KINDER MORGAN
ENERGY PARTNERS, L.P.

SFPP, L.P.
Operating Partnership

February 14, 2019

California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013

Re: Effluent Monitoring Report
October through December 2018
SFPP, L.P. Norwalk Pump Station
15306 Norwalk Boulevard, Norwalk, California
(NPDES No. CA0063509, CI No. 7497)

Attention: Information Technology Unit

In reference to the subject National Pollutant Discharge Elimination System (NPDES) permit, please find enclosed the Fourth Quarter 2018 Effluent Monitoring Report for the subject discharge.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on the 14th day of February 2019.
at 2:26 p.m.

_____ (signature)

Stephen T. Defibaugh (printed name)

Remediation Project Manager (title)

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Mr. Stephen Defibaugh
Kinder Morgan, Inc.
1100 Town and Country Road, Suite 700
Orange, California 92868

February 15, 2019

Subject: **Effluent Monitoring Report, October 1 to December 31, 2018 (Fourth Quarter 2018)**
SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California
(NPDES No. CA0063509, CI No. 7497, Order No. R4-2016-0309)

Dear Mr. Defibaugh,

This report has been prepared by CH2M HILL Engineers, Inc., now part of Jacobs Engineering Group Inc. (Jacobs), on behalf of Kinder Morgan, Inc. (Kinder Morgan), to summarize National Pollutant Discharge Elimination System (NPDES) monitoring related to the discharge of treated groundwater from Kinder Morgan's product recovery and groundwater extraction (GWE) system. This system is located at the SFPP, L.P. (SFPP) Norwalk Pump Station within the Defense Fuel Support Point Norwalk (DFSP), at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1).

This report describes NPDES monitoring activities during the period of October 1 to December 31, 2018. Kinder Morgan performed operations, maintenance, and monitoring tasks on the product recovery and GWE systems. This report has been prepared based on the NPDES monitoring conducted by Kinder Morgan.

Remediation Systems

Kinder Morgan operates remediation systems consisting of soil vapor extraction (SVE), total fluids extraction (TFE) of free product and/or groundwater using a top-loading pump, GWE 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.

The remedial objectives 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 system includes the following wells:

- South-central area
  - 20 TFE/GWE wells
  - 24 onsite and 6 offsite SVE wells (most collocated with TFE wells)
  - 2 horizontal SVE wells
  - 1 horizontal biosparge well
- Southeastern area (24-inch block valve area)
  - 4 TFE/GWE wells
  - 3 SVE wells (collocated with TFE wells)
  - 1 horizontal biosparge well (not yet operable)

The remediation system layout is shown on Figure 2. A brief description of each system is provided below.

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 vapor. Accumulated moisture in the knock-out tank is treated by the main groundwater treatment system (GWTS) described below. The soil vapors are then treated in a regenerative thermal oxidizer (RTO) where volatile organic compounds (VOCs) are converted to carbon dioxide and water prior to being discharged to the atmosphere. Operation of the GWTS and SVE systems is conducted in accordance with Permits to Operate (Permit Numbers [Nos.] G46188 A/N 578779 and G46187 A/N 578777, respectively; ID 110835) issued by the South Coast Air Quality Management District.

Groundwater Treatment System

The main GWTS handles 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 floatation oil-water separator (DAF/OWS). Free product, if any, from the DAF/OWS is collected in a storage tank and transported to an offsite location. Water from the OWS is then gravity drained into a 300-gallon transfer tank. From the transfer tank, the water is then treated using liquid-phase granular activated carbon (LGAC). Treated water is routed through an onsite 3,000-gallon equalization tank. Two fluidized bed bioreactors installed downstream of the equalization tank treat fuel oxygenates such as tertiary butyl alcohol and methyl tertiary butyl ether. 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 the NPDES permit (Permit No. CA0063509; Order No. R4-2016-0309), which was adopted on September 7, 2016, and became effective on November 1, 2016.

Horizontal Biosparge System

Kinder Morgan completed installation of a horizontal biosparge system in the south-central area of the site in 2014. 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 (bgs). The lateral length of the screen is 600 feet; the screen interval is situated below the central portion of the south-central area hydrocarbon plume. Further details regarding the construction of the biosparge well are documented in the *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report* (CH2M, 2015[1]).

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: 4-inch-diameter Schedule 80 PVC casing and screen completed to a depth of approximately 45 feet bgs. The lateral length of the screen is 240 feet centered below the southeastern area hydrocarbon plume. A construction completion report documenting construction activities and specifications was submitted to the Regional Water Quality Control Board (Water Board) on July 12, 2018 (Jacobs, 2018[2]).

Biosparging involves introducing air into the groundwater in situ to enhance biodegradation of VOCs present in product and groundwater. A 100-horsepower (hp) biosparge compressor was installed on November 2015 to deliver ambient air to the biosparge well at a maximum design rate of approximately

[1] CH2M HILL Engineers Inc. (CH2M). 2015. *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report, SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California.* February 18.
[2] Jacobs Engineering Group Inc. (Jacobs). 2018. *Southeastern Horizontal Biosparge Well (BS-02) Completion Report, SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California.* July 12.

500 standard cubic feet per minute (scfm). The 500-scfm sparge compressor was turned off temporarily and a new air sparge compressor (175-hp) that has a design flow rate of 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. Vapors generated by the biosparge well are captured by the SVE system. The SVE system has an interlock that prevents the biosparge system from turning on unless the SVE system is operating. Operation of the SVE system reduces the potential for off-gassing of VOCs during biosparge operations.

A summary of the GWTS operations during the reporting period is presented below. Operations of the SVE and biosparge systems are presented separately in quarterly remediation progress reports that are provided to the Water Board and Restoration Advisory Board (RAB).

Summary of Quarterly Groundwater Treatment System Operations

A total of 544,102 gallons of groundwater was extracted from the south-central and southeastern areas, treated, and discharged to Coyote Creek during the fourth quarter 2018. Wells that were in operation included MW-SF-3, MW-SF-15, GMW-9, GMW-O-11, GMW-O-20, and GMW-O-23 in the south-central area; and GMW-O-15, GMW-36, and GMW-SF-9 in the southeastern area. No groundwater was extracted from the West Side Barrier area during this period. Table 1 summarizes the average daily flow rate during the reporting period. The GWTS operated throughout the quarter, with the following exceptions:

- The GWTS shut down on October 3, 2018, due to the carbon change-out and carbon vessel repair. The GWTS was restarted on October 8, 2018.
- The GWTS was shut down on October 26, 2018, to facilitate gauging and sampling activities for the second semiannual groundwater monitoring event. The bioreactors and discharge pumps were turned on to discharge 826 gallons of treated water on November 2, 2018 and then the GWTS was restarted fully on November 9, 2018.
- The GWTS shut down on December 9, 2018, due to a false high level in the 300-gallon transfer tank. The wiring of the high level switch was repaired and the false alarm has not occurred since December 9, 2018. The system was restarted on December 11, 2018.
- The GWTS shut down on December 21, 2018, due to the 2007 and 2008 air compressor shutting down. Air compressors provide air to the pneumatic pumps in the wells. The GWTS was turned on briefly on December 24 and 28, 2018, to test the system. The GWTS remained off through December 31, 2018.

No free product accumulated in the product holding tank of the GWTS during the fourth quarter 2018. In addition, hand bailing of free product (from wells not equipped for TFE) was not performed during this reporting period because free product was not detected in the wells.

Routine Effluent Monitoring

During the fourth quarter 2018, effluent water samples were collected pursuant to the Waste Discharge Requirements (WDRs) under Order No. R4-2016-0309. Samples were collected at the Order-designated monitoring point EFF-001 (Remediation System Effluent) for monthly, quarterly, and annual analyses Samples were also collected at RSW-001 (50 feet upstream of the discharge into Coyote Creek) and RSW-002 (50 feet downstream of the discharge into Coyote Creek) for the annual analysis. A semiannual chronic toxicity analysis was also conducted on samples collected from EFF-001 and RSW-002.

Toxicity samples were shipped to Pacific EcoRisk in Fairfield, California, for testing. All other compliance samples were shipped to Asset Laboratories in Las Vegas, Nevada, for analysis. Asset Laboratories also sent samples to the following laboratories:

- BC Laboratories, Inc. in Bakersfield, California – for total petroleum hydrocarbons (TPH), biochemical oxygen demand, cyanide, sulfides, methylene blue activated substances, and ammonia as nitrogen analysis
- LA Testing in South Pasadena, California – for asbestos analysis
- TestAmerica in Irvine, California – for acrolein and acrylonitrile analysis
- Pace Analytical Services, Inc. in Minneapolis, Minnesota – for 2,3,7,8-tetrachlorodibenzodioxin and equivalents analysis

The samples were analyzed in accordance with current U.S. Environmental Protection Agency (EPA) methods or as specified in the WDRs for the site. The laboratory reports are included in Attachment A. A data quality assurance/quality control evaluation conducted by Jacobs is included in Attachment B.

Summary of Compliance Results

Monthly, Quarterly, and Annual Sampling

Effluent daily flow rates are presented in Table 1. All daily flows were below the permit maximum discharge limit of 150,000 gallons per day. Analytical results for the October, November, and December 2018 effluent sampling events are summarized in Table 2. The effluent samples (EFF-001) were collected after the secondary polishing LGAC vessel, prior to discharge into the storm drain at the site. The results were compared with the maximum daily and average monthly discharge limits under Order No. R4-2016-0309. As shown in Table 2, all discharge limits for the treatment system effluent were met during the reporting period. Laboratory analytical reports and chain-of-custody documents are included in Attachment A. The mass emission (in pounds per day) is calculated by multiplying the daily effluent flow measured during the day of the sampling event (in million gallons per day) by the concentration of the analyte (milligrams per liter) and the conversion factor of 8.34, as required by the discharge permit. If the analyte was not detected in the sample, the concentration used is half of the method detection limit.

Under NPDES Order No. R4-2016-0306, a wet weather condition is present when the maximum daily flow in Coyote Creek is equal to or greater than 156 cubic feet per second (cfs) as measured at the Los Angeles County Department of Public Works flow gauge station F354-R, located at the bottom of the creek just above the Long Beach Water Reclamation Plant. The daily flow rate in Coyote Creek, which is based on data from the Los Angeles County Department of Public Works flow gauge station F354-R, is presented in Table 3. Based on these data, the October and November 2018 sampling events, with maximum daily flows less than 27 cfs, all occurred during dry weather conditions. Therefore, the analytical results for October and November 2018 are compared to dry weather discharge limits. Los Angeles County Department of Public Works December 2018 flow data were not available at the time of this report. However, both the wet and dry weather discharge limits were not exceeded in December 2018.

Analytical results for remaining priority pollutants at the effluent are summarized in Table 4. Results for priority pollutants at sample point RSW-001 are summarized in Table 5. The tetrachlorodibenzo-p-dioxins (TCDD) equivalents for the effluent and the receiving water samples (RSW-001) are summarized in Table 6.

Toxicity Sampling

Effluent samples from station EFF-001 and RSW-002 were collected for chronic toxicity testing on November 12, 14, and 16, 2018. The initial salinity measured at EFF-001 on November 12, 2018, was 0.9 parts per thousand. Therefore, these samples were used for the chronic toxicity tests using Fathead Minnows as the test species (a freshwater species). All tests were performed according to

EPA (1995, 2002) methods in the receiving water and 100 percent effluent samples. Results were evaluated with EPA's (2010) Test of Significant Toxicity (TST) to determine a "Pass" or "Fail" and percent effect.

The Fathead Minnows were not affected by the effluent water (that is, the results were "Pass") and demonstrated effluent compliance for toxicity (Table 7). The result of the TST analysis for the receiving water RSW-002 sample was "Fail" for the pH adjusted and unadjusted tests. With the "Pass" test of the sample collected at the effluent, the "Fail" test of the receiving water is not attributed to the GWTS effluent. Each of the toxicity tests met the acceptability criteria, and reference toxicity results were within the acceptable range of expected variability. The laboratory report and chain-of-custody documents for the effluent samples collected during the fourth quarter 2018 are included in Attachment A.

Waste Handling

On October 3, 2018, approximately 4,000 pounds of nonhazardous spent carbon was removed from the site and disposed of by Prominent Systems Inc., of 13095 E. Temple Avenue, City of Industry, California 91746.

On December 13, 2018, approximately 175 pounds of non-Resource Conservation and Recovery Act (RCRA) hazardous waste (GWTS bag filters) was removed from the site by Clean Harbors Environmental Service Inc. of 1737 East Denni Street, Wilmington, California 90744. The waste was transported to Clean Harbors Wilmington LLC. at 1737 East Denni Street, Wilmington, California 90744.

On December 13, 2018, approximately 175 pounds of nonhazardous non-Department of Transportation (DOT) regulated debris waste (rubber hoses) was removed from the site by Clean Harbors Environmental Service Inc. of 1737 East Denni Street, Wilmington, California 90744. The waste was transported to Clean Harbors Wilmington LLC. at 1737 E Denni Street, Wilmington, California 90744.

Copies of the waste manifests are included in Attachment C.

Harbor Toxics Total Maximum Daily Load Monitoring

Wet chemistry monitoring and sampling for Toxic Pollutants in the Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters total maximum daily load (TMDL) [herein referred to as the Harbor Toxics TMDL] were conducted on July 11, 2018 (dry weather event), November 30, 2018 (wet weather event), and on January 11, 2019 (second wet weather event). As stated in the email response dated December 24, 2018, from the Water Board (Chin Yin To, Water Resources Control Engineer), the monitoring year started in May 2018, and was extended to April 2019. Jacobs is currently performing data validation on the laboratory analytical data from the second wet weather sampling event conducted on January 11, 2019; therefore, a separate Harbor Toxics TMDL letter report for 2018 will be prepared and submitted in the first quarter 2019.

Annual Review of Stormwater Pollution Prevention Plan, Best Management Practices Plan, and Spill Contingency Plan

As required in Section X.D.1 of the Monitoring and Reporting Program, the project Stormwater Pollution Prevention Plan (SWPPP), Best Management Practices Plan (BMPP), and Spill Contingency Plan (SCP) are reviewed annually and updated as needed to verify all actual and potential sources of pollutants in wastewater and stormwater discharged from the facility are addressed in the plans.

The existing SWPPP/BMPP and SCP documents have been reviewed and revised to incorporate the following changes:

- Revised site maps, process flow diagram, and equipment layout
- Updated project team information

- Provided details about the DAF overflow incident that occurred on August 20, 2018, related to the high level switch failures at the 300-gallon equalization tank and DAF containment pad. The report also included a discussion of the corrective measures that were implemented to avoid a future occurrence.

The above changes are now reflected in the SWPPP/BMPP and SCP documents, which will be submitted to the Water Board during the first quarter 2019. A copy of these documents will be maintained onsite for reference.

Should you require any further information, please contact Vladimir Carino at (949) 224-7548.

Regards,

Vladimir Carino
Project Engineer

Attachments:

Table 1 – Effluent Flow Rate Measurements, Fourth Quarter 2018
Table 2 – NPDES Effluent Monitoring, Fourth Quarter 2018
Table 3 – Maximum Daily Flow in Coyote Creek, Fourth Quarter 2018
Table 4 – NPDES Effluent Monitoring, Remaining Priority Pollutants, Fourth Quarter 2018
Table 5 – NPDES Receiving Water Monitoring, RSW-001 (50 feet upstream), Fourth Quarter 2018
Table 6 – NPDES TCDD Equivalent Calculation, Fourth Quarter 2018
Table 7 – NPDES Effluent and Receiving Water Chronic Toxicity Monitoring, Fourth Quarter 2018

Figure 1 – Site Location Map
Figure 2 – Remediation System Layout

Attachment A – Laboratory Analytical Reports, Chain-of-Custody Documents, and Field Measurements
Attachment B – Data Quality Assurance/Quality Control
Attachment C – Waste Manifests

Tables

Table 1. Effluent Flow Rate Measurements, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Date	Daily Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
10/01/18	12,460
10/02/18	8,756
10/03/18	5,420
10/04/18	0
10/05/18	0
10/06/18	0
10/07/18	0
10/08/18	6,194
10/09/18	9,714
10/10/18	8,012
10/11/18	13,180
10/12/18	12,450
10/13/18	11,866
10/14/18	11,928
10/15/18	10,996
10/16/18	13,072
10/17/18	14,728
10/18/18	15,264
10/19/18	15,576
10/20/18	14,240
10/21/18	12,972
10/22/18	11,164
10/23/18	10,162
10/24/18	11,456
10/25/18	11,454
10/26/18	7,488
10/27/18	0
10/28/18	0
10/29/18	0
10/30/18	0
10/31/18	0
11/01/18	0
11/02/18	826
11/03/18	0
11/04/18	0
11/05/18	0
11/06/18	0
11/07/18	0
11/08/18	0
11/09/18	3,326
11/10/18	9,692
11/11/18	9,148
11/12/18	9,280
11/13/18	8,676
11/14/18	9,040
11/15/18	9,456
11/16/18	10,424
11/17/18	12,180
11/18/18	11,788
11/19/18	9,200
11/20/18	8,668

Table 1. Effluent Flow Rate Measurements, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Date	Daily Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
11/21/18	10,580
11/22/18	10,016
11/23/18	6,764
11/24/18	6,848
11/25/18	6,836
11/26/18	6,890
11/27/18	7,774
11/28/18	6,548
11/29/18	7,220
11/30/18	6,444
12/01/18	6,736
12/02/18	6,420
12/03/18	6,600
12/04/18	6,536
12/05/18	5,726
12/06/18	8,610
12/07/18	5,414
12/08/18	5,830
12/09/18	1,104
12/10/18	0
12/11/18	3,406
12/12/18	9,754
12/13/18	3,144
12/14/18	2,912
12/15/18	7,668
12/16/18	1,486
12/17/18	5,130
12/18/18	9,096
12/19/18	7,210
12/20/18	4,682
12/21/18	354
12/22/18	0
12/23/18	0
12/24/18	80
12/25/18	0
12/26/18	0
12/27/18	0
12/28/18	28
12/29/18	0
12/30/18	0
12/31/18	0

Notes:

[a] California Regional Water Quality Control Board Waste Discharge Requirements (WDRs).

gpd = gallons per day

Table 2. NPDES Effluent Monitoring, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL[c]	RL[c]	ML[a]	10/16/2018	11/12/2018	11/14/2018	11/15/2018	11/16/2018	12/14/2018	Discharge Limits[b]	
													Monthly Average	Daily Maximum
Flow	Daily	--	gpd	--	--	--	**13,072**	**9,280**	**9,040**	**9,456**	**10,424**	**2,912**	--	**150,000**
TPH as Gasoline (C4-C12)	Monthly	EPA 8015B	µg/L	22	50	NE	<22	--	--	<22	--	<22	--	--
TPH as Diesel (C13-C22)	Monthly	EPA 8015B	µg/L	6.8	40	NE	<6.8	--	--	<6.8	--	<6.8	--	--
TPH as Oil (C23+)	Monthly	EPA 8015B	µg/L	13	100	NE	<13	--	--	<13	--	<13	--	--
Total TPH	Monthly	EPA 8015B	µg/L	22	100	NE	<16	--	--	<22	--	<22	--	**100**
Total TPH	Monthly	Calculated	lb/day	--	--	--	**0.000872**	--	--	**0.000867**	--	**0.000267**	--	**0.13**
Benzene	Monthly	EPA 8260B	µg/L	0.34	1	2.0	<0.34	--	--	<0.34	--	<0.34	--	--
1,1-Dichloroethane	Monthly	EPA 8260B	µg/L	0.45	0.5	1.0	<0.45	--	--	<0.45	--	<0.45	--	--
1,2-Dichloroethane	Monthly	EPA 8260B	µg/L	0.29	0.5	2.0	<0.29	--	--	<0.29	--	<0.29	--	--
Ethylbenzene	Monthly	EPA 8260B	µg/L	0.31	1.0	2.0	<0.31	--	--	<0.31	--	<0.31	--	--
Phenol	Monthly	EPA 8270C	µg/L	0.34	1.0	1	<0.33	--	--	<0.53	--	<0.34	--	--
Toluene	Monthly	EPA 8260B	µg/L	0.46	2.0	2.0	<0.46	--	--	<0.46	--	<0.46	--	--
Methyl Tertiary Butyl Ether	Monthly	EPA 8260B	µg/L	0.34	1.0	NE	<0.34	--	--	<0.34	--	<0.34	--	--
Tertiary Butyl Alcohol	Monthly	EPA 8260B	µg/L	2.4	5.0	NE	<2.4	--	--	<2.4	--	<2.4	--	--
Total Xylenes	Monthly	EPA 8260B	µg/L	1.5	2.0	NE	<1.5	--	--	<1.5	--	<1.5	--	--
Copper (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.26	0.5	0.5	<0.26 J	--	--	<0.26 J	--	<0.26 J	**9.7**	**32**
Copper (total recoverable) (dry weather)	Monthly	Calculated	lb/day	--	--	--	**0.000014**	--	--	**0.00001**	--	**0.000003**	**0.012**	**0.04**
Copper (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.26	0.5	0.5	--	--	--	--	--	<0.26 J	**8.3**	**27**
Copper (total recoverable) (wet weather)	Monthly	Calculated	lb/day	--	--	--	--	--	--	--	--	**0.000003**	**0.010**	**0.034**
Lead (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.13	0.5	0.5	<0.13	--	--	<0.13	--	<0.13	**33**	**106**
Lead (total recoverable) (dry weather)	Monthly	Calculated	lb/day	--	--	--	**0.000007**	--	--	**0.000005**	--	**0.000002**	**0.041**	**0.13**
Mercury (total recoverable)	Monthly	EPA 245.1	µg/L	0.018	0.1	0.2	<0.018	--	--	<0.018	--	<0.018	**0.051**	**0.10**
Mercury (total recoverable)	Monthly	Calculated	lb/day	--	--	--	**0.000001**	--	--	**0.000001**	--	**0**	**0.000064**	**0.00013**
Zinc (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.27	1.0	1.0	<0.27	--	--	**2.1**	--	**4.8**	**64**	**220**
Zinc (total recoverable) (dry weather)	Monthly	Calculated	lb/day	--	--	--	**0.000015**	--	--	**0.000166**	--	**0.000117**	**0.080**	**0.28**
Zinc (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.27	1.0	1.0	--	--	--	--	--	**4.8**	**46**	**158**
Zinc (total recoverable) (wet weather)	Monthly	Calculated	lb/day	--	--	--	--	--	--	--	--	**0.000117**	**0.058**	**0.2**
Biochemical Oxygen Demand	Quarterly	SM 5210B	mg/L	1.5	1.5	NE	--	--	--	**1.6**	--	--	**20**	**30**
Biochemical Oxygen Demand	Quarterly	Calculated	lb/day	--	--	--	--	--	--	**0.126181**	--	--	**25**	**38**
Total Suspended Solids	Quarterly	SM 2540D	mg/L	10	10.00	NE	--	--	--	<10	--	--	**50**	**75**
Total Suspended Solids	Quarterly	Calculated	lb/day	--	--	--	--	--	--	**0.394315**	--	--	**63**	**94**
pH	Quarterly	--	s.u.	--	--	NE	--	**6.93**	**6.67**	**6.57**	**6.63**	--	--	**6.5/8.5**
Oil and Grease	Quarterly	EPA 1664A	mg/L	0.82	5.10	NE	--	--	--	**1.3**	--	--	**10**	**15**
Oil and Grease	Quarterly	Calculated	lb/day	--	--	--	--	--	--	**0.102522**	--	--	**13**	**19**
Ammonia Nitrogen (as N)	Quarterly	EPA 350.1	mg/L	0.05	0.20	NE	--	--	--	**0.11**	--	--	--	--
Settleable Solids	Quarterly	SM 2540F	mL/L/hr	0.092	0.09	NE	--	--	--	<0.092	--	--	**0.1**	**0.3**
Temperature	Quarterly	Temperature	°F	--	--	NE	--	**68**	**63**	**73**	**64**	--	--	**86**
Turbidity	Quarterly	SM 2130B	NTU	0.1	0.10	NE	--	--	--	**0.38**	--	--	**50**	**75**
Salinity	2x/year	SM 2520B	--	--	--	NE	--	**0.9**	**1.2**	**1.2**	**1.2**	--	--	--
Chronic Toxicity (see Table 7)	2x/year	--	--	--	--	NE	--	--	--	**Pass**	--	--	**Pass**	**Pass and % Effect <50**
Di-isopropyl Ether	Annually	EPA 8260B	µg/L	0.079	1.00	NE	--	--	--	<0.079	--	--	--	--
Methyl Ethyl Ketone	Annually	EPA 8260B	µg/L	4.9	10.00	NE	--	--	--	<4.9	--	--	--	--
Methylene Blue Active Substances	Annually	SM 5540C	mg/L	0.03	0.20	NE	--	--	--	<0.03	--	--	--	--
Nitrate + Nitrite as N	Annually	EPA 300.0	mg/L	0.005	0.10	NE	--	--	--	<0.005	--	--	--	--
Sulfides	Annually	SM 4500 SD	mg/L	0.05	0.10	NE	--	--	--	<0.05	--	--	--	--

Table 2. NPDES Effluent Monitoring, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL[c]	RL[c]	ML[a]	10/16/2018	11/12/2018	11/14/2018	11/15/2018	11/16/2018	12/14/2018	Discharge Limits[b]	
													Monthly Average	Daily Maximum
Tert Amyl Methyl Ether	Annually	EPA 8260B	µg/L	0.26	1.00	NE	--	--	--	<0.26	--	--	--	--
TCDD Equivalents	Annually	EPA 8290	pg/L	--	--	NE	--	--	--	**5.0**	--	--	--	--
Other Priority Pollutants (Table 4)	Annually	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

[a] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is also the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed.

[b] California Regional Water Quality Control Board Waste Discharge Requirements (WDRs) under Order No. R4-2016-0309.

[c] The highest MDL and RL during this reporting period are shown.

-- = not measured or not analyzed

< = not detected above the MDL

° F = degrees Fahrenheit

µg/L = micrograms per liter

DNQ = detected, but not quantified; result is greater than or equal to the laboratory MDL but less than the ML (or RL if no ML is listed)

EPA = U.S. Environmental Protection Agency

gpd = gallons per day

J = detected at a concentration below the RL and above the MDL; reported value is estimated

lb/day = pounds per day

MDL = laboratory method detection limit

mg/L = milligrams per liter

ML = minimum level (see note a)

mL/L/hr = milliliters per liter per hour

NE = not established

NPDES = National Pollutant Discharge Elimination System

NTU = nephelometric turbidity unit(s)

pg/L = picograms per liter

ppt = parts per trillion

s.u. = standard unit(s)

TCDD = tetrachlorodibenzodioxin

TPH = total petroleum hydrocarbons

Table 3. Maximum Daily Flow in Coyote Creek, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Date	Maximum Daily Flow Rate (cfs)[a]	Comments
10/01/18	37.0	
10/02/18	5.2	
10/03/18	1,630.0	
10/04/18	1,430.0	
10/05/18	5.2	
10/06/18	5.2	
10/07/18	3.9	
10/08/18	3.3	
10/09/18	14.1	
10/10/18	6.6	
10/11/18	7.1	
10/12/18	247.0	
10/13/18	1,630.0	
10/14/18	41.9	
10/15/18	17.8	
10/16/18	7.1	October 2018 sampling conducted
10/17/18	7.7	
10/18/18	9.0	
10/19/18	3.9	
10/20/18	3.6	
10/21/18	3.3	
10/22/18	4.8	
10/23/18	7.1	
10/24/18	4.5	
10/25/18	4.5	
10/26/18	5.2	
10/27/18	5.5	
10/28/18	4.2	
10/29/18	8.4	
10/30/18	7.7	
10/31/18	10.4	
11/01/18	11.2	
11/02/18	11.2	
11/03/18	16.5	
11/04/18	17.8	
11/05/18	25.2	
11/06/18	23.6	
11/07/18	27.9	
11/08/18	48.0	
11/09/18	27.9	
11/10/18	35.4	
11/11/18	26.5	
11/12/18	29.3	
11/13/18	27.9	
11/14/18	51.2	
11/15/18	38.7	November 2018 sampling conducted
11/16/18	25.2	
11/17/18	0.4	
11/18/18	1.8	
11/19/18	0.1	
11/20/18	17.8	

Table 3. Maximum Daily Flow in Coyote Creek, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Date	Maximum Daily Flow Rate (cfs)[a]	Comments
11/21/18	9.0	
11/22/18	1.8	
11/23/18	0.1	
11/24/18	14.1	
11/25/18	40.4	
11/26/18	9.7	
11/27/18	--	
11/28/18	--	
11/29/18	--	
11/30/18	--	
12/01/18	--	
12/02/18	--	
12/03/18	--	
12/04/18	--	
12/05/18	--	
12/06/18	--	
12/07/18	--	
12/08/18	--	
12/09/18	--	
12/10/18	--	
12/11/18	--	
12/12/18	--	
12/13/18	--	
12/14/18	--	December 2018 sampling conducted
12/15/18	--	
12/16/18	--	
12/17/18	--	
12/18/18	--	
12/19/18	--	
12/20/18	--	
12/21/18	--	
12/22/18	--	
12/23/18	--	
12/24/18	--	
12/25/18	--	
12/26/18	--	
12/27/18	--	
12/28/18	--	
12/29/18	--	
12/30/18	--	
12/31/18	--	

Notes:

[a] A wet weather event is any day when the maximum daily flow of Coyote Creek is greater than or equal to 156 cfs. A dry weather event is any day when the maximum daily flow of Coyote Creek is less than 156 cfs.

cfs = cubic feet per second

Table 4. NPDES Effluent Monitoring, Remaining Priority Pollutants, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/15/2018	ML[a]
Antimony	EPA 200.8	µg/L	0.16	0.5	**0.29**	**0.50**
Arsenic	EPA 200.8	µg/L	0.081	0.1	**6.9**	**2**
Beryllium	EPA 200.8	µg/L	0.042	0.5	**0.36**	**0.50**
Cadmium	EPA 200.8	µg/L	0.053	0.25	<0.053	**0.25**
Chromium (III) (Total Cr - Cr VI)	CALCCR3	µg/L	0.13	0.5	<0.13	**NA**
Chromium VI	EPA 7199	µg/L	0.033	0.2	<0.033	**0.5**
Selenium	EPA 200.8	µg/L	0.36	0.5	<0.36	**2.0**
Thallium	EPA 200.8	µg/L	0.19	0.5	<0.19	**1.0**
Nickel	EPA 200.8	µg/L	0.26	1	**4.3**	**1**
Silver	EPA 200.8	µg/L	0.23	0.25	<0.23	**0.25**
Aroclor-1016	EPA 8082	µg/L	0.013	0.04	<0.013	**0.5**
Aroclor-1221	EPA 8082	µg/L	0.019	0.04	<0.019	**0.5**
Aroclor-1232	EPA 8082	µg/L	0.013	0.04	<0.013	**0.5**
Aroclor-1242	EPA 8082	µg/L	0.014	0.04	<0.014	**0.5**
Aroclor-1248	EPA 8082	µg/L	0.024	0.04	<0.024	**0.5**
Aroclor-1254	EPA 8082	µg/L	0.012	0.04	<0.012	**0.5**
Aroclor-1260	EPA 8082	µg/L	0.0068	0.04	<0.0068	**0.5**
4,4'-DDD	EPA 8081A	µg/L	0.00049	0.001	<0.00049	**0.05**
4,4'-DDE	EPA 8081A	µg/L	0.00048	0.001	<0.00048	**0.05**
4,4'-DDT	EPA 8081A	µg/L	0.00034	0.001	<0.00034	**0.01**
Aldrin	EPA 8081A	µg/L	0.00037	0.001	<0.00037	**0.005**
Alpha Endosulfan	EPA 8081A	µg/L	0.00048	0.001	<0.00048	**0.02**
Alpha-BHC	EPA 8081A	µg/L	0.00046	0.001	<0.00046	**0.01**
Beta Endosulfan	EPA 8081A	µg/L	0.00059	0.001	<0.00059	**0.01**
Beta-BHC	EPA 8081A	µg/L	0.00049	0.001	<0.00049	**0.005**
Chlordane	EPA 8081A	µg/L	0.03	0.1	<0.03	**0.1**
Delta-BHC	EPA 8081A	µg/L	0.00048	0.001	<0.00048	**0.005**
Dieldrin	EPA 8081A	µg/L	0.00046	0.001	<0.00046	**0.01**
Endosulfan Sulfate	EPA 8081A	µg/L	0.00085	0.001	<0.00085	**0.05**
Endrin	EPA 8081A	µg/L	0.00072	0.001	<0.00072	**0.01**
Endrin Aldehyde	EPA 8081A	µg/L	0.00077	0.002	<0.00077	**0.01**
Gamma-BHC	EPA 8081A	µg/L	0.00048	0.001	<0.00048	**0.02**
Heptachlor	EPA 8081A	µg/L	0.00039	0.001	<0.00039	**0.01**
Heptachlor Epoxide	EPA 8081A	µg/L	0.00084	0.001	<0.00084	**0.01**
Toxaphene	EPA 8081A	µg/L	0.04	0.4	<0.04	**0.5**
1,1,1-Trichloroethane	EPA 8260B	µg/L	0.38	1	<0.38	**2**
1,1,2,2-Tetrachloroethane	EPA 8260B	µg/L	0.34	1	<0.34	**1**
1,1,2-Trichloroethane	EPA 8260B	µg/L	0.29	1	<0.29	**2**
1,1-Dichloroethene	EPA 8260B	µg/L	0.34	1	<0.34	**2**
1,2,4-Trichlorobenzene	EPA 8260B	µg/L	0.21	1	<0.21	**5**
1,2-Dichlorobenzene	EPA 8260B	µg/L	0.29	1	<0.29	**2**
1,2-Dichloropropane	EPA 8260B	µg/L	0.24	1	<0.24	**1**
1,3-Dichlorobenzene	EPA 8260B	µg/L	0.28	1	<0.28	**1**
1,4-Dichlorobenzene	EPA 8260B	µg/L	0.32	1	<0.32	**1**
2-Chloroethyl Vinyl Ether	EPA 8260B	µg/L	0.29	0.5	<0.29	**1**
Acrolein	EPA 8260B	µg/L	2.5	5	<2.5 J	**5**
Acrylonitrile	EPA 8260B	µg/L	1	2	<1 J	**2**
Bromodichloromethane	EPA 8260B	µg/L	0.38	1	<0.38	**2**
Bromoform	EPA 8260B	µg/L	0.39	1	<0.39	**2**
Bromomethane	EPA 8260B	µg/L	0.79	1	<0.79	**2**
cis-1,3-Dichloropropene	EPA 8260B	µg/L	0.28	1	<0.28	**2**
Carbon Tetrachloride	EPA 8260B	µg/L	0.4	0.5	<0.4	**2**
Chlorobenzene	EPA 8260B	µg/L	0.3	1	<0.3	**2**
Chloroethane	EPA 8260B	µg/L	0.97	1	<0.97	**2**

Table 4. NPDES Effluent Monitoring, Remaining Priority Pollutants, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/15/2018	ML[a]
Chloroform	EPA 8260B	µg/L	0.27	1	<0.27	**2**
Chloromethane	EPA 8260B	µg/L	0.36	1	<0.36	**2**
Dibromochloromethane	EPA 8260B	µg/L	0.41	1	<0.41	**2**
Hexachlorobutadiene	EPA 8260B	µg/L	0.3	1	<0.3	**1**
Methylene Chloride	EPA 8260B	µg/L	1.9	2	<1.9	**2**
Naphthalene	EPA 8260B	µg/L	0.42	1	<0.42	**1**
trans-1,2-Dichloroethene	EPA 8260B	µg/L	0.4	1	<0.4	**1**
trans-1,3-Dichloropropene	EPA 8260B	µg/L	0.25	1	<0.25	**2**
Tetrachloroethene	EPA 8260B	µg/L	0.3	1	<0.3	**2**
Trichloroethene	EPA 8260B	µg/L	0.37	1	<0.37	**2**
Vinyl Chloride	EPA 8260B	µg/L	0.29	0.5	<0.29	**2**
1,2-Diphenylhydrazine	EPA 8270C	µg/L	0.44	1	<0.44	**1**
2,4,6-Trichlorophenol	EPA 8270C	µg/L	0.34	5	<0.34	**10**
2,4-Dichlorophenol	EPA 8270C	µg/L	0.26	1	<0.26	**5**
2,4-Dimethylphenol	EPA 8270C	µg/L	0.3	1	<0.3	**2**
2,4-Dinitrophenol	EPA 8270C	µg/L	0.37	5	<0.37	**5**
2,4-Dinitrotoluene	EPA 8270C	µg/L	0.87	2	<0.87	**5**
2,6-Dinitrotoluene	EPA 8270C	µg/L	0.46	2	<0.46	**5**
2-Chloronaphthalene	EPA 8270C	µg/L	0.23	2	<0.23	**10**
2-Chlorophenol	EPA 8270C	µg/L	0.85	2	<0.85	**5**
2-Nitrophenol	EPA 8270C	µg/L	0.39	2	<0.39	**10**
3,3'-Dichlorobenzidine	EPA 8270C	µg/L	0.41	5	<0.41	**5**
4,6-Dinitro-2-Methylphenol	EPA 8270C	µg/L	0.43	5	<0.43	**5**
4-Bromophenyl-Phenyl Ether	EPA 8270C	µg/L	0.2	2	<0.2	**5**
4-Chloro-3-Methylphenol	EPA 8270C	µg/L	0.42	1	<0.42	**1**
4-Chlorophenyl-Phenyl Ether	EPA 8270C	µg/L	0.2	2	<0.2	**5**
4-Nitrophenol	EPA 8270C	µg/L	0.66	2	<0.66	**10**
Acenaphthene	EPA 8270C	µg/L	0.22	1	<0.22	**1**
Acenaphthylene	EPA 8270C	µg/L	0.2	2	<0.2	**10**
Anthracene	EPA 8270C	µg/L	0.2	2	<0.2	**10**
Benzidine	EPA 8270C	µg/L	3	5	<3	**5**
Benzo (a) Anthracene	EPA 8270C	µg/L	0.3	2	<0.3	**5**
Benzo (a) Pyrene	EPA 8270C	µg/L	0.21	2	<0.21	**10**
Benzo (b) Fluoranthene	EPA 8270C	µg/L	0.42	2	<0.42	**10**
Benzo (g,h,i) Perylene	EPA 8270C	µg/L	0.48	2	<0.48	**5**
Benzo (k) Fluoranthene	EPA 8270C	µg/L	0.29	2	<0.29	**10**
Bis(2-Chloroethoxy) Methane	EPA 8270C	µg/L	0.27	2	<0.27	**5**
Bis(2-Chloroethyl) Ether	EPA 8270C	µg/L	0.86	1	<0.86	**1**
Bis(2-Chloroisopropyl) Ether	EPA 8270C	µg/L	1.7	2	<1.7	**2**
Bis(2-Ethylhexyl) Phthalate	EPA 8270C	µg/L	0.2	3	<0.2	**5**
Butyl Benzyl Phthalate	EPA 8270C	µg/L	0.26	2	<0.26	**10**
Chrysene	EPA 8270C	µg/L	0.26	2	<0.26	**10**
Dibenz (a,h) Anthracene	EPA 8270C	µg/L	0.59	3	<0.59	**10**
Diethyl Phthalate	EPA 8270C	µg/L	0.2	2	<0.2	**2**
Dimethyl Phthalate	EPA 8270C	µg/L	0.25	2	<0.25	**2**
Di-n-Butyl Phthalate	EPA 8270C	µg/L	0.2	2	<0.2	**10**
Di-n-Octyl Phthalate	EPA 8270C	µg/L	0.31	2	<0.31	**10**
Fluoranthene	EPA 8270C	µg/L	0.41	1	<0.41	**1**
Fluorene	EPA 8270C	µg/L	0.2	2	<0.2	**10**
Hexachlorobenzene	EPA 8270C	µg/L	0.23	1	<0.23	**1**
Hexachlorocyclopentadiene	EPA 8270C	µg/L	0.35	1	<0.35	**5**
Hexachloroethane	EPA 8270C	µg/L	0.9	1	<0.9	**1**
Indeno (1,2,3-c,d) Pyrene	EPA 8270C	µg/L	0.71	2	<0.71	**10**
Isophorone	EPA 8270C	µg/L	0.41	1	<0.41	**1**

Table 4. NPDES Effluent Monitoring, Remaining Priority Pollutants, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/15/2018	ML[a]
Nitrobenzene	EPA 8270C	µg/L	0.39	1	<0.39	**1**
N-Nitrosodimethylamine	EPA 8270C	µg/L	0.56	2	<0.56	**5**
N-Nitroso-di-n-propylamine	EPA 8270C	µg/L	0.56	2	<0.56	**5**
N-Nitrosodiphenylamine	EPA 8270C	µg/L	0.27	1	<0.27	**1**
Pentachlorophenol	EPA 8270C	µg/L	0.43	1	<0.43	**5**
Phenanthrene	EPA 8270C	µg/L	0.2	2	<0.2	**5**
Pyrene	EPA 8270C	µg/L	0.31	2	<0.31	**10**
2,3,7,8-TCDD	EPA 8290	pg/L	2.6	11	<2.6	**NE**
Asbestos	EPA 600 94 134, 100.2	MFL	0.2	0.2	<0.2	**NE**
Cyanide (Total)	EPA 335.4	mg/L	0.0017	0.005	**0.0071**	**NE**

Notes:

[a] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is also the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed.

