KINDER MORGAN
ENERGY PARTNERS, L.P.

SFPP, L.P.
Operating Partnership

August 7, 2017

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

Re: Effluent Monitoring Report
April through June 2017
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 Second Quarter 2017 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 7th day of August 2017.
at 2:43 p.m.

_____ (signature)

Stephen T. Defibaugh (printed name)

Remediation Project Manager (title)

Attachment

cc: Eric Davis, CH2M

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Mr. Stephen Defibaugh
Kinder Morgan Energy Partners, L.P.
1100 Town and Country Road
Orange, California 92868

August 7, 2017

Subject: Effluent Monitoring Report, April 1 to June 30, 2017 (Second Quarter 2017)
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. (CH2M), on behalf of SFPP, L.P. (SFPP), an operating partnership of Kinder Morgan Energy Partners, L.P. (Kinder Morgan), to summarize National Pollutant Discharge Elimination System (NPDES) monitoring related to the discharge of treated groundwater from SFPP's product recovery and groundwater extraction (GWE) system. This system is located at the SFPP Norwalk Pump Station within the Defense Fuel Support Point Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site; Figure 1).

This report describes NPDES monitoring activities during the period of April 1 to June 30, 2017. SFPP performed operations, maintenance, and monitoring tasks on the product recovery and GWE systems. SFPP retained CH2M to prepare this report based on the NPDES monitoring performed by SFPP.

Remediation Systems

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

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

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

- South-Central Area
  - 20 TFE wells
  - 24 onsite and 6 offsite SVE wells (most collocated with TFE wells)
  - 2 horizontal SVE wells
  - 1 horizontal biosparge well

- Southeastern Area (24-inch Block Valve Area)
  - 4 TFE wells (GMW-O-15, GMW-O-18, GMW-36, and GMW-SF-9)
  - 3 SVE wells (collocated with TFE wells)
  - 1 GWE well (GMW-SF-10)

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

SVE System

SVE is performed using a blower to remove soil vapors from the south-central and southeastern areas. The extracted vapors are conveyed to a knock-out tank that separates entrained moisture from the soil vapors. Accumulated moisture in the knock-out tank is treated by the main groundwater treatment system (GWTS) described below. The soil vapors are then treated in a regenerative thermal oxidizer (RTO) where VOCs are converted to carbon dioxide and water prior to being discharged to the atmosphere. The former thermal oxidizer was shut down on November 1, 2016, and was replaced by a new RTO. The new RTO was started on June 6, 2017. Operation of the GWTS and SVE system 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 (SCAQMD).

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 an oil-water separator (OWS). Free product, if any, from the OWS is collected in a storage tank and recycled at an offsite location. Water from the OWS is treated using liquid-phase granular activated carbon (LGAC). Treated water is routed through an onsite 3,000-gallon equalization tank. Two fluidized bed bioreactors (FBBRs) installed downstream of the equalization tank treat fuel oxygenates such as tertiary butyl alcohol (TBA) and methyl tertiary butyl ether (MTBE). The treated groundwater then passes through polishing LGAC units prior to discharge to a storm drain that leads to Coyote Creek. Discharge to Coyote Creek is performed in accordance with a NPDES permit (Permit No. CA0063509; Order No. R4-2016-0309). Order No. R4-2016-0309 was adopted on September 7, 2016, and became effective on November 1, 2016.

Horizontal Biosparge System

SFPP 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. The lateral distance of the screen interval 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 report titled, *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report, SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California* (CH2M, 2015).

The compressor used to deliver ambient air to the biosparge well has a maximum design rate of approximately 500 standard cubic feet per minute (scfm). SFPP's SVE system has an interlock that ensures the biosparge system cannot operate unless the SVE system is operating. Operation of the SVE system reduces the potential for off-gassing of VOCs during biosparge operations. Pilot testing of the biosparge system commenced in early January 2016 and continued through October 2016. Soil vapor

data collected as part of the pilot testing have been submitted to the Regional Water Quality Control Board (Water Board) and Restoration Advisory Board (RAB) under separate cover. Preparation of a comprehensive evaluation report that incorporates soil vapor and groundwater data is currently in process. The biosparge system was restarted on June 27, 2017, after the new RTO was put into operation.

A summary of the GWTS operations 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 RAB.

