%	104%	100%	103%	<u>%REC Limits</u> 70-130
----------------------	------	------	------	------	-------------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-09	9C19010-10	9C19010-11	9C19010-12	
Client ID No:	SVM-12-22	SVM-12-22DUP	Ambient Air	SVM-14R-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	104%	101%	101%	89%	<u>%REC Limits</u> 70-130
----------------------	------	------	------	-----	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-13	9C19010-14	9C19010-15	9C19010-16	
Client ID No:	SVM-14R-16	SVM-14R-22	SVM-2-5	SVM-1-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	91%	94%	103%	102%	%REC Limits 70-130
----------------------	-----	-----	------	------	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/2019	03/18/2019	03/18/2019	
Date Prepared:	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-17	9C19010-18	9C19010-19	
Client ID No:	SVM-1-15	SVM-3-5	SVM-3-15	
Matrix:	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	20
-------------------------------	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	102%	92%	91%	<u>%REC Limits</u> 70-130
----------------------	------	-----	-----	-------------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19010-01	9C19010-02	9C19010-03	9C19010-04	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19010-01	9C19010-02	9C19010-03	9C19010-04
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	0.080	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19010-01	9C19010-02	9C19010-03	9C19010-04
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates

4-Bromofluorobenzene	103%	103%	103%	102%	<u>%REC Limits</u> 70-130
----------------------	------	------	------	------	-------------------------------------

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19010-05	9C19010-06	9C19010-07	9C19010-08
Client ID No:	SVM-13-15.5	SVM-13-22.5	SVM-12-7	SVM-12-15
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19010-05	9C19010-06	9C19010-07	9C19010-08
Client ID No:	SVM-13-15.5	SVM-13-22.5	SVM-12-7	SVM-12-15
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	0.022	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19010-05	9C19010-06	9C19010-07	9C19010-08
Client ID No:	SVM-13-15.5	SVM-13-22.5	SVM-12-7	SVM-12-15
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates

4-Bromofluorobenzene	102%	101%	99%	101%	%REC Limits 70-130
----------------------	------	------	-----	------	------------------------------

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/25/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/25/19
AA ID No:	9C19010-09	9C19010-10	9C19010-11	9C19010-12
Client ID No:	SVM-12-22	SVM-12-22DUP	Ambient Air	SVM-14R-7
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	0.021	0.062 [3]	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/25/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/25/19
AA ID No:	9C19010-09	9C19010-10	9C19010-11	9C19010-12
Client ID No:	SVM-12-22	SVM-12-22DUP	Ambient Air	SVM-14R-7
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	0.032	0.030	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	2.9	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	0.011	0.013	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/25/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/25/19	
AA ID No:	9C19010-09	9C19010-10	9C19010-11	9C19010-12	
Client ID No:	SVM-12-22	SVM-12-22DUP	Ambient Air	SVM-14R-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates

					<u>%REC Limits</u>
4-Bromofluorobenzene	103%	99%	99%	106%	70-130

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/25/19	03/25/19	03/22/19	03/22/19	
Date Analyzed:	03/25/19	03/25/19	03/22/19	03/22/19	
AA ID No:	9C19010-13	9C19010-14	9C19010-15	9C19010-16	
Client ID No:	SVM-14R-16	SVM-14R-22	SVM-2-5	SVM-1-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	0.024	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/25/19	03/25/19	03/22/19	03/22/19
Date Analyzed:	03/25/19	03/25/19	03/22/19	03/22/19
AA ID No:	9C19010-13	9C19010-14	9C19010-15	9C19010-16
Client ID No:	SVM-14R-16	SVM-14R-22	SVM-2-5	SVM-1-5
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	0.032	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	1.4 [3]	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19
Date Prepared:	03/25/19	03/25/19	03/22/19	03/22/19
Date Analyzed:	03/25/19	03/25/19	03/22/19	03/22/19
AA ID No:	9C19010-13	9C19010-14	9C19010-15	9C19010-16
Client ID No:	SVM-14R-16	SVM-14R-22	SVM-2-5	SVM-1-5
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

<u>Surrogates</u>					<u>%REC Limits</u>
4-Bromofluorobenzene	103%	100%	101%	101%	70-130

Allen Aminian

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

	03/18/2019	03/18/2019	03/18/2019	
Date Sampled:	03/18/2019	03/18/2019	03/18/2019	
Date Prepared:	03/22/19	03/25/19	03/25/19	
Date Analyzed:	03/22/19	03/25/19	03/25/19	
AA ID No:	9C19010-17	9C19010-18	9C19010-19	
Client ID No:	SVM-1-15	SVM-3-5	SVM-3-15	
Matrix:	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	0.021	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

	03/18/2019	03/18/2019	03/18/2019	
Date Sampled:	03/18/2019	03/18/2019	03/18/2019	
Date Prepared:	03/22/19	03/25/19	03/25/19	
Date Analyzed:	03/22/19	03/25/19	03/25/19	
AA ID No:	9C19010-17	9C19010-18	9C19010-19	
Client ID No:	SVM-1-15	SVM-3-5	SVM-3-15	
Matrix:	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/18/2019	03/18/2019	03/18/2019	
Date Prepared:	03/22/19	03/25/19	03/25/19	
Date Analyzed:	03/22/19	03/25/19	03/25/19	
AA ID No:	9C19010-17	9C19010-18	9C19010-19	
Client ID No:	SVM-1-15	SVM-3-5	SVM-3-15	
Matrix:	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	0.020

Surrogates

4-Bromofluorobenzene	100%	95%	95%	%REC Limits 70-130
----------------------	------	-----	-----	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/25/19	03/25/19	03/25/19	03/25/19	
Date Analyzed:	03/25/19	03/25/19	03/25/19	03/25/19	
AA ID No:	9C19010-01	9C19010-02	9C19010-03	9C19010-04	
Client ID No:	SVM-11-7	SVM-11-15	SVM-11-22	SVM-13-7	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	18	15	10	18	0.10
Carbon Dioxide	<0.20	0.42	5.3	<0.20	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/25/19	03/25/19	03/25/19	03/25/19	
Date Analyzed:	03/25/19	03/25/19	03/25/19	03/25/19	
AA ID No:	9C19010-05	9C19010-06	9C19010-07	9C19010-08	
Client ID No:	SVM-13-15.5	SVM-13-22.5	SVM-12-7	SVM-12-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	17	17	17	16	0.10
Carbon Dioxide	<0.20	0.47	0.25	0.86	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/25/19	03/25/19	03/25/19	03/25/19	
Date Analyzed:	03/25/19	03/25/19	03/25/19	03/25/19	
AA ID No:	9C19010-09	9C19010-10	9C19010-12	9C19010-13	
Client ID No:	SVM-12-22	SVM-12-22DUP	SVM-14R-7	SVM-14R-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	14	14	18	17	0.10
Carbon Dioxide	2.2	2.8	<0.20	<0.20	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187326
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	Fixed Gases by TCD	Units:	% by Volume

Date Sampled:	03/18/19	03/18/19	03/18/19	03/18/19	
Date Prepared:	03/25/19	03/25/19	03/25/19	03/25/19	
Date Analyzed:	03/25/19	03/25/19	03/25/19	03/25/19	
AA ID No:	9C19010-14	9C19010-15	9C19010-16	9C19010-17	
Client ID No:	SVM-14R-22	SVM-2-5	SVM-1-5	SVM-1-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	<0.20	<0.20	0.10
Oxygen	14	18	18	18	0.10
Carbon Dioxide	1.9	<0.20	<0.20	<0.20	0.10

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/18/2019	03/18/2019	
Date Prepared:	03/25/19	03/25/19	
Date Analyzed:	03/25/19	03/25/19	
AA ID No:	9C19010-18	9C19010-19	
Client ID No:	SVM-3-5	SVM-3-15	
Matrix:	Vapor	Vapor	
Dilution Factor:	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	0.10
Oxygen	16	17	0.10
Carbon Dioxide	<0.20	<0.20	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
 Project No: 693142
 Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
 Date Received: 03/19/19
 Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	-----------	--------	-----	-----------	-------

VOCs by EPA TO-3 - Quality Control

Batch B9C2719 - *** DEFAULT PREP ***

Blank (B9C2719-BLK1)

Prepared & Analyzed: 03/22/19

Gasoline Range Organics (GRO) <20 20 ug/L

Surrogate: 4-Bromofluorobenzene 0.0313 ug/L 0.036 87.4 70-130

LCS (B9C2719-BS1)

Prepared & Analyzed: 03/23/19

Gasoline Range Organics (GRO) **0.689** 20 ug/L 0.82 84.2 70-130

Surrogate: 4-Bromofluorobenzene 0.0343 ug/L 0.036 95.8 70-130

LCS Dup (B9C2719-BSD1)

Prepared & Analyzed: 03/23/19

Gasoline Range Organics (GRO) **0.704** 20 ug/L 0.82 86.0 70-130 2.19 30

Surrogate: 4-Bromofluorobenzene 0.0352 ug/L 0.036 98.4 70-130

Batch B9C2720 - *** DEFAULT PREP ***

Blank (B9C2720-BLK1)

Prepared & Analyzed: 03/22/19

Gasoline Range Organics (GRO) <20 20 ug/L

Surrogate: 4-Bromofluorobenzene 0.0356 ug/L 0.036 99.4 70-130

LCS (B9C2720-BS1)

Prepared & Analyzed: 03/23/19

Gasoline Range Organics (GRO) **0.734** 20 ug/L 0.82 89.7 70-130

Surrogate: 4-Bromofluorobenzene 0.0364 ug/L 0.036 102 70-130

LCS Dup (B9C2720-BSD1)

Prepared & Analyzed: 03/23/19

Gasoline Range Organics (GRO) **0.720** 20 ug/L 0.82 88.0 70-130 2.01 30

Surrogate: 4-Bromofluorobenzene 0.0364 ug/L 0.036 102 70-130

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2535 - *** DEFAULT PREP ***

Blank (B9C2535-BLK1)

Prepared & Analyzed: 03/22/19

Acetone <0.020 0.020 ug/L

Allyl chloride <0.020 0.020 ug/L

tert-Amyl Methyl Ether (TAME) <0.020 0.020 ug/L

Benzene <0.0030 0.0030 ug/L

Benzyl chloride <0.020 0.020 ug/L

Bromodichloromethane <0.020 0.020 ug/L

Bromoform <0.020 0.020 ug/L

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
Blank (B9C2535-BLK1) Continued										
Prepared & Analyzed: 03/22/19										
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl alcohol (TBA)	<20	20	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.020	0.020	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
Blank (B9C2535-BLK1) Continued										
Prepared & Analyzed: 03/22/19										
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
 Project No: 693142
 Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
 Date Received: 03/19/19
 Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
Blank (B9C2535-BLK1) Continued										
Prepared & Analyzed: 03/22/19										
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.140</i>		<i>ug/L</i>	<i>0.14</i>		<i>97.8</i>	<i>70-130</i>			
LCS (B9C2535-BS1)										
Prepared & Analyzed: 03/22/19										
Acetone	0.0803	0.020	ug/L	0.095		84.6	70-130		30	
Benzene	0.119	0.0030	ug/L	0.13		93.4	70-130		30	
Benzyl chloride	0.179	0.020	ug/L	0.21		86.5	70-130		30	
Bromodichloromethane	0.246	0.020	ug/L	0.27		92.0	70-130		30	
Bromoform	0.373	0.020	ug/L	0.41		90.3	70-130		30	
Bromomethane	0.135	0.020	ug/L	0.16		86.7	70-130		30	
2-Butanone (MEK)	0.109	0.020	ug/L	0.12		92.2	70-130		30	
Carbon Disulfide	0.109	0.020	ug/L	0.12		87.5	70-130		30	
Carbon Tetrachloride	0.244	0.020	ug/L	0.25		96.8	70-130		30	
Chlorobenzene	0.161	0.020	ug/L	0.18		87.7	70-130		30	
Chloroethane	0.102	0.020	ug/L	0.11		97.0	70-130		30	
Chloroform	0.186	0.020	ug/L	0.20		95.2	70-130		30	
Chloromethane	0.0825	0.020	ug/L	0.083		99.9	70-130		30	
Dibromochloromethane	0.322	0.020	ug/L	0.34		94.4	70-130		30	
1,2-Dibromoethane (EDB)	0.296	0.020	ug/L	0.31		96.3	70-130		30	
1,2-Dichlorobenzene	0.224	0.020	ug/L	0.24		93.2	70-130		30	
1,3-Dichlorobenzene	0.219	0.020	ug/L	0.24		91.0	70-130		30	
1,4-Dichlorobenzene	0.235	0.020	ug/L	0.24		97.6	70-130		30	
Dichlorodifluoromethane (R12)	0.235	0.020	ug/L	0.20		119	70-130		30	
1,1-Dichloroethane	0.149	0.020	ug/L	0.16		91.9	70-130		30	
1,2-Dichloroethane (EDC)	0.157	0.0040	ug/L	0.16		97.2	70-130		30	
cis-1,2-Dichloroethylene	0.146	0.020	ug/L	0.16		92.1	70-130		30	
1,1-Dichloroethylene	0.151	0.020	ug/L	0.16		95.1	70-130		30	
trans-1,2-Dichloroethylene	0.144	0.020	ug/L	0.16		90.8	70-130		30	

Allen Aminian
 QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
LCS (B9C2535-BS1) Continued										
Prepared & Analyzed: 03/22/19										
1,2-Dichloropropane	0.171	0.020	ug/L	0.18		92.5	70-130		30	
trans-1,3-Dichloropropylene	0.177	0.020	ug/L	0.18		97.5	70-130		30	
cis-1,3-Dichloropropylene	0.171	0.020	ug/L	0.18		94.0	70-130		30	
Dichlorotetrafluoroethane	0.293	0.020	ug/L	0.28		105	70-130		30	
Ethylbenzene	0.145	0.020	ug/L	0.17		83.8	70-130		30	
4-Ethyltoluene	0.175	0.020	ug/L	0.20		89.0	70-130		30	
Hexachlorobutadiene	0.391	0.020	ug/L	0.43		91.7	70-130		30	
2-Hexanone (MBK)	0.178	0.020	ug/L	0.16		108	70-130		30	
Isopropanol (IPA)	0.0943	0.20	ug/L	0.098		95.9	70-130		30	
Methylene Chloride	0.106	0.020	ug/L	0.14		76.3	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.181	0.020	ug/L	0.16		110	70-130		30	
Styrene	0.149	0.020	ug/L	0.17		87.7	70-130		30	
1,1,2,2-Tetrachloroethane	0.196	0.020	ug/L	0.27		71.4	70-130		30	
Tetrachloroethylene (PCE)	0.243	0.010	ug/L	0.27		89.5	70-130		30	
Toluene	0.138	0.020	ug/L	0.15		91.3	70-130		30	
1,2,4-Trichlorobenzene	0.303	0.020	ug/L	0.30		102	70-130		30	
1,1,2-Trichloroethane	0.204	0.020	ug/L	0.22		93.7	70-130		30	
1,1,1-Trichloroethane	0.213	0.020	ug/L	0.22		97.4	70-130		30	
Trichloroethylene (TCE)	0.178	0.020	ug/L	0.21		82.8	70-130		30	
Trichlorofluoromethane (R11)	0.220	0.020	ug/L	0.22		97.7	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.302	0.020	ug/L	0.31		98.7	70-130		30	
1,3,5-Trimethylbenzene	0.174	0.020	ug/L	0.20		88.6	70-130		30	
1,2,4-Trimethylbenzene	0.177	0.020	ug/L	0.20		89.8	70-130		30	
Vinyl acetate	0.125	0.020	ug/L	0.14		89.0	70-130		30	
Vinyl chloride	0.101	0.020	ug/L	0.10		98.7	70-130		30	
o-Xylene	0.141	0.020	ug/L	0.17		81.0	70-130		30	
m,p-Xylenes	0.287	0.020	ug/L	0.35		82.7	70-130		30	
1,2,3-Trichloropropane	0.230	0.020	ug/L	0.24		95.2	70-130		30	
sec-Butylbenzene	0.236	0.020	ug/L	0.22		108	70-130		30	
Isopropylbenzene	0.194	0.020	ug/L	0.20		98.7	70-130		30	
n-Propylbenzene	0.188	0.020	ug/L	0.20		95.4	70-130		30	