< = not detected above the MDL
µg/L = micrograms per liter
J = detected at a concentration below the RL and above the MDL; reported value is estimated
MDL = laboratory method detection limit
MFL = million fibers per liter
mg/L = milligrams per liter
ML = minimum level (see note a)
NE = not established
NPDES = National Pollutant Discharge Elimination System
pg/L = picograms per liter
RL = laboratory reporting limit
TCDD = tetrachlorodibenzodioxin

Table 5. NPDES Receiving Water Monitoring, RSW-001 (50 feet upstream), Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/12/2018	11/14/2018	11/15/2018	11/16/2018	ML[a]
pH	SM 4500 HB	s.u.	--	--	**8.9**	**9.0**	**9.2**	**8.7**	**NE**
Temperature	Temperature	°F	--	--	**65.6**	**61.9**	**69.3**	**58.7**	**NE**
Hardness (as CaCO3)	SM 2340B	mg/L	1	1	--	--	**310**	--	**NE**
2,3,7,8-TCDD	EPA 8290	pg/L	1.9	11	--	--	<1.9	--	**NE**
Arsenic	EPA 200.8	µg/L	0.081	0.10	--	--	**2.2**	--	**2**
Lead	EPA 200.8	µg/L	0.13	0.5	--	--	**0.28**	--	**0.5**
Aroclor-1016	EPA 8082	µg/L	0.013	0.04	--	--	<0.013	--	**0.5**
Aroclor-1221	EPA 8082	µg/L	0.019	0.0	--	--	<0.019	--	**0.5**
Aroclor-1232	EPA 8082	µg/L	0.013	0.04	--	--	<0.013	--	**0.5**
Aroclor-1242	EPA 8082	µg/L	0.014	0.04	--	--	<0.014	--	**0.5**
Aroclor-1248	EPA 8082	µg/L	0.024	0.04	--	--	<0.024	--	**0.5**
Aroclor-1254	EPA 8082	µg/L	0.012	0.04	--	--	<0.012	--	**0.5**
Aroclor-1260	EPA 8082	µg/L	0.0068	0.04	--	--	<0.0068	--	**0.5**
Cadmium	EPA 200.8	µg/L	0.053	0.25	--	--	<0.053	--	**0.25**
Mercury	EPA 245.1	µg/L	0.018	0.05	--	--	<0.018	--	**0.2**
Antimony	EPA 200.8	µg/L	0.16	0.50	--	--	**0.73**	--	**0.50**
Beryllium	EPA 200.8	µg/L	0.042	0.50	--	--	<0.042	--	**0.50**
Total Chromium	EPA 200.8	µg/L	0.13	0.50	--	--	**0.72**	--	**0.50**
Chromium (III) (Total Cr - Cr VI)	CALCCR3	µg/L	0.13	0.50	--	--	**0.21**	--	**NA**
Copper	EPA 200.8	µg/L	0.26	0.5	--	--	**1.4**	--	**0.5**
Nickel	EPA 200.8	µg/L	0.26	1.0	--	--	**0.72**	--	**1**
Selenium	EPA 200.8	µg/L	0.36	0.5	--	--	**2.2**	--	**2.0**
Silver	EPA 200.8	µg/L	0.230	0.25	--	--	<0.23	--	**0.25**
Thallium	EPA 200.8	µg/L	0.19	0.5	--	--	<0.19	--	**1.0**
Zinc	EPA 200.8	µg/L	0.27	1	--	--	**9.3**	--	**1.0**
Chromium (VI)	EPA 7199	µg/L	0.033	0.2	--	--	**0.51**	--	**0.5**
4,4'-DDD	EPA 8081A	µg/L	0.00049	0.001	--	--	<0.00049	--	**0.05**
4,4'-DDE	EPA 8081A	µg/L	0.00048	0.001	--	--	<0.00048	--	**0.05**
4,4'-DDT	EPA 8081A	µg/L	0.00034	0.001	--	--	<0.00034	--	**0.01**
Aldrin	EPA 8081A	µg/L	0.00037	0.001	--	--	<0.00037	--	**0.005**
Alpha Endosulfan	EPA 8081A	µg/L	0.0005	0.001	--	--	<0.00048	--	**0.02**
Alpha-BHC	EPA 8081A	µg/L	0.00046	0.001	--	--	<0.00046	--	**0.01**
Beta Endosulfan	EPA 8081A	µg/L	0.00059	0.001	--	--	<0.00059	--	**0.01**
Beta-BHC	EPA 8081A	µg/L	0.00049	0.001	--	--	<0.00049	--	**0.005**
Chlordane	EPA 8081A	µg/L	0.03	0.10	--	--	<0.03	--	**0.1**
Delta-BHC	EPA 8081A	µg/L	0.00048	0.001	--	--	<0.00048	--	**0.005**
Dieldrin	EPA 8081A	µg/L	0.00046	0.001	--	--	<0.00046	--	**0.01**
Endosulfan Sulfate	EPA 8081A	µg/L	0.00085	0.001	--	--	<0.00085	--	**0.05**
Endrin	EPA 8081A	µg/L	0.00072	0.001	--	--	<0.00072	--	**0.01**

Table 5. NPDES Receiving Water Monitoring, RSW-001 (50 feet upstream), Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/12/2018	11/14/2018	11/15/2018	11/16/2018	ML[a]
Endrin Aldehyde	EPA 8081A	µg/L	0.00077	0.002	--	--	<0.00077	--	**0.01**
Gamma-BHC	EPA 8081A	µg/L	0.00048	0.001	--	--	<0.00048	--	**0.02**
Heptachlor	EPA 8081A	µg/L	0.00039	0.001	--	--	<0.00039	--	**0.01**
Heptachlor Epoxide	EPA 8081A	µg/L	0.00084	0.001	--	--	<0.00084	--	**0.01**
Toxaphene	EPA 8081A	µg/L	0.04	0.4	--	--	<0.04	--	**0.5**
1,1,1-Trichloroethane	EPA 8260B	µg/L	0.380	1.0	--	--	<0.38	--	**2**
1,1,2,2-Tetrachloroethane	EPA 8260B	µg/L	0.34	1.0	--	--	<0.34	--	**1**
1,1,2-Trichloroethane	EPA 8260B	µg/L	0.29	1.0	--	--	<0.29	--	**2**
1,1-Dichloroethane	EPA 8260B	µg/L	0.45	0.50	--	--	<0.45	--	**1.0**
1,1-Dichloroethene	EPA 8260B	µg/L	0.34	1.00	--	--	<0.34	--	**2**
1,2,4-Trichlorobenzene	EPA 8260B	µg/L	0.210	1.0	--	--	<0.21	--	**5**
1,2-Dichlorobenzene	EPA 8260B	µg/L	0.29	1.0	--	--	<0.29	--	**2**
1,2-Dichloroethane	EPA 8260B	µg/L	0.29	0.50	--	--	<0.29	--	**2.0**
1,2-Dichloropropane	EPA 8260B	µg/L	0.24	1.0	--	--	<0.24	--	**1**
1,3-Dichlorobenzene	EPA 8260B	µg/L	0.280	1.0	--	--	<0.28	--	**1**
1,4-Dichlorobenzene	EPA 8260B	µg/L	0.32	1.0	--	--	<0.32	--	**1**
2-Chloroethyl Vinyl Ether	EPA 8260B	µg/L	0.29	0.5	--	--	<0.29	--	**1**
Acrolein	EPA 8260B	µg/L	2.5	5	--	--	<2.5 J	--	**5**
Acrylonitrile	EPA 8260B	µg/L	1.00	2	--	--	<1 J	--	**2**
Benzene	EPA 8260B	µg/L	0.34	1.0	--	--	<0.34	--	**2.0**
Bromodichloromethane	EPA 8260B	µg/L	0.38	1.0	--	--	<0.38	--	**2**
Bromoform	EPA 8260B	µg/L	0.39	1.0	--	--	<0.39	--	**2**
Bromomethane	EPA 8260B	µg/L	0.79	1	--	--	<0.79	--	**2**
cis-1,3-Dichloropropene	EPA 8260B	µg/L	0.28	1.0	--	--	<0.28	--	**2**
Carbon Tetrachloride	EPA 8260B	µg/L	0.40	0.5	--	--	<0.4	--	**2**
Chlorobenzene	EPA 8260B	µg/L	0.3	1.0	--	--	<0.3	--	**2**
Chloroethane	EPA 8260B	µg/L	0.97	1.0	--	--	<0.97	--	**2**
Chloroform	EPA 8260B	µg/L	0.27	1.0	--	--	<0.27	--	**2**
Chloromethane	EPA 8260B	µg/L	0.36	1.0	--	--	<0.36	--	**2**
Dibromochloromethane	EPA 8260B	µg/L	0.41	1.0	--	--	<0.41	--	**2**
Ethylbenzene	EPA 8260B	µg/L	0.3	1	--	--	<0.31	--	**2.0**
Hexachlorobutadiene	EPA 8260B	µg/L	0.3	1	--	--	<0.3	--	**1**
Hexachlorobenzene	EPA 8270C	µg/L	0.2	1	--	--	<0.23	--	**1**
Hexachloroethane	EPA 8270C	µg/L	0.9	1	--	--	<0.9	--	**1**
Methylene Chloride	EPA 8260B	µg/L	1.90	2.0	--	--	<1.9	--	**2**
Naphthalene	EPA 8260B	µg/L	0.42	1	--	--	<0.42	--	**1**
trans-1,2-Dichloroethene	EPA 8260B	µg/L	0.400	1.0	--	--	<0.4	--	**1**
trans-1,3-Dichloropropene	EPA 8260B	µg/L	0.25	1.0	--	--	<0.25	--	**2**
Tetrachloroethene	EPA 8260B	µg/L	0.30	1.0	--	--	<0.3	--	**2**

Table 5. NPDES Receiving Water Monitoring, RSW-001 (50 feet upstream), Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/12/2018	11/14/2018	11/15/2018	11/16/2018	ML [a]
Toluene	EPA 8260B	µg/L	0.46	2.0	--	--	<0.46	--	**2.0**
Trichloroethene	EPA 8260B	µg/L	0.370	1.0	--	--	<0.37	--	**2**
Vinyl Chloride	EPA 8260B	µg/L	0.29	0.5	--	--	<0.29	--	**2**
1,2-Diphenylhydrazine	EPA 8270C	µg/L	0.44	1	--	--	<0.44	--	**1**
2,4,6-Trichlorophenol	EPA 8270C	µg/L	0.34	5	--	--	<0.34	--	**10**
2,4-Dichlorophenol	EPA 8270C	µg/L	0.26	1	--	--	<0.26	--	**5**
2,4-Dimethylphenol	EPA 8270C	µg/L	0.3	1	--	--	<0.3	--	**2**
2,4-Dinitrophenol	EPA 8270C	µg/L	0.37	5	--	--	<0.37	--	**5**
2,4-Dinitrotoluene	EPA 8270C	µg/L	0.9	2	--	--	<0.87	--	**5**
2,6-Dinitrotoluene	EPA 8270C	µg/L	0.5	2	--	--	<0.46	--	**5**
2-Chloronaphthalene	EPA 8270C	µg/L	0.2	2	--	--	<0.23	--	**10**
2-Chlorophenol	EPA 8270C	µg/L	0.9	2	--	--	<0.85	--	**5**
2-Nitrophenol	EPA 8270C	µg/L	0.39	2	--	--	<0.39	--	**10**
3,3'-Dichlorobenzidine	EPA 8270C	µg/L	0.41	5	--	--	<0.41	--	**5**
4,6-Dinitro-2-Methylphenol	EPA 8270C	µg/L	0.43	5	--	--	<0.43	--	**5**
4-Bromophenyl-Phenyl Ether	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**5**
4-Chloro-3-Methylphenol	EPA 8270C	µg/L	0.42	1	--	--	<0.42	--	**1**
4-Chlorophenyl-Phenyl Ether	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**5**
4-Nitrophenol	EPA 8270C	µg/L	0.66	2	--	--	<0.66	--	**10**
Acenaphthene	EPA 8270C	µg/L	0.22	1	--	--	<0.22	--	**1**
Acenaphthylene	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**10**
Anthracene	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**10**
Benzidine	EPA 8270C	µg/L	3	5	--	--	<3	--	**5**
Benzo (a) Anthracene	EPA 8270C	µg/L	0.3	2	--	--	<0.3	--	**5**
Benzo (a) Pyrene	EPA 8270C	µg/L	0.21	2	--	--	<0.21	--	**10**
Benzo (b) Fluoranthene	EPA 8270C	µg/L	0.42	2	--	--	<0.42	--	**10**
Benzo (g,h,i) Perylene	EPA 8270C	µg/L	0.48	2	--	--	<0.48	--	**5**
Benzo (k) Fluoranthene	EPA 8270C	µg/L	0.29	2	--	--	<0.29	--	**10**
Bis(2-Chloroethoxy) Methane	EPA 8270C	µg/L	0.27	2	--	--	<0.27	--	**5**
Bis(2-Chloroethyl) Ether	EPA 8270C	µg/L	0.9	1	--	--	<0.86	--	**1**
Bis(2-Chloroisopropyl) Ether	EPA 8270C	µg/L	1.7	2	--	--	<1.7	--	**2**
Bis(2-Ethylhexyl) Phthalate	EPA 8270C	µg/L	0.2	3	--	--	<0.2	--	**5**
Butyl Benzyl Phthalate	EPA 8270C	µg/L	0.3	2	--	--	<0.26	--	**10**
Chrysene	EPA 8270C	µg/L	0.26	2	--	--	<0.26	--	**10**
Dibenz (a,h) Anthracene	EPA 8270C	µg/L	0.59	3	--	--	<0.59	--	**10**
Diethyl Phthalate	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**2**
Dimethyl Phthalate	EPA 8270C	µg/L	0.25	2	--	--	<0.25	--	**2**
Di-n-Butyl Phthalate	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**10**
Di-n-Octyl Phthalate	EPA 8270C	µg/L	0.3	2	--	--	<0.31	--	**10**

Table 5. NPDES Receiving Water Monitoring, RSW-001 (50 feet upstream), Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Analytical Method	Units	MDL	RL	11/12/2018	11/14/2018	11/15/2018	11/16/2018	ML[a]
Fluoranthene	EPA 8270C	µg/L	0.41	1	--	--	<0.41	--	**1**
Fluorene	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**10**
Hexachlorocyclopentadiene	EPA 8270C	µg/L	0.35	1	--	--	<0.35	--	**5**
Indeno (1,2,3-c,d) Pyrene	EPA 8270C	µg/L	0.71	2	--	--	<0.71	--	**10**
Isophorone	EPA 8270C	µg/L	0.41	1	--	--	<0.41	--	**1**
Nitrobenzene	EPA 8270C	µg/L	0.39	1	--	--	<0.39	--	**1**
N-Nitrosodimethylamine	EPA 8270C	µg/L	0.56	2	--	--	<0.56	--	**5**
N-Nitroso-di-n-propylamine	EPA 8270C	µg/L	0.56	2	--	--	<0.56	--	**5**
N-Nitrosodiphenylamine	EPA 8270C	µg/L	0.3	1	--	--	<0.27	--	**1**
Pentachlorophenol	EPA 8270C	µg/L	0.4	1	--	--	<0.43	--	**5**
Phenanthrene	EPA 8270C	µg/L	0.2	2	--	--	<0.2	--	**5**
Phenol	EPA 8270C	µg/L	0.84	1	--	--	<0.84	--	**1**
Pyrene	EPA 8270C	µg/L	0.31	2	--	--	<0.31	--	**10**
Cyanide (Total)	EPA 335.4	mg/L	0.0017	0.005	--	--	**0.0017**	--	**NE**
Asbestos	EPA 600 94 134, 100.2	MFL	0.2	0.2	--	--	<0.2	--	**NE**
Salinity	SM 2520B	ppt	--	--	**0.4**	**0.6**	**0.5**	**0.8**	**NE**

Notes:

[a] ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is also the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed.

< = not detected above the MDL

µg/L = micrograms per liter

J = detected at a concentration below the RL and above the MDL. Reported value is estimated.

MDL = laboratory method detection limit

MFL = million fibers per liter

mg/L = milligrams per liter

ML = minimum level. See note 1.

NE = not established

NPDES = National Pollutant Discharge Elimination System

pg/L = picograms per liter

ppt = parts per trillion

RL = laboratory reporting limit

TCDD = tetrachlorodibenzodioxin

Table 6. NPDES TCDD Equivalent Calculation, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

Dioxin or Furan Congener [a]	Analysis Method	Units	Effluent Concentration (11/15/18)[b]	Receiving Water (RSW-001) Concentration (11/15/18)[b]	TEF	Effluent Concentration x TEF[c]	Receiving Water (RSW-001) Concentration x TEF[c]
1,2,3,4,6,7,8-Hepta CDD	EPA 8290	pg/L	<5.2	**4.2**	0.01	2.60E-02	4.20E-02
1,2,3,4,6,7,8-Hepta CDF	EPA 8290	pg/L	<3.5	<2.2	0.01	1.75E-02	1.10E-02
1,2,3,4,7,8,9-Hepta CDF	EPA 8290	pg/L	<4.3	<3	0.01	2.15E-02	1.50E-02
1,2,3,4,7,8-Hexa CDD	EPA 8290	pg/L	<4	<2	0.1	2.00E-01	1.00E-01
1,2,3,4,7,8-Hexa CDF	EPA 8290	pg/L	<3.5	<1.6	0.1	1.75E-01	8.00E-02
1,2,3,6,7,8-Hexa CDD	EPA 8290	pg/L	<3.1	<2.1	0.1	1.55E-01	1.05E-01
1,2,3,6,7,8-Hexa CDF	EPA 8290	pg/L	<3.1	<1.7	0.1	1.55E-01	8.50E-02
1,2,3,7,8,9-Hexa CDD	EPA 8290	pg/L	<3.7	<2.1	0.1	1.85E-01	1.05E-01
1,2,3,7,8,9-Hexa CDF	EPA 8290	pg/L	<3.6	<1.6	0.1	1.80E-01	8.00E-02
1,2,3,7,8-Penta CDD	EPA 8290	pg/L	<3.9	<1.7	1	1.95E+00	8.50E-01
1,2,3,7,8-Penta CDF	EPA 8290	pg/L	<3.2	<2	0.05	8.00E-02	5.00E-02
2,3,4,6,7,8-Hexa CDF	EPA 8290	pg/L	<2.8	<1.5	0.1	1.40E-01	7.50E-02
2,3,4,7,8-Penta CDF	EPA 8290	pg/L	<1.3	<1.1	0.5	3.25E-01	2.75E-01
2,3,7,8-Tetra CDD	EPA 8290	pg/L	<2.6	<1.9	1	1.30E+00	9.50E-01
2,3,7,8-Tetra CDF	EPA 8290	pg/L	<2.1	<1.5	0.1	1.05E-01	7.50E-02
Octa CDD	EPA 8290	pg/L	<13	**27**	0.0001	6.50E-04	2.70E-03
Octa CDF	EPA 8290	pg/L	<12	<6.4	0.0001	6.00E-04	3.20E-04
TCDD-Equivalent						5.0	2.9

Notes:

[a] Congeners per California Regional Water Quality Control Board Waste Discharge Requirements

[b] If the result is not detected, the data are shown as less than (<) the method detection limit.

[c] If the result is not detected, half the method detection limit for the respective congener is used to calculate TCDD-Equivalent

CDD = chlorodibenzodioxin
CDF = chlordibenzofuran
NPDES = National Pollutant Discharge Elimination System
pg/L = picograms per liter
TCDD = tetrachlorodibenzodioxin
TEF = toxicity equivalency factor

Table 7. NPDES Effluent Chronic Toxicity Monitoring, Fourth Quarter 2018

SFPP Norwalk Pump Station, Norwalk, California

		Sampling Dates	11/12/2018, 11/14/2018, 11/16/2018				
		Test Dates	11/13/2018 to 11/20/2018				
		EFF-001 (Effluent)		RSW-002 (Downstream)		RSW-002 (Downstream)	
Test Organism	Toxicity Endpoint	% Effect	TST Result	% Effect	TST Result	% Effect	TST Result
Larva Fathead Minnows (Pimephales promelas)	Survival	No Effect	Pass	40[a]	Fail	52[b]	Fail
	Growth	No Effect	Pass	29[a]	Fail	47[b]	Fail

Notes:

[a] Laboratory adjustment of test solutions to pH 7 (in response to the observation of pH >9.0, which could potentially interfere with the receiving water test; the test solution and an accompanying laboratory water control medium were adjusted to pH 7 via manual drop-wise addition of ACS reagent-grade hydrochloric acid [HCl] and sodium hydroxide [NaOH]).

[b] Unadjusted.

The Maximum Daily Effluent Limitation for chronic toxicity is exceeded when a chronic toxicity test results in “Fail” and the “Percent Effect” is $\geq$50%.

Two additional effluent toxicity tests will be conducted within the same calendar month if the initial test results in a "Fail" to evaluate the Median Monthly Effluent Limit (MMEL).

A Toxicity Identification Evaluation will be conducted on any effluent sample that causes a chronic result of "Fail" with an effect >50%.

Accelerated testing will be implemented if the MMEL result is a "Fail" or if a single effluent toxicity test results in a "Fail" with % effect >50%.

NPDES = National Pollutant Discharge Elimination System

TST = Test of Significant Toxicity (statistical analysis) per EPA 833-R-10-003

Figures

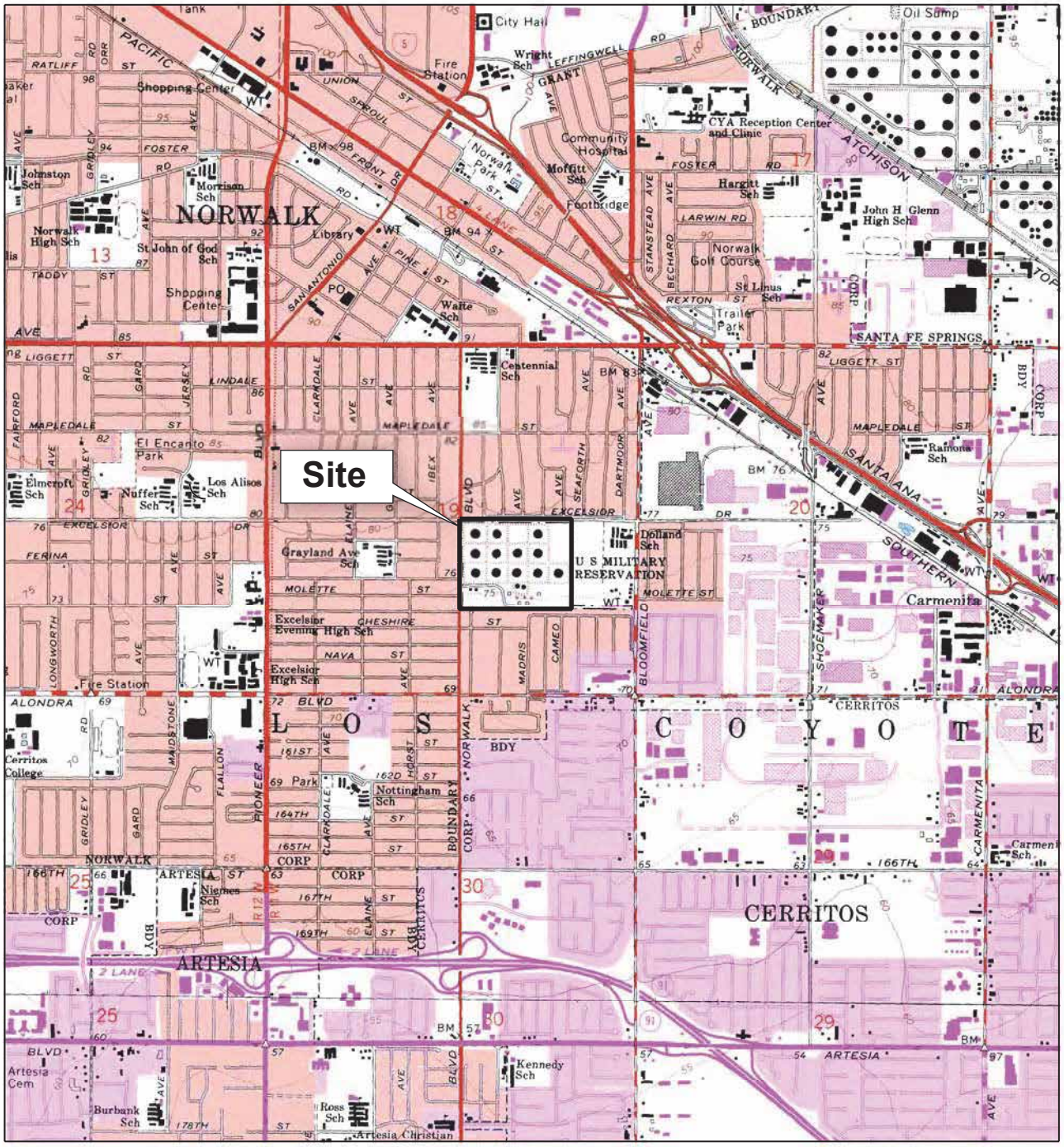
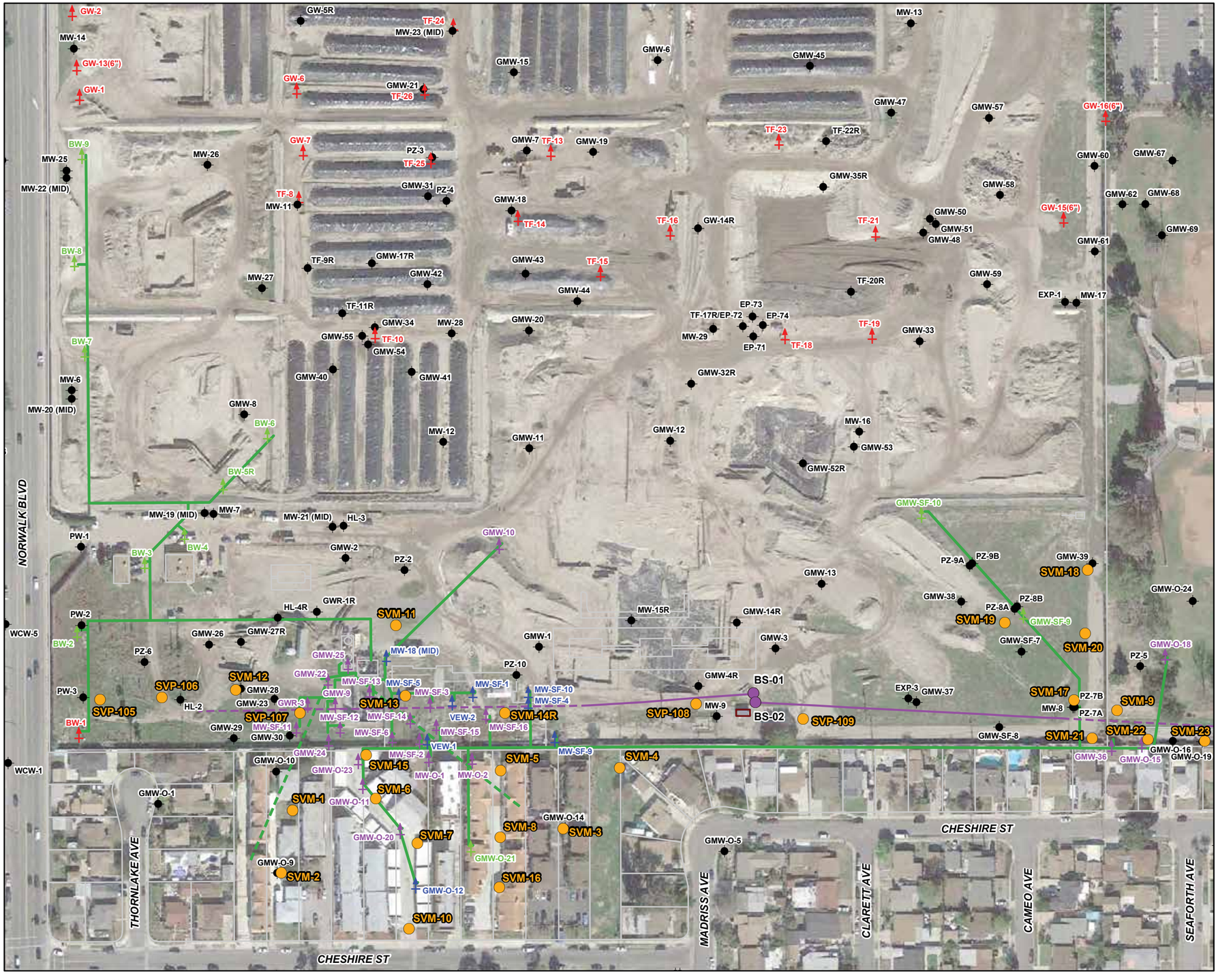


Figure 1. Site Location Map
SFPP Norwalk Pump Station
Norwalk, California

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.

JACOBS



LEGEND

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

Imagery Source:
Google Earth October 18, 2016.

N

0 75 150 300

Feet

1 inch = 150 feet

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

JACOBS

R:\ENBG\00_PROJ\K\KINDERMORGAN\NORWALK\MAPFILES\2018\FIGURE_2_REMEDIATION_SYSTEM_LAYOUT.MXD AESPEJO 2/15/2018

Attachment A
Laboratory Analytical Reports, Chain-of-Custody Documents, and Field Measurements

October 24, 2018

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

TEL:
FAX:

Workorder No.: N032525

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on October 16, 2018 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Quennie Manimtim
Laboratory Director

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Sample was analyzed within method holding time.

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

Subcontracted Analyses:

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

Analytical Comment for EPA 200.8:

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

Analytical Comments for EPA 8260B:

Laboratory Control Sample (LCS) recovery biased high for tert-Butanol. Sample results were non-detect (ND) for this analyte therefore reanalysis of the samples was not necessary.

RPD for Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) is outside criteriafor tert-Butanol. Sample results were non-detect (ND) for this analyte therefore reanalysis of the samples was not necessary.

Analytical Comments for EPA 8270C_SIM_Phenol:

Laboratory Control Sample Duplicate (LCSD) recovery biased high for surrogate 4-Terphenyl-d14. Sample results were non-detect (ND) for these analytes therefore reanalysis of the samples was not necessary.

Surrogate 4-Terphenyl-d14 recovery for Method Blank is biased high; however the results were non-detect (ND) for analytes of interest and reanalysis of the sample was not necessary.

Surrogate 4-Terphenyl-d14 recovery biased high in N032525-001 possibly due to matrix interferences. Sample results were non-detect (ND) for analytes of interest therefore reanalysis of the sample was not necessary.

ASSET Laboratories

Date: *24-Oct-18*

CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N032525
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N032525-001A	EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	10/16/2018	10/24/2018
N032525-001B	EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	10/16/2018	10/24/2018
N032525-001C	EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	10/16/2018	10/24/2018
N032525-001D	EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	10/16/2018	10/24/2018
N032525-001E	EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	10/16/2018	10/24/2018

CLIENT: CH2MHill
Lab Order: N032525
Project: SFPP Norwalk
Lab ID: N032525-001

Client Sample ID: EFF-10-16
Collection Date: 10/16/2018 1:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 3510C			**EPA 8270C**				
RunID: **NV00922-MS3_181023A** QC Batch: **71094**				PrepDate: **10/18/2018**			Analyst: **RRS**
Phenol	ND	0.33	1.0		µg/L	1	10/23/2018 03:41 PM
Surr: 1,2-Dichlorobenzene-d4	60.0	0	24-101		%REC	1	10/23/2018 03:41 PM
Surr: 2-Fluorobiphenyl	71.0	0	29-102		%REC	1	10/23/2018 03:41 PM
Surr: 4-Terphenyl-d14	132	0	27-108	S	%REC	1	10/23/2018 03:41 PM
Surr: Phenol-d5	39.0	0	25-108		%REC	1	10/23/2018 03:41 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **CA01638-MS10_181016A** QC Batch: **CA18VW033**				PrepDate:			Analyst: **GAC**
1,1-Dichloroethane	ND	0.45	0.50		ug/L	1	10/16/2018 03:52 PM
1,2-Dichloroethane	ND	0.29	0.50		ug/L	1	10/16/2018 03:52 PM
Benzene	ND	0.34	1.0		ug/L	1	10/16/2018 03:52 PM
Ethylbenzene	ND	0.31	1.0		ug/L	1	10/16/2018 03:52 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	10/16/2018 03:52 PM
MTBE	ND	0.34	1.0		ug/L	1	10/16/2018 03:52 PM
o-Xylene	ND	0.31	1.0		ug/L	1	10/16/2018 03:52 PM
Tert-Butanol	ND	2.4	5.0		ug/L	1	10/16/2018 03:52 PM
Toluene	ND	0.46	2.0		ug/L	1	10/16/2018 03:52 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	10/16/2018 03:52 PM
Surr: 1,2-Dichloroethane-d4	94.9	0	72-119		%REC	1	10/16/2018 03:52 PM
Surr: 4-Bromofluorobenzene	91.2	0	76-119		%REC	1	10/16/2018 03:52 PM
Surr: Dibromofluoromethane	101	0	85-115		%REC	1	10/16/2018 03:52 PM
Surr: Toluene-d8	96.6	0	81-120		%REC	1	10/16/2018 03:52 PM
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **NV00922-AA1_181017A** QC Batch: **71067**				PrepDate: **10/17/2018**			Analyst: **MG**
Mercury	ND	0.018	0.050		µg/L	1	10/17/2018 11:34 AM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_181017B** QC Batch: **71071**				PrepDate: **10/17/2018**			Analyst: **CEI**
Copper	ND	0.26	0.50		µg/L	1	10/17/2018 02:44 PM
Lead	ND	0.13	0.50		µg/L	1	10/17/2018 02:44 PM
Zinc	ND	0.27	1.0		µg/L	1	10/17/2018 02:44 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

CLIENT:	CH2MHill	**Client Sample ID:**	EFF-10-16
Lab Order:	N032525	**Collection Date:**	10/16/2018 1:30:00 PM
Project:	SFPP Norwalk	**Matrix:**	WASTEWATER
Lab ID:	N032525-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL TPH							
			EPA 8015B				
RunID: **SUBCONTRACT_181024A**	QC Batch: **R129493**			PrepDate:			Analyst: **admin**
Total TPH	ND	16	100		ug/L	1	10/24/2018

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

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-71071** SampType: **MBLK** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **10/17/2018** RunNo: **129329**
Client ID: **PBW** Batch ID: **71071** TestNo: **EPA 200.8** Analysis Date: **10/17/2018** SeqNo: **3176526**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.50									
Lead	ND	0.50									
Zinc	ND	1.0									

Sample ID: **LCS-71071** SampType: **LCS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **10/17/2018** RunNo: **129329**
Client ID: **LCSW** Batch ID: **71071** TestNo: **EPA 200.8** Analysis Date: **10/17/2018** SeqNo: **3176527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.028	0.50	10.00	0	100	85	115				
Lead	9.712	0.50	10.00	0	97.1	85	115				
Zinc	197.575	1.0	200.0	0	98.8	85	115				

Sample ID: **N032525-001C-DUP** SampType: **DUP** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **10/17/2018** RunNo: **129329**
Client ID: **ZZZZZZ** Batch ID: **71071** TestNo: **EPA 200.8** Analysis Date: **10/17/2018** SeqNo: **3176529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.50						0	0	20	
Lead	ND	0.50						0	0	20	
Zinc	ND	1.0						0	0	20	

Sample ID: **N032525-001C-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **10/17/2018** RunNo: **129329**
Client ID: **ZZZZZZ** Batch ID: **71071** TestNo: **EPA 200.8** Analysis Date: **10/17/2018** SeqNo: **3176531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.183	0.50	10.00	0	71.8	75	125				S
Lead	9.631	0.50	10.00	0	96.3	75	125				
Zinc	169.240	1.0	200.0	0	84.6	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
E Value above quantitation range
H Holding times for preparation or analysis exceeded
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
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N032525-001C-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **10/17/2018** RunNo: **129329**
Client ID: **ZZZZZZ** Batch ID: **71071** TestNo: **EPA 200.8** Analysis Date: **10/17/2018** SeqNo: **3176532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.306	0.50	10.00	0	73.1	75	125	7.183	1.71	20	S
Lead	9.600	0.50	10.00	0	96.0	75	125	9.631	0.317	20	
Zinc	169.920	1.0	200.0	0	85.0	75	125	169.2	0.401	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		Calculations are based on raw values		

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: **MB-71067**	SampType: **MBLK**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **10/17/2018**	RunNo: **129316**
Client ID: **PBW**	Batch ID: **71067**	TestNo: **EPA 245.1**		Analysis Date: **10/17/2018**	SeqNo: **3176264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.030	0.050									J

Sample ID: **LCS-71067**	SampType: **LCS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **10/17/2018**	RunNo: **129316**
Client ID: **LCSW**	Batch ID: **71067**	TestNo: **EPA 245.1**		Analysis Date: **10/17/2018**	SeqNo: **3176265**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.642	0.050	2.500	0	106	85	115				

Sample ID: **N032525-001C-MS**	SampType: **MS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **10/17/2018**	RunNo: **129316**
Client ID: **ZZZZZZ**	Batch ID: **71067**	TestNo: **EPA 245.1**		Analysis Date: **10/17/2018**	SeqNo: **3176266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.487	0.050	2.500	0	99.5	75	125				

Sample ID: **N032525-001C-MSD**	SampType: **MSD**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **10/17/2018**	RunNo: **129316**
Client ID: **ZZZZZZ**	Batch ID: **71067**	TestNo: **EPA 245.1**		Analysis Date: **10/17/2018**	SeqNo: **3176267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.527	0.050	2.500	0	101	75	125	2.487	1.57	20	

Sample ID: **N032525-001C-DUP**	SampType: **DUP**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **10/17/2018**	RunNo: **129316**
Client ID: **ZZZZZZ**	Batch ID: **71067**	TestNo: **EPA 245.1**		Analysis Date: **10/17/2018**	SeqNo: **3176269**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050						0	0	20	

Qualifiers:

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

Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: **MB-R129493** SampType: **MBLK** TestCode: **8015_W_SFP** Units: **ug/L** Prep Date: RunNo: **129493**
Client ID: **PBW** Batch ID: **R129493** TestNo: **EPA 8015B** Analysis Date: **10/24/2018** SeqNo: **3183621**

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		Calculations are based on raw values		

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181016-LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **LCSW** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	21.890	0.50	20.00	0	109	69	133				
1,2-Dichloroethane	17.600	0.50	20.00	0	88.0	69	132				
Benzene	19.310	1.0	20.00	0	96.6	81	122				
Ethylbenzene	19.670	1.0	20.00	0	98.4	73	127				
m,p-Xylene	40.050	1.0	40.00	0	100	76	128				
MTBE	22.240	1.0	20.00	0	111	65	123				
o-Xylene	19.900	1.0	20.00	0	99.5	80	121				
Tert-Butanol	105.260	5.0	100.0	0	105	70	130				
Toluene	18.410	2.0	20.00	0	92.0	77	122				
Xylenes, Total	59.950	2.0	60.00	0	99.9	75	125				
Surr: 1,2-Dichloroethane-d4	24.550		25.00		98.2	72	119				
Surr: 4-Bromofluorobenzene	25.440		25.00		102	76	119				
Surr: Dibromofluoromethane	25.900		25.00		104	85	115				
Surr: Toluene-d8	25.420		25.00		102	81	120				

Sample ID: **CA181016-LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **LCSS02** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	21.370	0.50	20.00	0	107	69	133	21.89	2.40	20	
1,2-Dichloroethane	18.400	0.50	20.00	0	92.0	69	132	17.60	4.44	20	
Benzene	20.210	1.0	20.00	0	101	81	122	19.31	4.55	20	
Ethylbenzene	19.990	1.0	20.00	0	100	73	127	19.67	1.61	20	
m,p-Xylene	41.800	1.0	40.00	0	104	76	128	40.05	4.28	20	
MTBE	23.270	1.0	20.00	0	116	65	123	22.24	4.53	20	
o-Xylene	20.660	1.0	20.00	0	103	80	121	19.90	3.75	20	
Tert-Butanol	130.720	5.0	100.0	0	131	70	130	105.3	21.6	20	SR
Toluene	19.430	2.0	20.00	0	97.2	77	122	18.41	5.39	20	
Xylenes, Total	62.460	2.0	60.00	0	104	75	125	59.95	4.10	20	
Surr: 1,2-Dichloroethane-d4	24.000		25.00		96.0	72	119		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
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181016-LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **LCSS02** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	25.710		25.00		103	76	119		0		
Surr: Dibromofluoromethane	27.070		25.00		108	85	115		0		
Surr: Toluene-d8	25.520		25.00		102	81	120		0		

Sample ID: **CA181016-MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **PBW** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Benzene	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	24.110		25.00		96.4	72	119				
Surr: 4-Bromofluorobenzene	23.750		25.00		95.0	76	119				
Surr: Dibromofluoromethane	25.540		25.00		102	85	115				
Surr: Toluene-d8	24.570		25.00		98.3	81	120				

Sample ID: **N032525-001A-MS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **ZZZZZZ** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.220	0.50	20.00	0	96.1	69	133				
1,2-Dichloroethane	18.460	0.50	20.00	0	92.3	69	132				
Benzene	18.910	1.0	20.00	0	94.6	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
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N032525-001A-MS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **ZZZZZZ** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	17.780	1.0	20.00	0	88.9	73	127				
m,p-Xylene	38.610	1.0	40.00	0	96.5	76	128				
MTBE	22.250	1.0	20.00	0	111	65	123				
o-Xylene	18.950	1.0	20.00	0	94.8	80	121				
Tert-Butanol	118.570	5.0	100.0	0	119	70	130				
Toluene	18.460	2.0	20.00	0	92.3	77	122				
Xylenes, Total	57.560	2.0	60.00	0	95.9	75	125				
Surr: 1,2-Dichloroethane-d4	24.020		25.00		96.1	72	119				
Surr: 4-Bromofluorobenzene	24.620		25.00		98.5	76	119				
Surr: Dibromofluoromethane	25.580		25.00		102	85	115				
Surr: Toluene-d8	25.960		25.00		104	81	120				

Sample ID: **N032525-001A-MSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **129302**
Client ID: **ZZZZZZ** Batch ID: **CA18VW033** TestNo: **EPA 8260B** Analysis Date: **10/16/2018** SeqNo: **3175323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.030	0.50	20.00	0	95.2	69	133	19.22	0.993	20	
1,2-Dichloroethane	17.970	0.50	20.00	0	89.8	69	132	18.46	2.69	20	
Benzene	19.140	1.0	20.00	0	95.7	81	122	18.91	1.21	20	
Ethylbenzene	18.480	1.0	20.00	0	92.4	73	127	17.78	3.86	20	
m,p-Xylene	39.730	1.0	40.00	0	99.3	76	128	38.61	2.86	20	
MTBE	21.870	1.0	20.00	0	109	65	123	22.25	1.72	20	
o-Xylene	19.080	1.0	20.00	0	95.4	80	121	18.95	0.684	20	
Tert-Butanol	117.180	5.0	100.0	0	117	70	130	118.6	1.18	20	
Toluene	18.310	2.0	20.00	0	91.6	77	122	18.46	0.816	20	
Xylenes, Total	58.810	2.0	60.00	0	98.0	75	125	57.56	2.15	20	
Surr: 1,2-Dichloroethane-d4	24.500		25.00		98.0	72	119		0		
Surr: 4-Bromofluorobenzene	25.120		25.00		100	76	119		0		
Surr: Dibromofluoromethane	24.880		25.00		99.5	85	115		0		
Surr: Toluene-d8	25.310		25.00		101	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
Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N032525
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID: **LCS-71094** SampType: **LCS** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **10/18/2018** RunNo: **129466**
Client ID: **LCSW** Batch ID: **71094** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **10/23/2018** SeqNo: **3182329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	3.200	1.0	6.000	0	53.3	24	120				
Surr: 1,2-Dichlorobenzene-d4	0.430		1.000		43.0	24	101				
Surr: 2-Fluorobiphenyl	0.710		1.000		71.0	29	102				
Surr: 4-Terphenyl-d14	0.830		1.000		83.0	27	108				
Surr: Phenol-d5	0.400		1.000		40.0	25	108				

Sample ID: **LCSD-71094** SampType: **LCSD** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **10/18/2018** RunNo: **129466**
Client ID: **LCSS02** Batch ID: **71094** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **10/23/2018** SeqNo: **3182392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	3.510	1.0	6.000	0	58.5	24	120	3.200	9.24	20	
Surr: 1,2-Dichlorobenzene-d4	0.430		1.000		43.0	24	101		0		
Surr: 2-Fluorobiphenyl	0.680		1.000		68.0	29	102		0		
Surr: 4-Terphenyl-d14	1.410		1.000		141	27	108		0		S
Surr: Phenol-d5	0.390		1.000		39.0	25	108		0		

Sample ID: **MB-71094** SampType: **MBLK** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **10/18/2018** RunNo: **129466**
Client ID: **PBW** Batch ID: **71094** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **10/23/2018** SeqNo: **3182442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	1.0									
Surr: 1,2-Dichlorobenzene-d4	0.550		1.000		55.0	24	101				
Surr: 2-Fluorobiphenyl	0.740		1.000		74.0	29	102				
Surr: 4-Terphenyl-d14	1.300		1.000		130	27	108				S
Surr: Phenol-d5	0.460		1.000		46.0	25	108				

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
Calculations are based on raw values

N032525

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: 10/16/18
PAGE: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		Section D Sampler Information:	
Company:	Kinder Morgan Energy Partners Attention: Steve Defibaugh	Report To:	Eric Davis	Attention:	Steve Defibaugh - Ref. AFE# 81195	Sampler Name:	James Dye
Address:	1100 Town & Country Road Orange, CA 92868	Copy To:	Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler Signature:	
Email To:	steve_defibaugh@kindermorgan.com eric.davis@rhs2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	10/16/18
Phone: 714-560-4802	Fax: 714-560-4801	Project Name:	SFPP Norwalk	ATL Project Manager:	Marlon Cartin		

Section E Required Sample Information

					CONTAINER TYPE	V	V	A	P	A									
					# OF CONTAINERS	3	3	2	1	2									
					PRESERVATIVE	H	H	–	N	--									
					VOLUME (mL)	40	40	1000	500	1000									
				SAMPLING															
ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	DATE	TIME	TOTAL # OF CONTAINERS	Analysis Test	BTEX, 1,1-DCA, 1,2-DCA, MTBE, TBA (8260B)	TPH-gas (8015B)	TPH-d, TPH-oil, Total TPH (8015B)	Cd, Pb, Zn (200.8); Hg (245.1)	Phenol (8270)							Comments
1	EFF-10-16	EFFLUENT	WW	G	10/16/18	1330	12		X	X	X	X	X							N032525-01
2																				Report metals, TPH and VOC preliminary data on 24-hr TAT
3																				Report total Xylenes
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
	10/16/18 1400	Karla Sevilla	10/16/18 14:00
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
Karla Sevilla	10/16/18 17:15	Vcantera Reguz	10/17/18 8:25 am
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT):
- ☐ A = Same Day
- ☑ B = 24 Hours
- ☐ C = 48 Hours
- ☐ D = 72 Hours
- ☑ E = 5 Workdays
- ☐ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:
2.2°C
ice #1

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

GSO #: 1038

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: James Dye

17-Oct-18

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 8015B**		
N032525-001B / EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	32OZA	2		
N032525-001E / EFF-10-16	Wastewater	10/16/2018 1:30:00 PM	VOA	1		

Please CC report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32525A 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: 1 day TAT.

Please analyze for TPH gas C4-C12, DRO C13-C22 and ORO C23+. Please also report Total TPH. EDD Requirement "CH2MHill" labspec7. "J" flagged down to MDL format.

GSO #: 542447750

		Date/Time		Date/Time
Relinquished by:		10/17/2018 17:00	**Received by:**	
Relinquished by:			**Received by:**	

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:	10/16/2018	Workorder:	N032525
Rep sample Temp (Deg C):	2.2	IR Gun ID:	1
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	1038	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 ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 10/17/2018

Reviewed By: 10/17/18

ASSET Laboratories

WORK ORDER Summary

17-Oct-18

WorkOrder: N032525

Client ID: CH2HI03

Project: SFPP Norwalk **QC Level:** RTNE **Date Received:** 10/16/2018

Comments: Report metals, TPH and VOC preliminary data on 24-hr TAT

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N032525-001A	EFF-10-16	10/16/2018 1:30:00 PM	10/18/2018	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N032525-001B			10/18/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☑	SUB
			10/18/2018		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☑	SUB
			10/18/2018		EPA 8015B	Total TPH	☐	☐	☑	SUB
N032525-001C			10/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			10/18/2018		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			10/18/2018		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			10/18/2018			MERCURY PREP	☐	☐	☐	WW
N032525-001D			10/23/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	☐	☐	☐	WW
			10/23/2018		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WW
N032525-001E			10/18/2018		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☑	SUB
N032525-002A	FOLDER	10/18/2018	10/18/2018		Folder	Folder	☐	☐	☐	LAB
			10/18/2018		Folder	Folder	☐	☐	☐	LAB

GSO | a GLS company GLS

800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

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

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

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

Tracking #: 542441038

EPS

LVS **A**

LAS VEGAS

C89102A

92283029

Print Date: 10/16/2018 6:22 PM

Package 4 of 4

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
Step 2: Fold this page in half.
Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

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

2.2°C
IR#1

Date of Report: 10/24/2018

Marlon Cartin

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

Client Project:	N032525
BCL Project:	CH2MHILL
BCL Work Order:	1832862
Invoice ID:	B320065

Enclosed are the results of analyses for samples received by the laboratory on 10/18/2018. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000808412

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1832862 Page 1 of 2

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

18-32862

QC Level: RTNE

Field Sampler: James Dye

17-Oct-18

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: EPA 8015B		
N032525-001B / EFF-10-16 -1	Wastewater	10/16/2018 1:30:00 PM	32OZA	2		
N032525-001E / EFF-10-16 -2	Wastewater	10/16/2018 1:30:00 PM	VOA	1		

CHECK IN — DISTRIBUTION — SUB-OUT

RUSH!

Please CC report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32525A 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: 1 day TAT.

Please analyze for TPH gas C4-C12, DRO C13-C22 and ORO C23+. Please also report Total TPH. EDD Requirement "CH2MHill" labspec7. "J" flagged down to MDL format.

GSO #: 542447750

	Date/Time		Date/Time
Relinquished by:	10/17/2018 17:00	Received by:	10.18.18 10:38
Relinquished by:		Received by:	

Chain of Custody and Cooler Receipt Form for 1832862 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-32862

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☑ (Specify) GSO	Ice Chest ☑ None ☐ Box ☐ Other ☐ (Specify)	YES ☐ NO ☐ W / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ 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: VOCA Thermometer ID: 274 Date/Time 10-18-18

Temperature: (A) 3.0 °C / (C) 2.7 °C Analyst Init MD 1038

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										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	CPW	AMX								
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 8270										
8oz / 16oz / 32oz AMBER	AMB									
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: JJR Date/Time: 10/18/18 1100

A = Actual / C = Corrected

Rev 21 05/23/2016

S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1832862-01	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 13:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	N032525-001B / EFF-10-16	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater
1832862-02	**COC Number:**	---	**Receive Date:**	10/18/2018 10:38
	Project Number:	---	**Sampling Date:**	10/16/2018 13:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	N032525-001E / EFF-10-16	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

BCL Sample ID: 1832862-01 | **Client Sample Name:** N032525-001B / EFF-10-16, 10/16/2018 1:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (C10 - C23)	ND	ug/L	40	6.8	EPA-8015CC	ND	U	1
TPH - Motor Oil (C23 - C36)	ND	ug/L	100	13	EPA-8015CC	ND	U	1
Tetracosane (Surrogate)	92.6	%	37 - 134 (LCL - UCL)		EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	10/19/18 20:45	10/22/18 17:32	RCC	GC-2	1.010	B028012

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1832862-02 | **Client Sample Name:** N032525-001E / EFF-10-16, 10/16/2018 1:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ppm	0.050	0.022	EPA-8015B	ND	U	1
a,a,a-Trifluorotoluene (FID Surrogate)	90.6	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	10/18/18 15:03	10/18/18 16:49	JBR	GC-V9	1	B027476

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B027476						
Gasoline Range Organics (C4 - C12)	B027476-BLK1	ND	ppm	0.050	0.022	U
a,a,a-Trifluorotoluene (FID Surrogate)	**B027476-BLK1**	**89.6**	%	**70 - 130 (LCL - UCL)**		

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B027476										
Gasoline Range Organics (C4 - C12)	B027476-BS1	LCS	1.1089	1.0000	ppm	111		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B027476-BS1	LCS	0.035915	0.040000	ppm	89.8		70 - 130		

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B027476	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1829546-79	ND	1.1239	1.0000	ppm		112		70 - 130	
	MSD	1829546-79	ND	1.1203	1.0000	ppm	0.3	112	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1829546-79	ND	0.037438	0.040000	ppm		93.6		70 - 130	
	MSD	1829546-79	ND	0.036508	0.040000	ppm	2.5	91.3		70 - 130	

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B028012						
TPH - Diesel (C10 - C23)	B028012-BLK1	ND	ug/L	40	6.8	U
TPH - Motor Oil (C23 - C36)	B028012-BLK1	ND	ug/L	100	13	U
Tetracosane (Surrogate)	**B028012-BLK1**	**103**	%	**37 - 134 (LCL - UCL)**		

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B028012										
TPH - Diesel (C10 - C23)	B028012-BS1	LCS	487.38	500.00	ug/L	97.5		52 - 128		
Tetracosane (Surrogate)	B028012-BS1	LCS	20.197	20.000	ug/L	101		37 - 134		

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B028012	Used client sample: N										
TPH - Diesel (C10 - C23)	MS	1829546-67	ND	401.54	500.00	ug/L		80.3		50 - 127	
	MSD	1829546-67	ND	495.34	500.00	ug/L	20.9	99.1	30	50 - 127	
Tetracosane (Surrogate)	MS	1829546-67	ND	16.905	20.000	ug/L		84.5		37 - 134	
	MSD	1829546-67	ND	19.714	20.000	ug/L	15.3	98.6		37 - 134	

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

Reported: 10/24/2018 17:50
Project: CH2MHILL
Project Number: N032525
Project Manager: Marlon Cartin

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
U	Analyte Not Detected at or above the reporting limit (CLP Flag)

November 28, 2018

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

TEL:
FAX:

Workorder No.: N032999

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on November 15, 2018 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Quennie Manimtim
Laboratory Director

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Sample was analyzed within method holding time ecept for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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

Subcontracted Analyses:

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

Ammonia Nitrogen, Cyanide, Sulfides, MBAS, BOD, EPA 8081, EPA 8082 and EPA 8270 were subcontractwed to BC Laboratories, Bakersfield, CA.