Summary of Quarterly Groundwater Treatment System Operations

A total of 800,613 gallons of groundwater were extracted from the south-central and southeastern areas and discharged to Coyote Creek during the second quarter 2017. Wells that were in operation included MW-SF-3, GMW-9, GMW-O-20, and GMW-O-23 in the south-central area, and GMW-O-15, GMW-O-18, and GMW-SF-9 in the southeastern area. No groundwater was extracted from the WSB area during this period. Table 1 summarizes the average daily flow rate during the reporting period. The GWTS operated throughout the quarter.

No free product accumulated in the product holding tank of the GWTS during the second quarter 2017. Hand bailing of free product (from wells not equipped for TFE) was therefore not performed during this reporting period.

Routine Effluent Monitoring

During the second quarter 2017, 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 semiannual analysis.

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 is certified by the National Environmental Laboratory Accreditation Program and the California Department of Public Health Environmental Laboratory Accreditation Program. The samples were analyzed in accordance with current U.S. Environmental Protection Agency (EPA) guidelines or as specified in the WDRs for the site.

Menidia beryllina (inland silverside) was used in lieu of *Atherinops affinis* (topsmelt) under this permit due to intermittent health issues of the topsmelt species from Aquatic Bio Systems of Fort Collins, Colorado, currently the only supplier of topsmelt for toxicity testing. A request to change the species for the toxicity test was submitted to the Water Board on March 22, 2017 (CH2M, 2017). The Water Board approved the request in a letter dated April 14, 2017 (Water Board, 2017).

Summary of Compliance Results

Monthly and Quarterly Sampling

Analytical results for the April, May, and June 2017 sampling events at the effluent are summarized in Table 2. The results were compared with monthly and quarterly 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.

Under NPDES Order No. R4-2016-0309, 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 maximum daily flow in Coyote Creek at the gauge station below Spring Street (F354-R) is reported in Table 3. Based on these data, the April, May, and June 2017 sampling events, with maximum daily flows of 18 cfs, 2 cfs, and less than 1 cfs, respectively, occurred during dry weather conditions. Therefore, the analytical results for April, May, and June 2017 are compared to dry weather discharge limits.

Toxicity Testing

Effluent samples from station EFF-001 were collected for chronic toxicity testing on May 8, 10, and 12, 2017. These samples were used for independent toxicity tests with an alga (giant kelp, *Macrocystis pyrifera*), invertebrate (purple urchin, *Strongylocentrotus purpuratus*), and a fish (inland silverside, *Menidia beryllina*) to evaluate species sensitivity and inform selection of the most sensitive test organism for future compliance toxicity testing. All tests were performed according to EPA (1995, 2002) methods in 100 percent effluent and results evaluated with EPA's (2010) Test of Significant Toxicity to determine a "Pass" or "Fail" and percent effect.

None of the three test organisms were significantly affected by the effluent (that is, the results were "Pass") and demonstrated effluent compliance for toxicity (Table 4). Each of the toxicity tests met all test 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 second quarter 2017 are included in Attachment A.

Waste Hauling

On April 11, 2017, approximately 100 pounds of non-Resource Conservation and Recovery Act (RCRA) hazardous solid waste (spent bag filters) was removed from the site by Patriot Environmental Services of 508 East E. Street, Unit A, Wilmington, California 90744. The waste was transported to Filter Recycling Services, Inc., at 180 West Monte Avenue, Bloomington, California 92316.

On April 21, 2017, approximately 2,000 gallons of nonhazardous liquid waste (well development water) was removed from the site by Southbay Industrial Services, Inc., of 425 West Carob Street, Compton, California 90220. The waste was transported to Filter Recycling Services, Inc., at 180 West Monte Avenue, Bloomington, California 92316.

On May 12, 2017, approximately 600 pounds of nonhazardous non-Department of Transportation (DOT) regulated waste soil (treatment system sludge) and 250 pounds non-DOT regulated solid waste (rags and gloves) were 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 June 1, 2017, approximately 1,000 gallons of nonhazardous liquid waste (rinse water from the OWS with trace arsenic and hydrocarbons) was removed from the site by Patriot Environmental Services of 508 East E. Street, Unit A, Wilmington, California 90744. The waste was transported to Crosby & Overton at 1630 West 17th Street, Long Beach, California 90813.

Copies of the waste manifests are included in Attachment B.

Should you require any further information, please contact me at (714) 435-6017.