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
LCS (B9C2535-BS1) Continued										
Prepared & Analyzed: 03/22/19										
4-Isopropyltoluene	0.255	0.020	ug/L	0.22		116	70-130		30	
Surrogate: 4-Bromofluorobenzene	0.145		ug/L	0.14		101	70-130			
LCS Dup (B9C2535-BSD1)										
Prepared & Analyzed: 03/23/19										
Acetone	0.0798	0.020	ug/L	0.095		84.0	70-130	0.712	30	
Benzene	0.124	0.0030	ug/L	0.13		97.1	70-130	3.88	30	
Benzyl chloride	0.177	0.020	ug/L	0.21		85.3	70-130	1.37	30	
Bromodichloromethane	0.258	0.020	ug/L	0.27		96.3	70-130	4.65	30	
Bromoform	0.384	0.020	ug/L	0.41		92.8	70-130	2.70	30	
Bromomethane	0.139	0.020	ug/L	0.16		89.5	70-130	3.09	30	
2-Butanone (MEK)	0.110	0.020	ug/L	0.12		93.1	70-130	0.944	30	
Carbon Disulfide	0.115	0.020	ug/L	0.12		92.2	70-130	5.18	30	
Carbon Tetrachloride	0.259	0.020	ug/L	0.25		103	70-130	6.16	30	
Chlorobenzene	0.168	0.020	ug/L	0.18		91.4	70-130	4.19	30	
Chloroethane	0.102	0.020	ug/L	0.11		96.5	70-130	0.517	30	
Chloroform	0.197	0.020	ug/L	0.20		101	70-130	5.56	30	
Chloromethane	0.0840	0.020	ug/L	0.083		102	70-130	1.81	30	
Dibromochloromethane	0.343	0.020	ug/L	0.34		101	70-130	6.45	30	
1,2-Dibromoethane (EDB)	0.312	0.020	ug/L	0.31		102	70-130	5.28	30	
1,2-Dichlorobenzene	0.233	0.020	ug/L	0.24		97.0	70-130	4.02	30	
1,3-Dichlorobenzene	0.233	0.020	ug/L	0.24		96.8	70-130	6.23	30	
1,4-Dichlorobenzene	0.237	0.020	ug/L	0.24		98.7	70-130	1.15	30	
Dichlorodifluoromethane (R12)	0.241	0.020	ug/L	0.20		122	70-130	2.68	30	
1,1-Dichloroethane	0.159	0.020	ug/L	0.16		98.1	70-130	6.61	30	
1,2-Dichloroethane (EDC)	0.166	0.0040	ug/L	0.16		102	70-130	5.19	30	
cis-1,2-Dichloroethylene	0.150	0.020	ug/L	0.16		94.7	70-130	2.81	30	
1,1-Dichloroethylene	0.156	0.020	ug/L	0.16		98.3	70-130	3.26	30	
trans-1,2-Dichloroethylene	0.149	0.020	ug/L	0.16		94.0	70-130	3.52	30	
1,2-Dichloropropane	0.179	0.020	ug/L	0.18		97.0	70-130	4.67	30	
trans-1,3-Dichloropropylene	0.182	0.020	ug/L	0.18		100	70-130	2.71	30	
cis-1,3-Dichloropropylene	0.177	0.020	ug/L	0.18		97.5	70-130	3.65	30	
Dichlorotetrafluoroethane	0.304	0.020	ug/L	0.28		109	70-130	3.63	30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2535 - *** DEFAULT PREP ***</i>										
LCS Dup (B9C2535-BSD1) Continued										
Prepared & Analyzed: 03/23/19										
Ethylbenzene	0.152	0.020	ug/L	0.17		87.8	70-130	4.69	30	
4-Ethyltoluene	0.184	0.020	ug/L	0.20		93.4	70-130	4.85	30	
Hexachlorobutadiene	0.417	0.020	ug/L	0.43		97.7	70-130	6.28	30	
2-Hexanone (MBK)	0.168	0.020	ug/L	0.16		102	70-130	5.64	30	
Isopropanol (IPA)	0.104	0.20	ug/L	0.098		106	70-130	10.2	30	
Methylene Chloride	0.129	0.020	ug/L	0.14		92.5	70-130	19.2	30	
4-Methyl-2-pentanone (MIBK)	0.180	0.020	ug/L	0.16		110	70-130	0.136	30	
Styrene	0.157	0.020	ug/L	0.17		91.9	70-130	4.68	30	
1,1,2,2-Tetrachloroethane	0.230	0.020	ug/L	0.27		83.9	70-130	16.1	30	
Tetrachloroethylene (PCE)	0.257	0.010	ug/L	0.27		94.8	70-130	5.78	30	
Toluene	0.145	0.020	ug/L	0.15		95.9	70-130	4.91	30	
1,2,4-Trichlorobenzene	0.307	0.020	ug/L	0.30		103	70-130	1.36	30	
1,1,2-Trichloroethane	0.219	0.020	ug/L	0.22		100	70-130	6.71	30	
1,1,1-Trichloroethane	0.223	0.020	ug/L	0.22		102	70-130	4.71	30	
Trichloroethylene (TCE)	0.192	0.020	ug/L	0.21		89.3	70-130	7.56	30	
Trichlorofluoromethane (R11)	0.229	0.020	ug/L	0.22		102	70-130	4.01	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.314	0.020	ug/L	0.31		102	70-130	3.73	30	
1,3,5-Trimethylbenzene	0.181	0.020	ug/L	0.20		91.9	70-130	3.63	30	
1,2,4-Trimethylbenzene	0.182	0.020	ug/L	0.20		92.4	70-130	2.91	30	
Vinyl acetate	0.128	0.020	ug/L	0.14		90.7	70-130	1.84	30	
Vinyl chloride	0.105	0.020	ug/L	0.10		102	70-130	3.61	30	
o-Xylene	0.147	0.020	ug/L	0.17		84.5	70-130	4.29	30	
m,p-Xylenes	0.328	0.020	ug/L	0.35		94.3	70-130	13.1	30	
1,2,3-Trichloropropane	0.237	0.020	ug/L	0.24		98.4	70-130	3.33	30	
sec-Butylbenzene	0.246	0.020	ug/L	0.22		112	70-130	4.14	30	
Isopropylbenzene	0.189	0.020	ug/L	0.20		96.4	70-130	2.46	30	
n-Propylbenzene	0.196	0.020	ug/L	0.20		99.6	70-130	4.28	30	
4-Isopropyltoluene	0.265	0.020	ug/L	0.22		120	70-130	3.51	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.141</i>		<i>ug/L</i>	<i>0.14</i>		<i>98.2</i>	<i>70-130</i>			
<i>Batch B9C2538 - *** DEFAULT PREP ***</i>										

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2538 - *** DEFAULT PREP ***</i>										
Blank (B9C2538-BLK1)										
Prepared & Analyzed: 03/25/19										
Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.020	0.020	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl alcohol (TBA)	<20	20	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.020	0.020	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2538 - *** DEFAULT PREP ***</i>										
Blank (B9C2538-BLK1) Continued										
Prepared & Analyzed: 03/25/19										
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
 Project No: 693142
 Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
 Date Received: 03/19/19
 Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2538 - *** DEFAULT PREP ***</i>										
Blank (B9C2538-BLK1) Continued										
Prepared & Analyzed: 03/25/19										
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.142</i>		<i>ug/L</i>	<i>0.14</i>		<i>99.2</i>	<i>70-130</i>			
LCS (B9C2538-BS1)										
Prepared & Analyzed: 03/25/19										
Acetone	0.0916	0.020	ug/L	0.095		96.4	70-130		30	
Benzene	0.134	0.0030	ug/L	0.13		105	70-130		30	
Benzyl chloride	0.197	0.020	ug/L	0.21		95.1	70-130		30	
Bromodichloromethane	0.275	0.020	ug/L	0.27		103	70-130		30	
Bromoform	0.418	0.020	ug/L	0.41		101	70-130		30	
Bromomethane	0.161	0.020	ug/L	0.16		104	70-130		30	
2-Butanone (MEK)	0.125	0.020	ug/L	0.12		106	70-130		30	
Carbon Disulfide	0.127	0.020	ug/L	0.12		102	70-130		30	
Carbon Tetrachloride	0.270	0.020	ug/L	0.25		107	70-130		30	
Chlorobenzene	0.178	0.020	ug/L	0.18		96.7	70-130		30	
Chloroethane	0.122	0.020	ug/L	0.11		116	70-130		30	
Chloroform	0.211	0.020	ug/L	0.20		108	70-130		30	
Chloromethane	0.0926	0.020	ug/L	0.083		112	70-130		30	
Dibromochloromethane	0.363	0.020	ug/L	0.34		106	70-130		30	
1,2-Dibromoethane (EDB)	0.332	0.020	ug/L	0.31		108	70-130		30	
1,2-Dichlorobenzene	0.240	0.020	ug/L	0.24		99.7	70-130		30	
1,3-Dichlorobenzene	0.246	0.020	ug/L	0.24		102	70-130		30	

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2538 - *** DEFAULT PREP ***</i>										
LCS (B9C2538-BS1) Continued										
Prepared & Analyzed: 03/25/19										
1,4-Dichlorobenzene	0.231	0.020	ug/L	0.24		96.0	70-130		30	
Dichlorodifluoromethane (R12)	0.255	0.020	ug/L	0.20		129	70-130		30	
1,1-Dichloroethane	0.170	0.020	ug/L	0.16		105	70-130		30	
1,2-Dichloroethane (EDC)	0.178	0.0040	ug/L	0.16		110	70-130		30	
cis-1,2-Dichloroethylene	0.165	0.020	ug/L	0.16		104	70-130		30	
1,1-Dichloroethylene	0.169	0.020	ug/L	0.16		106	70-130		30	
trans-1,2-Dichloroethylene	0.164	0.020	ug/L	0.16		104	70-130		30	
1,2-Dichloropropane	0.199	0.020	ug/L	0.18		107	70-130		30	
trans-1,3-Dichloropropylene	0.199	0.020	ug/L	0.18		109	70-130		30	
cis-1,3-Dichloropropylene	0.193	0.020	ug/L	0.18		106	70-130		30	
Dichlorotetrafluoroethane	0.324	0.020	ug/L	0.28		116	70-130		30	
Ethylbenzene	0.163	0.020	ug/L	0.17		93.9	70-130		30	
4-Ethyltoluene	0.202	0.020	ug/L	0.20		103	70-130		30	
Hexachlorobutadiene	0.406	0.020	ug/L	0.43		95.1	70-130		30	
2-Hexanone (MBK)	0.179	0.020	ug/L	0.16		109	70-130		30	
Isopropanol (IPA)	0.111	0.20	ug/L	0.098		113	70-130		30	
Methylene Chloride	0.142	0.020	ug/L	0.14		102	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.192	0.020	ug/L	0.16		117	70-130		30	
Styrene	0.167	0.020	ug/L	0.17		98.1	70-130		30	
1,1,2,2-Tetrachloroethane	0.245	0.020	ug/L	0.27		89.3	70-130		30	
Tetrachloroethylene (PCE)	0.268	0.010	ug/L	0.27		98.9	70-130		30	
Toluene	0.156	0.020	ug/L	0.15		104	70-130		30	
1,2,4-Trichlorobenzene	0.304	0.020	ug/L	0.30		103	70-130		30	
1,1,2-Trichloroethane	0.231	0.020	ug/L	0.22		106	70-130		30	
1,1,1-Trichloroethane	0.237	0.020	ug/L	0.22		109	70-130		30	
Trichloroethylene (TCE)	0.201	0.020	ug/L	0.21		93.4	70-130		30	
Trichlorofluoromethane (R11)	0.244	0.020	ug/L	0.22		108	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.335	0.020	ug/L	0.31		109	70-130		30	
1,3,5-Trimethylbenzene	0.188	0.020	ug/L	0.20		95.4	70-130		30	
1,2,4-Trimethylbenzene	0.192	0.020	ug/L	0.20		97.8	70-130		30	
Vinyl acetate	0.142	0.020	ug/L	0.14		101	70-130		30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2538 - *** DEFAULT PREP ***

LCS (B9C2538-BS1) Continued

Prepared & Analyzed: 03/25/19

Vinyl chloride	0.114	0.020	ug/L	0.10		112	70-130		30	
o-Xylene	0.158	0.020	ug/L	0.17		91.0	70-130		30	
m,p-Xylenes	0.348	0.020	ug/L	0.35		100	70-130		30	
1,2,3-Trichloropropane	0.257	0.020	ug/L	0.24		106	70-130		30	
sec-Butylbenzene	0.258	0.020	ug/L	0.22		118	70-130		30	
Isopropylbenzene	0.215	0.020	ug/L	0.20		110	70-130		30	
n-Propylbenzene	0.215	0.020	ug/L	0.20		110	70-130		30	
4-Isopropyltoluene	0.272	0.020	ug/L	0.22		124	70-130		30	

Surrogate: 4-Bromofluorobenzene 0.145

ug/L 0.14 101 70-130

Batch B9C2539 - *** DEFAULT PREP ***

Blank (B9C2539-BLK1)

Prepared & Analyzed: 03/25/19

Acetone	<0.020	0.020	ug/L							
Allyl chloride	<0.020	0.020	ug/L							
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L							
Benzene	<0.0030	0.0030	ug/L							
Benzyl chloride	<0.020	0.020	ug/L							
Bromodichloromethane	<0.020	0.020	ug/L							
Bromoform	<0.020	0.020	ug/L							
Bromomethane	<0.020	0.020	ug/L							
1,3-Butadiene	<0.020	0.020	ug/L							
2-Butanone (MEK)	<0.020	0.020	ug/L							
tert-Butyl alcohol (TBA)	<20	20	ug/L							
Carbon Disulfide	<0.020	0.020	ug/L							
Carbon Tetrachloride	<0.020	0.020	ug/L							
Chlorobenzene	<0.020	0.020	ug/L							
Chloroethane	<0.020	0.020	ug/L							
Chloroform	<0.020	0.020	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							

Allen Aminian

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2539 - *** DEFAULT PREP ***</i>										
Blank (B9C2539-BLK1) Continued										
Prepared & Analyzed: 03/25/19										
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2539 - *** DEFAULT PREP ***

Blank (B9C2539-BLK1) Continued

Prepared & Analyzed: 03/25/19

Tetrachloroethylene (PCE)	<0.010	0.010	ug/L						
Tetrahydrofuran (THF)	<0.020	0.020	ug/L						
Toluene	<0.020	0.020	ug/L						
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L						
1,1,2-Trichloroethane	<0.020	0.020	ug/L						
1,1,1-Trichloroethane	<0.020	0.020	ug/L						
Trichloroethylene (TCE)	<0.020	0.020	ug/L						
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L						
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L						
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L						
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L						
2,2,4-Trimethylpentane	<0.020	0.020	ug/L						
Vinyl acetate	<0.020	0.020	ug/L						
Vinyl bromide	<0.020	0.020	ug/L						
Vinyl chloride	<0.020	0.020	ug/L						
o-Xylene	<0.020	0.020	ug/L						
m,p-Xylenes	<0.020	0.020	ug/L						
1,2,3-Trichloropropane	<0.020	0.020	ug/L						
sec-Butylbenzene	<0.020	0.020	ug/L						
Isopropylbenzene	<0.020	0.020	ug/L						
n-Propylbenzene	<0.020	0.020	ug/L						
4-Isopropyltoluene	<0.020	0.020	ug/L						
n-Butylbenzene	<0.020	0.020	ug/L						

Surrogate: 4-Bromofluorobenzene 0.115 ug/L

0.14 80.4 70-130

LCS (B9C2539-BS1)