Acrolein and Acrylonitrile were subcontracted to Test America, Irvine, CA.

EPA 8290 was subcontracted to Pace Analytical Services, Inc., Minneapolis, MN.

Asbestos was subcontracted to LA testing, South Pasadena, CA.

Analytical Comment for EPA 1664_HEM Rev B:

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

Analytical Comment for EPA 200.7:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comment for EPA 200.8:

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

Analytical Comment for EPA 8260B:

Laboratory Control Sample (LCS) recovery biased high for 2-Chloroethyl Vinyl Ether. Sample results were non-detect (ND) for these analytes therefore reanalysis of the samples was not necessary.

CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N032999
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N032999-001A	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001B	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001C	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001D	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001E	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001F	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001G	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001H	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001I	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001J	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001K	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001L	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001M	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001N	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001O	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001P	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001Q	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001R	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-001S	EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	11/15/2018	11/29/2018
N032999-002A	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002B	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002C	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002D	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002E	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002F	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002G	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002H	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018
N032999-002I	RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	11/15/2018	11/29/2018

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-001

Client Sample ID: EFF-11-15
Collection Date: 11/15/2018 11:00:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_181121D** QC Batch: **R130110**				PrepDate:			Analyst: **LR**
pH	6.9	0.10	0.10	H	pH Units	1	11/21/2018 02:30 PM
Temp. at time of pH Analysis	25	0.10	0.10	H	°C	1	11/21/2018 02:30 PM
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_181119C** QC Batch: **71451**				PrepDate:	**11/19/2018**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	11/19/2018 09:32 AM
SETTLEABLE MATTER							
			SM2540F				
RunID: **NV00922-WC_181116H** QC Batch: **71444**				PrepDate:	**11/16/2018**		Analyst: **QBM**
Settleable Matter	ND	0.092	0.092		ml/L	1	11/16/2018 12:04 PM
HEXANE EXTRACTABLE MATERIAL (HEM)							
			EPA 1664 _HEM REV B				
RunID: **NV00922-WC_181120A** QC Batch: **71465**				PrepDate:	**11/20/2018**		Analyst: **LR**
Oil & Grease	1.3	0.82	5.1	J	mg/L	1	11/20/2018 08:02 AM
TURBIDITY							
			SM 2130B				
RunID: **NV00922-WC_181116A** QC Batch: **R130000**				PrepDate:			Analyst: **LR**
Turbidity	0.38	0.10	0.10		NTU	1	11/16/2018 11:15 AM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 3510C / **EPA 8270C**				
RunID: **NV00922-MS9_181126A** QC Batch: **71493**				PrepDate:	**11/21/2018**		Analyst: **RRS**
Phenol	0.53	0.33	1.0	J	µg/L	1	11/26/2018 04:30 PM
Surr: Phenol-d5	43.0	0	25-108		%REC	1	11/26/2018 04:30 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **CA01638-MS10_181116A** QC Batch: **CA18VW039**				PrepDate:			Analyst: **AW**
1,1,1-Trichloroethane	ND	0.38	1.0		ug/L	1	11/16/2018 01:33 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0		ug/L	1	11/16/2018 01:33 PM
1,1,2-Trichloroethane	ND	0.29	1.0		ug/L	1	11/16/2018 01:33 PM
1,1-Dichloroethane	ND	0.45	0.50		ug/L	1	11/16/2018 01:33 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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-001

Client Sample ID: EFF-11-15
Collection Date: 11/15/2018 11:00:00 AM
Matrix: WASTEWATER

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **CA01638-MS10_181116A** QC Batch: **CA18VW039** PrepDate: Analyst: **AW**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
1,1-Dichloroethene	ND	0.34	1.0		ug/L	1	11/16/2018 01:33 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0		ug/L	1	11/16/2018 01:33 PM
1,2-Dichlorobenzene	ND	0.29	1.0		ug/L	1	11/16/2018 01:33 PM
1,2-Dichloroethane	ND	0.29	0.50		ug/L	1	11/16/2018 01:33 PM
1,2-Dichloropropane	ND	0.24	1.0		ug/L	1	11/16/2018 01:33 PM
1,3-Dichlorobenzene	ND	0.28	1.0		ug/L	1	11/16/2018 01:33 PM
1,4-Dichlorobenzene	ND	0.32	1.0		ug/L	1	11/16/2018 01:33 PM
2-Butanone	ND	4.9	10		ug/L	1	11/16/2018 01:33 PM
Benzene	ND	0.34	1.0		ug/L	1	11/16/2018 01:33 PM
Bromodichloromethane	ND	0.38	1.0		ug/L	1	11/16/2018 01:33 PM
Bromoform	ND	0.39	1.0		ug/L	1	11/16/2018 01:33 PM
Bromomethane	ND	0.79	1.0		ug/L	1	11/16/2018 01:33 PM
Carbon tetrachloride	ND	0.40	0.50		ug/L	1	11/16/2018 01:33 PM
Chlorobenzene	ND	0.30	1.0		ug/L	1	11/16/2018 01:33 PM
Chloroethane	ND	0.97	1.0		ug/L	1	11/16/2018 01:33 PM
Chloroform	ND	0.27	1.0		ug/L	1	11/16/2018 01:33 PM
Chloromethane	ND	0.36	1.0		ug/L	1	11/16/2018 01:33 PM
cis-1,3-Dichloropropene	ND	0.28	1.0		ug/L	1	11/16/2018 01:33 PM
Di-isopropyl ether	ND	0.079	1.0		ug/L	1	11/16/2018 01:33 PM
Dibromochloromethane	ND	0.41	1.0		ug/L	1	11/16/2018 01:33 PM
Ethylbenzene	ND	0.31	1.0		ug/L	1	11/16/2018 01:33 PM
Hexachlorobutadiene	ND	0.30	1.0		ug/L	1	11/16/2018 01:33 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	11/16/2018 01:33 PM
Methylene chloride	ND	1.9	2.0		ug/L	1	11/16/2018 01:33 PM
MTBE	ND	0.34	1.0		ug/L	1	11/16/2018 01:33 PM
Naphthalene	ND	0.42	1.0		ug/L	1	11/16/2018 01:33 PM
o-Xylene	ND	0.31	1.0		ug/L	1	11/16/2018 01:33 PM
Tert-amyl methyl ether	ND	0.26	1.0		ug/L	1	11/16/2018 01:33 PM
Tert-Butanol	ND	2.4	5.0		ug/L	1	11/16/2018 01:33 PM
Tetrachloroethene	ND	0.30	1.0		ug/L	1	11/16/2018 01:33 PM
Toluene	ND	0.46	2.0		ug/L	1	11/16/2018 01:33 PM
trans-1,2-Dichloroethene	ND	0.40	1.0		ug/L	1	11/16/2018 01:33 PM
trans-1,3-Dichloropropene	ND	0.25	1.0		ug/L	1	11/16/2018 01:33 PM
Trichloroethene	ND	0.37	1.0		ug/L	1	11/16/2018 01:33 PM
Vinyl chloride	ND	0.29	0.50		ug/L	1	11/16/2018 01:33 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	11/16/2018 01:33 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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-001

Client Sample ID: EFF-11-15
Collection Date: 11/15/2018 11:00:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **CA01638-MS10_181116A** QC Batch: **CA18VW039**				PrepDate:			Analyst: **AW**
Surr: 1,2-Dichloroethane-d4	97.4	0	72-119		%REC	1	11/16/2018 01:33 PM
Surr: 4-Bromofluorobenzene	90.0	0	76-119		%REC	1	11/16/2018 01:33 PM
Surr: Dibromofluoromethane	104	0	85-115		%REC	1	11/16/2018 01:33 PM
Surr: Toluene-d8	99.3	0	81-120		%REC	1	11/16/2018 01:33 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **NV00922-MS5_181120A** QC Batch: **P18VW166**				PrepDate:			Analyst: **QBM**
2-Chloroethyl vinyl ether	ND	0.29	0.50		µg/L	1	11/20/2018 11:56 AM
Surr: 1,2-Dichloroethane-d4	111	0	75-130		%REC	1	11/20/2018 11:56 AM
Surr: 4-Bromofluorobenzene	105	0	80-120		%REC	1	11/20/2018 11:56 AM
Surr: Dibromofluoromethane	107	0	80-128		%REC	1	11/20/2018 11:56 AM
Surr: Toluene-d8	105	0	80-120		%REC	1	11/20/2018 11:56 AM
HEXAVALENT CHROMIUM BY IC							
EPA 7199							
RunID: **NV00922-IC7_181116A** QC Batch: **R129997**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	ND	0.033	0.20		µg/L	1	11/16/2018 09:11 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_181116A** QC Batch: **R130022**				PrepDate:			Analyst: **RAB**
Nitrogen, Nitrite	ND	0.015	2.5		mg/L	5	11/16/2018 12:15 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_181116A** QC Batch: **R130022**				PrepDate:			Analyst: **RAB**
Nitrate/Nitrite as N	ND	0.0050	0.10		mg/L	1	11/16/2018 12:15 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_181116A** QC Batch: **R130022**				PrepDate:			Analyst: **RAB**
Nitrate as N	ND	0.025	0.25		mg/L	5	11/16/2018 12:15 PM

Qualifiers:

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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-001

Client Sample ID: EFF-11-15
Collection Date: 11/15/2018 11:00:00 AM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **NV00922-AA1_181116A** QC Batch: **71423**				PrepDate:	**11/16/2018**		Analyst: **MG**
Mercury	ND	0.018	0.050		µg/L	1	11/16/2018 11:52 AM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_181119A** QC Batch: **71430**				PrepDate:	**11/16/2018**		Analyst: **CEI**
Selenium	ND	0.36	0.50		µg/L	1	11/19/2018 11:23 AM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_181119A** QC Batch: **71430**				PrepDate:	**11/16/2018**		Analyst: **CEI**
Antimony	0.29	0.16	0.50	J	µg/L	1	11/19/2018 11:23 AM
Arsenic	6.9	0.081	0.10		µg/L	1	11/19/2018 11:23 AM
Beryllium	0.36	0.042	0.50	J	µg/L	1	11/16/2018 01:50 PM
Cadmium	ND	0.053	0.25		µg/L	1	11/16/2018 01:50 PM
Chromium	ND	0.13	0.50		µg/L	1	11/16/2018 01:50 PM
Copper	ND	0.26	0.50		µg/L	1	11/16/2018 01:50 PM
Lead	ND	0.13	0.50		µg/L	1	11/16/2018 01:50 PM
Nickel	4.3	0.26	1.0		µg/L	1	11/16/2018 01:50 PM
Silver	ND	0.23	0.25		µg/L	1	11/16/2018 01:50 PM
Thallium	ND	0.19	0.50		µg/L	1	11/16/2018 01:50 PM
Zinc	2.1	0.27	1.0		µg/L	1	11/19/2018 11:23 AM
TOTAL TPH							
			EPA 8015B				
RunID: **SUBCONTRACT_181128A** QC Batch: **R130188**				PrepDate:			Analyst: **admin**
Total TPH	ND	22	100		ug/L	1	11/28/2018

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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-002

Client Sample ID: RSW-001-11-15
Collection Date: 11/15/2018 1:45:00 PM
Matrix: WASTEWATER

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: **CA01638-MS10_181116A** QC Batch: **CA18VW039** PrepDate: Analyst: **AW**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
1,1,1-Trichloroethane	ND	0.38	1.0		ug/L	1	11/16/2018 01:57 PM
1,1,2,2-Tetrachloroethane	ND	0.34	1.0		ug/L	1	11/16/2018 01:57 PM
1,1,2-Trichloroethane	ND	0.29	1.0		ug/L	1	11/16/2018 01:57 PM
1,1-Dichloroethane	ND	0.45	0.50		ug/L	1	11/16/2018 01:57 PM
1,1-Dichloroethene	ND	0.34	1.0		ug/L	1	11/16/2018 01:57 PM
1,2,4-Trichlorobenzene	ND	0.21	1.0		ug/L	1	11/16/2018 01:57 PM
1,2-Dichlorobenzene	ND	0.29	1.0		ug/L	1	11/16/2018 01:57 PM
1,2-Dichloroethane	ND	0.29	0.50		ug/L	1	11/16/2018 01:57 PM
1,2-Dichloropropane	ND	0.24	1.0		ug/L	1	11/16/2018 01:57 PM
1,3-Dichlorobenzene	ND	0.28	1.0		ug/L	1	11/16/2018 01:57 PM
1,4-Dichlorobenzene	ND	0.32	1.0		ug/L	1	11/16/2018 01:57 PM
2-Butanone	ND	4.9	10		ug/L	1	11/16/2018 01:57 PM
Benzene	ND	0.34	1.0		ug/L	1	11/16/2018 01:57 PM
Bromodichloromethane	ND	0.38	1.0		ug/L	1	11/16/2018 01:57 PM
Bromoform	ND	0.39	1.0		ug/L	1	11/16/2018 01:57 PM
Bromomethane	ND	0.79	1.0		ug/L	1	11/16/2018 01:57 PM
Carbon tetrachloride	ND	0.40	0.50		ug/L	1	11/16/2018 01:57 PM
Chlorobenzene	ND	0.30	1.0		ug/L	1	11/16/2018 01:57 PM
Chloroethane	ND	0.97	1.0		ug/L	1	11/16/2018 01:57 PM
Chloroform	ND	0.27	1.0		ug/L	1	11/16/2018 01:57 PM
Chloromethane	ND	0.36	1.0		ug/L	1	11/16/2018 01:57 PM
cis-1,3-Dichloropropene	ND	0.28	1.0		ug/L	1	11/16/2018 01:57 PM
Di-isopropyl ether	ND	0.079	1.0		ug/L	1	11/16/2018 01:57 PM
Dibromochloromethane	ND	0.41	1.0		ug/L	1	11/16/2018 01:57 PM
Ethylbenzene	ND	0.31	1.0		ug/L	1	11/16/2018 01:57 PM
Hexachlorobutadiene	ND	0.30	1.0		ug/L	1	11/16/2018 01:57 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	11/16/2018 01:57 PM
Methylene chloride	ND	1.9	2.0		ug/L	1	11/16/2018 01:57 PM
MTBE	ND	0.34	1.0		ug/L	1	11/16/2018 01:57 PM
Naphthalene	ND	0.42	1.0		ug/L	1	11/16/2018 01:57 PM
o-Xylene	ND	0.31	1.0		ug/L	1	11/16/2018 01:57 PM
Tert-amyl methyl ether	ND	0.26	1.0		ug/L	1	11/16/2018 01:57 PM
Tert-Butanol	ND	2.4	5.0		ug/L	1	11/16/2018 01:57 PM
Tetrachloroethene	ND	0.30	1.0		ug/L	1	11/16/2018 01:57 PM
Toluene	ND	0.46	2.0		ug/L	1	11/16/2018 01:57 PM
trans-1,2-Dichloroethene	ND	0.40	1.0		ug/L	1	11/16/2018 01:57 PM

Qualifiers:

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	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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-002

Client Sample ID: RSW-001-11-15
Collection Date: 11/15/2018 1:45:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **CA01638-MS10_181116A** QC Batch: **CA18VW039**				PrepDate:			Analyst: **AW**
trans-1,3-Dichloropropene	ND	0.25	1.0		ug/L	1	11/16/2018 01:57 PM
Trichloroethene	ND	0.37	1.0		ug/L	1	11/16/2018 01:57 PM
Vinyl chloride	ND	0.29	0.50		ug/L	1	11/16/2018 01:57 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	11/16/2018 01:57 PM
Surr: 1,2-Dichloroethane-d4	109	0	72-119		%REC	1	11/16/2018 01:57 PM
Surr: 4-Bromofluorobenzene	94.1	0	76-119		%REC	1	11/16/2018 01:57 PM
Surr: Dibromofluoromethane	106	0	85-115		%REC	1	11/16/2018 01:57 PM
Surr: Toluene-d8	99.8	0	81-120		%REC	1	11/16/2018 01:57 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **NV00922-MS5_181120A** QC Batch: **P18VW166**				PrepDate:			Analyst: **QBM**
2-Chloroethyl vinyl ether	ND	0.29	0.50		µg/L	1	11/20/2018 12:19 PM
Surr: 1,2-Dichloroethane-d4	112	0	75-130		%REC	1	11/20/2018 12:19 PM
Surr: 4-Bromofluorobenzene	100	0	80-120		%REC	1	11/20/2018 12:19 PM
Surr: Dibromofluoromethane	103	0	80-128		%REC	1	11/20/2018 12:19 PM
Surr: Toluene-d8	103	0	80-120		%REC	1	11/20/2018 12:19 PM
HEXAVALENT CHROMIUM BY IC							
EPA 7199							
RunID: **NV00922-IC7_181116A** QC Batch: **R129997**				PrepDate:			Analyst: **RAB**
Hexavalent Chromium	0.51	0.033	0.20		µg/L	1	11/16/2018 09:20 AM
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **NV00922-AA1_181116A** QC Batch: **71423**				PrepDate: **11/16/2018**			Analyst: **MG**
Mercury	ND	0.018	0.050		µg/L	1	11/16/2018 11:59 AM
TOTAL METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_181119E** QC Batch: **71422**				PrepDate: **11/16/2018**			Analyst: **CEI**
Calcium	67000	85	500		µg/L	1	11/19/2018 10:05 AM
Magnesium	36000	48	100		µg/L	1	11/19/2018 10:05 AM

Qualifiers:

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	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

CLIENT: CH2MHill
Lab Order: N032999
Project: SFPP Norwalk
Lab ID: N032999-002

Client Sample ID: RSW-001-11-15
Collection Date: 11/15/2018 1:45:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HARDNESS BY CALCULATION							
			SM 2340 B				
RunID: **NV00922-ICP2_181119E** QC Batch: **71422**				PrepDate:		**11/16/2018**	Analyst: **CEI**
Hardness, Calcium (As CaCO3)	170	0.50	0.50		mg/L	1	11/16/2018
Hardness, Magnesium (As CaCO3)	150	0.50	0.50		mg/L	1	11/16/2018
Total Hardness (As CaCO3)	310	1.0	1.0		mg/L	1	11/16/2018
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_181119A** QC Batch: **71430**				PrepDate:		**11/16/2018**	Analyst: **CEI**
Selenium	2.2	0.36	0.50		µg/L	1	11/19/2018 12:02 PM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_181119A** QC Batch: **71430**				PrepDate:		**11/16/2018**	Analyst: **CEI**
Antimony	0.73	0.16	0.50		µg/L	1	11/19/2018 12:02 PM
Arsenic	2.2	0.081	0.10		µg/L	1	11/19/2018 12:02 PM
Beryllium	ND	0.042	0.50		µg/L	1	11/16/2018 02:24 PM
Cadmium	ND	0.053	0.25		µg/L	1	11/16/2018 02:24 PM
Chromium	0.72	0.13	0.50		µg/L	1	11/16/2018 02:24 PM
Copper	1.4	0.26	0.50		µg/L	1	11/16/2018 02:24 PM
Lead	0.28	0.13	0.50	J	µg/L	1	11/16/2018 02:24 PM
Nickel	0.72	0.26	1.0	J	µg/L	1	11/16/2018 02:24 PM
Silver	ND	0.23	0.25		µg/L	1	11/16/2018 02:24 PM
Thallium	ND	0.19	0.50		µg/L	1	11/16/2018 02:24 PM
Zinc	9.3	0.27	1.0		µg/L	1	11/19/2018 12:02 PM

Qualifiers:

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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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID: **N032999-001GDUP** SampType: **DUP** TestCode: **150.1_4500H+** Units: **pH Units** Prep Date: RunNo: **130110**
Client ID: **ZZZZZZ** Batch ID: **R130110** TestNo: **SM4500-H+B** Analysis Date: **11/21/2018** SeqNo: **3211366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.890	0.10						6.860	0.436	10	H
Temp. at time of pH Analysis	25.000	0.10						25.00	0	10	H

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: **LCS-71451** SampType: **LCS** TestCode: **160.2_2540D_** Units: **mg/L** Prep Date: **11/19/2018** RunNo: **130072**
Client ID: **LCSW** Batch ID: **71451** TestNo: **SM2540D** Analysis Date: **11/19/2018** SeqNo: **3210014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	958.000	10	1000	0	95.8	80	120				

Sample ID: **MB-71451** SampType: **MBLK** TestCode: **160.2_2540D_** Units: **mg/L** Prep Date: **11/19/2018** RunNo: **130072**
Client ID: **PBW** Batch ID: **71451** TestNo: **SM2540D** Analysis Date: **11/19/2018** SeqNo: **3210015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID: **N032999-001GDUP** SampType: **DUP** TestCode: **160.2_2540D_** Units: **mg/L** Prep Date: **11/19/2018** RunNo: **130072**
Client ID: **ZZZZZZ** Batch ID: **71451** TestNo: **SM2540D** Analysis Date: **11/19/2018** SeqNo: **3210017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: **MB-71444** SampType: **MBLK** TestCode: **160.5_2540F_** Units: **ml/L** Prep Date: **11/16/2018** RunNo: **130151**
Client ID: **PBW** Batch ID: **71444** TestNo: **SM2540F** Analysis Date: **11/16/2018** SeqNo: **3212407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID: **MB-71465** SampType: **MBLK** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/20/2018** RunNo: **130058**
Client ID: **PBW** Batch ID: **71465** TestNo: **EPA 1664 _H** Analysis Date: **11/20/2018** SeqNo: **3209801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	ND	4.0									

Sample ID: **LCS-71465** SampType: **LCS** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/20/2018** RunNo: **130058**
Client ID: **LCSW** Batch ID: **71465** TestNo: **EPA 1664 _H** Analysis Date: **11/20/2018** SeqNo: **3209802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	37.900	4.0	40.00	0	94.8	78	114				

Sample ID: **N033006-002AMS** SampType: **MS** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/20/2018** RunNo: **130058**
Client ID: **ZZZZZZ** Batch ID: **71465** TestNo: **EPA 1664 _H** Analysis Date: **11/20/2018** SeqNo: **3209807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	40.435	4.3	43.48	16.65	54.7	78	114				S

Sample ID: **N033006-002AMSD** SampType: **MSD** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/20/2018** RunNo: **130058**
Client ID: **ZZZZZZ** Batch ID: **71465** TestNo: **EPA 1664 _H** Analysis Date: **11/20/2018** SeqNo: **3209808**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	39.355	4.3	43.01	16.65	52.8	78	114	40.43	2.71	18	S

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPPB

Sample ID: **MB-71422** SampType: **MBLK** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **PBW** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208651**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Magnesium	ND	100									

Sample ID: **LCS-71422** SampType: **LCS** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **LCSW** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208652**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	4971.291	500	5000	0	99.4	85	115				
Magnesium	5148.320	100	5000	0	103	85	115				

Sample ID: **N032999-002B-DUP** SampType: **DUP** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **ZZZZZZ** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	68649.392	500						67070	2.33	20	
Magnesium	36212.694	100						35590	1.73	20	

Sample ID: **N032999-002B-MS** SampType: **MS** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **ZZZZZZ** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	75181.757	500	5000	67070	162	75	125				S
Magnesium	41576.595	100	5000	35590	120	75	125				

Sample ID: **N032999-002B-MSD** SampType: **MSD** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **ZZZZZZ** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	75433.363	500	5000	67070	167	75	125	75180	0.334	20	S

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WPGEPPB

Sample ID: **N032999-002B-MSD** SampType: **MSD** TestCode: **200.7_WPGE** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130033**
Client ID: **ZZZZZZ** Batch ID: **71422** TestNo: **EPA 200.7** Analysis Date: **11/19/2018** SeqNo: **3208658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	41616.782	100	5000	35590	120	75	125	41580	0.0966	20	

Qualifiers:

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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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID: **MB-71430**	SampType: **MBLK**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **11/16/2018**	RunNo: **130036**
Client ID: **PBW**	Batch ID: **71430**	TestNo: **EPA 200.8**		Analysis Date: **11/19/2018**	SeqNo: **3208743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: **LCS-71430**	SampType: **LCS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **11/16/2018**	RunNo: **130036**
Client ID: **LCSW**	Batch ID: **71430**	TestNo: **EPA 200.8**		Analysis Date: **11/19/2018**	SeqNo: **3208744**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.989	0.50	10.00	0	99.9	85	115				

Sample ID: **N032999-001D-DUP**	SampType: **DUP**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **11/16/2018**	RunNo: **130036**
Client ID: **ZZZZZZ**	Batch ID: **71430**	TestNo: **EPA 200.8**		Analysis Date: **11/19/2018**	SeqNo: **3208746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50						0	0	20	

Sample ID: **N032999-001D-MS**	SampType: **MS**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **11/16/2018**	RunNo: **130036**
Client ID: **ZZZZZZ**	Batch ID: **71430**	TestNo: **EPA 200.8**		Analysis Date: **11/19/2018**	SeqNo: **3208749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.180	0.50	10.00	0	91.8	75	125				

Sample ID: **N032999-001D-MSD**	SampType: **MSD**	TestCode: **200.8_W_DR**	Units: **µg/L**	Prep Date: **11/16/2018**	RunNo: **130036**
Client ID: **ZZZZZZ**	Batch ID: **71430**	TestNo: **EPA 200.8**		Analysis Date: **11/19/2018**	SeqNo: **3208750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.219	0.50	10.00	0	102	75	125	9.180	10.7	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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-71430** SampType: **MBLK** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **PBW** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	ND	0.50									
Cadmium	ND	0.25									
Chromium	ND	0.50									
Copper	ND	0.50									
Lead	ND	0.50									
Nickel	ND	1.0									
Silver	ND	0.25									
Thallium	ND	0.50									

Sample ID: **LCS-71430** SampType: **LCS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **LCSW** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208622**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.804	0.50	10.00	0	98.0	85	115				
Cadmium	10.132	0.25	10.00	0	101	85	115				
Chromium	10.033	0.50	10.00	0	100	85	115				
Copper	10.358	0.50	10.00	0	104	85	115				
Lead	10.566	0.50	10.00	0	106	85	115				
Nickel	9.551	1.0	10.00	0	95.5	85	115				
Silver	9.904	0.25	10.00	0	99.0	85	115				
Thallium	9.575	0.50	10.00	0	95.7	85	115				

Sample ID: **N032999-001D-DUP** SampType: **DUP** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.355	0.50						0.3645	0	20	J
Cadmium	ND	0.25						0	0	20	
Chromium	ND	0.50						0	0	20	
Copper	ND	0.50						0	0	20	

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N032999-001D-DUP** SampType: **DUP** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208624**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.50						0	0	20	
Nickel	4.309	1.0						4.283	0.619	20	
Silver	ND	0.25						0	0	20	
Thallium	ND	0.50						0	0	20	

Sample ID: **N032999-001D-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	9.921	0.50	10.00	0.3645	95.6	75	125				
Cadmium	9.475	0.25	10.00	0	94.7	75	125				
Chromium	9.495	0.50	10.00	0	94.9	75	125				
Copper	6.076	0.50	10.00	0	60.8	75	125				S
Lead	10.791	0.50	10.00	0	108	75	125				
Nickel	13.676	1.0	10.00	4.283	93.9	75	125				
Silver	9.406	0.25	10.00	0	94.1	75	125				
Thallium	10.317	0.50	10.00	0	103	75	125				

Sample ID: **N032999-001D-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130029**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/16/2018** SeqNo: **3208628**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	10.039	0.50	10.00	0.3645	96.7	75	125	9.921	1.19	20	
Cadmium	9.743	0.25	10.00	0	97.4	75	125	9.475	2.79	20	
Chromium	9.407	0.50	10.00	0	94.1	75	125	9.495	0.930	20	
Copper	6.110	0.50	10.00	0	61.1	75	125	6.076	0.570	20	S
Lead	10.665	0.50	10.00	0	107	75	125	10.79	1.17	20	
Nickel	13.446	1.0	10.00	4.283	91.6	75	125	13.68	1.69	20	
Silver	9.349	0.25	10.00	0	93.5	75	125	9.406	0.602	20	
Thallium	10.240	0.50	10.00	0	102	75	125	10.32	0.745	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-71430** SampType: **MBLK** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130036**
Client ID: **PBW** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/19/2018** SeqNo: **3208770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.50									
Arsenic	ND	0.10									
Zinc	ND	1.0									

Sample ID: **LCS-71430** SampType: **LCS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130036**
Client ID: **LCSW** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/19/2018** SeqNo: **3208771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.065	0.50	10.00	0	101	85	115				
Arsenic	10.041	0.10	10.00	0	100	85	115				
Zinc	10.039	1.0	10.00	0	100	85	115				

Sample ID: **N032999-001D-DUP** SampType: **DUP** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130036**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/19/2018** SeqNo: **3208773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	0.273	0.50						0.2885	0	20	J
Arsenic	6.488	0.10						6.872	5.75	20	
Zinc	1.759	1.0						2.069	16.2	20	

Sample ID: **N032999-001D-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130036**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/19/2018** SeqNo: **3208776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.091	0.50	10.00	0.2885	98.0	75	125				
Arsenic	15.661	0.10	10.00	6.872	87.9	75	125				
Zinc	10.409	1.0	10.00	2.069	83.4	75	125				

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N032999-001D-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **130036**
Client ID: **ZZZZZZ** Batch ID: **71430** TestNo: **EPA 200.8** Analysis Date: **11/19/2018** SeqNo: **3208777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	10.203	0.50	10.00	0.2885	99.1	75	125	10.09	1.11	20	
Arsenic	16.148	0.10	10.00	6.872	92.8	75	125	15.66	3.06	20	
Zinc	10.349	1.0	10.00	2.069	82.8	75	125	10.41	0.582	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID: **MB-R130000**	SampType: **MBLK**	TestCode: **2130_W**	Units: **NTU**	Prep Date:	RunNo: **130000**
Client ID: **PBW**	Batch ID: **R130000**	TestNo: **SM 2130B**		Analysis Date: **11/16/2018**	SeqNo: **3207339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	ND	0.10									

Sample ID: **N032999-001GDUP**	SampType: **DUP**	TestCode: **2130_W**	Units: **NTU**	Prep Date:	RunNo: **130000**
Client ID: **ZZZZZZ**	Batch ID: **R130000**	TestNo: **SM 2130B**		Analysis Date: **11/16/2018**	SeqNo: **3207341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.380	0.10						0.3800	0	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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: **MB-71423** SampType: **MBLK** TestCode: **245.1_W_LL** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **129995**
Client ID: **PBW** Batch ID: **71423** TestNo: **EPA 245.1** Analysis Date: **11/16/2018** SeqNo: **3207230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID: **LCS-71423** SampType: **LCS** TestCode: **245.1_W_LL** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **129995**
Client ID: **LCSW** Batch ID: **71423** TestNo: **EPA 245.1** Analysis Date: **11/16/2018** SeqNo: **3207231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.613	0.050	2.500	0	105	85	115				

Sample ID: **N032999-001D-MS** SampType: **MS** TestCode: **245.1_W_LL** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **129995**
Client ID: **ZZZZZZ** Batch ID: **71423** TestNo: **EPA 245.1** Analysis Date: **11/16/2018** SeqNo: **3207232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.400	0.050	2.500	0	96.0	75	125				

Sample ID: **N032999-001D-MSD** SampType: **MSD** TestCode: **245.1_W_LL** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **129995**
Client ID: **ZZZZZZ** Batch ID: **71423** TestNo: **EPA 245.1** Analysis Date: **11/16/2018** SeqNo: **3207233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.302	0.050	2.500	0	92.1	75	125	2.400	4.17	20	

Sample ID: **N032999-001D-DUP** SampType: **DUP** TestCode: **245.1_W_LL** Units: **µg/L** Prep Date: **11/16/2018** RunNo: **129995**
Client ID: **ZZZZZZ** Batch ID: **71423** TestNo: **EPA 245.1** Analysis Date: **11/16/2018** SeqNo: **3207235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050						0	0	20	

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2PGE

Sample ID: **MB-R130022_NO2** SampType: **MBLK** TestCode: **300_W_NO2P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **PBW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3207972**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	0.50									

Sample ID: **LCS-R130022_NO2** SampType: **LCS** TestCode: **300_W_NO2P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **LCSW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3207973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	1.195	0.50	1.250	0	95.6	90	110				

Sample ID: **N032999-001GDUP** SampType: **DUP** TestCode: **300_W_NO2P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3207975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	2.5						0	0	20	

Sample ID: **N032999-001GMS** SampType: **MS** TestCode: **300_W_NO2P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3207976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	6.027	2.5	6.250	0	96.4	80	120				

Sample ID: **N032999-001GMSD** SampType: **MSD** TestCode: **300_W_NO2P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3207977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	6.304	2.5	6.250	0	101	80	120	6.027	4.48	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO3/NO2

Sample ID: **MB-R130022_NO3/N** SampType: **MBLK** TestCode: **300_W_NO3/** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **PBW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.10									
Nitrate/Nitrite as N	ND	0.10									

Sample ID: **LCS-R130022_NO3/** SampType: **LCS** TestCode: **300_W_NO3/** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **LCSW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.191	0.10	1.250	0	95.3	90	110				
Nitrate/Nitrite as N	2.386	0.10	2.500	0	95.4	90	110				

Sample ID: **N032999-001GDUP** SampType: **DUP** TestCode: **300_W_NO3/** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208133**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.10						0	0	20	

Sample ID: **N032999-001GMS** SampType: **MS** TestCode: **300_W_NO3/** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208134**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	11.767	0.10	12.50	0	94.1	80	120				

Sample ID: **N032999-001GMSD** SampType: **MSD** TestCode: **300_W_NO3/** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	12.097	0.10	12.50	0	96.8	80	120	11.77	2.77	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 300WLLNO3PGE

Sample ID: **MB-R130022_NO3** SampType: **MBLK** TestCode: **300WLLNO3P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **PBW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.050									

Sample ID: **LCS-R130022_NO3** SampType: **LCS** TestCode: **300WLLNO3P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **LCSW** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	1.191	0.050	1.250	0	95.3	90	110				

Sample ID: **N032999-001GDUP** SampType: **DUP** TestCode: **300WLLNO3P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	ND	0.25						0	0	20	

Sample ID: **N032999-001GMS** SampType: **MS** TestCode: **300WLLNO3P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.740	0.25	6.250	0	91.8	80	120				

Sample ID: **N032999-001GMSD** SampType: **MSD** TestCode: **300WLLNO3P** Units: **mg/L** Prep Date: RunNo: **130022**
Client ID: **ZZZZZZ** Batch ID: **R130022** TestNo: **EPA 300.0** Analysis Date: **11/16/2018** SeqNo: **3208129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate as N	5.794	0.25	6.250	0	92.7	80	120	5.740	0.928	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- 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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **MB-R129997** SampType: **MBLK** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **PBW** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID: **LCS-R129997** SampType: **LCS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **LCSW** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.982	0.20	5.000	0	99.6	90	110				

Sample ID: **N032999-001KDUP** SampType: **DUP** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **ZZZZZZ** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID: **N032999-002REP** SampType: **DUP** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **ZZZZZZ** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.502	0.20						0.5088	1.29	20	

Sample ID: **N032999-002DMS** SampType: **MS** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **ZZZZZZ** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.503	0.20	1.000	0.5088	99.4	90	110				

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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: **N032999-002DMSD** SampType: **MSD** TestCode: **7199_WPGE** Units: **µg/L** Prep Date: RunNo: **129997**
Client ID: **ZZZZZZ** Batch ID: **R129997** TestNo: **EPA 7199** Analysis Date: **11/16/2018** SeqNo: **3207319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.443	0.20	1.000	0.5088	93.4	90	110	1.503	4.11	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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: **MB-R130188** SampType: **MBLK** TestCode: **8015_W_SFP** Units: **ug/L** Prep Date: RunNo: **130188**
Client ID: **PBW** Batch ID: **R130188** TestNo: **EPA 8015B** Analysis Date: **11/28/2018** SeqNo: **3214043**

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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181116-LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **LCSW** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	19.600	1.0	20.00	0	98.0	67	132				
1,1,2,2-Tetrachloroethane	17.070	1.0	20.00	0	85.4	63	128				
1,1,2-Trichloroethane	19.820	1.0	20.00	0	99.1	75	125				
1,1-Dichloroethane	16.240	0.50	20.00	0	81.2	69	133				
1,1-Dichloroethene	16.630	1.0	20.00	0	83.2	68	130				
1,2,4-Trichlorobenzene	18.370	1.0	20.00	0	91.9	66	134				
1,2-Dichlorobenzene	20.110	1.0	20.00	0	101	71	122				
1,2-Dichloroethane	23.210	0.50	20.00	0	116	69	132				
1,2-Dichloropropane	19.850	1.0	20.00	0	99.2	75	125				
1,3-Dichlorobenzene	20.300	1.0	20.00	0	102	75	124				
1,4-Dichlorobenzene	19.640	1.0	20.00	0	98.2	74	123				
2-Butanone	217.740	10	200.0	0	109	49	136				
Benzene	17.890	1.0	20.00	0	89.4	81	122				
Bromodichloromethane	20.730	1.0	20.00	0	104	76	121				
Bromoform	20.790	1.0	20.00	0	104	69	128				
Bromomethane	21.580	1.0	20.00	0	108	53	141				
Carbon tetrachloride	17.340	0.50	20.00	0	86.7	66	138				
Chlorobenzene	18.620	1.0	20.00	0	93.1	81	122				
Chloroethane	19.410	1.0	20.00	0	97.0	58	133				
Chloroform	18.080	1.0	20.00	0	90.4	69	128				
Chloromethane	15.920	1.0	20.00	0	79.6	56	131				
cis-1,3-Dichloropropene	20.150	1.0	20.00	0	101	69	131				
Dibromochloromethane	19.500	1.0	20.00	0	97.5	66	133				
Dibromomethane	20.190	1.0	20.00	0	101	76	125				
Ethylbenzene	19.130	1.0	20.00	0	95.7	73	127				
Hexachlorobutadiene	19.390	1.0	20.00	0	97.0	67	131				
m,p-Xylene	41.650	1.0	40.00	0	104	76	128				
Methylene chloride	20.210	2.0	20.00	0	101	63	137				
MTBE	19.340	1.0	20.00	0	96.7	65	123				
n-Propylbenzene	20.510	1.0	20.00	0	103	72	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181116-LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **LCSW** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	20.160	1.0	20.00	0	101	80	121				
Tert-amyl methyl ether	20.600	1.0	20.00	0	103	70	130				
Tert-Butanol	96.000	5.0	100.0	0	96.0	70	130				
Tetrachloroethene	19.000	1.0	20.00	0	95.0	66	128				
Toluene	19.500	2.0	20.00	0	97.5	77	122				
trans-1,2-Dichloroethene	17.070	1.0	20.00	0	85.4	63	137				
trans-1,3-Dichloropropene	21.960	1.0	20.00	0	110	59	135				
Trichloroethene	19.240	1.0	20.00	0	96.2	70	127				
Vinyl chloride	18.330	0.50	20.00	0	91.7	50	134				
Xylenes, Total	61.810	2.0	60.00	0	103	75	125				
Surr: 1,2-Dichloroethane-d4	26.560		25.00		106	72	119				
Surr: 4-Bromofluorobenzene	26.000		25.00		104	76	119				
Surr: Dibromofluoromethane	25.940		25.00		104	85	115				
Surr: Toluene-d8	25.740		25.00		103	81	120				

Sample ID: **CA181116-LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **LCSS02** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1-Trichloroethane	18.730	1.0	20.00	0	93.6	67	132	19.60	4.54	20	
1,1,2,2-Tetrachloroethane	17.820	1.0	20.00	0	89.1	63	128	17.07	4.30	20	
1,1,2-Trichloroethane	19.630	1.0	20.00	0	98.2	75	125	19.82	0.963	20	
1,1-Dichloroethane	16.890	0.50	20.00	0	84.4	69	133	16.24	3.92	20	
1,1-Dichloroethene	16.760	1.0	20.00	0	83.8	68	130	16.63	0.779	20	
1,2,4-Trichlorobenzene	18.070	1.0	20.00	0	90.4	66	134	18.37	1.65	20	
1,2-Dichlorobenzene	20.190	1.0	20.00	0	101	71	122	20.11	0.397	20	
1,2-Dichloroethane	21.310	0.50	20.00	0	107	69	132	23.21	8.54	20	
1,2-Dichloropropane	19.360	1.0	20.00	0	96.8	75	125	19.85	2.50	20	
1,3-Dichlorobenzene	20.670	1.0	20.00	0	103	75	124	20.30	1.81	20	
1,4-Dichlorobenzene	20.010	1.0	20.00	0	100	74	123	19.64	1.87	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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181116-LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **LCSS02** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Butanone	194.780	10	200.0	0	97.4	49	136	217.7	11.1	20	
Benzene	17.770	1.0	20.00	0	88.8	81	122	17.89	0.673	20	
Bromodichloromethane	19.260	1.0	20.00	0	96.3	76	121	20.73	7.35	20	
Bromoform	20.110	1.0	20.00	0	101	69	128	20.79	3.33	20	
Bromomethane	19.290	1.0	20.00	0	96.5	53	141	21.58	11.2	20	
Carbon tetrachloride	16.850	0.50	20.00	0	84.2	66	138	17.34	2.87	20	
Chlorobenzene	18.890	1.0	20.00	0	94.4	81	122	18.62	1.44	20	
Chloroethane	17.560	1.0	20.00	0	87.8	58	133	19.41	10.0	20	
Chloroform	17.920	1.0	20.00	0	89.6	69	128	18.08	0.889	20	
Chloromethane	15.850	1.0	20.00	0	79.2	56	131	15.92	0.441	20	
cis-1,3-Dichloropropene	19.410	1.0	20.00	0	97.0	69	131	20.15	3.74	20	
Dibromochloromethane	20.240	1.0	20.00	0	101	66	133	19.50	3.72	20	
Dibromomethane	20.010	1.0	20.00	0	100	76	125	20.19	0.896	20	
Ethylbenzene	19.760	1.0	20.00	0	98.8	73	127	19.13	3.24	20	
Hexachlorobutadiene	19.360	1.0	20.00	0	96.8	67	131	19.39	0.155	20	
m,p-Xylene	44.040	1.0	40.00	0	110	76	128	41.65	5.58	20	
Methylene chloride	20.210	2.0	20.00	0	101	63	137	20.21	0	20	
MTBE	18.850	1.0	20.00	0	94.3	65	123	19.34	2.57	20	
n-Propylbenzene	21.730	1.0	20.00	0	109	72	129	20.51	5.78	20	
o-Xylene	21.550	1.0	20.00	0	108	80	121	20.16	6.67	20	
Tert-amyl methyl ether	19.940	1.0	20.00	0	99.7	70	130	20.60	3.26	20	
Tert-Butanol	108.880	5.0	100.0	0	109	70	130	96.00	12.6	20	
Tetrachloroethene	17.570	1.0	20.00	0	87.9	66	128	19.00	7.82	20	
Toluene	19.170	2.0	20.00	0	95.9	77	122	19.50	1.71	20	
trans-1,2-Dichloroethene	17.030	1.0	20.00	0	85.2	63	137	17.07	0.235	20	
trans-1,3-Dichloropropene	22.260	1.0	20.00	0	111	59	135	21.96	1.36	20	
Trichloroethene	19.170	1.0	20.00	0	95.9	70	127	19.24	0.364	20	
Vinyl chloride	17.810	0.50	20.00	0	89.0	50	134	18.33	2.88	20	
Xylenes, Total	65.590	2.0	60.00	0	109	75	125	61.81	5.93	20	
Surr: 1,2-Dichloroethane-d4	25.290		25.00		101	72	119		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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181116-LCSD** SampType: **LCSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **LCSS02** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.620		25.00		106	76	119		0		
Surr: Dibromofluoromethane	24.710		25.00		98.8	85	115		0		
Surr: Toluene-d8	24.900		25.00		99.6	81	120		0		

Sample ID: **CA181116-MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **PBW** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
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									
1,2,4-Trichlorobenzene	ND	1.0									
1,2-Dichlorobenzene	ND	1.0									
1,2-Dichloroethane	ND	0.50									
1,2-Dichloropropane	ND	1.0									
1,3-Dichlorobenzene	ND	1.0									
1,4-Dichlorobenzene	ND	1.0									
2-Butanone	ND	10									
Benzene	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	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-1,3-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: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181116-MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130016**
Client ID: **PBW** Batch ID: **CA18VW039** TestNo: **EPA 8260B** Analysis Date: **11/16/2018** SeqNo: **3207618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	1.0									
Ethylbenzene	ND	1.0									
Hexachlorobutadiene	ND	1.0									
m,p-Xylene	ND	1.0									
Methylene chloride	ND	2.0									
MTBE	ND	1.0									
n-Propylbenzene	ND	1.0									
o-Xylene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
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									
Vinyl chloride	ND	0.50									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	28.550		25.00		114	72	119				
Surr: 4-Bromofluorobenzene	22.680		25.00		90.7	76	119				
Surr: Dibromofluoromethane	27.080		25.00		108	85	115				
Surr: Toluene-d8	25.340		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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260WATERU

Sample ID: **P181120LCS** SampType: **LCS** TestCode: **8260WATERU** Units: **µg/L** Prep Date: RunNo: **130083**
Client ID: **LCSW** Batch ID: **P18VW166** TestNo: **EPA 8260B** Analysis Date: **11/20/2018** SeqNo: **3210211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chloroethyl vinyl ether	25.590	0.50	20.00	0	128	28	120				S
Surr: 1,2-Dichloroethane-d4	26.480		25.00		106	75	130				
Surr: 4-Bromofluorobenzene	25.170		25.00		101	80	120				
Surr: Dibromofluoromethane	25.580		25.00		102	80	128				
Surr: Toluene-d8	25.140		25.00		101	80	120				

Sample ID: **N032999-001QMS** SampType: **MS** TestCode: **8260WATERU** Units: **µg/L** Prep Date: RunNo: **130083**
Client ID: **ZZZZZZ** Batch ID: **P18VW166** TestNo: **EPA 8260B** Analysis Date: **11/20/2018** SeqNo: **3210212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chloroethyl vinyl ether	23.740	0.50	20.00	0	119	5	175				
Surr: 1,2-Dichloroethane-d4	26.720		25.00		107	75	130				
Surr: 4-Bromofluorobenzene	25.390		25.00		102	80	120				
Surr: Dibromofluoromethane	26.400		25.00		106	80	128				
Surr: Toluene-d8	25.360		25.00		101	80	120				

Sample ID: **N032999-001QMSD** SampType: **MSD** TestCode: **8260WATERU** Units: **µg/L** Prep Date: RunNo: **130083**
Client ID: **ZZZZZZ** Batch ID: **P18VW166** TestNo: **EPA 8260B** Analysis Date: **11/20/2018** SeqNo: **3210213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chloroethyl vinyl ether	22.490	0.50	20.00	0	112	5	175	23.74	5.41	20	
Surr: 1,2-Dichloroethane-d4	27.450		25.00		110	75	130		0		
Surr: 4-Bromofluorobenzene	25.970		25.00		104	80	120		0		
Surr: Dibromofluoromethane	26.170		25.00		105	80	128		0		
Surr: Toluene-d8	25.490		25.00		102	80	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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260WATERU

Sample ID: **P181120MB3** SampType: **MBLK** TestCode: **8260WATERU** Units: **µg/L** Prep Date: RunNo: **130083**
Client ID: **PBW** Batch ID: **P18VW166** TestNo: **EPA 8260B** Analysis Date: **11/20/2018** SeqNo: **3210216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Chloroethyl vinyl ether	ND	0.50									
Surr: 1,2-Dichloroethane-d4	26.510		25.00		106	75	130				
Surr: 4-Bromofluorobenzene	25.320		25.00		101	80	120				
Surr: Dibromofluoromethane	25.900		25.00		104	80	128				
Surr: Toluene-d8	25.210		25.00		101	80	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

CLIENT: CH2MHill
Work Order: N032999
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID: **LCS-71493**	SampType: **LCS**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **11/21/2018**	RunNo: **130141**
Client ID: **LCSW**	Batch ID: **71493**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **11/26/2018**	SeqNo: **3212110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	3.400	1.0	6.000	0	56.7	24	120				
Surr: Phenol-d5	0.470		1.000		47.0	25	108				

Sample ID: **LCSD-71493**	SampType: **LCSD**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **11/21/2018**	RunNo: **130141**
Client ID: **LCSS02**	Batch ID: **71493**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **11/26/2018**	SeqNo: **3212111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	3.000	1.0	6.000	0	50.0	24	120	3.400	12.5	20	
Surr: Phenol-d5	0.430		1.000		43.0	25	108		0		

Sample ID: **MB-71493**	SampType: **MBLK**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **11/21/2018**	RunNo: **130141**
Client ID: **PBW**	Batch ID: **71493**	TestNo: **EPA 8270C**	**EPA 3510C**	Analysis Date: **11/26/2018**	SeqNo: **3212112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	0.570	1.0									J
Surr: Phenol-d5	0.430		1.000		43.0	25	108				

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

N032999

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: 11-15-18
PAGE: 1 of 1

Section A Required Client Information:

Company:	Kinder Morgan Energy Partners
Attention:	Steve Defibaugh
Address:	1100 Town & Country Road, Orange, CA 92868
Email To:	steve_defibaugh@kindermorgan.com; eric.davis@ebcinc.com
Phone:	714-560-4802
Fax:	714-560-4801

Section B Required Project Information:

Report To:	Eric Davis
Copy To:	Steve Defibaugh
Purchase Order No.:	
Project Name:	SFPP Norwalk

Section C Invoice Information:

Attention:	Steve Defibaugh - Ref. AFE# 81195
Company Name:	Kinder Morgan Energy Partners
Address:	1100 Town & Country Road, Orange, CA 92868
ATL Project Manager:	Marlon Cartin

Section D Sampler Information:

NO LEAD

Sampler Name:	Eric Davis
Sampler Signature:	
Sample Date:	11-15-18

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS
1	EFF-11-15	EFFLUENT	WW	G	11/15/18	1100	32
2	RSW-001-11-15	50 Feet Upstream of Discharge in Coyote Creek		G	11/15/18	1345	19
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

Analysis Test	V	V	V	A	P	A	P	P	G	P	P	P	P	P	P	A	A	A	P	P
CONTAINER TYPE	V	V	V	A	P	A	P	P	G	P	P	P	P	P	P	A	A	A	P	P
# OF CONTAINERS	3	3	3	2	1	2	1	1	2	1	1	1	1	1	1	2	2	2	1	1
PRESERVATIVE	H	--	H	--	N	--	--	--	S	S	--	--	O	--	O/Z	--	--	--	--	N
VOLUME (mL)	40	40	40	1000	500	1000	1000	1000	1000	500	1000	250	250	500	250	1000	1000	1000	1000	500
MTBE, TBA, DIPE, TAME, MEK, + Priority Pollutant VOC (SW8260)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Acrolein, Acrylonitrile, 2-CLEVE (SW8260)	X	X																		
TPH-gas (SW8015)			X																	
TPH-d, TPH-oil, Total TPH (SW8015)				X																
Priority Pollutant Metals (E200.8/ E245.1)					X	X						X	X			X	X	X	X	
Priority Pollutant SVOC (SW8270)					X	X														
BOD (@ 20 deg. C)(SM5210B)																				
Total Suspended Solids (SM2540D); Turbidity (SM2130B); Nitrate + Nitrite (as N)(E300.0)								X												
Oil & Grease (1664)									X											
Ammonia Nitrogen (as N) (SM 4500 NH3C)										X										
Settleable Solids (SM2540F)											X									
Chromium VI (SW7199)												X								
Cyanide (EPA 335.4)													X							
MBAs (SM 5540C)														X						
Sulfides (SM 4500 S2-D)															X					
2,3,7,8-TCDD and TCDD Equivalents (SW8290)																X	X	X	X	
Priority Pollutant Pesticides (SW8081)																	X			
Priority Pollutant PCBs (SW8082)																		X		
Asbestos (EPA 600/R-94/134)																			X	
Hardness (SW13406)																				X

Comments

N032999-01
-02

Report metals, TPH and VOC preliminary data on 24-hr TAT
Report total Xylenes
Note that RSW-002 sample is only one time event over term of permit

Please Provide Detailed Sample Receipt with a list of sample bottles and analysis associated with the sample bottles.