Regards,
CH2M HILL Engineers, Inc.

Vladimir Carino
Project Engineer

Attachments:

References
Table 1 – Effluent Flow Rate Measurements, Second Quarter 2017
Table 2 – NPDES Effluent Monitoring, Second Quarter 2017
Table 3 – Maximum Daily Flow in Coyote Creek, Second Quarter 2017
Table 4 – NPDES Effluent Chronic Toxicity Monitoring, Second Quarter 2017
Table 5 – Initial Water Quality Parameters for the Composite Chronic Toxicity Samples, Second Quarter 2017
Figure 1 – Site Location Map
Figure 2 – Remediation System Layout
Attachment A – Laboratory Analytical Reports and Chain-of-Custody Documents
Attachment B – Waste Manifests

References

CH2M HILL (CH2M). 2015. *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report, SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California.* February 8.

CH2M HILL (CH2M). 2017. *Request for Toxicity Testing Species Substitution, National Pollutant Discharge Elimination System Permit No. CA0063509, Order No. R4-2016-0309 for the SFPP Norwalk Pump Station, Norwalk, California.* March 22.

Regional Water Quality Control Board (Water Board). 2017. *Approval of Using an Alternate Species for Chronic Toxicity Testing – SFPP L.P., SFPP Norwalk Pump Station, Norwalk, California (NPDES No. CA0063509, CI NO. 7497).*

U.S. Environmental Protection Agency (EPA). 1995. G. Chapman, D. Denton, and J. Lazorchak, eds. *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms.* Washington, DC. EPA/600/R-95/136.

U.S. Environmental Protection Agency (EPA). 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms.* Third Edition. Office of Water. EPA-821-R-02-014.

U.S. Environmental Protection Agency (EPA). 2010. *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document.* Office of Wastewater Management. EPA 833-R-10-003.

Tables

Table 1. Effluent Flow Rate Measurements, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
04/01/17	13,755
04/02/17	13,744
04/03/17	13,952
04/04/17	13,811
04/05/17	9,092
04/06/17	11,187
04/07/17	11,184
04/08/17	11,217
04/09/17	11,091
04/10/17	6,399
04/11/17	0
04/12/17	0
04/13/17	0
04/14/17	0
04/15/17	0
04/16/17	0
04/17/17	0
04/18/17	0
04/19/17	0
04/20/17	0
04/21/17	4,872
04/22/17	13,375
04/23/17	14,389
04/24/17	14,843
04/25/17	14,668
04/26/17	14,368
04/27/17	13,649
04/28/17	13,426
04/29/17	4,812
04/30/17	10,032
05/01/17	10,057
05/02/17	11,886
05/03/17	10,783
05/04/17	6,262
05/05/17	8,891
05/06/17	8,564
05/07/17	8,490
05/08/17	7,947
05/09/17	8,364
05/10/17	7,170
05/11/17	8,408
05/12/17	10,418
05/13/17	10,255
05/14/17	10,296
05/15/17	11,753
05/16/17	10,393
05/17/17	10,546
05/18/17	10,534
05/19/17	10,267
05/20/17	10,540
05/21/17	10,139
05/22/17	10,094
05/23/17	9,738
05/24/17	10,051
05/25/17	9,914
05/26/17	9,825
05/27/17	10,582

Table 1. Effluent Flow Rate Measurements, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd[a])
05/28/17	10,944
05/29/17	11,016
05/30/17	9,194
05/31/17	9,194
06/01/17	9,194
06/02/17	9,194
06/03/17	9,194
06/04/17	9,194
06/05/17	9,193
06/06/17	10,607
06/07/17	11,298
06/08/17	9,308
06/09/17	10,724
06/10/17	10,646
06/11/17	10,881
06/12/17	9,653
06/13/17	9,327
06/14/17	6,707
06/15/17	309
06/16/17	3,470
06/17/17	2,176
06/18/17	2,176
06/19/17	2,195
06/20/17	148
06/21/17	9,249
06/22/17	5,907
06/23/17	9,616
06/24/17	13,615
06/25/17	13,309
06/26/17	12,177
06/27/17	6,489
06/28/17	16,916
06/29/17	15,873
06/30/17	15,487

Notes:

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

gpd = gallons per day

Table 2. NPDES Effluent Monitoring, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL[c]	RL[c]	ML[a]	4/7/2017	5/8/2017	5/9/2017	5/10/2017	5/12/2017	6/16/2017	Discharge Limits[b] Monthly Average	Discharge Limits[b] Daily Maximum
Flow	Daily	--	gpd	--	--	--	**11,184**	--	**8,364**	--	--	**3,470**	--	**150,000**
TPH as gas (C4-C12)	Monthly	EPA 8015B	µg/L	16	50	NE	**<16**	--	**<16**	--	--	**<16**	--	--
TPH as Diesel (C13-C22)	Monthly	EPA 8015B	µg/L	16	26	NE	**<16**	--	**<15**	--	--	**<16**	--	--
TPH as Oil (C23+)	Monthly	EPA 8015B	µg/L	14	26	NE	**<14**	--	**15 J**	--	--	**20 J**	--	--
Total TPH	Monthly	EPA 8015B	µg/L	16	100	NE	**<16**	--	**<16**	--	--	**20 J**	--	**100**
Total TPH	Monthly	Calculated	lb/day	--	--	--	**0.000746**	--	**0.000558**	--	--	**0.000579**	--	**0.13**
Benzene	Monthly	EPA 8260B	µg/L	0.14	1	2.0	**<0.14**	--	**<0.14**	--	--	**<0.14**	--	--
1,1-Dichloroethane	Monthly	EPA 8260B	µg/L	0.13	0.5	1.0	**<0.13**	--	**<0.13**	--	--	**<0.13**	--	--
1,2-Dichloroethane	Monthly	EPA 8260B	µg/L	0.13	0.5	2.0	**<0.13**	--	**<0.13**	--	--	**<0.13**	--	--
Ethylbenzene	Monthly	EPA 8260B	µg/L	0.14	1.0	2.0	**<0.14**	--	**<0.14**	--	--	**<0.14**	--	--
Phenol	Monthly	EPA 8270C	µg/L	0.33	1.0	1	**<0.33**	--	**<0.33**	--	--	**<0.33**	--	--
Toluene	Monthly	EPA 8260B	µg/L	0.14	2.0	2.0	**0.17 J**	--	**<0.14**	--	--	**<0.14**	--	--
Methyl tertiary-butyl ether	Monthly	EPA 8260B	µg/L	0.13	1.0	NE	**<0.13**	--	**<0.13**	--	--	**<0.13**	--	--
Tertiary butyl alcohol	Monthly	EPA 8260B	µg/L	1.8	5.0	NE	**<1.8**	--	**<1.8**	--	--	**<1.8**	--	--
Total Xylenes	Monthly	EPA 8260B	µg/L	1.5	2.0	NE	**<1.5**	--	**<1.5**	--	--	**<1.5**	--	--
Copper (total recoverable) (dry weather)[d]	Monthly	EPA 200.8	µg/L	0.26	0.5	0.5	**<0.26**	--	**<0.26**	--	--	**<0.26**	**9.7**	**32**
Copper (total recoverable) (dry weather)[d]	Monthly	Calculated	lb/day	--	--	--	**0.000012**	--	**0.000009**	--	--	**0.000004**	**0.012**	**0.04**
Lead (total recoverable) (dry weather)[d]	Monthly	EPA 200.8	µg/L	0.037	0.5	0.5	**<0.037**	--	**<0.037**	--	--	**<0.037**	**33**	**106**
Lead (total recoverable) (dry weather)[d]	Monthly	Calculated	lb/day	--	--	--	**0.000002**	--	**0.000001**	--	--	**0.000001**	**0.041**	**0.13**
Mercury (total recoverable)	Monthly	EPA 245.1	µg/L	0.018	0.1	0.2	**0.028 J**	--	**0.037 J**	--	--	**0.048 J**	**0.051**	**0.10**