Prepared & Analyzed: 03/25/19

Acetone	0.0727	0.020	ug/L	0.095	76.6	70-130	30
Benzene	0.123	0.0030	ug/L	0.13	96.4	70-130	30
Benzyl chloride	0.213	0.020	ug/L	0.21	103	70-130	30
Bromodichloromethane	0.294	0.020	ug/L	0.27	110	70-130	30
Bromoform	0.446	0.020	ug/L	0.41	108	70-130	30

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
Batch B9C2539 - *** DEFAULT PREP ***										
LCS (B9C2539-BS1) Continued										
Prepared & Analyzed: 03/25/19										
Bromomethane	0.145	0.020	ug/L	0.16		93.5	70-130		30	
2-Butanone (MEK)	0.116	0.020	ug/L	0.12		98.6	70-130		30	
Carbon Disulfide	0.116	0.020	ug/L	0.12		93.0	70-130		30	
Carbon Tetrachloride	0.297	0.020	ug/L	0.25		118	70-130		30	
Chlorobenzene	0.180	0.020	ug/L	0.18		98.0	70-130		30	
Chloroethane	0.0832	0.020	ug/L	0.11		78.8	70-130		30	
Chloroform	0.195	0.020	ug/L	0.20		99.7	70-130		30	
Chloromethane	0.0730	0.020	ug/L	0.083		88.4	70-130		30	
Dibromochloromethane	0.465	0.020	ug/L	0.34		136	70-130		30	**
1,2-Dibromoethane (EDB)	0.377	0.020	ug/L	0.31		123	70-130		30	
1,2-Dichlorobenzene	0.210	0.020	ug/L	0.24		87.5	70-130		30	
1,3-Dichlorobenzene	0.222	0.020	ug/L	0.24		92.3	70-130		30	
1,4-Dichlorobenzene	0.229	0.020	ug/L	0.24		95.0	70-130		30	
Dichlorodifluoromethane (R12)	0.234	0.020	ug/L	0.20		118	70-130		30	
1,1-Dichloroethane	0.145	0.020	ug/L	0.16		89.4	70-130		30	
1,2-Dichloroethane (EDC)	0.152	0.0040	ug/L	0.16		94.1	70-130		30	
cis-1,2-Dichloroethylene	0.151	0.020	ug/L	0.16		95.3	70-130		30	
1,1-Dichloroethylene	0.145	0.020	ug/L	0.16		91.4	70-130		30	
trans-1,2-Dichloroethylene	0.157	0.020	ug/L	0.16		98.7	70-130		30	
1,2-Dichloropropane	0.189	0.020	ug/L	0.18		102	70-130		30	
trans-1,3-Dichloropropylene	0.210	0.020	ug/L	0.18		116	70-130		30	
cis-1,3-Dichloropropylene	0.198	0.020	ug/L	0.18		109	70-130		30	
Dichlorotetrafluoroethane	0.282	0.020	ug/L	0.28		101	70-130		30	
Ethylbenzene	0.146	0.020	ug/L	0.17		83.8	70-130		30	
4-Ethyltoluene	0.197	0.020	ug/L	0.20		100	70-130		30	
Hexachlorobutadiene	0.403	0.020	ug/L	0.43		94.6	70-130		30	
2-Hexanone (MBK)	0.203	0.020	ug/L	0.16		124	70-130		30	
Isopropanol (IPA)	0.0704	0.20	ug/L	0.098		71.6	70-130		30	
Methylene Chloride	0.110	0.020	ug/L	0.14		79.5	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.181	0.020	ug/L	0.16		111	70-130		30	
Styrene	0.162	0.020	ug/L	0.17		95.2	70-130		30	
1,1,2,2-Tetrachloroethane	0.182	0.020	ug/L	0.27		66.2	70-130		30	***

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2539 - *** DEFAULT PREP ***

LCS (B9C2539-BS1) Continued

Prepared & Analyzed: 03/25/19

Tetrachloroethylene (PCE)	0.316	0.010	ug/L	0.27		116	70-130		30	
Toluene	0.157	0.020	ug/L	0.15		104	70-130		30	
1,2,4-Trichlorobenzene	0.268	0.020	ug/L	0.30		90.4	70-130		30	
1,1,2-Trichloroethane	0.250	0.020	ug/L	0.22		115	70-130		30	
1,1,1-Trichloroethane	0.227	0.020	ug/L	0.22		104	70-130		30	
Trichloroethylene (TCE)	0.257	0.020	ug/L	0.21		120	70-130		30	
Trichlorofluoromethane (R11)	0.217	0.020	ug/L	0.22		96.6	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.301	0.020	ug/L	0.31		98.2	70-130		30	
1,3,5-Trimethylbenzene	0.152	0.020	ug/L	0.20		77.3	70-130		30	
1,2,4-Trimethylbenzene	0.159	0.020	ug/L	0.20		80.7	70-130		30	
Vinyl acetate	0.125	0.020	ug/L	0.14		88.9	70-130		30	
Vinyl chloride	0.0920	0.020	ug/L	0.10		89.9	70-130		30	
o-Xylene	0.140	0.020	ug/L	0.17		80.6	70-130		30	
m,p-Xylenes	0.276	0.020	ug/L	0.35		79.5	70-130		30	
1,2,3-Trichloropropane	0.215	0.020	ug/L	0.24		89.2	70-130		30	
sec-Butylbenzene	0.197	0.020	ug/L	0.22		89.6	70-130		30	
Isopropylbenzene	0.185	0.020	ug/L	0.20		94.2	70-130		30	
n-Propylbenzene	0.172	0.020	ug/L	0.20		87.4	70-130		30	
4-Isopropyltoluene	0.206	0.020	ug/L	0.22		93.6	70-130		30	

Surrogate: 4-Bromofluorobenzene 0.136 ug/L 0.14 94.9 70-130

Fixed Gases by TCD - Quality Control

Batch B9C2537 - *** DEFAULT PREP ***

Blank (B9C2537-BLK1)

Prepared & Analyzed: 03/25/19

Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							

LCS (B9C2537-BS1)

Prepared & Analyzed: 03/25/19


Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9C2537 - *** DEFAULT PREP ***</i>										
LCS (B9C2537-BS1) Continued					Prepared & Analyzed: 03/25/19					
Methane	2.46	0.10	% by Volume	2.5		98.5	75-125			
Oxygen	1.92	0.10	% by Volume	2.0		95.8	75-125			
Carbon Dioxide	6.25	0.10	% by Volume	7.5		83.3	75-125			
LCS Dup (B9C2537-BSD1)					Prepared & Analyzed: 03/25/19					
Methane	2.29	0.10	% by Volume	2.5		91.7	75-125	7.15	30	
Oxygen	1.82	0.10	% by Volume	2.0		90.8	75-125	5.31	30	
Carbon Dioxide	6.00	0.10	% by Volume	7.5		80.0	75-125	4.10	30	
Duplicate (B9C2537-DUP1)					Source: 9C19010-03 Prepared & Analyzed: 03/25/19					
Methane	<0.20	0.20	% by Volume		<0.20				30	
Oxygen	11.2	0.20	% by Volume		10.3			7.82	30	
Carbon Dioxide	5.73	0.20	% by Volume		5.30			7.65	30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187326
Date Received: 03/19/19
Date Reported: 03/28/19

Special Notes

[1] = ** : Exceeds upper control limit.

[2] = *** : Exceeds lower control limit.

[3] = E : The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).

A handwritten signature in black ink, appearing to read 'Allen Aminian'.

Allen Aminian
QA/QC Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 17739

70055668

Page 1 of 2

Client: <u>Jacobs</u>	Project Name / No.: <u>KMEP Norwalk</u>	Sampler's Name: <u>Don Rodriguez</u>
Project Manager: <u>ERIC D</u>	Site Address: <u>15306 Norwalk Blvd</u>	Sampler's Signature:
Phone:	City: <u>Norwalk</u>	P.O. No.:
Fax:	State & Zip: <u>CA</u>	Quote No.:

TAT Turnaround Codes **

- ① = Same Day Rush
- ② = 24 Hour Rush
- ③ = 48 Hour Rush
- ④ = 72 Hour Rush
- ⑤ = 5 Day Rush
- X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	ANALYSIS REQUESTED (Test Name)										Special Instructions		
						10-15	10-3	Fixed gases										
Please enter the TAT Turnaround Codes ** below																		
SUM-11-7	9C19010 -01	3/18/19	807	Vapor	1	X	X	X										
SUM-11-15	-02		810		1	X	X	X										
SUM-11-22	-03		810		1	X	X	X										
SUM-13-7	-04		827		1	X	X	X										
SUM-13-15.5	-05		827		1	X	X	X										
SUM-13-22.5	-06		835		1	X	X	X										
SUM-12-7	-07		848		1	X	X	X										
SUM-12-15	-08		848		1	X	X	X										
SUM-12-22	-09		849		1	X	X	X										
SUM-12-22 Dup	-10		849		1	X	X	X										
Ambient Air	-11		850		1	X	X	X										
SUM-14R-7	-12		928		1	X	X	X										
SUM-14R-16	-13		925		1	X	X	X										
SUM-14R-22	-14		928		1	X	X	X										
SUM-2-5	-15		1014		1	X	X	X										

19 MAR 19 JFO

<p style="text-align: center;">For Laboratory Use</p> <p style="text-align: center; font-size: 24pt; font-weight: bold;">REVIEWED</p> <p>Date <u>3/20/19</u> Time <u>9:14</u></p> <p>TAT <u>5</u> Days Sign: </p>	<p>Relinquished by </p> <p>Date <u>3/19/19</u> Time <u>11:15</u></p> <p>Relinquished by </p> <p>Date <u>3/19/19</u> Time <u>15:06</u></p> <p>Relinquished by _____</p> <p>Date _____ Time _____</p>	<p>Received by </p> <p>Received by </p> <p>Received by _____</p>
<p>A.A. Project No.: <u>MB187326/9C19010</u></p>		

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 17740

70055669

Page 2 of 2

Client: <u>Jacobs</u>	Project Name / No.: <u>KMEP Norwalk</u>	Sampler's Name: <u>Juan Rodriguez</u>
Project Manager: <u>ERIC D</u>	Site Address: <u>15306 Norwalk blvd</u>	Sampler's Signature: <u>[Signature]</u>
Phone:	City: <u>Norwalk</u>	P.O. No.:
Fax:	State & Zip: <u>CA</u>	Quote No.:

TAT Turnaround Codes **

- ① = Same Day Rush
- ② = 24 Hour Rush
- ③ = 48 Hour Rush
- ④ = 72 Hour Rush
- ⑤ = 5 Day Rush
- X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	ANALYSIS REQUESTED (Test Name)										Special Instructions				
						Please enter the TAT Turnaround Codes ** below														
<u>SUM-1-5</u>	<u>9C19010-16</u>	<u>3/18/19</u>	<u>1620</u>	<u>VAPOR</u>	<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>												
<u>SUM-1-15</u>	<u>-17</u>	<u>↓</u>	<u>1620</u>	<u>↓</u>	<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>												
<u>SUM-3-5</u>	<u>-18</u>	<u>↓</u>	<u>1655</u>	<u>↓</u>	<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>												
<u>SUM-3-15</u>	<u>-19</u>	<u>↓</u>	<u>1655</u>	<u>↓</u>	<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>												

<p>REVIEWED For Laboratory Use</p> <p>Date: <u>3/20/19</u> Time: <u>9:41</u></p> <p>TAT: <u>5</u> Days Sign: <u>[Signature]</u></p>	Relinquished by <u>[Signature]</u>	Date <u>3/18/19</u>	Time <u>11:15</u>	Received by <u>[Signature]</u>
	Relinquished by <u>[Signature]</u>	Date <u>3/19/19</u>	Time <u>15:06</u>	Received by <u>[Signature]</u>
	Relinquished by	Date	Time	Received by

A.A. Project No.: M6187326/9C19010

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.



9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

March 28, 2019

Vladimir Carino
CH2M Hill, Inc.
P.O. Box 241329
Denver, CO 80224

**Re : KMEP Norwalk Biosparge Startup / 693142
MB187327 / 9C19011**

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 03/19/19 13:44 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analyticals.

Sincerely,

A handwritten signature in black ink, appearing to read 'Allen A.'.

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
-----------	---------------	--------	-----	--------------	---------------

Fixed Gases - Field

SVM-15-7	9C19011-01	Vapor	5	03/19/19 08:04	03/19/19 13:44
SVM-15-15	9C19011-02	Vapor	5	03/19/19 08:05	03/19/19 13:44
SVM-15-22	9C19011-03	Vapor	5	03/19/19 08:04	03/19/19 13:44
SVM-6-5	9C19011-04	Vapor	5	03/19/19 08:28	03/19/19 13:44
SVM-6-15	9C19011-05	Vapor	5	03/19/19 08:28	03/19/19 13:44
SVM-7-7	9C19011-07	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13	9C19011-08	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13DUP	9C19011-09	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-10-15	9C19011-10	Vapor	5	03/19/19 09:03	03/19/19 13:44
SVM-5-5	9C19011-11	Vapor	5	03/19/19 09:39	03/19/19 13:44
SVM-5-15	9C19011-12	Vapor	5	03/19/19 09:37	03/19/19 13:44
SVM-8-5	9C19011-13	Vapor	5	03/19/19 09:46	03/19/19 13:44
SVM-8-15	9C19011-14	Vapor	5	03/19/19 09:51	03/19/19 13:44
SVM-16-7	9C19011-15	Vapor	5	03/19/19 10:13	03/19/19 13:44
SVM-16-16	9C19011-16	Vapor	5	03/19/19 10:16	03/19/19 13:44
SVM-16-22	9C19011-17	Vapor	5	03/19/19 10:10	03/19/19 13:44

TO-15 (Mid Level)

SVM-15-7	9C19011-01	Vapor	5	03/19/19 08:04	03/19/19 13:44
----------	------------	-------	---	----------------	----------------

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-15-15	9C19011-02	Vapor	5	03/19/19 08:05	03/19/19 13:44
SVM-15-22	9C19011-03	Vapor	5	03/19/19 08:04	03/19/19 13:44
SVM-6-5	9C19011-04	Vapor	5	03/19/19 08:28	03/19/19 13:44
SVM-6-15	9C19011-05	Vapor	5	03/19/19 08:28	03/19/19 13:44
Ambient Air	9C19011-06	Vapor	5	03/19/19 08:26	03/19/19 13:44
SVM-7-7	9C19011-07	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13	9C19011-08	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13DUP	9C19011-09	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-10-15	9C19011-10	Vapor	5	03/19/19 09:03	03/19/19 13:44
SVM-5-5	9C19011-11	Vapor	5	03/19/19 09:39	03/19/19 13:44
SVM-5-15	9C19011-12	Vapor	5	03/19/19 09:37	03/19/19 13:44
SVM-8-5	9C19011-13	Vapor	5	03/19/19 09:46	03/19/19 13:44
SVM-8-15	9C19011-14	Vapor	5	03/19/19 09:51	03/19/19 13:44
SVM-16-7	9C19011-15	Vapor	5	03/19/19 10:13	03/19/19 13:44
SVM-16-16	9C19011-16	Vapor	5	03/19/19 10:16	03/19/19 13:44
SVM-16-22	9C19011-17	Vapor	5	03/19/19 10:10	03/19/19 13:44
<u>TO-3</u>					
SVM-15-7	9C19011-01	Vapor	5	03/19/19 08:04	03/19/19 13:44
SVM-15-15	9C19011-02	Vapor	5	03/19/19 08:05	03/19/19 13:44
SVM-15-22	9C19011-03	Vapor	5	03/19/19 08:04	03/19/19 13:44