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
	11-15-18/1420	K Sevilla	11/15/18 1420
K Sevilla	11/15/18 1707		11/15/18 1707
	11/15/18 17:11	Yvandra Rdgz	11/16/18 8:25

Turn Around Time (TAT):

- ☐ A = Same Day
- ☒ B = 24 Hours
- ☐ C = 48 Hours
- ☐ D = 72 Hours
- ☒ E = 5 Workdays
- ☐ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

1.9°C / 2.7°C / 2.9°C IR#1

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 Type:

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

650 #: 3689/3690/3691

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:	11/15/2018	Workorder:	N032999
Rep sample Temp (Deg C):	1.9/2.7/2.9	IR Gun ID:	1

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 3689/3690/3691 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 ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was past holding time upon receipt.

Checklist Completed By: YR 11/21/2018

Reviewed By: MBC 11/27/2018

ASSET Laboratories

WORK ORDER Summary

19-Nov-18

WorkOrder: N032999

Client ID: CH2HI03

Project: SFPP Norwalk **QC Level:** RTNE **Date Received:** 11/15/2018

Comments: Report metals, TPH and VOC preliminary data on 24-hr TAT. Report Total Xylenes.

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N032999-001A	EFF-11-15	11/15/2018 11:00:00 AM	11/19/2018	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	V-CA
N032999-001B			11/19/2018		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☑	SUB
N032999-001C			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☑	SUB
			11/19/2018		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☑	SUB
			11/19/2018		EPA 8015B	Total TPH	☐	☐	☑	SUB
N032999-001D			11/19/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/19/2018		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	☐	☐	☐	WW
			11/19/2018		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			11/19/2018		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/19/2018			MERCURY PREP	☐	☐	☐	WW
N032999-001E			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE/PCB	☐	☐	☑	SUB
			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C	☐	☐	☑	SUB
			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE	☐	☐	☑	SUB
			11/19/2018		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD	☐	☐	☑	SUB
			11/19/2018		EPA 8082	PCBs BY GC/ECD	☐	☐	☑	SUB
			11/19/2018		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☑	SUB
N032999-001F			11/26/2018		SM 5210 B	BIOCHEMICAL OXYGEN DEMAND	☐	☐	☑	SUB
N032999-001G			11/26/2018		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	LSR
			11/26/2018			Total Suspended Solids Prep	☐	☐	☐	LSR

ASSET Laboratories

WORK ORDER Summary

19-Nov-18

WorkOrder: N032999

Client ID: CH2HI03

Project: SFPP Norwalk **QC Level:** RTNE **Date Received:** 11/15/2018

Comments: Report metals, TPH and VOC preliminary data on 24-hr TAT. Report Total Xylenes.

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N032999-001G	EFF-11-15	11/15/2018 11:00:00 AM	11/26/2018	Wastewater	SM 2130B	TURBIDITY	☐	☐	☐	LSR
			11/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			11/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
			11/26/2018		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	LSR
N032999-001H			11/26/2018			Oil and Grease Sample Prep	☐	☐	☐	WW
			11/26/2018		EPA 1664 _HEM Rev B	Hexane Extractable Material (HEM)	☐	☐	☐	WW
N032999-001I			11/26/2018		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
N032999-001J			11/26/2018		SM2540F	SETTLEABLE MATTER	☐	☐	☐	WW
			11/26/2018			Setteable Matter	☐	☐	☐	WW
N032999-001K			11/26/2018		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WW
N032999-001L			11/26/2018		SM4500-CN E	CYANIDE, TOTAL	☐	☐	☑	SUB
N032999-001M			11/26/2018		SM 5540 C	SURFACTANTS	☐	☐	☑	SUB
N032999-001N			11/26/2018		SM4500-S-2D	SULFIDE, TOTAL	☐	☐	☑	SUB
N032999-001O			11/26/2018		EPA 8290	Dioxins and Dibenzofurans	☐	☐	☑	SUB
N032999-001P			11/19/2018		TEM	Asbestos TEM	☐	☐	☑	SUB
N032999-001Q			11/26/2018		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N032999-001R			11/26/2018		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☑	SUB
N032999-002A	RSW-001-11-15	11/15/2018 1:45:00 PM	11/19/2018		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	V-CA
N032999-002B			11/19/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			11/19/2018		EPA 200.7	TOTAL METALS BY ICP	☐	☐	☐	WW
			11/19/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

19-Nov-18

WorkOrder: N032999

Client ID: CH2HI03

Project: SFPP Norwalk **QC Level:** RTNE **Date Received:** 11/15/2018

Comments: Report metals, TPH and VOC preliminary data on 24-hr TAT. Report Total Xylenes.

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N032999-002B	RSW-001-11-15	11/15/2018 1:45:00 PM	11/19/2018	Wastewater	EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	☐	☐	☐	WW
			11/19/2018		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			11/19/2018		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			11/19/2018			MERCURY PREP	☐	☐	☐	WW
			11/26/2018		SM 2340 B	Hardness by Calculation	☐	☐	☐	WW
N032999-002C			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE/PCB	☐	☐	☑	SUB
			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C	☐	☐	☑	SUB
			11/19/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: PESTICIDE	☐	☐	☑	SUB
			11/19/2018		EPA 8081A	ORGANOCHLORINE PESTICIDES BY GC/ECD	☐	☐	☑	SUB
			11/19/2018		EPA 8082	PCBs BY GC/ECD	☐	☐	☑	SUB
			11/19/2018		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☑	SUB
N032999-002D			11/26/2018		EPA 7199	Hexavalent Chromium by IC	☐	☐	☐	WW
N032999-002E			11/26/2018		SM4500-CN E	CYANIDE, TOTAL	☐	☐	☑	SUB
N032999-002F			11/26/2018		EPA 8290	Dioxins and Dibenzofurans	☐	☐	☑	SUB
N032999-002G			11/19/2018		TEM	Asbestos TEM	☐	☐	☑	SUB
N032999-002H			11/26/2018		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N032999-002I			11/26/2018		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☑	SUB
N032999-003A	FOLDER	11/19/2018	11/19/2018		Folder	Folder	☐	☐	☐	LAB
			11/19/2018		Folder	Folder	☐	☐	☐	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

Project Manager DANIELLE ROBERTS

Subcontractor:

Test America - Irvine
17461 Derian Ave, Ste. 100
Irvine, CA 92614

TEL: (949) 261-1022
FAX: (949) 261-1228
Acct #:

Field Sampler: SIGNED

16-Nov-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8260B		
N032999-001R / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	VOA	1		
N032999-002I / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	VOA	1		

Limited sample (1 VOA each)

Acrolein: RL-5
Acrylonitrile: RL-2
EDD Requirement CH2MHILL Labspec7 edata. Please report "J' flagged down to MDL format.

Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999C Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Acrolein (RL-5) and Acrylonitrile (RL-2) by 8260.

		Date/Time			Date/Time
Relinquished by:	KSevilla	11/16/18 1620	**Received by:**		11/16/18 1620
Relinquished by:			**Received by:**		

5.7/5.7 1K-89

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:

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414

TEL: (612) 607-1700
FAX: (612) 607-6444
Acct #:

Field Sampler: SIGNED

19-Nov-18

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 8290**		
N032999-001O / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	32OZA	1		
N032999-002F / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	32OZA	1		

EDD Requirement CH2MHILL Labspec7 edata. Please report "J" flagged down to MDL format.

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999D Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for 2,3,7,8-TCDD and TCDD equivalents by SW8290.

Fedex #: 773761146537

		Date/Time			**Date/Time**
Relinquished by:		11/19/2018 16:00	**Received by:**		
Relinquished by:			**Received by:**		

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:
LA Testing
159 Pasadena Avenue
South Pasadena, CA 91030

TEL: (323) 254-9960
FAX: (323) 254-9982
Acct #:

Field Sampler:

16-Nov-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: Asb_PLM	Requested Tests: TEM	
N032999-001P / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	32OZP	1 PC	1	
N032999-002G / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	32OZP	1 PC	1	

EDD Requirement CH2MHILL Labspec7 edata. Please report "J" flagged down to MDL format.

Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999B Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Molky at (562)-219-7435. Please e-mail results to reports@assetlaboratories.com by: 11/26/18

Please analyze for Asbestos (EPA 600/R-94/134)

4.6°C

		Date/Time			Date/Time
Relinquished by:	KSevilla	11/16/18 1230	**Received by:**	W1	1230 11/16/18
Relinquished by:			**Received by:**		

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: SIGNED

19-Nov-18

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 8081A**	**EPA 8082**	**EPA 8270C**
N032999-001E / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	32OZA	1	1	1
N032999-002C / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	32OZA	1	1	1

EDD Requirement CH2MHILL Labspec7 edata. Please report "J" flagged down to MDL format.

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999E Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Priority Pollutant SVOCs,Pesticides and PBCs.

GSO#: 542826164 / 542834736

	Date/Time		Date/Time
Relinquished by:	11/19/2018 17:00	**Received by:**	
Relinquished by:		**Received by:**	

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

SUBCONTRACT TO: BC LABS

CHAIN OF CUSTODY RECORD

Page 1 of 1

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.3072691
California: 11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: ASSET Laboratories	**Report to:** Marlon Cartin
Address: 11110 Artesia Blvd Ste B	**Company:** ASSET Laboratories
Address: Cerritos, CA 90703	**Email:** marlon@assetlaboratories.com; reports.lv@assetlaboratories.com
Phone: 562.219.7435 **Fax:** 562.219.7436	**Address:** 3151 W Post Rd
Submitted By: Molky Brar	Las Vegas, NV 89113
Title:	**Phone:** 702.307.2659 **Fax:**
Signature: **Date:**	**Sampled by:**
I hereby authorize ASSET Labs to perform the tests indicated below:	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.*
Project Name: SFPP NORWALK	**Signature:**
Project Number:	

Bill to: Elvira Allegaert/Accounts Payable	
Address: 11110 Artesia Blvd Ste B	
Cerritos, CA 90703	
Email to: elvira@assetlaboratories.com	**PO#** N32999A
Phone: 562.219.7435	**Fax:** 562.219.7436

EDD Requirement
- Excel EDD ☐
- Geotracker ☐
- Labspec ☐
- Others ☐
- Specify:
- Global ID:

QA/QC
- RTNE ☐
- RWQCB ☐
- CalTrans ☐
- Level III ☐
- LEVEL IV ☐
- Regulatory ☐
- Specify State:

Sampe Receipt Condition

	Y	N
1. Chilled	☐	☐
2. Headspace	☐	☐
3. Container Intact	☐	☐
4. Seal Present	☐	☐
5. IR number		
6. Method of Cooling		
Sample Temp:		

Matrix
- Ground ☐ Sediment ☐
- Potable ☐ Soil ☐
- NPDES ☐ Other Solid ☐
- Surface ☐

Analyses Requested

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	AMMONIA NITROGEN	CYANIDE (EPA 335.4)	SULFIDES (SM 4500 S2-D)	MBAs (SM 5540C)	BOD (@20 DEG. C) SM 5210B	TPH-gas (SW8015)	TPH-d, TPH-oil, Total TPH
1		EFF-11-15	11/15/18	11:00	WW			X	X	X	X	X	X	X
2		RSW-001-11-15	11/15/18	13:45	WW				X					
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														

Turn Around Time | No. of container | Container Type | PRESERVATION

Courier:

Tracking No.

Remarks

TPH on 24-HR TAT

Relinquished by (Signature and Printed Name): Date / Time 11/15/18 11:44:18 19:00

Received by (Signature and Printed Name): Date / Time

Relinquished by (Signature and Printed Name): Date / Time

Received by (Signature and Printed Name): Date / Time

Relinquished by (Signature and Printed Name): Date / Time

Received by (Signature and Printed Name): Date / Time

Turn Around Time (TAT)
- ☐ A < 24 Hrs or Same Day TAT
- ☑ B = Next Workday
- ☐ C = 2 Workdays
- ☐ D = 3 Workdays
- ☑ E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

EDD REQUIREMENT CH2MHILL Labspec7 edata.
Please report "J" flagged down to MDL format.

Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

Terms
1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
   Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 25% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. ASSET Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 Days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

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

Container Type:

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

White = Laboratory Copy

Yellow = Customer's Copy

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800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

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

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

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

Tracking #: 542803689

PDS

LVS

A

LAS VEGAS

C89102A

93871917

Package 1 of 3

Print Date: 11/15/2018 7:41 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.

1.9°C
JM#1

GSO | a GLS company GLS

800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

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

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

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

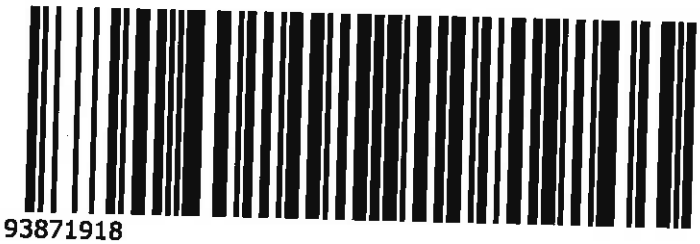
Tracking #: 542803690

PDS

LVS **A**

LAS VEGAS

C89102A



93871918

Package 2 of 3

Print Date: 11/15/2018 7:41 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.

2.7°C
SR# 1

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800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

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

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

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

Tracking #: 542803691

PDS

LVS

A

LAS VEGAS

C89102A

93871919

Print Date: 11/15/2018 7:41 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.

2.5°C
unit 1

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 321826571
Customer ID: ADTL34
Customer PO: N32999B
Project ID:

Attn: Marlon Cartin
Asset Laboratories
3151 West Post Road
Las Vegas, NV 89118

Phone: (702) 307-2659
Fax:
Collected: 11/15/2018
Received: 11/16/2018
Analyzed: 11/23/2018

Proj:

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
N032999-001P/EFF-11-15 321826571-0001	11/16/2018 02:50 PM	100	1288	0.0640	≥ 0.5 µm	None Detected	ND	0.20	<0.20	0.00 - 0.74
					> 10 µm only	None Detected	ND	0.20	<0.20	0.00 - 0.74
N032999-002G/RSW-001-11-15 321826571-0002	11/16/2018 02:50 PM	30	1288	0.2176	≥ 0.5 µm	None Detected	ND	0.20	<0.20	0.00 - 0.73
					> 10 µm only	None Detected	ND	0.20	<0.20	0.00 - 0.73

Analyst(s)
Kyeong Corbin (2)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 11/23/2018 10:35:04

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-224648-1
Client Project/Site: N032999

For:
Advanced Technology Laboratories
dba Asset Laboratories
3151-3153 W Post Road
Las Vegas, Nevada 89118

Attn: Marlon Cartin

Authorized for release by:
11/23/2018 3:48:29 PM

Danielle Roberts, Senior Project Manager
(949)261-1022
danielle.roberts@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

Table of Contents

Sample Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-224648-1	EFF-11-15	Water	11/15/18 11:00	11/16/18 16:20
440-224648-2	RSW-001-11-15	Water	11/15/18 13:45	11/16/18 16:20

Job ID: 440-224648-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-224648-1

Comments
No additional comments.

Receipt
The samples were received on 11/16/2018 4:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.7º C.

GC/MS VOA

Method(s) 8260B: The following volatile samples were analyzed with significant headspace in the sample container(s) due to multiple runs: EFF-11-15 (440-224648-1) and RSW-001-11-15 (440-224648-2). Significant headspace is defined as a bubble greater than 6 mm in diameter. Only one VOA vial provided per samples.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Client Sample ID: EFF-11-15 — Lab Sample ID: 440-224648-1

No Detections.

Client Sample ID: RSW-001-11-15 — Lab Sample ID: 440-224648-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Client Sample ID: EFF-11-15

Lab Sample ID: 440-224648-1

Date Collected: 11/15/18 11:00

Matrix: Water

Date Received: 11/16/18 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		5.0	2.5	ug/L			11/21/18 09:46	1
Acrylonitrile	ND		2.0	1.0	ug/L			11/21/18 09:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*11/21/18 09:46*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*11/21/18 09:46*	*1*
Toluene-d8 (Surr)	*111*		*80 - 128*		*11/21/18 09:46*	*1*

Client Sample ID: RSW-001-11-15

Lab Sample ID: 440-224648-2

Date Collected: 11/15/18 13:45

Matrix: Water

Date Received: 11/16/18 16:20

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		5.0	2.5	ug/L			11/21/18 10:11	1
Acrylonitrile	ND		2.0	1.0	ug/L			11/21/18 10:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*11/21/18 10:11*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*11/21/18 10:11*	*1*
Toluene-d8 (Surr)	*108*		*80 - 128*		*11/21/18 10:11*	*1*

Surrogate Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(80-120)	(76-132)	(80-128)
440-224648-1	EFF-11-15	101	101	111
440-224648-2	RSW-001-11-15	104	101	108
440-224657-A-5 MS	Matrix Spike	103	97	100
440-224657-A-5 MSD	Matrix Spike Duplicate	105	99	99
LCS 440-512593/5	Lab Control Sample	102	103	99
LCSD 440-512593/16	Lab Control Sample Dup	96	98	100
MB 440-512593/4	Method Blank	98	101	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
5030C	Purge and Trap	SW846	TAL IRV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Client Sample ID: EFF-11-15

Date Collected: 11/15/18 11:00
Date Received: 11/16/18 16:20

Lab Sample ID: 440-224648-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	512593	11/21/18 09:46	GK	TAL IRV

Client Sample ID: RSW-001-11-15

Date Collected: 11/15/18 13:45
Date Received: 11/16/18 16:20

Lab Sample ID: 440-224648-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	512593	11/21/18 10:11	GK	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-512593/4
Matrix: Water
Analysis Batch: 512593

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acrolein	ND		5.0	2.5	ug/L			11/21/18 08:03	1
Acrylonitrile	ND		2.0	1.0	ug/L			11/21/18 08:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*11/21/18 08:03*	*1*
Dibromofluoromethane (Surr)	*101*		*76 - 132*		*11/21/18 08:03*	*1*
Toluene-d8 (Surr)	*101*		*80 - 128*		*11/21/18 08:03*	*1*

Lab Sample ID: LCS 440-512593/5
Matrix: Water
Analysis Batch: 512593

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acrolein			25.0	19.1		ug/L		76	10 - 145		
Acrylonitrile			250	238		ug/L		95	48 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*76 - 132*
Toluene-d8 (Surr)	*99*		*80 - 128*

Lab Sample ID: LCSD 440-512593/16
Matrix: Water
Analysis Batch: 512593

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein			25.0	18.4		ug/L		74	10 - 145	3	30
Acrylonitrile			250	216		ug/L		86	48 - 140	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*76 - 132*
Toluene-d8 (Surr)	*100*		*80 - 128*

Lab Sample ID: 440-224657-A-5 MS
Matrix: Water
Analysis Batch: 512593

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acrolein	ND		25.0	17.0		ug/L		68	10 - 147		
Acrylonitrile	ND		250	192		ug/L		77	38 - 144		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*76 - 132*
Toluene-d8 (Surr)	*100*		*80 - 128*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-224657-A-5 MSD
Matrix: Water
Analysis Batch: 512593

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acrolein	ND		25.0	19.1		ug/L		76	10 - 147	12	40
Acrylonitrile	ND		250	224		ug/L		90	38 - 144	15	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*
Dibromofluoromethane (Surr)	*99*		*76 - 132*
Toluene-d8 (Surr)	*99*		*80 - 128*

QC Association Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

GC/MS VOA

Analysis Batch: 512593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-224648-1	EFF-11-15	Total/NA	Water	8260B	
440-224648-2	RSW-001-11-15	Total/NA	Water	8260B	
MB 440-512593/4	Method Blank	Total/NA	Water	8260B	
LCS 440-512593/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 440-512593/16	Lab Control Sample Dup	Total/NA	Water	8260B	
440-224657-A-5 MS	Matrix Spike	Total/NA	Water	8260B	
440-224657-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Advanced Technology Laboratories
Project/Site: N032999

TestAmerica Job ID: 440-224648-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	LA Cty Sanitation Districts	9	10256	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Acrolein
8260B		Water	Acrylonitrile

California	State Program	9	CA ELAP 2706	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

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

Project Manager DANIELLE ROBERTS

Subcontractor:

Test America - Irvine
17461 Derian Ave, Ste. 100
Irvine, CA 92614

TEL: (949) 261-1022
FAX: (949) 261-1228
Acct #:

Field Sampler: SIGNED

16-Nov-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8260B		
N032999-001R / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	VOA	1		
N032999-002I / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	VOA	1		

Limited sample (1 VOA each)

Acrolein: RL-5
Acrylonitrile: RL-2
EDD Requirement CH2MHILL Labspec7 edata. Please report "J' flagged down to MDL format.

Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

440-224648 Chain of Custody

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999C Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Acrolein (RL-5) and Acrylonitrile (RL-2) by 8260.

		Date/Time			Date/Time
Relinquished by:	KSevilla	11/16/18 1620	**Received by:**		11/16/18 16:20
Relinquished by:			**Received by:**		

5.7/5.7 1K-89

Login Sample Receipt Checklist

Client: Advanced Technology Laboratories

Job Number: 440-224648-1

Login Number: 224648
List Number: 1
Creator: Skinner, Alma D

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Date of Report: 12/06/2018

Marlon Cartin

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

Client Project:	N032999: SFPP NORWALK
BCL Project:	CH2MHILL
BCL Work Order:	1836187
Invoice ID:	B323580

Enclosed are the results of analyses for samples received by the laboratory on 11/16/2018. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000823615

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1836187 Page 1 of 4

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

SUBCONTRACT TO: BC LABS

CHAIN OF CUSTODY RECORD

Page 1 of 1 18-36187

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.3072691
California: 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client:	ASSET Laboratories
Address:	11110 Artesia Blvd Ste B
Address:	Cerritos, CA 90703
Phone:	562.219.7435 Fax: 562.219.7436
Submitted By:	Molky Brar
Title:	
Signature:	Date:
I hereby authorize ASSET Labs to perform the tests indicated below:	
Project Name:	SFPP NORWALK
Project Number:	

Report to:	Marlon Cartin
Company:	ASSET Laboratories
Email:	marlon@assetlaboratories.com; reports.lv@assetlaboratories.com
Address:	3151 W Post Rd, Las Vegas, NV 89113
Phone:	702.307.2659 Fax:
Sampled by:	

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
Signature:

Bill to:	Elvira Allegaert/Accounts Payable
Address:	11110 Artesia Blvd Ste B, Cerritos, CA 90703
Email to:	elvira@assetlaboratories.com
PO#	N32999A
Phone:	562.219.7435
Fax:	562.219.7436
Global ID:	

EDD Requirement: ☐ Excel EDD ☐ Geotracker ☐ Labspec ☐ Others; Specify:
QA/QC: ☐ RTNE ☐ RWQCB ☐ CalTrans ☐ Level III ☐ LEVEL IV ☐ Regulatory; Specify State:
Sample Receipt Condition (Y / N): 1. Chilled ☐☐ 2. Headspace ☐☐ 3. Container Intact ☐☐ 4. Seal Present ☐☐ 5. IR number 6. Method of Cooling; Sample Temp:

Matrix: Ground ☐ Sediment ☐ Potable ☐ Soil ☐ NPDES ☐ Other Solid ☐ Surface ☐

Courier:
Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	AMMONIA NITROGEN	CYANIDE (EPA 335.4)	SULFIDES (SM 4500 S2-D)	MBAs (SM 5540C)	BOD (@1000), Cl SM5210B	TPH-gas (SW8015)	TPH-d, TPH-o, Total TPH	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	-1	EFF-11-15	11/15/18	11:00	WW			X	X	X	X	X	X	X					TPH on 24-HR TAT
2	-2	RSW-001-11-15	11/15/18	13:45	WW				X										
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

SHORT HOLDING TIME
Cr+6 NO2 NO3 OP SS
DO Cl2 (BOD) (MBAS) COT

CHK BY DISTRIBUTION
SUB-OUT ☐

RUSH!

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
[signature]	11/15/18 ~~11/14/18~~ 19:00	[signature]	11-16-18 08:30

Turn Around Time (TAT):
☐ A < 24 Hrs or Same Day TAT
☑ B = Next Workday
☐ C = 2 Workdays
☐ D = 3 Workdays
☑ E = Routine 5-7 Workdays
TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:
EDD REQUIREMENT CH2MHILL Labspec7 edata.
Please report "J" flagged down to MDL format.
Please cc report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

Preservatives: H = HCl; N = HNO3; S = H2SO4; C = 4°C; Z = ZnAcCl2; O = NaOH; T = Na2S2O3; Others/Specify:

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

Terms: [fine print]

White = Laboratory Copy   Yellow = Customer's Copy

BC Laboratories 18-36187 10/2/2018

Analytical Method Information

Analyte	MDL	Reporting Limit	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
gm608w CTR in Water (EPA-608)								
Preservation: Store cool at 4°C in Dark								
Container: O20: EPA 508 (WHITE), GA 1000ml, No Pres		**Amount Required:** N			**Hold Time:** 7 days			
Aldrin	0.00037	0.0010 ug/L			60 - 130	30	60 - 130	30
alpha-BHC	0.00046	0.0010 ug/L						
beta-BHC	0.00049	0.0010 ug/L						
delta-BHC	0.00048	0.0010 ug/L						
gamma-BHC (Lindane)	0.00048	0.0010 ug/L			60 - 130	30	60 - 130	30
Chlordane (Technical)	0.030	0.10 ug/L						
4,4'-DDD	0.00049	0.0010 ug/L						
4,4'-DDE	0.00048	0.0010 ug/L						
4,4'-DDT	0.00034	0.0010 ug/L			60 - 130	30	60 - 130	30
Dieldrin	0.00046	0.0010 ug/L			65 - 130	30	60 - 130	30
Endosulfan I	0.00048	0.0010 ug/L						
Endosulfan II	0.00059	0.0010 ug/L						
Endosulfan sulfate	0.00085	0.0010 ug/L						
Endrin	0.00072	0.0010 ug/L			60 - 130	30	60 - 130	30
Endrin aldehyde	0.00077	0.0020 ug/L						
Heptachlor	0.00039	0.0010 ug/L			60 - 130	30	60 - 130	30
Heptachlor epoxide	0.00084	0.0010 ug/L						
Methoxychlor	0.00076	0.0010 ug/L						
Toxaphene	0.040	0.40 ug/L						
PCB-1016	0.013	0.040 ug/L						
PCB-1221	0.019	0.040 ug/L						
PCB-1232	0.013	0.040 ug/L						
PCB-1242	0.014	0.040 ug/L						
PCB-1248	0.024	0.040 ug/L						
PCB-1254	0.012	0.040 ug/L						
PCB-1260	0.0068	0.040 ug/L				25		25
PCB-1262	0.024	0.040 ug/L						
PCB-1268	0.020	0.040 ug/L						
Total PCB's (Summation)	0.020	0.040 ug/L						
Aldrin [2C]	0.00040	0.0010 ug/L			60 - 130	30	60 - 130	30
alpha-BHC [2C]	0.00034	0.0010 ug/L						
beta-BHC [2C]	0.00043	0.0010 ug/L						
delta-BHC [2C]	0.00046	0.0010 ug/L						
gamma-BHC (Lindane) [2C]	0.00043	0.0010 ug/L			60 - 130	30	60 - 130	30
Chlordane (Technical) [2C]	0.021	0.10 ug/L						
4,4'-DDD [2C]	0.00037	0.0010 ug/L						
4,4'-DDE [2C]	0.00031	0.0010 ug/L						
4,4'-DDT [2C]	0.00028	0.0010 ug/L			60 - 130	30	60 - 130	30
Dieldrin [2C]	0.00041	0.0010 ug/L			65 - 130	30	60 - 130	30
Endosulfan I [2C]	0.00050	0.0010 ug/L						
Endosulfan II [2C]	0.00057	0.0010 ug/L						
Endosulfan sulfate [2C]	0.00043	0.0010 ug/L						
Endrin [2C]	0.00053	0.0010 ug/L			60 - 130	30	60 - 130	30
Endrin aldehyde [2C]	0.00061	0.0020 ug/L						
Heptachlor [2C]	0.00036	0.0010 ug/L			60 - 130	30	60 - 130	30
Heptachlor epoxide [2C]	0.00056	0.0010 ug/L						

BC Laboratories

18-36187

10/2/2018

Analytical Method Information

Analyte	MDL	Reporting Limit	Surrogate %R	Duplicate RPD	Matrix Spike %R	Matrix Spike RPD	Blank Spike / LCS %R	Blank Spike / LCS RPD
Methoxychlor [2C]	0.00053	0.0010 ug/L						
Toxaphene [2C]	0.040	0.40 ug/L						
PCB-1016 [2C]	0.011	0.040 ug/L						
PCB-1221 [2C]	0.0088	0.040 ug/L						
PCB-1232 [2C]	0.015	0.040 ug/L						
PCB-1242 [2C]	0.016	0.040 ug/L						
PCB-1248 [2C]	0.018	0.040 ug/L						
PCB-1254 [2C]	0.013	0.040 ug/L						
PCB-1260 [2C]	0.012	0.040 ug/L				25		25
PCB-1262 [2C]	0.028	0.040 ug/L						
PCB-1268 [2C]	0.019	0.040 ug/L						
Total PCB's (Summation) [2C]	0.020	0.040 ug/L						
surr: TCMX (Surrogate)			40 - 140					
surr: Decachlorobiphenyl (Surrogate)			50 - 130					
surr: TCMX (Surrogate) [2C]			40 - 140					
surr: Decachlorobiphenyl (Surrogate) [2C]			50 - 130					

Page 2 of 2

Chain of Custody and Cooler Receipt Form for 1836187 Page 4 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-316187

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☒ (Specify) GSO	Ice Chest ☒ None ☐ Box ☐ Other ☐ (Specify)	YES ☐ NO ☐ W / S

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ (Intact? Yes ☐ No ☐) Containers ☐ (Intact? Yes ☐ No ☐) None ☒ Comments:

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

COC Received ☑ YES ☐ NO

Emissivity: .97 Container: Plastic Thermometer ID: 27H Date/Time 11-16-18

Temperature: (A) 0.0 °C / (C) 0.0 °C Analyst Init 08:30

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES	G									
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE	E	A								
PT NITROGEN FORMS	C									
PT TOTAL SULFIDE	F									
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	AB									
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 8270										
8oz / 16oz / 32oz AMBER	HI									
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By:

A = Actual / C = Corrected

Date/Time: 11/16/18 0845

Rev 21 05/23/2016

(S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20)

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1836187-01	**COC Number:**	---	**Receive Date:**	11/16/2018 08:30
	Project Number:	---	**Sampling Date:**	11/15/2018 11:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	EFF-11-15	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater
1836187-02	**COC Number:**	---	**Receive Date:**	11/16/2018 08:30
	Project Number:	---	**Sampling Date:**	11/15/2018 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	RSW-001-11-15	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1836187-01 | **Client Sample Name:** EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ppm	0.050	0.022	EPA-8015B	ND	U	1
a,a,a-Trifluorotoluene (FID Surrogate)	87.8	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	11/16/18 15:23	11/16/18 18:04	JBR	GC-V9	1	B030213

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

BCL Sample ID: 1836187-01 | **Client Sample Name:** EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (C10 - C23)	ND	ug/L	40	6.8	EPA-8015CC	ND	U	1
TPH - Motor Oil (C23 - C36)	ND	ug/L	100	13	EPA-8015CC	ND	U	1
Tetracosane (Surrogate)	81.7	%	37 - 134 (LCL - UCL)		EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	11/16/18 21:30	11/22/18 03:37	RCC	GC-5	1.010	B030537

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1836187-01 | **Client Sample Name:** EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
MBAS	ND	mg/L	0.20	0.030	SM-5540C	ND	U,A07	1
Total Cyanide	**0.0071**	**mg/L**	**0.0050**	**0.0017**	**EPA-335.4**	ND		2
Ammonia as N (Distilled)	**0.11**	**mg/L**	**0.20**	**0.050**	**SM-4500-NH3G**	ND	**J**	3
Total Sulfide	ND	mg/L	0.10	0.050	SM-4500SD	ND	U	4
Biochemical Oxygen Demand - Seeded	**1.6**	**mg/L**	**1.5**	**1.5**	**SM17-5210B**			5

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	SM-5540C	11/16/18 09:00	11/16/18 09:00	JMN	SPEC06	2	B030302
2	EPA-335.4	11/21/18 08:49	11/21/18 16:30	MC1	KONE-1	1	B030639
3	SM-4500-NH3G	11/20/18 13:43	11/27/18 16:09	JMH	SC-1	1	B030570
4	SM-4500SD	11/20/18 14:30	11/20/18 14:30	JKS	SPEC06	1	B030710
5	SM17-5210B	11/16/18 10:00	11/16/18 10:00	HPR	YSIPRO	1.525	B030713

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

BCL Sample ID: 1836187-02 | **Client Sample Name:** RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	**0.0017**	**mg/L**	**0.0050**	**0.0017**	**EPA-335.4**	ND	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-335.4	11/21/18 08:49	11/21/18 17:06	MC1	KONE-1	1	B030639

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030213						
Gasoline Range Organics (C4 - C12)	B030213-BLK1	ND	ppm	0.050	0.022	U
a,a,a-Trifluorotoluene (FID Surrogate)	**B030213-BLK1**	**92.7**	%	**70 - 130 (LCL - UCL)**		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030213										
Gasoline Range Organics (C4 - C12)	B030213-BS1	LCS	1.1166	1.0000	ppm	112		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B030213-BS1	LCS	0.039938	0.040000	ppm	99.8		70 - 130		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030213	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1833163-58	ND	1.0689	1.0000	ppm		107		70 - 130	
	MSD	1833163-58	ND	1.0679	1.0000	ppm	0.1	107	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1833163-58	ND	0.040173	0.040000	ppm		100		70 - 130	
	MSD	1833163-58	ND	0.040632	0.040000	ppm	1.1	102		70 - 130	

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030537						
TPH - Diesel (C10 - C23)	B030537-BLK1	ND	ug/L	40	6.8	U
TPH - Motor Oil (C23 - C36)	B030537-BLK1	ND	ug/L	100	13	U
Tetracosane (Surrogate)	**B030537-BLK1**	**67.7**	%	**37 - 134 (LCL - UCL)**		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030537										
TPH - Diesel (C10 - C23)	B030537-BS1	LCS	296.72	500.00	ug/L	59.3		52 - 128		
Tetracosane (Surrogate)	B030537-BS1	LCS	13.809	20.000	ug/L	69.0		37 - 134		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030537	Used client sample: N										
TPH - Diesel (C10 - C23)	MS	1833163-50	ND	390.00	500.00	ug/L		78.0		50 - 127	
	MSD	1833163-50	ND	473.25	500.00	ug/L	19.3	94.7	30	50 - 127	
Tetracosane (Surrogate)	MS	1833163-50	ND	17.029	20.000	ug/L		85.1		37 - 134	
	MSD	1833163-50	ND	19.727	20.000	ug/L	14.7	98.6		37 - 134	

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030302						
MBAS	B030302-BLK1	ND	mg/L	0.10	0.015	U
QC Batch ID: B030570						
Ammonia as N (Distilled)	B030570-BLK1	ND	mg/L	0.20	0.050	U
QC Batch ID: B030639						
Total Cyanide	B030639-BLK1	ND	mg/L	0.0050	0.0017	U
QC Batch ID: B030710						
Total Sulfide	B030710-BLK1	ND	mg/L	0.10	0.050	U
QC Batch ID: B030713						
Biochemical Oxygen Demand - Seeded	B030713-BLK1	ND	mg/L	1.0	1.0	U

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030302										
MBAS	B030302-BS1	LCS	0.20240	0.20000	mg/L	101		85 - 115		
QC Batch ID: B030570										
Ammonia as N (Distilled)	B030570-BS1	LCS	0.95950	1.0000	mg/L	96.0		85 - 115		
QC Batch ID: B030639										
Total Cyanide	B030639-BS1	LCS	0.14843	0.15000	mg/L	99.0		90 - 110		
QC Batch ID: B030710										
Total Sulfide	B030710-BS1	LCS	0.45102	0.50000	mg/L	90.2		90 - 110		
QC Batch ID: B030713										
Biochemical Oxygen Demand - Seeded	B030713-BS1	LCS	206.26	198.00	mg/L	104		85 - 115		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon Cartin

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030302	Used client sample: Y - Description: EFF-11-15, 11/15/2018 11:00										
MBAS	DUP	1836187-01	ND	ND		mg/L			20		U
	MS	1836187-01	ND	0.42800	0.40000	mg/L		107		80 - 120	
	MSD	1836187-01	ND	0.41060	0.40000	mg/L	4.1	103	20	80 - 120	
QC Batch ID: B030570	Used client sample: N										
Ammonia as N (Distilled)	DUP	1835692-01	0.38690	0.39640		mg/L	2.4		20		
	MS	1835692-01	0.38690	1.4904	1.1111	mg/L		99.3		80 - 120	
	MSD	1835692-01	0.38690	1.5382	1.1111	mg/L	3.2	104	20	80 - 120	
QC Batch ID: B030639	Used client sample: N										
Total Cyanide	DUP	**1836415-01**	**0.0021910**	**0.0018600**		**mg/L**	**16.3**		**10**		**J,A02**
	MS	**1836415-01**	**0.0021910**	**0.094956**	**0.10000**	**mg/L**		**92.8**		**90 - 110**	
	MSD	**1836415-01**	**0.0021910**	**0.095766**	**0.10000**	**mg/L**	**0.8**	**93.6**	**10**	**90 - 110**	
QC Batch ID: B030710	Used client sample: N										
Total Sulfide	DUP	1835946-02	ND	ND		mg/L			10		U
	MS	1835946-02	ND	0.44244	0.50000	mg/L		88.5		80 - 120	
	MSD	1835946-02	ND	0.44587	0.50000	mg/L	0.8	89.2	10	80 - 120	
QC Batch ID: B030713	Used client sample: N										
Biochemical Oxygen Demand - Seeded	DUP	1836160-03	7.8690	6.5067		mg/L	19.0		20		

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

Reported: 12/06/2018 14:51
Project: CH2MHILL
Project Number: N032999: SFPP NORWALK
Project Manager: Marlon 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)
A02	The difference between duplicate readings is less than the quantitation limit.
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.

Date of Report: 11/30/2018

Marlon Cartin

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

Client Project:	N032999
BCL Project:	CH2MHILL
BCL Work Order:	1836456
Invoice ID:	B323885

Enclosed are the results of analyses for samples received by the laboratory on 11/20/2018. 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

Table of Contents

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

CHAIN-OF-CUSTODY RECORD

18-36456

QC Level: RTNE

Subcontractor:
BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: SIGNED

19-Nov-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 8081A	EPA 8082	EPA 8270C
N032999-001E / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	32OZA	1	1	1
N032999-002C / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	32OZA	1	1	1

CHK BY DISTRIBUTION
SUB-OUT

EDD Requirement CH2MHILL Labspec7 edata. Please report "J" flagged down to MDL format.

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999E Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for Priority Pollutant SVOCs,Pesticides and PBCs.

