



UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

<u>Submittal Type:</u>	GEO_REPORT
<u>Report Title:</u>	SFPP Norwalk Pump Station Third Quarter 2019 Remediation Progress Report
<u>Report Type:</u>	Remedial Progress Report
<u>Report Date:</u>	10/15/2019
<u>Facility Global ID:</u>	SL204DM2394
<u>Facility Name:</u>	DOD - NORWALK DFSP-KINDER MORGAN
<u>File Name:</u>	SFPP_Norwalk_3Q19_RemediationReport_Final_10152019.pdf
<u>Organization Name:</u>	CH2M HILL
<u>Username:</u>	DJABLON1
<u>IP Address:</u>	172.91.156.224
<u>Submittal Date/Time:</u>	10/14/2019 3:46:49 PM
<u>Confirmation Number:</u>	1233134388

Copyright © 2019 State of California



SFPP Norwalk Pump Station
Norwalk, California

Third Quarter 2019 Remediation Progress Report

Final

October 15, 2019

Kinder Morgan, Inc.



SFPP Norwalk Pump Station, Norwalk, California

Project No: D3193500
Document Title: Third Quarter 2019 Remediation Progress Report
Revision: Final
Date: October 15, 2019
Client Name: Kinder Morgan, Inc.
Project Manager: Eric Davis
Author: Nils Orliczky

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

October 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 Fourth Quarter 2019 Activities.....	7-1
8. References	8-1

Appendix

- A Laboratory Analytical Reports

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 – September 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
- 3 Mass of VOCs Removed Quarterly by the Soil Vapor Extraction System
- 4 Influent VOC Concentrations into the Soil Vapor Extraction System
- 5 Influent VOC and TPH-Total Concentrations into the Groundwater Extraction System

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
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
GWE	groundwater extraction
GWTS	groundwater treatment system
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
PID	photoionization detector
PVC	polyvinyl chloride
RTO	regenerative thermal oxidizer
scfm	standard cubic feet per minute
SFPP	SFPP, L.P., an operating partnership of Kinder Morgan, Inc.
SVE	soil vapor extraction
TBA	tertiary butyl alcohol
TFE	total fluids extraction
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

This report summarizes remediation activities performed at the SFPP, L.P. (SFPP) Norwalk Pump Station located within the Defense Fuel Support Point Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1) during the third 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* (CH2M¹, 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 July through September 2019 with documentation of the following tasks:

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

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

¹ CH2M is now part of Jacobs.

2. Remediation Systems

Kinder Morgan, Inc. (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)
 - 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 third 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 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 conveyed to a 300-gallon tank and then treated using liquid-phase granular activated carbon (LGAC) to remove hydrocarbons including benzene, toluene, ethylbenzene, and xylenes (BTEX). 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 system 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.

Prior to initiating horizontal biosparging activities in the southeastern area of the site, the SVE system in the southeastern area will be upgraded to enhance the capture zone coverage required to match the zone of influence of the biosparge well. On March 7 through 8, 2019, three new SVE wells (VEW-3, VEW-4, and VEW-5) were installed in the southeastern area. Additionally, three groundwater monitoring wells (GMW-O-16, GMW-O-19, and MW-8) will need to be converted to SVE wells and connected to the SVE system. To minimize vacuum leakage, decrease friction, and increase the volume of air that passes through the conveyance line, upgrades to the well vaults and a new dedicated 6-inch high density polyethylene (HDPE) header will be installed for the southeastern area. Conversion of the three existing groundwater monitoring wells, installation of a new 6-inch header, and other upgrades are scheduled to take place during the fourth quarter of 2019.

3. Operations and Maintenance

During the third 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.

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

- The GWTS shut down on July 7, 2019, due to a high level in the transfer tank. The filter was changed, and the system was restarted on July 8, 2019.
- The GWTS shut down on July 12, 2019; there was no indication of alarms but clogged filters were observed. The filters were changed, and the system was restarted on July 15, 2019.
- The SVE system shut down on August 23, 2019, due to a delta pressure alarm. The SVE system was restarted on August 24, 2019.
- The SVE system, air sparge system, and GWTS shut down on September 1, 2019, at 4:32 a.m., due to a power outage, and were restarted at 11:24 a.m.

During the third quarter 2019, the GWTS was operational approximately 91 percent of the time. The SVE system was operational approximately 99 percent of the time. The biosparge system was operational 91 percent of the time. Table 2 presents the SVE system operation summary. Photoionization detector (PID) measurements and analytical results for extracted vapor during the third quarter 2019 are summarized in Tables 3 and 4, respectively. The groundwater remediation system operation activities for the third quarter 2019 are summarized in Table 5. The extracted groundwater analytical results for the third 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 September 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 July 31, August 22, and September 12, 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).

Vapor samples from the SVE influent were collected on July 9, August 18, and September 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 the Department of Toxic Substances Control (DTSC) recommended flow rates as set forth in the *Advisory for Active Soil Gas Investigations* (DTSC, 2015). The American Analytics laboratory of Chatsworth, California, conducted this event on September 10 and 11, 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-14R (22-foot depth) during the September 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 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 6,984 pounds during the third quarter 2019. Total mass recovered by the SVE system has consistently decreased since the first quarter of 2016 (74,148 pounds of VOCs recovered), when biosparging in the south-central area was implemented (see Figure 3). The cumulative mass of VOCs removed since SVE was implemented in September 1995 is 3,574,608 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). Laboratory analytical data show that the influent VOC concentrations (BTEX and MTBE) have consistently decreased since biosparging started in 2016 (Table 4, Figure 4).

A total of 818,916 gallons of groundwater was extracted during the third quarter 2019 (Table 5). No water was extracted from the WSB area during the third quarter 2019. Approximately 107.6 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 April 2019 did not warrant restarting the WSB system.

Free product did not accumulate in the product holding tank during the third 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 third 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 18,457 pounds. During the third quarter 2019, the mass removal of hydrocarbons was calculated to be 4.2 pounds (Table 5). Table 6 shows the extracted groundwater analytical results for the samples collected on July 31, August 22, and September 12, 2019. TPH, BTEX, and MTBE concentrations during the third quarter 2019 increased from the concentrations reported in the second quarter 2019 and are considerably less than the concentrations reported in late 2015 and early 2016 when the south-central biosparge system was started. The overall reduction in dissolved-phase hydrocarbon concentrations can be attributed to biosparge operations in the south-central area. Figure 5 includes a time series chart that shows this general decrease in dissolved-phase hydrocarbon concentrations in the extracted groundwater.

The biosparge system operated for 1,948 hours in the third quarter 2019 (Table 7). The biosparge system flow (air injection) rate ranged from 0 to 524 scfm during the third quarter 2019. Soil vapor samples were collected from 14 locations around the south-central area biosparge well on September 10 and 11, 2019, with the biosparge on at an average air flow of 450 scfm.

5. Soil Vapor Monitoring Results

5.1 Overview

During the third 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 September 2019 sampling event. Laboratory analytical reports are included in Appendix A. A summary of results is provided as follows:

- During the third quarter 2019 sampling event, COPCs were detected at offsite probes SVM-3 (15-foot depth), SVM-7 (13-foot depth), and SVM-15 (15-foot depth). Benzene was detected at a concentration of 0.0035 microgram per liter ($\mu\text{g/L}$) in SVM-3 (15-foot depth). Naphthalene was detected at concentrations of 0.003 $\mu\text{g/L}$ in SVM-3 (15-foot depth), 0.007 $\mu\text{g/L}$ in SVM-7 (13-foot depth), and 0.0059 $\mu\text{g/L}$ in SVM-15 (15-foot depth), respectively. The detected concentrations were below the April 2019 DTSC modified screening levels (DTSC, 2019²).
- During the third quarter 2019 sampling event, benzene, naphthalene, acetone, and tetrachloroethylene were detected in the onsite soil vapor monitoring probes. The detected concentrations were below the DTSC modified screening levels (DTSC, 2019).
- Other non-COPCs that were detected during this sampling event included 2,2,4-trimethylpentane and cyclohexane. There are no established screening levels for 2,2,4-trimethylpentane. The detected concentration for cyclohexane was below the DTSC modified screening level (DTSC, 2019).
- 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.

² DTSC has developed modified screening levels based on EPA Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities (DTSC, 2019).

6. System Evaluation and Optimization

The GWTS continued to operate during the third quarter 2019 for hydraulic control and product recovery in the south-central and southeastern areas. The SVE wells in the south-central and southeastern areas were fully open to ensure maximum vapor extraction in those areas. As a result of biosparge operations in the south-central area, light nonaqueous phase liquid (LNAPL) thickness was significantly reduced, with measured LNAPL detected in only one well (GMW-O-12) in the south-central area of the site. In addition, dissolved-phase TPH, BTEX, and MTBE concentrations also showed significant reductions in the groundwater and vapor samples collected from the influent into the GWTS and SVE, respectively.

The following repairs and modifications were conducted during this reporting period:

- A crack in the bioreactor acid tank was observed on July 23, 2019, so the automatic acid supply pump was turned off until the acid tank is replaced. In the interim period, muriatic acid will continue to be manually loaded into the bioreactor tanks to balance pH levels, as needed. The acid tank is scheduled for replacement in the fourth quarter of 2019. The GWTS has continued to operate normally.

7. Planned Fourth Quarter 2019 Activities

During the fourth quarter 2019, Kinder Morgan plans to continue to focus remedial efforts on the south-central and southeastern areas of the site. 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 annual 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 second semiannual groundwater monitoring event.
- Conduct annual and monthly 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.
- 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.

After completion of the SVE system upgrades in the southeastern area, startup of the southeastern biosparge well will commence. System inspections will continue on a weekly basis; system evaluation parameters will be collected as needed.

The remediation activities and progress for the fourth quarter 2019 will be described in the Fourth Quarter 2019 Remediation Progress Report, to be submitted by January 15, 2020.

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). 2019. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*: April. <https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-2019-04.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 Second 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	--	ON
	GMW-O-23	6/25/2007	73.63	20 - 40	SVE; TFE	ON	OFF
	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	ON
	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	--	--

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 Second Quarter 2019	
			(feet msl)	(feet bgs)		SVE/BS	TFE/GWE
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 Total	116,906	1,560	--	--	--	3,492

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
4/2/2019	117,077	171	208	1,370	50	653
4/9/2019	117,242	165	226	1,483	50	593
4/25/2019	117,293	51	234	1,610	50	190
4/29/2019	117,385	92	254	1,508	50	371
5/7/2019	117,567	182	196	1,758	50	798
5/14/2019	117,733	166	180	1,438	50	523
5/21/2019	117,902	169	214	1,430	50	628
5/30/2019	118,116	214	198	1,404	50	777
6/4/2019	118,237	121	108	1,267	50	195
6/11/2019	118,404	167	118	1,343	50	341
6/18/2019	118,573	169	190	1,349	50	550
6/27/2019	118,770	197	205	1,405	50	668
Second Quarter 2019 Total	118,770	1,864	--	--	--	6,286
7/2/2019	118,891	121	212	1,400	50	455
7/9/2019	119,060	169	216	1,396	50	641
7/16/2019	119,225	165	119	1,340	50	332
7/23/2019	119,393	168	214	1,350	50	612
7/30/2019	119,562	169	186	1,397	50	552
8/6/2019	119,729	167	195	1,371	50	566
8/13/2019	119,899	170	210	1,381	50	627
8/22/2019	120,114	215	215	1,409	50	844
8/27/2019	120,214	100	185	1,405	50	338
9/3/2019	120,376	162	188	1,425	50	563
9/12/2019	120,591	215	172	1,350	50	639
9/17/2019	120,711	120	172	1,391	50	371
9/24/2019	120,879	168	182	1,132	50	444
Third Quarter 2019 Total	120,879	2,109	--	--	--	6,984
Cumulative Totals	120,879	--	--	--	--	3,574,609

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	09/30/2019 (ppmv as Hexane) ^a
South-Central	MW-SF-1	SVE	116
	MW-SF-2	SVE; TFE	66
	MW-SF-3	SVE; TFE	294
	MW-SF-4	SVE	0
	MW-SF-5	SVE	84
	MW-SF-6	SVE; TFE	8
	MW-SF-9	SVE	0
	MW-SF-10	SVE	32
	MW-SF-11	SVE; TFE	70
	MW-SF-12	SVE; TFE	240
	MW-SF-13	SVE; TFE	162
	MW-SF-14	SVE; TFE	104
	MW-SF-15	SVE; TFE	24
	MW-SF-16	SVE; TFE	4
	MW-SF-17	SVE; TFE	--
	GMW-9	SVE; TFE	0
	GMW-10	SVE	180
	GMW-22	SVE; TFE	0
	GMW-24	SVE; TFE	NM
	GMW-25	SVE; GWE	NM
	GWR-3	SVE; GWE	NM
	VEW-1	SVE	NM
	VEW-2	SVE	138
	MW-O-1	SVE; TFE	NM
	MW-O-2	SVE; TFE	0
	GMW-O-11	SVE; TFE	16
	GMW-O-12	SVE	192
	GMW-O-20	SVE; TFE	884
	GMW-O-23	SVE; TFE	142
	MW-18 (MID)	SVE	620
HW-1	SVE	--	
HW-2	SVE	--	
Southeastern	GMW-36	SVE; TFE	620
	GMW-O-15	SVE; TFE	620
	GMW-O-18	SVE; TFE	620

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)	Ethyl-benzene (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

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)
12/11/2012	0.0074	0.84	21.0	53	---	---	130	17	110	173	<5.0
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
12/10/2015	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

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)	Ethyl-benzene (ppbv)	Toluene (ppbv)	Xylenes (ppbv)	MTBE (ppbv)
12/8/2017	0.0040	0.77	21	---	250	---	3,600	350	3,000	3,700	<81
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
4/4/2019	0.0044	0.80	21	--	160	--	2,400	400	2,000	2,730	550
5/7/2019	0.023	0.78	21	--	120	--	1,900	330	1,500	2,520	410
6/4/2019	0.0037	0.64	21	--	110	--	1,000	260	880	1,550	<19
7/9/2019	0.036	0.64	21	--	99	--	860	190	820	1,210	400
8/18/2019	0.0037	0.64	21	--	97	--	850	220	940	1,630	230
9/12/2019	0.0019	0.0084	22	--	58 ^c	--	640 ^c	78 ^c	520 ^c	880 ^c	200 ^c

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

RTO = regenerative thermal oxidizer

SCAQMD = South Coast Air Quality Management District

SVE = soil vapor extraction

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 South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from 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	--	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
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

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
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
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

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
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
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 Total	574,268	0	574,268	--	1.9	0
4/1/2019	0	0	0	420	0.000	0
4/2/2019	0	0	0	420	0.000	0
4/3/2019	0	0	0	420	0.000	0
4/4/2019	3,550	0	3,550	420	0.012	0
4/5/2019	10,880	0	10,880	420	0.038	0
4/6/2019	10,822	0	10,822	420	0.038	0

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
4/7/2019	10,824	0	10,824	420	0.038	0
4/8/2019	10,638	0	10,638	420	0.037	0
4/9/2019	6,748	0	6,748	420	0.024	0
4/10/2019	0	0	0	420	0.000	0
4/11/2019	1,100	0	1,100	420	0.004	0
4/12/2019	0	0	0	420	0.000	0
4/13/2019	0	0	0	420	0.000	0
4/14/2019	0	0	0	420	0.000	0
4/15/2019	0	0	0	420	0.000	0
4/16/2019	344	0	344	420	0.001	0
4/17/2019	0	0	0	420	0.000	0
4/18/2019	0	0	0	420	0.000	0
4/19/2019	0	0	0	420	0.000	0
4/20/2019	0	0	0	420	0.000	0
4/21/2019	0	0	0	420	0.000	0
4/22/2019	0	0	0	420	0.000	0
4/23/2019	780	0	780	420	0.003	0
4/24/2019	12,454	0	12,454	420	0.044	0
4/25/2019	12,986	0	12,986	420	0.045	0
4/26/2019	16,062	0	16,062	420	0.056	0
4/27/2019	16,496	0	16,496	420	0.058	0
4/28/2019	16,078	0	16,078	420	0.056	0
4/29/2019	15,516	0	15,516	350	0.045	0
4/30/2019	16,164	0	16,164	350	0.047	0
5/1/2019	15,418	0	15,418	350	0.045	0
5/2/2019	15,902	0	15,902	350	0.046	0
5/3/2019	15,368	0	15,368	350	0.045	0
5/4/2019	14,268	0	14,268	350	0.042	0
5/5/2019	15,312	0	15,312	350	0.045	0
5/6/2019	11,004	0	11,004	350	0.032	0
5/7/2019	10,332	0	10,332	350	0.030	0
5/8/2019	10,544	0	10,544	350	0.031	0
5/9/2019	10,570	0	10,570	350	0.031	0
5/10/2019	10,910	0	10,910	350	0.032	0
5/11/2019	10,260	0	10,260	350	0.030	0
5/12/2019	10,372	0	10,372	350	0.030	0
5/13/2019	9,442	0	9,442	350	0.028	0
5/14/2019	10,194	0	10,194	350	0.030	0
5/15/2019	10,426	0	10,426	350	0.030	0
5/16/2019	10,412	0	10,412	350	0.030	0

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
5/17/2019	10,138	0	10,138	350	0.030	0
5/18/2019	9,950	0	9,950	350	0.029	0
5/19/2019	9,752	0	9,752	350	0.028	0
5/20/2019	9,614	0	9,614	350	0.028	0
5/21/2019	9,688	0	9,688	350	0.028	0
5/22/2019	9,564	0	9,564	350	0.028	0
5/23/2019	9,440	0	9,440	350	0.028	0
5/24/2019	9,430	0	9,430	350	0.027	0
5/25/2019	9,340	0	9,340	350	0.027	0
5/26/2019	9,254	0	9,254	350	0.027	0
5/27/2019	9,348	0	9,348	350	0.027	0
5/28/2019	8,716	0	8,716	420	0.030	0
5/29/2019	8,932	0	8,932	420	0.031	0
5/30/2019	9,584	0	9,584	420	0.034	0
5/31/2019	10,294	0	10,294	420	0.036	0
6/1/2019	9,988	0	9,988	420	0.035	0
6/2/2019	10,374	0	10,374	420	0.036	0
6/3/2019	10,010	0	10,010	420	0.035	0
6/4/2019	9,966	0	9,966	420	0.035	0
6/5/2019	10,156	0	10,156	420	0.036	0
6/6/2019	10,336	0	10,336	420	0.036	0
6/7/2019	10,240	0	10,240	420	0.036	0
6/8/2019	10,036	0	10,036	420	0.035	0
6/9/2019	10,250	0	10,250	420	0.036	0
6/10/2019	9,964	0	9,964	420	0.035	0
6/11/2019	11,208	0	11,208	420	0.039	0
6/12/2019	14,434	0	14,434	420	0.051	0
6/13/2019	14,240	0	14,240	420	0.050	0
6/14/2019	13,820	0	13,820	420	0.048	0
6/15/2019	13,972	0	13,972	420	0.049	0
6/16/2019	13,848	0	13,848	420	0.048	0
6/17/2019	13,328	0	13,328	420	0.047	0
6/18/2019	12,428	0	12,428	420	0.043	0
6/19/2019	13,120	0	13,120	420	0.046	0
6/20/2019	10,718	0	10,718	460	0.041	0
6/21/2019	11,894	0	11,894	460	0.046	0
6/22/2019	12,448	0	12,448	460	0.048	0
6/23/2019	12,296	0	12,296	460	0.047	0
6/24/2019	12,122	0	12,122	460	0.046	0
6/25/2019	11,962	0	11,962	460	0.046	0

Table 5. Groundwater Remediation System Operation Summary
 SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
6/26/2019	12,092	0	12,092	460	0.046	0
6/27/2019	11,884	0	11,884	460	0.046	0
6/28/2019	11,992	0	11,992	460	0.046	0
6/29/2019	11,934	0	11,934	460	0.046	0
6/30/2019	12,218	0	12,218	460	0.047	0
Second Quarter 2019 Total	848,498	0	848,498	--	2.8	0
7/1/2019	11,696	0	11,696	460	0.045	0
7/2/2019	12,124	0	12,124	460	0.046	0
7/3/2019	13,728	0	13,728	460	0.053	0
7/4/2019	13,624	0	13,624	460	0.052	0
7/5/2019	13,548	0	13,548	460	0.052	0
7/6/2019	15,620	0	15,620	460	0.060	0
7/7/2019	8,374	0	8,374	460	0.032	0
7/8/2019	6,154	0	6,154	460	0.024	0
7/9/2019	17,936	0	17,936	460	0.069	0
7/10/2019	17,464	0	17,464	460	0.067	0
7/11/2019	17,212	0	17,212	460	0.066	0
7/12/2019	17,192	0	17,192	460	0.066	0
7/13/2019	2,644	0	2,644	460	0.010	0
7/14/2019	0	0	0	460	0.000	0
7/15/2019	5,516	0	5,516	460	0.021	0
7/16/2019	15,268	0	15,268	460	0.059	0
7/17/2019	16,602	0	16,602	460	0.064	0
7/18/2019	15,296	0	15,296	460	0.059	0
7/19/2019	15,710	0	15,710	460	0.060	0
7/20/2019	15,600	0	15,600	460	0.060	0
7/21/2019	15,780	0	15,780	460	0.060	0
7/22/2019	15,348	0	15,348	460	0.059	0
7/23/2019	15,276	0	15,276	460	0.059	0
7/24/2019	15,460	0	15,460	460	0.059	0
7/25/2019	15,222	0	15,222	460	0.058	0
7/26/2019	14,980	0	14,980	460	0.057	0
7/27/2019	15,172	0	15,172	460	0.058	0
7/28/2019	14,792	0	14,792	460	0.057	0
7/29/2019	14,738	0	14,738	460	0.056	0
7/30/2019	14,148	0	14,148	460	0.054	0
7/31/2019	15,220	0	15,220	390	0.049	0
8/1/2019	14,426	0	14,426	390	0.047	0
8/2/2019	14,450	0	14,450	390	0.047	0
8/3/2019	14,312	0	14,312	390	0.047	0

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
8/4/2019	11,948	0	11,948	390	0.039	0
8/5/2019	10,840	0	10,840	390	0.035	0
8/6/2019	10,864	0	10,864	390	0.035	0
8/7/2019	10,662	0	10,662	390	0.035	0
8/8/2019	7,458	0	7,458	390	0.024	0
8/9/2019	10,748	0	10,748	390	0.035	0
8/10/2019	10,872	0	10,872	390	0.035	0
8/11/2019	10,768	0	10,768	390	0.035	0
8/12/2019	9,208	0	9,208	390	0.030	0
8/13/2019	6,742	0	6,742	390	0.022	0
8/14/2019	6,674	0	6,674	390	0.022	0
8/15/2019	4,456	0	4,456	390	0.014	0
8/16/2019	5,528	0	5,528	390	0.018	0
8/17/2019	7,184	0	7,184	390	0.023	0
8/18/2019	7,088	0	7,088	390	0.023	0
8/19/2019	7,252	0	7,252	390	0.024	0
8/20/2019	7,292	0	7,292	390	0.024	0
8/21/2019	6,984	0	6,984	390	0.023	0
8/22/2019	5,660	0	5,660	1,600	0.075	0
8/23/2019	0	0	0	1,600	0.000	0
8/24/2019	1,884	0	1,884	1,600	0.025	0
8/25/2019	0	0	0	1,600	0.000	0
8/26/2019	3,884	0	3,884	1,600	0.052	0
8/27/2019	7,212	0	7,212	1,600	0.096	0
8/28/2019	7,144	0	7,144	1,600	0.095	0
8/29/2019	4,780	0	4,780	1,600	0.064	0
8/30/2019	7,064	0	7,064	1,600	0.094	0
8/31/2019	6,864	0	6,864	1,600	0.091	0
9/1/2019	4,928	0	4,928	1,600	0.066	0
9/2/2019	6,760	0	6,760	1,600	0.090	0
9/3/2019	6,548	0	6,548	1,600	0.087	0
9/4/2019	6,460	0	6,460	1,600	0.086	0
9/5/2019	6,148	0	6,148	1,600	0.082	0
9/6/2019	5,844	0	5,844	1,600	0.078	0
9/7/2019	6,164	0	6,164	1,600	0.082	0
9/8/2019	5,792	0	5,792	1,600	0.077	0
9/9/2019	6,116	0	6,116	1,600	0.082	0
9/10/2019	5,576	0	5,576	1,600	0.074	0
9/11/2019	5,800	0	5,800	1,600	0.077	0
9/12/2019	7,080	0	7,080	650	0.038	0

Table 5. Groundwater Remediation System Operation Summary
SFPP Norwalk Pump Station, Norwalk, California

System Inspection Date	Groundwater Removed from South-Central and Southeastern Areas (gallons)	Groundwater Removed from West Side Barrier Area (gallons)	Total Groundwater Removed (gallons)	Influent TPH-Total Concentration (µg/L)	Estimated Hydrocarbon Mass Removed from South-Central, Southeastern, and West Side Barrier Areas (pounds) ^a	Product Recovery (gallons)
9/13/2019	10,448	0	10,448	650	0.057	0
9/14/2019	10,284	0	10,284	650	0.056	0
9/15/2019	10,112	0	10,112	650	0.055	0
9/16/2019	9,888	0	9,888	650	0.054	0
9/17/2019	7,976	0	7,976	650	0.043	0
9/18/2019	4,616	0	4,616	650	0.025	0
9/19/2019	4,640	0	4,640	650	0.025	0
9/20/2019	4,660	0	4,660	650	0.025	0
9/21/2019	4,576	0	4,576	650	0.025	0
9/22/2019	3,660	0	3,660	650	0.020	0
9/23/2019	3,776	0	3,776	650	0.020	0
9/24/2019	2,412	0	2,412	650	0.013	0
9/25/2019	2,624	0	2,624	650	0.014	0
9/26/2019	2,056	0	2,056	650	0.011	0
9/27/2019	1,944	0	1,944	650	0.011	0
9/28/2019	1,804	0	1,804	650	0.010	0
9/29/2019	1,424	0	1,424	650	0.008	0
9/30/2019	1,108	0	1,108	650	0.006	0
Third Quarter 2019 Total	818,916	0	818,916	--	4.2	0
Cumulative Totals	80,727,217	26,902,652	107,629,869	--	18,457	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	--	--	--	--	
1/23/2002	--	--	--	--	--	<0.5	<1	<1	<2	2	--	--	--	--	

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)
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	--	--	--	--
1/28/2005	--	--	--	--	--	460	140	520	2,260	610	--	--	--	--

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)	
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	--	--	--	--	
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	--	--	--	--	

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)	
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	
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	

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)
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.														
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

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)
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
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

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)	
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	
4/29/2019	33 J	220	97	350	--	<1.0	<1.0	<2.0	<2.0	1.2	1,100	2.7	<1.0	<1.0	
5/28/2019	31 J	270	120	420	--	<1.0	<1.0	<2.0	<2.0	1.8	16	2.6	<1.0	<1.0	
6/20/2019	170	210	82	460	--	86	1.1	1.9 J	11	2.8	220	4.5	<1.0	<1.0	
7/31/2019	200	130	60	390	--	130	1.9	0.75	11	1.6	320	6.9	<1.0	<1.0	
8/22/2019	840	350	420	1,600	--	670	11	2.6	44	2.3	190	11	<1.0	<1.0	
9/12/2019	440	180	87	650	--	140	1.8	0.61 J	8	1.2	110	3.4	<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 Total	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 Total	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 Total	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 Total	5,302	527	62.7	--	--
2016 Totals	5,302	5,302	--	--	--
First Quarter 2017 Total	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 Total	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 Total	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 Total	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 Total	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 Total	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 Total	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 Total	14,216	649	27.9	--	--

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)
1/14/2019	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 Total	15,122	906	44.4	--	--
4/2/2019	15,197	75	44.6	155	8
4/9/2019	15,366	169	100	280	2
4/23/2019	15,366	0	0	150	2
4/29/2019	15,508	142	99	297	2
5/7/2019	15,691	183	95	149	2
5/14/2019	15,857	166	99	267	3
5/21/2019	16,025	168	100	401	8
5/30/2019	16,238	213	99	444	8
6/4/2019	16,360	122	100	158	2
6/11/2019	16,527	167	99	308	2
6/18/2019	16,696	169	100	338	5
6/27/2019	16,895	199	92.1	445	9
Second Quarter 2019 Total	16,895	1,773	79.4	--	--

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)
7/2/2019	17,016	121	100	470	8
7/9/2019	17,184	168	100	488	9
7/16/2019	17,351	167	99	157	2
7/23/2019	17,518	167	99	474	5
7/30/2019	17,686	168	100	485	10
8/6/2019	17,856	170	100	494	8
8/13/2019	18,022	166	99	450	10
8/22/2019	18,238	216	100	461	8
8/27/2019	18,341	103	86	524	10
9/3/2019	18,503	162	96	431	8
9/12/2019	18,720	217	100	464	8
9/17/2019	18,843	123	100	200	1
9/24/2019	18,843	0	0	0	1
Third Quarter 2019 Total	18,843	1,948	91.2	--	--
Cumulative Totals	18,843	--	57.9	--	--

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 – September 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 9/10/2019 SVM-1 5-5.5	SVM-1-15 9/10/2019 SVM-1 14.5-15	SVM-2-5 9/10/2019 SVM-2 5-5.5	SVM-3-5 9/10/2019 SVM-3 5-5.5	SVM-3-15 9/11/2019 SVM-3 15-15.5	SVM-5-5 9/11/2019 SVM-5 5-5.5	SVM-5-15 9/11/2019 SVM-5 15.5-16	SVM-6-7 9/10/2019 SVM-6 6.5-7	SVM-6-15 9/10/2019 SVM-6 15.5-16	SVM-7-7 9/10/2019 SVM-7 7-7.5	SVM-7-13 9/10/2019 SVM-7 13.25-13.75
Field Measurements	Pressure	inches H ₂ O	---	---	0.0	0.0	-0.18	-0.01	-0.17	-1.54	-0.23	0.0	-0.60	-0.02	-0.16
	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	<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	0.0035	<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	0.007
	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	310	1300	<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	2,2,4-Trimethylpentane	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	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
	Cyclohexane ^d	µg/L	6300	26000	<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
	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	<0.2	<0.2	<0.2	<0.2	<0.2
	Oxygen	% v/v	---	---	19	17	18	20	21	20	20	19	19	20	19
	Carbon Dioxide	% v/v	---	---	<0.2	<0.2	0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.24	0.51

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2019. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*. April.

DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

<https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-2019-04.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.

^d Screening levels for methylcyclohexane were used, as screening levels for cyclohexane are not available

9/10/2019 + 9/11/2019 = 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

COPC = chemical of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – September 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-7-13DUP 9/10/2019 SVM-7 13.25-13.75	SVM-8-5 9/11/2019 SVM-8 5-5.5	SVM-8-15 9/11/2019 SVM-8 15-15.5	SVM-10-15 9/10/2019 SVM-10 15.5-16	SVM-11-7 9/11/2019 SVM-11 7-7.5	SVM-11-15 9/11/2019 SVM-11 15-15.5	SVM-11-22 9/11/2019 SVM-11 21-21.5	SVM-12-7 9/11/2019 SVM-12 7-7.5	SVM-12-15 9/11/2019 SVM-12 15-15.5	SVM-12-22 9/11/2019 SVM-12 22-22.5	SVM-13-7 9/11/2019 SVM-13 7-7.5
Field Measurements	Pressure	inches H ₂ O	---	---	-0.16	-0.05	-0.31	0.0	0.00	-0.32	-0.55	0.0	0.0	-0.05	-1.34
	PID	ppmv	---	---	0.0	0.0	0.1	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	<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	0.0032	<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	0.0068	<0.003	<0.003	<0.003	<0.003	<0.003	0.024	<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	310	1300	<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	2,2,4-Trimethylpentane	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	Acetone	µg/L	32000	140000	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.033	<0.02	<0.02	<0.02	<0.02
	Cyclohexane ^d	µg/L	6300	26000	<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	0.019	<0.01	<0.01	0.02	<0.01
	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	<0.2	<0.2	<0.2	<0.2	<0.2
	Oxygen	% v/v	---	---	19	20	20	16	19	18	16	18	17	10	21
	Carbon Dioxide	% v/v	---	---	0.2	<0.2	<0.2	2	0.41	0.73	2.4	1.3	0.44	5.6	<0.2

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2019. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*. April. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities.
<https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-2019-04.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.

^d Screening levels for methylcyclohexane were used, as screening levels for cyclohexane are not available

9/10/2019 + 9/11/2019 = 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

COPC = chemical of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – September 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-13-15.5 9/11/2019 SVM-13 15.5-16	SVM-13-22.5 9/11/2019 SVM-13 22.5-23	SVM-14R-8 9/11/2019 SVM-14R 7-7.5	SVM-14R-16 9/11/2019 SVM-14R 15-15.5	SVM-14R-22 9/11/2019 SVM-14R 22-22.5	SVM-14R-22DUP 9/11/2019 SVM-14R 22-22.5	SVM-15-7 9/10/2019 SVM-15 7-7.5	SVM-15-15 9/10/2019 SVM-15 15-15.5	SVM-15-22 9/10/2019 SVM-15 22-22.5	SVM-16-7 9/11/2019 SVM-16 7-7.5	SVM-16-16 9/11/2019 SVM-16 15.5-16
Field Measurements	Pressure	inches H ₂ O	---	---	-14.83	-16.67	0.12	0.28	24.6	24.6	-0.03	-0.11	-2.55	0.00	-0.28
	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	<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	0.0049	0.0059	<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	310	1300	<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	2,2,4-Trimethylpentane	µg/L	---	---	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	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
	Cyclohexane ^d	µg/L	6300	26000	<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
	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	<0.2	<0.2	<0.2	<0.2	<0.2
	Oxygen	% v/v	---	---	20	19	17	19	20	20	23	20	18	20	19
	Carbon Dioxide	% v/v	---	---	<0.2	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2019. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*. April. DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities.
<https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-2019-04.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.

^d Screening levels for methylcyclohexane were used, as screening levels for cyclohexane are not available

9/10/2019 + 9/11/2019 = 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

COPC = chemical of potential concern

TPH-g = total petroleum hydrocarbons quantified as gasoline

Table 8. Field Measurements and Laboratory Soil Vapor Analytical Results – September 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-16-16DUP 9/11/2019 SVM-16 15.5-16	SVM-16-22 9/11/2019 SVM-16 22-22.5	Ambient Air 9/10/2019	Ambient Air 9/11/2019
Field Measurements	Pressure	inches H ₂ O	---	---	-0.28	-0.42	---	---
	PID	ppmv	---	---	0.0	0.0	---	---
COPCs ^c	1,2,4-Trimethylbenzene	µg/L	63	262	<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
	1,3,5-Trimethylbenzene	µg/L	63	262	<0.02	<0.02	<0.02	<0.02
	2-Propanol (leak test compound)	µg/L	---	---	<0.2	<0.2	<0.2	<0.2
	Benzene	µg/L	0.097	0.42	<0.003	<0.003	<0.003	<0.003
	Ethylbenzene	µg/L	1.1	4.9	<0.02	<0.02	<0.02	<0.02
	Isopropylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02
	m,p-Xylenes	µg/L	100	440	<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
	Naphthalene	µg/L	0.083	0.36	<0.003	<0.003	<0.003	<0.003
	n-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02
	n-Propylbenzene	µg/L	1000	4400	<0.02	<0.02	<0.02	<0.02
	o-Xylene	µg/L	100	440	<0.02	<0.02	<0.02	<0.02
	sec-Butylbenzene	µg/L	---	---	<0.02	<0.02	<0.02	<0.02
	tert-Butanol (TBA)	µg/L	---	---	<20	<20	<20	<20
Toluene	µg/L	310	1300	<0.02	<0.02	<0.02	<0.02	
Other Detected Compounds	2,2,4-Trimethylpentane	µg/L	---	---	<0.02	0.051	<0.02	<0.02
	Acetone	µg/L	32000	140000	<0.02	<0.02	<0.02	<0.02
	Cyclohexane ^d	µg/L	6300	26000	<0.02	0.022	<0.02	<0.02
	Tetrachloroethylene (PCE)	µg/L	0.46	2.0	<0.01	0.015	<0.01	<0.01
	TPH-G (C4-C12)	µg/L	630	2600	<20	<20	<20	<20
Fixed Gases	Methane	% v/v	---	---	<0.2	<0.2	---	---
	Oxygen	% v/v	---	---	19	8.2	---	---
	Carbon Dioxide	% v/v	---	---	<0.2	8.6	---	---

Notes:

^a Source for the Indoor Air Screening Levels: DTSC, 2019. *Human Health Risk Assessment (HHRA) Note: Human and Ecological Risk Office (HERO) HHRA Note Number: 3, DTSC-modified Screening Levels (DTSC-SLs)*. April.

DTSC has developed modified screening levels based on U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) for use in the human health risk assessment process at hazardous waste sites and permitted facilities.

<https://dtsc.ca.gov/wp-content/uploads/sites/31/2019/04/HHRA-Note-3-2019-04.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.