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-6-5	9C19011-04	Vapor	5	03/19/19 08:28	03/19/19 13:44
SVM-6-15	9C19011-05	Vapor	5	03/19/19 08:28	03/19/19 13:44
Ambient Air	9C19011-06	Vapor	5	03/19/19 08:26	03/19/19 13:44
SVM-7-7	9C19011-07	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13	9C19011-08	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-7-13DUP	9C19011-09	Vapor	5	03/19/19 08:49	03/19/19 13:44
SVM-10-15	9C19011-10	Vapor	5	03/19/19 09:03	03/19/19 13:44
SVM-5-5	9C19011-11	Vapor	5	03/19/19 09:39	03/19/19 13:44
SVM-5-15	9C19011-12	Vapor	5	03/19/19 09:37	03/19/19 13:44
SVM-8-5	9C19011-13	Vapor	5	03/19/19 09:46	03/19/19 13:44
SVM-8-15	9C19011-14	Vapor	5	03/19/19 09:51	03/19/19 13:44
SVM-16-7	9C19011-15	Vapor	5	03/19/19 10:13	03/19/19 13:44
SVM-16-16	9C19011-16	Vapor	5	03/19/19 10:16	03/19/19 13:44
SVM-16-22	9C19011-17	Vapor	5	03/19/19 10:10	03/19/19 13:44

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Fixed Gases by TCD								
Oxygen	SVM-15-7	18	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-15-15	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-15-15	0.10	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-15-22	18	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-15-22	0.76	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-6-5	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-6-15	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-6-15	0.16	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-7-7	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-7-7	0.26	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-7-13	18	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-7-13	0.43	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-7-13DUP	18	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-7-13DUP	0.41	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-10-15	15	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-10-15	3.4	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-5-5	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-5-15	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-8-5	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-8-15	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-8-15	0.14	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-16-7	19	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-16-7	0.21	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-16-16	18	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-16-16	0.50	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Oxygen	SVM-16-22	3.6	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM
Carbon Dioxide	SVM-16-22	11	0.10	% by Volume	1	03/22/19	03/22/19	EPA 3CM

VOCs by EPA TO-3**VOCs by GCMS EPA TO-15 (Mid Level)**

Benzene	SVM-15-7	0.0089	0.0030	ug/L	1	03/22/19	03/22/19	TO-15
Ethanol	SVM-15-7	0.16 E	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Toluene	SVM-15-7	0.044	0.020	ug/L	1	03/22/19	03/22/19	TO-15
m,p-Xylenes	SVM-15-7	0.029	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Acetone	SVM-5-15	0.027	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Isopropanol (IPA)	SVM-5-15	0.72 E	0.20	ug/L	1	03/22/19	03/22/19	TO-15
Acetone	SVM-16-7	0.021	0.020	ug/L	1	03/22/19	03/22/19	TO-15
Carbon Disulfide	SVM-16-7	0.020	0.020	ug/L	1	03/22/19	03/22/19	TO-15

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-01	9C19011-02	9C19011-03	9C19011-04	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	SVM-6-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	82%	86%	86%	88%	<u>%REC Limits</u> 70-130
----------------------	-----	-----	-----	-----	-------------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-05	9C19011-06	9C19011-07	9C19011-08	
Client ID No:	SVM-6-15	Ambient Air	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	89%	91%	93%	94%	<u>%REC Limits</u> 70-130
----------------------	-----	-----	-----	-----	-------------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-09	9C19011-10	9C19011-11	9C19011-12	
Client ID No:	SVM-7-13DUP	SVM-10-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	92%	92%	94%	91%	<u>%REC Limits</u> 70-130
----------------------	-----	-----	-----	-----	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-13	9C19011-14	9C19011-15	9C19011-16	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	<20	<20	<20	20
-------------------------------	-----	-----	-----	-----	----

Surrogates

4-Bromofluorobenzene	93%	93%	90%	91%	%REC Limits 70-130
----------------------	-----	-----	-----	-----	------------------------------

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by EPA TO-3

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/2019	
Date Prepared:	03/22/19	
Date Analyzed:	03/22/19	
AA ID No:	9C19011-17	
Client ID No:	SVM-16-22	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-3 (TO-3)

Gasoline Range Organics (GRO)	<20	20
-------------------------------	-----	----

Surrogates

		<u>%REC Limits</u>
4-Bromofluorobenzene	91%	70-130

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-01	9C19011-02	9C19011-03	9C19011-04	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	SVM-6-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	0.0089	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-01	9C19011-02	9C19011-03	9C19011-04
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	SVM-6-5
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	0.16 [3]	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-01	9C19011-02	9C19011-03	9C19011-04
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	SVM-6-5
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	0.044	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	0.029	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

<u>Surrogates</u>					<u>%REC Limits</u>
4-Bromofluorobenzene	96%	101%	101%	103%	70-130

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-05	9C19011-06	9C19011-07	9C19011-08
Client ID No:	SVM-6-15	Ambient Air	SVM-7-7	SVM-7-13
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-05	9C19011-06	9C19011-07	9C19011-08
Client ID No:	SVM-6-15	Ambient Air	SVM-7-7	SVM-7-13
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1
				MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-05	9C19011-06	9C19011-07	9C19011-08	
Client ID No:	SVM-6-15	Ambient Air	SVM-7-7	SVM-7-13	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

Surrogates

4-Bromofluorobenzene	105%	107%	109%	111%	%REC Limits 70-130
----------------------	------	------	------	------	------------------------------

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-09	9C19011-10	9C19011-11	9C19011-12
Client ID No:	SVM-7-13DUP	SVM-10-15	SVM-5-5	SVM-5-15
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	<0.020	0.027	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	<0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-09	9C19011-10	9C19011-11	9C19011-12	
Client ID No:	SVM-7-13DUP	SVM-10-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	0.72 [3]	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-09	9C19011-10	9C19011-11	9C19011-12	
Client ID No:	SVM-7-13DUP	SVM-10-15	SVM-5-5	SVM-5-15	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

<u>Surrogates</u>					<u>%REC Limits</u>
4-Bromofluorobenzene	108%	109%	110%	107%	70-130

Allen Aminian

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-13	9C19011-14	9C19011-15	9C19011-16
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-16
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	<0.020	0.021	<0.020	0.020
Allyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	<0.020	<0.020	<0.020	0.020
Benzene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Benzyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
Bromodichloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Bromoform	<0.020	<0.020	<0.020	<0.020	0.020
Bromomethane	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Butadiene	<0.020	<0.020	<0.020	<0.020	0.020
2-Butanone (MEK)	<0.020	<0.020	<0.020	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
Carbon Disulfide	<0.020	<0.020	0.020	<0.020	0.020
Carbon Tetrachloride	<0.020	<0.020	<0.020	<0.020	0.020
Chlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Chloroform	<0.020	<0.020	<0.020	<0.020	0.020
Chloromethane	<0.020	<0.020	<0.020	<0.020	0.020
Cyclohexane	<0.020	<0.020	<0.020	<0.020	0.020
Dibromochloromethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,3-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	<0.020	<0.020	<0.020	0.020
1,1-Dichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	<0.0040	<0.0040	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19
AA ID No:	9C19011-13	9C19011-14	9C19011-15	9C19011-16
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-16
Matrix:	Vapor	Vapor	Vapor	Vapor
Dilution Factor:	1	1	1	1

MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	<0.020	<0.020	<0.020	0.020
1,2-Dichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	<0.020	<0.020	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	<0.020	<0.020	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	<0.020	<0.020	<0.020	0.020
1,4-Dioxane	<0.020	<0.020	<0.020	<0.020	0.020
Ethanol	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl Acetate	<0.020	<0.020	<0.020	<0.020	0.020
Ethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	<0.020	<0.020	<0.020	0.020
4-Ethyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
Heptane	<0.020	<0.020	<0.020	<0.020	0.020
Hexachlorobutadiene	<0.020	<0.020	<0.020	<0.020	0.020
n-Hexane	<0.020	<0.020	<0.020	<0.020	0.020
2-Hexanone (MBK)	<0.020	<0.020	<0.020	<0.020	0.020
Isopropanol (IPA)	<0.20	<0.20	<0.20	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	<0.020	<0.020	<0.020	0.020
Methylene Chloride	<0.020	<0.020	<0.020	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	<0.020	<0.020	<0.020	0.020
Naphthalene	<0.0030	<0.0030	<0.0030	<0.0030	0.0030
Propylene	<0.020	<0.020	<0.020	<0.020	0.020
Styrene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	<0.010	<0.010	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	<0.020	<0.020	<0.020	0.020

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187327
Project No:	693142	Date Received:	03/19/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	03/28/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-13	9C19011-14	9C19011-15	9C19011-16	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-7	SVM-16-16	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
1,1,1-Trichloroethane	<0.020	<0.020	<0.020	<0.020	0.020
Trichloroethylene (TCE)	<0.020	<0.020	<0.020	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	<0.020	<0.020	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	<0.020	<0.020	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl acetate	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl bromide	<0.020	<0.020	<0.020	<0.020	0.020
Vinyl chloride	<0.020	<0.020	<0.020	<0.020	0.020
o-Xylene	<0.020	<0.020	<0.020	<0.020	0.020
m,p-Xylenes	<0.020	<0.020	<0.020	<0.020	0.020
1,2,3-Trichloropropane	<0.020	<0.020	<0.020	<0.020	0.020
sec-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
Isopropylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
n-Propylbenzene	<0.020	<0.020	<0.020	<0.020	0.020
4-Isopropyltoluene	<0.020	<0.020	<0.020	<0.020	0.020
n-Butylbenzene	<0.020	<0.020	<0.020	<0.020	0.020

<u>Surrogates</u>					<u>%REC Limits</u>
4-Bromofluorobenzene	110%	110%	106%	107%	70-130

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/2019	
Date Prepared:	03/22/19	
Date Analyzed:	03/22/19	
AA ID No:	9C19011-17	
Client ID No:	SVM-16-22	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	0.020
Allyl chloride	<0.020	0.020
tert-Amyl Methyl Ether (TAME)	<0.020	0.020
Benzene	<0.0030	0.0030
Benzyl chloride	<0.020	0.020
Bromodichloromethane	<0.020	0.020
Bromoform	<0.020	0.020
Bromomethane	<0.020	0.020
1,3-Butadiene	<0.020	0.020
2-Butanone (MEK)	<0.020	0.020
tert-Butyl alcohol (TBA)	<20	20
Carbon Disulfide	<0.020	0.020
Carbon Tetrachloride	<0.020	0.020
Chlorobenzene	<0.020	0.020
Chloroethane	<0.020	0.020
Chloroform	<0.020	0.020
Chloromethane	<0.020	0.020
Cyclohexane	<0.020	0.020
Dibromochloromethane	<0.020	0.020
1,2-Dibromoethane (EDB)	<0.020	0.020
1,2-Dichlorobenzene	<0.020	0.020
1,3-Dichlorobenzene	<0.020	0.020
1,4-Dichlorobenzene	<0.020	0.020
Dichlorodifluoromethane (R12)	<0.020	0.020
1,1-Dichloroethane	<0.020	0.020
1,2-Dichloroethane (EDC)	<0.0040	0.0040
cis-1,2-Dichloroethylene	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/2019	
Date Prepared:	03/22/19	
Date Analyzed:	03/22/19	
AA ID No:	9C19011-17	
Client ID No:	SVM-16-22	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

1,1-Dichloroethylene	<0.020	0.020
trans-1,2-Dichloroethylene	<0.020	0.020
1,2-Dichloropropane	<0.020	0.020
trans-1,3-Dichloropropylene	<0.020	0.020
cis-1,3-Dichloropropylene	<0.020	0.020
Dichlorotetrafluoroethane	<0.020	0.020
Diisopropyl ether (DIPE)	<0.020	0.020
1,4-Dioxane	<0.020	0.020
Ethanol	<0.020	0.020
Ethyl Acetate	<0.020	0.020
Ethylbenzene	<0.020	0.020
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020
4-Ethyltoluene	<0.020	0.020
Heptane	<0.020	0.020
Hexachlorobutadiene	<0.020	0.020
n-Hexane	<0.020	0.020
2-Hexanone (MBK)	<0.020	0.020
Isopropanol (IPA)	<0.20	0.20
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020
Methylene Chloride	<0.020	0.020
4-Methyl-2-pentanone (MIBK)	<0.020	0.020
Naphthalene	<0.0030	0.0030
Propylene	<0.020	0.020
Styrene	<0.020	0.020
1,1,2,2-Tetrachloroethane	<0.020	0.020
Tetrachloroethylene (PCE)	<0.010	0.010
Tetrahydrofuran (THF)	<0.020	0.020

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: ug/L

Date Sampled:	03/19/2019	
Date Prepared:	03/22/19	
Date Analyzed:	03/22/19	
AA ID No:	9C19011-17	
Client ID No:	SVM-16-22	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-15 (Mid Level) (TO-15) (continued)

Toluene	<0.020	0.020
1,2,4-Trichlorobenzene	<0.020	0.020
1,1,2-Trichloroethane	<0.020	0.020
1,1,1-Trichloroethane	<0.020	0.020
Trichloroethylene (TCE)	<0.020	0.020
Trichlorofluoromethane (R11)	<0.020	0.020
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020
1,3,5-Trimethylbenzene	<0.020	0.020
1,2,4-Trimethylbenzene	<0.020	0.020
2,2,4-Trimethylpentane	<0.020	0.020
Vinyl acetate	<0.020	0.020
Vinyl bromide	<0.020	0.020
Vinyl chloride	<0.020	0.020
o-Xylene	<0.020	0.020
m,p-Xylenes	<0.020	0.020
1,2,3-Trichloropropane	<0.020	0.020
sec-Butylbenzene	<0.020	0.020
Isopropylbenzene	<0.020	0.020
n-Propylbenzene	<0.020	0.020
4-Isopropyltoluene	<0.020	0.020
n-Butylbenzene	<0.020	0.020

Surrogates

		<u>%REC Limits</u>
4-Bromofluorobenzene	107%	70-130

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-01	9C19011-02	9C19011-03	9C19011-04	
Client ID No:	SVM-15-7	SVM-15-15	SVM-15-22	SVM-6-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.10	<0.10	<0.10	<0.10	0.10
Oxygen	18	19	18	19	0.10
Carbon Dioxide	<0.10	0.10	0.76	<0.10	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-05	9C19011-07	9C19011-08	9C19011-09	
Client ID No:	SVM-6-15	SVM-7-7	SVM-7-13	SVM-7-13DUP	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.10	<0.10	<0.10	<0.10	0.10
Oxygen	19	19	18	18	0.10
Carbon Dioxide	0.16	0.26	0.43	0.41	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-10	9C19011-11	9C19011-12	9C19011-13	
Client ID No:	SVM-10-15	SVM-5-5	SVM-5-15	SVM-8-5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.10	<0.10	<0.10	<0.10	0.10
Oxygen	15	19	19	19	0.10
Carbon Dioxide	3.4	<0.10	<0.10	<0.10	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: Fixed Gases by TCD

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19
Units: % by Volume

Date Sampled:	03/19/19	03/19/19	03/19/19	03/19/19	
Date Prepared:	03/22/19	03/22/19	03/22/19	03/22/19	
Date Analyzed:	03/22/19	03/22/19	03/22/19	03/22/19	
AA ID No:	9C19011-14	9C19011-15	9C19011-16	9C19011-17	
Client ID No:	SVM-8-15	SVM-16-7	SVM-16-16	SVM-16-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.10	<0.10	<0.10	<0.10	0.10
Oxygen	19	19	18	3.6	0.10
Carbon Dioxide	0.14	0.21	0.50	11	0.10

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control									
<i>Batch B9C2718 - *** DEFAULT PREP ***</i>									
Blank (B9C2718-BLK1)				Prepared & Analyzed: 03/22/19					
Gasoline Range Organics (GRO)	<20	20	ug/L						
Surrogate: 4-Bromofluorobenzene	0.118		ug/L	0.14	82.5	70-130			
LCS (B9C2718-BS1)				Prepared & Analyzed: 03/22/19					
Gasoline Range Organics (GRO)	1.01	20	ug/L	0.82	124	70-130			
Surrogate: 4-Bromofluorobenzene	0.129		ug/L	0.14	90.2	70-130			
LCS Dup (B9C2718-BSD1)				Prepared & Analyzed: 03/22/19					
Gasoline Range Organics (GRO)	1.06	20	ug/L	0.82	130	70-130	4.34	30	
Surrogate: 4-Bromofluorobenzene	0.130		ug/L	0.14	91.1	70-130			
Duplicate (B9C2718-DUP1)				Source: 9C19011-08 Prepared & Analyzed: 03/22/19					
Gasoline Range Organics (GRO)	<20	20	ug/L		<20			30	
Surrogate: 4-Bromofluorobenzene	0.131		ug/L	0.14	91.8	70-130			