GSO#: 542826164 / 542834736

	Date/Time		Date/Time
Relinquished by:	11/19/2018 17:00	Received by:	11-20-18 09:20
Relinquished by:		Received by:	

Chain of Custody and Cooler Receipt Form for 1836456 Page 2 of 3

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 2

Submission #: 18-36456

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☑ (Specify) GSO	Ice Chest ☑ None ☐ Box ☐ Other ☐ (Specify)_____	YES ☐ NO ☐ W / S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ 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: 274 Date/Time 11.20.18 09:20

Temperature: (A) 5.7 °C / (C) 5.9 °C Analyst Init: MS

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										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 505/605/8080										
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 8270										
8oz / 16oz / 32oz AMBER	A,B,C	A,B,C								
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: CAT Date/Time: 11/20/18 1010

A = Actual / C = Corrected

Rev 21 05/23/2016

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Chain of Custody and Cooler Receipt Form for 1836456 Page 3 of 3

BC LABORATORIES INC. 36456 COOLER RECEIPT FORM Page 2 Of 2

Submission #: 18-3[illegible] 11/20/18

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

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 ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

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

COC Received ☒ YES ☐ NO

Emissivity: 0.95 Container: Amber Thermometer ID: 274

Temperature: (A) 4.0 °C / (C) 4.2 °C

Date/Time 11.20.18

Analyst Init 09:20

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										
PtA 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 8270										
8oz / 16oz / 32oz AMBER	D.E.F	D.E.F								
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: COA Date/Time: 11/20/18 1016

A = Actual / C = Corrected

Rev 21 05/23/2016

(S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMPREC rev 20)

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1836456-01	**COC Number:**	---	**Receive Date:**	11/20/2018 09:20
	Project Number:	---	**Sampling Date:**	11/15/2018 11:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	N032999-001E / EFF-11-15	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater
1836456-02	**COC Number:**	---	**Receive Date:**	11/20/2018 09:20
	Project Number:	---	**Sampling Date:**	11/15/2018 13:45
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	N032999-002C / RSW-001-11-15	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides and PCB's (EPA Method 608)

BCL Sample ID: 1836456-01 | **Client Sample Name:** N032999-001E / EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016	ND	ug/L	0.040	0.013	EPA-608	ND	U	1
PCB-1221	ND	ug/L	0.040	0.019	EPA-608	ND	U	1
PCB-1232	ND	ug/L	0.040	0.013	EPA-608	ND	U	1
PCB-1242	ND	ug/L	0.040	0.014	EPA-608	ND	U	1
PCB-1248	ND	ug/L	0.040	0.024	EPA-608	ND	U	1
PCB-1254	ND	ug/L	0.040	0.012	EPA-608	ND	U	1
PCB-1260	ND	ug/L	0.040	0.0068	EPA-608	ND	U	1
Decachlorobiphenyl (Surrogate)	100	%	56 - 119 (LCL - UCL)		EPA-608			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-608	11/21/18 11:45	11/27/18 09:35	HKS	GC-17	1.020	B030885

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 1836456-01 | **Client Sample Name:** N032999-001E / EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	ug/L	0.0010	0.00037	EPA-8081A	ND	U	1
alpha-BHC	ND	ug/L	0.0010	0.00046	EPA-8081A	ND	U	1
beta-BHC	ND	ug/L	0.0010	0.00049	EPA-8081A	ND	U	1
delta-BHC	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
gamma-BHC (Lindane)	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
Chlordane (Technical)	ND	ug/L	0.10	0.030	EPA-8081A	ND	U	1
4,4'-DDD	ND	ug/L	0.0010	0.00049	EPA-8081A	ND	U	1
4,4'-DDE	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
4,4'-DDT	ND	ug/L	0.0010	0.00034	EPA-8081A	ND	U	1
Dieldrin	ND	ug/L	0.0010	0.00046	EPA-8081A	ND	U	1
Endosulfan I	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
Endosulfan II	ND	ug/L	0.0010	0.00059	EPA-8081A	ND	U	1
Endosulfan sulfate	ND	ug/L	0.0010	0.00085	EPA-8081A	ND	U	1
Endrin	ND	ug/L	0.0010	0.00072	EPA-8081A	ND	U	1
Endrin aldehyde	ND	ug/L	0.0020	0.00077	EPA-8081A	ND	U	1
Heptachlor	ND	ug/L	0.0010	0.00039	EPA-8081A	ND	U	1
Heptachlor epoxide	ND	ug/L	0.0010	0.00084	EPA-8081A	ND	U	1
Methoxychlor	ND	ug/L	0.0010	0.00076	EPA-8081A	ND	U	1
Toxaphene	ND	ug/L	0.40	0.040	EPA-8081A	ND	U	1
TCMX (Surrogate)	106	%	40 - 140 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	100	%	40 - 120 (LCL - UCL)		EPA-8081A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8081A	11/21/18 11:45	11/27/18 09:35	HKS	GC-17	1.020	B030885

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-01 | **Client Sample Name:** N032999-001E / EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	ug/L	1.0	0.22	EPA-8270C	ND	U	1
Acenaphthylene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Aldrin	ND	ug/L	2.0	0.28	EPA-8270C	ND	U	1
Aniline	ND	ug/L	5.0	1.8	EPA-8270C	ND	U	1
Anthracene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Benzidine	ND	ug/L	5.0	3.0	EPA-8270C	ND	U	1
Benzo[a]anthracene	ND	ug/L	2.0	0.30	EPA-8270C	ND	U	1
Benzo[b]fluoranthene	ND	ug/L	2.0	0.42	EPA-8270C	ND	U	1
Benzo[k]fluoranthene	ND	ug/L	2.0	0.29	EPA-8270C	ND	U	1
Benzo[a]pyrene	ND	ug/L	2.0	0.21	EPA-8270C	ND	U	1
Benzo[g,h,i]perylene	ND	ug/L	2.0	0.48	EPA-8270C	ND	U	1
Benzoic acid	ND	ug/L	10	0.72	EPA-8270C	ND	U	1
Benzyl alcohol	ND	ug/L	2.0	0.35	EPA-8270C	ND	U	1
Benzyl butyl phthalate	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
alpha-BHC	ND	ug/L	2.0	0.36	EPA-8270C	ND	U	1
beta-BHC	ND	ug/L	2.0	0.25	EPA-8270C	ND	U	1
delta-BHC	ND	ug/L	2.0	0.28	EPA-8270C	ND	U	1
gamma-BHC (Lindane)	ND	ug/L	2.0	0.32	EPA-8270C	ND	U	1
bis(2-Chloroethoxy)methane	ND	ug/L	2.0	0.27	EPA-8270C	ND	U	1
bis(2-Chloroethyl) ether	ND	ug/L	1.0	0.86	EPA-8270C	ND	U	1
bis(2-Chloroisopropyl)ether	ND	ug/L	2.0	1.7	EPA-8270C	ND	U	1
bis(2-Ethylhexyl)phthalate	ND	ug/L	3.0	0.20	EPA-8270C	ND	U	1
4-Bromophenyl phenyl ether	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
4-Chloroaniline	ND	ug/L	2.0	0.39	EPA-8270C	ND	U	1
2-Chloronaphthalene	ND	ug/L	2.0	0.23	EPA-8270C	ND	U	1
4-Chlorophenyl phenyl ether	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Chrysene	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
4,4'-DDD	ND	ug/L	2.0	0.40	EPA-8270C	ND	U	1
4,4'-DDE	ND	ug/L	3.0	0.32	EPA-8270C	ND	U	1
4,4'-DDT	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
Dibenzo[a,h]anthracene	ND	ug/L	3.0	0.59	EPA-8270C	ND	U	1
Dibenzofuran	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
1,2-Dichlorobenzene	ND	ug/L	2.0	1.8	EPA-8270C	ND	U	1

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-01 | **Client Sample Name:** N032999-001E / EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,3-Dichlorobenzene	ND	ug/L	1.0	0.50	EPA-8270C	ND	U	1
1,4-Dichlorobenzene	ND	ug/L	1.0	0.55	EPA-8270C	ND	U	1
3,3-Dichlorobenzidine	ND	ug/L	5.0	0.41	EPA-8270C	ND	U	1
Dieldrin	ND	ug/L	3.0	0.45	EPA-8270C	ND	U	1
Diethyl phthalate	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Dimethyl phthalate	ND	ug/L	2.0	0.25	EPA-8270C	ND	U	1
Di-n-butyl phthalate	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
2,4-Dinitrotoluene	ND	ug/L	2.0	0.87	EPA-8270C	ND	U	1
2,6-Dinitrotoluene	ND	ug/L	2.0	0.46	EPA-8270C	ND	U	1
Di-n-octyl phthalate	ND	ug/L	2.0	0.31	EPA-8270C	ND	U	1
1,2-Diphenylhydrazine	ND	ug/L	1.0	0.44	EPA-8270C	ND	U	1
Endosulfan I	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Endosulfan II	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Endosulfan sulfate	ND	ug/L	3.0	0.37	EPA-8270C	ND	U	1
Endrin	ND	ug/L	2.0	0.67	EPA-8270C	ND	U	1
Endrin aldehyde	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Fluoranthene	ND	ug/L	1.0	0.41	EPA-8270C	ND	U	1
Fluorene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Heptachlor	ND	ug/L	2.0	0.22	EPA-8270C	ND	U	1
Heptachlor epoxide	ND	ug/L	2.0	0.35	EPA-8270C	ND	U	1
Hexachlorobenzene	ND	ug/L	1.0	0.23	EPA-8270C	ND	U	1
Hexachlorobutadiene	ND	ug/L	1.0	0.46	EPA-8270C	ND	U	1
Hexachlorocyclopentadiene	ND	ug/L	1.0	0.35	EPA-8270C	ND	U	1
Hexachloroethane	ND	ug/L	1.0	0.90	EPA-8270C	ND	U	1
Indeno[1,2,3-cd]pyrene	ND	ug/L	2.0	0.71	EPA-8270C	ND	U	1
Isophorone	ND	ug/L	1.0	0.41	EPA-8270C	ND	U	1
2-Methylnaphthalene	ND	ug/L	2.0	0.30	EPA-8270C	ND	U	1
Naphthalene	ND	ug/L	1.0	0.20	EPA-8270C	ND	U	1
2-Naphthylamine	ND	ug/L	20	1.7	EPA-8270C	ND	U	1
2-Nitroaniline	ND	ug/L	2.0	0.36	EPA-8270C	ND	U	1
3-Nitroaniline	ND	ug/L	2.0	0.52	EPA-8270C	ND	U	1
4-Nitroaniline	ND	ug/L	5.0	0.85	EPA-8270C	ND	U	1
Nitrobenzene	ND	ug/L	1.0	0.39	EPA-8270C	ND	U	1

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-01 | **Client Sample Name:** N032999-001E / EFF-11-15, 11/15/2018 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
N-Nitrosodimethylamine	ND	ug/L	2.0	0.56	EPA-8270C	ND	U	1
N-Nitrosodi-N-propylamine	ND	ug/L	2.0	0.56	EPA-8270C	ND	U	1
N-Nitrosodiphenylamine	ND	ug/L	1.0	0.27	EPA-8270C	ND	U	1
Phenanthrene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Pyrene	ND	ug/L	2.0	0.31	EPA-8270C	ND	U	1
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.24	EPA-8270C	ND	U	1
4-Chloro-3-methylphenol	ND	ug/L	1.0	0.42	EPA-8270C	ND	U	1
2-Chlorophenol	ND	ug/L	2.0	0.85	EPA-8270C	ND	U	1
2,4-Dichlorophenol	ND	ug/L	1.0	0.26	EPA-8270C	ND	U	1
2,4-Dimethylphenol	ND	ug/L	1.0	0.30	EPA-8270C	ND	U	1
4,6-Dinitro-2-methylphenol	ND	ug/L	5.0	0.43	EPA-8270C	ND	U	1
2,4-Dinitrophenol	ND	ug/L	5.0	0.37	EPA-8270C	ND	U	1
2-Methylphenol	ND	ug/L	2.0	0.43	EPA-8270C	ND	U	1
3- & 4-Methylphenol	ND	ug/L	2.0	1.3	EPA-8270C	ND	U	1
2-Nitrophenol	ND	ug/L	2.0	0.39	EPA-8270C	ND	U	1
4-Nitrophenol	ND	ug/L	2.0	0.66	EPA-8270C	ND	U	1
Pentachlorophenol	ND	ug/L	1.0	0.43	EPA-8270C	ND	U	1
Phenol	ND	ug/L	1.0	0.84	EPA-8270C	ND	U	1
2,4,5-Trichlorophenol	ND	ug/L	5.0	0.36	EPA-8270C	ND	U	1
2,4,6-Trichlorophenol	ND	ug/L	5.0	0.34	EPA-8270C	ND	U	1
2-Fluorophenol (Surrogate)	51.4	%	34 - 108 (LCL - UCL)		EPA-8270C			1
Phenol-d5 (Surrogate)	45.0	%	14 - 76 (LCL - UCL)		EPA-8270C			1
Nitrobenzene-d5 (Surrogate)	88.9	%	54 - 138 (LCL - UCL)		EPA-8270C			1
2-Fluorobiphenyl (Surrogate)	78.9	%	52 - 134 (LCL - UCL)		EPA-8270C			1
2,4,6-Tribromophenol (Surrogate)	74.2	%	57 - 162 (LCL - UCL)		EPA-8270C			1
p-Terphenyl-d14 (Surrogate)	76.2	%	38 - 181 (LCL - UCL)		EPA-8270C			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C	11/20/18 17:00	11/21/18 15:29	MK1	MS-B1	1.010	B030643

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Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides and PCB's (EPA Method 608)

BCL Sample ID: 1836456-02 | **Client Sample Name:** N032999-002C / RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016	ND	ug/L	0.040	0.013	EPA-608	ND	U	1
PCB-1221	ND	ug/L	0.040	0.019	EPA-608	ND	U	1
PCB-1232	ND	ug/L	0.040	0.013	EPA-608	ND	U	1
PCB-1242	ND	ug/L	0.040	0.014	EPA-608	ND	U	1
PCB-1248	ND	ug/L	0.040	0.024	EPA-608	ND	U	1
PCB-1254	ND	ug/L	0.040	0.012	EPA-608	ND	U	1
PCB-1260	ND	ug/L	0.040	0.0068	EPA-608	ND	U	1
Decachlorobiphenyl (Surrogate)	64.8	%	56 - 119 (LCL - UCL)		EPA-608			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-608	11/21/18 11:45	11/27/18 09:49	HKS	GC-17	1.020	B030885

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Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID: 1836456-02 | **Client Sample Name:** N032999-002C / RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	ug/L	0.0010	0.00037	EPA-8081A	ND	U	1
alpha-BHC	ND	ug/L	0.0010	0.00046	EPA-8081A	ND	U	1
beta-BHC	ND	ug/L	0.0010	0.00049	EPA-8081A	ND	U	1
delta-BHC	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
gamma-BHC (Lindane)	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
Chlordane (Technical)	ND	ug/L	0.10	0.030	EPA-8081A	ND	U	1
4,4'-DDD	ND	ug/L	0.0010	0.00049	EPA-8081A	ND	U	1
4,4'-DDE	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
4,4'-DDT	ND	ug/L	0.0010	0.00034	EPA-8081A	ND	U	1
Dieldrin	ND	ug/L	0.0010	0.00046	EPA-8081A	ND	U	1
Endosulfan I	ND	ug/L	0.0010	0.00048	EPA-8081A	ND	U	1
Endosulfan II	ND	ug/L	0.0010	0.00059	EPA-8081A	ND	U	1
Endosulfan sulfate	ND	ug/L	0.0010	0.00085	EPA-8081A	ND	U	1
Endrin	ND	ug/L	0.0010	0.00072	EPA-8081A	ND	U	1
Endrin aldehyde	ND	ug/L	0.0020	0.00077	EPA-8081A	ND	U	1
Heptachlor	ND	ug/L	0.0010	0.00039	EPA-8081A	ND	U	1
Heptachlor epoxide	ND	ug/L	0.0010	0.00084	EPA-8081A	ND	U	1
Methoxychlor	ND	ug/L	0.0010	0.00076	EPA-8081A	ND	U	1
Toxaphene	ND	ug/L	0.40	0.040	EPA-8081A	ND	U	1
TCMX (Surrogate)	107	%	40 - 140 (LCL - UCL)		EPA-8081A			1
Decachlorobiphenyl (Surrogate)	64.8	%	40 - 120 (LCL - UCL)		EPA-8081A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8081A	11/21/18 11:45	11/27/18 09:49	HKS	GC-17	1.020	B030885

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Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-02 | **Client Sample Name:** N032999-002C / RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	ug/L	1.0	0.22	EPA-8270C	ND	U	1
Acenaphthylene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Aldrin	ND	ug/L	2.0	0.28	EPA-8270C	ND	U	1
Aniline	ND	ug/L	5.0	1.8	EPA-8270C	ND	U	1
Anthracene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Benzidine	ND	ug/L	5.0	3.0	EPA-8270C	ND	U	1
Benzo[a]anthracene	ND	ug/L	2.0	0.30	EPA-8270C	ND	U	1
Benzo[b]fluoranthene	ND	ug/L	2.0	0.42	EPA-8270C	ND	U	1
Benzo[k]fluoranthene	ND	ug/L	2.0	0.29	EPA-8270C	ND	U	1
Benzo[a]pyrene	ND	ug/L	2.0	0.21	EPA-8270C	ND	U	1
Benzo[g,h,i]perylene	ND	ug/L	2.0	0.48	EPA-8270C	ND	U	1
Benzoic acid	ND	ug/L	10	0.72	EPA-8270C	ND	U	1
Benzyl alcohol	ND	ug/L	2.0	0.35	EPA-8270C	ND	U	1
Benzyl butyl phthalate	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
alpha-BHC	ND	ug/L	2.0	0.36	EPA-8270C	ND	U	1
beta-BHC	ND	ug/L	2.0	0.25	EPA-8270C	ND	U	1
delta-BHC	ND	ug/L	2.0	0.28	EPA-8270C	ND	U	1
gamma-BHC (Lindane)	ND	ug/L	2.0	0.32	EPA-8270C	ND	U	1
bis(2-Chloroethoxy)methane	ND	ug/L	2.0	0.27	EPA-8270C	ND	U	1
bis(2-Chloroethyl) ether	ND	ug/L	1.0	0.86	EPA-8270C	ND	U	1
bis(2-Chloroisopropyl)ether	ND	ug/L	2.0	1.7	EPA-8270C	ND	U	1
bis(2-Ethylhexyl)phthalate	ND	ug/L	3.0	0.20	EPA-8270C	ND	U	1
4-Bromophenyl phenyl ether	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
4-Chloroaniline	ND	ug/L	2.0	0.39	EPA-8270C	ND	U	1
2-Chloronaphthalene	ND	ug/L	2.0	0.23	EPA-8270C	ND	U	1
4-Chlorophenyl phenyl ether	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Chrysene	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
4,4'-DDD	ND	ug/L	2.0	0.40	EPA-8270C	ND	U	1
4,4'-DDE	ND	ug/L	3.0	0.32	EPA-8270C	ND	U	1
4,4'-DDT	ND	ug/L	2.0	0.26	EPA-8270C	ND	U	1
Dibenzo[a,h]anthracene	ND	ug/L	3.0	0.59	EPA-8270C	ND	U	1
Dibenzofuran	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
1,2-Dichlorobenzene	ND	ug/L	2.0	1.8	EPA-8270C	ND	U	1

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Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-02 | **Client Sample Name:** N032999-002C / RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,3-Dichlorobenzene	ND	ug/L	1.0	0.50	EPA-8270C	ND	U	1
1,4-Dichlorobenzene	ND	ug/L	1.0	0.55	EPA-8270C	ND	U	1
3,3-Dichlorobenzidine	ND	ug/L	5.0	0.41	EPA-8270C	ND	U	1
Dieldrin	ND	ug/L	3.0	0.45	EPA-8270C	ND	U	1
Diethyl phthalate	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Dimethyl phthalate	ND	ug/L	2.0	0.25	EPA-8270C	ND	U	1
Di-n-butyl phthalate	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
2,4-Dinitrotoluene	ND	ug/L	2.0	0.87	EPA-8270C	ND	U	1
2,6-Dinitrotoluene	ND	ug/L	2.0	0.46	EPA-8270C	ND	U	1
Di-n-octyl phthalate	ND	ug/L	2.0	0.31	EPA-8270C	ND	U	1
1,2-Diphenylhydrazine	ND	ug/L	1.0	0.44	EPA-8270C	ND	U	1
Endosulfan I	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Endosulfan II	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Endosulfan sulfate	ND	ug/L	3.0	0.37	EPA-8270C	ND	U	1
Endrin	ND	ug/L	2.0	0.67	EPA-8270C	ND	U	1
Endrin aldehyde	ND	ug/L	10	0.37	EPA-8270C	ND	U	1
Fluoranthene	ND	ug/L	1.0	0.41	EPA-8270C	ND	U	1
Fluorene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Heptachlor	ND	ug/L	2.0	0.22	EPA-8270C	ND	U	1
Heptachlor epoxide	ND	ug/L	2.0	0.35	EPA-8270C	ND	U	1
Hexachlorobenzene	ND	ug/L	1.0	0.23	EPA-8270C	ND	U	1
Hexachlorobutadiene	ND	ug/L	1.0	0.46	EPA-8270C	ND	U	1
Hexachlorocyclopentadiene	ND	ug/L	1.0	0.35	EPA-8270C	ND	U	1
Hexachloroethane	ND	ug/L	1.0	0.90	EPA-8270C	ND	U	1
Indeno[1,2,3-cd]pyrene	ND	ug/L	2.0	0.71	EPA-8270C	ND	U	1
Isophorone	ND	ug/L	1.0	0.41	EPA-8270C	ND	U	1
2-Methylnaphthalene	ND	ug/L	2.0	0.30	EPA-8270C	ND	U	1
Naphthalene	ND	ug/L	1.0	0.20	EPA-8270C	ND	U	1
2-Naphthylamine	ND	ug/L	20	1.7	EPA-8270C	ND	U	1
2-Nitroaniline	ND	ug/L	2.0	0.36	EPA-8270C	ND	U	1
3-Nitroaniline	ND	ug/L	2.0	0.52	EPA-8270C	ND	U	1
4-Nitroaniline	ND	ug/L	5.0	0.85	EPA-8270C	ND	U	1
Nitrobenzene	ND	ug/L	1.0	0.39	EPA-8270C	ND	U	1

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Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1836456-02 | **Client Sample Name:** N032999-002C / RSW-001-11-15, 11/15/2018 1:45:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
N-Nitrosodimethylamine	ND	ug/L	2.0	0.56	EPA-8270C	ND	U	1
N-Nitrosodi-N-propylamine	ND	ug/L	2.0	0.56	EPA-8270C	ND	U	1
N-Nitrosodiphenylamine	ND	ug/L	1.0	0.27	EPA-8270C	ND	U	1
Phenanthrene	ND	ug/L	2.0	0.20	EPA-8270C	ND	U	1
Pyrene	ND	ug/L	2.0	0.31	EPA-8270C	ND	U	1
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.24	EPA-8270C	ND	U	1
4-Chloro-3-methylphenol	ND	ug/L	1.0	0.42	EPA-8270C	ND	U	1
2-Chlorophenol	ND	ug/L	2.0	0.85	EPA-8270C	ND	U	1
2,4-Dichlorophenol	ND	ug/L	1.0	0.26	EPA-8270C	ND	U	1
2,4-Dimethylphenol	ND	ug/L	1.0	0.30	EPA-8270C	ND	U	1
4,6-Dinitro-2-methylphenol	ND	ug/L	5.0	0.43	EPA-8270C	ND	U	1
2,4-Dinitrophenol	ND	ug/L	5.0	0.37	EPA-8270C	ND	U	1
2-Methylphenol	ND	ug/L	2.0	0.43	EPA-8270C	ND	U	1
3- & 4-Methylphenol	ND	ug/L	2.0	1.3	EPA-8270C	ND	U	1
2-Nitrophenol	ND	ug/L	2.0	0.39	EPA-8270C	ND	U	1
4-Nitrophenol	ND	ug/L	2.0	0.66	EPA-8270C	ND	U	1
Pentachlorophenol	ND	ug/L	1.0	0.43	EPA-8270C	ND	U	1
Phenol	ND	ug/L	1.0	0.84	EPA-8270C	ND	U	1
2,4,5-Trichlorophenol	ND	ug/L	5.0	0.36	EPA-8270C	ND	U	1
2,4,6-Trichlorophenol	ND	ug/L	5.0	0.34	EPA-8270C	ND	U	1
2-Fluorophenol (Surrogate)	32.1	%	34 - 108 (LCL - UCL)		EPA-8270C		S09	1
Phenol-d5 (Surrogate)	25.8	%	14 - 76 (LCL - UCL)		EPA-8270C			1
Nitrobenzene-d5 (Surrogate)	82.2	%	54 - 138 (LCL - UCL)		EPA-8270C			1
2-Fluorobiphenyl (Surrogate)	73.4	%	52 - 134 (LCL - UCL)		EPA-8270C			1
2,4,6-Tribromophenol (Surrogate)	61.3	%	57 - 162 (LCL - UCL)		EPA-8270C			1
p-Terphenyl-d14 (Surrogate)	49.3	%	38 - 181 (LCL - UCL)		EPA-8270C			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C	11/20/18 17:00	11/21/18 15:55	MK1	MS-B1	0.990	B030643

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Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030885						
PCB-1016	B030885-BLK1	ND	ug/L	0.040	0.013	U
PCB-1221	B030885-BLK1	ND	ug/L	0.040	0.019	U
PCB-1232	B030885-BLK1	ND	ug/L	0.040	0.013	U
PCB-1242	B030885-BLK1	ND	ug/L	0.040	0.014	U
PCB-1248	B030885-BLK1	ND	ug/L	0.040	0.024	U
PCB-1254	B030885-BLK1	ND	ug/L	0.040	0.012	U
PCB-1260	B030885-BLK1	ND	ug/L	0.040	0.0068	U
Decachlorobiphenyl (Surrogate)	**B030885-BLK1**	**108**	%	**56 - 119 (LCL - UCL)**		

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Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030885										
PCB-1260	B030885-BS2	LCS	0.31400	0.50000	ug/L	62.8		64 - 120		
Decachlorobiphenyl (Surrogate)	B030885-BS1	LCS	0.11255	0.12000	ug/L	93.8		56 - 119		

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Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides and PCB's (EPA Method 608)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030885	Used client sample: N										
PCB-1260	MS	**1833163-89**	**ND**	**0.31600**	**0.50000**	**ug/L**		**63.2**		**60 - 119**	
	MSD	**1833163-89**	**ND**	**0.29400**	**0.50000**	**ug/L**	**7.2**	**58.8**	**25**	**60 - 119**	
Decachlorobiphenyl (Surrogate)	MS	1833163-89	ND	0.11449	0.12000	ug/L		95.4		56 - 119	
	MSD	1833163-89	ND	0.11413	0.12000	ug/L	0.3	95.1		56 - 119	

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Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030885						
Aldrin	B030885-BLK1	ND	ug/L	0.0010	0.00037	U
alpha-BHC	B030885-BLK1	ND	ug/L	0.0010	0.00046	U
beta-BHC	B030885-BLK1	ND	ug/L	0.0010	0.00049	U
delta-BHC	B030885-BLK1	ND	ug/L	0.0010	0.00048	U
gamma-BHC (Lindane)	B030885-BLK1	ND	ug/L	0.0010	0.00048	U
Chlordane (Technical)	B030885-BLK1	ND	ug/L	0.10	0.030	U
4,4'-DDD	B030885-BLK1	ND	ug/L	0.0010	0.00049	U
4,4'-DDE	B030885-BLK1	ND	ug/L	0.0010	0.00048	U
4,4'-DDT	B030885-BLK1	ND	ug/L	0.0010	0.00034	U
Dieldrin	B030885-BLK1	ND	ug/L	0.0010	0.00046	U
Endosulfan I	B030885-BLK1	ND	ug/L	0.0010	0.00048	U
Endosulfan II	B030885-BLK1	ND	ug/L	0.0010	0.00059	U
Endosulfan sulfate	B030885-BLK1	ND	ug/L	0.0010	0.00085	U
Endrin	B030885-BLK1	ND	ug/L	0.0010	0.00072	U
Endrin aldehyde	B030885-BLK1	ND	ug/L	0.0020	0.00077	U
Heptachlor	B030885-BLK1	ND	ug/L	0.0010	0.00039	U
Heptachlor epoxide	B030885-BLK1	ND	ug/L	0.0010	0.00084	U
Methoxychlor	B030885-BLK1	ND	ug/L	0.0010	0.00076	U
Toxaphene	B030885-BLK1	ND	ug/L	0.40	0.040	U
TCMX (Surrogate)	**B030885-BLK1**	**95.6**	%	**40 - 140 (LCL - UCL)**		
Decachlorobiphenyl (Surrogate)	**B030885-BLK1**	**108**	%	**40 - 120 (LCL - UCL)**		

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Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030885										
Aldrin	B030885-BS1	LCS	0.030288	0.030000	ug/L	101		60 - 130		
gamma-BHC (Lindane)	B030885-BS1	LCS	0.028776	0.030000	ug/L	95.9		60 - 130		
4,4'-DDT	B030885-BS1	LCS	0.018802	0.030000	ug/L	62.7		60 - 130		
Dieldrin	B030885-BS1	LCS	0.030908	0.030000	ug/L	103		60 - 130		
Endrin	B030885-BS1	LCS	0.023734	0.030000	ug/L	79.1		60 - 130		
Heptachlor	B030885-BS1	LCS	0.025416	0.030000	ug/L	84.7		60 - 130		
TCMX (Surrogate)	B030885-BS1	LCS	0.053668	0.060000	ug/L	89.4		40 - 140		
Decachlorobiphenyl (Surrogate)	B030885-BS1	LCS	0.11255	0.12000	ug/L	93.8		40 - 120		

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Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030885	Used client sample: N										
Aldrin	MS	1833163-89	ND	0.030302	0.030000	ug/L		101		50 - 130	
	MSD	1833163-89	ND	0.030108	0.030000	ug/L	0.6	100	30	50 - 130	
gamma-BHC (Lindane)	MS	1833163-89	ND	0.029044	0.030000	ug/L		96.8		60 - 130	
	MSD	1833163-89	ND	0.028784	0.030000	ug/L	0.9	95.9	30	60 - 130	
4,4'-DDT	MS	1833163-89	ND	0.019750	0.030000	ug/L		65.8		60 - 130	
	MSD	1833163-89	ND	0.019402	0.030000	ug/L	1.8	64.7	30	60 - 130	
Dieldrin	MS	1833163-89	ND	0.031132	0.030000	ug/L		104		65 - 130	
	MSD	1833163-89	ND	0.031084	0.030000	ug/L	0.2	104	30	65 - 130	
Endrin	MS	1833163-89	ND	0.024932	0.030000	ug/L		83.1		60 - 130	
	MSD	1833163-89	ND	0.024532	0.030000	ug/L	1.6	81.8	30	60 - 130	
Heptachlor	MS	1833163-89	ND	0.025824	0.030000	ug/L		86.1		50 - 130	
	MSD	1833163-89	ND	0.025778	0.030000	ug/L	0.2	85.9	30	50 - 130	
TCMX (Surrogate)	MS	1833163-89	ND	0.053656	0.060000	ug/L		89.4		40 - 140	
	MSD	1833163-89	ND	0.052828	0.060000	ug/L	1.6	88.0		40 - 140	
Decachlorobiphenyl (Surrogate)	MS	1833163-89	ND	0.11449	0.12000	ug/L		95.4		40 - 120	
	MSD	1833163-89	ND	0.11413	0.12000	ug/L	0.3	95.1		40 - 120	

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030643						
Acenaphthene	B030643-BLK1	ND	ug/L	1.0	0.22	U
Acenaphthylene	B030643-BLK1	ND	ug/L	2.0	0.20	U
Aldrin	B030643-BLK1	ND	ug/L	2.0	0.28	U
Aniline	B030643-BLK1	ND	ug/L	5.0	1.8	U
Anthracene	B030643-BLK1	ND	ug/L	2.0	0.20	U
Benzidine	B030643-BLK1	ND	ug/L	5.0	3.0	U
Benzo[a]anthracene	B030643-BLK1	ND	ug/L	2.0	0.30	U
Benzo[b]fluoranthene	B030643-BLK1	ND	ug/L	2.0	0.42	U
Benzo[k]fluoranthene	B030643-BLK1	ND	ug/L	2.0	0.29	U
Benzo[a]pyrene	B030643-BLK1	ND	ug/L	2.0	0.21	U
Benzo[g,h,i]perylene	B030643-BLK1	ND	ug/L	2.0	0.48	U
Benzoic acid	B030643-BLK1	ND	ug/L	10	0.72	U
Benzyl alcohol	B030643-BLK1	ND	ug/L	2.0	0.35	U
Benzyl butyl phthalate	B030643-BLK1	ND	ug/L	2.0	0.26	U
alpha-BHC	B030643-BLK1	ND	ug/L	2.0	0.36	U
beta-BHC	B030643-BLK1	ND	ug/L	2.0	0.25	U
delta-BHC	B030643-BLK1	ND	ug/L	2.0	0.28	U
gamma-BHC (Lindane)	B030643-BLK1	ND	ug/L	2.0	0.32	U
bis(2-Chloroethoxy)methane	B030643-BLK1	ND	ug/L	2.0	0.27	U
bis(2-Chloroethyl) ether	B030643-BLK1	ND	ug/L	1.0	0.86	U
bis(2-Chloroisopropyl)ether	B030643-BLK1	ND	ug/L	2.0	1.7	U
bis(2-Ethylhexyl)phthalate	B030643-BLK1	ND	ug/L	3.0	0.20	U
4-Bromophenyl phenyl ether	B030643-BLK1	ND	ug/L	2.0	0.20	U
4-Chloroaniline	B030643-BLK1	ND	ug/L	2.0	0.39	U
2-Chloronaphthalene	B030643-BLK1	ND	ug/L	2.0	0.23	U
4-Chlorophenyl phenyl ether	B030643-BLK1	ND	ug/L	2.0	0.20	U
Chrysene	B030643-BLK1	ND	ug/L	2.0	0.26	U
4,4'-DDD	B030643-BLK1	ND	ug/L	2.0	0.40	U
4,4'-DDE	B030643-BLK1	ND	ug/L	3.0	0.32	U
4,4'-DDT	B030643-BLK1	ND	ug/L	2.0	0.26	U
Dibenzo[a,h]anthracene	B030643-BLK1	ND	ug/L	3.0	0.59	U
Dibenzofuran	B030643-BLK1	ND	ug/L	2.0	0.20	U
1,2-Dichlorobenzene	B030643-BLK1	ND	ug/L	2.0	1.8	U
1,3-Dichlorobenzene	B030643-BLK1	ND	ug/L	1.0	0.50	U

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030643						
1,4-Dichlorobenzene	B030643-BLK1	ND	ug/L	1.0	0.55	U
3,3-Dichlorobenzidine	B030643-BLK1	ND	ug/L	5.0	0.41	U
Dieldrin	B030643-BLK1	ND	ug/L	3.0	0.45	U
Diethyl phthalate	B030643-BLK1	ND	ug/L	2.0	0.20	U
Dimethyl phthalate	B030643-BLK1	ND	ug/L	2.0	0.25	U
Di-n-butyl phthalate	B030643-BLK1	ND	ug/L	2.0	0.20	U
2,4-Dinitrotoluene	B030643-BLK1	ND	ug/L	2.0	0.87	U
2,6-Dinitrotoluene	B030643-BLK1	ND	ug/L	2.0	0.46	U
Di-n-octyl phthalate	B030643-BLK1	ND	ug/L	2.0	0.31	U
1,2-Diphenylhydrazine	B030643-BLK1	ND	ug/L	1.0	0.44	U
Endosulfan I	B030643-BLK1	ND	ug/L	10	0.37	U
Endosulfan II	B030643-BLK1	ND	ug/L	10	0.37	U
Endosulfan sulfate	B030643-BLK1	ND	ug/L	3.0	0.37	U
Endrin	B030643-BLK1	ND	ug/L	2.0	0.67	U
Endrin aldehyde	B030643-BLK1	ND	ug/L	10	0.37	U
Fluoranthene	B030643-BLK1	ND	ug/L	1.0	0.41	U
Fluorene	B030643-BLK1	ND	ug/L	2.0	0.20	U
Heptachlor	B030643-BLK1	ND	ug/L	2.0	0.22	U
Heptachlor epoxide	B030643-BLK1	ND	ug/L	2.0	0.35	U
Hexachlorobenzene	B030643-BLK1	ND	ug/L	1.0	0.23	U
Hexachlorobutadiene	B030643-BLK1	ND	ug/L	1.0	0.46	U
Hexachlorocyclopentadiene	B030643-BLK1	ND	ug/L	1.0	0.35	U
Hexachloroethane	B030643-BLK1	ND	ug/L	1.0	0.90	U
Indeno[1,2,3-cd]pyrene	B030643-BLK1	ND	ug/L	2.0	0.71	U
Isophorone	B030643-BLK1	ND	ug/L	1.0	0.41	U
2-Methylnaphthalene	B030643-BLK1	ND	ug/L	2.0	0.30	U
Naphthalene	B030643-BLK1	ND	ug/L	1.0	0.20	U
2-Naphthylamine	B030643-BLK1	ND	ug/L	20	1.7	U
2-Nitroaniline	B030643-BLK1	ND	ug/L	2.0	0.36	U
3-Nitroaniline	B030643-BLK1	ND	ug/L	2.0	0.52	U
4-Nitroaniline	B030643-BLK1	ND	ug/L	5.0	0.85	U
Nitrobenzene	B030643-BLK1	ND	ug/L	1.0	0.39	U
N-Nitrosodimethylamine	B030643-BLK1	ND	ug/L	2.0	0.56	U
N-Nitrosodi-N-propylamine	B030643-BLK1	ND	ug/L	2.0	0.56	U

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B030643						
N-Nitrosodiphenylamine	B030643-BLK1	ND	ug/L	1.0	0.27	U
Phenanthrene	B030643-BLK1	ND	ug/L	2.0	0.20	U
Pyrene	B030643-BLK1	ND	ug/L	2.0	0.31	U
1,2,4-Trichlorobenzene	B030643-BLK1	ND	ug/L	1.0	0.24	U
4-Chloro-3-methylphenol	B030643-BLK1	ND	ug/L	1.0	0.42	U
2-Chlorophenol	B030643-BLK1	ND	ug/L	2.0	0.85	U
2,4-Dichlorophenol	B030643-BLK1	ND	ug/L	1.0	0.26	U
2,4-Dimethylphenol	B030643-BLK1	ND	ug/L	1.0	0.30	U
4,6-Dinitro-2-methylphenol	B030643-BLK1	ND	ug/L	5.0	0.43	U
2,4-Dinitrophenol	B030643-BLK1	ND	ug/L	5.0	0.37	U
2-Methylphenol	B030643-BLK1	ND	ug/L	2.0	0.43	U
3- & 4-Methylphenol	B030643-BLK1	ND	ug/L	2.0	1.3	U
2-Nitrophenol	B030643-BLK1	ND	ug/L	2.0	0.39	U
4-Nitrophenol	B030643-BLK1	ND	ug/L	2.0	0.66	U
Pentachlorophenol	B030643-BLK1	ND	ug/L	1.0	0.43	U
Phenol	B030643-BLK1	ND	ug/L	1.0	0.84	U
2,4,5-Trichlorophenol	B030643-BLK1	ND	ug/L	5.0	0.36	U
2,4,6-Trichlorophenol	B030643-BLK1	ND	ug/L	5.0	0.34	U
2-Fluorophenol (Surrogate)	**B030643-BLK1**	**57.4**	%	**34 - 108 (LCL - UCL)**		
Phenol-d5 (Surrogate)	**B030643-BLK1**	**32.0**	%	**14 - 76 (LCL - UCL)**		
Nitrobenzene-d5 (Surrogate)	**B030643-BLK1**	**72.9**	%	**54 - 138 (LCL - UCL)**		
2-Fluorobiphenyl (Surrogate)	**B030643-BLK1**	**66.9**	%	**52 - 134 (LCL - UCL)**		
2,4,6-Tribromophenol (Surrogate)	**B030643-BLK1**	**107**	%	**57 - 162 (LCL - UCL)**		
p-Terphenyl-d14 (Surrogate)	**B030643-BLK1**	**74.0**	%	**38 - 181 (LCL - UCL)**		

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B030643										
Acenaphthene	B030643-BS1	LCS	37.426	50.000	ug/L	74.9		58 - 118		
1,4-Dichlorobenzene	B030643-BS1	LCS	43.532	50.000	ug/L	87.1		55 - 109		
2,4-Dinitrotoluene	B030643-BS1	LCS	54.802	50.000	ug/L	110		53 - 122		
Hexachlorobenzene	B030643-BS1	LCS	45.041	40.000	ug/L	113		32 - 77		L01
Hexachlorobutadiene	B030643-BS1	LCS	51.969	50.000	ug/L	104		39 - 101		L01
Hexachloroethane	B030643-BS1	LCS	36.348	50.000	ug/L	72.7		48 - 110		
Nitrobenzene	B030643-BS1	LCS	49.696	50.000	ug/L	99.4		50 - 122		
N-Nitrosodi-N-propylamine	B030643-BS1	LCS	38.083	50.000	ug/L	76.2		48 - 133		
Pyrene	B030643-BS1	LCS	43.110	50.000	ug/L	86.2		35 - 157		
1,2,4-Trichlorobenzene	B030643-BS1	LCS	56.428	50.000	ug/L	113		53 - 110		L01
4-Chloro-3-methylphenol	B030643-BS1	LCS	31.860	50.000	ug/L	63.7		44 - 121		
2-Chlorophenol	B030643-BS1	LCS	35.750	50.000	ug/L	71.5		50 - 104		
2-Methylphenol	B030643-BS1	LCS	30.635	50.000	ug/L	61.3		39 - 104		
3- & 4-Methylphenol	B030643-BS1	LCS	52.626	100.00	ug/L	52.6		31 - 92		
4-Nitrophenol	B030643-BS1	LCS	13.034	50.000	ug/L	26.1		17 - 48		
Pentachlorophenol	B030643-BS1	LCS	30.027	40.000	ug/L	75.1		43 - 116		
Phenol	B030643-BS1	LCS	16.268	50.000	ug/L	32.5		19 - 58		
2,4,6-Trichlorophenol	B030643-BS1	LCS	37.034	50.000	ug/L	74.1		53 - 117		
2-Fluorophenol (Surrogate)	B030643-BS1	LCS	22.569	40.000	ug/L	56.4		34 - 108		
Phenol-d5 (Surrogate)	B030643-BS1	LCS	11.838	40.000	ug/L	29.6		14 - 76		
Nitrobenzene-d5 (Surrogate)	B030643-BS1	LCS	33.163	40.000	ug/L	82.9		54 - 138		
2-Fluorobiphenyl (Surrogate)	B030643-BS1	LCS	28.449	40.000	ug/L	71.1		52 - 134		
2,4,6-Tribromophenol (Surrogate)	B030643-BS1	LCS	43.600	40.000	ug/L	109		57 - 162		
p-Terphenyl-d14 (Surrogate)	B030643-BS1	LCS	12.720	20.000	ug/L	63.6		38 - 181		

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030643	Used client sample: N										
Acenaphthene	MS	1833163-08	ND	28.512	50.000	ug/L		57.0		53 - 124	
	MSD	1833163-08	ND	34.416	50.000	ug/L	18.8	68.8	24	53 - 124	
1,4-Dichlorobenzene	MS	1833163-08	ND	29.433	50.000	ug/L		58.9		52 - 114	
	MSD	1833163-08	ND	38.640	50.000	ug/L	27.1	77.3	28	52 - 114	
2,4-Dinitrotoluene	MS	1833163-08	ND	41.125	50.000	ug/L		82.2		53 - 125	
	MSD	1833163-08	ND	48.672	50.000	ug/L	16.8	97.3	23	53 - 125	
Hexachlorobenzene	MS	**1833163-08**	**ND**	**31.432**	**40.000**	**ug/L**		**78.6**		**32 - 78**	**Q03**
	MSD	**1833163-08**	**ND**	**42.134**	**40.000**	**ug/L**	**29.1**	**105**	**21**	**32 - 78**	**Q02,Q03**
Hexachlorobutadiene	MS	**1833163-08**	**ND**	**31.116**	**50.000**	**ug/L**		**62.2**		**35 - 106**	
	MSD	**1833163-08**	**ND**	**49.104**	**50.000**	**ug/L**	**44.8**	**98.2**	**30**	**35 - 106**	**Q02**
Hexachloroethane	MS	**1833163-08**	**ND**	**23.077**	**50.000**	**ug/L**		**46.2**		**49 - 111**	**Q03**
	MSD	**1833163-08**	**ND**	**34.493**	**50.000**	**ug/L**	**39.7**	**69.0**	**30**	**49 - 111**	**Q02**
Nitrobenzene	MS	1833163-08	ND	38.402	50.000	ug/L		76.8		46 - 125	
	MSD	1833163-08	ND	39.437	50.000	ug/L	2.7	78.9	26	46 - 125	
N-Nitrosodi-N-propylamine	MS	1833163-08	ND	28.700	50.000	ug/L		57.4		55 - 124	
	MSD	1833163-08	ND	35.539	50.000	ug/L	21.3	71.1	30	55 - 124	
Pyrene	MS	1833163-08	ND	31.967	50.000	ug/L		63.9		28 - 170	
	MSD	1833163-08	ND	37.373	50.000	ug/L	15.6	74.7	29	28 - 170	
1,2,4-Trichlorobenzene	MS	1833163-08	ND	38.808	50.000	ug/L		77.6		49 - 115	
	MSD	1833163-08	ND	50.400	50.000	ug/L	26.0	101	27	49 - 115	
4-Chloro-3-methylphenol	MS	**1833163-08**	**ND**	**20.681**	**50.000**	**ug/L**		**41.4**		**46 - 120**	**Q03**
	MSD	**1833163-08**	**ND**	**34.598**	**50.000**	**ug/L**	**50.4**	**69.2**	**25**	**46 - 120**	**Q02**
2-Chlorophenol	MS	**1833163-08**	**ND**	**23.532**	**50.000**	**ug/L**		**47.1**		**51 - 103**	**Q03**
	MSD	**1833163-08**	**ND**	**37.114**	**50.000**	**ug/L**	**44.8**	**74.2**	**27**	**51 - 103**	**Q02**
2-Methylphenol	MS	**1833163-08**	**ND**	**20.671**	**50.000**	**ug/L**		**41.3**		**39 - 105**	
	MSD	**1833163-08**	**ND**	**30.317**	**50.000**	**ug/L**	**37.8**	**60.6**	**27**	**39 - 105**	**Q02**
3- & 4-Methylphenol	MS	**1833163-08**	**ND**	**36.135**	**100.00**	**ug/L**		**36.1**		**30 - 96**	
	MSD	**1833163-08**	**ND**	**54.720**	**100.00**	**ug/L**	**40.9**	**54.7**	**29**	**30 - 96**	**Q02**
4-Nitrophenol	MS	**1833163-08**	**ND**	**9.6525**	**50.000**	**ug/L**		**19.3**		**11 - 55**	
	MSD	**1833163-08**	**ND**	**13.728**	**50.000**	**ug/L**	**34.9**	**27.5**	**26**	**11 - 55**	**Q02**
Pentachlorophenol	MS	**1833163-08**	**ND**	**22.136**	**40.000**	**ug/L**		**55.3**		**41 - 120**	
	MSD	**1833163-08**	**ND**	**29.568**	**40.000**	**ug/L**	**28.7**	**73.9**	**23**	**41 - 120**	**Q02**
Phenol	MS	**1833163-08**	**ND**	**11.068**	**50.000**	**ug/L**		**22.1**		**14 - 65**	
	MSD	**1833163-08**	**ND**	**15.590**	**50.000**	**ug/L**	**33.9**	**31.2**	**29**	**14 - 65**	**Q02**
2,4,6-Trichlorophenol	MS	**1833163-08**	**ND**	**26.473**	**50.000**	**ug/L**		**52.9**		**52 - 120**	
	MSD	**1833163-08**	**ND**	**42.720**	**50.000**	**ug/L**	**47.0**	**85.4**	**20**	**52 - 120**	**Q02**

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Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B030643	Used client sample: N										
2-Fluorophenol (Surrogate)	MS	1833163-08	ND	15.127	40.000	ug/L		37.8		34 - 108	
	MSD	1833163-08	ND	20.458	40.000	ug/L	30.0	51.1		34 - 108	
Phenol-d5 (Surrogate)	MS	1833163-08	ND	7.9893	40.000	ug/L		20.0		14 - 76	
	MSD	1833163-08	ND	11.453	40.000	ug/L	35.6	28.6		14 - 76	
Nitrobenzene-d5 (Surrogate)	MS	1833163-08	ND	25.374	40.000	ug/L		63.4		54 - 138	
	MSD	1833163-08	ND	28.915	40.000	ug/L	13.0	72.3		54 - 138	
2-Fluorobiphenyl (Surrogate)	MS	1833163-08	ND	21.483	40.000	ug/L		53.7		52 - 134	
	MSD	1833163-08	ND	28.368	40.000	ug/L	27.6	70.9		52 - 134	
2,4,6-Tribromophenol (Surrogate)	MS	1833163-08	ND	31.423	40.000	ug/L		78.6		57 - 162	
	MSD	1833163-08	ND	41.213	40.000	ug/L	27.0	103		57 - 162	
p-Terphenyl-d14 (Surrogate)	MS	**1833163-08**	**ND**	**7.2369**	**20.000**	**ug/L**		**36.2**		**38 - 181**	**S09**
	MSD	**1833163-08**	**ND**	**12.470**	**20.000**	**ug/L**	**53.1**	**62.4**		**38 - 181**	

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

Reported: 11/30/2018 16:15
Project: CH2MHILL
Project Number: N032999
Project Manager: Marlon Cartin

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
U	Analyte Not Detected at or above the reporting limit (CLP Flag)
L01	The Laboratory Control Sample Water (LCSW) recovery is not within laboratory established control limits.
Q02	Matrix spike precision is not within the control limits.
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.