^d Screening levels for methylcyclohexane were used, as screening levels for cyclohexane are not available

9/10/2019 + 9/11/2019 = 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

COPC = chemical 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	
4/23/2019	77.16	29.72	---	---	47.44	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	
4/16/2019	73.35	30.55	--	--	42.80	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
	4/16/2019	77.24	36.19	---	---	41.05	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
4/16/2019	77.48	38.43	---	---	39.05	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	
4/16/2019	78.14	36.89	---	---	41.25	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
	4/23/2019	76.66	33.56	---	---	43.10	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
	4/16/2019	74.17	NM	---	---	NC	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
4/16/2019	73.49	31.62	31.21	0.41	42.20	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	
4/23/2019	74.86	29.84	29.84	0.00	45.02	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
	4/16/2019	74.32	30.89	--	--	43.43	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	
4/23/2019	73.32	30.55	---	---	42.77	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	
4/16/2019	71.43	32.34	---	---	39.09	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	
4/16/2019	73.63	32.99	---	---	40.64	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
	4/16/2019	77.60	37.16	---	---	40.44	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	
4/16/2019	75.67	38.39	---	---	37.28	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	
4/16/2019	75.48	32.09	---	---	43.39	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	
4/16/2019	71.9	31.44	--	--	40.46	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
	4/16/2019	78.93	37.94	---	---	40.99	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
	4/16/2019	78.53	37.95	---	---	40.58	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	
4/16/2019	78.12	NM	---	---	NC	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	
4/16/2019	79.38	38.45	---	---	40.93	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	
4/16/2019	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

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)	
	10/17/2008	79.96	29.75	---	---	50.21	Envent
	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
	4/16/2019	76.8	36.13	---	---	40.67	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	
4/16/2019	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
	4/16/2019	78.56	38.52	---	---	40.04	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	33.58	---	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
	4/16/2019	78.07	37.53	---	---	40.54	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
	4/16/2019	73.40	32.29	---	---	41.11	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	
4/16/2019	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	
4/23/2019	78.27	36.15	---	---	42.12	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
	4/16/2019	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

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

NC = not calculated

NM = not measured

Figures

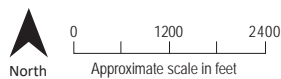
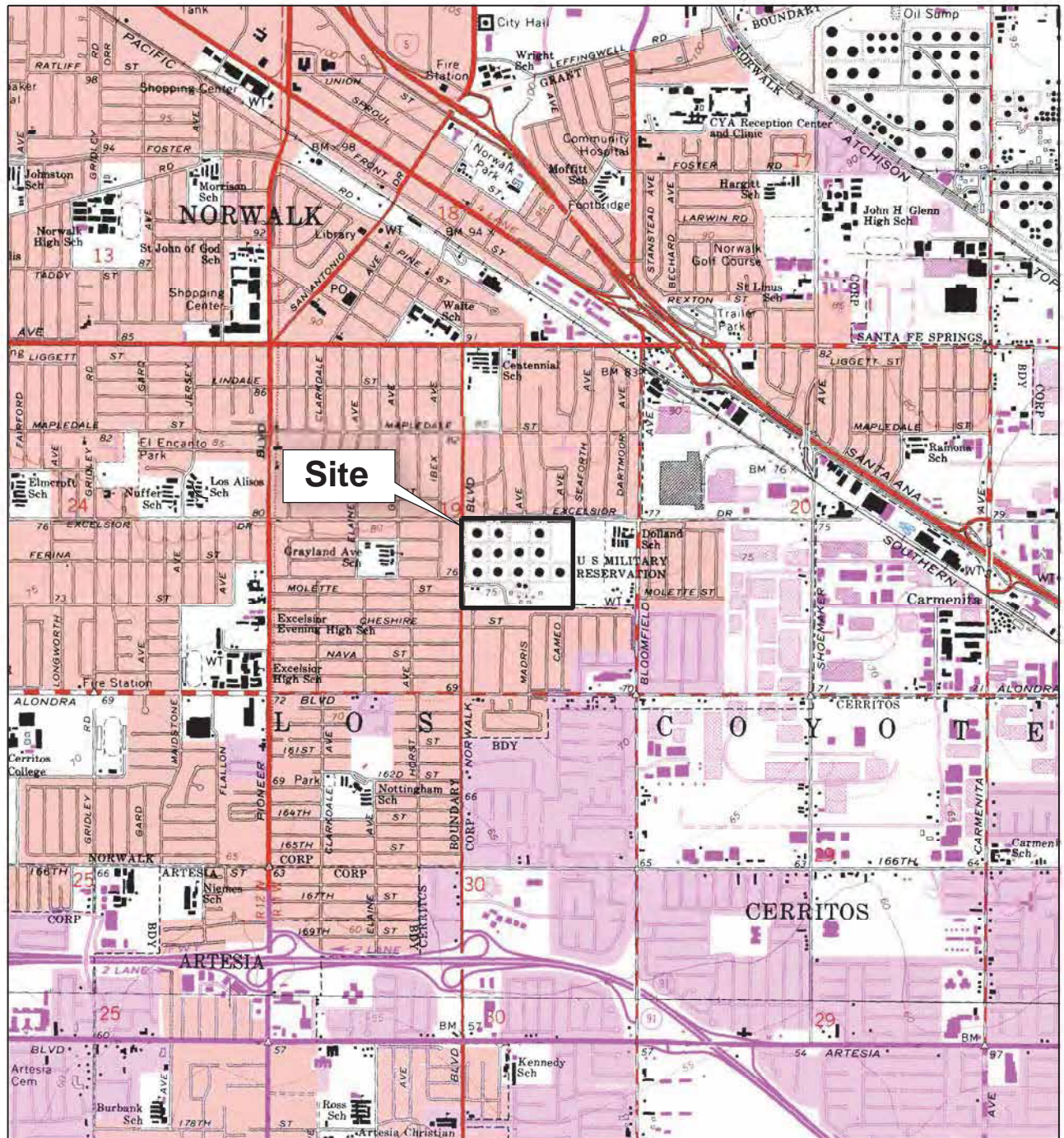
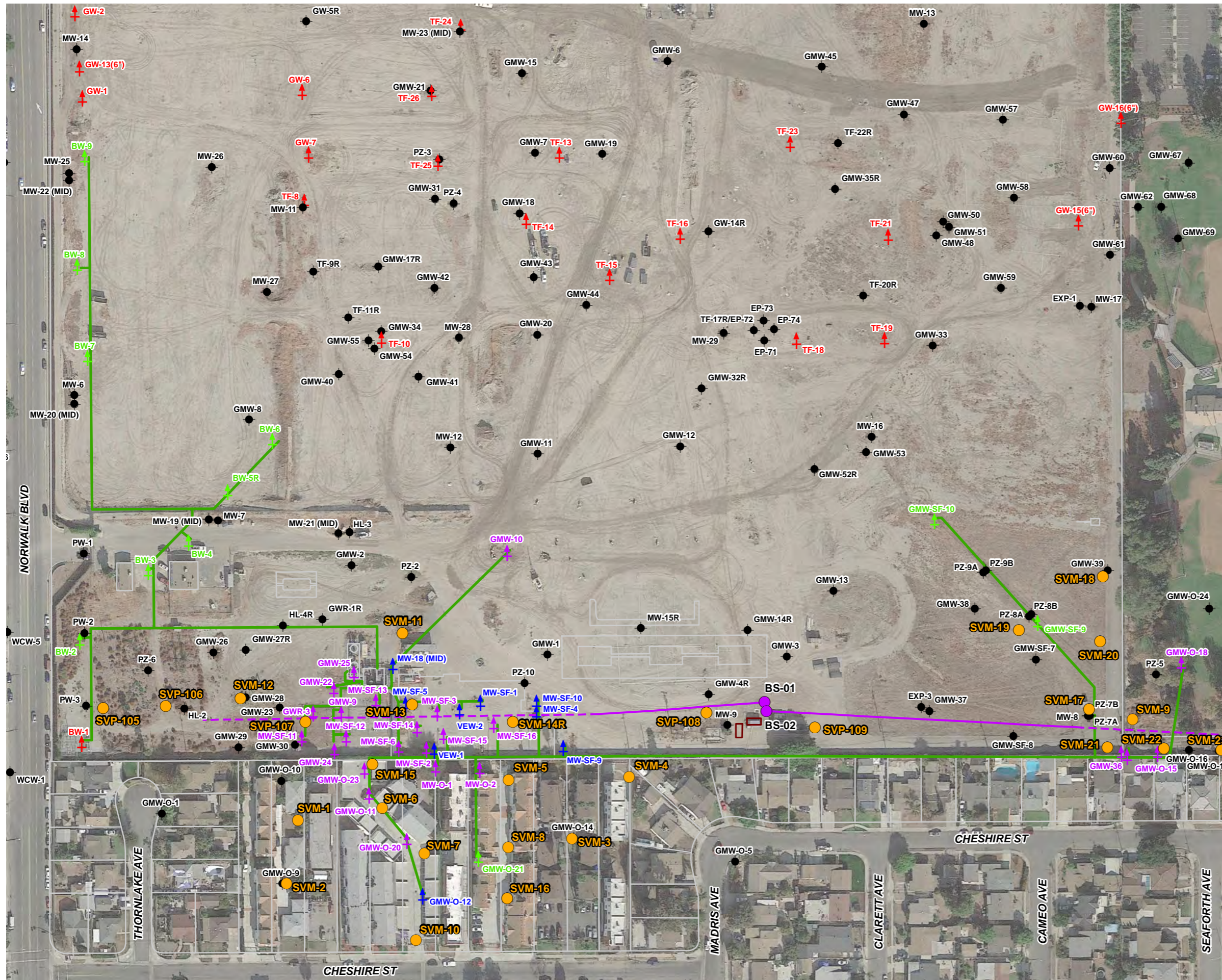


Figure 1. Site Location Map
SFPP Norwalk Pump Station
Norwalk, California

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 Biosparge Well (Dashed Line Depicts Approximate Lateral Extent of Well Screen)
 - Air Compressor System

Imagery Source:
Google Earth December 3, 2017.

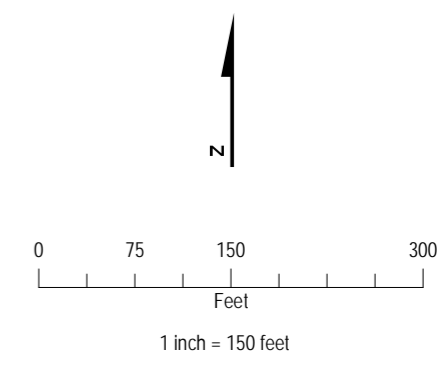
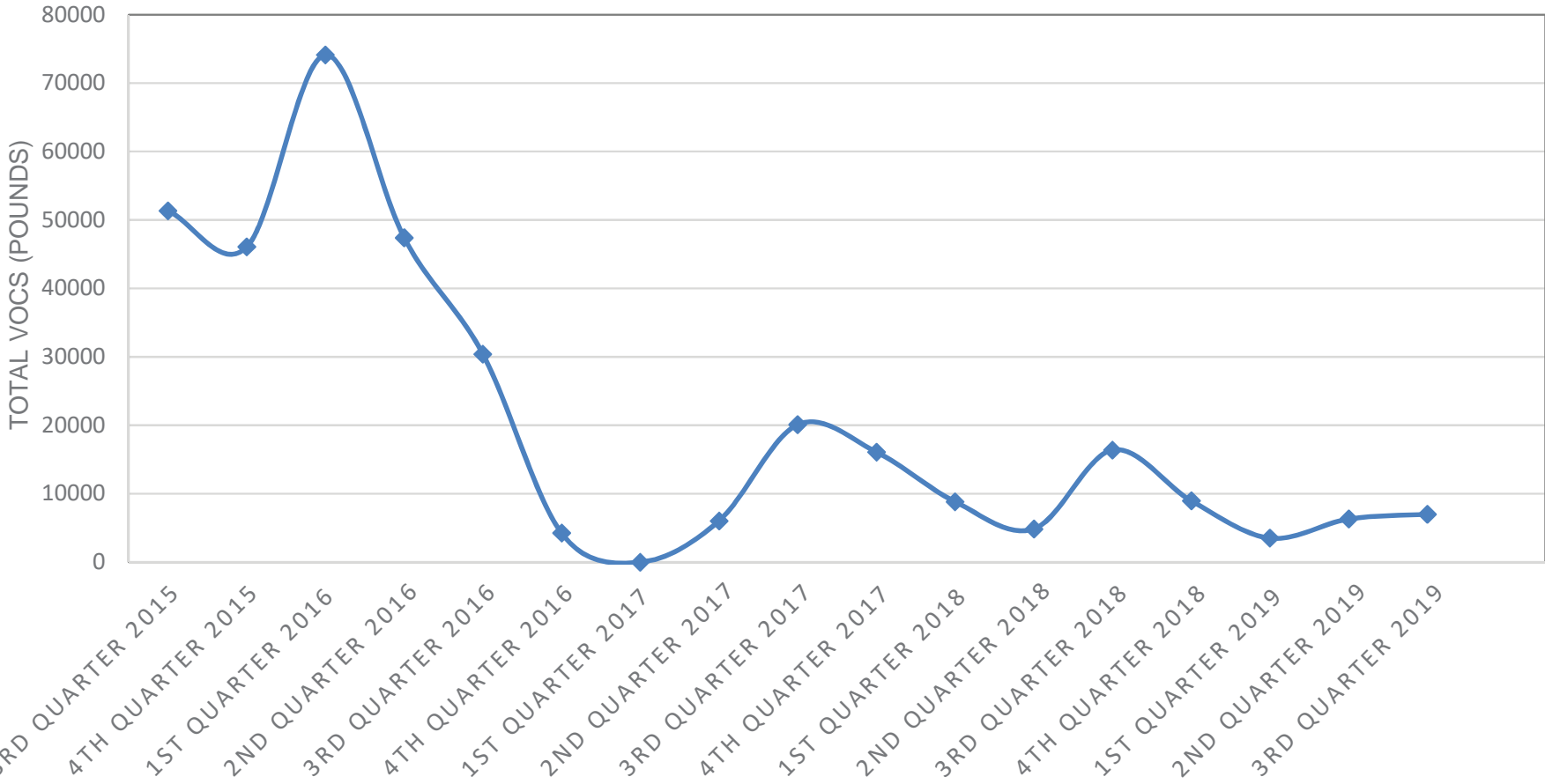


Figure 2. Remediation System Layout
SFPP Norwalk Pump Station
Norwalk, California

Mass of Volatile Organic Compounds Removed Quarterly by the Soil Vapor Extraction System

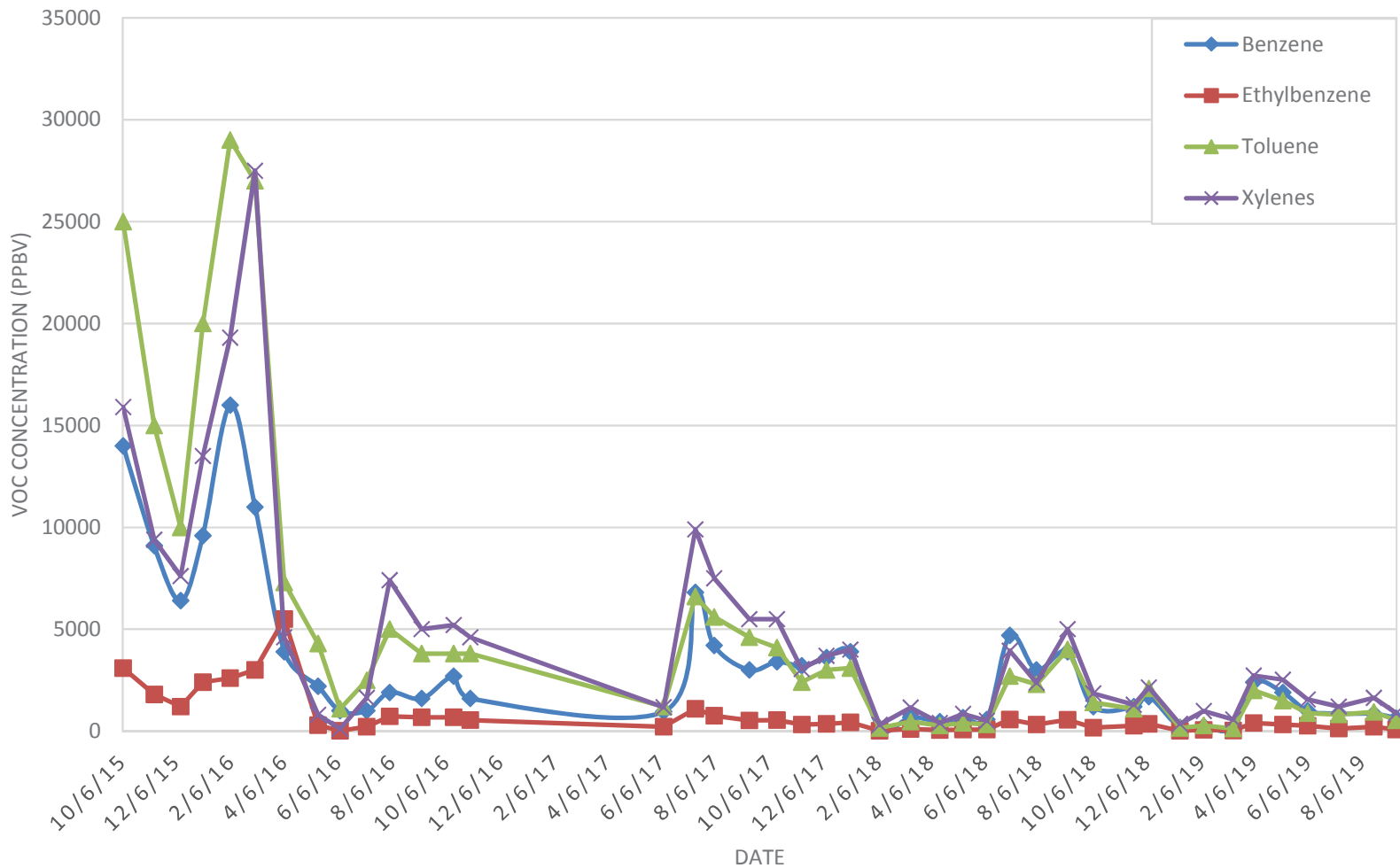


Note:
VOC = volatile organic compound

Figure 3. Mass of VOCs Removed Quarterly
by the Soil Vapor Extraction System
SFPP Norwalk Pump Station
Norwalk, California



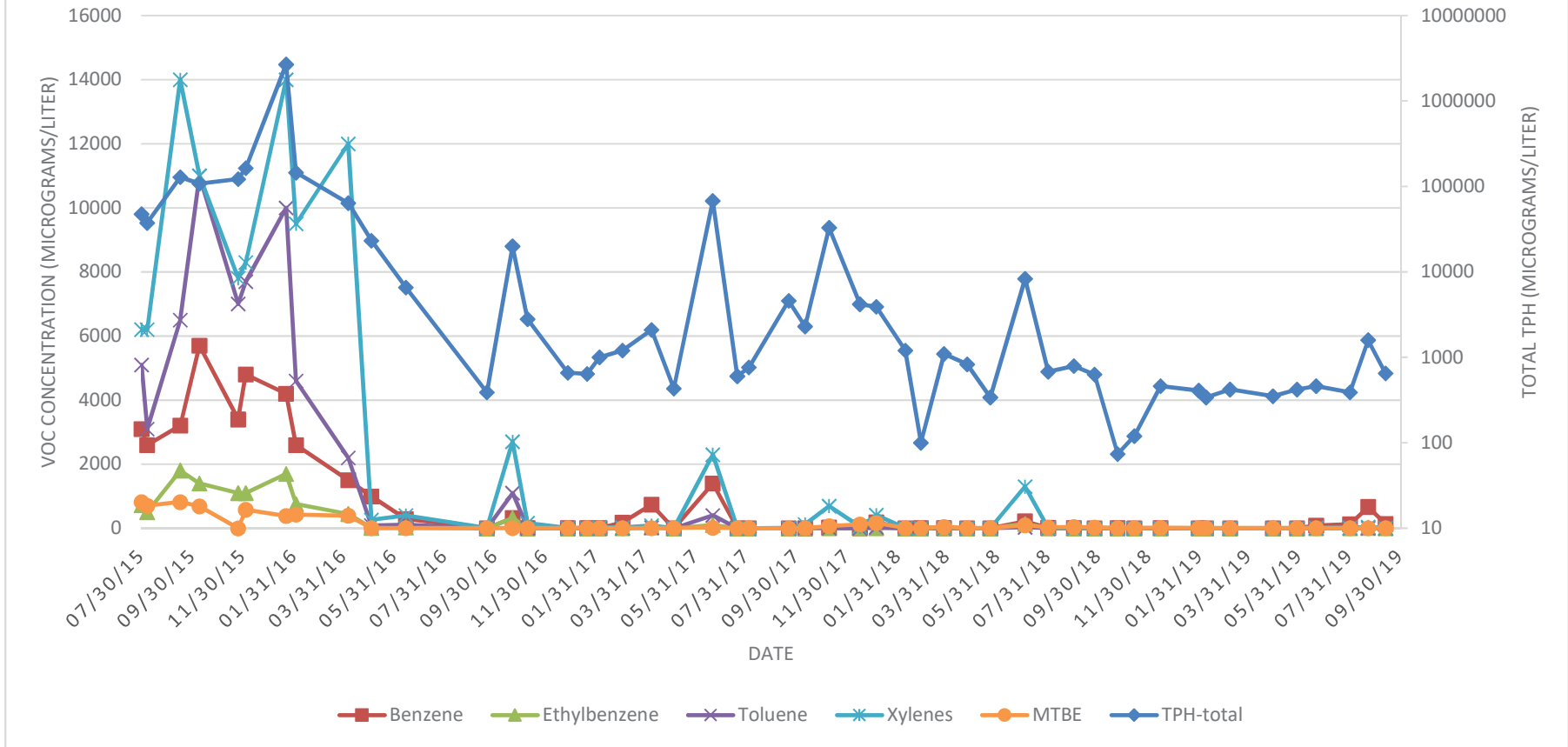
Influent VOC Concentrations into the Soil Vapor Extraction System



Notes:
 PPBV = parts per billion by volume
 VOC = volatile organic compound

Figure 4. Influent VOC Concentrations into the Soil Vapor Extraction System
 SFPP Norwalk Pump Station
 Norwalk, California

Influent VOC and TPH-Total Concentrations into the Groundwater Extraction System



Notes:
 TPH = total petroleum hydrocarbons
 VOC = volatile organic compound

**Figure 5. Influent VOC and TPH-Total Concentrations
 into the Groundwater Extraction System**
 SFPP Norwalk Pump Station
 Norwalk, California

Appendix A
Laboratory Analytical Reports



July 24, 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: K071005-01/04

Enclosed are results for sample(s) received 7/10/19 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, Nils Orliczky and Danny Hill on 7/23/19.

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", with a checkmark to the right.

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

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

K071005-01/04

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

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

Section A
Required Client Information:

Company: CH2M HILL
Attention: Eric Davis
Address: 1000 Wilshire Blvd. Suite 2100
Los Angeles, CA 90017
Phone: 404-573-1600 Fax:

Section B
Reference Information:

Report To: Eric Davis (eric.davis@ch2m.com)
Copy To: Vladimir Carino (vcarino@ch2m.com)
Purchase Order No.:
Project Name: SPPP Norwalk

Section C
Sample Information:

Attention: Eric Davis
Company: CH2M
Address: 1000 Wilshire Blvd. Suite 2100
Los Angeles, CA 90017
Project: Joann De La Ossa
Manager:

Section D
Sampler Information:

Sampler Name: James Dye
Sampler Name: [Signature]
Signature: [Signature]
Date: 7/19/19

ITEM #	SAMPLE ID	LOCATION / DESCRIPTION	MATRIX	SAMPLE TYPE (G-RAB, C-COMP)	CONTAINER TYPE # OF CONTAINERS	PRESERVATIVE VOLUME (ml)	DATE	TIME	TOTAL # OF CONTAINERS	Analysis Test		Comments
										TO-15 (VOCs, Target Analytes)	AC10-106 (O2/N2, CO2, CH4, H2)	
-01	VEFF-07-09	Effluent (stack)	Vapor	G	1		7/19/19	1100	1	X	X	Individually Certified 1-Liter SUMMA
-02	VEFF-07-09-D	Effluent (stack) (duplicate)	Vapor	G	1		7/19/19	1100	1	X	X	Individually Certified 1-Liter SUMMA
-03	VPOST-07-09	influent (post-dilution)	Vapor	G	1		7/19/19	1105	1	X	X	Individually Certified 1-Liter SUMMA
-04	VINF-07-09	influent (pre-dilution)	Vapor	G	1		7/19/19	1115	1	X	X	Batch Certified 1-Liter Summa
5												*Target analytes include historical VOCs and remaining ATU list per subcontract
6												
7												
8												
9												
10												

Section E
Required Sample Information:

Submitted by: [Signature] Date: 7/19/19
Managed by: [Signature] Date: 7/19/19
Submitted by: [Signature] Date: 7/19/19
Managed by: [Signature] Date: 7/19/19

Section F
Special Instructions:

Turn In/Store Free Vials:
 A = Same Day
 B = 24 Hours
 C = 48 Hours
 D = 72 Hours
 E = 5 Workdays
 F = 10 Workdays
 *AT samples at 8 AM the following day if samples received after 8:00 PM.

Section G
Matrix:

W = Water
G = Oil
Other/Specify:

Section H
Preservatives:

H = HCl
Z = ZINACD
Other/Specify:

Section I
Container Type:

T = Tube
J = Jar
M = Metal
V = VOA
P = Pint
G = Glass
P = Plastic
C = Can

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 07/10/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K071005-01			K071005-02			K071005-03			K071005-04		
Client Sample I.D.:	VEFF-07-09			VEFF-07-09D			VPOST-07-09			VINP-07-09		
Date/Time Sampled:	7/9/19 11:00			7/9/19 11:00			7/9/19 11:05			7/9/19 11:15		
Date/Time Analyzed:	7/19/19 18:16			7/19/19 18:57			7/19/19 16:09			7/19/19 16:54		
QC Batch No.:	190719MS2A1			190719MS2A1			190719MS2A1			190719MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.2			2.2			15			12		
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	0.0022	0.00034	ND	0.0022	0.00034	ND	0.015	0.0023	ND	0.012	0.0018
Chloromethane	ND	0.0044	0.00048	ND	0.0044	0.00048	ND	0.030	0.0033	ND	0.024	0.0026
1,2-CI-1,1,2,2-F ethane (114)	ND	0.0022	0.00044	ND	0.0022	0.00044	ND	0.015	0.0030	ND	0.012	0.0024
Vinyl Chloride	ND	0.0022	0.00036	ND	0.0022	0.00036	ND	0.015	0.0025	ND	0.012	0.0019
Bromomethane	0.0017	J 0.0022	0.00064	0.0015	J 0.0022	0.00064	0.011	J 0.015	0.0044	0.0093	J 0.012	0.0035
Chloroethane	ND	0.0022	0.0018	ND	0.0022	0.0018	ND	0.015	0.013	ND	0.012	0.010
Trichlorofluoromethane (11)	ND	0.0022	0.00047	ND	0.0022	0.00047	ND	0.015	0.0033	ND	0.012	0.0026
1,1-Dichloroethene	ND	0.0022	0.00050	ND	0.0022	0.00050	ND	0.015	0.0034	ND	0.012	0.0027
Carbon Disulfide	0.081	0.011	0.00053	0.13	0.011	0.00053	0.033	J 0.076	0.0036	0.052	J 0.060	0.0029
1,1,2-CI 1,2,2-F ethane (113)	ND	0.0022	0.00059	ND	0.0022	0.00059	ND	0.015	0.0041	ND	0.012	0.0032
Acetone	0.020	0.011	0.00063	0.032	0.011	0.00063	0.065	J 0.076	0.0044	0.051	J 0.060	0.0034
Methylene Chloride	ND	0.0022	0.00063	ND	0.0022	0.00063	ND	0.015	0.0043	ND	0.012	0.0034
t-1,2-Dichloroethene	ND	0.0022	0.00066	ND	0.0022	0.00066	ND	0.015	0.0045	ND	0.012	0.0036
1,1-Dichloroethane	ND	0.0022	0.00030	ND	0.0022	0.00030	0.0024	J 0.015	0.0021	ND	0.012	0.0016
c-1,2-Dichloroethene	ND	0.0022	0.00042	ND	0.0022	0.00042	ND	0.015	0.0029	ND	0.012	0.0023
2-Butanone	0.0082	0.0022	0.0014	0.0094	0.0022	0.0014	0.015	0.015	0.0094	0.015	0.012	0.0074
t-Butyl Methyl Ether (MTBE)	0.00060	J 0.0022	0.00049	0.00066	J 0.0022	0.00049	0.38	0.015	0.0034	0.40	0.012	0.0027
Chloroform	ND	0.0022	0.00031	ND	0.0022	0.00031	ND	0.015	0.0021	ND	0.012	0.0017
1,1,1-Trichloroethane	ND	0.0022	0.00022	ND	0.0022	0.00022	ND	0.015	0.0015	ND	0.012	0.0012
Carbon Tetrachloride	ND	0.0022	0.00038	ND	0.0022	0.00038	ND	0.015	0.0026	ND	0.012	0.0021
Benzene	0.0055	0.0022	0.00021	0.0054	0.0022	0.00021	1.0	0.015	0.0015	0.86	0.012	0.0011
1,2-Dichloroethane	ND	0.0022	0.00016	ND	0.0022	0.00016	0.0033	J 0.015	0.0011	0.0046	J 0.012	0.00089
Trichloroethene	ND	0.0022	0.00031	ND	0.0022	0.00031	ND	0.015	0.0021	ND	0.012	0.0017
1,2-Dichloropropane	ND	0.0022	0.00040	ND	0.0022	0.00040	ND	0.015	0.0027	ND	0.012	0.0022
Bromodichloromethane	ND	0.0022	0.00013	ND	0.0022	0.00013	ND	0.015	0.00091	ND	0.012	0.00072
c-1,3-Dichloropropene	ND	0.0022	0.00026	ND	0.0022	0.00026	ND	0.015	0.0018	ND	0.012	0.0014
4-Methyl-2-Pentanone	ND	0.0022	0.00015	ND	0.0022	0.00015	ND	0.015	0.0010	ND	0.012	0.00080
Toluene	0.0058	0.0022	0.00017	0.0064	0.0022	0.00017	0.98	0.015	0.0012	0.82	0.012	0.00095
t-1,3-Dichloropropene	ND	0.0022	0.00023	ND	0.0022	0.00023	ND	0.015	0.0016	ND	0.012	0.0012
1,1,2-Trichloroethane	ND	0.0022	0.00036	ND	0.0022	0.00036	ND	0.015	0.0025	ND	0.012	0.0019
1,3-Dichloropropane	ND	0.0022	0.00011	ND	0.0022	0.00011	ND	0.015	0.00075	ND	0.012	0.00059
Tetrachloroethene	ND	0.0022	0.00026	ND	0.0022	0.00026	ND	0.015	0.0018	ND	0.012	0.0014
2-Hexanone	ND	0.0022	0.00045	ND	0.0022	0.00045	ND	0.015	0.0031	ND	0.012	0.0025
Dibromochloromethane	ND	0.0022	0.00040	ND	0.0022	0.00040	ND	0.015	0.0028	ND	0.012	0.0022
1,2-Dibromoethane	ND	0.0022	0.00020	ND	0.0022	0.00020	ND	0.015	0.0014	ND	0.012	0.0011
Chlorobenzene	ND	0.0022	0.00017	ND	0.0022	0.00017	0.0085	J 0.015	0.0012	ND	0.012	0.00093
Ethylbenzene	0.0011	J 0.0022	0.00013	0.0011	J 0.0022	0.00013	0.19	0.015	0.00087	0.19	0.012	0.00069
p,&m-Xylene	0.0097	0.0022	0.00025	0.010	0.0022	0.00025	1.3	0.015	0.0017	1.1	0.012	0.0013
o-Xylene	0.0058	0.0022	0.00027	0.0060	0.0022	0.00027	0.14	0.015	0.0018	0.11	0.012	0.0014



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 07/10/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K071005-01			K071005-02			K071005-03			K071005-04		
Client Sample I.D.:	VEFF-07-09			VEFF-07-09D			VPOST-07-09			VINP-07-09		
Date/Time Sampled:	7/9/19 11:00			7/9/19 11:00			7/9/19 11:05			7/9/19 11:15		
Date/Time Analyzed:	7/19/19 18:16			7/19/19 18:57			7/19/19 16:09			7/19/19 16:54		
QC Batch No.:	190719MS2A1			190719MS2A1			190719MS2A1			190719MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.2			2.2			15			12		
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	0.00031 J	0.0022	0.00028	0.00055 J	0.0022	0.00028	0.0053 J	0.015	0.0019	0.0043 J	0.012	0.0015
Bromoform	ND	0.0022	0.00012	ND	0.0022	0.00012	ND	0.015	0.00085	ND	0.012	0.00066
Isopropyl benzene	ND	0.0022	0.00023	ND	0.0022	0.00023	0.0028 J	0.015	0.0016	0.0018 J	0.012	0.0012
1,1,2,2-Tetrachloroethane	ND	0.0044	0.00013	ND	0.0044	0.00013	ND	0.030	0.00093	ND	0.024	0.00073
Benzyl Chloride	ND	0.0022	0.00040	ND	0.0022	0.00040	ND	0.015	0.0028	ND	0.012	0.0022
1,2,3-Trichloropropane	ND	0.0022	0.00059	ND	0.0022	0.00059	ND	0.015	0.0041	ND	0.012	0.0032
n-Propyl Benzene	ND	0.0022	0.00013	0.00035 J	0.0022	0.00013	0.0018 J	0.015	0.00088	ND	0.012	0.00069
4-Ethyl Toluene	0.0029	0.0022	0.00014	0.0027	0.0022	0.00014	0.044	0.015	0.00096	0.046	0.012	0.00075
1,3,5-Trimethylbenzene	0.0015 J	0.0044	0.00038	0.0014 J	0.0044	0.00038	0.031	0.030	0.0026	0.032	0.024	0.0021
4-Chlorotoluene	ND	0.0022	0.00026	ND	0.0022	0.00026	ND	0.015	0.0018	ND	0.012	0.0014
tert-Butylbenzene	ND	0.0022	0.00020	ND	0.0022	0.00020	ND	0.015	0.0014	ND	0.012	0.0011
1,2,4-Trimethylbenzene	0.0024 J	0.0044	0.00025	0.0025 J	0.0044	0.00025	0.026 J	0.030	0.0017	0.026	0.024	0.0014
sec-Butylbenzene	ND	0.0022	0.00021	ND	0.0022	0.00021	ND	0.015	0.0015	ND	0.012	0.0012
p-Isopropyltoluene	0.0024	0.0022	0.00029	0.0037	0.0022	0.00029	0.0021 J	0.015	0.0020	0.0020 J	0.012	0.0016
1,3-Dichlorobenzene	ND	0.0022	0.00027	ND	0.0022	0.00027	ND	0.015	0.0018	ND	0.012	0.0014
1,4-Dichlorobenzene	ND	0.0022	0.00032	ND	0.0022	0.00032	ND	0.015	0.0022	ND	0.012	0.0017
n-Butylbenzene	0.00049 J	0.0022	0.00016	0.00046 J	0.0022	0.00016	ND	0.015	0.0011	ND	0.012	0.00087
1,2-Dichlorobenzene	ND	0.0022	0.00027	ND	0.0022	0.00027	ND	0.015	0.0019	ND	0.012	0.0015
1,2,4-Trichlorobenzene	ND	0.0044	0.00036	ND	0.0044	0.00036	ND	0.030	0.0025	ND	0.024	0.0020
Hexachlorobutadiene	ND	0.0022	0.00013	ND	0.0022	0.00013	ND	0.015	0.00089	ND	0.012	0.00070
t-Butanol	0.025	0.011	0.00042	0.0029 J	0.011	0.00042	ND	0.076	0.0029	0.035 J	0.060	0.0023
n-Hexane	0.0073 J	0.011	0.00030	0.0064 J	0.011	0.00030	2.3	0.076	0.0020	2.2	0.060	0.0016
Isopropyl ether	ND	0.011	0.00024	ND	0.011	0.00024	ND	0.076	0.0017	ND	0.060	0.0013
t-Butyl ethyl ether	ND	0.011	0.00044	ND	0.011	0.00044	ND	0.076	0.0030	ND	0.060	0.0024
2,2-Dichloropropane	ND	0.011	0.00021	ND	0.011	0.00021	ND	0.076	0.0014	ND	0.060	0.0011
t-Amyl methyl ether	ND	0.011	0.00016	ND	0.011	0.00016	ND	0.076	0.0011	ND	0.060	0.00084
1,4-Dioxane	ND	0.011	0.00038	ND	0.011	0.00038	ND	0.076	0.0026	ND	0.060	0.0021
Naphthalene	ND	0.011	0.00084	0.00088 J	0.011	0.00084	ND	0.076	0.0058	ND	0.060	0.0046
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:

7/23/19

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: 07/10/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	Method Blank														
Client Sample I.D.:	-														
Date/Time Sampled:	-														
Date/Time Analyzed:	7/19/19 5:50														
QC Batch No.:	190719MS2A1														
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	0.00011 J	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	0.00011 J	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	0.000021 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	0.000099												
Tetrachloroethene	ND	0.00020	0.000024												
2-Hexanone	ND	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: 07/10/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	Method Blank													
Client Sample I.D.:	-													
Date/Time Sampled:	-													
Date/Time Analyzed:	7/19/19 5:50													
QC Batch No.:	190719MS2A1													
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: 7/23/19

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



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190719MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	7/19/19 5:50		7/19/19 5:08		7/19/19 6:41						
Data File ID:	19JUL005.D		19JUL004.D		19JUL006.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	9.4	94	9.7	97	3.3	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.5	105	9.9	99	6.2	70	130	30	Pass
Trichloroethene	0.0	10.0	10.0	100	10.0	100	0.0	70	130	30	Pass
Toluene	0.0	10.0	10.1	101	9.8	98	2.3	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.9	109	11.0	110	0.2	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 7/23/19

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: 07/10/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K071005-01	K071005-02	K071005-03	K071005-04				
Client Sample I.D.:	VEFF-07-09	VEFF-07-09D	VPOST-07-09	VINF-07-09				
Date/Time Sampled:	7/9/19 11:00	7/9/19 11:00	7/9/19 11:05	7/9/19 11:15				
Date/Time Analyzed:	7/13/19 1:23	7/13/19 2:09	7/13/19 2:55	7/13/19 3:18				
QC Batch No.:	190712GC11A1	190712GC11A1	190712GC11A1	190712GC11A1				
Analyst Initials:	VM	VM	VM	VM				
Dilution Factor:	2.2	2.2	2.0	2.0				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Hexane	ND	2.2	ND	2.2	100	2.0	99	2.0

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson
 Mark Johnson
 Operations Manager

Date _____

7/18/19

The cover letter is an integral part of this analytical report



QC Batch No: 190712GC11AI
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3
 LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK	LCS	LCS D							
Date Analyzed:	7/12/19 16:54	7/12/19 14:35	7/12/19 14:58							
Analyst Initials:	VM	VM	VM							
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	5.01	100	4.40	88	13.0	70	130	25

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

 Mark Johnson
 Operations Manager

Date 7/18/19

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: 07/10/19
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	K071005-04						
Client Sample I.D.:	VINF-07-09						
Date/Time Sampled:	7/9/19 11:15						
Date/Time Analyzed:	7/17/19 12:30						
QC Batch No.:	190717GC8A1						
Analyst Initials:	CM/AS						
Dilution Factor:	2.0						
ANALYTE	Result % v/v	RL % v/v					
Carbon Dioxide	0.64	0.020					
Oxygen/Argon	21	1.0					
Nitrogen	78	2.0					
Methane	0.036	0.0020					

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 7/23/19

The cover letter is an integral part of this analytical report



QC Batch No: 190717GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK								Limits		
Date Analyzed:	7/17/19 9:25			7/17/19 8:13		7/17/19 8:27					
Analyst Initials:	CM/AS			CM/AS		CM/AS					
Dilution Factor:	1.0			1.0		1.0					
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	10.2	102	10.2	101	0.2	70	130	30
Oxygen/Argon	ND	0.50	15	15.6	105	15.5	105	0.7	70	130	30
Nitrogen	ND	1.0	70	71.5	102	71.3	102	0.3	70	130	30
Methane	ND	0.0010	0.10	0.102	102	0.101	101	0.5	70	130	30

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

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 7/23/19

The cover letter is an integral part of this analytical report





August 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: K080908-01/04

Enclosed are results for sample(s) received 8/09/19 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, Nils Orliczky and Danny Hill on 8/28/19.

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.