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

*Batch B9C2622 - *** DEFAULT PREP ****

Blank (B9C2622-BLK1)				Prepared & Analyzed: 03/22/19					
Acetone	<0.020	0.020	ug/L						
Allyl chloride	<0.020	0.020	ug/L						
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L						
Benzene	<0.0030	0.0030	ug/L						
Benzyl chloride	<0.020	0.020	ug/L						
Bromodichloromethane	<0.020	0.020	ug/L						
Bromoform	<0.020	0.020	ug/L						
Bromomethane	<0.020	0.020	ug/L						
1,3-Butadiene	<0.020	0.020	ug/L						
2-Butanone (MEK)	<0.020	0.020	ug/L						
tert-Butyl alcohol (TBA)	<20	20	ug/L						
Carbon Disulfide	<0.020	0.020	ug/L						
Carbon Tetrachloride	<0.020	0.020	ug/L						
Chlorobenzene	<0.020	0.020	ug/L						
Chloroethane	<0.020	0.020	ug/L						

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2622 - *** DEFAULT PREP ***</i>										
Blank (B9C2622-BLK1) Continued										
Prepared & Analyzed: 03/22/19										
Chloroform	<0.020	0.020	ug/L							
Chloromethane	<0.020	0.020	ug/L							
Cyclohexane	<0.020	0.020	ug/L							
Dibromochloromethane	<0.020	0.020	ug/L							
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L							
1,2-Dichlorobenzene	<0.020	0.020	ug/L							
1,3-Dichlorobenzene	<0.020	0.020	ug/L							
1,4-Dichlorobenzene	<0.020	0.020	ug/L							
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L							
1,1-Dichloroethane	<0.020	0.020	ug/L							
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L							
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,1-Dichloroethylene	<0.020	0.020	ug/L							
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L							
1,2-Dichloropropane	<0.020	0.020	ug/L							
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L							
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L							
Dichlorotetrafluoroethane	<0.020	0.020	ug/L							
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L							
1,4-Dioxane	<0.020	0.020	ug/L							
Ethanol	<0.020	0.020	ug/L							
Ethyl Acetate	<0.020	0.020	ug/L							
Ethylbenzene	<0.020	0.020	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L							
4-Ethyltoluene	<0.020	0.020	ug/L							
Heptane	<0.020	0.020	ug/L							
Hexachlorobutadiene	<0.020	0.020	ug/L							
n-Hexane	<0.020	0.020	ug/L							
2-Hexanone (MBK)	<0.020	0.020	ug/L							
Isopropanol (IPA)	<0.20	0.20	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L							
Methylene Chloride	<0.020	0.020	ug/L							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2622 - *** DEFAULT PREP ***</i>										
Blank (B9C2622-BLK1) Continued										
Prepared & Analyzed: 03/22/19										
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L							
Naphthalene	<0.0030	0.0030	ug/L							
Propylene	<0.020	0.020	ug/L							
Styrene	<0.020	0.020	ug/L							
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L							
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L							
Tetrahydrofuran (THF)	<0.020	0.020	ug/L							
Toluene	<0.020	0.020	ug/L							
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L							
1,1,2-Trichloroethane	<0.020	0.020	ug/L							
1,1,1-Trichloroethane	<0.020	0.020	ug/L							
Trichloroethylene (TCE)	<0.020	0.020	ug/L							
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L							
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L							
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L							
2,2,4-Trimethylpentane	<0.020	0.020	ug/L							
Vinyl acetate	<0.020	0.020	ug/L							
Vinyl bromide	<0.020	0.020	ug/L							
Vinyl chloride	<0.020	0.020	ug/L							
o-Xylene	<0.020	0.020	ug/L							
m,p-Xylenes	<0.020	0.020	ug/L							
1,2,3-Trichloropropane	<0.020	0.020	ug/L							
sec-Butylbenzene	<0.020	0.020	ug/L							
Isopropylbenzene	<0.020	0.020	ug/L							
n-Propylbenzene	<0.020	0.020	ug/L							
4-Isopropyltoluene	<0.020	0.020	ug/L							
n-Butylbenzene	<0.020	0.020	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.139</i>		<i>ug/L</i>	<i>0.14</i>		<i>97.2</i>	<i>70-130</i>			
LCS (B9C2622-BS1)										
Prepared & Analyzed: 03/22/19										

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
Batch B9C2622 - *** DEFAULT PREP ***										
LCS (B9C2622-BS1) Continued										
Prepared & Analyzed: 03/22/19										
Acetone	0.0269	0.020	ug/L	0.024		113	70-130		30	
Benzene	0.0275	0.0030	ug/L	0.032		86.1	70-130		30	
Benzyl chloride	0.0409	0.020	ug/L	0.052		79.0	70-130		30	
Bromodichloromethane	0.0586	0.020	ug/L	0.067		87.4	70-130		30	
Bromoform	0.0861	0.020	ug/L	0.10		83.3	70-130		30	
Bromomethane	0.0447	0.020	ug/L	0.039		115	70-130		30	
2-Butanone (MEK)	0.0257	0.020	ug/L	0.029		87.2	70-130		30	
Carbon Disulfide	0.0220	0.020	ug/L	0.031		70.6	70-130		30	
Carbon Tetrachloride	0.0557	0.020	ug/L	0.063		88.5	70-130		30	
Chlorobenzene	0.0410	0.020	ug/L	0.046		89.1	70-130		30	
Chloroethane	0.0332	0.020	ug/L	0.026		126	70-130		30	
Chloroform	0.0411	0.020	ug/L	0.049		84.1	70-130		30	
Chloromethane	0.0184	0.020	ug/L	0.021		88.9	70-130		30	
Dibromochloromethane	0.0723	0.020	ug/L	0.085		84.9	70-130		30	
1,2-Dibromoethane (EDB)	0.0667	0.020	ug/L	0.077		86.8	70-130		30	
1,2-Dichlorobenzene	0.0500	0.020	ug/L	0.060		83.1	70-130		30	
1,3-Dichlorobenzene	0.0504	0.020	ug/L	0.060		83.9	70-130		30	
1,4-Dichlorobenzene	0.0519	0.020	ug/L	0.060		86.3	70-130		30	
Dichlorodifluoromethane (R12)	0.0329	0.020	ug/L	0.049		66.5	70-130		30	***
1,1-Dichloroethane	0.0306	0.020	ug/L	0.040		75.7	70-130		30	
1,2-Dichloroethane (EDC)	0.0337	0.0040	ug/L	0.040		83.2	70-130		30	
cis-1,2-Dichloroethylene	0.0358	0.020	ug/L	0.040		90.3	70-130		30	
1,1-Dichloroethylene	0.0425	0.020	ug/L	0.040		107	70-130		30	
trans-1,2-Dichloroethylene	0.0287	0.020	ug/L	0.040		72.3	70-130		30	
1,2-Dichloropropane	0.0414	0.020	ug/L	0.046		89.6	70-130		30	
trans-1,3-Dichloropropylene	0.0398	0.020	ug/L	0.045		87.8	70-130		30	
cis-1,3-Dichloropropylene	0.0404	0.020	ug/L	0.045		89.0	70-130		30	
Dichlorotetrafluoroethane	0.0166	0.020	ug/L	0.070		23.8	70-130		30	***
Ethylbenzene	0.0383	0.020	ug/L	0.043		88.2	70-130		30	
4-Ethyltoluene	0.0400	0.020	ug/L	0.049		81.3	70-130		30	
Hexachlorobutadiene	0.0979	0.020	ug/L	0.11		91.8	70-130		30	
2-Hexanone (MBK)	0.0362	0.020	ug/L	0.041		88.4	70-130		30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2622 - *** DEFAULT PREP ***

LCS (B9C2622-BS1) Continued

Prepared & Analyzed: 03/22/19

Isopropanol (IPA)	0.0297	0.20	ug/L	0.025		121	70-130		30	
Methylene Chloride	0.0388	0.020	ug/L	0.035		112	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.0363	0.020	ug/L	0.041		88.6	70-130		30	
Styrene	0.0383	0.020	ug/L	0.043		89.9	70-130		30	
1,1,2,2-Tetrachloroethane	0.0599	0.020	ug/L	0.069		87.2	70-130		30	
Tetrachloroethylene (PCE)	0.0561	0.010	ug/L	0.068		82.7	70-130		30	
Toluene	0.0324	0.020	ug/L	0.038		86.1	70-130		30	
1,2,4-Trichlorobenzene	0.0712	0.020	ug/L	0.074		95.9	70-130		30	
1,1,2-Trichloroethane	0.0470	0.020	ug/L	0.055		86.1	70-130		30	
1,1,1-Trichloroethane	0.0457	0.020	ug/L	0.055		83.8	70-130		30	
Trichloroethylene (TCE)	0.0475	0.020	ug/L	0.054		88.4	70-130		30	
Trichlorofluoromethane (R11)	0.0593	0.020	ug/L	0.056		106	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0762	0.020	ug/L	0.077		99.4	70-130		30	
1,3,5-Trimethylbenzene	0.0421	0.020	ug/L	0.049		85.6	70-130		30	
1,2,4-Trimethylbenzene	0.0425	0.020	ug/L	0.049		86.4	70-130		30	
Vinyl acetate	0.0289	0.020	ug/L	0.035		82.0	70-130		30	
Vinyl chloride	0.0204	0.020	ug/L	0.026		79.7	70-130		30	
o-Xylene	0.0379	0.020	ug/L	0.043		87.3	70-130		30	
m,p-Xylenes	0.0752	0.020	ug/L	0.087		86.6	70-130		30	
1,2,3-Trichloropropane	0.0546	0.020	ug/L	0.060		90.5	70-130		30	
sec-Butylbenzene	0.0492	0.020	ug/L	0.055		89.6	70-130		30	
Isopropylbenzene	0.0457	0.020	ug/L	0.049		92.9	70-130		30	
n-Propylbenzene	0.0457	0.020	ug/L	0.049		93.0	70-130		30	
4-Isopropyltoluene	0.0502	0.020	ug/L	0.055		91.5	70-130		30	

Surrogate: 4-Bromofluorobenzene 0.144 ug/L 0.14 101 70-130

LCS Dup (B9C2622-BSD1)

Prepared & Analyzed: 03/22/19

Acetone	0.0188	0.020	ug/L	0.024		79.1	70-130	35.5	30	AA-C1
Benzene	0.0274	0.0030	ug/L	0.032		85.8	70-130	0.349	30	
Benzyl chloride	0.0393	0.020	ug/L	0.052		75.9	70-130	4.00	30	
Bromodichloromethane	0.0560	0.020	ug/L	0.067		83.5	70-130	4.56	30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2622 - *** DEFAULT PREP ***

LCS Dup (B9C2622-BSD1) Continued

Prepared & Analyzed: 03/22/19

Bromoform	0.0834	0.020	ug/L	0.10		80.7	70-130	3.17	30	
Bromomethane	0.0320	0.020	ug/L	0.039		82.5	70-130	33.1	30	AA-C1
2-Butanone (MEK)	0.0252	0.020	ug/L	0.029		85.6	70-130	1.85	30	
Carbon Disulfide	0.0220	0.020	ug/L	0.031		70.7	70-130	0.142	30	
Carbon Tetrachloride	0.0532	0.020	ug/L	0.063		84.6	70-130	4.51	30	
Chlorobenzene	0.0403	0.020	ug/L	0.046		87.5	70-130	1.81	30	
Chloroethane	0.0232	0.020	ug/L	0.026		87.8	70-130	35.6	30	AA-C1
Chloroform	0.0402	0.020	ug/L	0.049		82.3	70-130	2.16	30	
Chloromethane	0.0166	0.020	ug/L	0.021		80.6	70-130	9.79	30	
Dibromochloromethane	0.0692	0.020	ug/L	0.085		81.2	70-130	4.46	30	
1,2-Dibromoethane (EDB)	0.0655	0.020	ug/L	0.077		85.2	70-130	1.86	30	
1,2-Dichlorobenzene	0.0484	0.020	ug/L	0.060		80.5	70-130	3.18	30	
1,3-Dichlorobenzene	0.0490	0.020	ug/L	0.060		81.5	70-130	2.90	30	
1,4-Dichlorobenzene	0.0499	0.020	ug/L	0.060		83.0	70-130	3.90	30	
Dichlorodifluoromethane (R12)	0.0316	0.020	ug/L	0.049		64.0	70-130	3.83	30	***
1,1-Dichloroethane	0.0348	0.020	ug/L	0.040		86.0	70-130	12.7	30	
1,2-Dichloroethane (EDC)	0.0317	0.0040	ug/L	0.040		78.4	70-130	5.94	30	
cis-1,2-Dichloroethylene	0.0350	0.020	ug/L	0.040		88.4	70-130	2.13	30	
1,1-Dichloroethylene	0.0413	0.020	ug/L	0.040		104	70-130	2.93	30	
trans-1,2-Dichloroethylene	0.0318	0.020	ug/L	0.040		80.2	70-130	10.4	30	
1,2-Dichloropropane	0.0405	0.020	ug/L	0.046		87.6	70-130	2.26	30	
trans-1,3-Dichloropropylene	0.0386	0.020	ug/L	0.045		85.1	70-130	3.12	30	
cis-1,3-Dichloropropylene	0.0391	0.020	ug/L	0.045		86.2	70-130	3.20	30	
Dichlorotetrafluoroethane	0.0156	0.020	ug/L	0.070		22.3	70-130	6.51	30	***
Ethylbenzene	0.0374	0.020	ug/L	0.043		86.2	70-130	2.29	30	
4-Ethyltoluene	0.0381	0.020	ug/L	0.049		77.4	70-130	4.91	30	
Hexachlorobutadiene	0.0939	0.020	ug/L	0.11		88.0	70-130	4.23	30	
2-Hexanone (MBK)	0.0354	0.020	ug/L	0.041		86.3	70-130	2.40	30	
Isopropanol (IPA)	0.0224	0.20	ug/L	0.025		91.3	70-130	27.9	30	
Methylene Chloride	0.0373	0.020	ug/L	0.035		107	70-130	3.93	30	
4-Methyl-2-pentanone (MIBK)	0.0347	0.020	ug/L	0.041		84.8	70-130	4.38	30	
Styrene	0.0378	0.020	ug/L	0.043		88.7	70-130	1.34	30	