Pace Analytical™
www.pacelabs.com

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

Report Prepared for:

Marlon Cartin
Asset Laboratories
3151 West Post Road
Las Vegas NV 89118

REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

Report Information:

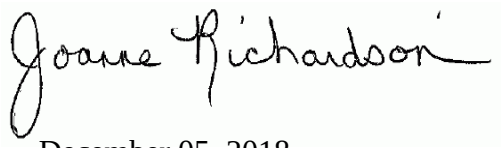
Pace Project #: 10456176
Sample Receipt Date: 11/20/2018
Client Project #: N032999
Client Sub PO #: N32999D
State Cert #: 2929

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:



December 05, 2018

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report Prepared Date:
December 5, 2018

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of Asset Laboratories. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were based on signal-to-noise measurements. Estimated Maximum Possible Concentration (EMPC) values were treated as positives in the toxic equivalence calculations.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 52-80%. All of the labeled internal standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

Values were flagged "I" where incorrect isotope ratios were obtained. Concentrations below the calibration range were flagged "J" and should be regarded as estimates.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show that PCDDs and PCDFs were not detected.

Laboratory spike samples were also prepared using clean reference matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 85-112% with relative percent differences of 0.0-14.4%. These results were within the target ranges for the method. Matrix spikes were not prepared with the sample batch.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
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Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - Pet	1240
Alabama	40770	Mississippi	MN00064
Alaska - DW	MN00064	Missouri - DW	10100
Alaska - UST	17-009	Montana	CERT0092
Arizona	AZ0014	Nebraska	NE-OS-18-06
Arkansas - DW	MN00064	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
CNMI Saipan	MP0003	New Jersey (NE	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina	27700
Connecticut	PH-0256	North Carolina -	27700
EPA Region 8+	via MN 027-053	North Carolina -	530
Florida (NELAP	E87605	North Dakota	R-036
Georgia	959	Ohio - DW	41244
Guam	17-001r	Ohio - VAP	CL101
Hawaii	MN00064	Oklahoma	9507
Idaho	MN00064	Oregon - Primar	MN300001
Illinois	200011	Oregon - Secon	MN200001
Indiana	C-MN-01	Pennsylvania	68-00563
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003
Kentucky - DW	90062	South Dakota	NA
Kentucky - WW	90062	Tennessee	TN02818
Louisiana - DE	03086	Texas	T104704192
Louisiana - DW	MN00064	Utah (NELAP)	MN00064
Maine	MN00064	Virginia	460163
Maryland	322	Washington	C486
Massachusetts	M-MN064	West Virginia -	382
Michigan	9909	West Virginia -	9952C
Minnesota	027-053-137	Wisconsin	999407970
Minnesota - De	via MN 027-053	Wyoming - UST	2926.01

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

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:
Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414

TEL: (612) 607-1700
FAX: (612) 607-6444
Acct #:

Field Sampler: SIGNED

19-Nov-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: EPA 8290		
N032999-001O / EFF-11-15	Wastewater	11/15/2018 11:00:00 AM	32OZA	1		001
N032999-002F / RSW-001-11-15	Wastewater	11/15/2018 1:45:00 PM	32OZA	1		002

WO# : 10456176

10456176

EDD Requirement CH2MHILL Labspec7 edata. Please report "J" flagged down to MDL format.

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N32999D Please email Invoices and Account Receivable Statements to elvira@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please analyze for 2,3,7,8-TCDD and TCDD equivalents by SW8290.

Fedex #: 773761146537

		Date/Time			Date/Time
Relinquished by:	YRT	11/19/2018 16:00	**Received by:**	PACE	1135 11/20/18
Relinquished by:			**Received by:**		

T=3.4

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 31Oct2018 Page 1 of 2
	Document No.: F-MN-L-213-rev.24	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Asset Lab

Project #: WO#: 10456176

PM: JMR Due Date: 12/06/18

CLIENT: Asset Labs

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 7787611465 37

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☐ G87A9170600254 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 3.4 **Cooler Temp Corrected (°C):** 3.4 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** AS 11/20/18

USDA Regulated Soil (☒ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

		COMMENTS:
Chain of Custody Present?	☒ Yes ☐ No	1.
Chain of Custody Filled Out?	☒ Yes ☐ No	2.
Chain of Custody Relinquished?	☒ Yes ☐ No	3.
Sampler Name and/or Signature on COC?	☐ Yes ☒ No ☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes ☐ No	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes ☒ No	6.
Rush Turn Around Time Requested?	☐ Yes ☒ No	7.
Sufficient Volume?	☒ Yes ☐ No	8.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☐ No ☐ Yes ☒ No	9.
Containers Intact?	☒ Yes ☐ No	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes ☐ No ☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: WT	☒ Yes ☐ No	12.
All containers needing acid/base preservation have been checked?	☐ Yes ☐ No ☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes ☐ No ☒ N/A	
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes ☐ No ☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes ☐ No ☒ N/A	14.
Trip Blank Present?	☐ Yes ☐ No ☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased): N/A		

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Joanne Richardson Date: 11-20-18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: AS

Pace Analytical Services, LLC
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Asset Laboratories

Client's Sample ID	N032999-001O / EFF-11-15		
Lab Sample ID	10456176001		
Filename	U181201A_07		
Injected By	JRH		
Total Amount Extracted	928 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	11/15/2018 11:00
ICAL ID	U181015	Received	11/20/2018 11:35
CCal Filename(s)	U181130B_18 & U181201A_15	Extracted	11/28/2018 13:00
Method Blank ID	BLANK-66569	Analyzed	12/01/2018 03:49

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**EDL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	2.1	2,3,7,8-TCDF-13C	2.00	70
Total TCDF	ND	-----	2.1	2,3,7,8-TCDD-13C	2.00	68
				1,2,3,7,8-PeCDF-13C	2.00	77
2,3,7,8-TCDD	ND	-----	2.6	2,3,4,7,8-PeCDF-13C	2.00	74
Total TCDD	ND	-----	2.6	1,2,3,7,8-PeCDD-13C	2.00	79
				1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	ND	-----	3.2	1,2,3,6,7,8-HxCDF-13C	2.00	77
2,3,4,7,8-PeCDF	ND	-----	1.3	2,3,4,6,7,8-HxCDF-13C	2.00	78
Total PeCDF	ND	-----	2.3	1,2,3,7,8,9-HxCDF-13C	2.00	74
				1,2,3,4,7,8-HxCDD-13C	2.00	73
1,2,3,7,8-PeCDD	ND	-----	3.9	1,2,3,6,7,8-HxCDD-13C	2.00	68
Total PeCDD	ND	-----	3.9	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
				1,2,3,4,7,8,9-HpCDF-13C	2.00	64
1,2,3,4,7,8-HxCDF	ND	-----	3.5	1,2,3,4,6,7,8-HpCDD-13C	2.00	68
1,2,3,6,7,8-HxCDF	ND	-----	3.1	OCDD-13C	4.00	55
2,3,4,6,7,8-HxCDF	ND	-----	2.8			
1,2,3,7,8,9-HxCDF	ND	-----	3.6	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	3.3	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	4.0	2,3,7,8-TCDD-37Cl4	0.20	76
1,2,3,6,7,8-HxCDD	ND	-----	3.1			
1,2,3,7,8,9-HxCDD	ND	-----	3.7			
Total HxCDD	ND	-----	3.6			
1,2,3,4,6,7,8-HpCDF	ND	-----	3.5	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	4.3	Equivalence: 0.00 pg/L		
Total HpCDF	ND	-----	3.9	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	5.2			
Total HpCDD	ND	-----	5.2			
OCDF	ND	-----	12			
OCDD	ND	-----	13			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Sample Analysis Results

Client - Asset Laboratories

Client's Sample ID	N032999-002F / RSW-001-11-15		
Lab Sample ID	10456176002		
Filename	U181201A_08		
Injected By	JRH		
Total Amount Extracted	938 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	11/15/2018 01:45
ICAL ID	U181015	Received	11/20/2018 11:35
CCal Filename(s)	U181130B_18 & U181201A_15	Extracted	11/28/2018 13:00
Method Blank ID	BLANK-66569	Analyzed	12/01/2018 04:34

Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L		Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.5		2,3,7,8-TCDF-13C	2.00	71
Total TCDF	ND	-----	1.5		2,3,7,8-TCDD-13C	2.00	69
					1,2,3,7,8-PeCDF-13C	2.00	80
2,3,7,8-TCDD	ND	-----	1.9		2,3,4,7,8-PeCDF-13C	2.00	74
Total TCDD	ND	-----	1.9		1,2,3,7,8-PeCDD-13C	2.00	80
					1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	ND	-----	2.0		1,2,3,6,7,8-HxCDF-13C	2.00	78
2,3,4,7,8-PeCDF	ND	-----	1.1		2,3,4,6,7,8-HxCDF-13C	2.00	79
Total PeCDF	ND	-----	1.5		1,2,3,7,8,9-HxCDF-13C	2.00	78
					1,2,3,4,7,8-HxCDD-13C	2.00	75
1,2,3,7,8-PeCDD	ND	-----	1.7		1,2,3,6,7,8-HxCDD-13C	2.00	71
Total PeCDD	ND	-----	1.7		1,2,3,4,6,7,8-HpCDF-13C	2.00	68
					1,2,3,4,7,8,9-HpCDF-13C	2.00	64
1,2,3,4,7,8-HxCDF	ND	-----	1.6		1,2,3,4,6,7,8-HpCDD-13C	2.00	71
1,2,3,6,7,8-HxCDF	ND	-----	1.7		OCDD-13C	4.00	52
2,3,4,6,7,8-HxCDF	ND	-----	1.5				
1,2,3,7,8,9-HxCDF	ND	-----	1.6		1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	1.6		1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	2.0		2,3,7,8-TCDD-37Cl4	0.20	87
1,2,3,6,7,8-HxCDD	ND	-----	2.1				
1,2,3,7,8,9-HxCDD	ND	-----	2.1				
Total HxCDD	ND	-----	2.1				
1,2,3,4,6,7,8-HpCDF	ND	-----	2.2		Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	3.0		Equivalence: 0.070 pg/L		
Total HpCDF	ND	-----	2.6		(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	4.2	-----	3.3	J			
Total HpCDD	4.2	-----	3.3	J			
OCDF	ND	-----	6.4				
OCDD	-----	27	7.5	IJ			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

J = Estimated value
I = Interference present

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Blank Analysis Results

Lab Sample Name	DFBLKBX		
Lab Sample ID	BLANK-66569	Matrix	Water
Filename	U181130B_07	Dilution	NA
Total Amount Extracted	1060 mL	Extracted	11/28/2018 13:00
ICAL ID	U181015	Analyzed	11/30/2018 14:16
CCal Filename(s)	U181130A_09 & U181130B_18	Injected By	ZMS

Native Isomers	Conc pg/L	EMPC pg/L	EDL pg/L	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	ND	-----	1.4	2,3,7,8-TCDF-13C	2.00	81
Total TCDF	ND	-----	1.4	2,3,7,8-TCDD-13C	2.00	81
				1,2,3,7,8-PeCDF-13C	2.00	87
2,3,7,8-TCDD	ND	-----	1.6	2,3,4,7,8-PeCDF-13C	2.00	79
Total TCDD	ND	-----	1.6	1,2,3,7,8-PeCDD-13C	2.00	90
				1,2,3,4,7,8-HxCDF-13C	2.00	75
1,2,3,7,8-PeCDF	ND	-----	1.6	1,2,3,6,7,8-HxCDF-13C	2.00	78
2,3,4,7,8-PeCDF	ND	-----	0.97	2,3,4,6,7,8-HxCDF-13C	2.00	86
Total PeCDF	ND	-----	1.3	1,2,3,7,8,9-HxCDF-13C	2.00	88
				1,2,3,4,7,8-HxCDD-13C	2.00	78
1,2,3,7,8-PeCDD	ND	-----	1.6	1,2,3,6,7,8-HxCDD-13C	2.00	82
Total PeCDD	ND	-----	1.6	1,2,3,4,6,7,8-HpCDF-13C	2.00	76
				1,2,3,4,7,8,9-HpCDF-13C	2.00	79
1,2,3,4,7,8-HxCDF	ND	-----	0.96	1,2,3,4,6,7,8-HpCDD-13C	2.00	88
1,2,3,6,7,8-HxCDF	ND	-----	0.89	OCDD-13C	4.00	69
2,3,4,6,7,8-HxCDF	ND	-----	0.76			
1,2,3,7,8,9-HxCDF	ND	-----	1.4	1,2,3,4-TCDD-13C	2.00	NA
Total HxCDF	ND	-----	1.00	1,2,3,7,8,9-HxCDD-13C	2.00	NA
1,2,3,4,7,8-HxCDD	ND	-----	1.3	2,3,7,8-TCDD-37Cl4	0.20	95
1,2,3,6,7,8-HxCDD	ND	-----	1.1			
1,2,3,7,8,9-HxCDD	ND	-----	1.1			
Total HxCDD	ND	-----	1.2			
1,2,3,4,6,7,8-HpCDF	ND	-----	2.4	Total 2,3,7,8-TCDD		
1,2,3,4,7,8,9-HpCDF	ND	-----	3.6	Equivalence: 0.00 pg/L		
Total HpCDF	ND	-----	3.0	(Lower-bound - Using ITE Factors)		
1,2,3,4,6,7,8-HpCDD	ND	-----	2.2			
Total HpCDD	ND	-----	2.2			
OCDF	ND	-----	5.0			
OCDD	ND	-----	6.4			

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
EDL = Estimated Detection Limit

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCS-66570		
Filename	U181130B_04	Matrix	Water
Total Amount Extracted	1040 mL	Dilution	NA
ICAL ID	U181015	Extracted	11/28/2018 13:00
CCal Filename(s)	U181130A_09 & U181130B_18	Analyzed	11/30/2018 12:00
Method Blank ID	BLANK-66569	Injected By	ZMS

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.21	103	2,3,7,8-TCDF-13C	2.0	51
Total TCDF				2,3,7,8-TCDD-13C	2.0	52
				1,2,3,7,8-PeCDF-13C	2.0	55
2,3,7,8-TCDD	0.20	0.19	94	2,3,4,7,8-PeCDF-13C	2.0	53
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	58
				1,2,3,4,7,8-HxCDF-13C	2.0	49
1,2,3,7,8-PeCDF	1.0	1.00	100	1,2,3,6,7,8-HxCDF-13C	2.0	53
2,3,4,7,8-PeCDF	1.0	1.00	100	2,3,4,6,7,8-HxCDF-13C	2.0	54
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	54
				1,2,3,4,7,8-HxCDD-13C	2.0	51
1,2,3,7,8-PeCDD	1.0	0.92	92	1,2,3,6,7,8-HxCDD-13C	2.0	49
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	50
				1,2,3,4,7,8,9-HpCDF-13C	2.0	51
1,2,3,4,7,8-HxCDF	1.0	1.1	110	1,2,3,4,6,7,8-HpCDD-13C	2.0	57
1,2,3,6,7,8-HxCDF	1.0	1.0	103	OCDD-13C	4.0	50
2,3,4,6,7,8-HxCDF	1.0	0.95	95			
1,2,3,7,8,9-HxCDF	1.0	0.93	93	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	1.0	104	2,3,7,8-TCDD-37Cl4	0.20	79
1,2,3,6,7,8-HxCDD	1.0	1.1	111			
1,2,3,7,8,9-HxCDD	1.0	1.1	112			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.99	99			
1,2,3,4,7,8,9-HpCDF	1.0	1.0	101			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.94	94			
Total HpCDD						
OCDF	2.0	2.1	103			
OCDD	2.0	2.1	105			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290 Laboratory Control Spike Results

Lab Sample ID	LCSD-66571		
Filename	U181130B_05	Matrix	Water
Total Amount Extracted	1030 mL	Dilution	NA
ICAL ID	U181015	Extracted	11/28/2018 13:00
CCal Filename(s)	U181130A_09 & U181130B_18	Analyzed	11/30/2018 12:45
Method Blank ID	BLANK-66569	Injected By	ZMS

Native Isomers	Qs (ng)	Qm (ng)	% Rec.	Internal Standards	ng's Added	Percent Recovery
2,3,7,8-TCDF	0.20	0.19	93	2,3,7,8-TCDF-13C	2.0	73
Total TCDF				2,3,7,8-TCDD-13C	2.0	73
				1,2,3,7,8-PeCDF-13C	2.0	73
2,3,7,8-TCDD	0.20	0.18	90	2,3,4,7,8-PeCDF-13C	2.0	67
Total TCDD				1,2,3,7,8-PeCDD-13C	2.0	75
				1,2,3,4,7,8-HxCDF-13C	2.0	82
1,2,3,7,8-PeCDF	1.0	0.92	92	1,2,3,6,7,8-HxCDF-13C	2.0	89
2,3,4,7,8-PeCDF	1.0	0.96	96	2,3,4,6,7,8-HxCDF-13C	2.0	85
Total PeCDF				1,2,3,7,8,9-HxCDF-13C	2.0	78
				1,2,3,4,7,8-HxCDD-13C	2.0	82
1,2,3,7,8-PeCDD	1.0	0.85	85	1,2,3,6,7,8-HxCDD-13C	2.0	75
Total PeCDD				1,2,3,4,6,7,8-HpCDF-13C	2.0	69
				1,2,3,4,7,8,9-HpCDF-13C	2.0	65
1,2,3,4,7,8-HxCDF	1.0	0.97	97	1,2,3,4,6,7,8-HpCDD-13C	2.0	73
1,2,3,6,7,8-HxCDF	1.0	0.92	92	OCDD-13C	4.0	55
2,3,4,6,7,8-HxCDF	1.0	0.91	91			
1,2,3,7,8,9-HxCDF	1.0	0.93	93	1,2,3,4-TCDD-13C	2.0	NA
Total HxCDF				1,2,3,7,8,9-HxCDD-13C	2.0	NA
1,2,3,4,7,8-HxCDD	1.0	0.92	92	2,3,7,8-TCDD-37Cl4	0.20	78
1,2,3,6,7,8-HxCDD	1.0	1.1	109			
1,2,3,7,8,9-HxCDD	1.0	0.97	97			
Total HxCDD						
1,2,3,4,6,7,8-HpCDF	1.0	0.94	94			
1,2,3,4,7,8,9-HpCDF	1.0	0.91	91			
Total HpCDF						
1,2,3,4,6,7,8-HpCDD	1.0	0.87	87			
Total HpCDD						
OCDF	2.0	1.9	95			
OCDD	2.0	1.8	91			

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 8290

Spike Recovery Relative Percent Difference (RPD) Results

Client	Asset Laboratories		
Spike 1 ID	LCS-66570	Spike 2 ID	LCSD-66571
Spike 1 Filename	U181130B_04	Spike 2 Filename	U181130B_05

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDF	103	93	10.2
2,3,7,8-TCDD	94	90	4.3
1,2,3,7,8-PeCDF	100	92	8.3
2,3,4,7,8-PeCDF	100	96	4.1
1,2,3,7,8-PeCDD	92	85	7.9
1,2,3,4,7,8-HxCDF	110	97	12.6
1,2,3,6,7,8-HxCDF	103	92	11.3
2,3,4,6,7,8-HxCDF	95	91	4.3
1,2,3,7,8,9-HxCDF	93	93	0.0
1,2,3,4,7,8-HxCDD	104	92	12.2
1,2,3,6,7,8-HxCDD	111	109	1.8
1,2,3,7,8,9-HxCDD	112	97	14.4
1,2,3,4,6,7,8-HpCDF	99	94	5.2
1,2,3,4,7,8,9-HpCDF	101	91	10.4
1,2,3,4,6,7,8-HpCDD	94	87	7.7
OCDF	103	95	8.1
OCDD	105	91	14.3

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

Eric Davis
CH2M
1000 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90017

February 1, 2019

Eric,

I have enclosed our *Supplemental* report "NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent" for the effluent samples collected on November 12, 14, and 16, 2018. The originally submitted report was revised to replace an incorrectly included COC. This revision does not affect the test results nor interpretation as originally reported. As per your new NPDES permit, the test and the resultant data analysis conformed to the EPA's Test of Significant Toxicity (TST) framework, with all testing of the effluent being performed only at the Instream Waste Concentration (IWC) of 100% effluent. The species tested consisted of:

- 7-day survival and growth test with Larval Fathead Minnows

As the receiving water sample arrived with a pH >9.0, which per the test method can negatively influence the organism response, the receiving water was tested with and without a pH adjustment. The results of the unadjusted testing are summarized below, and indicated that the effluent was ***not*** toxic, but a significant reduction in survival and growth was observed for the unadjusted receiving water. However, note that Pathogen Related Mortality (PRM) was observed corresponding to mortalities in the receiving water.

Test Species	Test Material	Test Endpoint	Percent (%) Effect	TST Analysis
Fathead Minnows	Effluent	Survival	No Effect	"Pass" (= non-toxic)
		Growth	No Effect	"Pass" (= non-toxic)
Fathead Minnows	Unadjusted Receiving Water	Survival	40%	"Fail" (= toxic)
Fathead Minnows	Survival Growth	Growth	29%	"Fail" (= toxic)

The results of the adjusted receiving water testing are summarized below, and indicated that a significant reduction in survival and growth was observed for the adjusted sample. However, note that PRM was observed corresponding to mortalities in the receiving water.

Test Species	Test Material	Test Endpoint	Percent (%) Effect	TST Analysis
Fathead Minnows	Adjusted Receiving Water	Survival	52%	"Fail" (= toxic)
		Growth	47%	"Fail" (= toxic)

If you have any questions regarding these test results or the report, please call my colleague Stephen Clark or myself at (707) 207-7760.

Sincerely,

Kristin Robertson
Sr. Aquatic Ecotoxicologist

Cc: Benny Pataray, CH2M
Vladimir Carino, CH2M
Jefferey Johnson, CH2M

Supplemental Report

NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent

Samples collected November 12, 14, and 16, 2018

Prepared For

CH2M
1000 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90017

Prepared By

Pacific EcoRisk, Inc.
2250 Cordelia Rd.
Fairfield, CA 94534

February 2019

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

Supplemental Report

NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent

Samples collected November 12, 14, and 16, 2018

Table of Contents

Appendices

1. INTRODUCTION

CH2M has contracted Pacific EcoRisk (PER) to evaluate the chronic toxicity of the SFPP Norwalk Pump Station (SFPP Norwalk) effluent. The current round of testing was intended to assess the sensitivity of the following species:

- 7-day survival and growth test with larval fathead minnows (*Pimephales promelas*).

This test was performed using effluent samples collected November 12, 14, and 16, 2018. In order to assess the sensitivity of the test organisms to toxicant stress, a monthly reference toxicant test was also performed. This report describes the performance and results of this testing.

2. CHRONIC TOXICITY TEST PROCEDURES

The methods used in this testing followed established guidelines in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition (EPA-821-R-02-014).

2.1 Receipt and Handling of the Effluent and Receiving Water Samples

On November 12, 14, and 16, 2018, samples of SFPP Norwalk effluent and receiving water samples were collected into appropriately-cleaned containers; these samples were shipped via overnight delivery, on ice and under chain-of-custody, to the PER testing facility in Fairfield, CA. Upon receipt at the testing laboratory, aliquots of each sample were collected for determination of initial water quality characteristics (Table 1), after which the remainder of each sample was stored at 0-6˚C, except when being used to prepare the test solutions. The chain-of-custody records for the collection and delivery of these samples are presented in Appendix A.

Sample Receipt Date	Sample ID	Temp (˚C)	pH	D.O. (mg/L)	Salinity (ppt)	Alkalinity (mg/L)	Hardness (mg/L)	Chlorine (mg/L)	Conductivity (µS/cm)	Total Ammonia (mg/L N)
11/13/18	EFF-11-12	0.0	6.97	6.0	1.3	258	800	0.05	2507	<1.0
11/13/18	RSW-02-11-12	0.0	9.31	18.2	0.8	195	327	-[a]	1553	<1.0
11/15/18	EFF-11-14	0.0	6.79	6.1	1.3	234	790	0.01	2404	<1.0
11/15/18	RSW-02-11-14	0.0	8.88	17.1	0.8	235	362	-[a]	1599	<1.0
11/17/18	EFF-11-16	0.0	7.13	6.5	1.3	247	740	0.06	2401	<1.0
11/17/18	RSW-02-11-16	0.0	8.52	12.2	0.9	263	392	-[a]	1772	<1.0

a – Chlorine is not measured from Receiving water samples

2.1.1 Adjustment of Test Solutions to pH7

In response to the observation of pH >9.0 which could potentially interfere with the receiving water test, the test solution and an accompanying Lab Water Control medium were adjusted to pH7 via manual drop-wise addition of ACS reagent-grade HCl and NaOH.

2.2 Survival and Growth Toxicity Testing with Larval Fathead Minnows

The chronic toxicity test with fathead minnows consists of exposing larval fish to the effluent for seven days, after which effects on survival and growth are evaluated. The specific procedures used in this test are described below.

The Lab Water Control medium for this test consisted of EPA synthetic moderately hard water. The effluent and receiving water were tested at the 100% concentration only. "New" water quality characteristics (pH, D.O., and conductivity) were measured on these test solutions prior to use in the test.

There were four replicates at each test treatment, each replicate consisting of 400 mL of test media in a 600-mL glass beaker. This test was initiated by randomly allocating 10 larval fathead minnows (<48 hours old) into each replicate. The replicate beakers were placed in a temperature-controlled room at 25˚C, under cool-white fluorescent lighting on a 16L:8D photoperiod. The test fish were fed brine shrimp nauplii twice daily.

Each day of the test, fresh test solutions were prepared and characterized as before. The beakers containing the fathead minnows were examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined and then approximately 80% of the old test solution in each beaker was carefully poured out and replaced with fresh test solution. “Old” water quality characteristics (pH, D.O., and conductivity) were measured on the old test solution that had been discarded from one randomly-selected replicate at each treatment.

After seven days exposure, the test was terminated and the number of live fish in each replicate beaker was recorded. The fish from each replicate were then carefully euthanized in methanol, rinsed in de-ionized water, and transferred to a pre-dried and pre-tared weighing pan. These fish were then dried at 100˚C for ≥24 hours and re-weighed to determine the total weight of fish in each replicate. The total weight was then divided by the initial number of fish per replicate to determine the biomass value. The resulting survival and biomass value (i.e., growth) data were analyzed to evaluate any impairment caused by the effluent. All statistical analyses were performed using the CETIS statistical software (TidePool Scientific Software, McKinleyville, CA).

2.2.1 Reference Toxicant Testing of the Larval Fathead Minnows

The reference toxicant test was performed similarly to the effluent test except that test solutions consisted of Lab Water Control medium spiked with NaCl at test concentrations of 0.75, 1.5, 3, 6, and 9 g/L. The resulting test response data were statistically analyzed to determine key dose-

response point estimates. All statistical analyses were performed using the CETIS software. These response endpoints were then compared to the typical response ranges established by the mean ± 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3. RESULTS

3.1 Effects of SFPP Norwalk Effluent and Unadjusted Receiving Water on Fathead Minnows

The results of this test are summarized below in Table 2. The effluent "passed" the TST analysis for both survival and growth, indicating that the effluent was not toxic. The receiving water "failed" the TST analysis for both survival and growth, indicating that the receiving water was toxic. However, Pathogen Related Mortality (PRM) was observed corresponding to mortalities in the receiving water. The test data and summary of statistical analyses for this test are presented in Appendix B.

Table 2. Effects of SFPP Norwalk effluent on Fathead Minnows survival and growth: receiving water with unadjusted pH.

Treatment	Mean % Survival	Mean Biomass Value (mg)
Receiving Water	60[a]	0.68
Lab Water Control	100	0.95
100% Effluent	100	1.17
Summary of Key Statistics		
Receiving Water Percent (%) Effect =	40% reduction	29% reduction
Receiving Water TST Analysis =	"Fail" (= toxic)[a]	"Fail" (= toxic)[a]
Effluent Percent (%) Effect =	0% reduction	No reduction
Effluent TST Analysis =	"Pass" (= non-toxic)	"Pass" (= non-toxic)

a – Mortalities observed in the Receiving Water Control were associated with observations of Pathogen Related Mortality (PRM) via observation of fungal coronas around the affected fish and high inter-replicate variability.

3.1.1 Effects of SFPP Norwalk pH Adjusted Receiving Water on Fathead Minnows

The results of this test are summarized below in Table 3. The receiving water "failed" the TST analysis for both survival and growth, indicating that the receiving water was toxic. However, PRM was observed corresponding to mortalities in the receiving water. The test data and summary of statistical analyses for this test are presented in Appendix C.

Table 3. Effects of SFPP Norwalk effluent on Fathead Minnows survival and growth: receiving water with adjusted pH.

Treatment	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	100	0.95
pH7 Lab Water Control	100	0.86
pH7 100% Receiving Water	47.5[a]	0.51
Summary of Key Statistics		
Receiving Water Percent (%) Effect =	52% reduction[a]	47% reduction[a]
Receiving Water TST Analysis =	"Fail" (= toxic)	"Fail" (= toxic)

a – Mortalities observed in the Receiving Water Control were associated with observations of PRM via observation of fungal coronas around the affected fish and high inter-replicate variability.

3.1.2 Reference Toxicant Toxicity to Fathead Minnows

The results of this test are summarized below in Table 4. The survival EC_{50} and growth IC_{50} for this test were consistent with the "typical response" range established by the reference toxicant test database for this species, indicating that the survival response of these organisms was responding to toxic stress in a typical fashion. The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 4. Reference toxicant testing: effects of NaCl on Fathead Minnows survival and growth.

NaCl Treatment (g/L)	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	95	0.55
0.75	95	0.68
1.5	80	**0.60***
3	**42.5***	0.28
6	**45***	0.20
9	**0***	-
Summary of Key Statistics		
Survival EC_{50} or Growth IC_{50} =	3.39 g/L NaCl	2.86 g/L NaCl

* The response at this test treatment was significantly less than the Lab Control treatment response ($p < 0.05$).

4. SUMMARY AND CONCLUSIONS

As the receiving water sample arrived with a pH >9.0, which per the test method can negatively influence the organism response, the receiving water was tested with and without a pH adjustment. The results of the unadjusted testing are summarized below, and indicated that the effluent was ***not*** toxic, but a significant reduction in survival and growth was observed for the unadjusted receiving water. However, note that PRM was observed corresponding to mortalities in the receiving water.

Test Species	Test Material	Test Endpoint	Percent (%) Effect	TST Analysis
Fathead Minnows	Effluent	Survival	No Effect	"Pass" (= non-toxic)
		Growth	No Effect	"Pass" (= non-toxic)
Fathead Minnows	Unadjusted Receiving Water	Survival	40%	"Fail" (= toxic)
Fathead Minnows	Survival Growth	Growth	29%	"Fail" (= toxic)

The results of the adjusted receiving water testing are summarized below, and indicated that a significant reduction in survival and growth was observed for the adjusted sample. However, note that PRM was observed corresponding to mortalities in the receiving water.

Test Species	Test Material	Test Endpoint	Percent (%) Effect	TST Analysis
Fathead Minnows	Adjusted Receiving Water	Survival	52%	"Fail" (= toxic)
		Growth	247%	"Fail" (= toxic)

4.1 QA/QC Summary

Test Conditions – The fathead minnows for the Stillwater and reference toxicant tests arrived in solution at 20.2°C. These fish experienced a >3°C temperature change in <24 hours. As per guidance in the EPA testing manual, aeration was initiated for the chronic fathead minnow test during the course of testing due to observation of dissolved oxygen <4.0 mg/L. Otherwise all test conditions (pH, D.O., temperature, etc.) were within acceptable limits for these tests. All test analyses were performed according to laboratory Standard Operating Procedures.

Negative Control – The biological responses for the test organisms at the Lab Control treatments were within acceptable limits.

Positive Control – All reference toxicant test results were consistent with the reference toxicant test database, indicating that these test organisms were responding to toxic stress in a typical fashion.

Concentration Response Relationships – The concentration-response relationships for these tests were evaluated as per EPA guidelines (EPA-821-B-00-004), and were determined to be acceptable.

Appendix A

Chain-of-Custody Records for the Collection and Delivery of the SFPP Norwalk Wastewater Treatment Facility Effluent and Receiving Water Samples

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534
Tel:707-207-7760 Fax: 707-207-7916
Kristin Worrell (kworrell@pacificecorisk.com

CHAIN OF CUSTODY RECORD

DATE: November 12, 2018
PAGE: 1 of 1

Section A Required Client Information:		**Section B** Required Project Information:		**Section C** Invoice Information:		**Section D** Sampler Information:	
Company:	**Kinder Morgan Energy Partners Attention: Steve Defibaugh**	Report To:	Eric Davis	Attention:	Steve Defibaugh - Ref. AFE# 81195	Sampler Name:	Nils Orliczky
Address:	1100 Town & Country Road Orange, CA 92868	Copy To:	Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler Signature:	
Email To:	steve_defibaugh@kindermorgan.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	11/12/2018
Phone:	714-560-4802 Fax: 714-560-4801	Project Name:	**SFPP Norwalk**	ATL Project Manager:	Kristin Worrell		

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	Analysis Test	Inland Silverside (Menidia Beryllina) or Topsmelt (Atherinops affinis) [survival and Growth Test Method 1006)	Fat head Minnow) [Survival and Growth Test Method 1000)	Comments
	CONTAINER TYPE								P		
	# OF CONTAINERS								2		
	PRESERVATIVE								–		
	VOLUME (mL)								10000		
1	EFF-11-12	EFFLUENT	WW	C	11/12/18	1015	1		X	X	
2	RSW-02 - 11-12	50 Downstream Coyote Creek	WW	G	11/12/18	1205	1		X	X	
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

11-12-18

Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
	11-12-18 / 1305	Ivana Djordjevic	11/13/18 1045
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT):
- ☐ A = Same Day
- ☐ B = 24 Hours
- ☐ C = 48 Hours
- ☐ D = 72 Hours
- ☐ E = 5 Workdays
- ☑ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

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

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534
Tel:707-207-7760 Fax: 707-207-7916
Kristin Worrell (kworrell@pacificecorisk.com

CHAIN OF CUSTODY RECORD

DATE: November 14, 2018
PAGE: 1 of 1

Section A Required Client Information:		**Section B** Required Project Information:		**Section C** Invoice Information:		**Section D** Sampler Information:	
Company:	Kinder Morgan Energy Partners Attention: Steve Defibaugh	Report To:	Eric Davis	Attention:	Steve Defibaugh - Ref. AFE# 81195	Sampler Name:	Nils Orliczky
Address:	1100 Town & Country Road Orange, CA 92868	Copy To:	Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler Signature:	
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	11/14/2018
Phone: 714-560-4802	Fax: 714-560-4801	Project Name:	SFPP Norwalk	ATL Project Manager:	Kristin Worrell		

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS			Analysis Test: Inland Silverside (Menidia Beryllina) or Topsmelt (Atherinops affinis) (Survival and Growth Test Method 1006)	Fat head Minnow) (Survival and Growth Test Method 1000)	Comments
	CONTAINER TYPE						P					
	# OF CONTAINERS						2					
	PRESERVATIVE						–					
	VOLUME (mL)						10000					
1	EFF-11-14	EFFLUENT	WW	C	11/14/18	0905	1			X	X	
2	RSW-02 - 11-14	50 Downstream Coyote Creek	WW	G	11/14/18	1005	1			X	X	
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

11-14-18

Received

Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
	11-14-18 1440	DH	11/15/18 1410
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time

Turn Around Time (TAT):
- ☐ A = Same Day
- ☐ B = 24 Hours
- ☐ C = 48 Hours
- ☐ D = 72 Hours
- ☐ E = 5 Workdays
- ☑ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instruction:

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

Pacific EcoRisk
2250 Cordelia Rd.
Fairfield, CA 94534
Tel:707-207-7780 Fax: 707-207 7916
Kristin Worrell (kworrell@pacificecorisk.com

CHAIN OF CUSTODY RECORD

DATE: 11-16-18
PAGE: 1 of 1

Section A Required Client Information:

Company:	Kinder Morgan Energy Partners
Attention:	Steve Delibaugh
Address:	1100 Town & Country Road, Orange, CA 92868
Email To:	steve_delibaugh@kindermorgan.com
Phone: 714-560-4802	Fax: 714-560-4801

Section B Required Project Information:

Report To:	Eric Gavis
Copy To:	Steve Delibaugh
Purchase Order No.:	
Project Name:	SFPP Norwalk

Section C Invoice Information:

Attention:	Steve Delibaugh - Ref AFE# 81195
Company Name:	Kinder Morgan Energy Partners
Address:	1100 Town & Country Road, Orange, CA 92868
ATL Project Manager:	Kristin Worrell

Section D Sampler Information:

Sampler Name:	Nils Orlczky
Sampler Signature:	NB-OC
Sample Date:	16-Nov-18

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS		Analysis Test: Inland Silverside (Menidia Beryllina) or Topsmelt (Atherinops affinis) (Survival and Growth Test Method 1006)	Fat head Minnow) (Survival and Growth Test Method 1000)	Comments
	CONTAINER TYPE								P		
	# OF CONTAINERS								2		
	PRESERVATIVE								-		
	VOLUME (mL)								10000		
1	EFF-11 16	EFFLUENT	WW	C	11/16/18	08.30	1		X	X	
2	RSW-02 - 11-16	50 Downstream Coyote Creek	WW	G	11/16/18	09:40	1		X	X	
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

11-16-18

NB-OC

Relinquished by (Signature and Printed Name): NB-OC 11-16-18 1300
Received by (Signature and Printed Name):

Relinquished by (Signature and Printed Name): Trevor Fischer
Received by (Signature and Printed Name): Trevor Fischer ITF 11/17/18 1421

Relinquished by (Signature and Printed Name):
Received by (Signature and Printed Name):

Turn Around Time (TAT):
- ☐ A = Same Day
- ☐ B = 24 Hours
- ☐ C = 48 Hours
- ☒ D = 72 Hours
- ☐ E = 5 Workdays
- ☒ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00 PM.

Special Instructions:

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

Appendix B

Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk Effluent and Unadjusted Receiving Water to Fathead Minnows

CETIS Summary Report

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	04-3837-3620	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Kristin Robertson
Start Date:	13 Nov-18 17:06	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	20 Nov-18 10:57	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 18h	**Source:**	Aquatox, AR	**Age:**	1

Sample ID:	14-9823-4283	**Code:**	Effluent	**Client:**	CH2M Hill
Sample Date:	12 Nov-18 10:15	**Material:**	Effluent	**Project:**	29469
Receipt Date:	13 Nov-18 10:45	**Source:**	SFPP Norwalk Station		
Sample Age:	31h (0 °C)	**Station:**	Eff-11-12		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
06-4272-0106	7d Survival Rate	TST-Welch's t Test	0.8666	Receiving Water failed 7d survival rate
09-6834-1436	7d Survival Rate	TST-Welch's t Test	<0.25	100% passed 7d survival rate
01-5875-9360	Mean Dry Biomass-mg	TST-Welch's t Test	0.6295	Receiving Water failed mean dry biomass-m
09-6695-6730	Mean Dry Biomass-mg	TST-Welch's t Test	7.6E-05	100% passed mean dry biomass-mg

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0	R	4	0.600	0.282	0.918	0.500	0.900	0.100	0.200	33.33%	40.00%
100		4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.888	1.04	0.034	0.0681	7.16%	0.00%
0	R	4	0.677	0.369	0.985	0.526	0.959	0.0967	0.193	28.55%	28.81%
100		4	1.17	1.05	1.29	1.09	1.25	0.0365	0.0729	6.24%	-22.92%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.000	1.000	1.000	1.000
0	R	0.500	0.500	0.500	0.900
100		1.000	1.000	1.000	1.000

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	0.909	1.04	0.967	0.888
0	R	0.526	0.636	0.587	0.959
100		1.13	1.09	1.25	1.2

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	10/10	10/10	10/10	10/10
0	R	5/10	5/10	5/10	9/10
100		10/10	10/10	10/10	10/10

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID: 09-6834-1436 **Endpoint:** 7d Survival Rate **CETIS Version:** CETISv1.9.2
Analyzed: 21 Nov-18 11:08 **Analysis:** Parametric Bioequivalence-Two Sample **Official Results:** Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% passed 7d survival rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		100*	0.353	n/a		<0.25	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65500	<1.0E-37	Significant Effect
Error	0	0	6			
Total	0		7			

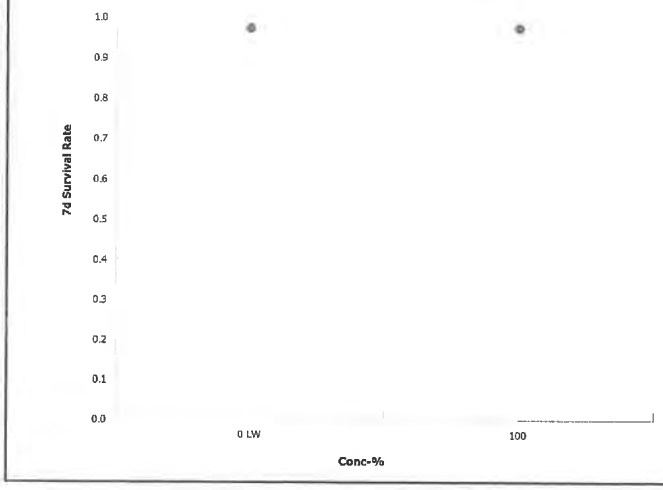
7d Survival Rate Summary

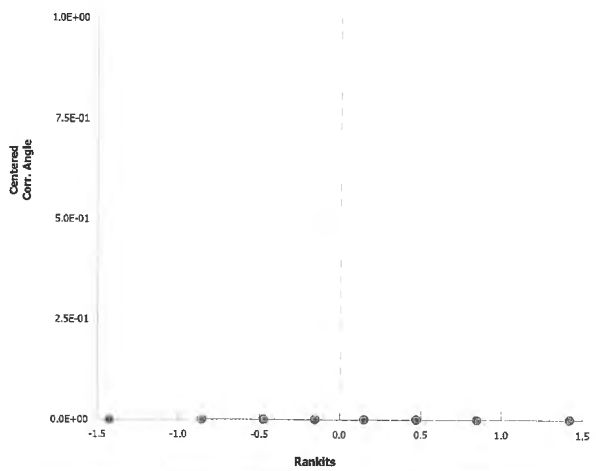
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
100		4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%

Graphics





Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID: 06-4272-0106 **Endpoint:** 7d Survival Rate **CETIS Version:** CETISv1.9.2
Analyzed: 21 Nov-18 11:08 **Analysis:** Parametric Bioequivalence-Two Sample **Official Results:** Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	Receiving Water failed 7d survival rate

TST-Welch's t Test

Control vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr	Receiving Water	-1.36	0.765	3	CDF	0.8666	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.521641	0.521641	1	19.4	0.0045	Significant Effect
Error	0.161227	0.0268711	6			
Total	0.682868		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	9	13.7	0.0240	Equal Variances
Variances	Mod Levene Equality of Variance Test	1	13.7	0.3559	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.706	0.645	0.0027	Non-Normal Distribution

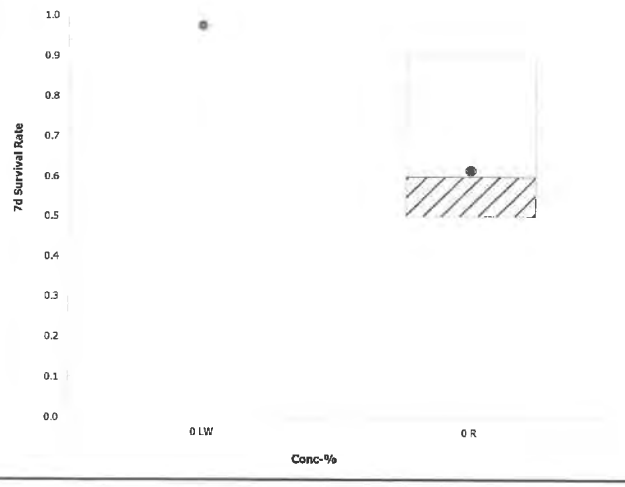
7d Survival Rate Summary

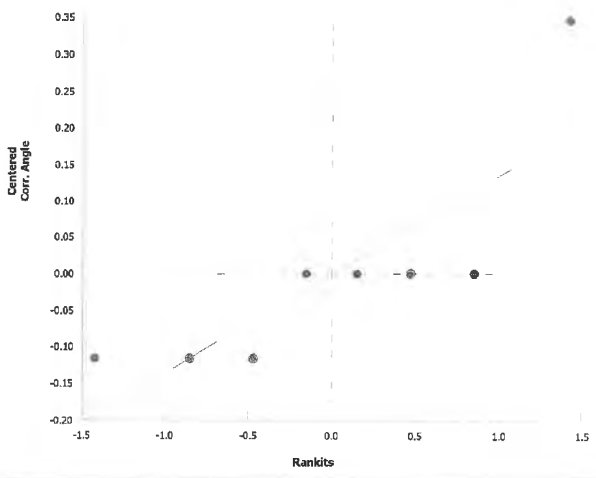
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
0	R	4	0.600	0.282	0.918	0.500	0.500	0.900	0.100	33.33%	40.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
0	R	4	0.901	0.532	1.27	0.785	0.785	1.25	0.116	25.72%	36.17%

Graphics





Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	09-6695-6730	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:21	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed mean dry biomass-mg

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		100*	10.2	0.727	5	CDF	7.6E-05	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0950467	0.0950467	1	19.1	0.0047	Significant Effect
Error	0.02987	0.0049783	6			
Total	0.124917		7			