K80918-01/04


CHAIN OF CUSTODY RECORD
DATE: 8/8/19
PAGE: 1 of 1

Air Technology Laboratories, Inc.
18501 Gale Ave, #130
City of Industry, CA 91748
Tel: 626-964-4037
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
Phone: 404-373-1600 Fax:

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

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

Section D Sampler Information
Sampler Name: James Dye
Signature: 
Date: 8/8/19

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G-GRAB C-COMP)	CONTAINER TYPE		ANALYSIS TEST	COMMENTS
					# OF CONTAINERS	VOLUME (mL)		
1	VEFF-0808	Effluent (stock)	Vapor G	G	DATE: 8/8/19 TIME: 1120	TO-15 (VOCs, Target Analytes)	ASTM-D 1366 (O2, N2, CH4, H2)	Individually Certified 6-Liter SUMMA
2	VEFF-08-08-D	Effluent (stock) (duplicate)	Vapor G	G	DATE: 8/8/19 TIME: 1120	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
3	VPOST-08-68	Effluent (post-dilution)	Vapor G	G	DATE: 8/8/19 TIME: 1215	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
4	VINF-08-08	Effluent (pre-dilution)	Vapor G	G	DATE: 8/8/19 TIME: 1225	TO-15 (VOCs, Target Analytes)		Individually Certified 6-Liter SUMMA
5								Batch Certified 1-Liter Summa
6								Target analytes include historical VOCs and remaining 411 list per subcontract
7								
8								
9								
10								

Section E Required Sample Information
Date / Time: 8/8/19 1500
Signature: 

Section F Required Project Information
Date / Time: 8/8/19 1500
Signature: 

Section G Required Project Information
Date / Time: 8/9/19 1028
Signature: 

Section H Matrix
W = Vapor, MW = Water/Seal, D = Oil, F = Product, S = Soil
Matrix: MW = Water/Seal, F = Product, S = Soil

Section I Container Types
T = Tube, V = VOA, P = Pet, A = Amber, J = Jar, B = Radlar, G = Glass, M = Metal, Pl = Plastic, C = Can

Section J Special Instructions
Item Arrived Time (MST):
DA = Same Day
DB = 24 Hours
DC = 48 Hours
DD = 72 Hours
DE = 5 Workdays
DF = 10 Workdays
TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 08/09/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K080908-01			K080908-02			K080908-03			K080908-04		
Client Sample I.D.:	VEFF-08-08			VEFF-08-08-D			YPOST-08-08			VINP-08-08		
Date/Time Sampled:	8/8/19 11:20			8/8/19 11:20			8/8/19 12:15			8/8/19 12:25		
Date/Time Analyzed:	8/21/19 1:52			8/21/19 2:33			8/22/19 10:43			8/22/19 11:23		
QC Batch No.:	190820MS2A2			190820MS2A2			190821MS2A1			190821MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.0			2.0			12			12		
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	0.0020	0.00031	ND	0.0020	0.00031	ND	0.012	0.0019	ND	0.012	0.0019
Chloromethane	ND	0.0040	0.00044	ND	0.0040	0.00044	ND	0.024	0.0027	ND	0.024	0.0027
1,2-CI-1,1,2,2-F ethane (114)	ND	0.0020	0.00041	ND	0.0020	0.00041	ND	0.012	0.0024	ND	0.012	0.0024
Vinyl Chloride	ND	0.0020	0.00033	ND	0.0020	0.00033	ND	0.012	0.0020	ND	0.012	0.0020
Bromomethane	0.00078 J	0.0020	0.00059	0.00072 J	0.0020	0.00059	0.0048 J	0.012	0.0036	ND	0.012	0.0036
Chloroethane	ND	0.0020	0.0017	ND	0.0020	0.0017	ND	0.012	0.010	ND	0.012	0.010
Trichlorofluoromethane (11)	ND	0.0020	0.00044	ND	0.0020	0.00044	ND	0.012	0.0026	ND	0.012	0.0026
1,1-Dichloroethene	ND	0.0020	0.00046	ND	0.0020	0.00046	ND	0.012	0.0028	ND	0.012	0.0028
Carbon Disulfide	0.11	0.010	0.00048	0.11	0.010	0.00048	0.079	0.061	0.0029	0.028 J	0.061	0.0029
1,1,2-CI 1,2,2-F ethane (113)	ND	0.0020	0.00054	ND	0.0020	0.00054	ND	0.012	0.0033	ND	0.012	0.0033
Acetone	0.016	0.010	0.00058	0.016	0.010	0.00058	0.097	0.061	0.0035	0.13	0.061	0.0035
Methylene Chloride	ND	0.0020	0.00058	ND	0.0020	0.00058	ND	0.012	0.0035	ND	0.012	0.0035
t-1,2-Dichloroethene	ND	0.0020	0.00060	ND	0.0020	0.00060	ND	0.012	0.0036	ND	0.012	0.0036
1,1-Dichloroethane	ND	0.0020	0.00028	ND	0.0020	0.00028	ND	0.012	0.0017	ND	0.012	0.0017
c-1,2-Dichloroethene	ND	0.0020	0.00039	ND	0.0020	0.00039	ND	0.012	0.0023	ND	0.012	0.0023
2-Butanone	0.0095	0.0020	0.0012	0.0055	0.0020	0.0012	0.026	0.012	0.0075	ND	0.012	0.0075
t-Butyl Methyl Ether (MTBE)	0.0029	0.0020	0.00045	0.0026	0.0020	0.00045	0.25	0.012	0.0027	0.23	0.012	0.0027
Chloroform	ND	0.0020	0.00028	ND	0.0020	0.00028	ND	0.012	0.0017	ND	0.012	0.0017
1,1,1-Trichloroethane	ND	0.0020	0.00020	ND	0.0020	0.00020	ND	0.012	0.0012	ND	0.012	0.0012
Carbon Tetrachloride	ND	0.0020	0.00035	ND	0.0020	0.00035	ND	0.012	0.0021	ND	0.012	0.0021
Benzene	0.020	0.0020	0.00019	0.019	0.0020	0.00019	0.83	0.012	0.0012	0.85	0.012	0.0012
1,2-Dichloroethane	ND	0.0020	0.00015	ND	0.0020	0.00015	0.0032 J	0.012	0.00090	ND	0.012	0.00090
Trichloroethene	ND	0.0020	0.00029	ND	0.0020	0.00029	0.022	0.012	0.0017	0.028	0.012	0.0017
1,2-Dichloropropane	ND	0.0020	0.00037	ND	0.0020	0.00037	ND	0.012	0.0022	ND	0.012	0.0022
Bromodichloromethane	ND	0.0020	0.00012	ND	0.0020	0.00012	ND	0.012	0.00073	ND	0.012	0.00073
c-1,3-Dichloropropene	ND	0.0020	0.00024	ND	0.0020	0.00024	ND	0.012	0.0015	ND	0.012	0.0015
4-Methyl-2-Pentanone	ND	0.0020	0.00014	ND	0.0020	0.00014	ND	0.012	0.00082	ND	0.012	0.00082
Toluene	0.12	0.0020	0.00016	0.11	0.0020	0.00016	0.94	0.012	0.00096	0.94	0.012	0.00096
t-1,3-Dichloropropene	ND	0.0020	0.00021	ND	0.0020	0.00021	ND	0.012	0.0013	ND	0.012	0.0013
1,1,2-Trichloroethane	ND	0.0020	0.00033	ND	0.0020	0.00033	ND	0.012	0.0020	ND	0.012	0.0020
1,3-Dichloropropane	ND	0.0020	0.00010	ND	0.0020	0.00010	ND	0.012	0.00060	ND	0.012	0.00060
Tetrachloroethene	ND	0.0020	0.00024	ND	0.0020	0.00024	ND	0.012	0.0015	ND	0.012	0.0015
2-Hexanone	ND	0.0020	0.00042	ND	0.0020	0.00042	ND	0.012	0.0025	ND	0.012	0.0025
Dibromochloromethane	ND	0.0020	0.00037	ND	0.0020	0.00037	ND	0.012	0.0022	ND	0.012	0.0022
1,2-Dibromoethane	ND	0.0020	0.00018	ND	0.0020	0.00018	ND	0.012	0.0011	ND	0.012	0.0011
Chlorobenzene	ND	0.0020	0.00016	ND	0.0020	0.00016	ND	0.012	0.00094	0.0075 J	0.012	0.00094
Ethylbenzene	0.023	0.0020	0.00012	0.021	0.0020	0.00012	0.23	0.012	0.00070	0.22	0.012	0.00070
p.&m-Xylene	0.18	0.0020	0.00023	0.17	0.0020	0.00023	1.3	0.012	0.0014	1.4	0.012	0.0014
o-Xylene	0.064	0.0020	0.00025	0.063	0.0020	0.00025	0.37	0.012	0.0015	0.23	0.012	0.0015



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 08/09/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K080908-01			K080908-02			K080908-03			K080908-04		
Client Sample I.D.:	VEFF-08-08			VEFF-08-08-D			VPOST-08-08			VINP-08-08		
Date/Time Sampled:	8/8/19 11:20			8/8/19 11:20			8/8/19 12:15			8/8/19 12:25		
Date/Time Analyzed:	8/21/19 1:52			8/21/19 2:33			8/22/19 10:43			8/22/19 11:23		
QC Batch No.:	190820MS2A2			190820MS2A2			190821MS2A1			190821MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	2.0			2.0			12			12		
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	0.0029	0.0020	0.00026	0.0028	0.0020	0.00026	0.015	0.012	0.0016	0.0093 J	0.012	0.0016
Bromoform	ND	0.0020	0.00011	ND	0.0020	0.00011	ND	0.012	0.00068	ND	0.012	0.00068
Isopropyl benzene	0.0011 J	0.0020	0.00021	0.0011 J	0.0020	0.00021	0.012	0.012	0.0015	0.012	0.012	0.0013
1,1,2,2-Tetrachloroethane	ND	0.0040	0.00012	ND	0.0040	0.00012	ND	0.024	0.00074	ND	0.024	0.00074
Benzyl Chloride	ND	0.0020	0.00037	ND	0.0020	0.00037	ND	0.012	0.0022	ND	0.012	0.0022
1,2,3-Trichloropropane	ND	0.0020	0.00054	ND	0.0020	0.00054	ND	0.012	0.0033	ND	0.012	0.0033
n-Propyl Benzene	0.0054	0.0020	0.00012	0.0053	0.0020	0.00012	0.033	0.012	0.00071	0.030	0.012	0.00071
4-Ethyl Toluene	0.037	0.0020	0.00013	0.036	0.0020	0.00013	0.30	0.012	0.00077	0.32	0.012	0.00077
1,3,5-Trimethylbenzene	0.014	0.0040	0.00035	0.014	0.0040	0.00035	0.17	0.024	0.0021	0.18	0.024	0.0021
4-Chlorotoluene	ND	0.0020	0.00024	ND	0.0020	0.00024	ND	0.012	0.0014	ND	0.012	0.0014
tert-Butylbenzene	ND	0.0020	0.00018	ND	0.0020	0.00018	ND	0.012	0.0011	ND	0.012	0.0011
1,2,4-Trimethylbenzene	0.029	0.0040	0.00023	0.028	0.0040	0.00023	0.11	0.024	0.0014	0.12	0.024	0.0014
sec-Butylbenzene	ND	0.0020	0.00020	0.00039 J	0.0020	0.00020	ND	0.012	0.0012	ND	0.012	0.0012
p-Isopropyltoluene	0.0011 J	0.0020	0.00026	0.0022	0.0020	0.00026	0.0050 J	0.012	0.0016	0.0048 J	0.012	0.0016
1,3-Dichlorobenzene	ND	0.0020	0.00025	ND	0.0020	0.00025	ND	0.012	0.0015	ND	0.012	0.0015
1,4-Dichlorobenzene	ND	0.0020	0.00030	ND	0.0020	0.00030	ND	0.012	0.0018	ND	0.012	0.0018
n-Butylbenzene	0.0020	0.0020	0.00015	0.0019 J	0.0020	0.00015	ND	0.012	0.00089	ND	0.012	0.00089
1,2-Dichlorobenzene	ND	0.0020	0.00025	ND	0.0020	0.00025	ND	0.012	0.0015	ND	0.012	0.0015
1,2,4-Trichlorobenzene	ND	0.0040	0.00033	ND	0.0040	0.00033	ND	0.024	0.0020	ND	0.024	0.0020
Hexachlorobutadiene	ND	0.0020	0.00012	ND	0.0020	0.00012	ND	0.012	0.00071	ND	0.012	0.00071
n-Butanol	ND	0.010	0.00039	ND	0.010	0.00039	0.086	0.061	0.0023	0.12	0.061	0.0023
n-Hexane	0.019	0.010	0.00027	0.020	0.010	0.00027	2.1	0.061	0.0016	2.0	0.061	0.0016
Isopropyl ether	ND	0.010	0.00022	ND	0.010	0.00022	ND	0.061	0.0013	ND	0.061	0.0013
t-Butyl ethyl ether	ND	0.010	0.00040	ND	0.010	0.00040	ND	0.061	0.0024	ND	0.061	0.0024
2,2-Dichloropropane	ND	0.010	0.00019	ND	0.010	0.00019	ND	0.061	0.0012	ND	0.061	0.0012
t-Amyl methyl ether	ND	0.010	0.00014	ND	0.010	0.00014	ND	0.061	0.00086	ND	0.061	0.00086
1,4-Dioxane	ND	0.010	0.00035	ND	0.010	0.00035	ND	0.061	0.0021	ND	0.061	0.0021
Naphthalene	ND	0.010	0.00078	ND	0.010	0.00078	ND	0.061	0.0047	ND	0.061	0.0047
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:

8/26/19

The above data is an analytical report and does not constitute a warranty.



AirTECHNOLOGY Laboratories, Inc.

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 08/09/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	-			-								
Date/Time Sampled:	-			-								
Date/Time Analyzed:	8/20/19 23:49			8/21/19 20:53								
QC Batch No.:	190820MS2A2			190821MS2A1								
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	0.000065 J	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	0.000027 J	0.00020	0.000019	ND	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	ND	0.00020	0.000016						
t-1,3-Dichloropropene	ND	0.00020	0.000021	ND	0.00020	0.000021						
1,1,1-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	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: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 08/09/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK			METHOD BLANK								
Client Sample I.D.:	-			-								
Date/Time Sampled:	-			-								
Date/Time Analyzed:	8/20/19 23:49			8/21/19 20:53								
QC Batch No.:	190820MS2A2			190821MS2A1								
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	0.000076 J	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: 8/28/19

The cover letter is an integral part of this analytical report



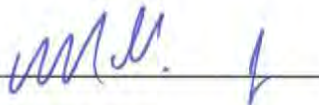
LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190820MS2A2

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	8/20/19 23:49		8/20/19 21:01	8/20/19 21:43							
Data File ID:	20AUG025.D		20AUG021.D	20AUG022.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	10.7	107	10.5	105	2.3	70	130	30	Pass
Methylene Chloride	0.0	10.0	11.2	112	10.7	107	4.4	70	130	30	Pass
Trichloroethene	0.0	10.0	9.3	93	9.3	93	0.2	70	130	30	Pass
Toluene	0.0	10.0	10.7	107	10.7	107	0.1	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	11.3	113	11.1	111	2.1	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date: 8/28/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 190821MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	8/21/19 20:53		8/21/19 19:29		8/21/19 20:10						
Data File ID:	21AUG005.D		21AUG003.D		21AUG004.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	10.6	106	10.3	103	2.7	70	130	30	Pass
Methylene Chloride	0.0	10.0	11.1	111	10.9	109	2.0	70	130	30	Pass
Trichloroethene	0.0	10.0	9.3	93	9.3	93	0.0	70	130	30	Pass
Toluene	0.0	10.0	10.6	106	10.7	107	1.0	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	10.8	108	11.0	110	1.6	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 8/28/19

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: 08/09/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K080908-01	K080908-02	K080908-03	K080908-04				
Client Sample I.D.:	VEFF-08-08	VEFF-08-08-D	VPOST-08-08	VINF-08-08				
Date/Time Sampled:	8/8/19 11:20	8/8/19 11:20	8/8/19 12:15	8/8/19 12:25				
Date/Time Analyzed:	8/12/19 11:48	8/12/19 12:11	8/12/19 13:20	8/12/19 13:43				
QC Batch No.:	190812GC11A1	190812GC11A1	190812GC11A1	190812GC11A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.0	2.0	2.0	2.0				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Hexane	ND	2.0	ND	2.0	94	2.0	97	2.0

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

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 8/16/19

The cover letter is an integral part of this analytical report



QC Batch No: 190812GC11A1

Matrix: Air

Reporting Units: ppmv

**EPA METHOD TO3
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK	LCS	LCSD							
Date Analyzed:	8/12/19 11:21	8/12/19 10:07	8/12/19 10:35							
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	4.37	87	4.36	87	0.2	70	130	25

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____



Mark Johnson
Operations Manager

Date _____

8/16/19

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: 08/09/19
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	K080908-04						
Client Sample I.D.:	VINF-08-08						
Date/Time Sampled:	8/8/19 12:25						
Date/Time Analyzed:	8/14/19 20:12						
QC Batch No.:	190814GC8A1						
Analyst Initials:	CM/AS						
Dilution Factor:	2.0						
ANALYTE	Result % v/v	RL % v/v					
Carbon Dioxide	0.64	0.020					
Oxygen/Argon	21	1.0					
Nitrogen	79	2.0					
Methane	0.0037	0.0020					

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____


 Mark Johnson
 Operations Manager

Date _____



The cover letter is an integral part of this analytical report



QC Batch No: 190814GC8A1
Matrix: Air
Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK		LCS		LCSD						
Date Analyzed:	8/14/19 14:16		8/14/19 14:30		8/14/19 14:45						
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	9.57	96	9.29	93	3.0	70	130	30
Oxygen/Argon	ND	0.50	15	15.0	101	14.7	99	1.8	70	130	30
Nitrogen	ND	1.0	70	70.1	100	68.6	98	2.2	70	130	30
Methane	ND	0.0010	0.10	0.0945	94	0.0938	94	0.7	70	130	30

ND = Not Detected (below RL.)

RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 8/28/19

The cover letter is an integral part of this analytical report





September 30, 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: K091602-01/04

Enclosed are results for sample(s) received 9/16/19 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, Nils Orliczky and Danny Hill on 9/27/19.

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: 9/12/19
PAGE: 1 of 1

K091602-01/04

Air Technology Laboratories, Inc.
18501 Gale Ave. #130
City of Industry, CA 91748
Tel: 626-964-4032
Joann De La Ossa (DeLaOssa@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
Phone: 404-323-1600 Fax:

Section B
Required Project Information:
Report To: Eric Davis (eric.davis@ch2m.com)
Copy To: Vladimir-Castro (vcastro@ch2m.com)
Purchase Order No.: N15 011 224 0041114

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
Sampler Signature: [Signature]
Sample Date: 9/12/19

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G-GRAB C-COMP)	DATE	TIME	TOTAL # OF CONTAINERS	ANALYSIS TEST	COMMENTS
1	VEFF-09-12	Effluent (stack)	Vapor	G	9/12/19	0910	1	TO-15 (VOCs, Target Analytes) TO-3 (Total VOCs as Hexane)	Individually Certified 6-Liter SUMMA
2	VEFF-09-12 D	Effluent (stack) (duplicate)	Vapor	G	9/12/19	0915	1		Individually Certified 6-Liter SUMMA
3	VPOST-09-12	Influent (post-dilution)	Vapor	G	9/12/19	0945	1		Individually Certified 1-Liter SUMMA
4	VINF-09-12	Influent (pre-dilution)	Vapor	G	9/12/19	0925	1		Batch Certified 1-Liter Summa
5						091119			Target analytes include: Historical VOCs and remaining ATU list per subcontract
6									
7									
8									
9									
10									

Section E
Required Signature and Printed Name:
Signature: [Signature]
Date/Time: 9/12/19 1000

Section F
Required Signature and Printed Name:
Signature: [Signature]
Date/Time: 9/12/19 1500

Section G
Required Signature and Printed Name:
Signature: [Signature]
Date/Time: 9/16/19 1144

Section H
Required Signature and Printed Name:
Signature: [Signature]
Date/Time: 9/16/19 1144

Special Instructions:
-01 09:10
-02 09:10
-03 09:15
-04 09:25
Collection times conf'd
LIFE-DANS 9/12/19 JD

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.

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

Preservatives:
 H = HCl
 W = Water
 O = Oil
 N = HNO3
 Z = Zn(Ac2)
 S = H2SO4
 P = Product
 \$ = Soil
 O = NaOH
 Others/Specify:

Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 09/16/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K091602-01			K091602-02			K091602-03			K091602-04		
Client Sample I.D.:	VEFF-09-12			VEFF-09-12D			VPOST-09-12			VINP-09-12		
Date/Time Sampled:	9/12/19 9:10			9/12/19 9:10			9/12/19 9:15			9/12/19 9:25		
Date/Time Analyzed:	9/23/19 15:22			9/23/19 16:02			9/24/19 1:16			9/23/19 16:54		
QC Batch No.:	190923MS2A1			190923MS2A1			190923MS2A1			190923MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	1.9			2.0			10			1.9		
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	0.0019	0.00030	ND	0.0020	0.00031	ND	0.010	0.0016	0.00049 J	0.0019	0.00030
Chloromethane	ND	0.0039	0.00043	ND	0.0040	0.00044	ND	0.020	0.0022	0.00097 J	0.0039	0.00043
1,2-CI-1,1,2,2-F ethane (114)	ND	0.0019	0.00039	ND	0.0020	0.00041	ND	0.010	0.0020	ND	0.0019	0.00039
Vinyl Chloride	ND	0.0019	0.00032	ND	0.0020	0.00033	ND	0.010	0.0016	ND	0.0019	0.00032
Bromomethane	0.00082 J	0.0019	0.00057	0.00075 J	0.0020	0.00059	ND	0.010	0.0030	0.00070 J	0.0019	0.00057
Chloroethane	ND	0.0019	0.0016	ND	0.0020	0.0017	ND	0.010	0.0085	ND	0.0019	0.0016
Trichlorofluoromethane (11)	ND	0.0019	0.00042	ND	0.0020	0.00044	ND	0.010	0.0022	ND	0.0019	0.00042
1,1-Dichloroethene	ND	0.0019	0.00044	ND	0.0020	0.00046	ND	0.010	0.0023	ND	0.0019	0.00044
Carbon Disulfide	0.20	0.0097	0.00047	0.23	0.010	0.00048	0.092	0.051	0.0024	0.0019 J	0.0097	0.00047
1,1,2-CI 1,2,2-F ethane (113)	ND	0.0019	0.00052	ND	0.0020	0.00054	ND	0.010	0.0027	ND	0.0019	0.00052
Acetone	0.031	0.0097	0.00056	0.039	0.010	0.00058	0.018 J	0.051	0.0029	0.033	0.0097	0.00056
Methylene Chloride	ND	0.0019	0.00055	ND	0.0020	0.00058	ND	0.010	0.0029	ND	0.0019	0.00055
t-1,2-Dichloroethene	ND	0.0019	0.00058	ND	0.0020	0.00060	ND	0.010	0.0030	ND	0.0019	0.00058
1,1-Dichloroethane	ND	0.0019	0.00026	ND	0.0020	0.00028	ND	0.010	0.0014	ND	0.0019	0.00026
c-1,2-Dichloroethene	ND	0.0019	0.00038	ND	0.0020	0.00039	ND	0.010	0.0020	ND	0.0019	0.00038
2-Butanone	0.016	0.0019	0.0012	0.014	0.0020	0.0012	ND	0.010	0.0062	0.018	0.0019	0.0012
t-Butyl Methyl Ether (MTBE)	ND	0.0019	0.00043	0.00069 J	0.0020	0.00045	0.20	0.010	0.0023	ND	0.0019	0.00043
Chloroform	ND	0.0019	0.00027	ND	0.0020	0.00028	ND	0.010	0.0014	ND	0.0019	0.00027
1,1,1-Trichloroethane	ND	0.0019	0.00019	ND	0.0020	0.00020	ND	0.010	0.0010	ND	0.0019	0.00019
Carbon Tetrachloride	ND	0.0019	0.00034	ND	0.0020	0.00035	ND	0.010	0.0018	ND	0.0019	0.00034
Benzene	0.0038	0.0019	0.00019	0.0043	0.0020	0.00019	0.64	0.010	0.00097	0.0016 J	0.0019	0.00019
1,2-Dichloroethane	ND	0.0019	0.00014	ND	0.0020	0.00015	0.0028 J	0.010	0.00075	ND	0.0019	0.00014
Trichloroethene	ND	0.0019	0.00027	ND	0.0020	0.00029	ND	0.010	0.0014	0.00034 J	0.0019	0.00027
1,2-Dichloropropane	ND	0.0019	0.00035	ND	0.0020	0.00037	ND	0.010	0.0018	ND	0.0019	0.00035
Bromodichloromethane	ND	0.0019	0.00012	ND	0.0020	0.00012	ND	0.010	0.00061	ND	0.0019	0.00012
c-1,3-Dichloropropene	ND	0.0019	0.00023	ND	0.0020	0.00024	ND	0.010	0.0012	ND	0.0019	0.00023
4-Methyl-2-Pentanone	ND	0.0019	0.00013	ND	0.0020	0.00014	ND	0.010	0.00068	ND	0.0019	0.00013
Toluene	0.0054	0.0019	0.00015	0.0061	0.0020	0.00016	0.52	0.010	0.00080	0.0057	0.0019	0.00015
t-1,3-Dichloropropene	ND	0.0019	0.00020	ND	0.0020	0.00021	ND	0.010	0.0010	ND	0.0019	0.00020
1,1,2-Trichloroethane	ND	0.0019	0.00031	ND	0.0020	0.00033	ND	0.010	0.0016	ND	0.0019	0.00031
1,3-Dichloropropane	ND	0.0019	0.000097	ND	0.0020	0.00010	ND	0.010	0.00050	ND	0.0019	0.000097
Tetrachloroethene	ND	0.0019	0.00023	ND	0.0020	0.00024	ND	0.010	0.0012	ND	0.0019	0.00023
2-Hexanone	ND	0.0019	0.00040	ND	0.0020	0.00042	ND	0.010	0.0021	ND	0.0019	0.00040
Dibromochloromethane	ND	0.0019	0.00035	ND	0.0020	0.00037	ND	0.010	0.0018	ND	0.0019	0.00035
1,2-Dibromoethane	ND	0.0019	0.00018	ND	0.0020	0.00018	ND	0.010	0.00092	ND	0.0019	0.00018
Chlorobenzene	ND	0.0019	0.00015	ND	0.0020	0.00016	0.0028 J	0.010	0.00079	ND	0.0019	0.00015
Ethylbenzene	0.0031	0.0019	0.00011	0.0030	0.0020	0.00012	0.078	0.010	0.00058	0.00043 J	0.0019	0.00011
p,&m-Xylene	0.019	0.0019	0.00022	0.020	0.0020	0.00023	0.58	0.010	0.0011	0.0019	0.0019	0.00022
o-Xylene	0.012	0.0019	0.00024	0.013	0.0020	0.00025	0.30	0.010	0.0012	0.0012 J	0.0019	0.00024



Client: Jacobs
 Attn: Eric Davis
 Project Name: SFPP Norwalk
 Project No.: NA
 Date Received: 09/16/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	K091602-01			K091602-02			K091602-03			K091602-04		
Client Sample I.D.:	VEFF-09-12			VEFF-09-12D			VPOST-09-12			VINP-09-12		
Date/Time Sampled:	9/12/19 9:10			9/12/19 9:10			9/12/19 9:15			9/12/19 9:25		
Date/Time Analyzed:	9/23/19 15:22			9/23/19 16:02			9/24/19 1:16			9/23/19 16:54		
QC Batch No.:	190923MS2A1			190923MS2A1			190923MS2A1			190923MS2A1		
Analyst Initials:	DT			DT			DT			DT		
Dilution Factor:	1.9			2.0			10			1.9		
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	0.0011 J	0.0019	0.00025	0.0014 J	0.0020	0.00026	0.015	0.010	0.0013	ND	0.0019	0.00025
Bromoform	ND	0.0019	0.00011	ND	0.0020	0.00011	ND	0.010	0.00056	ND	0.0019	0.00011
Isopropyl benzene	ND	0.0019	0.00020	0.00069 J	0.0020	0.00021	0.0040 J	0.010	0.0011	ND	0.0019	0.00020
1,1,2,2-Tetrachloroethane	ND	0.0039	0.00012	ND	0.0040	0.00012	ND	0.020	0.00062	ND	0.0039	0.00012
Benzyl Chloride	ND	0.0019	0.00036	ND	0.0020	0.00037	ND	0.010	0.0019	ND	0.0019	0.00036
1,2,3-Trichloropropane	ND	0.0019	0.00052	ND	0.0020	0.00054	ND	0.010	0.0027	ND	0.0019	0.00052
n-Propyl Benzene	0.0031	0.0019	0.00011	0.0033	0.0020	0.00012	0.012	0.010	0.00059	ND	0.0019	0.00011
4-Ethyl Toluene	0.015	0.0019	0.00012	0.016	0.0020	0.00013	0.11	0.010	0.00064	ND	0.0019	0.00012
1,3,5-Trimethylbenzene	0.0050	0.0039	0.00034	0.0054	0.0040	0.00035	0.066	0.020	0.0017	ND	0.0039	0.00034
4-Chlorotoluene	ND	0.0019	0.00023	ND	0.0020	0.00024	ND	0.010	0.0012	ND	0.0019	0.00023
tert-Butylbenzene	ND	0.0019	0.00018	ND	0.0020	0.00018	ND	0.010	0.00092	ND	0.0019	0.00018
1,2,4-Trimethylbenzene	0.015	0.0039	0.00022	0.015	0.0040	0.00023	0.054	0.020	0.0011	0.00068 J	0.0039	0.00022
sec-Butylbenzene	ND	0.0019	0.00019	0.00034 J	0.0020	0.00020	0.0010 J	0.010	0.00098	ND	0.0019	0.00019
p-Isopropyltoluene	0.0052	0.0019	0.00025	0.011	0.0020	0.00026	0.0037 J	0.010	0.0013	0.00041 J	0.0019	0.00025
1,3-Dichlorobenzene	ND	0.0019	0.00024	ND	0.0020	0.00025	ND	0.010	0.0012	ND	0.0019	0.00024
1,4-Dichlorobenzene	ND	0.0019	0.00028	ND	0.0020	0.00030	ND	0.010	0.0015	ND	0.0019	0.00028
n-Butylbenzene	0.0015 J	0.0019	0.00014	0.0016 J	0.0020	0.00015	ND	0.010	0.00074	ND	0.0019	0.00014
1,2-Dichlorobenzene	ND	0.0019	0.00024	ND	0.0020	0.00025	ND	0.010	0.0013	ND	0.0019	0.00024
1,2,4-Trichlorobenzene	ND	0.0039	0.00032	ND	0.0040	0.00033	ND	0.020	0.0017	ND	0.0039	0.00032
Hexachlorobutadiene	ND	0.0019	0.00011	ND	0.0020	0.00012	ND	0.010	0.00059	ND	0.0019	0.00011
t-Butanol	0.0050 J	0.0097	0.00037	0.0064 J	0.010	0.00039	ND	0.051	0.0019	ND	0.0097	0.00037
n-Hexane	0.0046 J	0.0097	0.00026	0.0049 J	0.010	0.00027	1.6	0.051	0.0014	0.0017 J	0.0097	0.00026
Isopropyl ether	ND	0.0097	0.00022	ND	0.010	0.00022	ND	0.051	0.0011	ND	0.0097	0.00022
t-Butyl ethyl ether	ND	0.0097	0.00039	ND	0.010	0.00040	ND	0.051	0.0020	ND	0.0097	0.00039
2,2-Dichloropropane	ND	0.0097	0.00018	ND	0.010	0.00019	ND	0.051	0.00096	ND	0.0097	0.00018
t-Amyl methyl ether	ND	0.0097	0.00014	ND	0.010	0.00014	ND	0.051	0.00071	ND	0.0097	0.00014
1,4-Dioxane	ND	0.0097	0.00034	ND	0.010	0.00035	ND	0.051	0.0018	ND	0.0097	0.00034
Naphthalene	0.00099 J	0.0097	0.00075	0.0014 J	0.010	0.00078	ND	0.051	0.0039	ND	0.0097	0.00075
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 9/27/19
 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: 09/16/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK									
Client Sample I.D.:	-									
Date/Time Sampled:	-									
Date/Time Analyzed:	9/23/19 13:20									
QC Batch No.:	190923MS2A1									
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-Di-1,1,2,2-F ethane (114)	ND	0.00020	0.000040							
Vinyl Chloride	ND	0.00020	0.000032							
Bromomethane	0.000083 J	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-Di-1,2,2-F ethane (113)	ND	0.00020	0.000054							
Acetone	0.00013 J	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	ND	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	ND	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: 09/16/19
 Matrix: Air
 Reporting Units: ppmv

EPA Method TO15

Lab No.:	METHOD BLANK																		
Client Sample I.D.:	-																		
Date/Time Sampled:	-																		
Date/Time Analyzed:	9/23/19 13:20																		
QC Batch No.:	190923MS2A1																		
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 9/27/19

The cover letter is an integral part of this analytical report



LCS/LCSD Recovery and RPD Summary Report


QC Batch #: 190923MS2A1

Matrix: Air

EPA Method TO-14/TO-15											
Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	9/23/19 13:20		9/23/19 11:59		9/23/19 12:39						
Data File ID:	23SEP006.D		23SEP004.D		23SEP005.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	10.1	101	9.5	95	6.7	70	130	30	Pass
Methylene Chloride	0.0	10.0	10.5	105	9.2	92	13.0	70	130	30	Pass
Trichloroethene	0.0	10.0	10.2	102	10.2	102	0.2	70	130	30	Pass
Toluene	0.0	10.0	9.7	97	9.7	97	0.7	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	9.7	97	9.7	97	0.3	70	130	30	Pass

RPD = Relative Percent Difference

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: 09/16/19
 Matrix: Air
 Reporting Units: ppmv

EPA METHOD TO3

Lab No.:	K091602-01	K091602-02	K091602-03	K091602-04				
Client Sample I.D.:	VEFF-09-12	VEFF-09-12D	VPOST-09-12	VINF-09-12				
Date/Time Sampled:	9/12/19 9:10	9/12/19 9:10	9/12/19 9:15	9/12/19 9:25				
Date/Time Analyzed:	9/19/19 10:47	9/19/19 11:10	9/19/19 11:33	9/19/19 12:20				
QC Batch No.:	190919GC11A1	190919GC11A1	190919GC11A1	190919GC11A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.9	2.0	2.0	1.9				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
TVOC as Hexane	ND	1.9	ND	2.0	58	2.0	ND	1.9

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 9/27/19

The cover letter is an integral part of this analytical report



QC Batch No: 190919GC11A1

Matrix: Air

Reporting Units: ppmv

**EPA METHOD TO3
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK	LCS		LCSD						
Date Analyzed:	9/19/19 10:00	9/19/19 9:14		9/19/19 9:37						
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	4.84	97	5.19	104	7.0	70	130	25

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: *W. Johnson*
Mark Johnson
Operations Manager

Date 9/27/19

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: 09/16/19
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	K091602-04						
Client Sample I.D.:	VINF-09-12						
Date/Time Sampled:	9/12/19 9:25						
Date/Time Analyzed:	9/20/19 14:12						
QC Batch No.:	190920GC8A1						
Analyst Initials:	CM/AS						
Dilution Factor:	1.9						
ANALYTE	Result % v/v	RL % v/v					
Carbon Dioxide	0.084	0.019					
Oxygen/Argon	22	0.97					
Nitrogen	78	1.9					
Methane	ND	0.0019					

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 9/27/19

The cover letter is an integral part of this analytical report



August 13, 2019

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

TEL:

FAX:

Workorder No.: N036799

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on July 31, 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,

Handwritten signature of Puri Romualdo, with the word "for" written to the right of the signature.

Puri Romualdo
Laboratory Director

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



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

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: CH2M Hill
Project: SFPP Norwalk
Lab Order: N036799

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

TPH DRO/ORO was subcontracted to BC Laboratories, Bakersfield CA

Analytical comments for EPA 8260B:

Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) recovery biased high for analyte Acrylonitrile. Sample results were non-detect (ND) for these analytes therefore reanalysis of the samples was not necessary.