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2622 - *** DEFAULT PREP ***</i>										
LCS Dup (B9C2622-BSD1) Continued						Prepared & Analyzed: 03/22/19				
1,1,2,2-Tetrachloroethane	0.0581	0.020	ug/L	0.069		84.7	70-130	2.91	30	
Tetrachloroethylene (PCE)	0.0550	0.010	ug/L	0.068		81.0	70-130	2.08	30	
Toluene	0.0317	0.020	ug/L	0.038		84.1	70-130	2.35	30	
1,2,4-Trichlorobenzene	0.0703	0.020	ug/L	0.074		94.7	70-130	1.26	30	
1,1,2-Trichloroethane	0.0461	0.020	ug/L	0.055		84.5	70-130	1.88	30	
1,1,1-Trichloroethane	0.0439	0.020	ug/L	0.055		80.4	70-130	4.14	30	
Trichloroethylene (TCE)	0.0464	0.020	ug/L	0.054		86.4	70-130	2.29	30	
Trichlorofluoromethane (R11)	0.0461	0.020	ug/L	0.056		82.1	70-130	24.9	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.0694	0.020	ug/L	0.077		90.5	70-130	9.37	30	
1,3,5-Trimethylbenzene	0.0404	0.020	ug/L	0.049		82.1	70-130	4.17	30	
1,2,4-Trimethylbenzene	0.0403	0.020	ug/L	0.049		82.0	70-130	5.23	30	
Vinyl acetate	0.0294	0.020	ug/L	0.035		83.4	70-130	1.69	30	
Vinyl chloride	0.0219	0.020	ug/L	0.026		85.7	70-130	7.26	30	
o-Xylene	0.0366	0.020	ug/L	0.043		84.2	70-130	3.62	30	
m,p-Xylenes	0.0744	0.020	ug/L	0.087		85.6	70-130	1.05	30	
1,2,3-Trichloropropane	0.0525	0.020	ug/L	0.060		87.0	70-130	3.94	30	
sec-Butylbenzene	0.0472	0.020	ug/L	0.055		86.0	70-130	4.10	30	
Isopropylbenzene	0.0440	0.020	ug/L	0.049		89.4	70-130	3.84	30	
n-Propylbenzene	0.0439	0.020	ug/L	0.049		89.2	70-130	4.17	30	
4-Isopropyltoluene	0.0480	0.020	ug/L	0.055		87.5	70-130	4.47	30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.138</i>		<i>ug/L</i>	<i>0.14</i>		<i>96.5</i>	<i>70-130</i>			
Duplicate (B9C2622-DUP1)						Source: 9C19011-08 Prepared & Analyzed: 03/22/19				
Acetone	<0.020	0.020	ug/L		<0.020				30	
Allyl chloride	<0.020	0.020	ug/L		<0.020				30	
tert-Amyl Methyl Ether (TAME)	<0.020	0.020	ug/L		<0.020				30	
Benzene	<0.0030	0.0030	ug/L		<0.0030				30	
Benzyl chloride	<0.020	0.020	ug/L		<0.020				30	
Bromodichloromethane	<0.020	0.020	ug/L		<0.020				30	
Bromoform	<0.020	0.020	ug/L		<0.020				30	
Bromomethane	<0.020	0.020	ug/L		<0.020				30	

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2622 - *** DEFAULT PREP ***</i>										
Duplicate (B9C2622-DUP1) Continued Source: 9C19011-08 Prepared & Analyzed: 03/22/19										
1,3-Butadiene	<0.020	0.020	ug/L		<0.020				30	
2-Butanone (MEK)	<0.020	0.020	ug/L		<0.020				30	
tert-Butyl alcohol (TBA)	<20	20	ug/L		<20				30	
Carbon Disulfide	<0.020	0.020	ug/L		<0.020				30	
Carbon Tetrachloride	<0.020	0.020	ug/L		<0.020				30	
Chlorobenzene	<0.020	0.020	ug/L		<0.020				30	
Chloroethane	<0.020	0.020	ug/L		<0.020				30	
Chloroform	<0.020	0.020	ug/L		<0.020				30	
Chloromethane	<0.020	0.020	ug/L		<0.020				30	
Cyclohexane	<0.020	0.020	ug/L		<0.020				30	
Dibromochloromethane	<0.020	0.020	ug/L		<0.020				30	
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L		<0.020				30	
1,2-Dichlorobenzene	<0.020	0.020	ug/L		<0.020				30	
1,3-Dichlorobenzene	<0.020	0.020	ug/L		<0.020				30	
1,4-Dichlorobenzene	<0.020	0.020	ug/L		<0.020				30	
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L		<0.020				30	
1,1-Dichloroethane	<0.020	0.020	ug/L		<0.020				30	
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L		<0.0040				30	
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L		<0.020				30	
1,1-Dichloroethylene	<0.020	0.020	ug/L		<0.020				30	
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L		<0.020				30	
1,2-Dichloropropane	<0.020	0.020	ug/L		<0.020				30	
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L		<0.020				30	
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L		<0.020				30	
Dichlorotetrafluoroethane	<0.020	0.020	ug/L		<0.020				30	
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L		<0.020				30	
1,4-Dioxane	<0.020	0.020	ug/L		<0.020				30	
Ethanol	<0.020	0.020	ug/L		<0.020				30	
Ethyl Acetate	<0.020	0.020	ug/L		<0.020				30	
Ethylbenzene	<0.020	0.020	ug/L		<0.020				30	
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L		<0.020				30	
4-Ethyltoluene	<0.020	0.020	ug/L		<0.020				30	

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B9C2622 - *** DEFAULT PREP ***</i>										
Duplicate (B9C2622-DUP1) Continued Source: 9C19011-08 Prepared & Analyzed: 03/22/19										
Heptane	<0.020	0.020	ug/L		<0.020				30	
Hexachlorobutadiene	<0.020	0.020	ug/L		<0.020				30	
n-Hexane	<0.020	0.020	ug/L		<0.020				30	
2-Hexanone (MBK)	<0.020	0.020	ug/L		<0.020				30	
Isopropanol (IPA)	<0.20	0.20	ug/L		<0.20				30	
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L		<0.020				30	
Methylene Chloride	<0.020	0.020	ug/L		<0.020				30	
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L		<0.020				30	
Naphthalene	<0.0030	0.0030	ug/L		<0.0030				30	
Propylene	<0.020	0.020	ug/L		<0.020				30	
Styrene	<0.020	0.020	ug/L		<0.020				30	
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L		<0.020				30	
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L		<0.010				30	
Tetrahydrofuran (THF)	<0.020	0.020	ug/L		<0.020				30	
Toluene	<0.020	0.020	ug/L		<0.020				30	
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L		<0.020				30	
1,1,2-Trichloroethane	<0.020	0.020	ug/L		<0.020				30	
1,1,1-Trichloroethane	<0.020	0.020	ug/L		<0.020				30	
Trichloroethylene (TCE)	<0.020	0.020	ug/L		<0.020				30	
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L		<0.020				30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L		<0.020				30	
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L		<0.020				30	
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L		<0.020				30	
2,2,4-Trimethylpentane	<0.020	0.020	ug/L		<0.020				30	
Vinyl acetate	<0.020	0.020	ug/L		<0.020				30	
Vinyl bromide	<0.020	0.020	ug/L		<0.020				30	
Vinyl chloride	<0.020	0.020	ug/L		<0.020				30	
o-Xylene	<0.020	0.020	ug/L		<0.020				30	
m,p-Xylenes	<0.020	0.020	ug/L		<0.020				30	
1,2,3-Trichloropropane	<0.020	0.020	ug/L		<0.020				30	
sec-Butylbenzene	<0.020	0.020	ug/L		<0.020				30	

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control

Batch B9C2622 - *** DEFAULT PREP ***

Duplicate (B9C2622-DUP1) Continued Source: 9C19011-08 Prepared & Analyzed: 03/22/19

Isopropylbenzene	<0.020	0.020	ug/L		<0.020				30	
n-Propylbenzene	<0.020	0.020	ug/L		<0.020				30	
4-Isopropyltoluene	<0.020	0.020	ug/L		<0.020				30	
n-Butylbenzene	<0.020	0.020	ug/L		<0.020				30	

Surrogate: 4-Bromofluorobenzene 0.155 ug/L 0.14 108 70-130

Fixed Gases by TCD - Quality Control

Batch B9C2717 - *** DEFAULT PREP ***

Blank (B9C2717-BLK1) Prepared & Analyzed: 03/22/19

Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							

LCS (B9C2717-BS1) Prepared & Analyzed: 03/22/19

Methane	4.28	0.10	% by Volume	5.0		85.6	75-125			
Oxygen	3.88	0.10	% by Volume	4.0		97.0	75-125			
Carbon Dioxide	14.4	0.10	% by Volume	15		95.7	75-125			

LCS Dup (B9C2717-BSD1) Prepared & Analyzed: 03/22/19

Methane	4.42	0.10	% by Volume	5.0		88.4	75-125	3.22	30	
Oxygen	4.03	0.10	% by Volume	4.0		101	75-125	3.79	30	
Carbon Dioxide	14.4	0.10	% by Volume	15		95.8	75-125	0.139	30	

Duplicate (B9C2717-DUP1) Source: 9C19011-08 Prepared & Analyzed: 03/22/19

Methane	<0.10	0.10	% by Volume		<0.10				30	
---------	-------	------	-------------	--	-------	--	--	--	----	--

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9C2717 - *** DEFAULT PREP ***</i>										
Duplicate (B9C2717-DUP1) Continued Source: 9C19011-08 Prepared & Analyzed: 03/22/19										
Oxygen	18.5	0.10	% by Volume		18.5			0.00	30	
Carbon Dioxide	0.411	0.10	% by Volume		0.431			4.75	30	

Allen Aminian

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup

AA Project No: MB187327
Date Received: 03/19/19
Date Reported: 03/28/19

Special Notes

- [1] = *** : Exceeds lower control limit.
- [2] = AA-C1 : Exceeds RPD limit.
- [3] = E : The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).

A handwritten signature in black ink, appearing to read 'Allen Aminian'.

Allen Aminian
QA/QC Manager



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 17741

70055764

Page 1 of 1

Client: <u>Jacobs</u>	Project Name / No.: <u>km EP Norwalk</u>	Sampler's Name: <u>Jan Reddy</u>
Project Manager: <u>Eric D</u>	Site Address: <u>15306 Norwalk Blvd</u>	Sampler's Signature: <u>[Signature]</u>
Phone:	City: <u>Norwalk CA</u>	P.O. No.:
Fax:	State & Zip: <u>CA</u>	Quote No.:

TAT Turnaround Codes **

- ① = Same Day Rush
- ② = 24 Hour Rush
- ③ = 48 Hour Rush
- ④ = 72 Hour Rush
- ⑤ = 5 Day Rush
- X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

TU15	TU3	fixed gases																	
------	-----	-------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Special Instructions

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	Please enter the TAT Turnaround Codes ** below										Special Instructions				
						TU15	TU3	fixed gases												
SUM-15-7	9C19011-01	3/19/19	804	VAPOR	1	X	X	X												
SUM-15-15	-02		805			X	X	X												
SUM-15-22	-03		804			X	X	X												
SUM-6-5	-04		828			X	X	X												
SUM-6-15	-05		828			X	X	X												
Ambient Air	-06		826			X	X													
SUM-7-7	-07		849			X	X	X												
SUM-7-13	-08		849			X	X	X												
SUM-7-13 Dup	-09		908			X	X	X												
SUM-10-15	-10		903			X	X	X												
SUM-5-5	-11		939			X	X	X												
SUM-5-15	-12		937			X	X	X												
SUM-8-5	-13		946			X	X	X												
SUM-8-15	-14		951			X	X	X												
SUM-10-7	-15		1013			X	X	X												

19 MAR 19 1:44 PM

For Laboratory Use REVIEWED Date <u>3/20/19</u> Time <u>9:42</u> TAT <u>5</u> Days Sign <u>[Signature]</u>	Relinquished by <u>[Signature]</u>	Date <u>3/19/19</u>	Time <u>1020</u>	Received by <u>[Signature]</u>
	Relinquished by <u>[Signature]</u>	Date <u>3/19/19</u>	Time <u>1215</u>	Received by <u>[Signature]</u>
	Relinquished by <u>[Signature]</u>	Date <u>3/19/19</u>	Time <u>13:44</u>	Received by <u>[Signature]</u>

A.A. Project No.: MB187327/9C011-01

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.



AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311

Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 17742

70055670

Page 2 of 2

Client: <u>Jacobs</u>	Project Name / No.: <u>KNEP Norwalk</u>	Sampler's Name: <u>Juan Rodriguez</u>
Project Manager: <u>ERIC D</u>	Site Address: <u>15306 Norwalk blvd</u>	Sampler's Signature: <u>[Signature]</u>
Phone:	City: <u>Norwalk</u>	P.O. No.:
Fax:	State & Zip: <u>CA</u>	Quote No.:

TAT Turnaround Codes **

- ① = Same Day Rush
- ② = 24 Hour Rush
- ③ = 48 Hour Rush
- ④ = 72 Hour Rush
- ⑤ = 5 Day Rush
- X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	ANALYSIS REQUESTED (Test Name)										Special Instructions				
						Please enter the TAT Turnaround Codes ** below														
<u>Sum-16-16</u>	<u>9C19011 -16</u>	<u>3/19/19</u>	<u>1016</u>	<u>Water</u>	<u>1</u>	<u>X</u>	<u>X</u>	<u>X</u>												
<u>Sum-16-22</u>	<u>-17</u>	<u>↓</u>	<u>1010</u>	<u>↓</u>	<u>2</u>	<u>X</u>	<u>X</u>	<u>X</u>												

For Laboratory Use

REVIEWED

Date 3/20/19 Time 9:42

TAT 5 Days Sign: [Signature]

Relinquished by: <u>[Signature]</u>	Date: <u>3/19/19</u>	Time: <u>1020</u>	Received by: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date: <u>3/19/19</u>	Time: <u>1215</u>	Received by: <u>[Signature]</u>
Relinquished by: <u>[Signature]</u>	Date: <u>3/19/19</u>	Time: <u>13:44</u>	Received by: <u>[Signature]</u>

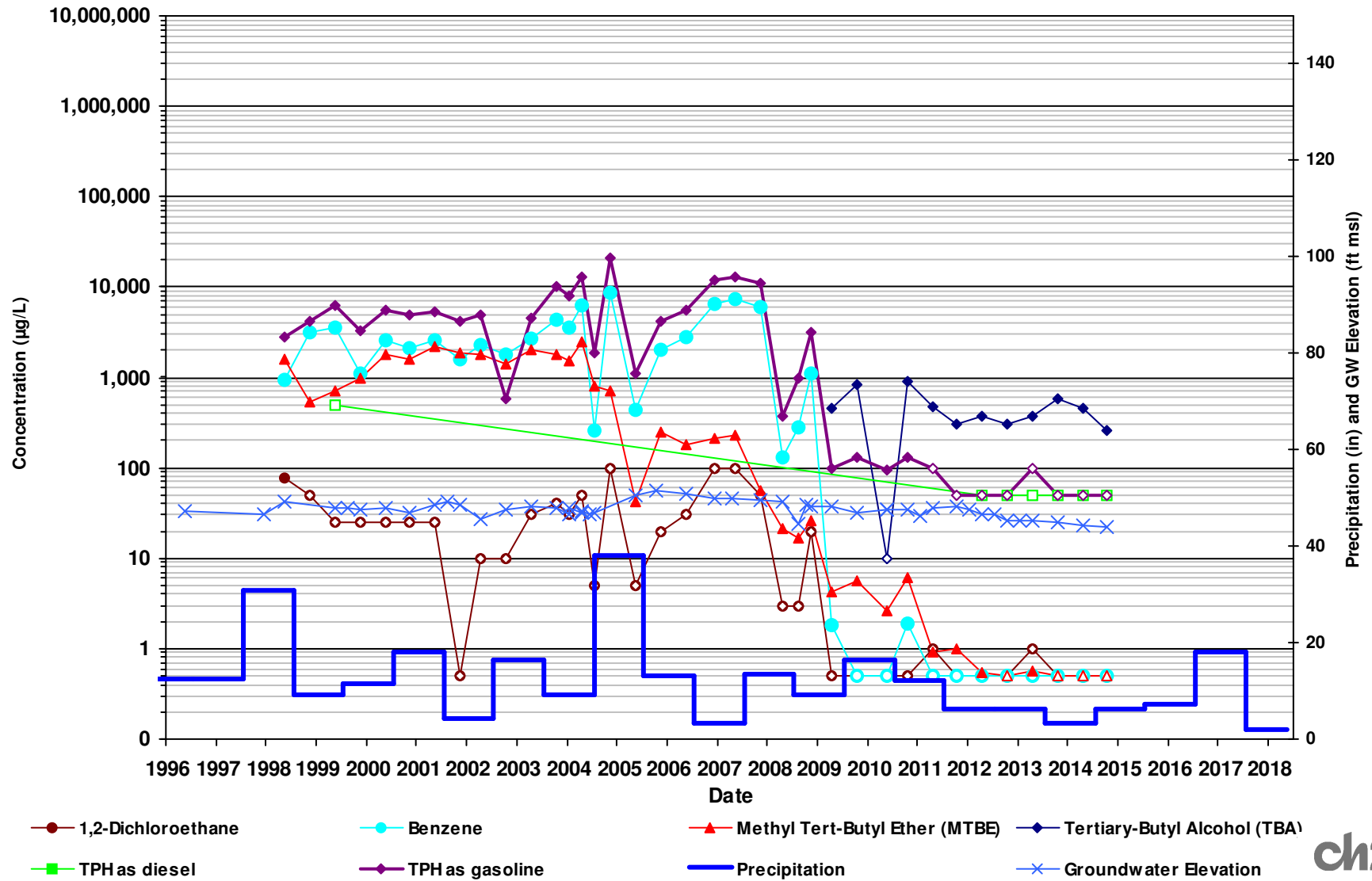
A.A. Project No.: MB187327/9C19011

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

Appendix B
Time Series Charts for Select
South-Central Area Wells

South-Central Area
GMW-27, GMW-O-3, GMW-O-5,
GMW-O-9, GMW-O-10, GMW-O-14,
GWR-1R, HL-2, MW-SF-1