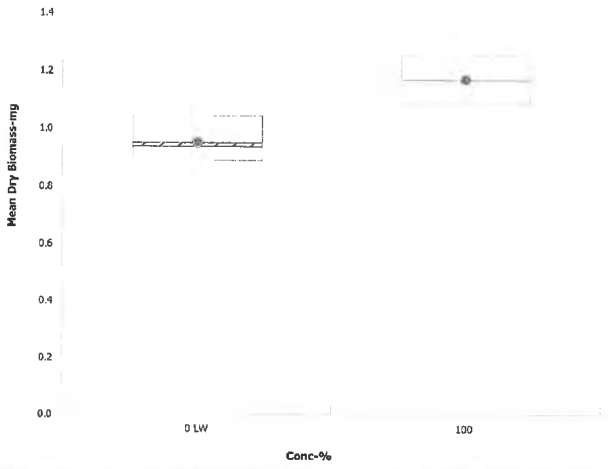
Distributional Tests

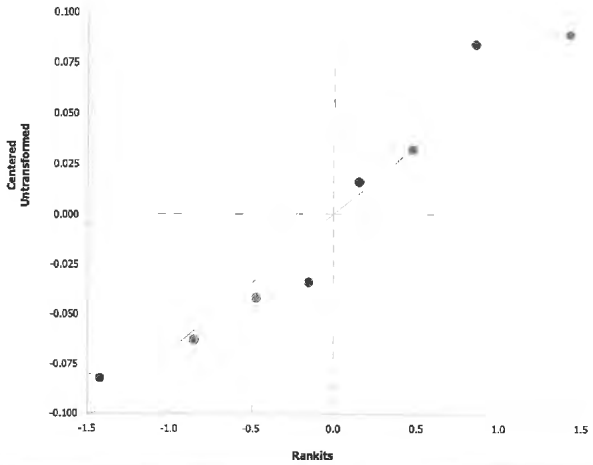
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.15	47.5	0.9127	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.92	0.645	0.4273	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.938	0.888	1.04	0.034	7.16%	0.00%
100		4	1.17	1.05	1.29	1.17	1.09	1.25	0.0365	6.24%	-22.92%

Graphics





Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	01-5875-9360	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:22	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	Receiving Water failed mean dry biomass-mg

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		Receiving Water	-0.363	0.765	3	CDF	0.6295	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.150153	0.150153	1	7.15	0.0368	Significant Effect
Error	0.126016	0.0210027	6			
Total	0.276169		7			

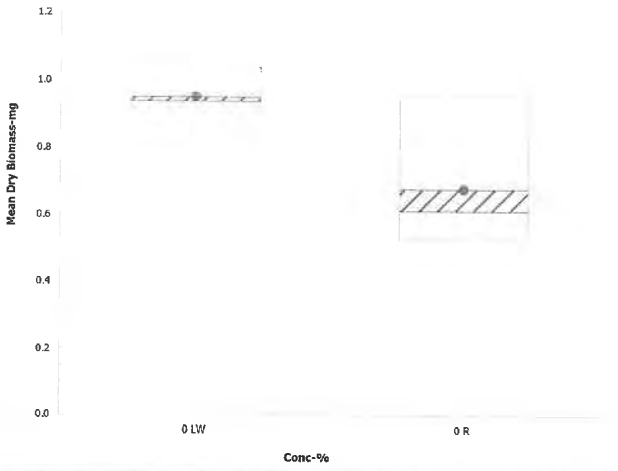
Distributional Tests

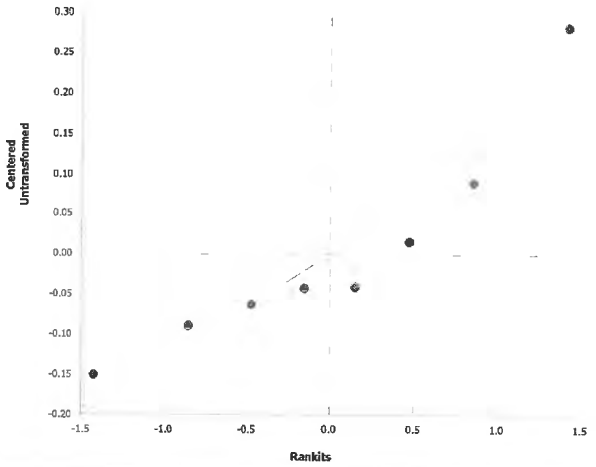
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	8.06	47.5	0.1203	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.877	0.645	0.1775	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.938	0.888	1.04	0.034	7.16%	0.00%
0	R	4	0.677	0.369	0.985	0.612	0.526	0.959	0.0967	28.55%	28.81%

Graphics





7 Day Chronic Fathead Minnow Toxicity Test Data

Client: **SFPP Norwalk Station**
Test Material: Effluent
Test ID#: 80393 Project #: 29469
Test Date: 11/13/18 Randomization: 4.5.14

Organism Log#: 11284 Age: L48hr
Organism Supplier: Aquatox
Control/Diluent: EPAMH
Control Water Batch: 2119

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µs/cm)	# Live Organisms A	B	C	D	SIGN-OFF
Lab Water Control	24.1	8.01		8.4		341	10	10	20	10	Date: 11/13/18
Receiving Water	24.9	9.17		14.6		1521	10	10	10	10	Sample ID (RW/Eff): S1318/S1317
100% Effluent	25.1	7.08		9.0		2437	10	10	10	10	Test Solution Prep: AEF
											New WQ: TA
											Initiation Time: 1706
Meter ID	93A	PH25		RD11		EC11					Initiation Signoff: CB
Lab Water Control	25.7	7.93	7.64	9.8	7.8	328	10	10	10	10	Date: 11/14/18
Receiving Water	25.6	9.31	8.64	14.9	8.1	1518	10	10	10	10	Sample ID (RW/Eff): S1318/S1317
100% Effluent	25.7	6.96	7.84	9.7	7.7	2430	10	10	10	10	Test Solution Prep: CB
											New WQ: TA
											Renewal Time: 1341
											Renewal Signoff: TF
Meter ID	10A	PH25	PH19	RD11	RD10	EC11					Old WQ: WC
Lab Water Control	24.0	7.71	7.70	9.2	8.3	320	10	10	10	10	Date: 11/15/18
Receiving Water	23.9	8.91	8.01	16.6	7.3	1589	10	10	10	10	Sample ID (RW/Eff): ~~S1352/S1353~~ S1353/S1352
100% Effluent	24.0	6.86	8.04	8.5	7.4	2380	10	10	10	10	Test Solution Prep: NB
											New WQ: TP
											Renewal Time: 1616
											Renewal Signoff: LL
Meter ID	59A	PH19	PH 19	RD11	Rd 11	EC11					Old WQ: CB
Lab Water Control	24.0	8.04	8.24	8.9	8.6	330	10	10	10	10	Date: 11/16/18
Receiving Water	24.2	8.95	8.79	14.7	8.5	1568	5	7	6	10	Sample ID (RW/Eff): S1353/S1352 TF 11/16/18
100% Effluent	24.0	7.10	8.57	9.2	8.6	2441	10	10	10	10	Test Solution Prep: TF
											New WQ: SB
											Renewal Time: 1116
											Renewal Signoff: RB
Meter ID	81A	PH25	PH24	RD13	RD11	EC13					Old WQ: SR

7 Day Chronic Fathead Minnow Toxicity Test Data

Client: **SFPP Norwalk Station**
Test Material: Effluent
Test ID#: 80393 Project #: 29469
Test Date: 11/13/18 Randomization: 4.5.14

Organism Log#: 11284 Age: 24-48hr
Organism Supplier: Aquatox
Control/Diluent: 1 EPAMH
Control Water Batch: 2119

Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µs/cm)	# Live Organisms A	# Live Organisms B	# Live Organisms C	# Live Organisms D	SIGN-OFF
Lab Water Control	24.3	7.91	7.68	7.3	7.3	314	10	10	10	10	Date: 11/17/18
Receiving Water	24.4	8.72	8.34	12.4	7.7	1761	5	5	~~5~~ 4	10	Sample ID (RW/Eff): 51362/51361
100% Effluent	24.1	7.06	8.07	6.6	7.6	2391	10	10	10	10	Test Solution Prep: JO
											New WQ: SR
											Renewal Time: 1626
											Renewal Signoff: SL
Meter ID	100A	PH24	PH15	RD13	RD11	EC13					Old WQ: TP
Lab Water Control	24.0	7.94	7.92	9.2	7.8	297	10	10	10	10	Date: 11/18/18
Receiving Water	24.1	8.75	8.46	13.8	8.0	1735	5	5	5	10	Sample ID (RW/Eff): 51362/51361
100% Effluent	24.0	7.01	8.15	8.0	8.1	2350	10	10	10	10	Test Solution Prep: TK
											New WQ: TP
											Renewal Time: 1700
											Renewal Signoff: KL
Meter ID	108A	PH24	PH19	RD12	RD13	EC12					Old WQ: TP
Lab Water Control	24.0	7.93	7.48	9.0	7.7	300	10	10	10	10	Date: 11/19/18
Receiving Water	24.1	8.74	8.20	13.7	8.0	1749	5	5	5	9	Sample ID (RW/Eff): 51362/51361
100% Effluent	24.1	6.99	7.91	8.6	8.1	2377	10	10	10	10	Test Solution Prep: TK
											New WQ: KL
											Renewal Time: 1315
											Renewal Signoff: TK
Meter ID	108A	PH19	PH24	RD11	RD13	EC11					Old WQ: AR
Lab Water Control	24.4		7.78		7.8	328	10	10	10	10	Termination Date: 11/20/18
Receiving Water	24.2		8.44		8.0	1875	5	5	5	9	Termination Time: 1057
100% Effluent	24.2		8.10		7.9	2492	10	10	10	10	Termination Signoff: TF
											Old WQ: VE
Meter ID	100A		PH24		RD11	EC11					

Fathead Minnow Dry Weight Data Sheet

Client: **SFPP Norwalk Station** Test ID #: 80393 Project #: 29469

Test Material: Effluent Tare Weight Date: 11/18/18 Sign-off: AR

Test Date: 11/13/18 Final Weight Date: 11-21-18 Sign-off: [signature]

Pan ID	Treatment/ Replicate	Initial Weight (mg)	Final Weight (mg)	# of Organisms at Test Initiation	Biomass Value (mg)
1	Lab Water Control A	417.85	426.94	10	0.909
2	B	409.01	419.41	10	1.04
3	C	408.84	418.51	10	0.967
4	D	407.99	416.87	10	0.888
5	Receiving Water A	403.48	408.74	10	0.526
6	B	414.39	420.75	10	0.636
7	C	412.55	418.42	10	0.587
8	D	409.59	419.18	10	0.959
9	100% A	407.39	418.74	10	1.13
10	B	413 98	424.85	10	1.09
11	C	413.50	426.03	10	1.25
12	D	407.20	419.21	10	1.20
QA1		415.58	415.55		
QA2		406.77	406.80		
Balance ID		BAL 04	Bal 04		

Appendix C

Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk pH Adjusted Receiving Water to Fathead Minnows

CETIS Summary Report

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	21-1782-4762	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Kristin Robertson
Start Date:	13 Nov-18 17:06	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Not Applicable
Ending Date:	20 Nov-18 10:57	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 18h	**Source:**	Aquatox, AR	**Age:**	1

Sample ID:	08-2721-5208	**Code:**	Effluent	**Client:**	CH2M Hill
Sample Date:	12 Nov-18 10:15	**Material:**	Effluent	**Project:**	29469
Receipt Date:	13 Nov-18 10:45	**Source:**	SFPP Norwalk Station		
Sample Age:	31h (0 °C)	**Station:**	Eff-11-12		

Comments:
pH Adjusted RW

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
08-8372-2006	7d Survival Rate	TST-Welch's t Test	0.9907	100% failed 7d survival rate
15-2206-5871	7d Survival Rate	TST-Welch's t Test	0.9907	100% failed 7d survival rate
05-2868-8434	Mean Dry Biomass-mg	TST-Welch's t Test	0.8770	100% failed mean dry biomass-mg
05-7785-4733	Mean Dry Biomass-mg	TST-Welch's t Test	0.9408	100% failed mean dry biomass-mg

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
0	p7	4	1.000	1.000	1.000	1.000	1.000	0.000	0.000	0.00%	0.00%
100		4	0.475	0.275	0.675	0.300	0.600	0.063	0.126	26.49%	52.50%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.888	1.04	0.034	0.0681	7.16%	0.00%
0	p7	4	0.857	0.762	0.952	0.796	0.938	0.0299	0.0598	6.98%	9.91%
100		4	0.507	0.216	0.798	0.267	0.702	0.0916	0.183	36.12%	46.69%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.000	1.000	1.000	1.000
0	p7	1.000	1.000	1.000	1.000
100		0.500	0.600	0.500	0.300

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	0.909	1.04	0.967	0.888
0	p7	0.836	0.938	0.796	0.857
100		0.485	0.702	0.574	0.267

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	10/10	10/10	10/10	10/10
0	p7	10/10	10/10	10/10	10/10
100		5/10	6/10	5/10	3/10

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID:	15-2206-5871	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:15	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% failed 7d survival rate

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
pH 7 Lab Control		100	-4.66	0.765	3	CDF	0.9907	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.852525	0.852525	1	103	5.3E-05	Significant Effect
Error	0.0497124	0.0082854	6			
Total	0.902237		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.52	13.7	0.0570	Equal Variances
Variances	Mod Levene Equality of Variance Test	2.43	13.7	0.1701	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.791	0.645	0.0230	Normal Distribution

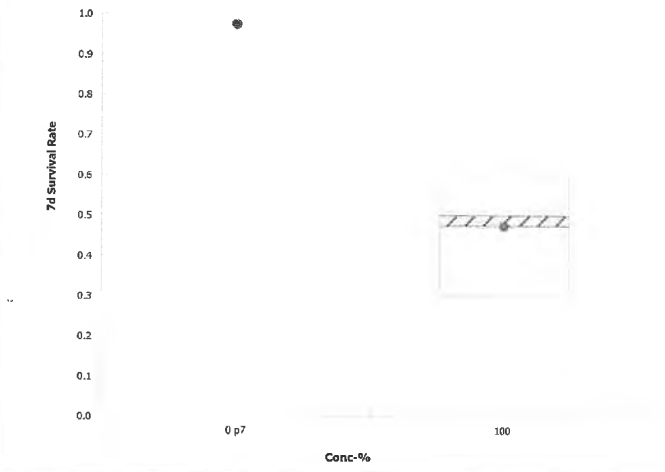
7d Survival Rate Summary

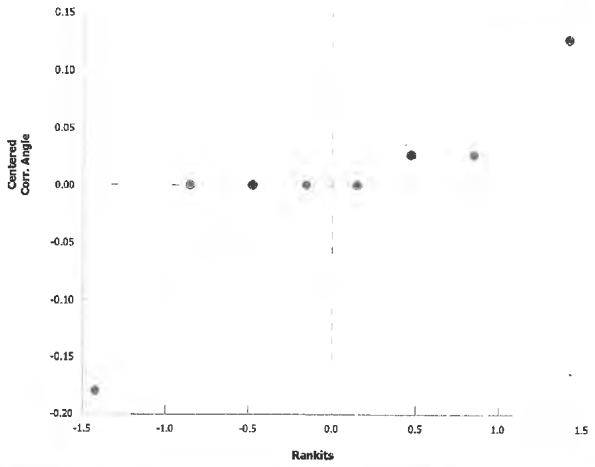
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	p7	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	0.475	0.275	0.675	0.500	0.300	0.600	0.063	26.49%	52.50%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	p7	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
100		4	0.759	0.554	0.964	0.785	0.58	0.886	0.0644	16.96%	46.24%

Graphics





Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	08-8372-2006	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:16	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	100% failed 7d survival rate

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		100	-4.66	0.765	3	CDF	0.9907	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.852525	0.852525	1	103	5.3E-05	Significant Effect
Error	0.0497124	0.0082854	6			
Total	0.902237		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	5.52	13.7	0.0570	Equal Variances
Variances	Mod Levene Equality of Variance Test	2.43	13.7	0.1701	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.791	0.645	0.0230	Normal Distribution

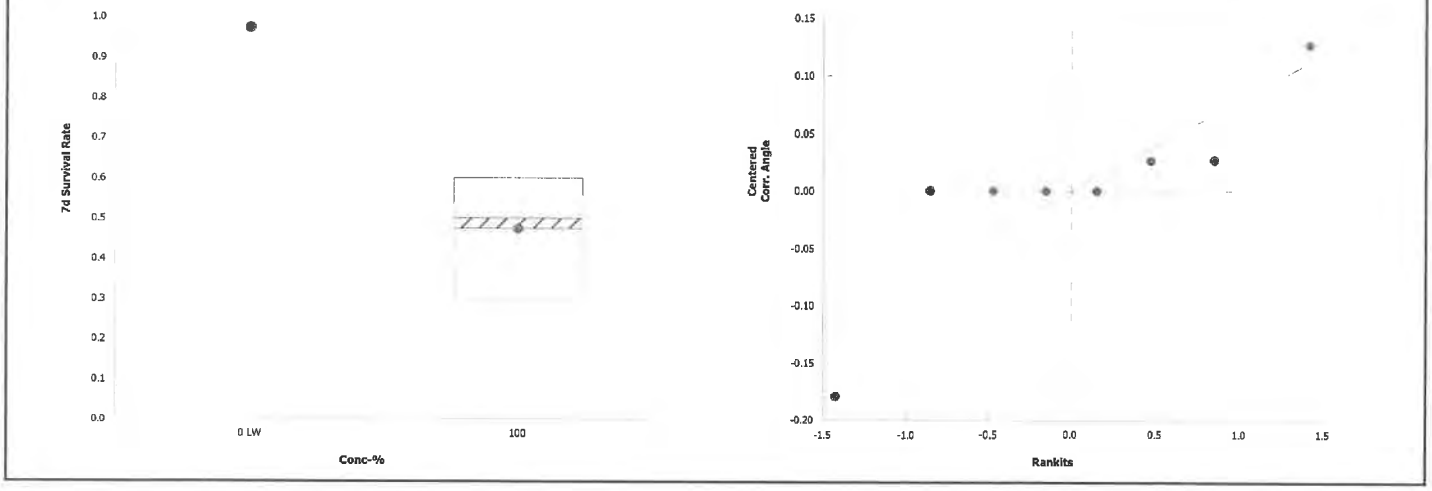
7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	0.475	0.275	0.675	0.500	0.300	0.600	0.063	26.49%	52.50%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
100		4	0.759	0.554	0.964	0.785	0.58	0.886	0.0644	16.96%	46.24%

Graphics



Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	05-2868-8434	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:15	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% failed mean dry biomass-mg

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
pH 7 Lab Control		100	-1.44	0.765	3	CDF	0.8770	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.24465	0.24465	1	13.2	0.0109	Significant Effect
Error	0.11132	0.0185534	6			
Total	0.35597		7			

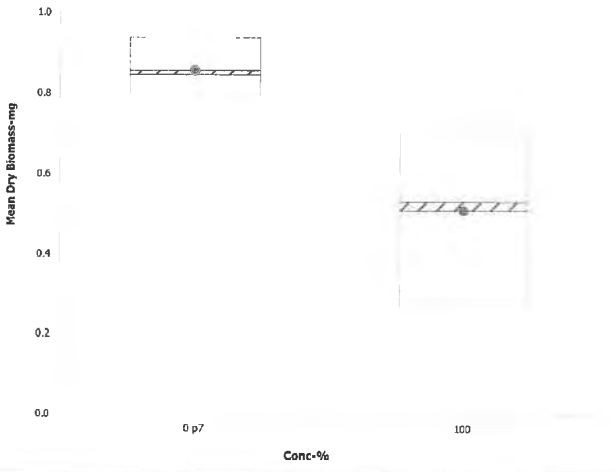
Distributional Tests

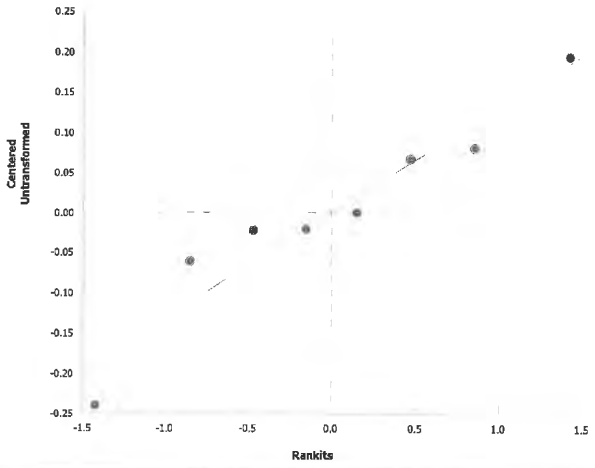
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	9.38	47.5	0.0985	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.948	0.645	0.6929	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	p7	4	0.857	0.762	0.952	0.846	0.796	0.938	0.0299	6.98%	0.00%
100		4	0.507	0.216	0.798	0.529	0.267	0.702	0.0916	36.12%	40.82%

Graphics





Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID: 05-7785-4733 **Endpoint:** Mean Dry Biomass-mg **CETIS Version:** CETISv1.9.2
Analyzed: 21 Nov-18 11:16 **Analysis:** Parametric Bioequivalence-Two Sample **Official Results:** Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% failed mean dry biomass-mg

TST-Welch's t Test

Control	vs	Conc-%	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		100	-2.17	0.765	3	CDF	0.9408	Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.394272	0.394272	1	20.7	0.0039	Significant Effect
Error	0.114507	0.0190845	6			
Total	0.50878		7			

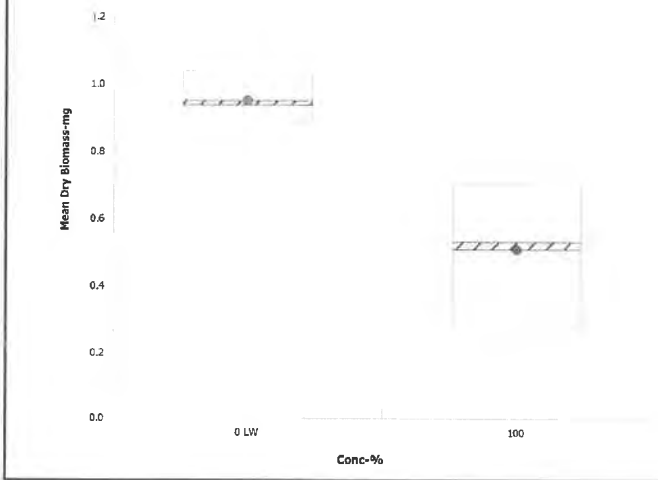
Distributional Tests

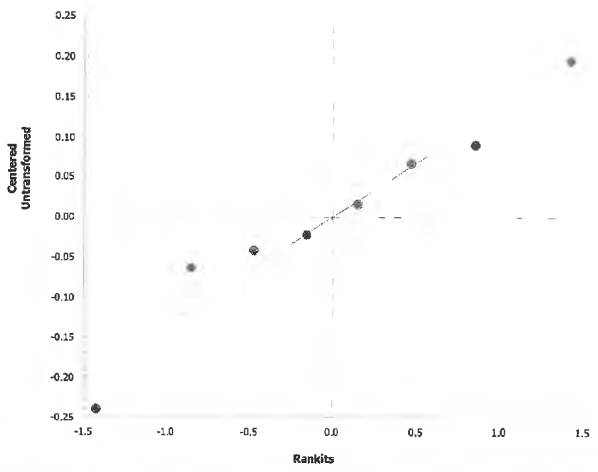
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	7.23	47.5	0.1384	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.966	0.645	0.8611	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.938	0.888	1.04	0.034	7.16%	0.00%
100		4	0.507	0.216	0.798	0.529	0.267	0.702	0.0916	36.12%	46.69%

Graphics





Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID:	19-0098-6616	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:25	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	pH 7 Lab Control passed 7d survival rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		pH 7 Lab Control	0.353	n/a		<0.25	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65500	<1.0E-37	Significant Effect
Error	0	0	6			
Total	0		7			

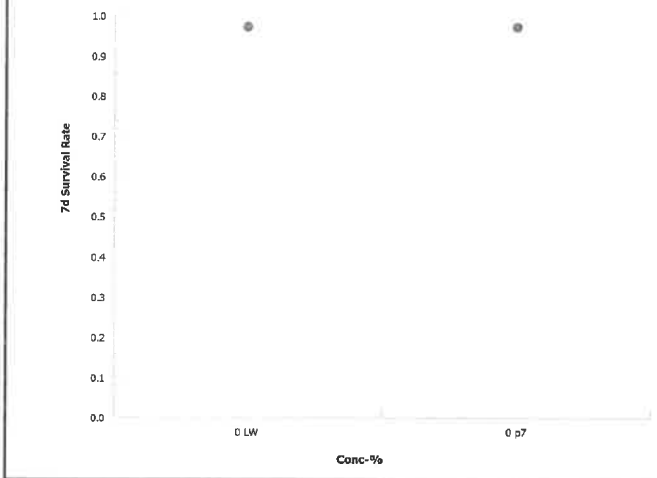
7d Survival Rate Summary

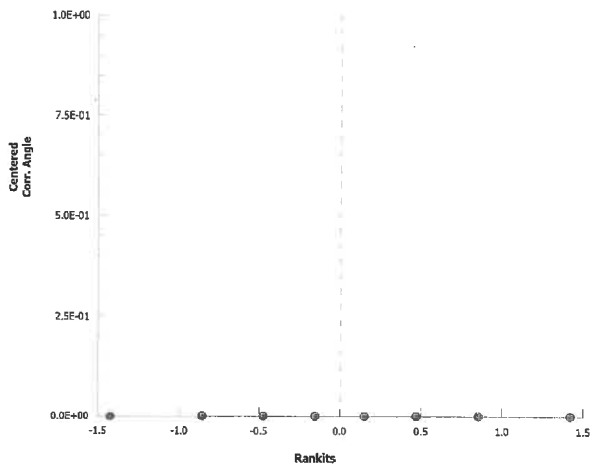
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
0	p7	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
0	p7	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%

Graphics





Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Analysis ID:	07-1050-8712	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	21 Nov-18 11:25	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	pH 7 Lab Control passed mean dry biomass-

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		pH 7 Lab Control	3.65	0.727	5	CDF	0.0074	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0177663	0.0177663	1	4.33	0.0827	Non-Significant Effect
Error	0.0246329	0.0041055	6			
Total	0.0423992		7			

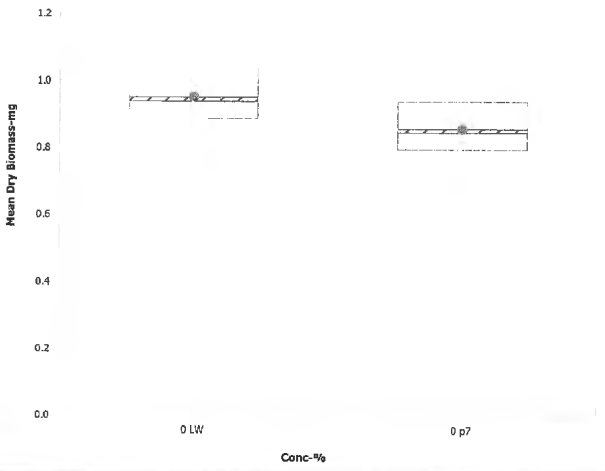
Distributional Tests

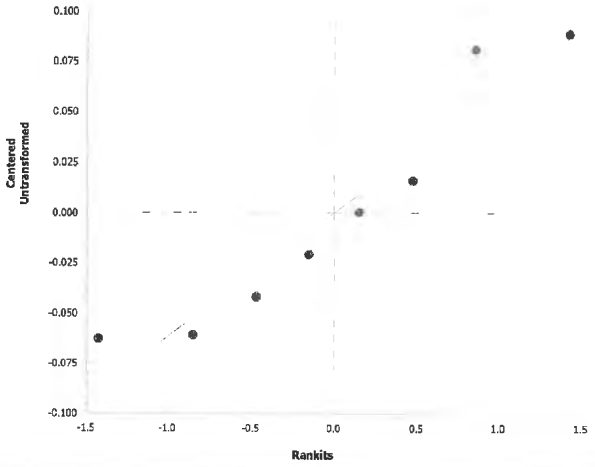
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.3	47.5	0.8357	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.892	0.645	0.2440	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.951	0.843	1.06	0.938	0.888	1.04	0.034	7.16%	0.00%
0	p7	4	0.857	0.762	0.952	0.846	0.796	0.938	0.0299	6.98%	9.91%

Graphics





7 Day Chronic Fathead Minnow Toxicity Test Data

Client: SFPP Norwalk Station
Test Material: Receiving Water @ pH 7.00 Test Date: 11/13/18
Test ID#: 80393 Project #: 29469
Organism Log#: 11284 Organism Age: <48hr
Organism Supplier: Aquatox Randomization 4.5.14
Control Water: EPAMH @ pH 7.00 Control Water Batch: 2119

Test Treatment	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µS/cm)	# Live Organisms A	B	C	D	SIGN-OFF
Lab Water Control @ pH 7.00	25.6	7.00		8.7		335	10	10	10	10	Date: 11/13/18 Test Solution Prep: ARF
Receiving Water @ pH 7.00	25.8	7.00		12.6		1606	10	10	10	10	Initiation Time: 1706 Initiation Signoff: RO
Meter ID	93A	PH19		RD11		EC11	New WQ: TA				
Lab Water Control @ pH 7.00	26.0	7.00	7.60	8.7	7.9	340	10	10	10	10	Date: 11/14/18 Test Solution Prep: ER
Receiving Water @ pH 7.00	25.5	7.00	7.90	15.9	7.2	1604	10	10	10	10	Renewal Time: 1341 Renewal Signoff: TF
Meter ID	109A	PH25	PH19	RD11	RD10	EC11	New WQ: TA		Old WQ: WL		
Lab Water Control @ pH 7.00	23.9	7.00	7.78	9.0	7.9	336	10	10	10	10	Date: 11/15/18 Test Solution Prep: WB
Receiving Water @ pH 7.00	23.8	7.00	7.92	13.1	7.8	2121	7	9	7	6	Renewal Time: 1616 Renewal Signoff: WL
Meter ID	59A	PH25	PH19	RD11	RD11	EC11	New WQ: TP		Old WQ: GR		
Lab Water Control @ pH 7.00	24.1	7.00	8.14	8.5	8.5	345	10	10	10	10	Date: 11/16/18 Test Solution Prep: TF
Receiving Water @ pH 7.00	24.0	7.00	8.57	11.8	8.5	1712	5	8	6	5	Renewal Time: 1116 Renewal Signoff: RO
Meter ID	81A	PH24	PH24	RD13	RD11	EC13	New WQ: SOB		Old WQ: SR		
Lab Water Control @ pH 7.00	24.0	7.00	7.78	7.7	8.1	336	10	10	10	10	Date: 11/17/18 Test Solution Prep: JO
Receiving Water @ pH 7.00	24.1	7.00	8.15	9.3	8.1	1825	5	6	5	4	Renewal Time: 1626 Renewal Signoff: JR
Meter ID	100A	PH15	PH15	RD13	RD11	EC13	New WQ: JR		Old WQ: TP		
Lab Water Control @ pH 7.00	24.0	7.00	7.79	9.2	8.0	322	10	10	10	10	Date: 11/18/18 Test Solution Prep: TK
Receiving Water @ pH 7.00	24.1	7.00	8.25	13.0	7.8	1803	5	6	5	3	Renewal Time: 1200 Renewal Signoff: KL
Meter ID	108A	PH24	PH19	RD12	RD13	EC12	New WQ: TP		Old WQ: TP		
Lab Water Control @ pH 7.00	24.2	7.00	7.53	8.9	8.0	325	10	10	10	10	Date: 11/19/18 Test Solution Prep: TK
Receiving Water @ pH 7.00	24.3	7.00	8.14	12.9	8.1	1819	5	6	5	3	Renewal Time: 1315 Renewal Signoff: TK
Meter ID	108A	PH25	PH24	RD11	RD13	EC11	New WQ: KL		Old WQ: AR		
Lab Water Control @ pH 7.00	24.2		7.79		8.2	352	10	10	10	10	Date: 11/20/18 Termination Time: 1057
Receiving Water @ pH 7.00	24.1		8.34		8.2	1907	5	6	5	3	Termination Signoff: TF
Meter ID	100A		PH24		RD11	EC11			Old WQ: LT		

Fathead Minnow Dry Weight Data Sheet

Client: **SFPP Norwalk Station** Test ID #: 80393 Project # 29469

Test Material: **Receiving Water @ pH 7.00** Tare Weight Date: 11/18/18 Sign-off: AR

Test Date: 11-6-18 Final Weight Date: 11-21-18 Sign-off: YL

Pan ID	Concentration	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
13	Lab Water Control @ pH 7.00	A	407.95	416.31	10	0.836
14		B	413.94	423.32	10	0.938
15		C	407.22	415.18	10	0.796
16		D	411.59	420.16	10	0.857
17	Receiving Water @ pH 7.00	A	412.23	417.08	10	0.485
18		B	410.14	417.16	10	0.702
19		C	411.90	417.64	10	0.574
20		D	411.36	414.03	10	0.267
QA1			415.58	415.55	—	—

Appendix D

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Fathead Minnows

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Batch ID:	10-6998-5253	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Jessica Okutsu
Start Date:	06 Nov-18 16:10	**Protocol:**	EPA-821-R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	13 Nov-18 10:31	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Duration:	6d 18h	**Source:**	Aquatox, AR	**Age:**	1

Sample ID:	10-8460-1947	**Code:**	NaCl	**Client:**	Pacific Ecorisk
Sample Date:	06 Nov-18 16:10	**Material:**	Sodium chloride	**Project:**	29528
Receipt Date:	06 Nov-18 16:10	**Source:**	Reference Toxicant		
Sample Age:	n/a (24.9 °C)	**Station:**	In House		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
08-9523-1980	7d Survival Rate	Dunnett Multiple Comparison Test	0.75	1.5	1.061		14.8%
08-7217-9654	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test	1.5	3	2.121		17.7%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	g/L	95% LCL	95% UCL	TU ✓
03-6853-9513	7d Survival Rate	Regression: Log-Normal (Probit)	EC5	0.891	0.281	1.49	
			EC10	1.2	0.459	1.86	
			EC15	1.46	0.636	2.17	
			EC20	1.71	0.823	2.45	
			EC25	1.96	1.02	2.74	
			EC40	2.76	1.74	3.68	
			EC50	3.39	2.34	4.49	
20-7772-3373	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	IC5	1.54	0.764	1.73	
			IC10	1.69	1.17	1.9	
			IC15	1.84	1.46	2.07	
			IC20	1.98	1.63	2.24	
			IC25	2.13	1.8	2.42	
			IC40	2.57	2.21	2.97	
			IC50	2.86	2.48	4.17	

7d Survival Rate Summary

Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.950	0.791	1.000	0.800	1.000	0.050	0.100	10.53%	0.00%
0.75		4	0.950	0.791	1.000	0.800	1.000	0.050	0.100	10.53%	0.00%
1.5		4	0.800	0.670	0.930	0.700	0.900	0.041	0.082	10.21%	15.79%
3		4	0.425	0.273	0.577	0.300	0.500	0.048	0.096	22.53%	55.26%
6		4	0.450	0.245	0.655	0.300	0.600	0.065	0.129	28.69%	52.63%
9		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%

Mean Dry Biomass-mg Summary

Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.552	0.475	0.629	0.511	0.622	0.0242	0.0483	8.75%	0.00%
0.75		4	0.682	0.573	0.791	0.582	0.736	0.0344	0.0687	10.08%	-23.55%
1.5		4	0.595	0.508	0.681	0.55	0.672	0.0272	0.0544	9.14%	-7.74%
3		4	0.28	0.162	0.398	0.174	0.336	0.037	0.074	26.42%	49.28%
6		4	0.199	0.135	0.264	0.169	0.258	0.0202	0.0404	20.28%	63.90%
9		4	0	0	0	0	0	0	0		100.00%

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

7d Survival Rate Detail

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.000	1.000	0.800	1.000
0.75		1.000	1.000	0.800	1.000
1.5		0.800	0.900	0.700	0.800
3		0.500	0.300	0.500	0.400
6		0.300	0.600	0.500	0.400
9		0.000	0.000	0.000	0.000

Mean Dry Biomass-mg Detail

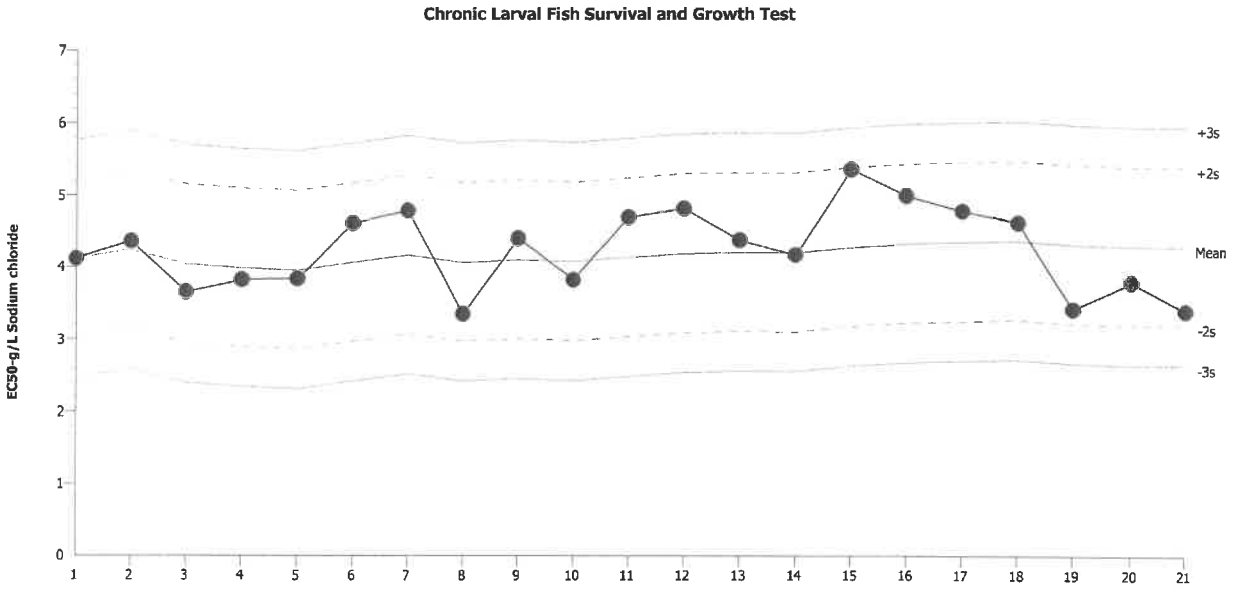
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	0.511	0.539	0.536	0.622
0.75		0.582	0.695	0.715	0.736
1.5		0.672	0.55	0.592	0.565
3		0.336	0.285	0.325	0.174
6		0.169	0.258	0.193	0.177
9		0	0	0	0

7d Survival Rate Binomials

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	10/10	10/10	8/10	10/10
0.75		10/10	10/10	8/10	10/10
1.5		8/10	9/10	7/10	8/10
3		5/10	3/10	5/10	4/10
6		3/10	6/10	5/10	4/10
9		0/10	0/10	0/10	0/10

Chronic Larval Fish Survival and Growth Test **Pacific EcoRisk**

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Sodium chloride
Protocol:	EPA-821-R-02-013 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	Reference Toxicant-REF



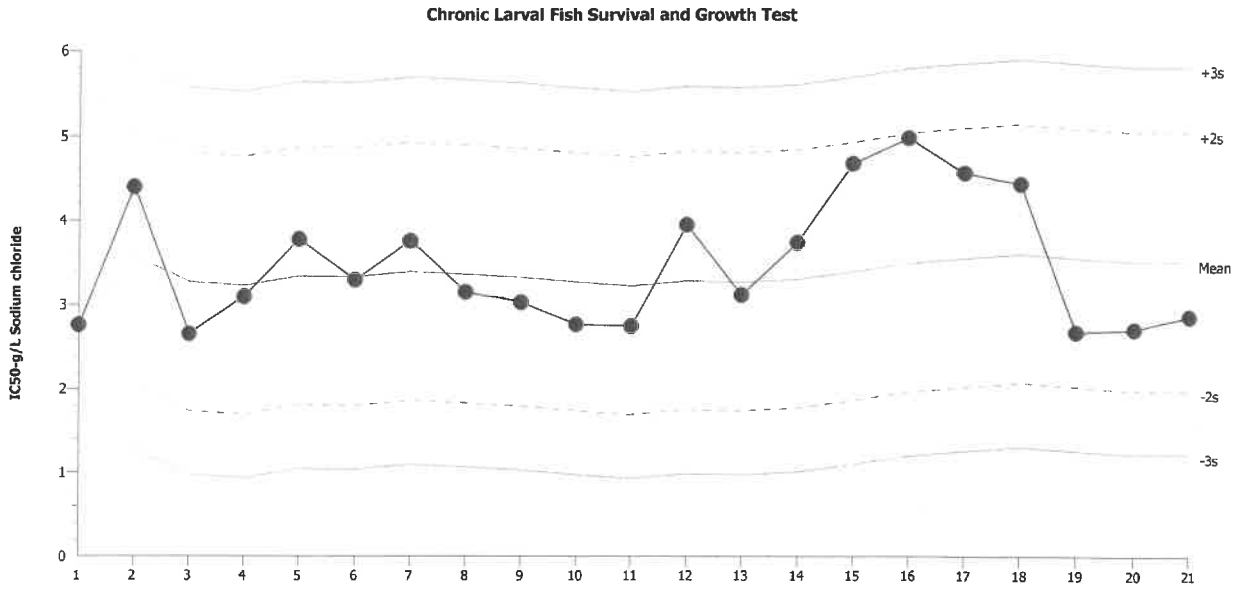
Mean:	4.29	**Count:**	20	**-2s Warning Limit:**	3.189	**-3s Action Limit:**	2.639
Sigma:	0.5502	**CV:**	12.80%	**+2s Warning Limit:**	5.39	**+3s Action Limit:**	5.94

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jul	10	12:04	4.12	-0.1704	-0.3097			19-2170-8163	05-3847-6939
2			18	16:58	4.367	0.07657	0.1392			07-4419-8970	09-2083-0510
3			19	16:14	3.661	-0.6289	-1.143			16-5107-0781	21-0013-8333
4			24	14:46	3.825	-0.4653	-0.8456			21-0185-1379	13-9425-4482
5		Aug	8	16:17	3.84	-0.4503	-0.8184			12-5185-9493	17-6034-0583
6			11	15:18	4.611	0.321	0.5834			16-6110-1850	03-0954-4740
7			14	15:32	4.787	0.4968	0.903			04-9928-7400	04-4698-1164
8			21	15:07	3.351	-0.939	-1.707			17-8676-2686	10-1524-9046
9			28	15:35	4.405	0.1149	0.2088			06-1769-7714	11-1267-1942
10		Sep	11	16:30	3.823	-0.4669	-0.8486			07-8474-4906	13-5238-3833
11			18	15:45	4.698	0.4079	0.7413			01-1427-3865	05-1514-4365
12			25	17:30	4.814	0.5237	0.9518			04-0313-8586	13-9080-2740
13		Oct	2	16:24	4.377	0.08656	0.1573			20-1212-0023	19-6135-0804
14			9	16:00	4.172	-0.1179	-0.2143			20-5332-1329	05-3293-2465
15			11	15:15	5.352	1.062	1.929			19-2873-5652	05-2720-9406
16			16	15:35	4.989	0.6991	1.271			13-4570-5393	18-2103-2582
17			18	16:38	4.781	0.4909	0.8922			02-1330-7298	13-1935-5149
18			19	16:22	4.619	0.3295	0.5989			07-1347-0013	10-7278-7280
19			23	13:50	3.417	-0.8725	-1.586			12-0873-4729	15-0690-5413
20			30	15:22	3.789	-0.5013	-0.9111			01-0648-8193	05-1179-1405
21		Nov	6	16:10	3.394	-0.8959	-1.628			12-9855-6809	03-6853-9513

Chronic Larval Fish Survival and Growth Test Pacific EcoRisk

Test Type:	Growth-Survival (7d)	**Organism:**	Pimephales promelas (Fathead Minn	**Material:**	Sodium chloride
Protocol:	EPA-821-R-02-013 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	Reference Toxicant-REF



Mean:	3.515	**Count:**	20	**-2s Warning Limit:**	1.983	**-3s Action Limit:**	1.217
Sigma:	0.7661	**CV:**	21.80%	**+2s Warning Limit:**	5.047	**+3s Action Limit:**	5.813

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jul	10	12:04	2.764	-0.7515	-0.9809			19-2170-8163	04-0002-0210
2			18	16:58	4.401	0.8859	1.156			07-4419-8970	06-4266-7790
3			19	16:14	2.656	-0.8591	-1.121			16-5107-0781	02-7529-5487
4			24	14:46	3.095	-0.4196	-0.5477			21-0185-1379	10-1686-9781
5		Aug	8	16:17	3.78	0.2651	0.346			12-5185-9493	19-1777-4607
6			11	15:18	3.293	-0.2215	-0.2892			16-6110-1850	20-2228-3757
7			14	15:32	3.759	0.2436	0.3179			04-9928-7400	07-4736-8387
8			21	15:07	3.151	-0.3635	-0.4745			17-8676-2686	14-2592-9303
9			28	15:35	3.031	-0.4843	-0.6322			06-1769-7714	17-9100-0066
10		Sep	11	16:30	2.768	-0.7474	-0.9755			07-8474-4906	09-1807-8105
11			18	15:45	2.75	-0.7654	-0.9991			01-1427-3865	08-1466-2963
12			25	17:30	3.951	0.4358	0.5689			04-0313-8586	07-0057-8821
13		Oct	2	16:24	3.118	-0.3974	-0.5187			20-1212-0023	10-4087-1940
14			9	16:00	3.743	0.228	0.2977			20-5332-1329	09-8654-5777
15			11	15:15	4.676	1.161	1.516			19-2873-5652	12-0848-0436
16			16	15:35	4.978	1.463	1.909			13-4570-5393	20-9929-2964
17			18	16:38	4.567	1.052	1.373			02-1330-7298	03-3996-6914
18			19	16:22	4.437	0.9222	1.204			07-1347-0013	17-9320-6067
19			23	13:50	2.677	-0.838	-1.094			12-0873-4729	07-2686-4319
20			30	15:22	2.709	-0.8062	-1.052			01-0648-8193	04-4246-0928
21		Nov	6	16:10	2.864	-0.6508	-0.8495			12-9855-6809	20-7772-3373

7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: **Reference Toxicant** Organism Log#: 11268 Age: 24 hrs
Test Material: Sodium Chloride Organism Supplier: AquaTox
Test ID#: 80513 Project #: 29528 Control/Diluent: EPAMH
Test Date: 11/6/18 Randomization: 4.6.3 Control Water Batch: 2117