Mercury (total recoverable)	Monthly	Calculated	lb/day	--	--	--	**0.000003**	--	**0.000003**	--	--	**0.000001**	**6.4E-05**	**1.3E-04**
Zinc (total recoverable) (dry weather)[d]	Monthly	EPA 200.8	µg/L	0.27	1.0	1.0	**10**	--	**5.3**	--	--	**7.3**	**64**	**220**
Zinc (total recoverable) (dry weather)[d]	Monthly	Calculated	lb/day	--	--	--	**0.000933**	--	**0.00037**	--	--	**0.000211**	**0.080**	**0.28**
BOD	Quarterly	SM 5210B	mg/L	1.5	1.5	NE	--	--	**<1.5**	--	--	--	**20**	**30**
BOD	Quarterly	Calculated	lb/day	--	--	--	--	--	**0.052317**	--	--	--	**25**	**38**
Total Suspended Solids	Quarterly	SM 2540D	mg/L	10	10.00	NE	--	--	**<10**	--	--	--	**50**	**75**
Total Suspended Solids	Quarterly	Calculated	lb/day	--	--	--	--	--	**0.348779**	--	--	--	**63**	**94**
pH	Quarterly	--	s.u.	--	--	NE	**7.3**	--	**7.3**	--	--	--	--	**6.5/8.5**
Oil and Grease	Quarterly	EPA 1664A	mg/L	0.7	4.30	NE	--	--	**<0.70**	--	--	--	**10**	**15**
Oil and Grease	Quarterly	Calculated	lb/day	--	--	--	--	--	**0.024415**	--	--	--	**13**	**19**
Ammonia Nitrogen (as N)	Quarterly	EPA 350.1	mg/L	0.025	0.13	NE	--	--	**<0.025**	--	--	--	--	--
Settleable Solids	Quarterly	SM 2540F	mL/L/hr	0.095	0.10	NE	--	--	**<0.095**	--	--	--	**0.1**	**0.3**
Temperature	Quarterly	Temperature	°F	--	--	NE	--	--	**73**	--	--	--	--	**86**
Turbidity	Quarterly	SM 2130B	NTU	0.1	0.10	NE	--	--	**0.24**	--	--	--	**50**	**75**
Salinity	2x/year	SM 2520B	--	--	--	NE	--	**0.9**	**0.9**	**0.9**	**0.9**	--	--	--
Chronic Toxicity (see Table 4)	2x/year	--	--	--	--	NE	--	**Pass**	--	**Pass**	**Pass**	--	**Pass**	**Pass and % Effect <50**
Di-isopropyl Ether	Annually	EPA 8260B	µg/L	--	--	NE	--	--	--	--	--	--	--	--
Methyl ethyl ketone	Annually	EPA 8260B	µg/L	0.48	10.00	NE	--	--	--	--	--	--	--	--
Methylene Blue Active Substances	Annually	SM 5540C	mg/L	--	--	NE	--	--	--	--	--	--	--	--
Nitrate + Nitrite as N	Annually	EPA 300.0	mg/L	--	--	NE	--	--	--	--	--	--	--	--
Sulfides	Annually	SM 4500 SD	mg/L	--	--	NE	--	--	--	--	--	--	--	--
Tert-amyl-methyl Ether	Annually	EPA 8260B	µg/L	--	--	NE	--	--	--	--	--	--	--	--
TCDD Equivalents	Annually	EPA 8290	pg/L	--	--	NE	--	--	--	--	--	--	--	--
Other Priority Pollutants (not included)	Annually	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 2. NPDES Effluent Monitoring, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