CLIENT: CH2Mhill
Project: SFPP Norwalk
Lab Order: N036799
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N036799-001A	INF-07-31	Wastewater	7/31/2019 9:00:00 AM	7/31/2019	8/13/2019
N036799-001B	INF-07-31	Wastewater	7/31/2019 9:00:00 AM	7/31/2019	8/13/2019
N036799-001C	INF-07-31	Wastewater	7/31/2019 9:00:00 AM	7/31/2019	8/13/2019
N036799-001D	INF-07-31	Wastewater	7/31/2019 9:00:00 AM	7/31/2019	8/13/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 13-Aug-19

CLIENT: CH2MHill
Lab Order: N036799
Project: SFPP Norwalk
Lab ID: N036799-001

Client Sample ID: INF-07-31
Collection Date: 7/31/2019 9:00:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	NV00922-MS5_190802A	QC Batch:	P19VW074	PrepDate:	Analyst:	RAB
1,1,1,2-Tetrachloroethane	ND	0.38	1.0	ug/L	1	8/2/2019 02:42 PM
1,1,1-Trichloroethane	ND	0.38	1.0	ug/L	1	8/2/2019 02:42 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0	ug/L	1	8/2/2019 02:42 PM
1,1,2-Trichloroethane	ND	0.29	1.0	ug/L	1	8/2/2019 02:42 PM
1,1-Dichloroethane	ND	0.45	0.50	ug/L	1	8/2/2019 02:42 PM
1,1-Dichloroethene	ND	0.34	1.0	ug/L	1	8/2/2019 02:42 PM
1,1-Dichloropropene	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
1,2,3-Trichlorobenzene	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
1,2,3-Trichloropropane	ND	0.26	1.0	ug/L	1	8/2/2019 02:42 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0	ug/L	1	8/2/2019 02:42 PM
1,2,4-Trimethylbenzene	4.5	0.33	1.0	ug/L	1	8/2/2019 02:42 PM
1,2-Dibromo-3-chloropropane	ND	0.67	2.0	ug/L	1	8/2/2019 02:42 PM
1,2-Dibromoethane	ND	0.31	1.0	ug/L	1	8/2/2019 02:42 PM
1,2-Dichlorobenzene	ND	0.29	1.0	ug/L	1	8/2/2019 02:42 PM
1,2-Dichloroethane	ND	0.29	0.50	ug/L	1	8/2/2019 02:42 PM
1,2-Dichloropropane	ND	0.24	1.0	ug/L	1	8/2/2019 02:42 PM
1,3,5-Trimethylbenzene	1.5	0.27	1.0	ug/L	1	8/2/2019 02:42 PM
1,3-Dichlorobenzene	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
1,3-Dichloropropane	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
1,4-Dichlorobenzene	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
2,2-Dichloropropane	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
2-Butanone	ND	4.9	10	ug/L	1	8/2/2019 02:42 PM
2-Chlorotoluene	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
4-Chlorotoluene	ND	0.30	1.0	ug/L	1	8/2/2019 02:42 PM
4-Isopropyltoluene	ND	0.33	1.0	ug/L	1	8/2/2019 02:42 PM
4-Methyl-2-pentanone	ND	3.2	10	ug/L	1	8/2/2019 02:42 PM
Acetone	ND	9.7	10	ug/L	1	8/2/2019 02:42 PM
Acrolein	ND	3.3	20	ug/L	1	8/2/2019 02:42 PM
Acrylonitrile	ND	2.6	20	ug/L	1	8/2/2019 02:42 PM
Benzene	130	3.4	10	ug/L	10	8/2/2019 01:57 PM
Bromobenzene	ND	0.25	1.0	ug/L	1	8/2/2019 02:42 PM
Bromochloromethane	ND	0.41	1.0	ug/L	1	8/2/2019 02:42 PM
Bromodichloromethane	ND	0.38	1.0	ug/L	1	8/2/2019 02:42 PM
Bromoform	ND	0.39	1.0	ug/L	1	8/2/2019 02:42 PM
Bromomethane	ND	0.79	1.0	ug/L	1	8/2/2019 02:42 PM
Carbon disulfide	ND	0.81	1.0	ug/L	1	8/2/2019 02:42 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: 13-Aug-19

CLIENT: CH2MHill
Lab Order: N036799
Project: SFPP Norwalk
Lab ID: N036799-001

Client Sample ID: INF-07-31
Collection Date: 7/31/2019 9:00:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	NV00922-MS5_190802A	QC Batch:	P19VW074	PrepDate:	Analyst:	RAB
Carbon tetrachloride	ND	0.40	0.50	ug/L	1	8/2/2019 02:42 PM
Chlorobenzene	ND	0.30	1.0	ug/L	1	8/2/2019 02:42 PM
Chloroethane	ND	0.97	1.0	ug/L	1	8/2/2019 02:42 PM
Chloroform	ND	0.27	1.0	ug/L	1	8/2/2019 02:42 PM
Chloromethane	ND	0.36	1.0	ug/L	1	8/2/2019 02:42 PM
cis-1,2-Dichloroethene	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
cis-1,3-Dichloropropene	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
Di-isopropyl ether	6.9	0.079	1.0	ug/L	1	8/2/2019 02:42 PM
Dibromochloromethane	ND	0.41	1.0	ug/L	1	8/2/2019 02:42 PM
Dibromomethane	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
Dichlorodifluoromethane	ND	0.29	1.0	ug/L	1	8/2/2019 02:42 PM
Ethyl tert-butyl ether	ND	0.30	1.0	ug/L	1	8/2/2019 02:42 PM
Ethylbenzene	1.9	0.31	1.0	ug/L	1	8/2/2019 02:42 PM
Freon-113	ND	0.35	1.0	ug/L	1	8/2/2019 02:42 PM
Hexachlorobutadiene	ND	0.30	1.0	ug/L	1	8/2/2019 02:42 PM
Isopropylbenzene	0.98	0.26	1.0	J ug/L	1	8/2/2019 02:42 PM
m,p-Xylene	9.9	0.23	1.0	ug/L	1	8/2/2019 02:42 PM
Methylene chloride	ND	1.9	2.0	ug/L	1	8/2/2019 02:42 PM
MTBE	1.6	0.34	1.0	ug/L	1	8/2/2019 02:42 PM
n-Butylbenzene	ND	0.34	1.0	ug/L	1	8/2/2019 02:42 PM
n-Propylbenzene	1.5	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
Naphthalene	9.2	0.42	1.0	ug/L	1	8/2/2019 02:42 PM
o-Xylene	1.0	0.31	1.0	ug/L	1	8/2/2019 02:42 PM
sec-Butylbenzene	ND	0.32	1.0	ug/L	1	8/2/2019 02:42 PM
Styrene	ND	0.21	1.0	ug/L	1	8/2/2019 02:42 PM
Tert-amyl methyl ether	ND	0.26	1.0	ug/L	1	8/2/2019 02:42 PM
Tert-Butanol	320	2.4	5.0	ug/L	1	8/2/2019 02:42 PM
tert-Butylbenzene	ND	0.28	1.0	ug/L	1	8/2/2019 02:42 PM
Tetrachloroethene	ND	0.30	1.0	ug/L	1	8/2/2019 02:42 PM
Toluene	0.75	0.46	2.0	J ug/L	1	8/2/2019 02:42 PM
trans-1,2-Dichloroethene	ND	0.40	1.0	ug/L	1	8/2/2019 02:42 PM
trans-1,3-Dichloropropene	ND	0.25	1.0	ug/L	1	8/2/2019 02:42 PM
Trichloroethene	ND	0.37	1.0	ug/L	1	8/2/2019 02:42 PM
Trichlorofluoromethane	ND	0.37	1.0	ug/L	1	8/2/2019 02:42 PM
Vinyl chloride	ND	0.29	0.50	ug/L	1	8/2/2019 02:42 PM
Xylenes, Total	11	1.5	2.0	ug/L	1	8/2/2019 02:42 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: 13-Aug-19

CLIENT: CH2MHill
Lab Order: N036799
Project: SFPP Norwalk
Lab ID: N036799-001

Client Sample ID: INF-07-31
Collection Date: 7/31/2019 9:00:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	NV00922-MS5_190802A	QC Batch:	P19VW074	PrepDate:	Analyst:	RAB
Surr: 1,2-Dichloroethane-d4	103	0	72-119	%REC	10	8/2/2019 01:57 PM
Surr: 1,2-Dichloroethane-d4	101	0	72-119	%REC	1	8/2/2019 02:42 PM
Surr: 4-Bromofluorobenzene	101	0	76-119	%REC	1	8/2/2019 02:42 PM
Surr: 4-Bromofluorobenzene	100	0	76-119	%REC	10	8/2/2019 01:57 PM
Surr: Dibromofluoromethane	99.7	0	85-115	%REC	1	8/2/2019 02:42 PM
Surr: Dibromofluoromethane	103	0	85-115	%REC	10	8/2/2019 01:57 PM
Surr: Toluene-d8	97.4	0	81-120	%REC	1	8/2/2019 02:42 PM
Surr: Toluene-d8	102	0	81-120	%REC	10	8/2/2019 01:57 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID:	NV00922-GC4_190802A	QC Batch:	E19VW054	PrepDate:	Analyst:	RAB
TPH-Gasoline (C4-C12)	200	21	50	ug/L	1	8/2/2019 01:41 PM
Surr: Chlorobenzene - d5	100	0	74-138	%REC	1	8/2/2019 01:41 PM

TOTAL TPH

EPA 8015B

RunID:	NV00922-GC4_190802A	QC Batch:	R135561	PrepDate:	Analyst:	RAB
Total TPH	390	21	100	ug/L	1	8/2/2019

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

CLIENT: CH2MHill
Work Order: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R135561	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 135561						
Client ID: PBW	Batch ID: R135561	TestNo: EPA 8015B		Analysis Date: 8/2/2019	SeqNo: 3477887						
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



ASSET LABORATORIES
ANALYTICAL SERVICES FOR CALIFORNIA, NEVADA, AND OREGON

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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFP

Sample ID: E190802LCS	SampType: LCS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 135561						
Client ID: LCSW	Batch ID: E19VW054	TestNo: EPA 8015B		Analysis Date: 8/2/2019	SeqNo: 3467923						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	857.000	50	1000	0	85.7	67	136				
Surr: Chlorobenzene - d5	46411.000		50000		92.8	74	138				

Sample ID: E190802MB1	SampType: MBLK	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 135561						
Client ID: PBW	Batch ID: E19VW054	TestNo: EPA 8015B		Analysis Date: 8/2/2019	SeqNo: 3467924						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	26.000	50									J
Surr: Chlorobenzene - d5	57860.000		50000		116	74	138				

Sample ID: N036761-003BMS	SampType: MS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 135561						
Client ID: ZZZZZ	Batch ID: E19VW054	TestNo: EPA 8015B		Analysis Date: 8/2/2019	SeqNo: 3467931						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	780.000	50	1000	38.00	74.2	67	136				
Surr: Chlorobenzene - d5	48348.000		50000		96.7	74	138				

Sample ID: N036761-003BMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 135561						
Client ID: ZZZZZ	Batch ID: E19VW054	TestNo: EPA 8015B		Analysis Date: 8/2/2019	SeqNo: 3467932						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	758.000	50	1000	38.00	72.0	67	136	780.0	2.86	30	
Surr: Chlorobenzene - d5	47044.000		50000		94.1	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 |



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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475302						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.410	1.0	20.00	0	102	81	129				
1,1,1-Trichloroethane	21.240	1.0	20.00	0	106	67	132				
1,1,2,2-Tetrachloroethane	21.500	1.0	20.00	0	108	63	128				
1,1,2-Trichloroethane	19.570	1.0	20.00	0	97.9	75	125				
1,1-Dichloroethane	21.320	0.50	20.00	0	107	69	133				
1,1-Dichloroethene	20.010	1.0	20.00	0	100	68	130				
1,1-Dichloropropene	22.280	1.0	20.00	0	111	73	132				
1,2,3-Trichlorobenzene	21.230	1.0	20.00	0	106	67	137				
1,2,3-Trichloropropane	19.470	1.0	20.00	0	97.4	73	124				
1,2,4-Trichlorobenzene	21.120	1.0	20.00	0	106	66	134				
1,2,4-Trimethylbenzene	22.780	1.0	20.00	0	114	74	132				
1,2-Dibromo-3-chloropropane	18.130	2.0	20.00	0	90.7	50	132				
1,2-Dibromoethane	20.030	1.0	20.00	0	100	80	121				
1,2-Dichlorobenzene	20.660	1.0	20.00	0	103	71	122				
1,2-Dichloroethane	20.110	0.50	20.00	0	101	69	132				
1,2-Dichloropropane	19.940	1.0	20.00	0	99.7	75	125				
1,3,5-Trimethylbenzene	23.060	1.0	20.00	0	115	74	131				
1,3-Dichlorobenzene	21.700	1.0	20.00	0	108	75	124				
1,3-Dichloropropane	20.400	1.0	20.00	0	102	73	126				
1,4-Dichlorobenzene	20.980	1.0	20.00	0	105	74	123				
2,2-Dichloropropane	23.920	1.0	20.00	0	120	69	137				
2-Butanone	209.870	10	200.0	0	105	49	136				
2-Chlorotoluene	21.900	1.0	20.00	0	110	73	126				
4-Chlorotoluene	22.310	1.0	20.00	0	112	74	128				
4-Isopropyltoluene	23.890	1.0	20.00	0	119	73	130				
4-Methyl-2-pentanone	219.380	10	200.0	0	110	58	134				
Acetone	194.850	10	200.0	0	97.4	40	135				
Acrolein	157.950	20	200.0	0	79.0	75	125				
Acrylonitrile	259.630	20	200.0	0	130	75	125				S
Benzene	20.610	1.0	20.00	0	103	81	122				

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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475302						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromobenzene	20.390	1.0	20.00	0	102	76	124				
Bromochloromethane	20.870	1.0	20.00	0	104	65	129				
Bromodichloromethane	20.530	1.0	20.00	0	103	76	121				
Bromoform	21.980	1.0	20.00	0	110	69	128				
Bromomethane	18.190	1.0	20.00	0	91.0	53	141				
Carbon disulfide	20.750	1.0	20.00	0	104	75	125				
Carbon tetrachloride	22.940	0.50	20.00	0	115	66	138				
Chlorobenzene	21.020	1.0	20.00	0	105	81	122				
Chloroethane	19.350	1.0	20.00	0	96.8	58	133				
Chloroform	20.810	1.0	20.00	0	104	69	128				
Chloromethane	21.820	1.0	20.00	0	109	56	131				
cis-1,2-Dichloroethene	20.080	1.0	20.00	0	100	72	126				
cis-1,3-Dichloropropene	20.270	1.0	20.00	0	101	69	131				
Di-isopropyl ether	22.270	1.0	20.00	0	111	70	130				
Dibromochloromethane	19.920	1.0	20.00	0	99.6	66	133				
Dibromomethane	20.110	1.0	20.00	0	101	76	125				
Dichlorodifluoromethane	18.010	1.0	20.00	0	90.1	53	153				
Ethyl tert-butyl ether	22.690	1.0	20.00	0	113	70	130				
Ethylbenzene	20.760	1.0	20.00	0	104	73	127				
Freon-113	22.580	1.0	20.00	0	113	75	125				
Hexachlorobutadiene	21.340	1.0	20.00	0	107	67	131				
Isopropylbenzene	24.090	1.0	20.00	0	120	75	127				
m,p-Xylene	43.790	1.0	40.00	0	109	76	128				
Methylene chloride	18.990	2.0	20.00	0	95.0	63	137				
MTBE	21.100	1.0	20.00	0	106	65	123				
n-Butylbenzene	24.880	1.0	20.00	0	124	69	137				
n-Propylbenzene	23.200	1.0	20.00	0	116	72	129				
Naphthalene	20.990	1.0	20.00	0	105	54	138				
o-Xylene	21.550	1.0	20.00	0	108	80	121				
sec-Butylbenzene	24.280	1.0	20.00	0	121	72	127				

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: N036799
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475302						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Styrene	20.400	1.0	20.00	0	102	65	134				
Tert-amyl methyl ether	20.260	1.0	20.00	0	101	70	130				
Tert-Butanol	110.890	5.0	100.0	0	111	70	130				
tert-Butylbenzene	22.680	1.0	20.00	0	113	70	129				
Tetrachloroethene	22.840	1.0	20.00	0	114	66	128				
Toluene	20.650	2.0	20.00	0	103	77	122				
trans-1,2-Dichloroethene	20.960	1.0	20.00	0	105	63	137				
trans-1,3-Dichloropropene	21.620	1.0	20.00	0	108	59	135				
Trichloroethene	20.180	1.0	20.00	0	101	70	127				
Trichlorofluoromethane	19.410	1.0	20.00	0	97.0	57	129				
Vinyl chloride	20.210	0.50	20.00	0	101	50	134				
Xylenes, Total	65.340	2.0	60.00	0	109	75	125				
Surr: 1,2-Dichloroethane-d4	24.530		25.00		98.1	72	119				
Surr: 4-Bromofluorobenzene	25.510		25.00		102	76	119				
Surr: Dibromofluoromethane	25.370		25.00		101	85	115				
Surr: Toluene-d8	24.400		25.00		97.6	81	120				

Sample ID: P190802LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSS02	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	21.090	1.0	20.00	0	105	81	129	20.41	3.28	20	
1,1,1-Trichloroethane	20.660	1.0	20.00	0	103	67	132	21.24	2.77	20	
1,1,2,2-Tetrachloroethane	22.080	1.0	20.00	0	110	63	128	21.50	2.66	20	
1,1,2-Trichloroethane	20.220	1.0	20.00	0	101	75	125	19.57	3.27	20	
1,1-Dichloroethane	20.910	0.50	20.00	0	105	69	133	21.32	1.94	20	
1,1-Dichloroethene	19.800	1.0	20.00	0	99.0	68	130	20.01	1.06	20	
1,1-Dichloropropene	21.360	1.0	20.00	0	107	73	132	22.28	4.22	20	
1,2,3-Trichlorobenzene	21.820	1.0	20.00	0	109	67	137	21.23	2.74	20	
1,2,3-Trichloropropane	20.440	1.0	20.00	0	102	73	124	19.47	4.86	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 |

CLIENT: CH2MHill
Work Order: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSS02	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	22.130	1.0	20.00	0	111	66	134	21.12	4.67	20	
1,2,4-Trimethylbenzene	22.830	1.0	20.00	0	114	74	132	22.78	0.219	20	
1,2-Dibromo-3-chloropropane	20.570	2.0	20.00	0	103	50	132	18.13	12.6	20	
1,2-Dibromoethane	20.300	1.0	20.00	0	102	80	121	20.03	1.34	20	
1,2-Dichlorobenzene	21.420	1.0	20.00	0	107	71	122	20.66	3.61	20	
1,2-Dichloroethane	20.860	0.50	20.00	0	104	69	132	20.11	3.66	20	
1,2-Dichloropropane	20.120	1.0	20.00	0	101	75	125	19.94	0.899	20	
1,3,5-Trimethylbenzene	22.710	1.0	20.00	0	114	74	131	23.06	1.53	20	
1,3-Dichlorobenzene	22.550	1.0	20.00	0	113	75	124	21.70	3.84	20	
1,3-Dichloropropane	20.860	1.0	20.00	0	104	73	126	20.40	2.23	20	
1,4-Dichlorobenzene	20.840	1.0	20.00	0	104	74	123	20.98	0.670	20	
2,2-Dichloropropane	22.700	1.0	20.00	0	114	69	137	23.92	5.23	20	
2-Butanone	221.330	10	200.0	0	111	49	136	209.9	5.32	20	
2-Chlorotoluene	22.250	1.0	20.00	0	111	73	126	21.90	1.59	20	
4-Chlorotoluene	22.680	1.0	20.00	0	113	74	128	22.31	1.64	20	
4-Isopropyltoluene	22.740	1.0	20.00	0	114	73	130	23.89	4.93	20	
4-Methyl-2-pentanone	223.780	10	200.0	0	112	58	134	219.4	1.99	20	
Acetone	210.650	10	200.0	0	105	40	135	194.8	7.79	20	
Acrolein	153.140	20	200.0	0	76.6	75	125	158.0	3.09	20	
Acrylonitrile	250.820	20	200.0	0	125	75	125	259.6	3.45	20	S
Benzene	20.770	1.0	20.00	0	104	81	122	20.61	0.773	20	
Bromobenzene	20.440	1.0	20.00	0	102	76	124	20.39	0.245	20	
Bromochloromethane	21.410	1.0	20.00	0	107	65	129	20.87	2.55	20	
Bromodichloromethane	20.430	1.0	20.00	0	102	76	121	20.53	0.488	20	
Bromoform	22.210	1.0	20.00	0	111	69	128	21.98	1.04	20	
Bromomethane	17.870	1.0	20.00	0	89.4	53	141	18.19	1.77	20	
Carbon disulfide	20.080	1.0	20.00	0	100	75	125	20.75	3.28	20	
Carbon tetrachloride	21.330	0.50	20.00	0	107	66	138	22.94	7.27	20	
Chlorobenzene	21.150	1.0	20.00	0	106	81	122	21.02	0.617	20	
Chloroethane	19.460	1.0	20.00	0	97.3	58	133	19.35	0.567	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 |

CLIENT: CH2MHill
Work Order: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSS02	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloroform	20.900	1.0	20.00	0	104	69	128	20.81	0.432	20	
Chloromethane	21.890	1.0	20.00	0	109	56	131	21.82	0.320	20	
cis-1,2-Dichloroethene	21.110	1.0	20.00	0	106	72	126	20.08	5.00	20	
cis-1,3-Dichloropropene	21.030	1.0	20.00	0	105	69	131	20.27	3.68	20	
Di-isopropyl ether	22.760	1.0	20.00	0	114	70	130	22.27	2.18	20	
Dibromochloromethane	20.400	1.0	20.00	0	102	66	133	19.92	2.38	20	
Dibromomethane	19.560	1.0	20.00	0	97.8	76	125	20.11	2.77	20	
Dichlorodifluoromethane	16.890	1.0	20.00	0	84.4	53	153	18.01	6.42	20	
Ethyl tert-butyl ether	22.660	1.0	20.00	0	113	70	130	22.69	0.132	20	
Ethylbenzene	20.950	1.0	20.00	0	105	73	127	20.76	0.911	20	
Freon-113	20.380	1.0	20.00	0	102	75	125	22.58	10.2	20	
Hexachlorobutadiene	22.390	1.0	20.00	0	112	67	131	21.34	4.80	20	
Isopropylbenzene	23.380	1.0	20.00	0	117	75	127	24.09	2.99	20	
m,p-Xylene	43.900	1.0	40.00	0	110	76	128	43.79	0.251	20	
Methylene chloride	19.720	2.0	20.00	0	98.6	63	137	18.99	3.77	20	
MTBE	22.000	1.0	20.00	0	110	65	123	21.10	4.18	20	
n-Butylbenzene	24.260	1.0	20.00	0	121	69	137	24.88	2.52	20	
n-Propylbenzene	22.460	1.0	20.00	0	112	72	129	23.20	3.24	20	
Naphthalene	21.900	1.0	20.00	0	110	54	138	20.99	4.24	20	
o-Xylene	21.530	1.0	20.00	0	108	80	121	21.55	0.0929	20	
sec-Butylbenzene	22.960	1.0	20.00	0	115	72	127	24.28	5.59	20	
Styrene	20.950	1.0	20.00	0	105	65	134	20.40	2.66	20	
Tert-amyl methyl ether	20.950	1.0	20.00	0	105	70	130	20.26	3.35	20	
Tert-Butanol	112.250	5.0	100.0	0	112	70	130	110.9	1.22	20	
tert-Butylbenzene	22.130	1.0	20.00	0	111	70	129	22.68	2.45	20	
Tetrachloroethene	21.900	1.0	20.00	0	110	66	128	22.84	4.20	20	
Toluene	20.490	2.0	20.00	0	102	77	122	20.65	0.778	20	
trans-1,2-Dichloroethene	20.910	1.0	20.00	0	105	63	137	20.96	0.239	20	
trans-1,3-Dichloropropene	22.410	1.0	20.00	0	112	59	135	21.62	3.59	20	
Trichloroethene	20.020	1.0	20.00	0	100	70	127	20.18	0.796	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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: LCSS02	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475303						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichlorofluoromethane	18.160	1.0	20.00	0	90.8	57	129	19.41	6.65	20	
Vinyl chloride	18.730	0.50	20.00	0	93.6	50	134	20.21	7.60	20	
Xylenes, Total	65.430	2.0	60.00	0	109	75	125	65.34	0.138	20	
Surr: 1,2-Dichloroethane-d4	24.630		25.00		98.5	72	119		0		
Surr: 4-Bromofluorobenzene	25.730		25.00		103	76	119		0		
Surr: Dibromofluoromethane	25.170		25.00		101	85	115		0		
Surr: Toluene-d8	24.680		25.00		98.7	81	120		0		

Sample ID: P190802MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: PBW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475306						
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									
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									

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 CONSTRUCTION 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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: PBW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475306						
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
1,3-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									
Acrolein	ND	20									
Acrylonitrile	ND	20									
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									
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									

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: N036799
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P190802MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 135575						
Client ID: PBW	Batch ID: P19VW074	TestNo: EPA 8260B		Analysis Date: 8/2/2019	SeqNo: 3475306						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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	25.410		25.00		102	72	119				
Surr: 4-Bromofluorobenzene	23.950		25.00		95.8	76	119				
Surr: Dibromofluoromethane	25.320		25.00		101	85	115				
Surr: Toluene-d8	25.210		25.00		101	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
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2659 Fax: 702-307-2691
 Marlon Carlin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

DATE: 07/31/19
 PAGE: 1

Section A Requested Client Information:	Section B Requested Project Information:	Section C Sample Information:	Section D Sampler Information:
Company: <u>Altera Magna, Inc.</u>	Report To: <u>Eric Davis</u>	Client: <u>Alan Van Antwerp - Ref. A119 01185</u>	Sampler: <u>Arha Brewster</u>
Address: <u>9950 San Diego Mission Road San Diego, CA 92108</u>	Copy To: <u>Alan Van Antwerp</u>	Company Name: <u>Altera Magna, Inc.</u>	Sampler: <u>Arha Brewster</u>
Email To: <u>ALIA_SALES@ALTERA.COM</u>	Purchase Order No.:	Address: <u>9950 San Diego Mission Road San Diego, CA 92108</u>	Sampler: <u>Arha Brewster</u>
Phone: <u>619-971-1860 (mobile)</u>	Project Name: <u>SFPF Miramonte</u>	ATL Project Manager: <u>Marlon Carlin</u>	Date: <u>07/31/19</u>

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (BS/GRAB/C-COMP)	SAMPLING		TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	ANALYSIS TYPE	V	V	A	Comments
					DATE	TIME							
1	INF-07-21	INFLUENT	WW	G	7/31/19	0900	1			X	X	X	N036799-01
2													
3													
4													
5													
6													
7													
8													
9													
10													

Approved by Signature and Printed Name: <u>Arha Brewster</u> Date/Time: <u>07/31/19 c 1800</u> Approved by Signature and Printed Name: <u>Arha Brewster</u> Date/Time: <u>07/31/19 1824</u> Approved by Signature and Printed Name: <u>EMIL ANGELA RODRIGUEZ</u> Date/Time: <u>8/1/19 1900</u>	Approved by Signature and Printed Name: <u>Arha Brewster</u> Date/Time: <u>7/31/19 1800</u> Approved by Signature and Printed Name: <u>EMIL ANGELA RODRIGUEZ</u> Date/Time: <u>7/31/19 1824</u> Approved by Signature and Printed Name: <u>LAY VOLUNTEER</u> Date/Time: <u>8/2/19 0826</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 type="checkbox"/> E = 5 Workdays <input type="checkbox"/> F = 10 Workdays TAT Starts at 8 AM the following day if samples received after 5:00 PM.	Special Instructions:
Matrix: W = Water WW = Wastewater O = Oil P = Product S = Soil	Preservative: H = HD N = NHO3 S = H2SO4 Z = Zn(AQ) Q = NaOH T = Na2S2O8	Container Types: T = Tube V = VOA P = Pin J = Jar W = Teflon G = Glass M = Metal F = Plastic C = Can	

IL#2 2.3°C 0.00 0.250

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: 7/31/2019 Workorder: N036799
 Rep sample Temp (Deg C): 2.3 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 4252 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?
Was Client notified? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: RM YRJ 8/7/2019

Reviewed By: MBC 8/8/2019

ASSET Laboratories

WORK ORDER Summary

07-Aug-19

WorkOrder: N036799

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 7/31/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N036799-001A	INF-07-31	7/31/2019 9:00:00 AM	8/8/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	V-CA
N036799-001B			8/8/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
			8/8/2019		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N036799-001C			8/8/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			8/8/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			8/8/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N036799-001D			8/8/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N036799-002A	FOLDER	8/8/2019	8/8/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			8/8/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.atl-labs.com
TEL: 7023072659 FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Field Sampler: SIGNED

05-Aug-19

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8015B		
N036799-001D / INF-07-31	Wastewater	7/31/2019 9:00:00 AM	32OZA	1		

HT up to 8/7/19

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

Please use PO#:N36799A Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 8/8/19.

Please analyze for TPH-d (C13-C22) and TPH-o (C23+) by EPA 8015. EDD requirement "CH2MHILL" Labspec7 edata. Please report "J" flagged down to MDL
oil

GSO #: 545731325

	Date/Time		Date/Time
Relinquished by: <u>YRJ</u>	8/5/2019 17:00	Received by: _____	_____
Relinquished by: _____	_____	Received by: _____	_____



800-322-5555
www.gso.com

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

Tracking #: 545704252

CPS



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

LAS VEGAS

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

C89102A



6522418

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

LVS NV891-C51

Print Date: 8/1/2019 8:19 PM

LABEL INSTRUCTIONS:

2.3e

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: 08/07/2019

Marlon B. Cartin

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

Client Project: N036799
BCL Project: CH2MHILL
BCL Work Order: 1925586
Invoice ID: B350114

Enclosed are the results of analyses for samples received by the laboratory on 8/6/2019. 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

1925586-01 - N036799-001D / INF-07-31

Total Petroleum Hydrocarbons.....	6
-----------------------------------	---

Quality Control Reports

Total Petroleum Hydrocarbons

Method Blank Analysis.....	7
Laboratory Control Sample.....	8
Precision and Accuracy.....	9

Notes

Notes and Definitions.....	10
----------------------------	----



CHAIN-OF-CUSTODY RECORD

Page 1 of 1

ASSET Laboratories

3151-3153 W Post Rd., Las Vegas, NV 89118
www.afi-labs.com
TEL: 7023072699 FAX: 7023072691



QC Level: RTNE
Field Sampler: SIGNED
19-25586 05-Aug-19

Subcontractor:
BC Labs
4100 Atlas Court
Bakersfield, CA 93308
TEL: (661) 327-4911
FAX: (661) 327-1918
Acct #:

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests
N036798-001D / INF-07-31	Wastewater	7/31/2019 9:00:00 AM	320ZA 1	EPA 8015B

HT up to 8/7/19

CHK BY [Signature] DISTRIBUTION [] SUB OUT []

RUSH!

General Comments: Please email sample receipt acknowledgement to the PM. Please cc andrea.gallardo@assetlaboratories.com
Please use PO# N36789A. Please email Invoices and Account Receivable Statements to alvira@assetlaboratories.com. For questions, call Manton at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 8/8/19.
Please analyze for TPH-d (C13-C22) and TPH-o (C23+) by EPA 8015. EDD requirement "CH2MHILL" LabSpec7 edata. Please report "J" flagged down to MDL Oil

GSO #: 545731325

Relinquished by: [Signature]	Date/Time: 8/5/2019 17:00
Received by: [Signature]	Date/Time: 8/6/19 08:35



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 of 1

Submission #: 19-25586

SHIPPING INFORMATION: Fed Ex UPS Ontrac Hand Delivery BC Lab Field Service Other (Specify) GSD

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 None Comments: _____

All samples received? Yes No All samples containers intact? Yes No Description(s) match COC? Yes No

COC Received: YES NO Emissivity: 95 Container: Amber Thermometer ID: 224 Date/Time: 8/6/19

Temperature: (A) 2.8 °C / (C) 2.3 °C Analyst Initials: [Signature]

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										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
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 827A										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLURVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____
 Sample Numbering Completed By: [Signature] Date/Time: 8/10/19 9:50 Rev 21 05/23/2016

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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1925586-01	COC Number:	---	Receive Date:	08/06/2019 08:35
	Project Number:	---	Sampling Date:	07/31/2019 09:00
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N036799-001D / INF-07-31	Lab Matrix:	Water
	Sampled By:	---	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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. Cartin

Total Petroleum Hydrocarbons

BCL Sample ID: 1925586-01	Client Sample Name: N036799-001D / INF-07-31, 7/31/2019 9:00:00AM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (C13 - C22)	130	ug/L	40	11	EPA-8015CC	ND	A52	1
TPH - Motor Oil (C23 - C36)	60	ug/L	100	26	EPA-8015CC	ND	J,A57	1
Tetracosane (Surrogate)	46.7	%	37 - 134 (LCL - UCL)		EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	08/06/19 18:20	08/07/19 08:35	BUP	GC-2	0.960	B053009

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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B053009						
TPH - Diesel (C13 - C22)	B053009-BLK1	ND	ug/L	40	11	U
TPH - Motor Oil (C23 - C36)	B053009-BLK1	ND	ug/L	100	26	U
Tetracosane (Surrogate)	B053009-BLK1	49.3	%	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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. 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: B053009											
TPH - Diesel (C13 - C22)	B053009-BS1	LCS	261.26	500.00	ug/L	52.3		52	128		
Tetracosane (Surrogate)	B053009-BS1	LCS	10.685	20.000	ug/L	53.4		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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. 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		Recovery
QC Batch ID: B053009		Used client sample: N									
TPH - Diesel (C13 - C22)	MS	1922879-48	ND	105.27	500.00	ug/L		21.1		50 - 127	Q03
	MSD	1922879-48	ND	149.97	500.00	ug/L	35.0	30.0	30	50 - 127	Q03
Tetracosane (Surrogate)	MS	1922879-48	ND	6.6765	20.000	ug/L		33.4		37 - 134	S09
	MSD	1922879-48	ND	6.9986	20.000	ug/L	4.7	35.0		37 - 134	S09

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: 08/07/2019 17:11
Project: CH2MHILL
Project Number: N036799
Project Manager: Marlon B. Cartin

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- U Analyte Not Detected at or above the reporting limit (CLP Flag)
- A52 Chromatogram not typical of diesel.
- A57 Chromatogram not typical of motor oil.
- Q03 Matrix spike recovery(s) was(were) not within the control limits.
- S09 The surrogate recovery for this compound was not within the control limits.

September 05, 2019

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

TEL:

FAX:

Workorder No.: N037136

RE: SFPP Norwalk

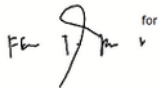
Attention: Eric Davis

Enclosed are the results for sample(s) received on August 22, 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,

Handwritten signature of Puri Romualdo, with the word "for" written to the right of the signature.

Puri Romualdo
Laboratory Director

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



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

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: N037136

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

Analytical comments for EPA 8015B_DRO/ORO:

Surrogate recovery for Method Blank is biased high; however, surrogate recovery on the sample passed criteria.

Analytical comments for EPA 8260B:

Laboratory Control Sample (LCS) outside recovery criteria 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) are outside recovery criteria on some analytes 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 on some analytes; however, the analytical batch was validated by the Laboratory Control Sample (LCS).



CLIENT: CH2Mhill
Project: SFPP Norwalk
Lab Order: N037136
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N037136-001A	INF-08-22	Wastewater	8/22/2019 12:30:00 PM	8/22/2019	9/5/2019
N037136-001B	INF-08-22	Wastewater	8/22/2019 12:30:00 PM	8/22/2019	9/5/2019
N037136-001C	INF-08-22	Wastewater	8/22/2019 12:30:00 PM	8/22/2019	9/5/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 05-Sep-19

CLIENT: CH2MHill
Lab Order: N037136
Project: SFPP Norwalk
Lab ID: N037136-001

Client Sample ID: INF-08-22
Collection Date: 8/22/2019 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_190826A	QC Batch:	CA19VW076	PrepDate:	Analyst:	AW
1,1,1,2-Tetrachloroethane	ND	0.25	1.0	ug/L	1	8/26/2019 12:26 PM
1,1,1-Trichloroethane	ND	0.20	1.0	ug/L	1	8/26/2019 12:26 PM
1,1,2,2-Tetrachloroethane	ND	0.11	1.0	ug/L	1	8/26/2019 12:26 PM
1,1,2-Trichloroethane	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
1,1-Dichloroethane	ND	0.22	0.50	ug/L	1	8/26/2019 12:26 PM
1,1-Dichloroethene	ND	0.17	1.0	ug/L	1	8/26/2019 12:26 PM
1,1-Dichloropropene	ND	0.16	1.0	ug/L	1	8/26/2019 12:26 PM
1,2,3-Trichlorobenzene	ND	0.37	1.0	ug/L	1	8/26/2019 12:26 PM
1,2,3-Trichloropropane	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
1,2,4-Trichlorobenzene	ND	0.10	1.0	ug/L	1	8/26/2019 12:26 PM
1,2,4-Trimethylbenzene	16	0.060	1.0	ug/L	1	8/26/2019 12:26 PM
1,2-Dibromo-3-chloropropane	ND	0.32	2.0	ug/L	1	8/26/2019 12:26 PM
1,2-Dibromoethane	ND	0.19	1.0	ug/L	1	8/26/2019 12:26 PM
1,2-Dichlorobenzene	ND	0.089	1.0	ug/L	1	8/26/2019 12:26 PM
1,2-Dichloroethane	1.0	0.16	0.50	ug/L	1	8/26/2019 12:26 PM
1,2-Dichloropropane	ND	0.16	1.0	ug/L	1	8/26/2019 12:26 PM
1,3,5-Trimethylbenzene	6.9	0.051	1.0	ug/L	1	8/26/2019 12:26 PM
1,3-Dichlorobenzene	ND	0.081	1.0	ug/L	1	8/26/2019 12:26 PM
1,3-Dichloropropane	ND	0.13	1.0	ug/L	1	8/26/2019 12:26 PM
1,4-Dichlorobenzene	ND	0.080	1.0	ug/L	1	8/26/2019 12:26 PM
2,2-Dichloropropane	ND	0.22	1.0	ug/L	1	8/26/2019 12:26 PM
2-Butanone	ND	4.7	10	ug/L	1	8/26/2019 12:26 PM
2-Chlorotoluene	ND	0.090	1.0	ug/L	1	8/26/2019 12:26 PM
4-Chlorotoluene	ND	0.065	1.0	ug/L	1	8/26/2019 12:26 PM
4-Isopropyltoluene	ND	0.085	1.0	ug/L	1	8/26/2019 12:26 PM
4-Methyl-2-pentanone	ND	0.83	10	ug/L	1	8/26/2019 12:26 PM
Acetone	10	4.6	10	ug/L	1	8/26/2019 12:26 PM
Benzene	670	1.1	10	ug/L	10	8/26/2019 01:42 PM
Bromobenzene	ND	0.093	1.0	ug/L	1	8/26/2019 12:26 PM
Bromochloromethane	ND	0.26	1.0	ug/L	1	8/26/2019 12:26 PM
Bromodichloromethane	ND	0.20	1.0	ug/L	1	8/26/2019 12:26 PM
Bromoform	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
Bromomethane	ND	0.38	1.0	ug/L	1	8/26/2019 12:26 PM
Carbon disulfide	1.7	0.19	1.0	ug/L	1	8/26/2019 12:26 PM
Carbon tetrachloride	ND	0.33	0.50	ug/L	1	8/26/2019 12:26 PM
Chlorobenzene	ND	0.11	1.0	ug/L	1	8/26/2019 12:26 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

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 05-Sep-19

CLIENT: CH2MHill
Lab Order: N037136
Project: SFPP Norwalk
Lab ID: N037136-001

Client Sample ID: INF-08-22
Collection Date: 8/22/2019 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_190826A	QC Batch:	CA19VW076	PrepDate:	Analyst:	AW
Chloroethane	ND	0.69	1.0	ug/L	1	8/26/2019 12:26 PM
Chloroform	ND	0.38	1.0	ug/L	1	8/26/2019 12:26 PM
Chloromethane	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
cis-1,2-Dichloroethene	ND	0.11	1.0	ug/L	1	8/26/2019 12:26 PM
cis-1,3-Dichloropropene	ND	0.16	1.0	ug/L	1	8/26/2019 12:26 PM
Di-isopropyl ether	11	0.15	1.0	ug/L	1	8/26/2019 12:26 PM
Dibromochloromethane	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
Dibromomethane	ND	0.13	1.0	ug/L	1	8/26/2019 12:26 PM
Dichlorodifluoromethane	ND	0.16	1.0	ug/L	1	8/26/2019 12:26 PM
Ethyl tert-butyl ether	ND	0.10	1.0	ug/L	1	8/26/2019 12:26 PM
Ethylbenzene	11	0.11	1.0	ug/L	1	8/26/2019 12:26 PM
Freon-113	ND	0.28	1.0	ug/L	1	8/26/2019 12:26 PM
Hexachlorobutadiene	ND	0.30	1.0	ug/L	1	8/26/2019 12:26 PM
Isopropylbenzene	3.6	0.092	1.0	ug/L	1	8/26/2019 12:26 PM
m,p-Xylene	42	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
Methylene chloride	ND	1.2	2.0	ug/L	1	8/26/2019 12:26 PM
MTBE	2.3	0.44	1.0	ug/L	1	8/26/2019 12:26 PM
n-Butylbenzene	ND	0.093	1.0	ug/L	1	8/26/2019 12:26 PM
n-Propylbenzene	7.2	0.10	1.0	ug/L	1	8/26/2019 12:26 PM
Naphthalene	38	0.41	1.0	ug/L	1	8/26/2019 12:26 PM
o-Xylene	2.5	0.087	1.0	ug/L	1	8/26/2019 12:26 PM
sec-Butylbenzene	0.51	0.076	1.0	J ug/L	1	8/26/2019 12:26 PM
Styrene	ND	0.41	1.0	ug/L	1	8/26/2019 12:26 PM
Tert-amyl methyl ether	ND	0.13	1.0	ug/L	1	8/26/2019 12:26 PM
Tert-Butanol	190	2.8	5.0	ug/L	1	8/26/2019 12:26 PM
tert-Butylbenzene	ND	0.10	1.0	ug/L	1	8/26/2019 12:26 PM
Tetrachloroethene	ND	0.25	1.0	ug/L	1	8/26/2019 12:26 PM
Toluene	2.6	0.13	2.0	ug/L	1	8/26/2019 12:26 PM
trans-1,2-Dichloroethene	ND	0.27	1.0	ug/L	1	8/26/2019 12:26 PM
trans-1,3-Dichloropropene	ND	0.12	1.0	ug/L	1	8/26/2019 12:26 PM
Trichloroethene	ND	0.26	1.0	ug/L	1	8/26/2019 12:26 PM
Trichlorofluoromethane	ND	0.23	1.0	ug/L	1	8/26/2019 12:26 PM
Vinyl chloride	ND	0.19	0.50	ug/L	1	8/26/2019 12:26 PM
Xylenes, Total	44	1.5	2.0	ug/L	1	8/26/2019 12:26 PM
Surr: 1,2-Dichloroethane-d4	103	0	72-119	%REC	10	8/26/2019 01:42 PM
Surr: 1,2-Dichloroethane-d4	110	0	72-119	%REC	1	8/26/2019 12:26 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: 05-Sep-19

CLIENT: CH2MHill
Lab Order: N037136
Project: SFPP Norwalk
Lab ID: N037136-001

Client Sample ID: INF-08-22
Collection Date: 8/22/2019 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_190826A	QC Batch:	CA19VW076	PrepDate:	Analyst:	AW
Surr: 4-Bromofluorobenzene	94.4	0	76-119	%REC	10	8/26/2019 01:42 PM
Surr: 4-Bromofluorobenzene	102	0	76-119	%REC	1	8/26/2019 12:26 PM
Surr: Dibromofluoromethane	104	0	85-115	%REC	1	8/26/2019 12:26 PM
Surr: Dibromofluoromethane	106	0	85-115	%REC	10	8/26/2019 01:42 PM
Surr: Toluene-d8	105	0	81-120	%REC	10	8/26/2019 01:42 PM
Surr: Toluene-d8	101	0	81-120	%REC	1	8/26/2019 12:26 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID:	NV00922-GC3_190829C	QC Batch:	75153	PrepDate:	8/26/2019	Analyst:	LLR
TPH-Diesel (C13-C22)	350	15	25	ug/L	1	8/29/2019 04:21 PM	
TPH-Oil (C23-C36)	420	14	25	ug/L	1	8/29/2019 04:21 PM	
Surr: Octacosane	124	0	26-152	%REC	1	8/29/2019 04:21 PM	
Surr: p-Terphenyl	107	0	57-132	%REC	1	8/29/2019 04:21 PM	