Treatment (g/L)	Temp (°C)	pH New	pH Old	D.O. (mg/L) New	D.O. (mg/L) Old	Conductivity (µs/cm) New	Conductivity (µs/cm) Old	# Live Organisms A	B	C	D	SIGN-OFF
Control	24.9	8.03		9.1		303		10	10	10	10	Date: 11/6/18
0.75	24.6	7.96		8.6		1736		10	10	10	10	Test Solution Prep: NB
1.5	24.8	7.93		8.7		3145		10	10	10	10	New WQ: BR
3	24.9	7.89		8.7		5865		10	10	10	10	Initiation Time: 1610
6	24.9	7.83		8.9		11090		10	10	10	10	Initiation Signoff: KL
9	25.0	7.77		10.0		16330		10	10	10	10	RT Stock Batch #: 405
Meter ID	54	pH25		RD10		EC10						
Control	26.9	7.86	7.78	8.8	8.3	300	312	10	10	8	10	Date: 11/7/18
0.75	26.5	7.94	7.78	8.8	8.1	1783	1775	10	10	9	10	Test Solution Prep: KL
1.5	26.2	7.93	7.79	8.9	8.2	3213	3169	10	10	10	10	New WQ: TA
3	26.3	7.90	7.76	9.2	8.2	6048	5984	10	10	10	9	Renewal Time: 1105
6	26.6	7.84	7.74	9.9	8.4	11350	11460	10	10	10	10	Renewal Signoff: KL
9	26.5	7.77	7.69	10.0	8.3	16440	16410	0	0	0	0	Old WQ: SD
Meter ID	81A	PH19	PH19	RD10	RD10	EC10	EC10					RT Stock Batch #: 405
Control	26.2	7.72	7.89	8.6	7.6	327	326	10	10	8	10	Date: 11/8/18
0.75	26.1	7.78	7.79	8.6	7.6	1780	1794	10	10	9	10	Test Solution Prep: TK
1.5	26.2	7.77	7.64	8.7	7.7	3223	3230	10	10	9	10	New WQ: TA
3	25.9	7.74	7.60	8.7	7.6	5921	6210	10	10	10	9	Renewal Time: 1220
6	26.0	7.72	7.57	8.9	7.7	11180	11440	10	10	10	10	Renewal Signoff: RB
9	—	—	—	—	—	—	—	—	—	—	—	Old WQ: TP
Meter ID	57	PH25	PH25	RD11	RD13	EC11	EC13					RT Stock Batch #: 406
Control	24.5	8.38	7.73	8.8	6.0	308	353	10	10	8	10	Date: 11/9/18
0.75	24.9	8.22	7.74	8.9	6.1	1804	1968	10	10	9	10	Test Solution Prep: NB
1.5	24.9	8.15	7.69	9.0	6.2	3203	3549	10	10	9	10	New WQ: TA
3	24.8	8.06	7.63	9.0	6.3	5993	6450	10	10	10	9	Renewal Time: 1331
6	25.0	7.95	7.62	9.2	6.5	11280	11700	6	9	9	9	Renewal Signoff: EP
9	—	—	—	—	—	—	—	—	—	—	—	Old WQ: SD
Meter ID	5	PH 25	PH19	RD11	RD13	EC11	EC13					RT Stock Batch #: 406

7 Day Chronic Fathead Minnow Reference Toxicant Test Data

Client: **Reference Toxicant**
Test Material: Sodium Chloride
Test ID#: 80513 Project #: 29528
Test Date: 11/6/18 Randomization: 4.63

Organism Log#: 11268 Age: <1/8 hrs
Organism Supplier: Aquatox
Control/Diluent: EPAMH
Control Water Batch: 2117

Treatment (g/L)	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Conductivity (µs/cm) New	Conductivity (µs/cm) Old	# Live Organisms A	B	C	D	SIGN-OFF
Control	25.5	7.97	7.64	7.3	8.1	315	342	10	10	8	10	Date: 11/10/18
0.75	25.2	7.93	7.60	7.3	7.9	1803	1925	10	10	8	10	Test Solution Prep: SMC
1.5	25.0	7.91	7.62	7.4	7.9	3189	3552	10	10	9	10	New WQ: TA
3	24.9	7.86	7.59	7.5	8.2	5982	6434	10	10	10	9	Renewal Time: 1031
6	25.7	7.78	7.50	7.7	8.0	11570	11570	5	7	7	6	Renewal Signoff:
9	—	—	—	—	—	—	—	—	—	—	—	Old WQ: TP
Meter ID	994	PH19	PH25	RD12	RD10	EC12	EC10					RT Stock Batch #: 406
Control	25.9	8.03	7.67	8.8	7.7	303	323	10	10	8	10	Date: 11/11/18
0.75	25.5	7.99	7.70	9.0	7.6	1763	1948	10	10	8	10	Test Solution Prep: KD
1.5	25.0	7.95	7.65	9.0	7.3	3178	3600	10	9	9	10	New WQ: TA
3	24.8	7.88	7.66	9.2	7.5	5913	6463	10	8	9	9	Renewal Time: 1107
6	25.0	7.82	7.62	9.6	7.8	11240	12120	4	7	6	5	Renewal Signoff: BV
9	—	—	—	—	—	—	—	—	—	—	—	Old WQ: TP
Meter ID	93A	PH15	PH25	RD10	RD13	EC10	EC13					RT Stock Batch #: 406
Control	25.8	7.86	7.53	8.2	7.5	300	322	10	10	8	10	Date: 11/12/18
0.75	25.8	7.92	7.61	8.4	7.5	1751	1869	10	10	8	10	Test Solution Prep: EP
1.5	25.1	7.92	7.54	8.5	7.3	3169	3647	8	9	9	9	New WQ: WC
3	25.1	7.89	7.54	8.9	7.3	5956	6308	8	4	7	7	Renewal Time: 1019
6	25.5	7.81	7.57	9.6	7.9	11290	11340	4	6	5	5	Renewal Signoff: BV
9	—	—	—	—	—	—	—	—	—	—	—	Old WQ: WC
Meter ID	81A	PH25	PH19	RD13	RD10	EC13	EC10					RT Stock Batch #: 406
Control	25.1		7.69		6.9		326	10	10	8	10	Date: 11/13/18
0.75	25.1		7.61		6.5		~~700~~ 1990	10	10	8	10	Termination Time: 1031
1.5	24.9		7.59		6.5		3532	8	9	7	8	Termination Signoff: TF
3	24.9		7.54		6.5		6442	5	3	5	4	Old WQ: BV
6	25.9		7.52		6.8		11620	3	6	5	4	
9	—		—		—		—	—	—	—	—	
Meter ID	81A		PH 25		RD10		EC10					

Fathead Minnow Dry Weight Data Sheet

Client: **Reference Toxicant** Test ID #: 80513 Project #: 29528

Sample: Sodium Chloride Tare Weight Date: 11/12/18 Sign-off: JK

Test Date: 11/6/18 Final Weight Date: 11-17-18 Sign-off: MH

Pan ID	Concentration (g/L)	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control	A	408.15	413.26	10	0.511
2		B	412.02	417.41	10	0.539
3		C	411.60	416.96	10	0.536
4		D	407.63	413.85	10	0.622
5	0.75	A	414.79	420.61	10	0.582
6		B	409.54	416.49	10	0.695
7		C	412.93	420.08	10	0.715
8		D	405.14	412.50	10	0.736
9	1.5	A	414.24	420.96	10	0.672
10		B	407.12	412.62	10	0.550
11		C	412.49	418.41	10	0.592
12		D	411.33	416.98	10	0.565
13	3	A	410.05	413.41	10	0.336
14		B	415.20	418.05	10	0.285
15		C	410.61	413.86	10	0.325
16		D	416.13	417.87	10	0.174
17	6	A	413.43	415.12	10	0.169
18		B	409.03	411.61	10	0.258
19		C	413.48	415.41	10	0.193
20		D	411.17	412.94	10	0.177
21	9	A	411.62	—	10	0
22		B	408.88	—	10	0
23		C	408.46	—	10	0
24		D	413.09	—	10	0
QA1			408.12	408.13		
QA2			405.29	405.31		
QA3			417.69	417.70		
Balance ID:			BAL04	BAL04		

December 21, 2018

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

TEL:
FAX:

Workorder No.: N033443

RE: SFPP Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on December 14, 2018 by ASSET Laboratories. The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Quennie Manimtim
Laboratory Director

CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N033443

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

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

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

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

Sample was analyzed within method holding time.

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

Subcontracted Analyses:

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

Analytical Comment for EPA 200.8:

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

ASSET Laboratories

Date: *21-Dec-18*

CLIENT: CH2MHill
Project: SFPP Norwalk
Lab Order: N033443
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N033443-001A	EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	12/14/2018	12/21/2018
N033443-001B	EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	12/14/2018	12/21/2018
N033443-001C	EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	12/14/2018	12/21/2018
N033443-001D	EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	12/14/2018	12/21/2018
N033443-001E	EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	12/14/2018	12/21/2018

CLIENT: CH2MHill
Lab Order: N033443
Project: SFPP Norwalk
Lab ID: N033443-001

Client Sample ID: EFF-12-14
Collection Date: 12/14/2018 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 3510C			**EPA 8270C**				
RunID: **NV00922-MS9_181220A**	QC Batch: **71826**			PrepDate:	**12/19/2018**		Analyst: **RRS**
Phenol	ND	0.34	1.0		µg/L	1	12/21/2018 08:36 AM
Surr: Phenol-d5	31.0	0	25-108		%REC	1	12/21/2018 08:36 AM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **CA01638-MS10_181218A**	QC Batch: **CA18VW044**			PrepDate:			Analyst: **GAC**
1,1-Dichloroethane	ND	0.45	0.50		ug/L	1	12/18/2018 05:39 PM
1,2-Dichloroethane	ND	0.29	0.50		ug/L	1	12/18/2018 05:39 PM
Benzene	ND	0.34	1.0		ug/L	1	12/18/2018 05:39 PM
Ethylbenzene	ND	0.31	1.0		ug/L	1	12/18/2018 05:39 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	12/18/2018 05:39 PM
MTBE	ND	0.34	1.0		ug/L	1	12/18/2018 05:39 PM
o-Xylene	ND	0.31	1.0		ug/L	1	12/18/2018 05:39 PM
Tert-Butanol	ND	2.4	5.0		ug/L	1	12/18/2018 05:39 PM
Toluene	ND	0.46	2.0		ug/L	1	12/18/2018 05:39 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	12/18/2018 05:39 PM
Surr: 1,2-Dichloroethane-d4	98.4	0	72-119		%REC	1	12/18/2018 05:39 PM
Surr: 4-Bromofluorobenzene	85.8	0	76-119		%REC	1	12/18/2018 05:39 PM
Surr: Dibromofluoromethane	109	0	85-115		%REC	1	12/18/2018 05:39 PM
Surr: Toluene-d8	96.2	0	81-120		%REC	1	12/18/2018 05:39 PM
MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **NV00922-AA1_181220B**	QC Batch: **71776**			PrepDate:	**12/17/2018**		Analyst: **CEI**
Mercury	ND	0.018	0.050		µg/L	1	12/20/2018 08:14 AM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_181217A**	QC Batch: **71775**			PrepDate:	**12/17/2018**		Analyst: **CEI**
Copper	ND	0.26	0.50		µg/L	1	12/17/2018 06:57 PM
Lead	ND	0.13	0.50		µg/L	1	12/17/2018 06:57 PM
Zinc	4.8	0.27	1.0		µg/L	1	12/17/2018 06:57 PM
TOTAL TPH							
			EPA 8015B				
RunID: **SUBCONTRACT_181220B**	QC Batch: **R130707**			PrepDate:			Analyst: **admin**

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

CLIENT:	CH2MHill	**Client Sample ID:**	EFF-12-14
Lab Order:	N033443	**Collection Date:**	12/14/2018 12:30:00 PM
Project:	SFPP Norwalk	**Matrix:**	WASTEWATER
Lab ID:	N033443-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL TPH							
			EPA 8015B				
RunID: **SUBCONTRACT_181220B**	QC Batch: **R130707**			PrepDate:			Analyst: **admin**
Total TPH	ND	22	100		ug/L	1	12/20/2018

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

CLIENT: CH2MHill
Work Order: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **MB-71775** SampType: **MBLK** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **12/17/2018** RunNo: **130625**
Client ID: **PBW** Batch ID: **71775** TestNo: **EPA 200.8** Analysis Date: **12/17/2018** SeqNo: **3233898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.50									
Lead	ND	0.50									
Zinc	ND	1.0									

Sample ID: **LCS-71775** SampType: **LCS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **12/17/2018** RunNo: **130625**
Client ID: **LCSW** Batch ID: **71775** TestNo: **EPA 200.8** Analysis Date: **12/17/2018** SeqNo: **3233899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.475	0.50	10.00	0	94.7	85	115				
Lead	10.161	0.50	10.00	0	102	85	115				
Zinc	9.879	1.0	10.00	0	98.8	85	115				

Sample ID: **N033443-001C-DUP** SampType: **DUP** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **12/17/2018** RunNo: **130625**
Client ID: **ZZZZZZ** Batch ID: **71775** TestNo: **EPA 200.8** Analysis Date: **12/17/2018** SeqNo: **3233902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	ND	0.50						0	0	20	
Lead	ND	0.50						0	0	20	
Zinc	4.635	1.0						4.839	4.30	20	

Sample ID: **N033443-001C-MS** SampType: **MS** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **12/17/2018** RunNo: **130625**
Client ID: **ZZZZZZ** Batch ID: **71775** TestNo: **EPA 200.8** Analysis Date: **12/17/2018** SeqNo: **3233904**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	6.832	0.50	10.00	0	68.3	75	125				S
Lead	10.133	0.50	10.00	0	101	75	125				
Zinc	12.874	1.0	10.00	4.839	80.4	75	125				

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: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: **N033443-001C-MSD** SampType: **MSD** TestCode: **200.8_W_SFP** Units: **µg/L** Prep Date: **12/17/2018** RunNo: **130625**
Client ID: **ZZZZZZ** Batch ID: **71775** TestNo: **EPA 200.8** Analysis Date: **12/17/2018** SeqNo: **3233907**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	6.841	0.50	10.00	0	68.4	75	125	6.832	0.136	20	S
Lead	10.107	0.50	10.00	0	101	75	125	10.13	0.261	20	
Zinc	13.147	1.0	10.00	4.839	83.1	75	125	12.87	2.09	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: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: **MB-71776**	SampType: **MBLK**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **12/17/2018**	RunNo: **130706**
Client ID: **PBW**	Batch ID: **71776**	TestNo: **EPA 245.1**		Analysis Date: **12/20/2018**	SeqNo: **3237469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID: **LCS-71776**	SampType: **LCS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **12/17/2018**	RunNo: **130706**
Client ID: **LCSW**	Batch ID: **71776**	TestNo: **EPA 245.1**		Analysis Date: **12/20/2018**	SeqNo: **3237470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.561	0.050	2.500	0	102	85	115				

Sample ID: **N033443-001C-MS**	SampType: **MS**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **12/17/2018**	RunNo: **130706**
Client ID: **ZZZZZZ**	Batch ID: **71776**	TestNo: **EPA 245.1**		Analysis Date: **12/20/2018**	SeqNo: **3237471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.595	0.050	2.500	0	104	75	125				

Sample ID: **N033443-001C-MSD**	SampType: **MSD**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **12/17/2018**	RunNo: **130706**
Client ID: **ZZZZZZ**	Batch ID: **71776**	TestNo: **EPA 245.1**		Analysis Date: **12/20/2018**	SeqNo: **3237472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.512	0.050	2.500	0	100	75	125	2.595	3.26	20	

Sample ID: **N033443-001C-DUP**	SampType: **DUP**	TestCode: **245.1_W_LL**	Units: **µg/L**	Prep Date: **12/17/2018**	RunNo: **130706**
Client ID: **ZZZZZZ**	Batch ID: **71776**	TestNo: **EPA 245.1**		Analysis Date: **12/20/2018**	SeqNo: **3237474**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050						0	0	20	

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: **MB-R130707** SampType: **MBLK** TestCode: **8015_W_SFP** Units: **ug/L** Prep Date: RunNo: **130707**
Client ID: **PBW** Batch ID: **R130707** TestNo: **EPA 8015B** Analysis Date: **12/20/2018** SeqNo: **3237480**

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

CLIENT: CH2MHill
Work Order: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181218-LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **LCSW** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235468**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.000	0.50	20.00	0	95.0	69	133				
1,2-Dichloroethane	18.710	0.50	20.00	0	93.6	69	132				
Benzene	18.900	1.0	20.00	0	94.5	81	122				
Ethylbenzene	18.530	1.0	20.00	0	92.6	73	127				
m,p-Xylene	37.860	1.0	40.00	0	94.6	76	128				
MTBE	17.700	1.0	20.00	0	88.5	65	123				
o-Xylene	17.820	1.0	20.00	0	89.1	80	121				
Tert-Butanol	114.130	5.0	100.0	0	114	70	130				
Toluene	19.090	2.0	20.00	0	95.4	77	122				
Xylenes, Total	55.680	2.0	60.00	0	92.8	75	125				
Surr: 1,2-Dichloroethane-d4	23.860		25.00		95.4	72	119				
Surr: 4-Bromofluorobenzene	23.060		25.00		92.2	76	119				
Surr: Dibromofluoromethane	25.580		25.00		102	85	115				
Surr: Toluene-d8	23.900		25.00		95.6	81	120				

Sample ID: **CA181218-MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **PBW** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Benzene	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	25.270		25.00		101	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: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **CA181218-MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **PBW** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	23.690		25.00		94.8	76	119				
Surr: Dibromofluoromethane	27.350		25.00		109	85	115				
Surr: Toluene-d8	25.510		25.00		102	81	120				

Sample ID: **N033443-001A-MS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **ZZZZZZ** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235484**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.280	0.50	20.00	0	96.4	69	133				
1,2-Dichloroethane	19.890	0.50	20.00	0	99.4	69	132				
Benzene	19.200	1.0	20.00	0	96.0	81	122				
Ethylbenzene	18.350	1.0	20.00	0	91.8	73	127				
m,p-Xylene	37.380	1.0	40.00	0	93.5	76	128				
MTBE	17.050	1.0	20.00	0	85.2	65	123				
o-Xylene	17.510	1.0	20.00	0	87.6	80	121				
Tert-Butanol	103.870	5.0	100.0	0	104	70	130				
Toluene	18.970	2.0	20.00	0	94.8	77	122				
Xylenes, Total	54.890	2.0	60.00	0	91.5	75	125				
Surr: 1,2-Dichloroethane-d4	23.000		25.00		92.0	72	119				
Surr: 4-Bromofluorobenzene	23.470		25.00		93.9	76	119				
Surr: Dibromofluoromethane	26.540		25.00		106	85	115				
Surr: Toluene-d8	24.830		25.00		99.3	81	120				

Sample ID: **N033443-001A-MSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **ZZZZZZ** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	18.930	0.50	20.00	0	94.6	69	133	19.28	1.83	20	
1,2-Dichloroethane	19.910	0.50	20.00	0	99.6	69	132	19.89	0.101	20	
Benzene	19.190	1.0	20.00	0	96.0	81	122	19.20	0.0521	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: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: **N033443-001A-MSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **130657**
Client ID: **ZZZZZZ** Batch ID: **CA18VW044** TestNo: **EPA 8260B** Analysis Date: **12/18/2018** SeqNo: **3235485**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	18.550	1.0	20.00	0	92.8	73	127	18.35	1.08	20	
m,p-Xylene	38.410	1.0	40.00	0	96.0	76	128	37.38	2.72	20	
MTBE	17.540	1.0	20.00	0	87.7	65	123	17.05	2.83	20	
o-Xylene	18.440	1.0	20.00	0	92.2	80	121	17.51	5.17	20	
Tert-Butanol	114.030	5.0	100.0	0	114	70	130	103.9	9.33	20	
Toluene	19.190	2.0	20.00	0	96.0	77	122	18.97	1.15	20	
Xylenes, Total	56.850	2.0	60.00	0	94.8	75	125	54.89	3.51	20	
Surr: 1,2-Dichloroethane-d4	22.740		25.00		91.0	72	119		0		
Surr: 4-Bromofluorobenzene	23.410		25.00		93.6	76	119		0		
Surr: Dibromofluoromethane	24.760		25.00		99.0	85	115		0		
Surr: Toluene-d8	23.920		25.00		95.7	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

CLIENT: CH2MHill
Work Order: N033443
Project: SFPP Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID: **LCS-71826** SampType: **LCS** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **12/19/2018** RunNo: **130738**
Client ID: **LCSW** Batch ID: **71826** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **12/21/2018** SeqNo: **3240191**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.100	1.0	6.000	0	35.0	24	120				
Surr: Phenol-d5	0.320		1.000		32.0	25	108				

Sample ID: **MB-71826** SampType: **MBLK** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **12/19/2018** RunNo: **130738**
Client ID: **PBW** Batch ID: **71826** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **12/21/2018** SeqNo: **3240192**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	ND	1.0									
Surr: Phenol-d5	0.320		1.000		32.0	25	108				

Sample ID: **N033443-001D-MS** SampType: **MS** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **12/19/2018** RunNo: **130738**
Client ID: **ZZZZZZ** Batch ID: **71826** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **12/21/2018** SeqNo: **3240194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.316	1.0	6.122	0	37.8	24	120				
Surr: Phenol-d5	0.337		1.020		33.0	25	108				

Sample ID: **N033443-001D-MSD** SampType: **MSD** TestCode: **8270WATER_** Units: **µg/L** Prep Date: **12/19/2018** RunNo: **130738**
Client ID: **ZZZZZZ** Batch ID: **71826** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **12/21/2018** SeqNo: **3240195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.424	1.0	6.061	0	40.0	24	120	2.316	4.55	20	
Surr: Phenol-d5	0.374		1.010		37.0	25	108		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

CH2HI03 C: 12/17/201 12:00 AM
FOLDER R: 12/14/2018
N033443-002A 1 of 1

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: 12/14/18
PAGE: 1 of 1

Section A Required Client Information:

Company:	Kinder Morgan Energy Partners Attention: Steve Defibaugh
Address:	1100 Town & Country Road Orange, CA 92868
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com
Phone: 714-560-4802	Fax: 714-560-4801

Section B Required Project Information:

Report To:	Eric Davis
Copy To:	Steve Defibaugh
Purchase Order No.:	
Project Name:	SFPP Norwalk

Section C Invoice Information:

Attention:	Steve Defibaugh - Ref. AFE# 81195
Company Name:	Kinder Morgan Energy Partners
Address:	1100 Town & Country Road Orange, CA 92868
ATL Project Manager:	Marlon Cartin

Section D Sampler Information:

Sampler Name:	James Dye
Sampler Signature:	
Sample Date:	12/14/18

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	Analysis Test
CONTAINER TYPE								V
# OF CONTAINERS								3
PRESERVATIVE								H
VOLUME (mL)								40
1	EFF-12.14	EFFLUENT	WW	G	12/14/18	1250	8	X
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

BTEX, 1,1-DCA, 1,2-DCA, MTBE, TBA (8260B)	TPH-gas (8015B)	TPH-d, TPH-oil, Total TPH (8015B)	Cu, Pb, Zn (200.8); Hg (245.1)	Phenol (8270)
V	V	A	P	A
3	3	2	1	2
H	H	–	N	–
40	40	1000	500	1000
X	X	X	X	X

Comments

N033443-01

Report metals, TPH and VOC preliminary data on 24-hr TAT

Report total Xylenes

Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
	12/14/18 1400	Kbenda	12/14/18 1400
Kbenda	12/14/18 1729	FEDEX	12/15/18 9:10

Turn Around Time (TAT):

- ☐ A = Same Day
- ☑ B = 24 Hours
- ☐ C = 48 Hours
- ☐ D = 72 Hours
- ☑ E = 5 Workdays
- ☐ E = 10 Workdays

TAT Starts at 8 AM the following day if samples received after 5:00 PM.

Special Instruction:

In #2 0.9°C GSO 8573

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

ASSET Laboratories

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

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

Cooler Received/Opened On:	12/14/2018	Workorder:	N033443
Rep sample Temp (Deg C):	0.9	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	8573	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 ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☑	No ☐	NA ☐
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: FR 12/17/2018

Reviewed By: 12/18/18

ASSET Laboratories

WORK ORDER Summary

17-Dec-18

WorkOrder: N033443

Client ID: CH2HI03

Project: SFPP Norwalk **QC Level:** RTNE **Date Received:** 12/14/2018

Comments: Report metals, TPH and VOC preliminary data on 24hr TAT. Report Total Xylenes.

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N033443-001A	EFF-12-14	12/14/2018 12:30:00 PM	12/18/2018	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N033443-001B			12/18/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☑	SUB
			12/18/2018		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☑	SUB
			12/18/2018		EPA 8015B	Total TPH	☐	☐	☑	SUB
N033443-001C			12/18/2018			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			12/18/2018		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			12/18/2018		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			12/18/2018			MERCURY PREP	☐	☐	☐	WW
N033443-001D			12/21/2018		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	☐	☐	☐	WW
			12/21/2018		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WW
N033443-001E			12/18/2018		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☑	SUB
N033443-002A	FOLDER	12/18/2018	12/18/2018		Folder	Folder	☐	☐	☐	LAB
			12/18/2018		Folder	Folder	☐	☐	☐	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: James Dye

17-Dec-18

				Requested Tests		
Sample ID	**Matrix**	**Date Collected**	**Bottle Type**	**EPA 3510C**	**EPA 8015B**	
N033443-001B / EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	32OZA	1	2	
N033443-001E / EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	VOA		1	

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N33443A 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: 12/18/2018

Please analyze for TPH-gas (8015B), TPH-d, TPH-o, Total TPH (8015B). EDD Requirement CH2MHill Labspec7 edata. Please report "J" flagged down to MDL format.

		Date/Time			Date/Time
Relinquished by:		12/17/18 17:04	**Received by:**		
Relinquished by:			**Received by:**		

GSO | a GLS company

800-322-5555
www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11110 ARTESIA BLVD. SUITE B
CERRITOS, CA 90703

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

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

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

Tracking #: 543138573

ESS

LVS

A

LAS VEGAS

C89102A

95363153

Print Date: 12/14/2018 8:16 PM

Package 3 of 4

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.
Step 2: Fold this page in half.
Step 3: Securely attach this label to your package and do not cover the barcode.

TERMS AND CONDITIONS:

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

IR #2
0.9°C

Date of Report: 12/31/2018

Marlon Cartin

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

Client Project:	N033443
BCL Project:	CH2MHILL
BCL Work Order:	1839333
Invoice ID:	B325905, B326686

Enclosed are the results of analyses for samples received by the laboratory on 12/18/2018. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000832413

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Stuart Buttram
Technical Director

Table of Contents

Chain of Custody and Cooler Receipt Form for 1839333 Page 1 of 2

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

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

18-39333

QC Level: RTNE

Subcontractor:
BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: James Dye

17-Dec-18

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				EPA 3510C	EPA 8015B
N033443-001B / EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	32OZA	1	2
N033443-001E / EFF-12-14	Wastewater	12/14/2018 12:30:00 PM	VOA		1

RUSH!

Please cc Report to Lucille Golosinda at lucille.golosinda@assetlaboratories.com

SHK BY

DISTRIBUTION

SUB-OUT

General Comments: Please email sample receipt acknowledgement to the PM.

Please use PO#:N33443A Please email Invoices and Account Receivable Statements to elviral@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: 12/18/2018

Please analyze for TPH-gas (8015B), TPH-d, TPH-o, Total TPH (8015B). EDD Requirement CH2MHill Labspec7 edata. Please report "J" flagged down to MDL format.

	Date/Time		Date/Time
Relinquished by:	12/17/18 17:04	Received by:	12.18.18 09:00
Relinquished by:		Received by:	

Chain of Custody and Cooler Receipt Form for 1839333 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 18-39333

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐
BC Lab Field Service ☐ Other ☑ (Specify) GSO

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 ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ 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: VOA Thermometer ID: 274

Temperature: (A) 4.3 °C / (C) 4.1 °C

Date/Time 12.18.18

Analyst Init DD 9:00

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										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	HCl	HCl								
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 8270										
8oz / 16oz / 32oz AMBER	LD	A 1m	12/19/18							
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:
Sample Numbering Completed By: JAL Date/Time: 12/19/18 1109
A = Actual / C = Corrected

Rev 21 05/23/2016
(S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20)

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1839333-01	**COC Number:**	---	**Receive Date:**	12/18/2018 09:00
	Project Number:	---	**Sampling Date:**	12/14/2018 12:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	EFF-12-14	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Wastewater

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1839333-01 | **Client Sample Name:** EFF-12-14, 12/14/2018 12:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Gasoline Range Organics (C4 - C12)	ND	ppm	0.050	0.022	EPA-8015B	ND	U	1
a,a,a-Trifluorotoluene (FID Surrogate)	87.2	%	70 - 130 (LCL - UCL)		EPA-8015B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B	12/18/18 09:00	12/18/18 18:05	JBR	GC-V9	1	B033168

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

BCL Sample ID: 1839333-01 | **Client Sample Name:** EFF-12-14, 12/14/2018 12:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (C13 - C22)	ND	ug/L	40	6.8	EPA-8015CC	ND	U	1
TPH - Motor Oil (C23 - C36)	ND	ug/L	100	13	EPA-8015CC	ND	U	1
Tetracosane (Surrogate)	92.5	%	37 - 134 (LCL - UCL)		EPA-8015CC			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015CC	12/18/18 19:37	12/19/18 10:14	RSM	GC-13	0.960	B033349

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B033168						
Gasoline Range Organics (C4 - C12)	B033168-BLK1	ND	ppm	0.050	0.022	U
a,a,a-Trifluorotoluene (FID Surrogate)	**B033168-BLK1**	**87.2**	%	**70 - 130 (LCL - UCL)**		

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B033168										
Gasoline Range Organics (C4 - C12)	B033168-BS1	LCS	1.0012	1.0000	ppm	100		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B033168-BS1	LCS	0.037082	0.040000	ppm	92.7		70 - 130		

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B033168	Used client sample: N										
Gasoline Range Organics (C4 - C12)	MS	1836707-67	ND	1.0246	1.0000	ppm		102		70 - 130	
	MSD	1836707-67	ND	1.1432	1.0000	ppm	10.9	114	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1836707-67	ND	0.035482	0.040000	ppm		88.7		70 - 130	
	MSD	1836707-67	ND	0.034050	0.040000	ppm	4.1	85.1		70 - 130	

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B033349						
TPH - Diesel (C13 - C22)	B033349-BLK1	ND	ug/L	40	6.8	U
TPH - Motor Oil (C23 - C36)	B033349-BLK1	ND	ug/L	100	13	U
Tetracosane (Surrogate)	**B033349-BLK1**	**97.3**	%	**37 - 134 (LCL - UCL)**		

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B033349										
TPH - Diesel (C13 - C22)	B033349-BS1	LCS	407.55	500.00	ug/L	81.5		52 - 128		
Tetracosane (Surrogate)	B033349-BS1	LCS	20.585	20.000	ug/L	103		37 - 134		

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B033349	Used client sample: N										
TPH - Diesel (C13 - C22)	MS	1836707-60	ND	351.26	500.00	ug/L		70.3		50 - 127	
	MSD	1836707-60	ND	358.48	500.00	ug/L	2.0	71.7	30	50 - 127	
Tetracosane (Surrogate)	MS	1836707-60	ND	17.670	20.000	ug/L		88.4		37 - 134	
	MSD	1836707-60	ND	18.906	20.000	ug/L	6.8	94.5		37 - 134	

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

Reported: 12/31/2018 9:36
Project: CH2MHILL
Project Number: N033443
Project Manager: Marlon Cartin

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
U	Analyte Not Detected at or above the reporting limit (CLP Flag)

Kinder Morgan Field Meter Calibration and Log Form

Site Name	Site Location	Project Manager	CH2M Personnel	Norwalk Effluent Monitoring Form SFPP Norwalk Pump Station *Norwalk, CA* Form Revised 1/8/18	
SFPP Norwalk Pump Station	Norwalk, CA	Steve Defibaugh	Eric Davis, PM		
Date	**Time**	**SAMPLE TYPE (circle one):**		**Discharge Permit**	**Expiration Date**
11/12/18	0800	Grab, Composite, Flow-through, Other		R4-2016-0309	11/1/2021
O&M Technician#1	**O&M Technician#2**				
Nils Orliczky					

EQUIPMENT

Multimeter	Make:	Horiba
	Model:	U-5000
	Serial Number:	NVMVVU0W

CALIBRATION

Date of Calibration:	11/5	Time:	16:55 (Pine Environmental)		
Calibration Standard:	(Yes) No	Standard	Expiration Date	Calibrated Within 0.2 pH units?	
pH Calibration Standard	4.00/4.00 7.00/7.00	(4)	—	(Yes)	No
		(7)	—	(Yes)	No
		10		(Yes)	No
Cond. Calibration 0.718	Equipment Reading: 0.718	Calibrated to or within 10%?		(Yes) NO 11-14-18	No

FIELD PARAMETERS	FIELD MEASUREMENTS			
	Effluent (EFF-001)	Upstream (RSW-001)	Downstream (RSW-002)	Mid-Point
TIME	0920	0820	0810	
pH (DISCHARGE LIMIT 6.5 - 8.5) (Quarterly, Annually)	6.93	8.90	8.76	
TEMP (°F) (DISCHARGE LIMIT 86°F) (Quarterly, Annually)	19.77/67.6	18.69/65.6	18.65/65.6	
SALINITY (ppt)	0.9	0.4	0.4	
COND (mS/cm or uS/cm; Specific Cond.) *Circle or Note Units Used*	1.84	0.864	0.873	
OBSERVATIONS				
DO mg/L	4.53	24.74	22.51	

KINDER MORGAN

Signed: _____ Date: 11/12/18

Kinder Morgan Field Meter Calibration and Log Form

Site Name	Site Location	Project Manager	CH2M Personnel	Norwalk Effluent Monitoring Form SFPP Norwalk Pump Station *Norwalk, CA* Form Revised 1/8/18	
SFPP Norwalk Pump Station	Norwalk, CA	Steve Defibaugh	Eric Davis, PM		
Date	**Time**	**SAMPLE TYPE (circle one):**		**Discharge Permit**	**Expiration Date**
11-14-18	0835	Grab, Composite, Flow-through, Other		R4-2016-0309	11/1/2021
O&M Technician#1	**O&M Technician#2**				
Nils Orliczky					

EQUIPMENT

Multimeter	Make:	Horiba
	Model:	U-5000
	Serial Number:	NVMVVU0W

CALIBRATION

Date of Calibration:	11-14-18	Time:	0835		
Calibration Standard:	(Yes) No	Standard	Expiration Date	Calibrated Within 0.2 pH units?	
pH Calibration Standard 3.76/4.00		4	May 2019	(Yes)	No
		7	May 2019	(Yes)	No
		10	May 2019	(Yes)	No
Cond. Calibration	Equipment Reading: 3.60 / 4.49	Calibrated to or within 10%?		(Yes)	No

FIELD PARAMETERS	FIELD MEASUREMENTS			
	Effluent (EFF-001)	Upstream (RSW-001)	Downstream (RSW-002)	Mid-Point
TIME	0845	0950	0945	
pH (DISCHARGE LIMIT 6.5 - 8.5) (Quarterly, Annually)	6.67	9.01	8.90	
TEMP (°F) (DISCHARGE LIMIT 86°F) (Quarterly, Annually)	17.08	16.67	16.93	
SALINITY (ppt)	1.2	0.6	0.7	
COND (mS/cm or uS/cm; Specific Cond.) *Circle or Note Units Used*	2.25	1.13	1.40	
OBSERVATIONS				
DO mg/L	3.76	17.03	11.41	~~pH 3.76~~ NO 11-14-18 ~~Cond 3.60~~ NO 11-14-18 ~~DO 11.09~~ NO 11-14-18

KINDER MORGAN

Signed: _____ Date: 11-14-18

Kinder Morgan Field Meter Calibration and Log Form

Site Name	Site Location	Project Manager	CH2M Personnel	Norwalk Effluent Monitoring Form SFPP Norwalk Pump Station Norwalk, CA Form Revised 1/8/18	
SFPP Norwalk Pump Station	Norwalk, CA	Steve Deflbaugh	Eric Davis, PM		
Date	**Time**	**SAMPLE TYPE (circle one):**		**Discharge Permit**	**Expiration Date**
11-15-18	1045	Grab, Composite, Flow-through, Other		R4-2016-0309	11/1/2021
O&M Technician#1	**O&M Technician#2**				
Nils Orliczky					

EQUIPMENT

Multimeter	Make:	Horiba
	Model:	U-5000
	Serial Number:	NVMVVU0W

CALIBRATION

Date of Calibration:	11-15-18	Time:	1045		
Calibration Standard:	(Yes) No	Standard	Expiration Date	Calibrated Within 0.2 pH units?	
pH Calibration Standard 4.01 / 4.00 6.94 / 7.00		4	May 2019	(Yes)	No
		7	May 2019	(Yes)	No
		10		(Yes)	No
Cond. Calibration 4.33 / 4.49	Equipment Reading:		Calibrated to or within 10%?	(Yes)	No

FIELD PARAMETERS	FIELD MEASUREMENTS			
	Effluent (EFF-001)	Upstream (RSW-001)	Downstream (RSW-002)	Mid-Point
TIME	1050	1335	1332	
pH (DISCHARGE LIMIT 6.5 - 8.5) (Quarterly, Annually)	6.57	9.20	9.11	
TEMP (°F) (DISCHARGE LIMIT 86°F) (Quarterly, Annually)	22.75/72.95	20.20/69.26	20.94/69.69	
SALINITY (ppt)	1.2	0.5	0.5	
COND (mS/cm or uS/cm; Specific Cond.) *Circle or Note Units Used*	2.33	1.04	1.06	
DO (mg/L)	5.56	22.91	13.37	

OBSERVATIONS

KINDER MORGAN

Signed: _____ Date: 11-15-18

Kinder Morgan Field Meter Calibration and Log Form

Site Name	Site Location	Project Manager	CH2M Personnel	Norwalk Effluent Monitoring Form SFPP Norwalk Pump Station Norwalk, CA Form Revised 1/8/18	
SFPP Norwalk Pump Station	Norwalk, CA	Steve Defibaugh	Eric Davis, PM		
Date	**Time**	**SAMPLE TYPE (circle one):**		**Discharge Permit**	**Expiration Date**
11/16/18	0905	Grab, Composite, Flow-through, Other		R4-2016-0309	11/1/2021
O&M Technician#1	**O&M Technician#2**				
Nils Orliczky					

EQUIPMENT

Multimeter	Make:	Horiba
	Model:	U-5000
	Serial Number:	NVMVVU0W

CALIBRATION

Date of Calibration:	11/16/18	Time:	0805		
Calibration Standard:	(Yes) No	Standard	Expiration Date	Calibrated Within 0.2 pH units?	
pH Calibration Standard 3.92/4.01 6.98/6.99		(4)	May 2019	(Yes)	No
		(7)	May 2019	(Yes)	No
		10		Yes	No
Cond. Calibration 4.49	Equipment Reading: 4.53		Calibrated to or within 10%?	(Yes)	No

FIELD PARAMETERS	FIELD MEASUREMENTS			
	Effluent (EFF-001)	Upstream (RSW-001)	Downstream (RSW-002)	Mid-Point
TIME	0815	0935	0930	
pH (DISCHARGE LIMIT 6.5 - 8.5) (Quarterly, Annually)	6.83	8.70	8.58	
TEMP (°F) (DISCHARGE LIMIT 86°F) (Quarterly, Annually)	17.61/63.70F	14.82/58.68F	14.82/58.68	
SALINITY (ppt)	1.2	0.8	0.8	
COND (mS/cm or uS/cm; Specific Cond.) *Circle or Note Units Used*	2.47	1.67	1.68	
DO (mg/L)	7.90	16.30	12.93	

OBSERVATIONS

KINDER MORGAN

Signed: _____ Date: 11-16-18

Attachment B
Data Quality Assurance/Quality Control

Data Quality Assurance/Quality Control

Data quality was evaluated by examining the holding times, laboratory method blanks, surrogate percent recoveries, laboratory control sample/laboratory control sample duplicates (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent differences (RPDs). Data quality review results for each analysis are outlined in the following subsections.

Analytical Data

The data quality evaluation report covers six normal effluent samples and one receiving water sample. Samples were collected between October 16 and December 14, 2018. Analyses were performed by Asset Laboratories in Las Vegas, Nevada, BC Laboratories in Bakersfield, California, Pace Analytical in Minneapolis, Minnesota, TestAmerica in Irvine, California and LA Testing in South Pasadena, California. The sample results were reported as three sample delivery groups:

Sample Delivery Groups
N032525
N032999
N033443

Twenty-three methods were used to analyze the environmental samples. Samples were collected and submitted directly to the Asset Laboratories for analysis. Asset Laboratories was responsible for shipment of samples to the other laboratories. Samples were analyzed for the following analytes/method:

Parameter	Method	Laboratory
Turbidity	SM2130B	Asset
Asbestos	EPA 600 94 134, 100.2	LA Testing
Total suspended solids	SM2540D	Asset
Calcium, Magnesium, Hardness	E200.7/SM2340B	Asset
Sulfide	SM4500S2-D	BC Laboratories
MBAS	SM5540C	BC Laboratories
Nitrite and Nitrate	E300.0	Asset
Cyanide	E335.4	BC Laboratories
Settleable solids	SM2540F	Asset
Biochemical oxygen demand	SM5210B	BC Laboratories
Oil and grease	E1664	Asset
pH and Temperature	SM4500-H+B	Asset
Metals	E200.8/E245.1	Asset
Hexavalent Chromium	SW7199	Asset
Ammonia	SM4500NH3G	BC Laboratories
Total petroleum hydrocarbons – gasoline, diesel and motor oil ranges	SW8015B	Asset/BC Laboratories

Parameter	Method	Laboratory
Polychlorinated Biphenyls	E608	BC Laboratories
Pesticides	SW8081A	BC Laboratories
Dioxins and Furans	SW8290	Pace
Volatile organic compounds	SW8260B	Asset/TestAmerica
Phenol and Semi-Volatile organic compounds	SW8270C	Asset/BC Laboratories

Data validation flags were assigned using guidance from the EPA Contract Laboratory National Functional Guidelines for Organic Superfund Methods Data Review (EPA, 2017) and EPA Contract Laboratory National Functional Guidelines for Inorganic Superfund Methods Data Review (EPA, 2017). Multiple flags are routinely applied to specific sample method/ matrix/ analyte combinations, but there will be only one final flag. A final flag is applied to the data and is the most conservative of the applied data validation flags. The final flag also includes blank sample impacts.

The data validation flags are as follows:

- J = Analyte was present, but the reported value may not be accurate or precise (estimated). The result was estimated because it was less than the referenced reporting limit, but greater than the method detection limit, or because a QC exceedance occurred.
- R = Data were unusable because of deficiencies in the ability to analyze the sample and meet QC criteria.
- U = Analyte was not detected at the specified detection limit.
- UJ = Analyte was not detected, and the specified detection limit may not be accurate or precise (estimated).

Findings

The overall summaries of the data validation findings are contained in the following subsections.

Holding Times

All holding time criteria were met with one exception.

The holding time for pH and temperature was exceeded for sample EFF-11-15-18 for Method SM4500-H+B. The associated detected results were qualified as estimated and flagged “J”.

Method Blanks

Method blanks were analyzed at the required frequency and were free of contamination that would affect the sample results with the following exception:

Phenol was detected less than the reporting limit in a method blank for Method SW8270C. One associated result was detected less than five times the blank concentration and was qualified as not detected and flagged “U” in sample EFF-11-15-18.

Surrogates

All surrogate recovery criteria were met.

Internal Standards

All internal standard criteria were met.

Laboratory Control Samples

LCS/LCSDs were analyzed as required. All accuracy and precision criteria were met.

Matrix Spikes/Matrix Spike Duplicates

The results of MS/MSD analyses provide information about the possible influence of the matrix on either accuracy or precision of the measurements. There were no MS/MSD recovery or RPD exceedances that would affect the sample results with the following exceptions:

The recovery of copper was less than the lower control limit in the MSs and MSDs of samples EFF-10-16, EFF-11-15-18 and EFF-12-14-18 for Method E200.8, indicating the associated parent sample results are possibly biased low. Three associated nondetected results were qualified as estimated and flagged “UJ”.

Chain-of-Custody

Each sample was documented in a completed COC and received at the laboratory in good condition.

Miscellaneous

Samples EFF-11-15-18 and RSW-001-11-15-18 were analyzed for acrolein and acrylonitrile from sample vials with headspace, associated sample results are possibly biased low. Four associated nondetected results were qualified as estimated and flagged “UJ”.

Overall Assessment

An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results are considered usable taking into consideration possible biases as described above.

Attachment C
Waste Manifests

Please print or type. DW 1806184191 SC PPW 7/12/2018 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
CAT080033962	1	(800) 483-3718	012859619 FLE

GENERATOR

5. Generator's Name and Mailing Address
Sfpp, L.P. Norwalk Station
1100 Town And Country Road
Orange, CA 92868
Generator's Phone: (714) 560-4887 ATTN: Karina Hankins

Generator's Site Address (if different than mailing address)
15306 Norwalk Boulevard
Norwalk, CA 90651

6. Transporter 1 Company Name
Clean Harbors Environmental Services, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Wilmington LLC
1737 East Denni Street
Wilmington, CA 90744
Facility's Phone: (310) 835-9998
U.S. EPA ID Number: CAD044429835

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-RCRA HAZARDOUS WASTE, SOLID, (FILTERS)	001	DM	175	P	181
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1424321 IX 55 DM
1. Groundwater Treatment System
Contract retained by generator confers agency authority on initial transporter to add or substitute additional transporters on generator's behalf.

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: JAMES DUE Signature: [signature] Month: 12 Day: 13 Year: 18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: HOWARD MENDEZ Signature: [signature] Month: 12 Day: 13 Year: 18

Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month: Day: Year:

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Beatrice Falcon Signature: [signature] Month: 12 Day: 27 Year: 18

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

DW 1806184191

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080033962

Manifest Document No.: NH6184191

2. Page 1 of 1

3. Generator's Name and Mailing Address
Sfpp. L.P. Norwalk Station
1100 Town And Country Road
Orange CA 92868

4. Generator's Phone ((714) 560-4887 ATTN:Karina Hankins

Site Address :
15306 Norwalk Boulevard
Norwalk, CA 90651

5. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc.

6. US EPA ID Number: MAD039322250

A. State Transporter's ID

B. Transporter 1 Phone: (781) 792-5000

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
Clean Harbors Wilmington LLC
1737 East Denni Street
Wilmington, CA 90744

10. US EPA ID Number: CAD044429835

E. State Facility's ID

F. Facility's Phone: (310) 835-9998

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON D.O.T. REGULATED, (DEBRIS)	001	DM	175	P
b.				
c.				
d.				

GENERATOR

G. Additional Descriptions for Materials Listed Above
11a.CH1401785

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
11a. Rubber Hose 1X55DM

EMERGENCY PHONE #: (800) 483-3718
GENERATOR: Sfpp, L.P. Norwalk Station

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: JAMES DUK
Signature:
Date: Month 12 Day 13 Year 18

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: HOWARD MENDEZ
Signature:
Date: Month 12 Day 13 Year 18

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name
Signature
Date: Month Day Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	001		NHZ-100318KMNW

GENERATOR

5. Generator's Name and Mailing Address

SFPP-LP....
1100 TOWN & COUNTRY RD
ORANGE, CA 92868

Generator's Phone: 714-560-4400-4823

Generator's Site Address (if different than mailing address)

NORWALK TANK FARM
15306 NORWALK BLVD
NORWALK, CA 90650

6. Transporter 1 Company Name: PROMINENT SYSTEMS, INC — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address

PROMINENT SYSTEMS, INC
13095 E. TEMPLE AVENUE
CITY OF INDUSTRY, CA 91746

Facility's Phone: 626-858-1888

U.S. EPA ID Number:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS SPENT CARBON	4	BA	4000	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

PROFILE #: PSP180017L

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: JAMES DYE — Signature — Month: 10 Day: 03 Year: 18

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Kevin Pratama — Signature — Month: 10 Day: 3 Year: 18

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Chand Wolk — Signature — Month: 10 Day: 03 Year: 18