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.

[d] Dry weather condition is defined as a maximum daily flow below 156 cfs as measured at the Los Angeles County Department of Public Works flow gauge station F354-R. The maximum daily flows in Coyote Creek, as measured at Coyote Creek Gauge Station below Spring Street (F354-R), during the April, May, and June 2017 sampling events were 18 cfs, 2 cfs, and less than 1 cfs, respectively. Therefore, the April, May, and June 2017 results will be compared to the dry weather discharge limits.

Reported value is estimated.
-- = not measured or not analyzed
< = not detected above the MDL
° F = degrees Fahrenheit
µg/L = micrograms per liter
BOD = biological oxygen demand
cfs = cubic feet per second
gpd = gallons per day
J = detected at a concentration below the RL and above the MDL.
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
RL = reporting limit
s.u. = standard units
TPH = total petroleum hydrocarbons

Table 3. Maximum Daily Flow in Coyote Creek, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

Date	Maximum Daily Flow Rate (cfs)[a]	Comments
04/01/17	8	
04/02/17	13	
04/03/17	21	
04/04/17	31	
04/05/17	27	
04/06/17	27	
04/07/17	18	April 2017 sampling conducted
04/08/17	144	
04/09/17	22	
04/10/17	17	
04/11/17	12	
04/12/17	25	
04/13/17	27	
04/14/17	24	
04/15/17	27	
04/16/17	22	
04/17/17	37	
04/18/17	28	
04/19/17	29	
04/20/17	39	
04/21/17	37	
04/22/17	37	
04/23/17	31	
04/24/17	34	
04/25/17	37	
04/26/17	31	
04/27/17	29	
04/28/17	35	
04/29/17	29	
04/30/17	24	
05/01/17	15	
05/02/17	21	
05/03/17	12	
05/04/17	8	
05/05/17	10	
05/06/17	8	
05/07/17	1,840	
05/08/17	78	
05/09/17	2	May 2017 sampling conducted
05/10/17	2	
05/11/17	1	
05/12/17	2	
05/13/17	4	
05/14/17	2	
05/15/17	11	
05/16/17	13	
05/17/17	4	
05/18/17	1	
05/19/17	0	
05/20/17	0	
05/21/17	0	
05/22/17	0	
05/23/17	0	
05/24/17	0	
05/25/17	0	
05/26/17	1	

Table 3. Maximum Daily Flow in Coyote Creek, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

Date	Maximum Daily Flow Rate (cfs)[a]	Comments
05/27/17	0	
05/28/17	1	
05/29/17	0	
05/30/17	1	
05/31/17	2	
06/01/17	0	
06/02/17	1	
06/03/17	1	
06/04/17	0	
06/05/17	2	
06/06/17	1	
06/07/17	1	
06/08/17	1	
06/09/17	1	
06/10/17	1	
06/11/17	2	
06/12/17	2	
06/13/17	2	
06/14/17	3	
06/15/17	5	
06/16/17	3	June 2017 sampling conducted
06/17/17	4	
06/18/17	4	
06/19/17	9	
06/20/17	5	
06/21/17	12	
06/22/17	18	
06/23/17	9	
06/24/17	11	
06/25/17	14	
06/26/17	24	
06/27/17	29	
06/28/17	12	
06/29/17	7	
06/30/17	7	

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 Chronic Toxicity Monitoring, Second Quarter 2017

SFPP Norwalk Pump Station, Norwalk, California

		Sampling Dates	5/8, 5/10, and 5/12
		Test dates	5/9 to 5/16
Test Organism[a]	**Toxicity Endpoint**	**% Effect**	**EFF-001 (Effluent) TST Result**
Inland silversides (*Menidia beryllina*)	Survival	2.5	Pass
	Growth	-6.3	Pass
Giant kelp (*Macrocystis pyrifera*)	Reproduction	-1.5	Pass
	Growth	-0.62	Pass
Purple urchin (*Strongylocentrotus purpuratus*)	Fertilization	-0.20	Pass

Notes:

[a] Toxicity testing was conducted using EPA Methods 600-R-95-136 and 821-R-02-014

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

NPDES = National Pollutant Discharge Elimination System

TRE = toxicity reduction evaluation

The Maximum Daily Effluent Limitation (MDEL) for chronic toxicity is exceeded when a chronic toxicity test results in “Fail” and the “Percent Effect” is ≥0.50.

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 TIE (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%.

Table 5. Initial Water Quality Parameters for the Composite Chronic Toxicity Samples, Second Quarter 2017
SFPP Norwalk Pump Station, Norwalk, California

			Sampling Dates		
Parameter Tests	**Unit**	**Measurement Method**	**EFF-05-08-TOX[a] 5/8/2017**	**EFF-05-10-TOX[a] 5/10/2017**	**EFF-05-12-TOX[a] 5/12/2017**
pH	s.u.	Field[b]	6.5	7.0	7.1
pH	s.u.	Laboratory	7.2	7.2	7.1
Temperature	°F	Field[b]	67.3	70.0	70.0
Temperature	°F	Laboratory	32.9	32.0	34.0
Salinity	ppt	Field[b]	0.9	0.9	0.9
Salinity	ppt	Laboratory	0.9	0.9	0.9
Chlorine	mg/L	Laboratory	<0.1	0.04	0.04
Dissolved Oxygen	mg/L	Laboratory	10.4	8.8	11.3
Conductivity	µS/cm	Laboratory	1870	1774	1717
Total Ammonia	mg/L	Laboratory	<1.0	<1.0	<1.0

Notes:

[a] The EFF-05-08-TOX is a 24-hour composite sample collected from 5/7/2017 10:00 a.m. to 5/8/2017 10:00 a.m. The EFF-05-10-TOX is a 24-hour composite sample collected from 5/9/2017 10:00 a.m. to 5/10/2017 10:00 a.m. The EFF-05-12-TOX is a 24-hour composite sample collected from 5/11/2017 10:00 a.m. to 5/12/2017 10:00 a.m.