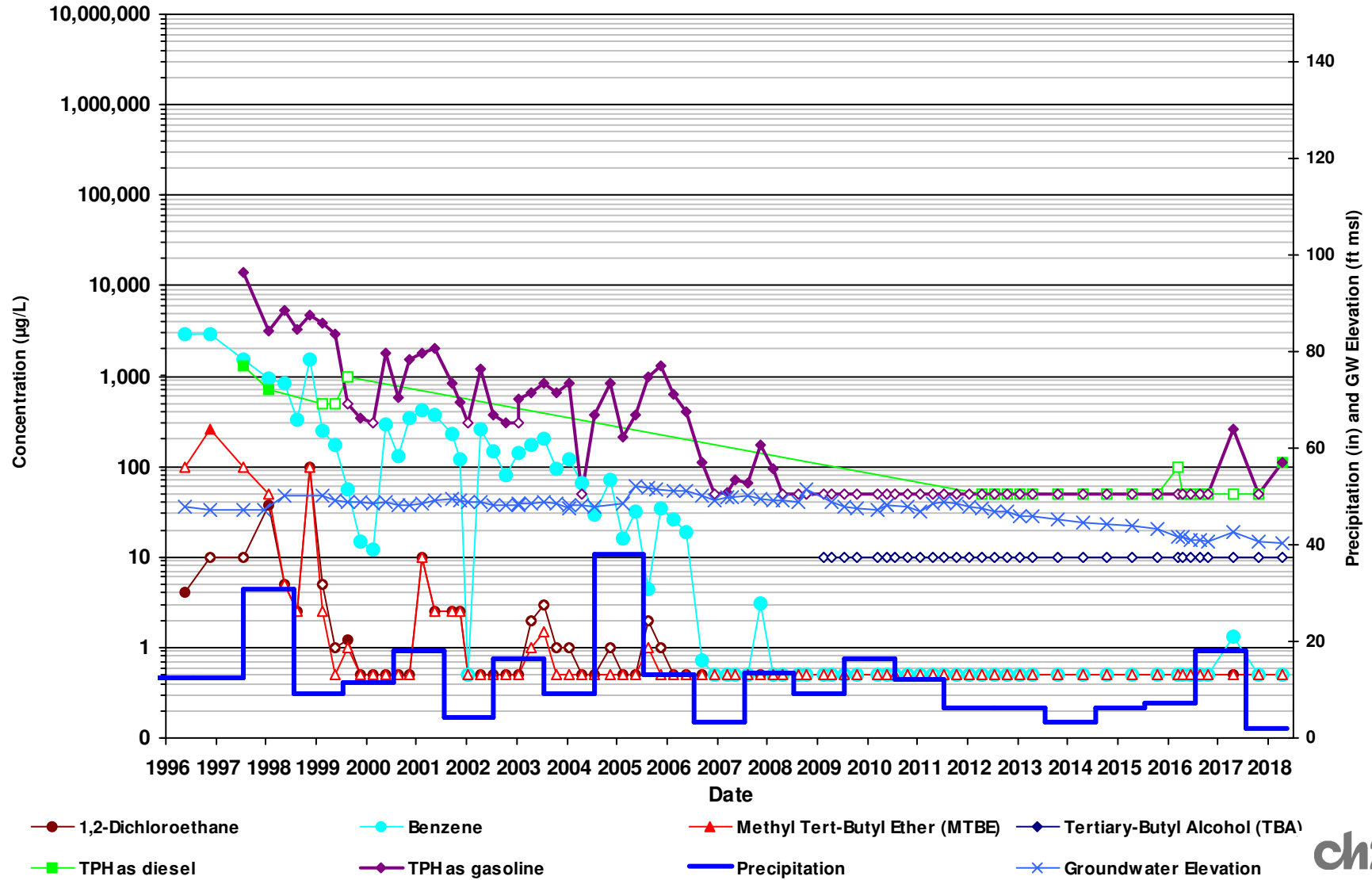
GMW-27



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

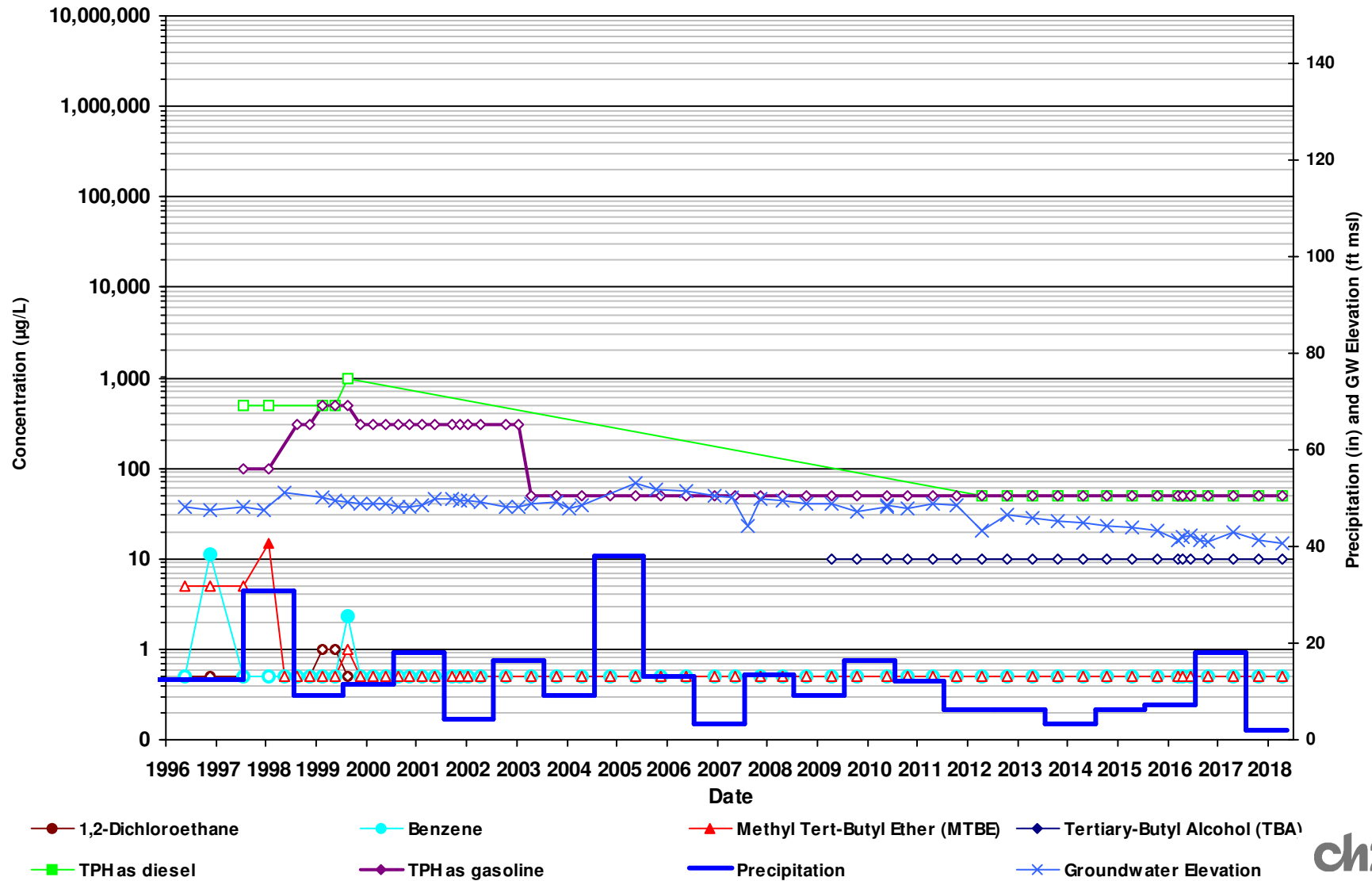
GMW-O-3



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

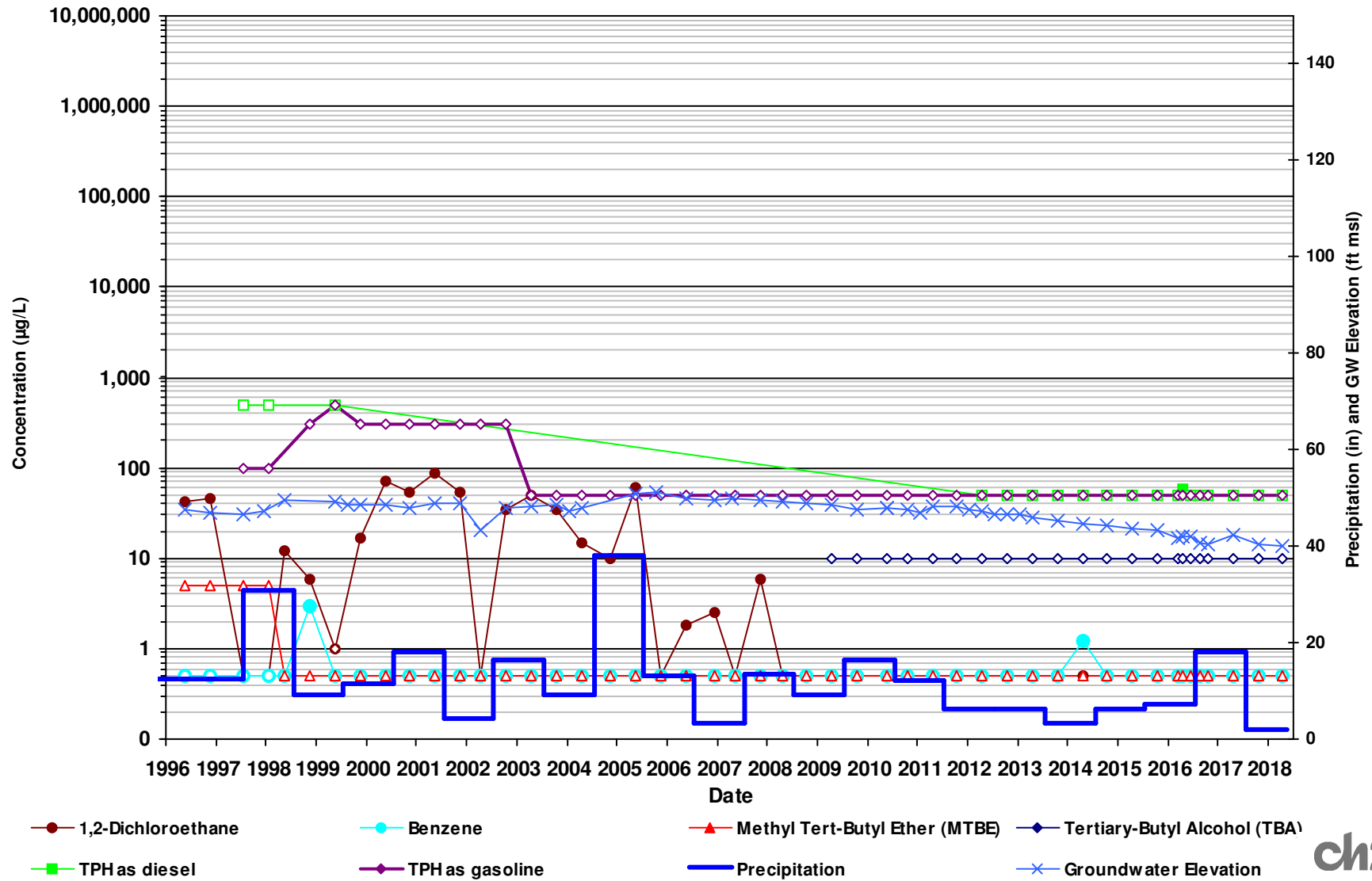
GMW-O-5



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

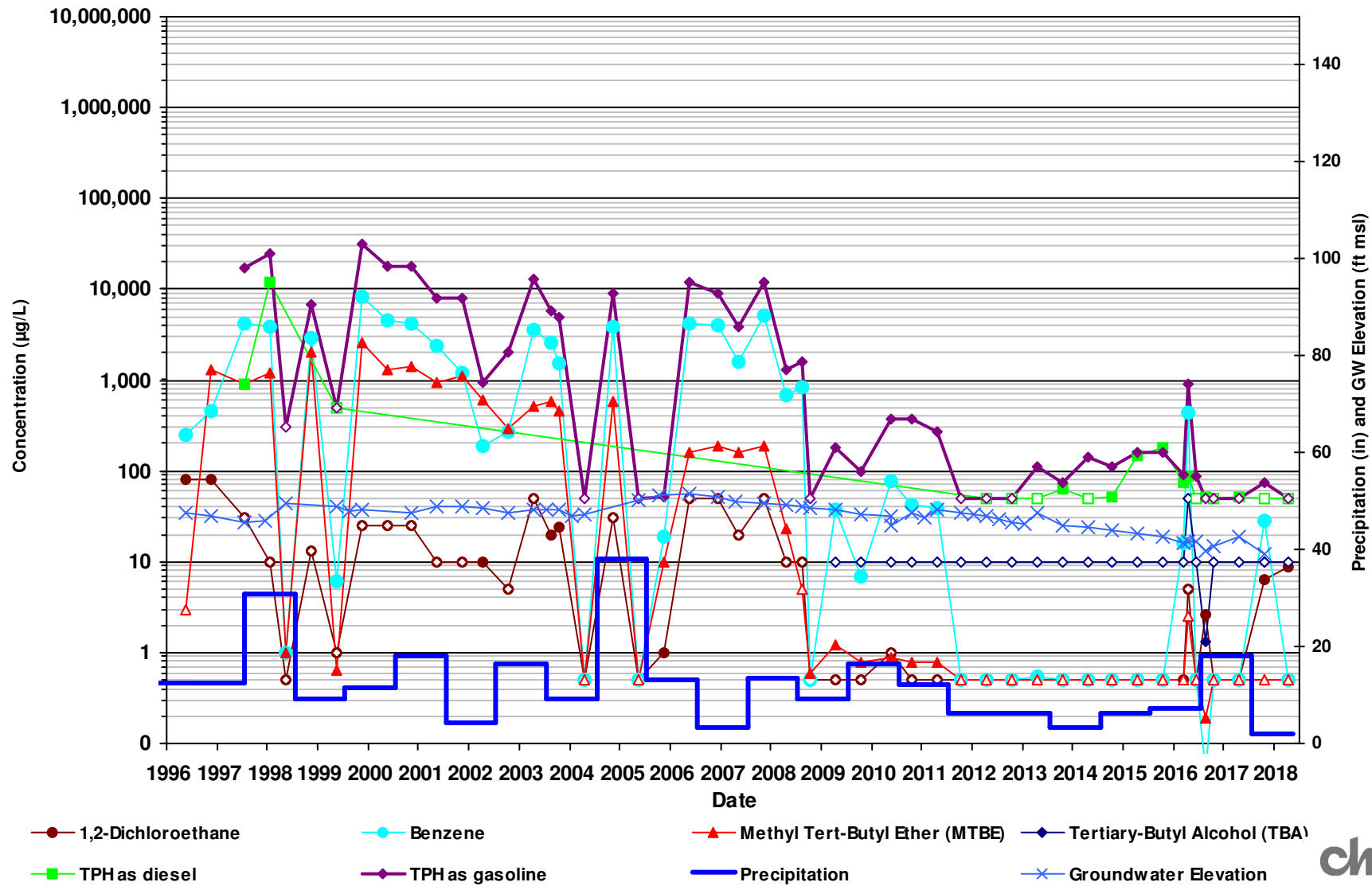
GMW-O-9



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

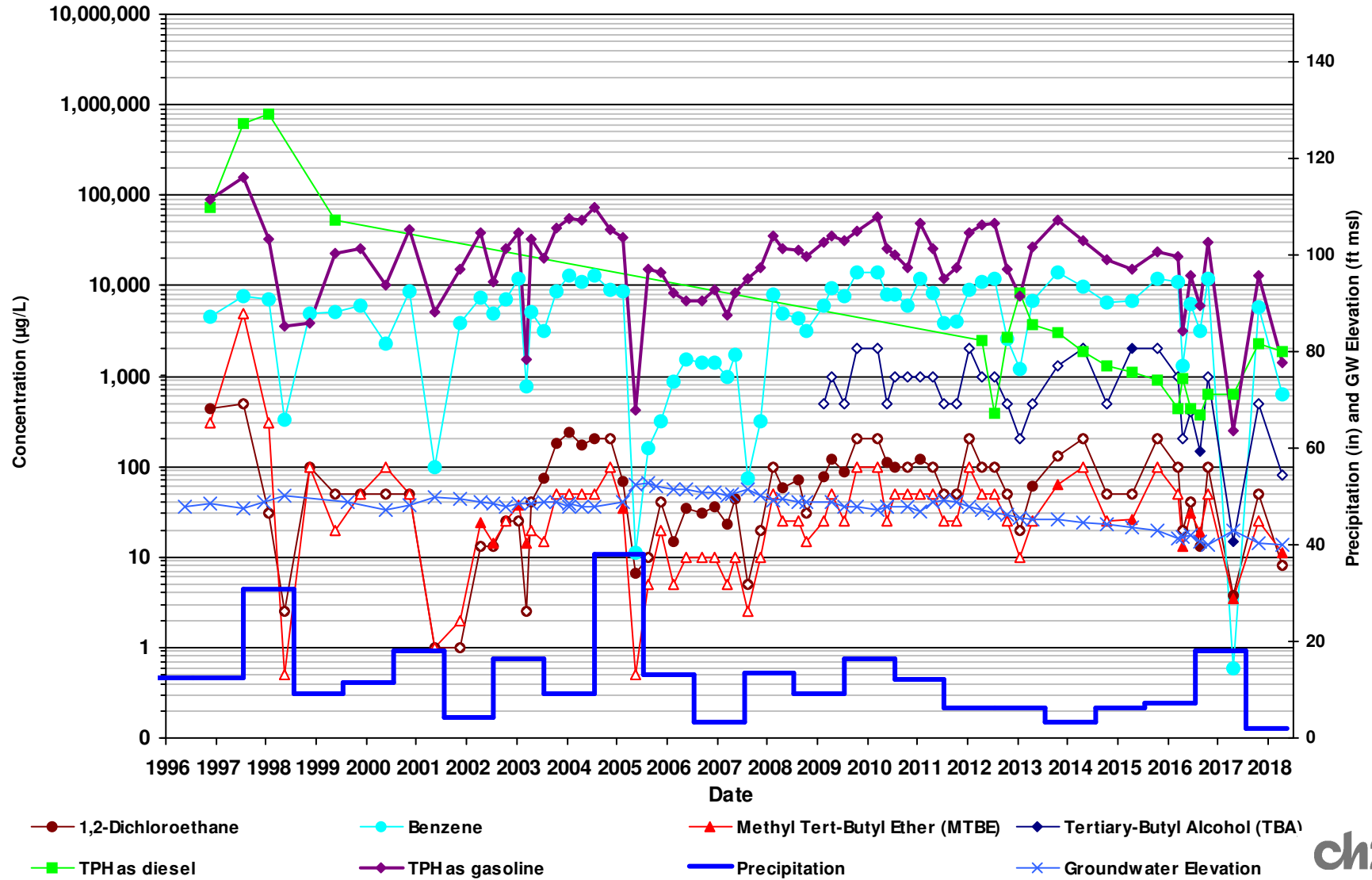
GMW-O-10



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

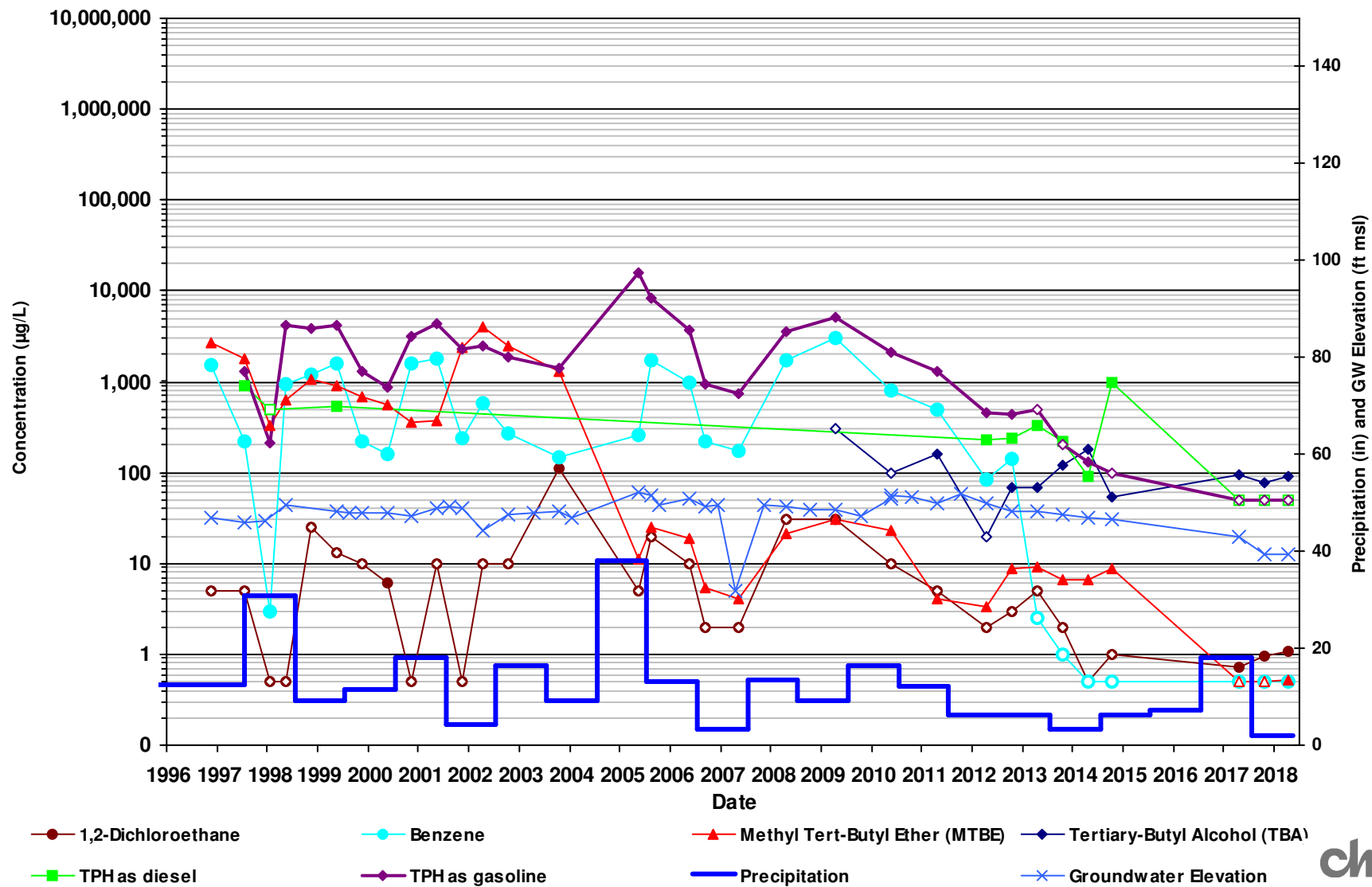
GMW-O-14