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID:	NV00922-GC4_190826A	QC Batch:	E19VW061	PrepDate:	Analyst:	RAB
TPH-Gasoline (C4-C12)	840	21	50	ug/L	1	8/26/2019 01:24 PM
Surr: Chlorobenzene - d5	109	0	74-138	%REC	1	8/26/2019 01:24 PM

TOTAL TPH

EPA 8015B

RunID:	NV00922-GC3_190829C	QC Batch:	R136199	PrepDate:	Analyst:	LLR
Total TPH	1600	21	100	ug/L	1	8/29/2019

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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-75153	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 8/26/2019	RunNo: 136199						
Client ID: PBW	Batch ID: 75153	TestNo: EPA 8015B EPA 3510C		Analysis Date: 8/29/2019	SeqNo: 3497011						
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	121.770		80.00		152	26	152				S
Surr: p-Terphenyl	107.762		80.00		135	57	132				S

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

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPTOT

Sample ID: MB-R136199	SampType: MBLK	TestCode: 8015_W_SFPP	Units: ug/L	Prep Date:	RunNo: 136199						
Client ID: PBW	Batch ID: R136199	TestNo: EPA 8015B		Analysis Date: 8/29/2019	SeqNo: 3501167						
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 | 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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFP

Sample ID: E190826LCS	SampType: LCS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: LCSW	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492473							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1070.000	50	1000	0	107	67	136				
Surr: Chlorobenzene - d5	53856.000		50000		108	74	138				

Sample ID: E190826LCSD	SampType: LCSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: LCSS02	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492474							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	945.000	50	1000	0	94.5	67	136	1070	12.4	30	
Surr: Chlorobenzene - d5	50689.000		50000		101	74	138		0	0	

Sample ID: E190826MB	SampType: MBLK	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: PBW	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492475							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	26.000	50									J
Surr: Chlorobenzene - d5	60700.000		50000		121	74	138				

Sample ID: N037187-001CMS	SampType: MS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: ZZZZZ	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492478							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1095.000	50	1000	60.00	104	67	136				
Surr: Chlorobenzene - d5	59190.000		50000		118	74	138				

Sample ID: N037187-001CMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: ZZZZZ	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492479							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1046.000	50	1000	60.00	98.6	67	136	1095	4.58	30	

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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: N037187-001CMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136090						
Client ID: ZZZZZZ	Batch ID: E19VW061	TestNo: EPA 8015B	Analysis Date: 8/26/2019	SeqNo: 3492479							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	58602.000		50000		117	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 |



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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: LCSW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.240	1.0	20.00	0	101	81	129				
1,1,1-Trichloroethane	22.510	1.0	20.00	0	113	67	132				
1,1,2,2-Tetrachloroethane	19.950	1.0	20.00	0	99.8	63	128				
1,1,2-Trichloroethane	18.770	1.0	20.00	0	93.8	75	125				
1,1-Dichloroethane	21.700	0.50	20.00	0	108	69	133				
1,1-Dichloroethene	19.070	1.0	20.00	0	95.4	68	130				
1,1-Dichloropropene	21.980	1.0	20.00	0	110	73	132				
1,2,3-Trichlorobenzene	19.480	1.0	20.00	0	97.4	67	137				
1,2,3-Trichloropropane	20.280	1.0	20.00	0	101	73	124				
1,2,4-Trichlorobenzene	19.760	1.0	20.00	0	98.8	66	134				
1,2,4-Trimethylbenzene	22.400	1.0	20.00	0	112	74	132				
1,2-Dibromo-3-chloropropane	19.100	2.0	20.00	0	95.5	50	132				
1,2-Dibromoethane	19.100	1.0	20.00	0	95.5	80	121				
1,2-Dichlorobenzene	19.890	1.0	20.00	0	99.4	71	122				
1,2-Dichloroethane	18.900	0.50	20.00	0	94.5	69	132				
1,2-Dichloropropane	18.500	1.0	20.00	0	92.5	75	125				
1,3,5-Trimethylbenzene	22.110	1.0	20.00	0	111	74	131				
1,3-Dichlorobenzene	20.710	1.0	20.00	0	104	75	124				
1,3-Dichloropropane	20.060	1.0	20.00	0	100	73	126				
1,4-Dichlorobenzene	21.240	1.0	20.00	0	106	74	123				
2,2-Dichloropropane	21.890	1.0	20.00	0	109	69	137				
2-Butanone	160.930	10	200.0	0	80.5	49	136				
2-Chlorotoluene	20.980	1.0	20.00	0	105	73	126				
4-Chlorotoluene	20.860	1.0	20.00	0	104	74	128				
4-Isopropyltoluene	22.160	1.0	20.00	0	111	73	130				
4-Methyl-2-pentanone	154.390	10	200.0	0	77.2	58	134				
Acetone	141.540	10	200.0	0	70.8	40	135				
Benzene	20.690	1.0	20.00	0	103	81	122				
Bromobenzene	20.670	1.0	20.00	0	103	76	124				
Bromochloromethane	19.080	1.0	20.00	0	95.4	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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: LCSW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	20.610	1.0	20.00	0	103	76	121				
Bromoform	20.930	1.0	20.00	0	105	69	128				
Bromomethane	10.370	1.0	20.00	0	51.8	53	141				S
Carbon disulfide	21.240	1.0	20.00	0	106	75	125				
Carbon tetrachloride	21.750	0.50	20.00	0	109	66	138				
Chlorobenzene	20.730	1.0	20.00	0	104	81	122				
Chloroethane	24.840	1.0	20.00	0	124	58	133				
Chloroform	19.680	1.0	20.00	0	98.4	69	128				
Chloromethane	19.030	1.0	20.00	0	95.2	56	131				
cis-1,2-Dichloroethene	21.380	1.0	20.00	0	107	72	126				
cis-1,3-Dichloropropene	17.320	1.0	20.00	0	86.6	69	131				
Di-isopropyl ether	18.040	1.0	20.00	0	90.2	70	130				
Dibromochloromethane	20.680	1.0	20.00	0	103	66	133				
Dibromomethane	20.350	1.0	20.00	0	102	76	125				
Dichlorodifluoromethane	21.710	1.0	20.00	0	109	53	153				
Ethyl tert-butyl ether	18.340	1.0	20.00	0	91.7	70	130				
Ethylbenzene	21.130	1.0	20.00	0	106	73	127				
Freon-113	23.590	1.0	20.00	0	118	75	125				
Hexachlorobutadiene	20.820	1.0	20.00	0	104	67	131				
Isopropylbenzene	20.760	1.0	20.00	0	104	75	127				
m,p-Xylene	43.150	1.0	40.00	0	108	76	128				
Methylene chloride	20.830	2.0	20.00	0	104	63	137				
MTBE	16.970	1.0	20.00	0	84.8	65	123				
n-Butylbenzene	22.010	1.0	20.00	0	110	69	137				
n-Propylbenzene	21.510	1.0	20.00	0	108	72	129				
Naphthalene	17.520	1.0	20.00	0	87.6	54	138				
o-Xylene	20.080	1.0	20.00	0	100	80	121				
sec-Butylbenzene	21.600	1.0	20.00	0	108	72	127				
Styrene	20.750	1.0	20.00	0	104	65	134				
Tert-amyl methyl ether	16.820	1.0	20.00	0	84.1	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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: LCSW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	74.860	5.0	100.0	0	74.9	70	130				
tert-Butylbenzene	21.250	1.0	20.00	0	106	70	129				
Tetrachloroethene	21.760	1.0	20.00	0	109	66	128				
Toluene	19.350	2.0	20.00	0	96.8	77	122				
trans-1,2-Dichloroethene	20.000	1.0	20.00	0	100	63	137				
trans-1,3-Dichloropropene	18.430	1.0	20.00	0	92.2	59	135				
Trichloroethene	23.440	1.0	20.00	0	117	70	127				
Trichlorofluoromethane	23.480	1.0	20.00	0	117	57	129				
Vinyl chloride	21.750	0.50	20.00	0	109	50	134				
Xylenes, Total	63.230	2.0	60.00	0	105	75	125				
Surr: 1,2-Dichloroethane-d4	23.620		25.00		94.5	72	119				
Surr: 4-Bromofluorobenzene	25.160		25.00		101	76	119				
Surr: Dibromofluoromethane	24.720		25.00		98.9	85	115				
Surr: Toluene-d8	23.680		25.00		94.7	81	120				

Sample ID: N036976-021A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	21.840	1.0	20.00	0	109	81	129				
1,1,1-Trichloroethane	19.810	1.0	20.00	0	99.0	67	132				
1,1,2,2-Tetrachloroethane	21.170	1.0	20.00	0	106	63	128				
1,1,2-Trichloroethane	20.100	1.0	20.00	0	101	75	125				
1,1-Dichloroethane	20.040	0.50	20.00	0	100	69	133				
1,1-Dichloroethene	18.110	1.0	20.00	0	90.6	68	130				
1,1-Dichloropropene	23.420	1.0	20.00	0	117	73	132				
1,2,3-Trichlorobenzene	20.160	1.0	20.00	0	101	67	137				
1,2,3-Trichloropropane	20.540	1.0	20.00	0	103	73	124				
1,2,4-Trichlorobenzene	19.950	1.0	20.00	0	99.8	66	134				
1,2,4-Trimethylbenzene	22.620	1.0	20.00	0	113	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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N036976-021A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromo-3-chloropropane	21.270	2.0	20.00	0	106	50	132				
1,2-Dibromoethane	19.030	1.0	20.00	0	95.2	80	121				
1,2-Dichlorobenzene	20.000	1.0	20.00	0	100	71	122				
1,2-Dichloroethane	21.510	0.50	20.00	0.6400	104	69	132				
1,2-Dichloropropane	18.980	1.0	20.00	0	94.9	75	125				
1,3,5-Trimethylbenzene	22.740	1.0	20.00	0	114	74	131				
1,3-Dichlorobenzene	20.540	1.0	20.00	0	103	75	124				
1,3-Dichloropropane	20.320	1.0	20.00	0	102	73	126				
1,4-Dichlorobenzene	21.540	1.0	20.00	0	108	74	123				
2,2-Dichloropropane	23.000	1.0	20.00	0	115	69	137				
2-Butanone	131.810	10	200.0	0	65.9	49	136				
2-Chlorotoluene	21.650	1.0	20.00	0	108	73	126				
4-Chlorotoluene	20.990	1.0	20.00	0	105	74	128				
4-Isopropyltoluene	22.180	1.0	20.00	0	111	73	130				
4-Methyl-2-pentanone	160.930	10	200.0	0	80.5	58	134				
Acetone	88.110	10	200.0	0	44.1	40	135				
Benzene	23.210	1.0	20.00	1.010	111	81	122				
Bromobenzene	20.010	1.0	20.00	0	100	76	124				
Bromochloromethane	17.240	1.0	20.00	0	86.2	65	129				
Bromodichloromethane	20.860	1.0	20.00	0	104	76	121				
Bromoform	21.500	1.0	20.00	0	108	69	128				
Bromomethane	10.290	1.0	20.00	0	51.4	53	141				S
Carbon disulfide	21.380	1.0	20.00	0	107	75	125				
Carbon tetrachloride	24.180	0.50	20.00	0	121	66	138				
Chlorobenzene	20.200	1.0	20.00	0	101	81	122				
Chloroethane	20.110	1.0	20.00	0	101	58	133				
Chloroform	44.480	1.0	20.00	25.99	92.5	69	128				
Chloromethane	20.760	1.0	20.00	0	104	56	131				
cis-1,2-Dichloroethene	20.300	1.0	20.00	0	102	72	126				
cis-1,3-Dichloropropene	17.710	1.0	20.00	0	88.6	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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N036976-021A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Di-isopropyl ether	16.450	1.0	20.00	0	82.2	70	130				
Dibromochloromethane	20.380	1.0	20.00	0	102	66	133				
Dibromomethane	19.490	1.0	20.00	0	97.5	76	125				
Dichlorodifluoromethane	39.830	1.0	20.00	17.64	111	53	153				
Ethyl tert-butyl ether	16.350	1.0	20.00	0	81.8	70	130				
Ethylbenzene	21.680	1.0	20.00	0	108	73	127				
Freon-113	22.090	1.0	20.00	0	110	75	125				
Hexachlorobutadiene	20.560	1.0	20.00	0	103	67	131				
Isopropylbenzene	21.680	1.0	20.00	0	108	75	127				
m,p-Xylene	43.720	1.0	40.00	0	109	76	128				
Methylene chloride	22.160	2.0	20.00	4.320	89.2	63	137				
MTBE	15.480	1.0	20.00	0	77.4	65	123				
n-Butylbenzene	22.870	1.0	20.00	0	114	69	137				
n-Propylbenzene	22.150	1.0	20.00	0	111	72	129				
Naphthalene	19.030	1.0	20.00	0	95.2	54	138				
o-Xylene	19.870	1.0	20.00	0	99.4	80	121				
sec-Butylbenzene	21.600	1.0	20.00	0	108	72	127				
Styrene	21.320	1.0	20.00	0	107	65	134				
Tert-amyl methyl ether	16.270	1.0	20.00	0	81.4	70	130				
Tert-Butanol	318.640	5.0	100.0	313.6	5.05	70	130				S
tert-Butylbenzene	21.790	1.0	20.00	0	109	70	129				
Tetrachloroethene	22.840	1.0	20.00	0.9600	109	66	128				
Toluene	20.460	2.0	20.00	0	102	77	122				
trans-1,2-Dichloroethene	18.980	1.0	20.00	0	94.9	63	137				
trans-1,3-Dichloropropene	19.390	1.0	20.00	0	97.0	59	135				
Trichloroethene	36.810	1.0	20.00	12.30	123	70	127				
Trichlorofluoromethane	51.290	1.0	20.00	25.52	129	57	129				
Vinyl chloride	23.330	0.50	20.00	0	117	50	134				
Xylenes, Total	63.590	2.0	60.00	0	106	75	125				
Surr: 1,2-Dichloroethane-d4	20.840		25.00		83.4	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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N036976-021A-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B	Analysis Date: 8/26/2019	SeqNo: 3492730							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	24.410		25.00		97.6	76	119				
Surr: Dibromofluoromethane	23.970		25.00		95.9	85	115				
Surr: Toluene-d8	23.830		25.00		95.3	81	120				

Sample ID: N036976-021A-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B	Analysis Date: 8/26/2019	SeqNo: 3492731							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.780	1.0	20.00	0	104	81	129	21.84	4.97	20	
1,1,1-Trichloroethane	21.540	1.0	20.00	0	108	67	132	19.81	8.37	20	
1,1,2,2-Tetrachloroethane	22.500	1.0	20.00	0	112	63	128	21.17	6.09	20	
1,1,2-Trichloroethane	20.910	1.0	20.00	0	105	75	125	20.10	3.95	20	
1,1-Dichloroethane	21.710	0.50	20.00	0	109	69	133	20.04	8.00	20	
1,1-Dichloroethene	19.800	1.0	20.00	0	99.0	68	130	18.11	8.92	20	
1,1-Dichloropropene	22.460	1.0	20.00	0	112	73	132	23.42	4.18	20	
1,2,3-Trichlorobenzene	19.200	1.0	20.00	0	96.0	67	137	20.16	4.88	20	
1,2,3-Trichloropropane	20.360	1.0	20.00	0	102	73	124	20.54	0.880	20	
1,2,4-Trichlorobenzene	19.580	1.0	20.00	0	97.9	66	134	19.95	1.87	20	
1,2,4-Trimethylbenzene	21.790	1.0	20.00	0	109	74	132	22.62	3.74	20	
1,2-Dibromo-3-chloropropane	20.490	2.0	20.00	0	102	50	132	21.27	3.74	20	
1,2-Dibromoethane	19.920	1.0	20.00	0	99.6	80	121	19.03	4.57	20	
1,2-Dichlorobenzene	19.640	1.0	20.00	0	98.2	71	122	20.00	1.82	20	
1,2-Dichloroethane	22.310	0.50	20.00	0.6400	108	69	132	21.51	3.65	20	
1,2-Dichloropropane	19.260	1.0	20.00	0	96.3	75	125	18.98	1.46	20	
1,3,5-Trimethylbenzene	21.330	1.0	20.00	0	107	74	131	22.74	6.40	20	
1,3-Dichlorobenzene	19.430	1.0	20.00	0	97.2	75	124	20.54	5.55	20	
1,3-Dichloropropane	20.550	1.0	20.00	0	103	73	126	20.32	1.13	20	
1,4-Dichlorobenzene	19.310	1.0	20.00	0	96.6	74	123	21.54	10.9	20	
2,2-Dichloropropane	25.180	1.0	20.00	0	126	69	137	23.00	9.05	20	
2-Butanone	158.930	10	200.0	0	79.5	49	136	131.8	18.7	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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N036976-021A-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492731						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	19.980	1.0	20.00	0	99.9	73	126	21.65	8.02	20	
4-Chlorotoluene	19.060	1.0	20.00	0	95.3	74	128	20.99	9.64	20	
4-Isopropyltoluene	21.340	1.0	20.00	0	107	73	130	22.18	3.86	20	
4-Methyl-2-pentanone	187.570	10	200.0	0	93.8	58	134	160.9	15.3	20	
Acetone	106.560	10	200.0	0	53.3	40	135	88.11	19.0	20	
Benzene	22.330	1.0	20.00	1.010	107	81	122	23.21	3.86	20	
Bromobenzene	20.210	1.0	20.00	0	101	76	124	20.01	0.995	20	
Bromochloromethane	21.210	1.0	20.00	0	106	65	129	17.24	20.7	20	R
Bromodichloromethane	22.030	1.0	20.00	0	110	76	121	20.86	5.46	20	
Bromoform	22.540	1.0	20.00	0	113	69	128	21.50	4.72	20	
Bromomethane	10.150	1.0	20.00	0	50.8	53	141	10.29	1.37	20	S
Carbon disulfide	22.060	1.0	20.00	0	110	75	125	21.38	3.13	20	
Carbon tetrachloride	22.330	0.50	20.00	0	112	66	138	24.18	7.96	20	
Chlorobenzene	20.480	1.0	20.00	0	102	81	122	20.20	1.38	20	
Chloroethane	30.490	1.0	20.00	0	152	58	133	20.11	41.0	20	SR
Chloroform	47.370	1.0	20.00	25.99	107	69	128	44.48	6.29	20	
Chloromethane	21.640	1.0	20.00	0	108	56	131	20.76	4.15	20	
cis-1,2-Dichloroethene	21.600	1.0	20.00	0	108	72	126	20.30	6.21	20	
cis-1,3-Dichloropropene	18.960	1.0	20.00	0	94.8	69	131	17.71	6.82	20	
Di-isopropyl ether	18.230	1.0	20.00	0	91.2	70	130	16.45	10.3	20	
Dibromochloromethane	21.290	1.0	20.00	0	106	66	133	20.38	4.37	20	
Dibromomethane	20.320	1.0	20.00	0	102	76	125	19.49	4.17	20	
Dichlorodifluoromethane	42.440	1.0	20.00	17.64	124	53	153	39.83	6.34	20	
Ethyl tert-butyl ether	17.790	1.0	20.00	0	89.0	70	130	16.35	8.44	20	
Ethylbenzene	20.970	1.0	20.00	0	105	73	127	21.68	3.33	20	
Freon-113	22.900	1.0	20.00	0	114	75	125	22.09	3.60	20	
Hexachlorobutadiene	19.300	1.0	20.00	0	96.5	67	131	20.56	6.32	20	
Isopropylbenzene	19.820	1.0	20.00	0	99.1	75	127	21.68	8.96	20	
m,p-Xylene	42.890	1.0	40.00	0	107	76	128	43.72	1.92	20	
Methylene chloride	24.250	2.0	20.00	4.320	99.7	63	137	22.16	9.01	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 N000922
 ORELAP/NELAP Cert 4046

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N036976-021A-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: ZZZZZ	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492731						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	18.040	1.0	20.00	0	90.2	65	123	15.48	15.3	20	
n-Butylbenzene	21.940	1.0	20.00	0	110	69	137	22.87	4.15	20	
n-Propylbenzene	20.540	1.0	20.00	0	103	72	129	22.15	7.54	20	
Naphthalene	19.780	1.0	20.00	0	98.9	54	138	19.03	3.86	20	
o-Xylene	19.930	1.0	20.00	0	99.7	80	121	19.87	0.302	20	
sec-Butylbenzene	20.430	1.0	20.00	0	102	72	127	21.60	5.57	20	
Styrene	20.660	1.0	20.00	0	103	65	134	21.32	3.14	20	
Tert-amyl methyl ether	17.470	1.0	20.00	0	87.4	70	130	16.27	7.11	20	
Tert-Butanol	419.190	5.0	100.0	313.6	106	70	130	318.6	27.3	20	R
tert-Butylbenzene	19.770	1.0	20.00	0	98.8	70	129	21.79	9.72	20	
Tetrachloroethene	26.080	1.0	20.00	0.9600	126	66	128	22.84	13.2	20	
Toluene	19.940	2.0	20.00	0	99.7	77	122	20.46	2.57	20	
trans-1,2-Dichloroethene	21.960	1.0	20.00	0	110	63	137	18.98	14.6	20	
trans-1,3-Dichloropropene	19.990	1.0	20.00	0	100	59	135	19.39	3.05	20	
Trichloroethene	36.290	1.0	20.00	12.30	120	70	127	36.81	1.42	20	
Trichlorofluoromethane	52.730	1.0	20.00	25.52	136	57	129	51.29	2.77	20	S
Vinyl chloride	24.540	0.50	20.00	0	123	50	134	23.33	5.06	20	
Xylenes, Total	62.820	2.0	60.00	0	105	75	125	63.59	1.22	20	
Surr: 1,2-Dichloroethane-d4	23.700		25.00		94.8	72	119		0		
Surr: 4-Bromofluorobenzene	22.080		25.00		88.3	76	119		0		
Surr: Dibromofluoromethane	24.820		25.00		99.3	85	115		0		
Surr: Toluene-d8	24.510		25.00		98.0	81	120		0		

Sample ID: CA190826-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: PBW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492733						
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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: PBW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492733						
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 |

CLIENT: CH2MHill
Work Order: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: PBW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492733						
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
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	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 |



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: N037136
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190826-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136104						
Client ID: PBW	Batch ID: CA19VW076	TestNo: EPA 8260B		Analysis Date: 8/26/2019	SeqNo: 3492733						
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	25.060		25.00		100	72	119				
Surr: 4-Bromofluorobenzene	22.060		25.00		88.2	76	119				
Surr: Dibromofluoromethane	25.500		25.00		102	85	115				
Surr: Toluene-d8	25.090		25.00		100	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 |



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

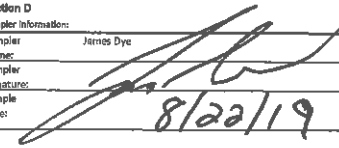
NEVADA | P: 702.307.2659 | F: 702.307.2691
 3151 W. Post Rd., Las Vegas, NV 89118
 ELAP Cert 2676 | NV Cert NV00922
 ORELAP/NELAP Cert 4046

N037136

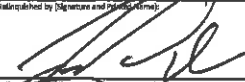
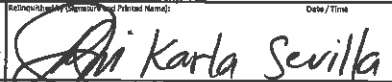

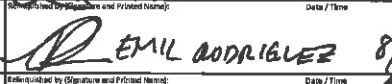

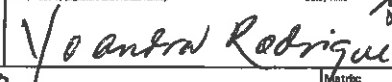
Asset Laboratories
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2659 Fax: 702-307-2691
 Marlon Cartin (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

DATE: 8/22/19
 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, Inc. Attention: Alan Van Antwerp		Report To: Eric Davis		Attention: Alan Van Antwerp - Ref. AFE# 81195		Sampler Name: James Dye	
Address: 9950 San Diego Mission Road San Diego, CA 92108		Copy To: Alan Van Antwerp		Company Name: Kinder Morgan, Inc.		Sampler Signature: 	
Email To: alan_vanantwerp@kindermorgan.com eric.davis@jacobs.com		Purchase Order No.:		Address: 9950 San Diego Mission Road San Diego, CA 92108		Sample Date: 8/22/19	
Phone: 619-922-1960 (mobile) Fax:		Project Name: SPPP Norwalk		ATL Project Manager: Marlon Cartin			

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (S-GRAB C-COMP)	SAMPLING		TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test			Comments
					DATE	TIME			Full VOCs + Organometal Lic (82609)	TPH-gas (C4-C12) (80158)	TPH-l (C13-C28), TPH-oil (C29+), Total TPH (80159)	
1	INF-08-22	INFLUENT	WW	G	8/22/19	1230	9		X	X	X	N037136-01
2												
3												
4												
5												
6												
7												
8												
9												
10												

Relinquished by (Signature and Printed Name):  Date / Time: 8/22/19 1245	Relinquished by (Signature and Printed Name):  Date / Time: 8/22/19 1245	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: 1.8°C JPL#2 COSO# : 4972
Relinquished by (Signature and Printed Name):  Date / Time: 8/22/19 1345	Relinquished by (Signature and Printed Name):  Date / Time: 8/22/19 1345		
Relinquished by (Signature and Printed Name):  Date / Time: 8/22/19 1800	Relinquished by (Signature and Printed Name):  Date / Time: 8/23/19 8:51 am		
Matrix: W = Water WW = Wastewater O = Oil P = Product S = Soil Others/Specify:		Preservatives: H = HCl N = HNO3 S = H2SO4 Z = Zn(Ac)2 O = NaOH T = Na2S2O3 Others/Specify:	
Container Types:		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: 8/23/2019 Workorder: N037136
 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.: 4972 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?
Was Client notified? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: YR YRJ 8/26/2019

Reviewed By: ABC 8/27/2019

ASSET Laboratories

WORK ORDER Summary

23-Aug-19

WorkOrder: N037136

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 8/22/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N037136-001A	INF-08-22	8/22/2019 12:30:00 PM	8/30/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	V-CA
N037136-001B			8/30/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N037136-001C			8/30/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			8/30/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			8/30/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N037136-002A	FOLDER	8/30/2019	8/30/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			8/30/2019		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 #: 545944972

CPS



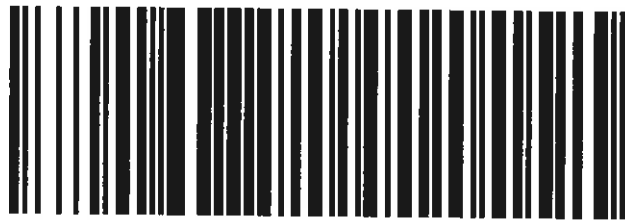
Ship To
ASSET LABORATORIES
MARLON CARLIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LAS VEGAS

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

C89102A

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



7523121

LVS NV891-C51

Print Date: 8/22/2019 6:02 PM

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.

1.8⁰
JN # 2

September 23, 2019

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

TEL:

FAX:

Workorder No.: N037432

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on September 12, 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

Puri Romualdo
Laboratory Director

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



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

"Serving Clients with Passion and Professionalism"

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: N037432

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Samples were analyzed within method holding time.

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:

RPD for Matrix Spike (MS)/Matrix Spike Duplicate (MSD) is outside criteria on analytes Chloroform and Bromochloromethane; however, the analytical batch was validated by the Laboratory Control Sample (LCS).

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



CLIENT: CH2Mhill
Project: SFPP Norwalk
Lab Order: N037432
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N037432-001A	INF-09-12	Wastewater	9/12/2019 9:05:00 AM	9/12/2019	9/23/2019
N037432-001B	INF-09-12	Wastewater	9/12/2019 9:05:00 AM	9/12/2019	9/23/2019
N037432-001C	INF-09-12	Wastewater	9/12/2019 9:05:00 AM	9/12/2019	9/23/2019



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 23-Sep-19

CLIENT: CH2MHill
Lab Order: N037432
Project: SFPP Norwalk
Lab ID: N037432-001

Client Sample ID: INF-09-12
Collection Date: 9/12/2019 9:05:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	CA01638-MS10_190913A	QC Batch:	CA19VW084	PrepDate:	Analyst:	AW
1,1,1,2-Tetrachloroethane	ND	0.25	1.0	ug/L	1	9/13/2019 11:15 AM
1,1,1-Trichloroethane	ND	0.20	1.0	ug/L	1	9/13/2019 11:15 AM
1,1,2,2-Tetrachloroethane	ND	0.11	1.0	ug/L	1	9/13/2019 11:15 AM
1,1,2-Trichloroethane	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
1,1-Dichloroethane	ND	0.22	0.50	ug/L	1	9/13/2019 11:15 AM
1,1-Dichloroethene	ND	0.17	1.0	ug/L	1	9/13/2019 11:15 AM
1,1-Dichloropropene	ND	0.16	1.0	ug/L	1	9/13/2019 11:15 AM
1,2,3-Trichlorobenzene	ND	0.37	1.0	ug/L	1	9/13/2019 11:15 AM
1,2,3-Trichloropropane	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
1,2,4-Trichlorobenzene	ND	0.10	1.0	ug/L	1	9/13/2019 11:15 AM
1,2,4-Trimethylbenzene	4.1	0.060	1.0	ug/L	1	9/13/2019 11:15 AM
1,2-Dibromo-3-chloropropane	ND	0.32	2.0	ug/L	1	9/13/2019 11:15 AM
1,2-Dibromoethane	ND	0.19	1.0	ug/L	1	9/13/2019 11:15 AM
1,2-Dichlorobenzene	ND	0.089	1.0	ug/L	1	9/13/2019 11:15 AM
1,2-Dichloroethane	ND	0.16	0.50	ug/L	1	9/13/2019 11:15 AM
1,2-Dichloropropane	ND	0.16	1.0	ug/L	1	9/13/2019 11:15 AM
1,3,5-Trimethylbenzene	1.9	0.051	1.0	ug/L	1	9/13/2019 11:15 AM
1,3-Dichlorobenzene	ND	0.081	1.0	ug/L	1	9/13/2019 11:15 AM
1,3-Dichloropropane	ND	0.13	1.0	ug/L	1	9/13/2019 11:15 AM
1,4-Dichlorobenzene	ND	0.080	1.0	ug/L	1	9/13/2019 11:15 AM
2,2-Dichloropropane	ND	0.22	1.0	ug/L	1	9/13/2019 11:15 AM
2-Butanone	ND	4.7	10	ug/L	1	9/13/2019 11:15 AM
2-Chlorotoluene	ND	0.090	1.0	ug/L	1	9/13/2019 11:15 AM
4-Chlorotoluene	ND	0.065	1.0	ug/L	1	9/13/2019 11:15 AM
4-Isopropyltoluene	ND	0.085	1.0	ug/L	1	9/13/2019 11:15 AM
4-Methyl-2-pentanone	ND	0.83	10	ug/L	1	9/13/2019 11:15 AM
Acetone	6.6	4.6	10	J ug/L	1	9/13/2019 11:15 AM
Benzene	140	0.57	5.0	ug/L	5	9/13/2019 12:29 PM
Bromobenzene	ND	0.093	1.0	ug/L	1	9/13/2019 11:15 AM
Bromochloromethane	ND	0.26	1.0	ug/L	1	9/13/2019 11:15 AM
Bromodichloromethane	ND	0.20	1.0	ug/L	1	9/13/2019 11:15 AM
Bromoform	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
Bromomethane	ND	0.38	1.0	ug/L	1	9/13/2019 11:15 AM
Carbon disulfide	0.22	0.19	1.0	J ug/L	1	9/13/2019 11:15 AM
Carbon tetrachloride	ND	0.33	0.50	ug/L	1	9/13/2019 11:15 AM
Chlorobenzene	ND	0.11	1.0	ug/L	1	9/13/2019 11:15 AM

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: 23-Sep-19

CLIENT: CH2MHill
Lab Order: N037432
Project: SFPP Norwalk
Lab ID: N037432-001

Client Sample ID: INF-09-12
Collection Date: 9/12/2019 9:05:00 AM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID:	CA01638-MS10_190913A	QC Batch:	CA19VW084	PrepDate:	Analyst:	AW
Chloroethane	ND	0.69	1.0	ug/L	1	9/13/2019 11:15 AM
Chloroform	ND	0.38	1.0	ug/L	1	9/13/2019 11:15 AM
Chloromethane	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
cis-1,2-Dichloroethene	ND	0.11	1.0	ug/L	1	9/13/2019 11:15 AM
cis-1,3-Dichloropropene	ND	0.16	1.0	ug/L	1	9/13/2019 11:15 AM
Di-isopropyl ether	3.4	0.15	1.0	ug/L	1	9/13/2019 11:15 AM
Dibromochloromethane	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
Dibromomethane	ND	0.13	1.0	ug/L	1	9/13/2019 11:15 AM
Dichlorodifluoromethane	ND	0.16	1.0	ug/L	1	9/13/2019 11:15 AM
Ethyl tert-butyl ether	ND	0.10	1.0	ug/L	1	9/13/2019 11:15 AM
Ethylbenzene	1.8	0.11	1.0	ug/L	1	9/13/2019 11:15 AM
Freon-113	ND	0.28	1.0	ug/L	1	9/13/2019 11:15 AM
Hexachlorobutadiene	ND	0.30	1.0	ug/L	1	9/13/2019 11:15 AM
Isopropylbenzene	1.1	0.092	1.0	ug/L	1	9/13/2019 11:15 AM
m,p-Xylene	7.6	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
Methylene chloride	ND	1.2	2.0	ug/L	1	9/13/2019 11:15 AM
MTBE	1.2	0.44	1.0	ug/L	1	9/13/2019 11:15 AM
n-Butylbenzene	ND	0.093	1.0	ug/L	1	9/13/2019 11:15 AM
n-Propylbenzene	1.7	0.10	1.0	ug/L	1	9/13/2019 11:15 AM
Naphthalene	15	0.41	1.0	ug/L	1	9/13/2019 11:15 AM
o-Xylene	0.49	0.087	1.0	J ug/L	1	9/13/2019 11:15 AM
sec-Butylbenzene	0.12	0.076	1.0	J ug/L	1	9/13/2019 11:15 AM
Styrene	ND	0.41	1.0	ug/L	1	9/13/2019 11:15 AM
Tert-amyl methyl ether	ND	0.13	1.0	ug/L	1	9/13/2019 11:15 AM
Tert-Butanol	110	2.8	5.0	ug/L	1	9/13/2019 11:15 AM
tert-Butylbenzene	ND	0.10	1.0	ug/L	1	9/13/2019 11:15 AM
Tetrachloroethene	ND	0.25	1.0	ug/L	1	9/13/2019 11:15 AM
Toluene	0.61	0.13	2.0	J ug/L	1	9/13/2019 11:15 AM
trans-1,2-Dichloroethene	ND	0.27	1.0	ug/L	1	9/13/2019 11:15 AM
trans-1,3-Dichloropropene	ND	0.12	1.0	ug/L	1	9/13/2019 11:15 AM
Trichloroethene	ND	0.26	1.0	ug/L	1	9/13/2019 11:15 AM
Trichlorofluoromethane	ND	0.23	1.0	ug/L	1	9/13/2019 11:15 AM
Vinyl chloride	ND	0.19	0.50	ug/L	1	9/13/2019 11:15 AM
Xylenes, Total	8.1	1.5	2.0	ug/L	1	9/13/2019 11:15 AM
Surr: 1,2-Dichloroethane-d4	85.1	0	72-119	%REC	5	9/13/2019 12:29 PM
Surr: 1,2-Dichloroethane-d4	95.6	0	72-119	%REC	1	9/13/2019 11:15 AM

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: 23-Sep-19

CLIENT: CH2MHill	Client Sample ID: INF-09-12
Lab Order: N037432	Collection Date: 9/12/2019 9:05:00 AM
Project: SFPP Norwalk	Matrix: WASTEWATER
Lab ID: N037432-001	

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: CA01638-MS10_190913A	QC Batch: CA19VW084	PrepDate:	Analyst: AW
Surr: 4-Bromofluorobenzene	96.8 0	76-119	%REC 5 9/13/2019 12:29 PM
Surr: 4-Bromofluorobenzene	97.0 0	76-119	%REC 1 9/13/2019 11:15 AM
Surr: Dibromofluoromethane	92.4 0	85-115	%REC 1 9/13/2019 11:15 AM
Surr: Dibromofluoromethane	88.9 0	85-115	%REC 5 9/13/2019 12:29 PM
Surr: Toluene-d8	101 0	81-120	%REC 5 9/13/2019 12:29 PM
Surr: Toluene-d8	98.1 0	81-120	%REC 1 9/13/2019 11:15 AM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: NV00922-GC3_190913A	QC Batch: 75351	PrepDate: 9/13/2019	Analyst: LLR
TPH-Diesel (C13-C22)	180 16	26	ug/L 1 9/13/2019 02:55 PM
TPH-Oil (C23-C36)	87 14	26	ug/L 1 9/13/2019 02:55 PM
Surr: Octacosane	66.0 0	26-152	%REC 1 9/13/2019 02:55 PM
Surr: p-Terphenyl	67.0 0	57-132	%REC 1 9/13/2019 02:55 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: NV00922-GC4_190920A	QC Batch: E19VW068	PrepDate:	Analyst: RAB
TPH-Gasoline (C4-C12)	440 21	50	ug/L 1 9/20/2019 02:41 PM
Surr: Chlorobenzene - d5	129 0	74-138	%REC 1 9/20/2019 02:41 PM

TOTAL TPH

EPA 8015B

RunID: NV00922-GC3_190913A	QC Batch: R136442	PrepDate:	Analyst: LLR
Total TPH	650 21	100	ug/L 1 9/13/2019

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: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-75351	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 9/13/2019	RunNo: 136442						
Client ID: PBW	Batch ID: 75351	TestNo: EPA 8015B EPA 3510C		Analysis Date: 9/13/2019	SeqNo: 3511362						
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	70.458		80.00		88.1	26	152				
Surr: p-Terphenyl	75.073		80.00		93.8	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
- 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: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R136442	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 136442						
Client ID: PBW	Batch ID: R136442	TestNo: EPA 8015B		Analysis Date: 9/13/2019	SeqNo: 3512629						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	52.000	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

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFP

Sample ID: E190920LCS	SampType: LCS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136562						
Client ID: LCSW	Batch ID: E19VW068	TestNo: EPA 8015B		Analysis Date: 9/20/2019	SeqNo: 3515886						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	1032.000	50	1000	0	103	67	136				
Surr: Chlorobenzene - d5	60587.000		50000		121	74	138				

Sample ID: E190920MB	SampType: MBLK	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136562						
Client ID: PBW	Batch ID: E19VW068	TestNo: EPA 8015B		Analysis Date: 9/20/2019	SeqNo: 3515887						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	38.000	50									J
Surr: Chlorobenzene - d5	66662.000		50000		133	74	138				

Sample ID: N037432-001BMS	SampType: MS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136562						
Client ID: ZZZZZ	Batch ID: E19VW068	TestNo: EPA 8015B		Analysis Date: 9/20/2019	SeqNo: 3515889						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	1345.000	50	1000	439.0	90.6	67	136				
Surr: Chlorobenzene - d5	61239.000		50000		122	74	138				

Sample ID: N037432-001BMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 136562						
Client ID: ZZZZZ	Batch ID: E19VW068	TestNo: EPA 8015B		Analysis Date: 9/20/2019	SeqNo: 3515890						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	1306.000	50	1000	439.0	86.7	67	136	1345	2.94	30	
Surr: Chlorobenzene - d5	63024.000		50000		126	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 |



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: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: LCSW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511405						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.890	1.0	20.00	0	104	81	129				
1,1,1-Trichloroethane	18.170	1.0	20.00	0	90.9	67	132				
1,1,2,2-Tetrachloroethane	19.610	1.0	20.00	0	98.0	63	128				
1,1,2-Trichloroethane	17.570	1.0	20.00	0	87.9	75	125				
1,1-Dichloroethane	18.270	0.50	20.00	0	91.4	69	133				
1,1-Dichloroethene	17.070	1.0	20.00	0	85.4	68	130				
1,1-Dichloropropene	18.630	1.0	20.00	0	93.2	73	132				
1,2,3-Trichlorobenzene	21.340	1.0	20.00	0	107	67	137				
1,2,3-Trichloropropane	17.540	1.0	20.00	0	87.7	73	124				
1,2,4-Trichlorobenzene	21.540	1.0	20.00	0	108	66	134				
1,2,4-Trimethylbenzene	20.810	1.0	20.00	0	104	74	132				
1,2-Dibromo-3-chloropropane	23.130	2.0	20.00	0	116	50	132				
1,2-Dibromoethane	19.450	1.0	20.00	0	97.3	80	121				
1,2-Dichlorobenzene	21.340	1.0	20.00	0	107	71	122				
1,2-Dichloroethane	20.570	0.50	20.00	0	103	69	132				
1,2-Dichloropropane	17.780	1.0	20.00	0	88.9	75	125				
1,3,5-Trimethylbenzene	20.320	1.0	20.00	0	102	74	131				
1,3-Dichlorobenzene	20.330	1.0	20.00	0	102	75	124				
1,3-Dichloropropane	21.730	1.0	20.00	0	109	73	126				
1,4-Dichlorobenzene	20.950	1.0	20.00	0	105	74	123				
2,2-Dichloropropane	19.340	1.0	20.00	0	96.7	69	137				
2-Butanone	192.400	10	200.0	0	96.2	49	136				
2-Chlorotoluene	18.750	1.0	20.00	0	93.8	73	126				
4-Chlorotoluene	18.020	1.0	20.00	0	90.1	74	128				
4-Isopropyltoluene	20.450	1.0	20.00	0	102	73	130				
4-Methyl-2-pentanone	187.370	10	200.0	0	93.7	58	134				
Acetone	217.540	10	200.0	0	109	40	135				
Benzene	18.790	1.0	20.00	0	94.0	81	122				
Bromobenzene	20.630	1.0	20.00	0	103	76	124				
Bromochloromethane	19.030	1.0	20.00	0	95.2	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 |

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445
Client ID: LCSW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511405

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromodichloromethane	18.310	1.0	20.00	0	91.6	76	121				
Bromoform	18.940	1.0	20.00	0	94.7	69	128				
Bromomethane	25.040	1.0	20.00	0	125	53	141				
Carbon disulfide	17.740	1.0	20.00	0	88.7	75	125				
Carbon tetrachloride	18.910	0.50	20.00	0	94.6	66	138				
Chlorobenzene	19.870	1.0	20.00	0	99.4	81	122				
Chloroethane	19.350	1.0	20.00	0	96.8	58	133				
Chloroform	18.850	1.0	20.00	0	94.3	69	128				
Chloromethane	15.920	1.0	20.00	0	79.6	56	131				
cis-1,2-Dichloroethene	20.220	1.0	20.00	0	101	72	126				
cis-1,3-Dichloropropene	18.790	1.0	20.00	0	94.0	69	131				
Di-isopropyl ether	17.380	1.0	20.00	0	86.9	70	130				
Dibromochloromethane	17.930	1.0	20.00	0	89.7	66	133				
Dibromomethane	20.390	1.0	20.00	0	102	76	125				
Dichlorodifluoromethane	17.200	1.0	20.00	0	86.0	53	153				
Ethyl tert-butyl ether	18.230	1.0	20.00	0	91.2	70	130				
Ethylbenzene	19.560	1.0	20.00	0	97.8	73	127				
Freon-113	19.510	1.0	20.00	0	97.6	75	125				
Hexachlorobutadiene	20.340	1.0	20.00	0	102	67	131				
Isopropylbenzene	19.380	1.0	20.00	0	96.9	75	127				
m,p-Xylene	40.980	1.0	40.00	0	102	76	128				
Methylene chloride	18.470	2.0	20.00	0	92.4	63	137				
MTBE	17.790	1.0	20.00	0	89.0	65	123				
n-Butylbenzene	20.170	1.0	20.00	0	101	69	137				
n-Propylbenzene	19.650	1.0	20.00	0	98.2	72	129				
Naphthalene	20.250	1.0	20.00	0	101	54	138				
o-Xylene	19.120	1.0	20.00	0	95.6	80	121				
sec-Butylbenzene	19.380	1.0	20.00	0	96.9	72	127				
Styrene	21.280	1.0	20.00	0	106	65	134				
Tert-amyl methyl ether	19.480	1.0	20.00	0	97.4	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 |



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: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-LCS	SampType: LCS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: LCSW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511405						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Tert-Butanol	91.920	5.0	100.0	0	91.9	70	130				
tert-Butylbenzene	19.930	1.0	20.00	0	99.7	70	129				
Tetrachloroethene	21.900	1.0	20.00	0	110	66	128				
Toluene	19.200	2.0	20.00	0	96.0	77	122				
trans-1,2-Dichloroethene	17.610	1.0	20.00	0	88.0	63	137				
trans-1,3-Dichloropropene	18.870	1.0	20.00	0	94.4	59	135				
Trichloroethene	19.900	1.0	20.00	0	99.5	70	127				
Trichlorofluoromethane	19.880	1.0	20.00	0	99.4	57	129				
Vinyl chloride	17.950	0.50	20.00	0	89.8	50	134				
Xylenes, Total	60.100	2.0	60.00	0	100	75	125				
Surr: 1,2-Dichloroethane-d4	22.830		25.00		91.3	72	119				
Surr: 4-Bromofluorobenzene	24.700		25.00		98.8	76	119				
Surr: Dibromofluoromethane	24.370		25.00		97.5	85	115				
Surr: Toluene-d8	25.230		25.00		101	81	120				

Sample ID: CA190913-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: PBW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511407						
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 |

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: PBW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511407						
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
1,2-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 |

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: PBW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511407						
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
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 |



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: N037432
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: CA190913-MB2	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: PBW	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511407						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	23.790		25.00		95.2	76	119				
Surr: Dibromofluoromethane	23.850		25.00		95.4	85	115				
Surr: Toluene-d8	24.870		25.00		99.5	81	120				

Sample ID: N037433-001-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511410						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	20.640	1.0	20.00	0	103	81	129				
1,1,1-Trichloroethane	19.920	1.0	20.00	0	99.6	67	132				
1,1,2,2-Tetrachloroethane	20.060	1.0	20.00	0	100	63	128				
1,1,2-Trichloroethane	19.300	1.0	20.00	0	96.5	75	125				
1,1-Dichloroethane	16.320	0.50	20.00	0	81.6	69	133				
1,1-Dichloroethene	17.900	1.0	20.00	0	89.5	68	130				
1,1-Dichloropropene	20.540	1.0	20.00	0	103	73	132				
1,2,3-Trichlorobenzene	21.320	1.0	20.00	0	107	67	137				
1,2,3-Trichloropropane	19.450	1.0	20.00	0	97.3	73	124				
1,2,4-Trichlorobenzene	21.530	1.0	20.00	0	108	66	134				
1,2,4-Trimethylbenzene	20.660	1.0	20.00	0	103	74	132				
1,2-Dibromo-3-chloropropane	18.250	2.0	20.00	0	91.2	50	132				
1,2-Dibromoethane	21.030	1.0	20.00	0	105	80	121				
1,2-Dichlorobenzene	21.220	1.0	20.00	0	106	71	122				
1,2-Dichloroethane	22.040	0.50	20.00	0	110	69	132				
1,2-Dichloropropane	19.900	1.0	20.00	0	99.5	75	125				
1,3,5-Trimethylbenzene	19.970	1.0	20.00	0	99.8	74	131				
1,3-Dichlorobenzene	20.140	1.0	20.00	0	101	75	124				
1,3-Dichloropropane	21.410	1.0	20.00	0	107	73	126				
1,4-Dichlorobenzene	20.960	1.0	20.00	0	105	74	123				
2,2-Dichloropropane	17.990	1.0	20.00	0	90.0	69	137				
2-Butanone	160.310	10	200.0	0	80.2	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 |

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N037433-001-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511410						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chlorotoluene	18.310	1.0	20.00	0	91.6	73	126				
4-Chlorotoluene	18.120	1.0	20.00	0	90.6	74	128				
4-Isopropyltoluene	20.180	1.0	20.00	0	101	73	130				
4-Methyl-2-pentanone	186.150	10	200.0	0	93.1	58	134				
Acetone	169.120	10	200.0	7.620	80.8	40	135				
Benzene	20.650	1.0	20.00	0	103	81	122				
Bromobenzene	20.900	1.0	20.00	0	104	76	124				
Bromochloromethane	20.540	1.0	20.00	0	103	65	129				
Bromodichloromethane	20.120	1.0	20.00	0	101	76	121				
Bromoform	17.570	1.0	20.00	0	87.9	69	128				
Bromomethane	24.700	1.0	20.00	0	124	53	141				
Carbon disulfide	17.450	1.0	20.00	0	87.2	75	125				
Carbon tetrachloride	20.370	0.50	20.00	0	102	66	138				
Chlorobenzene	20.440	1.0	20.00	0	102	81	122				
Chloroethane	19.350	1.0	20.00	0	96.8	58	133				
Chloroform	20.140	1.0	20.00	0	101	69	128				
Chloromethane	16.180	1.0	20.00	0	80.9	56	131				
cis-1,2-Dichloroethene	19.200	1.0	20.00	0	96.0	72	126				
cis-1,3-Dichloropropene	20.650	1.0	20.00	0	103	69	131				
Di-isopropyl ether	14.490	1.0	20.00	0	72.4	70	130				
Dibromochloromethane	19.080	1.0	20.00	0	95.4	66	133				
Dibromomethane	22.540	1.0	20.00	0	113	76	125				
Dichlorodifluoromethane	18.570	1.0	20.00	0	92.8	53	153				
Ethyl tert-butyl ether	16.400	1.0	20.00	0	82.0	70	130				
Ethylbenzene	20.540	1.0	20.00	0	103	73	127				
Freon-113	20.230	1.0	20.00	0	101	75	125				
Hexachlorobutadiene	21.150	1.0	20.00	0	106	67	131				
Isopropylbenzene	19.230	1.0	20.00	0	96.2	75	127				
m,p-Xylene	42.070	1.0	40.00	0	105	76	128				
Methylene chloride	18.780	2.0	20.00	0	93.9	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 |

CLIENT: CH2MHill
 Work Order: N037432
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N037433-001-MS	SampType: MS	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511410						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

MTBE	17.960	1.0	20.00	0	89.8	65	123				
n-Butylbenzene	19.840	1.0	20.00	0	99.2	69	137				
n-Propylbenzene	19.170	1.0	20.00	0	95.9	72	129				
Naphthalene	19.980	1.0	20.00	0	99.9	54	138				
o-Xylene	19.600	1.0	20.00	0	98.0	80	121				
sec-Butylbenzene	19.740	1.0	20.00	0	98.7	72	127				
Styrene	21.490	1.0	20.00	0	107	65	134				
Tert-amyl methyl ether	21.320	1.0	20.00	0	107	70	130				
Tert-Butanol	83.610	5.0	100.0	0	83.6	70	130				
tert-Butylbenzene	19.830	1.0	20.00	0	99.2	70	129				
Tetrachloroethene	22.700	1.0	20.00	0	114	66	128				
Toluene	21.260	2.0	20.00	0	106	77	122				
trans-1,2-Dichloroethene	18.740	1.0	20.00	0	93.7	63	137				
trans-1,3-Dichloropropene	19.270	1.0	20.00	0	96.4	59	135				
Trichloroethene	22.160	1.0	20.00	0	111	70	127				
Trichlorofluoromethane	21.570	1.0	20.00	0	108	57	129				
Vinyl chloride	17.550	0.50	20.00	0	87.8	50	134				
Xylenes, Total	61.670	2.0	60.00	0	103	75	125				
Surr: 1,2-Dichloroethane-d4	23.290		25.00		93.2	72	119				
Surr: 4-Bromofluorobenzene	23.800		25.00		95.2	76	119				
Surr: Dibromofluoromethane	23.370		25.00		93.5	85	115				
Surr: Toluene-d8	25.400		25.00		102	81	120				

Sample ID: N037433-001-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1,1,2-Tetrachloroethane	18.790	1.0	20.00	0	94.0	81	129	20.64	9.38	20	
1,1,1-Trichloroethane	17.510	1.0	20.00	0	87.6	67	132	19.92	12.9	20	
1,1,2,2-Tetrachloroethane	17.270	1.0	20.00	0	86.4	63	128	20.06	14.9	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 |

CLIENT: CH2MHill
 Work Order: N037432
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N037433-001-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	17.970	1.0	20.00	0	89.8	75	125	19.30	7.14	20	
1,1-Dichloroethane	14.410	0.50	20.00	0	72.0	69	133	16.32	12.4	20	
1,1-Dichloroethene	16.150	1.0	20.00	0	80.8	68	130	17.90	10.3	20	
1,1-Dichloropropene	18.240	1.0	20.00	0	91.2	73	132	20.54	11.9	20	
1,2,3-Trichlorobenzene	20.290	1.0	20.00	0	101	67	137	21.32	4.95	20	
1,2,3-Trichloropropane	16.130	1.0	20.00	0	80.6	73	124	19.45	18.7	20	
1,2,4-Trichlorobenzene	19.140	1.0	20.00	0	95.7	66	134	21.53	11.8	20	
1,2,4-Trimethylbenzene	19.490	1.0	20.00	0	97.5	74	132	20.66	5.83	20	
1,2-Dibromo-3-chloropropane	15.330	2.0	20.00	0	76.7	50	132	18.25	17.4	20	
1,2-Dibromoethane	18.740	1.0	20.00	0	93.7	80	121	21.03	11.5	20	
1,2-Dichlorobenzene	20.430	1.0	20.00	0	102	71	122	21.22	3.79	20	
1,2-Dichloroethane	19.450	0.50	20.00	0	97.3	69	132	22.04	12.5	20	
1,2-Dichloropropane	17.750	1.0	20.00	0	88.8	75	125	19.90	11.4	20	
1,3,5-Trimethylbenzene	18.770	1.0	20.00	0	93.8	74	131	19.97	6.20	20	
1,3-Dichlorobenzene	19.650	1.0	20.00	0	98.2	75	124	20.14	2.46	20	
1,3-Dichloropropane	19.670	1.0	20.00	0	98.4	73	126	21.41	8.47	20	
1,4-Dichlorobenzene	19.970	1.0	20.00	0	99.8	74	123	20.96	4.84	20	
2,2-Dichloropropane	16.040	1.0	20.00	0	80.2	69	137	17.99	11.5	20	
2-Butanone	146.040	10	200.0	0	73.0	49	136	160.3	9.32	20	
2-Chlorotoluene	17.590	1.0	20.00	0	88.0	73	126	18.31	4.01	20	
4-Chlorotoluene	16.930	1.0	20.00	0	84.6	74	128	18.12	6.79	20	
4-Isopropyltoluene	19.260	1.0	20.00	0	96.3	73	130	20.18	4.67	20	
4-Methyl-2-pentanone	161.180	10	200.0	0	80.6	58	134	186.2	14.4	20	
Acetone	139.840	10	200.0	7.620	66.1	40	135	169.1	19.0	20	
Benzene	18.670	1.0	20.00	0	93.4	81	122	20.65	10.1	20	
Bromobenzene	19.970	1.0	20.00	0	99.8	76	124	20.90	4.55	20	
Bromochloromethane	16.270	1.0	20.00	0	81.4	65	129	20.54	23.2	20	R
Bromodichloromethane	17.430	1.0	20.00	0	87.2	76	121	20.12	14.3	20	
Bromoform	16.490	1.0	20.00	0	82.5	69	128	17.57	6.34	20	
Bromomethane	23.470	1.0	20.00	0	117	53	141	24.70	5.11	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: N037432
 Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N037433-001-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:			RunNo: 136445				
Client ID: ZZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B	Analysis Date: 9/13/2019			SeqNo: 3511411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon disulfide	16.180	1.0	20.00	0	80.9	75	125	17.45	7.55	20	
Carbon tetrachloride	19.310	0.50	20.00	0	96.6	66	138	20.37	5.34	20	
Chlorobenzene	19.220	1.0	20.00	0	96.1	81	122	20.44	6.15	20	
Chloroethane	18.140	1.0	20.00	0	90.7	58	133	19.35	6.46	20	
Chloroform	15.220	1.0	20.00	0	76.1	69	128	20.14	27.8	20	R
Chloromethane	14.630	1.0	20.00	0	73.2	56	131	16.18	10.1	20	
cis-1,2-Dichloroethene	17.420	1.0	20.00	0	87.1	72	126	19.20	9.72	20	
cis-1,3-Dichloropropene	18.040	1.0	20.00	0	90.2	69	131	20.65	13.5	20	
Di-isopropyl ether	12.930	1.0	20.00	0	64.7	70	130	14.49	11.4	20	S
Dibromochloromethane	15.880	1.0	20.00	0	79.4	66	133	19.08	18.3	20	
Dibromomethane	21.490	1.0	20.00	0	107	76	125	22.54	4.77	20	
Dichlorodifluoromethane	16.430	1.0	20.00	0	82.2	53	153	18.57	12.2	20	
Ethyl tert-butyl ether	14.910	1.0	20.00	0	74.6	70	130	16.40	9.52	20	
Ethylbenzene	18.690	1.0	20.00	0	93.5	73	127	20.54	9.43	20	
Freon-113	17.570	1.0	20.00	0	87.9	75	125	20.23	14.1	20	
Hexachlorobutadiene	20.350	1.0	20.00	0	102	67	131	21.15	3.86	20	
Isopropylbenzene	18.240	1.0	20.00	0	91.2	75	127	19.23	5.28	20	
m,p-Xylene	38.580	1.0	40.00	0	96.5	76	128	42.07	8.65	20	
Methylene chloride	17.150	2.0	20.00	0	85.8	63	137	18.78	9.07	20	
MTBE	16.050	1.0	20.00	0	80.2	65	123	17.96	11.2	20	
n-Butylbenzene	18.580	1.0	20.00	0	92.9	69	137	19.84	6.56	20	
n-Propylbenzene	18.590	1.0	20.00	0	93.0	72	129	19.17	3.07	20	
Naphthalene	17.860	1.0	20.00	0	89.3	54	138	19.98	11.2	20	
o-Xylene	17.780	1.0	20.00	0	88.9	80	121	19.60	9.74	20	
sec-Butylbenzene	18.060	1.0	20.00	0	90.3	72	127	19.74	8.89	20	
Styrene	19.740	1.0	20.00	0	98.7	65	134	21.49	8.49	20	
Tert-amyl methyl ether	18.960	1.0	20.00	0	94.8	70	130	21.32	11.7	20	
Tert-Butanol	83.830	5.0	100.0	0	83.8	70	130	83.61	0.263	20	
tert-Butylbenzene	18.410	1.0	20.00	0	92.0	70	129	19.83	7.43	20	
Tetrachloroethene	22.440	1.0	20.00	0	112	66	128	22.70	1.15	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 N000922
 ORELAP/NELAP Cert 4046

CLIENT: CH2MHill
Work Order: N037432
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: N037433-001-MSD	SampType: MSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 136445						
Client ID: ZZZZZZ	Batch ID: CA19VW084	TestNo: EPA 8260B		Analysis Date: 9/13/2019	SeqNo: 3511411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	19.540	2.0	20.00	0	97.7	77	122	21.26	8.43	20	
trans-1,2-Dichloroethene	16.830	1.0	20.00	0	84.2	63	137	18.74	10.7	20	
trans-1,3-Dichloropropene	18.440	1.0	20.00	0	92.2	59	135	19.27	4.40	20	
Trichloroethene	20.090	1.0	20.00	0	100	70	127	22.16	9.80	20	
Trichlorofluoromethane	19.510	1.0	20.00	0	97.6	57	129	21.57	10.0	20	
Vinyl chloride	16.630	0.50	20.00	0	83.2	50	134	17.55	5.38	20	
Xylenes, Total	56.360	2.0	60.00	0	93.9	75	125	61.67	9.00	20	
Surr: 1,2-Dichloroethane-d4	22.540		25.00		90.2	72	119		0		
Surr: 4-Bromofluorobenzene	23.740		25.00		95.0	76	119		0		
Surr: Dibromofluoromethane	23.800		25.00		95.2	85	115		0		
Surr: Toluene-d8	24.310		25.00		97.2	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 |



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

N037432

Asset Laboratories
 3151 W. Post Road
 Las Vegas, NV 89118
 Tel: 702-307-2859 Fax: 702-307-2691
 Marlon Carrón (marlon@assetlaboratories.com)

CHAIN OF CUSTODY RECORD

DATE: 9/12/19
 PAGE: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Section D Sample Information:	
Company: Kinder Morgan, Inc. Attention: Alan Van Amberg		Report For: Eric Davis		Attention: Alan Van Amberg - Ref. AFE81195		Sampler Name: <u>SCOTT Gasman</u>	
Address: 9650 San Diego Mission Road San Diego, CA 92108		Copy To: Alan Van Amberg		Company: Kinder Morgan, Inc.		Sampler Name: <u>Scott</u>	
Email To: alan_van_berg@kmi.com; alan.van_berg@jetco.com; alan_van_berg@jetco.com		Purchase Order No.:		Address: 9960 San Diego Mission Road San Diego, CA 92108		Sampler Name: <u>Scott</u>	
Phone: 624-922-1860 (mobile) Fax:		Project Name: SPPP Northwest		ATL Project Manager: Marlon Carrón		Date: 9/12/19	

ITEM #	SAMPLE ID	LOCATION / DESCRIPTION	MATRIX	SAMPLE TYPE (EPA/USEPA CODE)	CONTAINER TYPE		TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	ANALYSIS TEST	Full VOCs + Compounds List (EPA09)	TPHs (EPA01) (M025)	TPHs (EPA01) (M025) Total TPH (M025)	Comments
					# OF CONTAINERS	VOLUME (mL)							
1	INI-09-12	DILUENT	WW	G	DATE	TIME	1			X	X	X	N037432-01
2													
3													
4													
5													
6													
7													
8													
9													
10													

Authorized by Signature and Printed Name: <u>Scott M</u> 9/12/19 4:00 PM		Authorized by Signature and Printed Name: <u>MARLENE SANTOS</u> 9/12/19 4:00 PM		Term Beyond Time (TAT): <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> 5 Workdays <input type="checkbox"/> 10 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.		Special Instructions: 4.1°C / 5.2°C FLK # 2 COSO #: 9009/9010	
Authorized by Signature and Printed Name: <u>MARLENE SANTOS</u> 9/12/19 17:00		Authorized by Signature and Printed Name: <u>E. RODRIGUEZ</u> 9/12/19 17:00		Matrix: W = Water WW = Wastewater O = Oil P = Product S = Soil Others/Specify:		Container Type: T = Tube V = VOA P = Pbt A = Amber J = Jar S = Tedlar G = Glass M = Metal P = Plastic C = Can	
Authorized by Signature and Printed Name: <u>E. RODRIGUEZ</u> 9/12/19 18:00		Authorized by Signature and Printed Name: <u>Yeanderson Rodriguez</u> 9/13/19 8:53 am					

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: 9/12/2019 Workorder: N037432
 Rep sample Temp (Deg C): 4.1/5.2 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 9009/9010 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 type="checkbox"/> | No <input checked="" 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?
Was Client notified? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments: One out of 3 VOAs for TPH gas with headspace > 6 mm.

Checklist Completed By: YR YRT 9/13/2019

Reviewed By: ABC 9/17/2019

ASSET Laboratories

WORK ORDER Summary

13-Sep-19

WorkOrder: N037432

Client ID: CH2HI03

Project: SFPP Norwalk

QC Level: RTNE

Date Received: 9/12/2019

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N037432-001A	INF-09-12	9/12/2019 9:05:00 AM	9/20/2019	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	V-CA
N037432-001B			9/20/2019		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N037432-001C			9/20/2019		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			9/20/2019		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			9/20/2019		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N037432-002A	FOLDER	9/20/2019	9/20/2019		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB
			9/20/2019		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 #: 546189009

CPS



Ship To

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

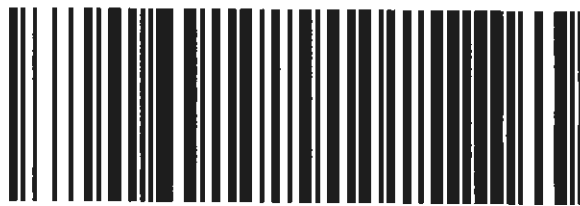
LAS VEGAS

COD: \$0.00

Weight: 0 lb(s)

Reference:

C89102A



8541947

Delivery Instructions:

HOLD FOR PICKUP

Signature Type: STANDARD

LVS NV891-C51

Print Date: 9/12/2019 5:51 PM

Package 2 of 3

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.

4.10
JN#2



800-322-5555
www.gso.com

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

Tracking #: 546189010

CPS



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

LAS VEGAS

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

C89102A



8541948

Delivery Instructions:
HOLD FOR PICKUP
Signature Type: STANDARD

LVS NV891-C51

Print Date: 9/12/2019 5:51 PM

Package 3 of 3

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.

5.20
sn# 2



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

October 01, 2019

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

**Re : KMEP Norwalk Biosparge Startup / 693142
MB187330 / 9110020**

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 09/11/19 13:30 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 Analytix.

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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
-----------	---------------	--------	-----	--------------	---------------

Fixed Gases - Field

SVM-2-5	9I10020-01	Vapor	5	09/10/19 07:28	09/11/19 13:30
SVM-1-5	9I10020-02	Vapor	5	09/10/19 07:53	09/11/19 13:30
SVM-1-15	9I10020-03	Vapor	5	09/10/19 07:58	09/11/19 13:30
SVM-15-7	9I10020-04	Vapor	5	09/10/19 08:37	09/11/19 13:30
SVM-15-22	9I10020-05	Vapor	5	09/10/19 08:39	09/11/19 13:30
SVM-15-15	9I10020-06	Vapor	5	09/10/19 08:40	09/11/19 13:30
SVM-6-7	9I10020-07	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-6-15	9I10020-08	Vapor	5	09/10/19 09:07	09/11/19 13:30
SVM-7-7	9I10020-09	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-7-13	9I10020-10	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-7-13DUP	9I10020-11	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-10-15	9I10020-12	Vapor	5	09/10/19 10:16	09/11/19 13:30
SVM-3-15	9I10020-14	Vapor	5	09/10/19 10:51	09/11/19 13:30
SVM-3-5	9I10020-15	Vapor	5	09/10/19 10:57	09/11/19 13:30
SVM-5-15	9I10020-16	Vapor	5	09/11/19 07:36	09/11/19 13:30
SVM-5-5	9I10020-17	Vapor	5	09/11/19 07:41	09/11/19 13:30
SVM-8-5	9I10020-18	Vapor	5	09/11/19 08:04	09/11/19 13:30
SVM-8-15	9I10020-19	Vapor	5	09/11/19 08:06	09/11/19 13:30
SVM-16-22	9I10020-20	Vapor	5	09/11/19 08:36	09/11/19 13:30

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-16-7	9I10020-21	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16	9I10020-22	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16DUP	9I10020-23	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-12-15	9I10020-25	Vapor	5	09/11/19 09:25	09/11/19 13:30
SVM-12-7	9I10020-26	Vapor	5	09/11/19 09:25	09/11/19 13:30
SVM-12-22	9I10020-27	Vapor	5	09/11/19 09:41	09/11/19 13:30
SVM-11-15	9I10020-28	Vapor	5	09/11/19 10:16	09/11/19 13:30
SVM-11-7	9I10020-29	Vapor	5	09/11/19 10:23	09/11/19 13:30
SVM-11-22	9I10020-30	Vapor	5	09/11/19 10:42	09/11/19 13:30
SVM-13-22.5	9I10020-31	Vapor	5	09/11/19 11:03	09/11/19 13:30
SVM-13-15.5	9I10020-32	Vapor	5	09/11/19 11:04	09/11/19 13:30
SVM-13-7	9I10020-33	Vapor	5	09/11/19 11:07	09/11/19 13:30
SVM-14R-8	9I10020-34	Vapor	5	09/11/19 11:22	09/11/19 13:30
SVM-14R-16	9I10020-35	Vapor	5	09/11/19 11:24	09/11/19 13:30
SVM-14R-22	9I10020-36	Vapor	5	09/11/19 11:30	09/11/19 13:30
SVM-14R-22DUP	9I10020-37	Vapor	5	09/11/19 11:30	09/11/19 13:30
<u>TO-15 (Mid Level)</u>					
SVM-2-5	9I10020-01	Vapor	5	09/10/19 07:28	09/11/19 13:30
SVM-1-5	9I10020-02	Vapor	5	09/10/19 07:53	09/11/19 13:30
SVM-1-15	9I10020-03	Vapor	5	09/10/19 07:58	09/11/19 13:30

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-15-7	9I10020-04	Vapor	5	09/10/19 08:37	09/11/19 13:30
SVM-15-22	9I10020-05	Vapor	5	09/10/19 08:39	09/11/19 13:30
SVM-15-15	9I10020-06	Vapor	5	09/10/19 08:40	09/11/19 13:30
SVM-6-7	9I10020-07	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-6-15	9I10020-08	Vapor	5	09/10/19 09:07	09/11/19 13:30
SVM-7-7	9I10020-09	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-7-13	9I10020-10	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-7-13DUP	9I10020-11	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-10-15	9I10020-12	Vapor	5	09/10/19 10:16	09/11/19 13:30
Ambient Air	9I10020-13	Vapor	5	09/10/19 10:08	09/11/19 13:30
SVM-3-15	9I10020-14	Vapor	5	09/10/19 10:51	09/11/19 13:30
SVM-3-5	9I10020-15	Vapor	5	09/10/19 10:57	09/11/19 13:30
SVM-5-15	9I10020-16	Vapor	5	09/11/19 07:36	09/11/19 13:30
SVM-5-5	9I10020-17	Vapor	5	09/11/19 07:41	09/11/19 13:30
SVM-8-5	9I10020-18	Vapor	5	09/11/19 08:04	09/11/19 13:30
SVM-8-15	9I10020-19	Vapor	5	09/11/19 08:06	09/11/19 13:30
SVM-16-22	9I10020-20	Vapor	5	09/11/19 08:36	09/11/19 13:30
SVM-16-7	9I10020-21	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16	9I10020-22	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16DUP	9I10020-23	Vapor	5	09/11/19 08:41	09/11/19 13:30

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Ambient Air	9I10020-24	Vapor	5	09/11/19 09:14	09/11/19 13:30
SVM-12-15	9I10020-25	Vapor	5	09/11/19 09:25	09/11/19 13:30
SVM-12-7	9I10020-26	Vapor	5	09/11/19 09:25	09/11/19 13:30
SVM-12-22	9I10020-27	Vapor	5	09/11/19 09:41	09/11/19 13:30
SVM-11-15	9I10020-28	Vapor	5	09/11/19 10:16	09/11/19 13:30
SVM-11-7	9I10020-29	Vapor	5	09/11/19 10:23	09/11/19 13:30
SVM-11-22	9I10020-30	Vapor	5	09/11/19 10:42	09/11/19 13:30
SVM-13-22.5	9I10020-31	Vapor	5	09/11/19 11:03	09/11/19 13:30
SVM-13-15.5	9I10020-32	Vapor	5	09/11/19 11:04	09/11/19 13:30
SVM-13-7	9I10020-33	Vapor	5	09/11/19 11:07	09/11/19 13:30
SVM-14R-8	9I10020-34	Vapor	5	09/11/19 11:22	09/11/19 13:30
SVM-14R-16	9I10020-35	Vapor	5	09/11/19 11:24	09/11/19 13:30
SVM-14R-22	9I10020-36	Vapor	5	09/11/19 11:30	09/11/19 13:30
SVM-14R-22DUP	9I10020-37	Vapor	5	09/11/19 11:30	09/11/19 13:30
<u>TO-3</u>					
SVM-2-5	9I10020-01	Vapor	5	09/10/19 07:28	09/11/19 13:30
SVM-1-5	9I10020-02	Vapor	5	09/10/19 07:53	09/11/19 13:30
SVM-1-15	9I10020-03	Vapor	5	09/10/19 07:58	09/11/19 13:30
SVM-15-7	9I10020-04	Vapor	5	09/10/19 08:37	09/11/19 13:30
SVM-15-22	9I10020-05	Vapor	5	09/10/19 08:39	09/11/19 13:30

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-15-15	9I10020-06	Vapor	5	09/10/19 08:40	09/11/19 13:30
SVM-6-7	9I10020-07	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-6-15	9I10020-08	Vapor	5	09/10/19 09:07	09/11/19 13:30
SVM-7-7	9I10020-09	Vapor	5	09/10/19 09:10	09/11/19 13:30
SVM-7-13	9I10020-10	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-7-13DUP	9I10020-11	Vapor	5	09/10/19 09:45	09/11/19 13:30
SVM-10-15	9I10020-12	Vapor	5	09/10/19 10:16	09/11/19 13:30
Ambient Air	9I10020-13	Vapor	5	09/10/19 10:08	09/11/19 13:30
SVM-3-15	9I10020-14	Vapor	5	09/10/19 10:51	09/11/19 13:30
SVM-3-5	9I10020-15	Vapor	5	09/10/19 10:57	09/11/19 13:30
SVM-5-15	9I10020-16	Vapor	5	09/11/19 07:36	09/11/19 13:30
SVM-5-5	9I10020-17	Vapor	5	09/11/19 07:41	09/11/19 13:30
SVM-8-5	9I10020-18	Vapor	5	09/11/19 08:04	09/11/19 13:30
SVM-8-15	9I10020-19	Vapor	5	09/11/19 08:06	09/11/19 13:30
SVM-16-22	9I10020-20	Vapor	5	09/11/19 08:36	09/11/19 13:30
SVM-16-7	9I10020-21	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16	9I10020-22	Vapor	5	09/11/19 08:41	09/11/19 13:30
SVM-16-16DUP	9I10020-23	Vapor	5	09/11/19 08:41	09/11/19 13:30
Ambient Air	9I10020-24	Vapor	5	09/11/19 09:14	09/11/19 13:30
SVM-12-15	9I10020-25	Vapor	5	09/11/19 09:25	09/11/19 13:30

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SVM-12-7	9I10020-26	Vapor	5	09/11/19 09:25	09/11/19 13:30
SVM-12-22	9I10020-27	Vapor	5	09/11/19 09:41	09/11/19 13:30
SVM-11-15	9I10020-28	Vapor	5	09/11/19 10:16	09/11/19 13:30
SVM-11-7	9I10020-29	Vapor	5	09/11/19 10:23	09/11/19 13:30
SVM-11-22	9I10020-30	Vapor	5	09/11/19 10:42	09/11/19 13:30
SVM-13-22.5	9I10020-31	Vapor	5	09/11/19 11:03	09/11/19 13:30
SVM-13-15.5	9I10020-32	Vapor	5	09/11/19 11:04	09/11/19 13:30
SVM-13-7	9I10020-33	Vapor	5	09/11/19 11:07	09/11/19 13:30
SVM-14R-8	9I10020-34	Vapor	5	09/11/19 11:22	09/11/19 13:30
SVM-14R-16	9I10020-35	Vapor	5	09/11/19 11:24	09/11/19 13:30
SVM-14R-22	9I10020-36	Vapor	5	09/11/19 11:30	09/11/19 13:30
SVM-14R-22DUP	9I10020-37	Vapor	5	09/11/19 11:30	09/11/19 13:30

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Fixed Gases by TCD								
Oxygen	SVM-2-5	18	0.20	% by Volume	2	09/23/19	09/23/19	EPA 3CM
Carbon Dioxide	SVM-2-5	0.60	0.20	% by Volume	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-1-5	19	0.20	% by Volume	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-1-15	17	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-15-7	23	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-15-22	18	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-15-15	20	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-6-7	19	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-6-15	19	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-7-7	20	0.20	% by Volume	2	09/24/19	09/24/19	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Carbon Dioxide	SVM-7-7	0.24	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-7-13	19	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-7-13	0.51	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-7-13DUP	19	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-7-13DUP	0.20	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-10-15	16	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-10-15	2.0	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-3-15	21	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-3-5	20	0.20	% by Volum e	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-5-15	20	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-5-5	20	0.20	% by Volum e	2	09/23/19	09/23/19	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-8-5	20	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-8-15	20	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-16-22	8.2	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Carbon Dioxide	SVM-16-22	8.6	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-16-7	20	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-16-16	19	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-16-16DUP	19	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-12-15	17	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Carbon Dioxide	SVM-12-15	0.44	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Oxygen	SVM-12-7	18	0.20	% by Volum e	2	09/23/19	09/23/19	EPA 3CM
Carbon Dioxide	SVM-12-7	1.3	0.20	% by Volum e	2	09/23/19	09/23/19	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-12-22	10	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-12-22	5.6	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-11-15	18	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-11-15	0.73	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-11-7	19	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-11-7	0.41	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-11-22	16	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-11-22	2.4	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-13-22.5	19	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-13-15.5	20	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-13-7	21	0.20	% by Volume	2	09/24/19	09/24/19	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Oxygen	SVM-14R-8	17	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Carbon Dioxide	SVM-14R-8	0.80	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-14R-16	19	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-14R-22	20	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM
Oxygen	SVM-14R-22DUP	20	0.20	% by Volume	2	09/24/19	09/24/19	EPA 3CM

VOCs by EPA TO-3

VOCs by GCMS EPA TO-15 (Mid Level)

Naphthalene	SVM-15-15	0.0059	0.0030	ug/L	1	09/11/19	09/11/19	TO-15
Naphthalene	SVM-7-13	0.0070	0.0030	ug/L	1	09/12/19	09/12/19	TO-15
Naphthalene	SVM-7-13DUP	0.0068	0.0030	ug/L	1	09/12/19	09/12/19	TO-15
Benzene	SVM-3-15	0.0035	0.0030	ug/L	1	09/12/19	09/12/19	TO-15
Naphthalene	SVM-3-15	0.0030	0.0030	ug/L	1	09/12/19	09/12/19	TO-15
Cyclohexane	SVM-16-22	0.022	0.020	ug/L	1	09/16/19	09/16/19	TO-15
Tetrachloroethylene (PCE)	SVM-16-22	0.015	0.010	ug/L	1	09/16/19	09/16/19	TO-15
2,2,4-Trimethylpentane	SVM-16-22	0.051	0.020	ug/L	1	09/16/19	09/16/19	TO-15
Benzene	SVM-12-22	0.0032	0.0030	ug/L	1	09/17/19	09/17/19	TO-15
Tetrachloroethylene (PCE)	SVM-12-22	0.020	0.010	ug/L	1	09/17/19	09/17/19	TO-15
Acetone	SVM-11-22	0.033	0.020	ug/L	1	09/18/19	09/18/19	TO-15
Naphthalene	SVM-11-22	0.024	0.0030	ug/L	1	09/18/19	09/18/19	TO-15
Tetrachloroethylene (PCE)	SVM-11-22	0.019	0.010	ug/L	1	09/18/19	09/18/19	TO-15