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

GWR-1R



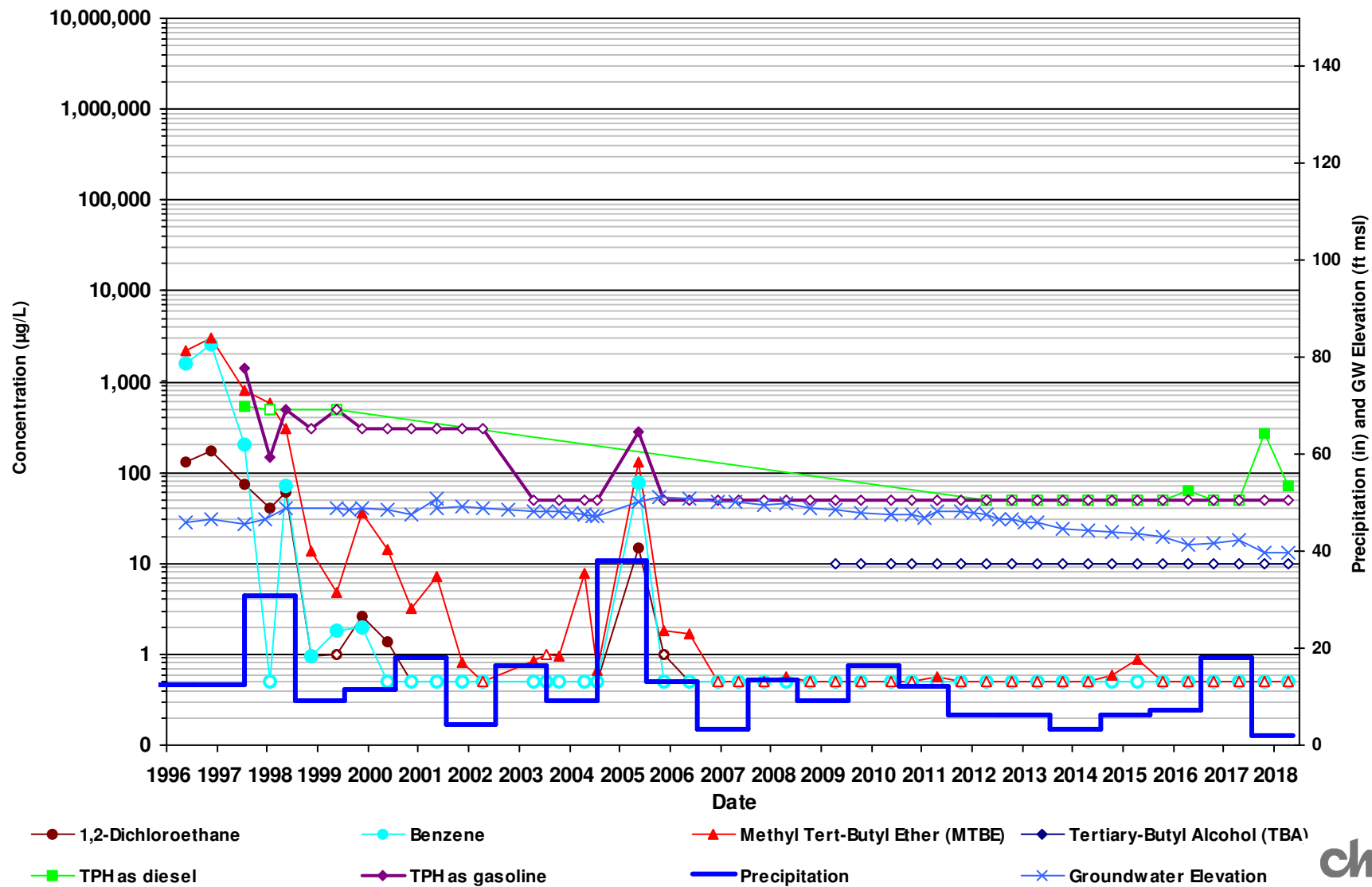
Well formerly known as GWR-1.

Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station.

source: <https://cimis.water.ca.gov/>

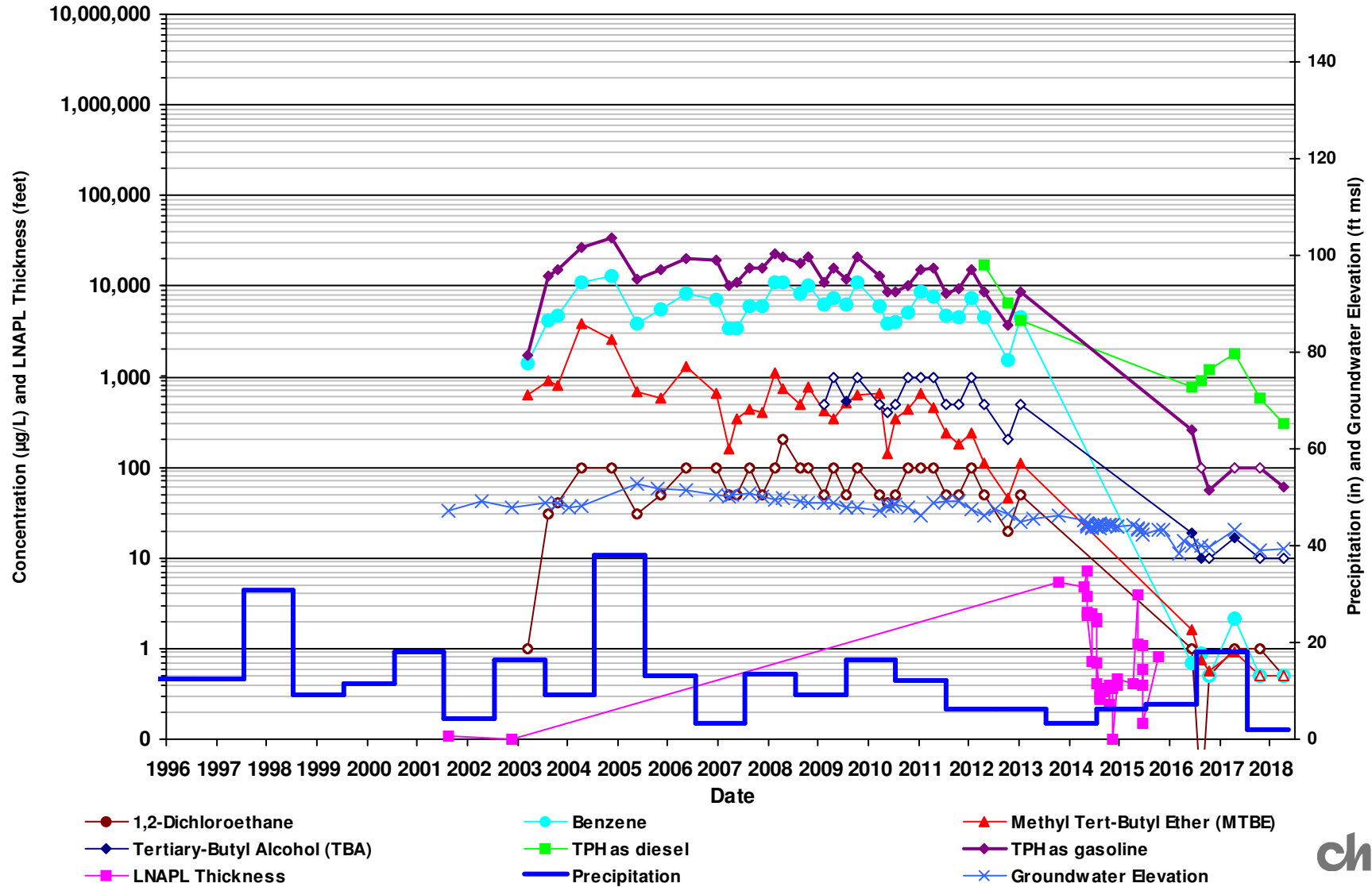
HL-2



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source: <https://cimis.water.ca.gov/>

MW-SF-1



Non detect results (ND) are plotted with an open symbol using the laboratory reporting limit.

Precipitation data reported as annual rainfall which is calculated from Long Beach CIMIS #174 weather station. source:<https://cimis.water.ca.gov/>