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

ANALYTICAL DATA SUMMARY

Analyte	Sample Name	Result	MRL	Units	Dilution	Prepared	Analyzed	Method
Naphthalene	SVM-14R-22DUP	0.0049	0.0030	ug/L	1	09/18/19	09/18/19	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-01	9I10020-02	9I10020-03	9I10020-04	
Client ID No:	SVM-2-5	SVM-1-5	SVM-1-15	SVM-15-7	
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	108%	100%	101%	99%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-05	9I10020-06	9I10020-07	9I10020-08	
Client ID No:	SVM-15-22	SVM-15-15	SVM-6-7	SVM-6-15	
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	101%	104%	102%	101%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/12/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/12/19	
AA ID No:	9I10020-09	9I10020-10	9I10020-11	9I10020-12	
Client ID No:	SVM-7-7	SVM-7-13	SVM-7-13DUP	SVM-10-15	
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%	102%	99%	102%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/11/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/16/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/16/19	
AA ID No:	9I10020-13	9I10020-14	9I10020-15	9I10020-16	
Client ID No:	Ambient Air	SVM-3-15	SVM-3-5	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	101%	102%	104%	103%	%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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/2019	09/11/2019	09/11/2019	09/11/2019	
Date Prepared:	09/16/19	09/16/19	09/16/19	09/16/19	
Date Analyzed:	09/16/19	09/16/19	09/16/19	09/16/19	
AA ID No:	9I10020-17	9I10020-18	9I10020-19	9I10020-20	
Client ID No:	SVM-5-5	SVM-8-5	SVM-8-15	SVM-16-22	
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%	99%	102%	107%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/16/19	09/17/19	09/17/19	09/17/19	
Date Analyzed:	09/16/19	09/17/19	09/17/19	09/17/19	
AA ID No:	9I10020-21	9I10020-22	9I10020-23	9I10020-24	
Client ID No:	SVM-16-7	SVM-16-16	SVM-16-16DUP	Ambient Air	
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%	102%	102%	101%	%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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/17/19	09/17/19	09/17/19	09/18/19	
Date Analyzed:	09/17/19	09/17/19	09/17/19	09/18/19	
AA ID No:	9I10020-25	9I10020-26	9I10020-27	9I10020-28	
Client ID No:	SVM-12-15	SVM-12-7	SVM-12-22	SVM-11-15	
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	103%	104%	105%	104%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-29	9I10020-30	9I10020-31	9I10020-32	
Client ID No:	SVM-11-7	SVM-11-22	SVM-13-22.5	SVM-13-15.5	
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	99%	128%	105%	100%	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-33	9I10020-34	9I10020-35	9I10020-36	
Client ID No:	SVM-13-7	SVM-14R-8	SVM-14R-16	SVM-14R-22	
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	106%	100%	102%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	
Date Prepared:	09/18/19	
Date Analyzed:	09/18/19	
AA ID No:	9I10020-37	
Client ID No:	SVM-14R-22DUP	
Matrix:	Vapor	
Dilution Factor:	1	MRL

TO-3 (TO-3)

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

Surrogates

		<u>%REC Limits</u>
4-Bromofluorobenzene	103%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-01	9I10020-02	9I10020-03	9I10020-04	
Client ID No:	SVM-2-5	SVM-1-5	SVM-1-15	SVM-15-7	
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:** MB187330
Project No: 693142 **Date Received:** 09/11/19
Project Name: KMEP Norwalk Biosparge Startup **Date Reported:** 10/01/19
Method: VOCs by GCMS EPA TO-15 (Mid Level) **Units:** ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19
AA ID No:	9I10020-01	9I10020-02	9I10020-03	9I10020-04
Client ID No:	SVM-2-5	SVM-1-5	SVM-1-15	SVM-15-7
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	<0.010	<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: MB187330
Project No: 693142	Date Received: 09/11/19
Project Name: KMEP Norwalk Biosparge Startup	Date Reported: 10/01/19
Method: VOCs by GCMS EPA TO-15 (Mid Level)	Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-01	9I10020-02	9I10020-03	9I10020-04	
Client ID No:	SVM-2-5	SVM-1-5	SVM-1-15	SVM-15-7	
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

<u>Surrogates</u>					<u>%REC Limits</u>
4-Bromofluorobenzene	110%	102%	101%	101%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-05	9I10020-06	9I10020-07	9I10020-08	
Client ID No:	SVM-15-22	SVM-15-15	SVM-6-7	SVM-6-15	
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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-05	9I10020-06	9I10020-07	9I10020-08	
Client ID No:	SVM-15-22	SVM-15-15	SVM-6-7	SVM-6-15	
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	0.0059	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Analyzed:	09/11/19	09/11/19	09/11/19	09/11/19	
AA ID No:	9I10020-05	9I10020-06	9I10020-07	9I10020-08	
Client ID No:	SVM-15-22	SVM-15-15	SVM-6-7	SVM-6-15	
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	100%	102%	102%	101%	<u>%REC Limits</u> 70-130
----------------------	------	------	------	------	------------------------------

Allen Aminian

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/12/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/12/19	
AA ID No:	9I10020-09	9I10020-10	9I10020-11	9I10020-12	
Client ID No:	SVM-7-7	SVM-7-13	SVM-7-13DUP	SVM-10-15	
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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/12/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/12/19	
AA ID No:	9I10020-09	9I10020-10	9I10020-11	9I10020-12	
Client ID No:	SVM-7-7	SVM-7-13	SVM-7-13DUP	SVM-10-15	
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	0.0070	0.0068	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/12/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/12/19	
AA ID No:	9I10020-09	9I10020-10	9I10020-11	9I10020-12	
Client ID No:	SVM-7-7	SVM-7-13	SVM-7-13DUP	SVM-10-15	
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	103%	101%	100%	102%	70-130

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client: CH2M Hill, Inc. **AA Project No:** MB187330
Project No: 693142 **Date Received:** 09/11/19
Project Name: KMEP Norwalk Biosparge Startup **Date Reported:** 10/01/19
Method: VOCs by GCMS EPA TO-15 (Mid Level) **Units:** ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/11/19
Date Prepared:	09/12/19	09/12/19	09/12/19	09/16/19
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/16/19
AA ID No:	9I10020-13	9I10020-14	9I10020-15	9I10020-16
Client ID No:	Ambient Air	SVM-3-15	SVM-3-5	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	<0.020	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	0.0035	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

	09/10/19	09/10/19	09/10/19	09/11/19	
Date Sampled:	09/10/19	09/10/19	09/10/19	09/11/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/16/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/16/19	
AA ID No:	9I10020-13	9I10020-14	9I10020-15	9I10020-16	
Client ID No:	Ambient Air	SVM-3-15	SVM-3-5	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	<0.20	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: MB187330
Project No: 693142	Date Received: 09/11/19
Project Name: KMEP Norwalk Biosparge Startup	Date Reported: 10/01/19
Method: VOCs by GCMS EPA TO-15 (Mid Level)	Units: ug/L

Date Sampled:	09/10/19	09/10/19	09/10/19	09/11/19	
Date Prepared:	09/12/19	09/12/19	09/12/19	09/16/19	
Date Analyzed:	09/12/19	09/12/19	09/12/19	09/16/19	
AA ID No:	9I10020-13	9I10020-14	9I10020-15	9I10020-16	
Client ID No:	Ambient Air	SVM-3-15	SVM-3-5	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

Surrogates					%REC Limits
4-Bromofluorobenzene	101%	103%	104%	106%	70-130

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/2019	09/11/2019	09/11/2019	09/11/2019	
Date Prepared:	09/16/19	09/16/19	09/16/19	09/16/19	
Date Analyzed:	09/16/19	09/16/19	09/16/19	09/16/19	
AA ID No:	9I10020-17	9I10020-18	9I10020-19	9I10020-20	
Client ID No:	SVM-5-5	SVM-8-5	SVM-8-15	SVM-16-22	
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	0.022	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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/2019	09/11/2019	09/11/2019	09/11/2019	MRL
Date Prepared:	09/16/19	09/16/19	09/16/19	09/16/19	
Date Analyzed:	09/16/19	09/16/19	09/16/19	09/16/19	
AA ID No:	9I10020-17	9I10020-18	9I10020-19	9I10020-20	
Client ID No:	SVM-5-5	SVM-8-5	SVM-8-15	SVM-16-22	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	

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	0.015	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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/2019	09/11/2019	09/11/2019	09/11/2019	
Date Prepared:	09/16/19	09/16/19	09/16/19	09/16/19	
Date Analyzed:	09/16/19	09/16/19	09/16/19	09/16/19	
AA ID No:	9I10020-17	9I10020-18	9I10020-19	9I10020-20	
Client ID No:	SVM-5-5	SVM-8-5	SVM-8-15	SVM-16-22	
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	0.051	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					%REC Limits
4-Bromofluorobenzene	107%	101%	103%	108%	70-130

Allen Aminian

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19
Date Prepared:	09/16/19	09/17/19	09/17/19	09/17/19
Date Analyzed:	09/16/19	09/17/19	09/17/19	09/17/19
AA ID No:	9I10020-21	9I10020-22	9I10020-23	9I10020-24
Client ID No:	SVM-16-7	SVM-16-16	SVM-16-16DUP	Ambient Air
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: MB187330
Project No: 693142	Date Received: 09/11/19
Project Name: KMEP Norwalk Biosparge Startup	Date Reported: 10/01/19
Method: VOCs by GCMS EPA TO-15 (Mid Level)	Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/16/19	09/17/19	09/17/19	09/17/19	
Date Analyzed:	09/16/19	09/17/19	09/17/19	09/17/19	
AA ID No:	9I10020-21	9I10020-22	9I10020-23	9I10020-24	
Client ID No:	SVM-16-7	SVM-16-16	SVM-16-16DUP	Ambient Air	
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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19
Date Prepared:	09/16/19	09/17/19	09/17/19	09/17/19
Date Analyzed:	09/16/19	09/17/19	09/17/19	09/17/19
AA ID No:	9I10020-21	9I10020-22	9I10020-23	9I10020-24
Client ID No:	SVM-16-7	SVM-16-16	SVM-16-16DUP	Ambient Air
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	105%	103%	105%	103%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/17/19	09/17/19	09/17/19	09/18/19	
Date Analyzed:	09/17/19	09/17/19	09/17/19	09/18/19	
AA ID No:	9I10020-25	9I10020-26	9I10020-27	9I10020-28	
Client ID No:	SVM-12-15	SVM-12-7	SVM-12-22	SVM-11-15	
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	0.0032	<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.
Project No: 693142
Project Name: KMEP Norwalk Biosparge Startup
Method: VOCs by GCMS EPA TO-15 (Mid Level)

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/17/19	09/17/19	09/17/19	09/18/19	
Date Analyzed:	09/17/19	09/17/19	09/17/19	09/18/19	
AA ID No:	9I10020-25	9I10020-26	9I10020-27	9I10020-28	
Client ID No:	SVM-12-15	SVM-12-7	SVM-12-22	SVM-11-15	
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	0.020	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/17/19	09/17/19	09/17/19	09/18/19	
Date Analyzed:	09/17/19	09/17/19	09/17/19	09/18/19	
AA ID No:	9I10020-25	9I10020-26	9I10020-27	9I10020-28	
Client ID No:	SVM-12-15	SVM-12-7	SVM-12-22	SVM-11-15	
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	104%	104%	105%	107%	<u>%REC Limits</u> 70-130
----------------------	------	------	------	------	------------------------------

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

Client:	CH2M Hill, Inc.	AA Project No:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-29	9I10020-30	9I10020-31	9I10020-32	
Client ID No:	SVM-11-7	SVM-11-22	SVM-13-22.5	SVM-13-15.5	
Matrix:	Vapor	Vapor	Vapor	Vapor	
Dilution Factor:	1	1	1	1	MRL

TO-15 (Mid Level) (TO-15)

Acetone	<0.020	0.033	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-29	9I10020-30	9I10020-31	9I10020-32	
Client ID No:	SVM-11-7	SVM-11-22	SVM-13-22.5	SVM-13-15.5	
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	<0.020	<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	0.024	<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	0.019	<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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-29	9I10020-30	9I10020-31	9I10020-32	
Client ID No:	SVM-11-7	SVM-11-22	SVM-13-22.5	SVM-13-15.5	
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	101%	130%	105%	103%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

	09/11/19	09/11/19	09/11/19	09/11/19	
Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9110020-33	9110020-34	9110020-35	9110020-36	
Client ID No:	SVM-13-7	SVM-14R-8	SVM-14R-16	SVM-14R-22	
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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-33	9I10020-34	9I10020-35	9I10020-36	
Client ID No:	SVM-13-7	SVM-14R-8	SVM-14R-16	SVM-14R-22	
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:	MB187330
Project No:	693142	Date Received:	09/11/19
Project Name:	KMEP Norwalk Biosparge Startup	Date Reported:	10/01/19
Method:	VOCs by GCMS EPA TO-15 (Mid Level)	Units:	ug/L

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/18/19	09/18/19	09/18/19	09/18/19	
Date Analyzed:	09/18/19	09/18/19	09/18/19	09/18/19	
AA ID No:	9I10020-33	9I10020-34	9I10020-35	9I10020-36	
Client ID No:	SVM-13-7	SVM-14R-8	SVM-14R-16	SVM-14R-22	
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					%REC Limits
4-Bromofluorobenzene	107%	102%	105%	104%	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	
Date Prepared:	09/18/19	
Date Analyzed:	09/18/19	
AA ID No:	9I10020-37	
Client ID No:	SVM-14R-22DUP	
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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	
Date Prepared:	09/18/19	
Date Analyzed:	09/18/19	
AA ID No:	9I10020-37	
Client ID No:	SVM-14R-22DUP	
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	0.0049	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: ug/L

Date Sampled:	09/11/19	
Date Prepared:	09/18/19	
Date Analyzed:	09/18/19	
AA ID No:	9I10020-37	
Client ID No:	SVM-14R-22DUP	
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

<u>Surrogates</u>		<u>%REC Limits</u>
4-Bromofluorobenzene	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: Fixed Gases by TCD

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/23/19	09/23/19	09/24/19	09/24/19	
Date Analyzed:	09/23/19	09/23/19	09/24/19	09/24/19	
AA ID No:	9I10020-01	9I10020-02	9I10020-03	9I10020-04	
Client ID No:	SVM-2-5	SVM-1-5	SVM-1-15	SVM-15-7	
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	19	17	23	0.10
Carbon Dioxide	0.60	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/24/19	09/24/19	09/24/19	09/24/19	
Date Analyzed:	09/24/19	09/24/19	09/24/19	09/24/19	
AA ID No:	9I10020-05	9I10020-06	9I10020-07	9I10020-08	
Client ID No:	SVM-15-22	SVM-15-15	SVM-6-7	SVM-6-15	
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	18	20	19	19	0.10
Carbon Dioxide	<0.20	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/10/19	09/10/19	09/10/19	09/10/19	
Date Prepared:	09/24/19	09/24/19	09/24/19	09/24/19	
Date Analyzed:	09/24/19	09/24/19	09/24/19	09/24/19	
AA ID No:	9I10020-09	9I10020-10	9I10020-11	9I10020-12	
Client ID No:	SVM-7-7	SVM-7-13	SVM-7-13DUP	SVM-10-15	
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	20	19	19	16	0.10
Carbon Dioxide	0.24	0.51	0.20	2.0	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

	09/10/19	09/10/19	09/11/19	09/11/19	
Date Sampled:	09/10/19	09/10/19	09/11/19	09/11/19	
Date Prepared:	09/24/19	09/24/19	09/23/19	09/23/19	
Date Analyzed:	09/24/19	09/24/19	09/23/19	09/23/19	
AA ID No:	9I10020-14	9I10020-15	9I10020-16	9I10020-17	
Client ID No:	SVM-3-15	SVM-3-5	SVM-5-15	SVM-5-5	
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	21	20	20	20	0.10
Carbon Dioxide	<0.20	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/11/2019	09/11/2019	09/11/2019	09/11/2019	
Date Prepared:	09/23/19	09/23/19	09/23/19	09/23/19	
Date Analyzed:	09/23/19	09/23/19	09/23/19	09/23/19	
AA ID No:	9I10020-18	9I10020-19	9I10020-20	9I10020-21	
Client ID No:	SVM-8-5	SVM-8-15	SVM-16-22	SVM-16-7	
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	20	20	8.2	20	0.10
Carbon Dioxide	<0.20	<0.20	8.6	<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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/23/19	09/23/19	09/23/19	09/23/19	
Date Analyzed:	09/23/19	09/23/19	09/23/19	09/23/19	
AA ID No:	9I10020-22	9I10020-23	9I10020-25	9I10020-26	
Client ID No:	SVM-16-16	SVM-16-16DUP	SVM-12-15	SVM-12-7	
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	19	19	17	18	0.10
Carbon Dioxide	<0.20	<0.20	0.44	1.3	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/24/19	09/24/19	09/24/19	09/24/19	
Date Analyzed:	09/24/19	09/24/19	09/24/19	09/24/19	
AA ID No:	9I10020-27	9I10020-28	9I10020-29	9I10020-30	
Client ID No:	SVM-12-22	SVM-11-15	SVM-11-7	SVM-11-22	
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	10	18	19	16	0.10
Carbon Dioxide	5.6	0.73	0.41	2.4	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/11/19	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/24/19	09/24/19	09/24/19	09/24/19	
Date Analyzed:	09/24/19	09/24/19	09/24/19	09/24/19	
AA ID No:	9I10020-31	9I10020-32	9I10020-33	9I10020-34	
Client ID No:	SVM-13-22.5	SVM-13-15.5	SVM-13-7	SVM-14R-8	
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	19	20	21	17	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	0.80	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19
Units: % by Volume

Date Sampled:	09/11/19	09/11/19	09/11/19	
Date Prepared:	09/24/19	09/24/19	09/24/19	
Date Analyzed:	09/24/19	09/24/19	09/24/19	
AA ID No:	9I10020-35	9I10020-36	9I10020-37	
Client ID No:	SVM-14R-16	SVM-14R-22	SVM-14R-22DU P	
Matrix:	Vapor	Vapor	Vapor	
Dilution Factor:	2	2	2	MRL

Fixed Gases - Field (EPA 3CM)

Methane	<0.20	<0.20	<0.20	0.10
Oxygen	19	20	20	0.10
Carbon Dioxide	<0.20	<0.20	<0.20	0.10

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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
VOCs by EPA TO-3 - Quality Control										
<i>Batch B9I2325 - *** DEFAULT PREP ***</i>										
Blank (B9I2325-BLK1)				Prepared & Analyzed: 09/16/19						
Gasoline Range Organics (GRO)	<20	20	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0356</i>		<i>ug/L</i>	<i>0.036</i>	<i>99.4</i>	<i>70-130</i>				
LCS (B9I2325-BS1)				Prepared & Analyzed: 09/17/19						
Gasoline Range Organics (GRO)	0.951	20	ug/L	0.82	116	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0359</i>		<i>ug/L</i>	<i>0.036</i>	<i>100</i>	<i>70-130</i>				
LCS Dup (B9I2325-BSD1)				Prepared & Analyzed: 09/17/19						
Gasoline Range Organics (GRO)	0.957	20	ug/L	0.82	117	70-130	0.656	30		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0359</i>		<i>ug/L</i>	<i>0.036</i>	<i>100</i>	<i>70-130</i>				
<i>Batch B9I2424 - *** DEFAULT PREP ***</i>										
Blank (B9I2424-BLK1)				Prepared & Analyzed: 09/11/19						
Gasoline Range Organics (GRO)	<20	20	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0334</i>		<i>ug/L</i>	<i>0.036</i>	<i>93.4</i>	<i>70-130</i>				
LCS (B9I2424-BS1)				Prepared & Analyzed: 09/12/19						
Gasoline Range Organics (GRO)	0.755	20	ug/L	0.82	92.3	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0364</i>		<i>ug/L</i>	<i>0.036</i>	<i>102</i>	<i>70-130</i>				
LCS Dup (B9I2424-BSD1)				Prepared & Analyzed: 09/12/19						
Gasoline Range Organics (GRO)	0.604	20	ug/L	0.82	73.8	70-130	22.3	30		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0354</i>		<i>ug/L</i>	<i>0.036</i>	<i>99.0</i>	<i>70-130</i>				
<i>Batch B9I2522 - *** DEFAULT PREP ***</i>										
Blank (B9I2522-BLK1)				Prepared & Analyzed: 09/18/19						
Gasoline Range Organics (GRO)	<20	20	ug/L							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0339</i>		<i>ug/L</i>	<i>0.036</i>	<i>94.6</i>	<i>70-130</i>				
LCS (B9I2522-BS1)				Prepared & Analyzed: 09/19/19						
Gasoline Range Organics (GRO)	0.959	20	ug/L	0.82	117	70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0351</i>		<i>ug/L</i>	<i>0.036</i>	<i>98.0</i>	<i>70-130</i>				
LCS Dup (B9I2522-BSD1)				Prepared & Analyzed: 09/19/19						
Gasoline Range Organics (GRO)	0.796	20	ug/L	0.82	97.3	70-130	18.5	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912522 - *** DEFAULT PREP ***</i>										
LCS Dup (B912522-BSD1) Continued										
Prepared & Analyzed: 09/19/19										
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0351		ug/L	0.036		98.0	70-130			
VOCs by GCMS EPA TO-15 (Mid Level) - Quality Control										
<i>Batch B911222 - *** DEFAULT PREP ***</i>										
Blank (B911222-BLK1)										
Prepared & Analyzed: 09/11/19										
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							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>										
Blank (B911222-BLK1) Continued										
Prepared & Analyzed: 09/11/19										
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							
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							

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>									
Blank (B911222-BLK1) Continued					Prepared & Analyzed: 09/11/19				
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>0.137</i>		<i>ug/L</i>	<i>0.14</i>		<i>95.4 70-130</i>			
LCS (B911222-BS1)					Prepared & Analyzed: 09/11/19				
Acetone	0.0749	0.020	ug/L	0.095		78.8 70-130		30	
Benzene	0.115	0.0030	ug/L	0.13		89.9 70-130		30	
Benzyl chloride	0.218	0.020	ug/L	0.21		105 70-130		30	
Bromodichloromethane	0.274	0.020	ug/L	0.27		102 70-130		30	
Bromoform	0.542	0.020	ug/L	0.41		131 70-130		30	
Bromomethane	0.114	0.020	ug/L	0.16		73.6 70-130		30	
2-Butanone (MEK)	0.0999	0.020	ug/L	0.12		84.7 70-130		30	
Carbon Disulfide	0.111	0.020	ug/L	0.12		89.1 70-130		30	
Carbon Tetrachloride	0.268	0.020	ug/L	0.25		106 70-130		30	
Chlorobenzene	0.218	0.020	ug/L	0.18		118 70-130		30	
Chloroethane	0.0923	0.020	ug/L	0.11		87.5 70-130		30	
Chloroform	0.182	0.020	ug/L	0.20		93.2 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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>										
LCS (B911222-BS1) Continued						Prepared & Analyzed: 09/11/19				
Chloromethane	0.0833	0.020	ug/L	0.083		101	70-130		30	
Dibromochloromethane	0.361	0.020	ug/L	0.34		106	70-130		30	
1,2-Dibromoethane (EDB)	0.318	0.020	ug/L	0.31		103	70-130		30	
1,2-Dichlorobenzene	0.283	0.020	ug/L	0.24		118	70-130		30	
1,3-Dichlorobenzene	0.252	0.020	ug/L	0.24		105	70-130		30	
1,4-Dichlorobenzene	0.287	0.020	ug/L	0.24		119	70-130		30	
Dichlorodifluoromethane (R12)	0.224	0.020	ug/L	0.20		113	70-130		30	
1,1-Dichloroethane	0.146	0.020	ug/L	0.16		90.0	70-130		30	
1,2-Dichloroethane (EDC)	0.150	0.0040	ug/L	0.16		92.7	70-130		30	
cis-1,2-Dichloroethylene	0.139	0.020	ug/L	0.16		87.9	70-130		30	
1,1-Dichloroethylene	0.144	0.020	ug/L	0.16		91.0	70-130		30	
trans-1,2-Dichloroethylene	0.142	0.020	ug/L	0.16		89.6	70-130		30	
1,2-Dichloropropane	0.182	0.020	ug/L	0.18		98.5	70-130		30	
trans-1,3-Dichloropropylene	0.175	0.020	ug/L	0.18		96.5	70-130		30	
cis-1,3-Dichloropropylene	0.176	0.020	ug/L	0.18		96.7	70-130		30	
Dichlorotetrafluoroethane	0.301	0.020	ug/L	0.28		108	70-130		30	
Ethylbenzene	0.193	0.020	ug/L	0.17		111	70-130		30	
4-Ethyltoluene	0.243	0.020	ug/L	0.20		124	70-130		30	
Hexachlorobutadiene	0.548	0.020	ug/L	0.43		129	70-130		30	
2-Hexanone (MBK)	0.191	0.020	ug/L	0.16		117	70-130		30	
Isopropanol (IPA)	0.0889	0.20	ug/L	0.098		90.5	70-130		30	
Methylene Chloride	0.118	0.020	ug/L	0.14		85.2	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.206	0.020	ug/L	0.16		126	70-130		30	
Styrene	0.196	0.020	ug/L	0.17		115	70-130		30	
1,1,2,2-Tetrachloroethane	0.196	0.020	ug/L	0.27		71.3	70-130		30	
Tetrachloroethylene (PCE)	0.271	0.010	ug/L	0.27		99.9	70-130		30	
Toluene	0.149	0.020	ug/L	0.15		98.7	70-130		30	
1,2,4-Trichlorobenzene	0.370	0.020	ug/L	0.30		125	70-130		30	
1,1,2-Trichloroethane	0.220	0.020	ug/L	0.22		101	70-130		30	
1,1,1-Trichloroethane	0.209	0.020	ug/L	0.22		96.0	70-130		30	
Trichloroethylene (TCE)	0.214	0.020	ug/L	0.21		99.6	70-130		30	
Trichlorofluoromethane (R11)	0.223	0.020	ug/L	0.22		99.1	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>										
LCS (B911222-BS1) Continued						Prepared & Analyzed: 09/11/19				
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.307	0.020	ug/L	0.31		100	70-130		30	
1,3,5-Trimethylbenzene	0.224	0.020	ug/L	0.20		114	70-130		30	
1,2,4-Trimethylbenzene	0.223	0.020	ug/L	0.20		113	70-130		30	
Vinyl acetate	0.121	0.020	ug/L	0.14		86.0	70-130		30	
Vinyl chloride	0.0935	0.020	ug/L	0.10		91.5	70-130		30	
o-Xylene	0.191	0.020	ug/L	0.17		110	70-130		30	
m,p-Xylenes	0.386	0.020	ug/L	0.35		111	70-130		30	
1,2,3-Trichloropropane	0.250	0.020	ug/L	0.24		104	70-130		30	
sec-Butylbenzene	0.250	0.020	ug/L	0.22		114	70-130		30	
Isopropylbenzene	0.211	0.020	ug/L	0.20		107	70-130		30	
n-Propylbenzene	0.179	0.020	ug/L	0.20		90.8	70-130		30	
4-Isopropyltoluene	0.268	0.020	ug/L	0.22		122	70-130		30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.167</i>		<i>ug/L</i>	<i>0.14</i>		<i>116</i>	<i>70-130</i>			
LCS Dup (B911222-BSD1)						Prepared & Analyzed: 09/12/19				
Acetone	0.0819	0.020	ug/L	0.095		86.2	70-130	8.97	30	
Benzene	0.128	0.0030	ug/L	0.13		100	70-130	10.7	30	
Benzyl chloride	0.205	0.020	ug/L	0.21		98.7	70-130	6.35	30	
Bromodichloromethane	0.299	0.020	ug/L	0.27		111	70-130	8.45	30	
Bromoform	0.532	0.020	ug/L	0.41		129	70-130	1.81	30	
Bromomethane	0.134	0.020	ug/L	0.16		86.2	70-130	15.7	30	
2-Butanone (MEK)	0.110	0.020	ug/L	0.12		93.5	70-130	9.91	30	
Carbon Disulfide	0.121	0.020	ug/L	0.12		97.1	70-130	8.57	30	
Carbon Tetrachloride	0.293	0.020	ug/L	0.25		116	70-130	8.85	30	
Chlorobenzene	0.222	0.020	ug/L	0.18		121	70-130	2.11	30	
Chloroethane	0.114	0.020	ug/L	0.11		108	70-130	20.9	30	
Chloroform	0.200	0.020	ug/L	0.20		102	70-130	9.45	30	
Chloromethane	0.0881	0.020	ug/L	0.083		107	70-130	5.62	30	
Dibromochloromethane	0.394	0.020	ug/L	0.34		116	70-130	8.91	30	
1,2-Dibromoethane (EDB)	0.341	0.020	ug/L	0.31		111	70-130	7.09	30	
1,2-Dichlorobenzene	0.275	0.020	ug/L	0.24		114	70-130	2.97	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>										
LCS Dup (B911222-BSD1) Continued										
Prepared & Analyzed: 09/12/19										
1,3-Dichlorobenzene	0.248	0.020	ug/L	0.24		103	70-130	1.61	30	
1,4-Dichlorobenzene	0.284	0.020	ug/L	0.24		118	70-130	0.989	30	
Dichlorodifluoromethane (R12)	0.255	0.020	ug/L	0.20		129	70-130	12.9	30	
1,1-Dichloroethane	0.163	0.020	ug/L	0.16		101	70-130	11.2	30	
1,2-Dichloroethane (EDC)	0.165	0.0040	ug/L	0.16		102	70-130	9.28	30	
cis-1,2-Dichloroethylene	0.157	0.020	ug/L	0.16		98.9	70-130	11.7	30	
1,1-Dichloroethylene	0.162	0.020	ug/L	0.16		102	70-130	11.5	30	
trans-1,2-Dichloroethylene	0.159	0.020	ug/L	0.16		100	70-130	11.0	30	
1,2-Dichloropropane	0.193	0.020	ug/L	0.18		105	70-130	6.08	30	
trans-1,3-Dichloropropylene	0.189	0.020	ug/L	0.18		104	70-130	7.84	30	
cis-1,3-Dichloropropylene	0.190	0.020	ug/L	0.18		105	70-130	7.80	30	
Dichlorotetrafluoroethane	0.343	0.020	ug/L	0.28		123	70-130	13.2	30	
Ethylbenzene	0.195	0.020	ug/L	0.17		112	70-130	1.01	30	
4-Ethyltoluene	0.242	0.020	ug/L	0.20		123	70-130	0.588	30	
Hexachlorobutadiene	0.544	0.020	ug/L	0.43		128	70-130	0.761	30	
2-Hexanone (MBK)	0.192	0.020	ug/L	0.16		117	70-130	0.556	30	
Isopropanol (IPA)	0.0965	0.20	ug/L	0.098		98.2	70-130	8.17	30	
Methylene Chloride	0.134	0.020	ug/L	0.14		96.6	70-130	12.5	30	
4-Methyl-2-pentanone (MIBK)	0.210	0.020	ug/L	0.16		128	70-130	1.87	30	
Styrene	0.190	0.020	ug/L	0.17		112	70-130	2.76	30	
1,1,2,2-Tetrachloroethane	0.200	0.020	ug/L	0.27		73.0	70-130	2.32	30	
Tetrachloroethylene (PCE)	0.300	0.010	ug/L	0.27		110	70-130	9.96	30	
Toluene	0.164	0.020	ug/L	0.15		109	70-130	10.0	30	
1,2,4-Trichlorobenzene	0.380	0.020	ug/L	0.30		128	70-130	2.65	30	
1,1,2-Trichloroethane	0.241	0.020	ug/L	0.22		110	70-130	9.02	30	
1,1,1-Trichloroethane	0.238	0.020	ug/L	0.22		109	70-130	12.9	30	
Trichloroethylene (TCE)	0.229	0.020	ug/L	0.21		106	70-130	6.55	30	
Trichlorofluoromethane (R11)	0.248	0.020	ug/L	0.22		110	70-130	10.6	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.334	0.020	ug/L	0.31		109	70-130	8.42	30	
1,3,5-Trimethylbenzene	0.230	0.020	ug/L	0.20		117	70-130	2.77	30	
1,2,4-Trimethylbenzene	0.223	0.020	ug/L	0.20		113	70-130	0.132	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***

LCS Dup (B911222-BSD1) Continued

Prepared & Analyzed: 09/12/19

Vinyl acetate	0.135	0.020	ug/L	0.14	96.0	70-130	10.9	30		
Vinyl chloride	0.104	0.020	ug/L	0.10	101	70-130	10.3	30		
o-Xylene	0.194	0.020	ug/L	0.17	112	70-130	1.69	30		
m,p-Xylenes	0.390	0.020	ug/L	0.35	112	70-130	1.02	30		
1,2,3-Trichloropropane	0.245	0.020	ug/L	0.24	102	70-130	1.97	30		
sec-Butylbenzene	0.251	0.020	ug/L	0.22	114	70-130	0.416	30		
Isopropylbenzene	0.209	0.020	ug/L	0.20	106	70-130	0.609	30		
n-Propylbenzene	0.185	0.020	ug/L	0.20	94.0	70-130	3.46	30		
4-Isopropyltoluene	0.270	0.020	ug/L	0.22	123	70-130	0.694	30		

Surrogate: 4-Bromofluorobenzene 0.151 ug/L 0.14 106 70-130

Duplicate (B911222-DUP1)

Source: 9109021-01

Prepared & Analyzed: 09/11/19

Acetone	<0.020	0.020	ug/L					30		
Allyl chloride	<0.020	0.020	ug/L					30		
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L					30		
Benzene	<0.0030	0.0030	ug/L					30		
Benzyl chloride	<0.020	0.020	ug/L					30		
Bromodichloromethane	<0.020	0.020	ug/L					30		
Bromoform	<0.020	0.020	ug/L					30		
Bromomethane	<0.020	0.020	ug/L					30		
1,3-Butadiene	<0.020	0.020	ug/L					30		
2-Butanone (MEK)	<0.020	0.020	ug/L					30		
tert-Butyl Alcohol (TBA)	<20	20	ug/L					30		
Carbon Disulfide	<0.020	0.020	ug/L					30		
Carbon Tetrachloride	<0.020	0.020	ug/L					30		
Chlorobenzene	<0.020	0.020	ug/L					30		
Chloroethane	<0.020	0.020	ug/L					30		
Chloroform	<0.020	0.020	ug/L					30		
Chloromethane	<0.020	0.020	ug/L					30		
Cyclohexane	<0.020	0.020	ug/L					30		
Dibromochloromethane	<0.020	0.020	ug/L					30		
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L					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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***</i>										
Duplicate (B911222-DUP1) Continued Source: 9109021-01 Prepared & Analyzed: 09/11/19										
1,2-Dichlorobenzene	<0.020	0.020	ug/L						30	
1,3-Dichlorobenzene	<0.020	0.020	ug/L						30	
1,4-Dichlorobenzene	<0.020	0.020	ug/L						30	
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L						30	
1,1-Dichloroethane	<0.020	0.020	ug/L						30	
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L						30	
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L						30	
1,1-Dichloroethylene	<0.020	0.020	ug/L						30	
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L						30	
1,2-Dichloropropane	<0.020	0.020	ug/L						30	
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L						30	
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L						30	
Dichlorotetrafluoroethane	<0.020	0.020	ug/L						30	
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L						30	
1,4-Dioxane	<0.020	0.020	ug/L						30	
Ethanol	<0.020	0.020	ug/L						30	
Ethyl Acetate	<0.020	0.020	ug/L						30	
Ethylbenzene	<0.020	0.020	ug/L						30	
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L						30	
4-Ethyltoluene	<0.020	0.020	ug/L						30	
Heptane	<0.020	0.020	ug/L						30	
Hexachlorobutadiene	<0.020	0.020	ug/L						30	
n-Hexane	0.0619	0.020	ug/L		0.0597			3.54	30	
2-Hexanone (MBK)	<0.020	0.020	ug/L						30	
Isopropanol (IPA)	<0.20	0.20	ug/L						30	
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L						30	
Methylene Chloride	<0.020	0.020	ug/L						30	
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L						30	
Naphthalene	<0.0030	0.0030	ug/L						30	
Propylene	<0.020	0.020	ug/L						30	
Styrene	<0.020	0.020	ug/L						30	
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L						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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B911222 - *** DEFAULT PREP ***

Duplicate (B911222-DUP1) Continued Source: 9109021-01 Prepared & Analyzed: 09/11/19

Tetrachloroethylene (PCE)	<0.010	0.010	ug/L						30	
Tetrahydrofuran (THF)	<0.020	0.020	ug/L						30	
Toluene	<0.020	0.020	ug/L						30	
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L						30	
1,1,2-Trichloroethane	<0.020	0.020	ug/L						30	
1,1,1-Trichloroethane	<0.020	0.020	ug/L						30	
Trichloroethylene (TCE)	<0.020	0.020	ug/L						30	
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L						30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L						30	
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L						30	
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L						30	
2,2,4-Trimethylpentane	<0.020	0.020	ug/L						30	
Vinyl acetate	<0.020	0.020	ug/L						30	
Vinyl bromide	<0.020	0.020	ug/L						30	
Vinyl chloride	<0.020	0.020	ug/L						30	
o-Xylene	<0.020	0.020	ug/L						30	
m,p-Xylenes	<0.020	0.020	ug/L						30	
1,2,3-Trichloropropane	<0.020	0.020	ug/L						30	
sec-Butylbenzene	<0.020	0.020	ug/L						30	
Isopropylbenzene	<0.020	0.020	ug/L						30	
n-Propylbenzene	<0.020	0.020	ug/L						30	
4-Isopropyltoluene	<0.020	0.020	ug/L						30	
n-Butylbenzene	<0.020	0.020	ug/L						30	

Surrogate: 4-Bromofluorobenzene 0.158 ug/L 0.14 111 70-130

Batch B912015 - *** DEFAULT PREP ***

Blank (B912015-BLK1) Prepared & Analyzed: 09/16/19

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							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
Blank (B9I2015-BLK1) Continued										
Prepared & Analyzed: 09/16/19										
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							
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							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
Blank (B9I2015-BLK1) Continued										
Prepared & Analyzed: 09/16/19										
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							
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							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
Blank (B9I2015-BLK1) Continued										
Prepared & Analyzed: 09/16/19										
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>0.150</i>		<i>ug/L</i>	<i>0.14</i>		<i>105</i>	<i>70-130</i>			
LCS (B9I2015-BS1)										
Prepared & Analyzed: 09/16/19										
Acetone	0.0844	0.020	ug/L	0.095		88.9	70-130		30	
Benzene	0.128	0.0030	ug/L	0.13		100	70-130		30	
Benzyl chloride	0.232	0.020	ug/L	0.21		112	70-130		30	
Bromodichloromethane	0.283	0.020	ug/L	0.27		105	70-130		30	
Bromoform	0.495	0.020	ug/L	0.41		120	70-130		30	
Bromomethane	0.133	0.020	ug/L	0.16		85.9	70-130		30	
2-Butanone (MEK)	0.113	0.020	ug/L	0.12		95.6	70-130		30	
Carbon Disulfide	0.124	0.020	ug/L	0.12		99.6	70-130		30	
Carbon Tetrachloride	0.272	0.020	ug/L	0.25		108	70-130		30	
Chlorobenzene	0.201	0.020	ug/L	0.18		109	70-130		30	
Chloroethane	0.111	0.020	ug/L	0.11		105	70-130		30	
Chloroform	0.201	0.020	ug/L	0.20		103	70-130		30	
Chloromethane	0.0890	0.020	ug/L	0.083		108	70-130		30	
Dibromochloromethane	0.363	0.020	ug/L	0.34		107	70-130		30	
1,2-Dibromoethane (EDB)	0.319	0.020	ug/L	0.31		104	70-130		30	
1,2-Dichlorobenzene	0.259	0.020	ug/L	0.24		108	70-130		30	
1,3-Dichlorobenzene	0.236	0.020	ug/L	0.24		98.1	70-130		30	
1,4-Dichlorobenzene	0.259	0.020	ug/L	0.24		108	70-130		30	
Dichlorodifluoromethane (R12)	0.187	0.020	ug/L	0.20		94.7	70-130		30	
1,1-Dichloroethane	0.165	0.020	ug/L	0.16		102	70-130		30	
1,2-Dichloroethane (EDC)	0.164	0.0040	ug/L	0.16		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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
LCS (B9I2015-BS1) Continued										
Prepared & Analyzed: 09/16/19										
cis-1,2-Dichloroethylene	0.154	0.020	ug/L	0.16		96.8	70-130		30	
1,1-Dichloroethylene	0.166	0.020	ug/L	0.16		104	70-130		30	
trans-1,2-Dichloroethylene	0.158	0.020	ug/L	0.16		99.3	70-130		30	
1,2-Dichloropropane	0.187	0.020	ug/L	0.18		101	70-130		30	
trans-1,3-Dichloropropylene	0.180	0.020	ug/L	0.18		99.4	70-130		30	
cis-1,3-Dichloropropylene	0.182	0.020	ug/L	0.18		100	70-130		30	
Dichlorotetrafluoroethane	0.250	0.020	ug/L	0.28		89.4	70-130		30	
Ethylbenzene	0.176	0.020	ug/L	0.17		101	70-130		30	
4-Ethyltoluene	0.210	0.020	ug/L	0.20		107	70-130		30	
Hexachlorobutadiene	0.545	0.020	ug/L	0.43		128	70-130		30	
2-Hexanone (MBK)	0.228	0.020	ug/L	0.16		139	70-130		30	
Isopropanol (IPA)	0.122	0.20	ug/L	0.098		124	70-130		30	
Methylene Chloride	0.131	0.020	ug/L	0.14		94.0	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.212	0.020	ug/L	0.16		130	70-130		30	
Styrene	0.176	0.020	ug/L	0.17		103	70-130		30	
1,1,2,2-Tetrachloroethane	0.176	0.020	ug/L	0.27		64.2	70-130		30	
Tetrachloroethylene (PCE)	0.279	0.010	ug/L	0.27		103	70-130		30	
Toluene	0.155	0.020	ug/L	0.15		103	70-130		30	
1,2,4-Trichlorobenzene	0.382	0.020	ug/L	0.30		129	70-130		30	
1,1,2-Trichloroethane	0.228	0.020	ug/L	0.22		105	70-130		30	
1,1,1-Trichloroethane	0.238	0.020	ug/L	0.22		109	70-130		30	
Trichloroethylene (TCE)	0.216	0.020	ug/L	0.21		101	70-130		30	
Trichlorofluoromethane (R11)	0.248	0.020	ug/L	0.22		110	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.339	0.020	ug/L	0.31		111	70-130		30	
1,3,5-Trimethylbenzene	0.196	0.020	ug/L	0.20		99.5	70-130		30	
1,2,4-Trimethylbenzene	0.204	0.020	ug/L	0.20		104	70-130		30	
Vinyl acetate	0.135	0.020	ug/L	0.14		95.7	70-130		30	
Vinyl chloride	0.109	0.020	ug/L	0.10		107	70-130		30	
o-Xylene	0.174	0.020	ug/L	0.17		100	70-130		30	
m,p-Xylenes	0.347	0.020	ug/L	0.35		100	70-130		30	
1,2,3-Trichloropropane	0.270	0.020	ug/L	0.24		112	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
LCS (B9I2015-BS1) Continued					Prepared & Analyzed: 09/16/19					
sec-Butylbenzene	0.232	0.020	ug/L	0.22		105	70-130		30	
Isopropylbenzene	0.208	0.020	ug/L	0.20		106	70-130		30	
n-Propylbenzene	0.174	0.020	ug/L	0.20		88.7	70-130		30	
4-Isopropyltoluene	0.250	0.020	ug/L	0.22		114	70-130		30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.145</i>		<i>ug/L</i>	<i>0.14</i>		<i>101</i>	<i>70-130</i>			
LCS Dup (B9I2015-BSD1)					Prepared & Analyzed: 09/16/19					
Acetone	0.0826	0.020	ug/L	0.095		87.0	70-130	2.19	30	
Benzene	0.126	0.0030	ug/L	0.13		98.8	70-130	1.21	30	
Benzyl chloride	0.225	0.020	ug/L	0.21		109	70-130	2.90	30	
Bromodichloromethane	0.288	0.020	ug/L	0.27		107	70-130	1.76	30	
Bromoform	0.492	0.020	ug/L	0.41		119	70-130	0.608	30	
Bromomethane	0.134	0.020	ug/L	0.16		86.2	70-130	0.320	30	
2-Butanone (MEK)	0.125	0.020	ug/L	0.12		106	70-130	10.0	30	
Carbon Disulfide	0.122	0.020	ug/L	0.12		98.1	70-130	1.52	30	
Carbon Tetrachloride	0.273	0.020	ug/L	0.25		108	70-130	0.138	30	
Chlorobenzene	0.198	0.020	ug/L	0.18		107	70-130	1.39	30	
Chloroethane	0.108	0.020	ug/L	0.11		102	70-130	2.94	30	
Chloroform	0.198	0.020	ug/L	0.20		101	70-130	1.72	30	
Chloromethane	0.0865	0.020	ug/L	0.083		105	70-130	2.90	30	
Dibromochloromethane	0.366	0.020	ug/L	0.34		107	70-130	0.748	30	
1,2-Dibromoethane (EDB)	0.316	0.020	ug/L	0.31		103	70-130	0.677	30	
1,2-Dichlorobenzene	0.255	0.020	ug/L	0.24		106	70-130	1.47	30	
1,3-Dichlorobenzene	0.232	0.020	ug/L	0.24		96.3	70-130	1.83	30	
1,4-Dichlorobenzene	0.256	0.020	ug/L	0.24		106	70-130	1.12	30	
Dichlorodifluoromethane (R12)	0.189	0.020	ug/L	0.20		95.6	70-130	0.999	30	
1,1-Dichloroethane	0.161	0.020	ug/L	0.16		99.7	70-130	2.11	30	
1,2-Dichloroethane (EDC)	0.164	0.0040	ug/L	0.16		101	70-130	0.00	30	
cis-1,2-Dichloroethylene	0.149	0.020	ug/L	0.16		94.1	70-130	2.83	30	
1,1-Dichloroethylene	0.164	0.020	ug/L	0.16		103	70-130	1.13	30	
trans-1,2-Dichloroethylene	0.155	0.020	ug/L	0.16		98.0	70-130	1.39	30	
1,2-Dichloropropane	0.186	0.020	ug/L	0.18		101	70-130	0.719	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
LCS Dup (B9I2015-BSD1) Continued										
Prepared & Analyzed: 09/16/19										
trans-1,3-Dichloropropylene	0.182	0.020	ug/L	0.18		100	70-130	0.802	30	
cis-1,3-Dichloropropylene	0.182	0.020	ug/L	0.18		100	70-130	0.0249	30	
Dichlorotetrafluoroethane	0.270	0.020	ug/L	0.28		96.5	70-130	7.64	30	
Ethylbenzene	0.175	0.020	ug/L	0.17		101	70-130	0.322	30	
4-Ethyltoluene	0.210	0.020	ug/L	0.20		107	70-130	0.140	30	
Hexachlorobutadiene	0.514	0.020	ug/L	0.43		121	70-130	5.78	30	
2-Hexanone (MBK)	0.230	0.020	ug/L	0.16		140	70-130	0.715	30	
Isopropanol (IPA)	0.117	0.20	ug/L	0.098		119	70-130	4.63	30	
Methylene Chloride	0.127	0.020	ug/L	0.14		91.2	70-130	3.05	30	
4-Methyl-2-pentanone (MIBK)	0.211	0.020	ug/L	0.16		129	70-130	0.619	30	
Styrene	0.177	0.020	ug/L	0.17		104	70-130	0.629	30	
1,1,2,2-Tetrachloroethane	0.180	0.020	ug/L	0.27		65.7	70-130	2.35	30	
Tetrachloroethylene (PCE)	0.277	0.010	ug/L	0.27		102	70-130	0.806	30	
Toluene	0.157	0.020	ug/L	0.15		104	70-130	1.23	30	
1,2,4-Trichlorobenzene	0.376	0.020	ug/L	0.30		127	70-130	1.68	30	
1,1,2-Trichloroethane	0.228	0.020	ug/L	0.22		104	70-130	0.143	30	
1,1,1-Trichloroethane	0.229	0.020	ug/L	0.22		105	70-130	3.79	30	
Trichloroethylene (TCE)	0.216	0.020	ug/L	0.21		100	70-130	0.149	30	
Trichlorofluoromethane (R11)	0.243	0.020	ug/L	0.22		108	70-130	2.11	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.327	0.020	ug/L	0.31		107	70-130	3.63	30	
1,3,5-Trimethylbenzene	0.206	0.020	ug/L	0.20		105	70-130	4.95	30	
1,2,4-Trimethylbenzene	0.200	0.020	ug/L	0.20		102	70-130	1.82	30	
Vinyl acetate	0.131	0.020	ug/L	0.14		92.9	70-130	2.94	30	
Vinyl chloride	0.110	0.020	ug/L	0.10		107	70-130	0.888	30	
o-Xylene	0.171	0.020	ug/L	0.17		98.7	70-130	1.48	30	
m,p-Xylenes	0.345	0.020	ug/L	0.35		99.4	70-130	0.527	30	
1,2,3-Trichloropropane	0.267	0.020	ug/L	0.24		111	70-130	1.33	30	
sec-Butylbenzene	0.229	0.020	ug/L	0.22		104	70-130	1.19	30	
Isopropylbenzene	0.207	0.020	ug/L	0.20		105	70-130	0.427	30	
n-Propylbenzene	0.178	0.020	ug/L	0.20		90.4	70-130	1.98	30	
4-Isopropyltoluene	0.247	0.020	ug/L	0.22		112	70-130	1.31	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
LCS Dup (B9I2015-BSD1) Continued										
Prepared & Analyzed: 09/16/19										
Surrogate: 4-Bromofluorobenzene	0.146		ug/L	0.14		102	70-130			
Duplicate (B9I2015-DUP1)										
Source: 9I06009-02 Prepared & Analyzed: 09/17/19										
Acetone	<0.020	0.020	ug/L						30	
Allyl chloride	<0.020	0.020	ug/L						30	
tert-Amyl-Methyl Ether (TAME)	<0.020	0.020	ug/L						30	
Benzene	<0.0030	0.0030	ug/L						30	
Benzyl chloride	<0.020	0.020	ug/L						30	
Bromodichloromethane	<0.020	0.020	ug/L						30	
Bromoform	<0.020	0.020	ug/L						30	
Bromomethane	<0.020	0.020	ug/L						30	
1,3-Butadiene	<0.020	0.020	ug/L						30	
2-Butanone (MEK)	<0.020	0.020	ug/L						30	
tert-Butyl Alcohol (TBA)	<20	20	ug/L						30	
Carbon Disulfide	<0.020	0.020	ug/L						30	
Carbon Tetrachloride	<0.020	0.020	ug/L						30	
Chlorobenzene	<0.020	0.020	ug/L						30	
Chloroethane	<0.020	0.020	ug/L						30	
Chloroform	<0.020	0.020	ug/L						30	
Chloromethane	<0.020	0.020	ug/L						30	
Cyclohexane	<0.020	0.020	ug/L						30	
Dibromochloromethane	<0.020	0.020	ug/L						30	
1,2-Dibromoethane (EDB)	<0.020	0.020	ug/L						30	
1,2-Dichlorobenzene	<0.020	0.020	ug/L						30	
1,3-Dichlorobenzene	<0.020	0.020	ug/L						30	
1,4-Dichlorobenzene	<0.020	0.020	ug/L						30	
Dichlorodifluoromethane (R12)	<0.020	0.020	ug/L						30	
1,1-Dichloroethane	<0.020	0.020	ug/L						30	
1,2-Dichloroethane (EDC)	<0.0040	0.0040	ug/L						30	
cis-1,2-Dichloroethylene	<0.020	0.020	ug/L						30	
1,1-Dichloroethylene	<0.020	0.020	ug/L						30	
trans-1,2-Dichloroethylene	<0.020	0.020	ug/L						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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
Duplicate (B9I2015-DUP1) Continued Source: 9I06009-02 Prepared & Analyzed: 09/17/19										
1,2-Dichloropropane	<0.020	0.020	ug/L						30	
trans-1,3-Dichloropropylene	<0.020	0.020	ug/L						30	
cis-1,3-Dichloropropylene	<0.020	0.020	ug/L						30	
Dichlorotetrafluoroethane	<0.020	0.020	ug/L						30	
Diisopropyl ether (DIPE)	<0.020	0.020	ug/L						30	
1,4-Dioxane	<0.020	0.020	ug/L						30	
Ethanol	<0.020	0.020	ug/L						30	
Ethyl Acetate	<0.020	0.020	ug/L						30	
Ethylbenzene	<0.020	0.020	ug/L						30	
Ethyl-tert-Butyl Ether (ETBE)	<0.020	0.020	ug/L						30	
4-Ethyltoluene	<0.020	0.020	ug/L						30	
Heptane	<0.020	0.020	ug/L						30	
Hexachlorobutadiene	<0.020	0.020	ug/L						30	
n-Hexane	<0.020	0.020	ug/L						30	
2-Hexanone (MBK)	<0.020	0.020	ug/L						30	
Isopropanol (IPA)	<0.20	0.20	ug/L						30	
Methyl-tert-Butyl Ether (MTBE)	<0.020	0.020	ug/L						30	
Methylene Chloride	<0.020	0.020	ug/L						30	
4-Methyl-2-pentanone (MIBK)	<0.020	0.020	ug/L						30	
Naphthalene	<0.0030	0.0030	ug/L						30	
Propylene	<0.020	0.020	ug/L						30	
Styrene	<0.020	0.020	ug/L						30	
1,1,2,2-Tetrachloroethane	<0.020	0.020	ug/L						30	
Tetrachloroethylene (PCE)	<0.010	0.010	ug/L						30	
Tetrahydrofuran (THF)	<0.020	0.020	ug/L						30	
Toluene	<0.020	0.020	ug/L						30	
1,2,4-Trichlorobenzene	<0.020	0.020	ug/L						30	
1,1,2-Trichloroethane	<0.020	0.020	ug/L						30	
1,1,1-Trichloroethane	<0.020	0.020	ug/L						30	
Trichloroethylene (TCE)	<0.020	0.020	ug/L						30	
Trichlorofluoromethane (R11)	<0.020	0.020	ug/L						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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2015 - *** DEFAULT PREP ***</i>										
Duplicate (B9I2015-DUP1) Continued Source: 9I06009-02 Prepared & Analyzed: 09/17/19										
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.020	0.020	ug/L						30	
1,3,5-Trimethylbenzene	<0.020	0.020	ug/L						30	
1,2,4-Trimethylbenzene	<0.020	0.020	ug/L						30	
2,2,4-Trimethylpentane	<0.020	0.020	ug/L						30	
Vinyl acetate	<0.020	0.020	ug/L						30	
Vinyl bromide	<0.020	0.020	ug/L						30	
Vinyl chloride	<0.020	0.020	ug/L						30	
o-Xylene	<0.020	0.020	ug/L						30	
m,p-Xylenes	<0.020	0.020	ug/L						30	
1,2,3-Trichloropropane	<0.020	0.020	ug/L						30	
sec-Butylbenzene	<0.020	0.020	ug/L						30	
Isopropylbenzene	<0.020	0.020	ug/L						30	
n-Propylbenzene	<0.020	0.020	ug/L						30	
4-Isopropyltoluene	<0.020	0.020	ug/L						30	
n-Butylbenzene	<0.020	0.020	ug/L						30	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.148</i>		<i>ug/L</i>	<i>0.14</i>		<i>103</i>	<i>70-130</i>			
<i>Batch B9I2425 - *** DEFAULT PREP ***</i>										
Blank (B9I2425-BLK1) Prepared & Analyzed: 09/18/19										
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							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912425 - *** DEFAULT PREP ***</i>										
Blank (B912425-BLK1) Continued										
Prepared & Analyzed: 09/18/19										
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							
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							

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912425 - *** DEFAULT PREP ***</i>										
Blank (B912425-BLK1) Continued										
Prepared & Analyzed: 09/18/19										
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							
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							

Allen Aminian
QA/QC Manager

**LABORATORY ANALYSIS RESULTS**

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912425 - *** DEFAULT PREP ***</i>										
Blank (B912425-BLK1) Continued										
Prepared & Analyzed: 09/18/19										
Surrogate: 4-Bromofluorobenzene	0.137		ug/L	0.14		95.9	70-130			
LCS (B912425-BS1)										
Prepared & Analyzed: 09/18/19										
Acetone	0.0727	0.020	ug/L	0.095		76.5	70-130		30	
Benzene	0.110	0.0030	ug/L	0.13		85.8	70-130		30	
Benzyl chloride	0.176	0.020	ug/L	0.21		84.9	70-130		30	
Bromodichloromethane	0.256	0.020	ug/L	0.27		95.4	70-130		30	
Bromoform	0.425	0.020	ug/L	0.41		103	70-130		30	
Bromomethane	0.116	0.020	ug/L	0.16		74.8	70-130		30	
2-Butanone (MEK)	0.110	0.020	ug/L	0.12		93.1	70-130		30	
Carbon Disulfide	0.105	0.020	ug/L	0.12		84.5	70-130		30	
Carbon Tetrachloride	0.248	0.020	ug/L	0.25		98.5	70-130		30	
Chlorobenzene	0.173	0.020	ug/L	0.18		94.1	70-130		30	
Chloroethane	0.0919	0.020	ug/L	0.11		87.0	70-130		30	
Chloroform	0.176	0.020	ug/L	0.20		90.3	70-130		30	
Chloromethane	0.0747	0.020	ug/L	0.083		90.4	70-130		30	
Dibromochloromethane	0.326	0.020	ug/L	0.34		95.6	70-130		30	
1,2-Dibromoethane (EDB)	0.282	0.020	ug/L	0.31		91.8	70-130		30	
1,2-Dichlorobenzene	0.207	0.020	ug/L	0.24		85.9	70-130		30	
1,3-Dichlorobenzene	0.192	0.020	ug/L	0.24		80.0	70-130		30	
1,4-Dichlorobenzene	0.207	0.020	ug/L	0.24		86.2	70-130		30	
Dichlorodifluoromethane (R12)	0.208	0.020	ug/L	0.20		105	70-130		30	
1,1-Dichloroethane	0.142	0.020	ug/L	0.16		87.4	70-130		30	
1,2-Dichloroethane (EDC)	0.140	0.0040	ug/L	0.16		86.7	70-130		30	
cis-1,2-Dichloroethylene	0.134	0.020	ug/L	0.16		84.6	70-130		30	
1,1-Dichloroethylene	0.142	0.020	ug/L	0.16		89.6	70-130		30	
trans-1,2-Dichloroethylene	0.136	0.020	ug/L	0.16		86.0	70-130		30	
1,2-Dichloropropane	0.167	0.020	ug/L	0.18		90.5	70-130		30	
trans-1,3-Dichloropropylene	0.158	0.020	ug/L	0.18		86.9	70-130		30	
cis-1,3-Dichloropropylene	0.163	0.020	ug/L	0.18		89.6	70-130		30	
Dichlorotetrafluoroethane	0.285	0.020	ug/L	0.28		102	70-130		30	
Ethylbenzene	0.152	0.020	ug/L	0.17		87.7	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B9I2425 - *** DEFAULT PREP ***

LCS (B9I2425-BS1) Continued

Prepared & Analyzed: 09/18/19

4-Ethyltoluene	0.177	0.020	ug/L	0.20		90.2	70-130		30	
Hexachlorobutadiene	0.373	0.020	ug/L	0.43		87.6	70-130		30	
2-Hexanone (MBK)	0.198	0.020	ug/L	0.16		121	70-130		30	
Isopropanol (IPA)	0.106	0.20	ug/L	0.098		108	70-130		30	
Methylene Chloride	0.119	0.020	ug/L	0.14		85.8	70-130		30	
4-Methyl-2-pentanone (MIBK)	0.187	0.020	ug/L	0.16		114	70-130		30	
Styrene	0.150	0.020	ug/L	0.17		88.0	70-130		30	
1,1,2,2-Tetrachloroethane	0.154	0.020	ug/L	0.27		56.0	70-130		30	
Tetrachloroethylene (PCE)	0.247	0.010	ug/L	0.27		90.8	70-130		30	
Toluene	0.140	0.020	ug/L	0.15		92.6	70-130		30	
1,2,4-Trichlorobenzene	0.261	0.020	ug/L	0.30		88.0	70-130		30	
1,1,2-Trichloroethane	0.202	0.020	ug/L	0.22		92.7	70-130		30	
1,1,1-Trichloroethane	0.205	0.020	ug/L	0.22		93.8	70-130		30	
Trichloroethylene (TCE)	0.195	0.020	ug/L	0.21		90.7	70-130		30	
Trichlorofluoromethane (R11)	0.219	0.020	ug/L	0.22		97.6	70-130		30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.290	0.020	ug/L	0.31		94.6	70-130		30	
1,3,5-Trimethylbenzene	0.167	0.020	ug/L	0.20		85.0	70-130		30	
1,2,4-Trimethylbenzene	0.168	0.020	ug/L	0.20		85.5	70-130		30	
Vinyl acetate	0.116	0.020	ug/L	0.14		82.6	70-130		30	
Vinyl chloride	0.0936	0.020	ug/L	0.10		91.5	70-130		30	
o-Xylene	0.151	0.020	ug/L	0.17		86.7	70-130		30	
m,p-Xylenes	0.300	0.020	ug/L	0.35		86.3	70-130		30	
1,2,3-Trichloropropane	0.232	0.020	ug/L	0.24		96.0	70-130		30	
sec-Butylbenzene	0.192	0.020	ug/L	0.22		87.4	70-130		30	
Isopropylbenzene	0.179	0.020	ug/L	0.20		90.9	70-130		30	
n-Propylbenzene	0.153	0.020	ug/L	0.20		77.7	70-130		30	
4-Isopropyltoluene	0.205	0.020	ug/L	0.22		93.4	70-130		30	

Surrogate: 4-Bromofluorobenzene 0.143 ug/L 0.14 99.9 70-130

LCS Dup (B9I2425-BSD1)

Prepared & Analyzed: 09/19/19

Acetone	0.0817	0.020	ug/L	0.095		86.0	70-130	11.7	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912425 - *** DEFAULT PREP ***

LCS Dup (B912425-BSD1) Continued

Prepared & Analyzed: 09/19/19

Benzene	0.122	0.0030	ug/L	0.13		95.4	70-130	10.5	30	
Benzyl chloride	0.179	0.020	ug/L	0.21		86.6	70-130	2.07	30	
Bromodichloromethane	0.266	0.020	ug/L	0.27		99.1	70-130	3.83	30	
Bromoform	0.459	0.020	ug/L	0.41		111	70-130	7.78	30	
Bromomethane	0.124	0.020	ug/L	0.16		79.8	70-130	6.43	30	
2-Butanone (MEK)	0.122	0.020	ug/L	0.12		104	70-130	10.8	30	
Carbon Disulfide	0.126	0.020	ug/L	0.12		101	70-130	17.8	30	
Carbon Tetrachloride	0.262	0.020	ug/L	0.25		104	70-130	5.63	30	
Chlorobenzene	0.189	0.020	ug/L	0.18		103	70-130	8.62	30	
Chloroethane	0.102	0.020	ug/L	0.11		96.8	70-130	10.6	30	
Chloroform	0.189	0.020	ug/L	0.20		96.6	70-130	6.69	30	
Chloromethane	0.0922	0.020	ug/L	0.083		112	70-130	21.1	30	
Dibromochloromethane	0.349	0.020	ug/L	0.34		102	70-130	6.79	30	
1,2-Dibromoethane (EDB)	0.288	0.020	ug/L	0.31		93.7	70-130	2.10	30	
1,2-Dichlorobenzene	0.217	0.020	ug/L	0.24		90.3	70-130	4.99	30	
1,3-Dichlorobenzene	0.222	0.020	ug/L	0.24		92.5	70-130	14.4	30	
1,4-Dichlorobenzene	0.230	0.020	ug/L	0.24		95.5	70-130	10.2	30	
Dichlorodifluoromethane (R12)	0.213	0.020	ug/L	0.20		108	70-130	2.12	30	
1,1-Dichloroethane	0.157	0.020	ug/L	0.16		97.3	70-130	10.6	30	
1,2-Dichloroethane (EDC)	0.153	0.0040	ug/L	0.16		94.6	70-130	8.66	30	
cis-1,2-Dichloroethylene	0.144	0.020	ug/L	0.16		90.8	70-130	7.13	30	
1,1-Dichloroethylene	0.160	0.020	ug/L	0.16		101	70-130	12.0	30	
trans-1,2-Dichloroethylene	0.148	0.020	ug/L	0.16		93.1	70-130	8.01	30	
1,2-Dichloropropane	0.177	0.020	ug/L	0.18		95.6	70-130	5.53	30	
trans-1,3-Dichloropropylene	0.165	0.020	ug/L	0.18		90.9	70-130	4.50	30	
cis-1,3-Dichloropropylene	0.171	0.020	ug/L	0.18		94.4	70-130	5.16	30	
Dichlorotetrafluoroethane	0.301	0.020	ug/L	0.28		108	70-130	5.49	30	
Ethylbenzene	0.167	0.020	ug/L	0.17		96.1	70-130	9.17	30	
4-Ethyltoluene	0.185	0.020	ug/L	0.20		93.9	70-130	4.02	30	
Hexachlorobutadiene	0.389	0.020	ug/L	0.43		91.2	70-130	4.03	30	
2-Hexanone (MBK)	0.202	0.020	ug/L	0.16		123	70-130	1.70	30	
Isopropanol (IPA)	0.106	0.20	ug/L	0.098		108	70-130	0.0697	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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

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 B912425 - *** DEFAULT PREP ***

LCS Dup (B912425-BSD1) Continued

Prepared & Analyzed: 09/19/19

Methylene Chloride	0.144	0.020	ug/L	0.14		104	70-130	18.9	30	
4-Methyl-2-pentanone (MIBK)	0.222	0.020	ug/L	0.16		135	70-130	16.8	30	
Styrene	0.161	0.020	ug/L	0.17		94.6	70-130	7.23	30	
1,1,2,2-Tetrachloroethane	0.163	0.020	ug/L	0.27		59.3	70-130	5.86	30	
Tetrachloroethylene (PCE)	0.260	0.010	ug/L	0.27		95.7	70-130	5.17	30	
Toluene	0.147	0.020	ug/L	0.15		97.8	70-130	5.41	30	
1,2,4-Trichlorobenzene	0.267	0.020	ug/L	0.30		89.9	70-130	2.14	30	
1,1,2-Trichloroethane	0.215	0.020	ug/L	0.22		98.5	70-130	6.12	30	
1,1,1-Trichloroethane	0.224	0.020	ug/L	0.22		102	70-130	8.76	30	
Trichloroethylene (TCE)	0.205	0.020	ug/L	0.21		95.5	70-130	5.18	30	
Trichlorofluoromethane (R11)	0.239	0.020	ug/L	0.22		106	70-130	8.39	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	0.311	0.020	ug/L	0.31		102	70-130	7.09	30	
1,3,5-Trimethylbenzene	0.184	0.020	ug/L	0.20		93.6	70-130	9.63	30	
1,2,4-Trimethylbenzene	0.180	0.020	ug/L	0.20		91.3	70-130	6.59	30	
Vinyl acetate	0.128	0.020	ug/L	0.14		90.7	70-130	9.29	30	
Vinyl chloride	0.102	0.020	ug/L	0.10		99.6	70-130	8.40	30	
o-Xylene	0.165	0.020	ug/L	0.17		94.9	70-130	8.98	30	
m,p-Xylenes	0.314	0.020	ug/L	0.35		90.5	70-130	4.74	30	
1,2,3-Trichloropropane	0.246	0.020	ug/L	0.24		102	70-130	6.09	30	
sec-Butylbenzene	0.203	0.020	ug/L	0.22		92.6	70-130	5.72	30	
Isopropylbenzene	0.192	0.020	ug/L	0.20		97.9	70-130	7.44	30	
n-Propylbenzene	0.160	0.020	ug/L	0.20		81.2	70-130	4.31	30	
4-Isopropyltoluene	0.216	0.020	ug/L	0.22		98.3	70-130	5.14	30	

Surrogate: 4-Bromofluorobenzene 0.144 ug/L 0.14 101 70-130

Fixed Gases by TCD - Quality Control

Batch B912323 - *** DEFAULT PREP ***

Blank (B912323-BLK1)

Prepared & Analyzed: 09/23/19

Methane	<0.10	0.10	% by Volume							
---------	-------	------	-------------	--	--	--	--	--	--	--

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9I2323 - *** DEFAULT PREP ***</i>										
Blank (B9I2323-BLK1) Continued Prepared & Analyzed: 09/23/19										
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B9I2323-BS1) Prepared & Analyzed: 09/23/19										
Methane	4.21	0.20	% by Volume	5.0		84.1	75-125			
Oxygen	7.77	0.20	% by Volume	4.0		194	75-125			
Carbon Dioxide	13.6	0.20	% by Volume	15		90.4	75-125			
LCS Dup (B9I2323-BSD1) Prepared & Analyzed: 09/23/19										
Methane	4.40	0.20	% by Volume	5.0		88.0	75-125	4.55	30	
Oxygen	7.84	0.20	% by Volume	4.0		196	75-125	0.820	30	
Carbon Dioxide	13.1	0.20	% by Volume	15		87.3	75-125	3.51	30	
Duplicate (B9I2323-DUP1) Source: 9I10020-01 Prepared & Analyzed: 09/23/19										
Methane	<0.20	0.20	% by Volume		<0.20				30	
Oxygen	<0.20	0.20	% by Volume		17.5				30	
Carbon Dioxide	<0.20	0.20	% by Volume		0.602				30	
<i>Batch B9I2603 - *** DEFAULT PREP ***</i>										
Blank (B9I2603-BLK1) Prepared & Analyzed: 09/24/19										
Methane	<0.10	0.10	% by Volume							
Oxygen	0.519	0.10	% by Volume							

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9I2603 - *** DEFAULT PREP ***</i>										
Blank (B9I2603-BLK1) Continued Prepared & Analyzed: 09/24/19										
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B9I2603-BS1) Prepared & Analyzed: 09/24/19										
Methane	4.84	0.20	% by Volume	5.0		96.8	75-125			
Oxygen	4.17	0.20	% by Volume	4.0		104	75-125			
Carbon Dioxide	15.1	0.20	% by Volume	15		101	75-125			
LCS Dup (B9I2603-BSD1) Prepared & Analyzed: 09/24/19										
Methane	4.45	0.20	% by Volume	5.0		89.0	75-125	8.44	30	
Oxygen	5.74	0.20	% by Volume	4.0		143	75-125	31.6	30	
Carbon Dioxide	14.3	0.20	% by Volume	15		95.3	75-125	5.80	30	
Duplicate (B9I2603-DUP1) Source: 9I10020-10 Prepared & Analyzed: 09/24/19										
Methane	<0.20	0.20	% by Volume		<0.20				30	
Oxygen	18.5	0.20	% by Volume		18.5			0.129	30	
Carbon Dioxide	0.598	0.20	% by Volume		0.510			15.9	30	
<i>Batch B9I2609 - *** DEFAULT PREP ***</i>										
Blank (B9I2609-BLK1) Prepared & Analyzed: 09/23/19										
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B9I2609-BS1) Prepared & Analyzed: 09/23/19										

Allen Aminian
QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9I2609 - *** DEFAULT PREP ***</i>										
Methane	4.77	0.10	% by Volume	5.0		95.3	75-125			
Oxygen	4.19	0.10	% by Volume	4.0		105	75-125			
Carbon Dioxide	14.7	0.10	% by Volume	15		98.0	75-125			
LCS Dup (B9I2609-BSD1)				Prepared & Analyzed: 09/23/19						
Methane	4.73	0.10	% by Volume	5.0		94.5	75-125	0.822	30	
Oxygen	4.36	0.10	% by Volume	4.0		109	75-125	3.98	30	
Carbon Dioxide	14.2	0.10	% by Volume	15		94.7	75-125	3.46	30	
Duplicate (B9I2609-DUP1)				Source: 9I10020-22 Prepared & Analyzed: 09/23/19						
Methane	<0.20	0.20	% by Volume		<0.20				30	
Oxygen	19.2	0.20	% by Volume		18.7			2.44	30	
Carbon Dioxide	<0.20	0.20	% by Volume		<0.20				30	
<i>Batch B9I2610 - *** DEFAULT PREP ***</i>										
Blank (B9I2610-BLK1)				Prepared & Analyzed: 09/24/19						
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B9I2610-BS1)				Prepared & Analyzed: 09/24/19						
Methane	4.73	0.10	% by Volume	5.0		94.5	75-125			
Oxygen	4.25	0.10	% by Volume	4.0		106	75-125			

Allen Aminian
 QA/QC Manager



LABORATORY ANALYSIS RESULTS

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

AA Project No: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
<i>Batch B9I2610 - *** DEFAULT PREP ***</i>										
LCS (B9I2610-BS1) Continued					Prepared & Analyzed: 09/24/19					
Carbon Dioxide	14.2	0.10	% by Volume	15		95.0	75-125			
LCS Dup (B9I2610-BSD1)					Prepared & Analyzed: 09/24/19					
Methane	4.78	0.10	% by Volume	5.0		95.6	75-125	1.11	30	
Oxygen	4.27	0.10	% by Volume	4.0		107	75-125	0.516	30	
Carbon Dioxide	14.6	0.10	% by Volume	15		97.3	75-125	2.43	30	
Duplicate (B9I2610-DUP1)					Source: 9I10020-36 Prepared & Analyzed: 09/24/19					
Methane	<0.20	0.20	% by Volume		<0.20				30	
Oxygen	19.7	0.20	% by Volume		20.1			2.01	30	
Carbon Dioxide	<0.20	0.20	% by Volume		<0.20				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: MB187330
Date Received: 09/11/19
Date Reported: 10/01/19

Special Notes

A handwritten signature in black ink, appearing to read 'Allen A.'.

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.: 18868

70055061

Page 1 of 1

Client: JACOBS ENGINEERING Project Name / No.: KINDM MORGAN NORWALK Sampler's Name: WILLIAM STANTON
 Project Manager: _____ Site Address: 1506 NORWALK BLVD Sampler's Signature: [Signature]
 Phone: _____ City: NORWALK P.O. No.: _____
 Fax: _____ State & Zip: CA 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	Please enter the TAT Turnaround Codes ** below										Special Instructions			
						T01	T02	T03	T04	T05	T06	T07	T08	T09	T10				
SUM-2-S	9I10020-01	9-10-19	0818	V	1	X	X	X											PV3
SUM-1-S	-02		0853	V	1	X	X	X											
SUM-1-S	-03		0858	V	1	X	X	X											
SUM-1S-7	-04		0837	V	1	X	X	X											
SUM-1S-22	-05		0839	V	1	X	X	X											
SUM-1S-15	-06		0840	V	1	X	X	X											
SUM-6-7	-07		0910	V	1	X	X	X											
SUM-6-15	-08		0907	V	1	X	X	X											
SUM-7-7	-09		0943	V	1	X	X	X											
SUM-7-13	-10		0945	V	1	X	X	X											
SUM-7-13 DUP	-11 -11		0945	V	1	X	X	X											
SUM-10-15	-12 -12		1016	V	1	X	X	X											
AMBIENT AIR	-13 -13		1008	V	1	X	X												
SUM-3-15	-14 -14		1051	V	1	X	X	X											PV3
SUM-3-S	-15 -15		1057	V	1	X	X	X											PV3
For Laboratory Use						Relinquished by	Date	Time	Received by										
REVIEWED						[Signature]	9-10-19	1100	[Signature]										
Date 9/13/19 Time 12:15						Relinquished by	Date	Time	Received by										
TAT 5 Days Sign: [Signature]						[Signature]	9-10-19	12:45	[Signature]										
A.A. Project No.: MB187830/9I10020						Relinquished by	Date	Time	Received by										

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.: 18896
 70055062
 Page 1 of 2

Client: JACOBS ENGINEERING Project Name / No.: KINDER MORGAN NORWALK Sampler's Name: WILLIAM SCHEIDT
 Project Manager: _____ Site Address: 15306 NORWALK BLVD Sampler's Signature: [Signature]
 Phone: _____ City: NORWALK P.O. No.: _____
 Fax: _____ State & Zip: CA 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	
						TD15	TD3	FINANCIALS									
SUM-S-K	9I10020-16	9-11-19	0736	V	1	X	X	X									PUB
SUM-S-S	-17		0741	V	1	X	X	X									
SUM-8-S	-18		0804	V	1	X	X	X									
SUM-8-15	-19		0806	V	1	X	X	X									
SUM-16-22	-20		0836	V	1	X	X	X									
SUM-16-7	-21		0841	V	1	X	X	X									
SUM-16-16	-22		0841	V	1	X	X	X									
SUM-16-16 DEP	-23		0841	V	1	X	X	X									
AMBIENT AIR	-24		0914	V	1	X	X										
SUM-12-15	-25		0925	V	1	X	X	X									PUB
SUM-12-7	-26		0929	V	1	X	X	X									
SUM-12-22	-27		0941	V	1	X	X	X									
SUM-11-15	-28		1016	V	1	X	X	X									
SUM-11-7	-29		1023	V	1	X	X	X									
SUM-11-22	-30		1042	V	1	X	X	X									

For Laboratory Use		Relinquished by		Date	Time	Received by	
REVIEWED Date <u>9/13/19</u> Time <u>12:15</u> TAT <u>5</u> Days Sign <u>[Signature]</u>	[Signature]		9-11-19	1140	[Signature]		
	[Signature]		9-11-19	13:30	[Signature]		
	Relinquished by		Date	Time	Received by		

A.A. Project No.: MB187330/9I10020

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.: 18897

70055063

Page 2 of 2

Client: JACOBS ENGINEERING Project Name / No.: KINDM MALDEN NORWALK Sampler's Name: LYNNE SCHAUB
 Project Manager: Site Address: 15306 NORWALK BLVD Sampler's Signature: [Signature]
 Phone: City: NORWALK P.O. No.:
 Fax: State & Zip: CA 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	Please enter the TAT Turnaround Codes ** below										Special Instructions		
						TDS	TB3	FRAND CHANGES										
SUM-13-22.S	9I10020 - 31	9-11-19	1103	V	1	X	X	X										PUS
SUM-13-15.S	-32		1104	V	1	X	X	X										
SUM-13-7	-33		1107	V	1	X	X	X										
SUM-14R-8	-34		112	V	1	X	X	X										
SUM-14R-16	-35		1024	V	1	X	X	X										
SUM-14R-22	-36		1130	V	1	X	X	X										
SUM-14R-22 DUP	-37		1130	V	1	X	X	X										

For Laboratory Use REVIEWED Date <u>9/13/19</u> Time <u>12:18</u> TAT <u>5</u> Days Sign <u>[Signature]</u>	Relinquished by <u>[Signature]</u>	Date <u>9-11-19</u>	Time <u>1140</u>	Received by <u>[Signature]</u>
	Relinquished by <u>[Signature]</u>	Date <u>9-11-19</u>	Time <u>13:30</u>	Received by <u>[Signature]</u>
	Relinquished by	Date	Time	Received by

A.A. Project No.: M0187330/9I10020

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.