[b] Field measurements were collected using a Horiba U-52.

-- = not measured or not applicable

° F = degrees Fahrenheit

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter

ppt = parts per trillion

s.u. = standard units

Figures

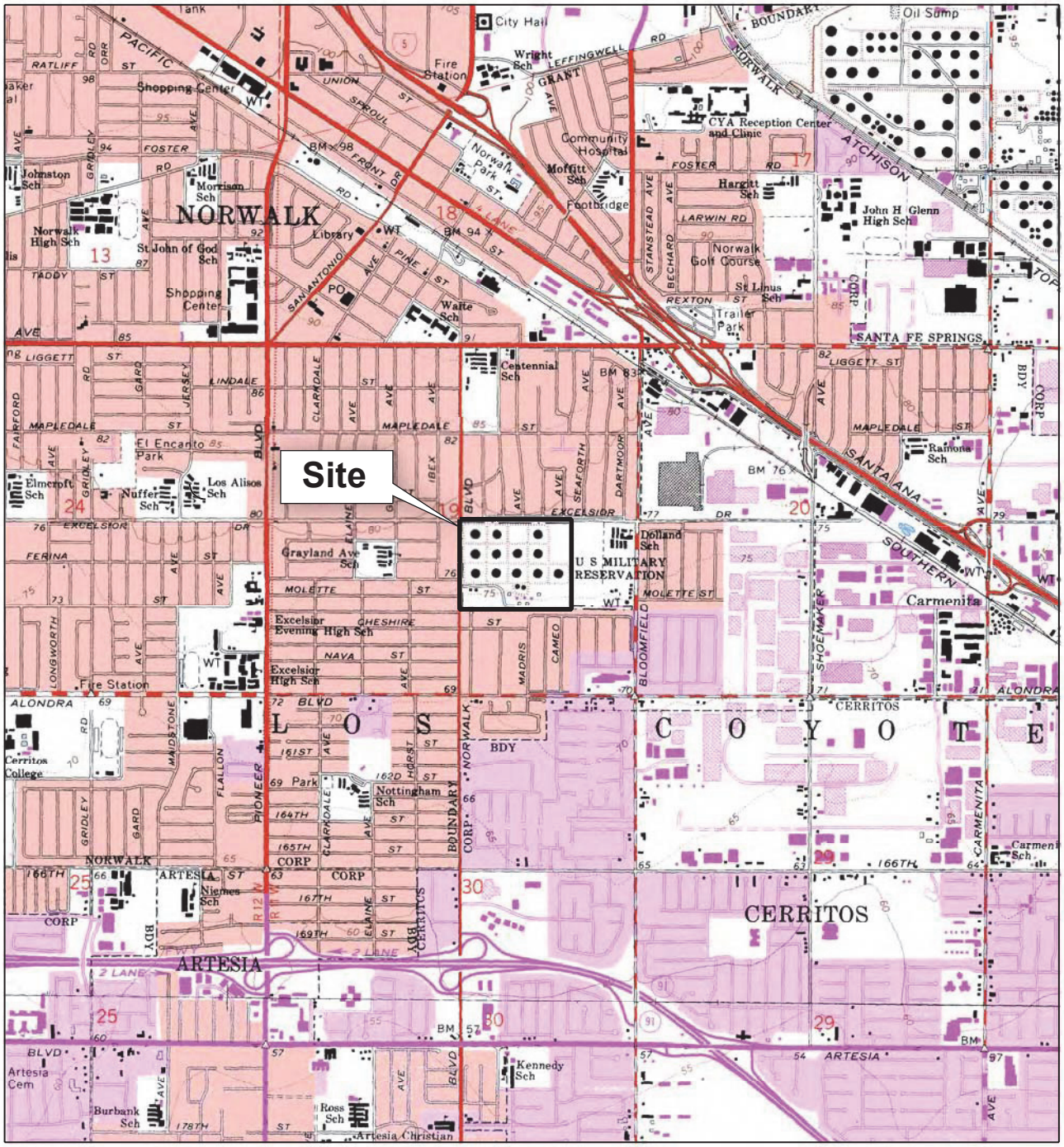
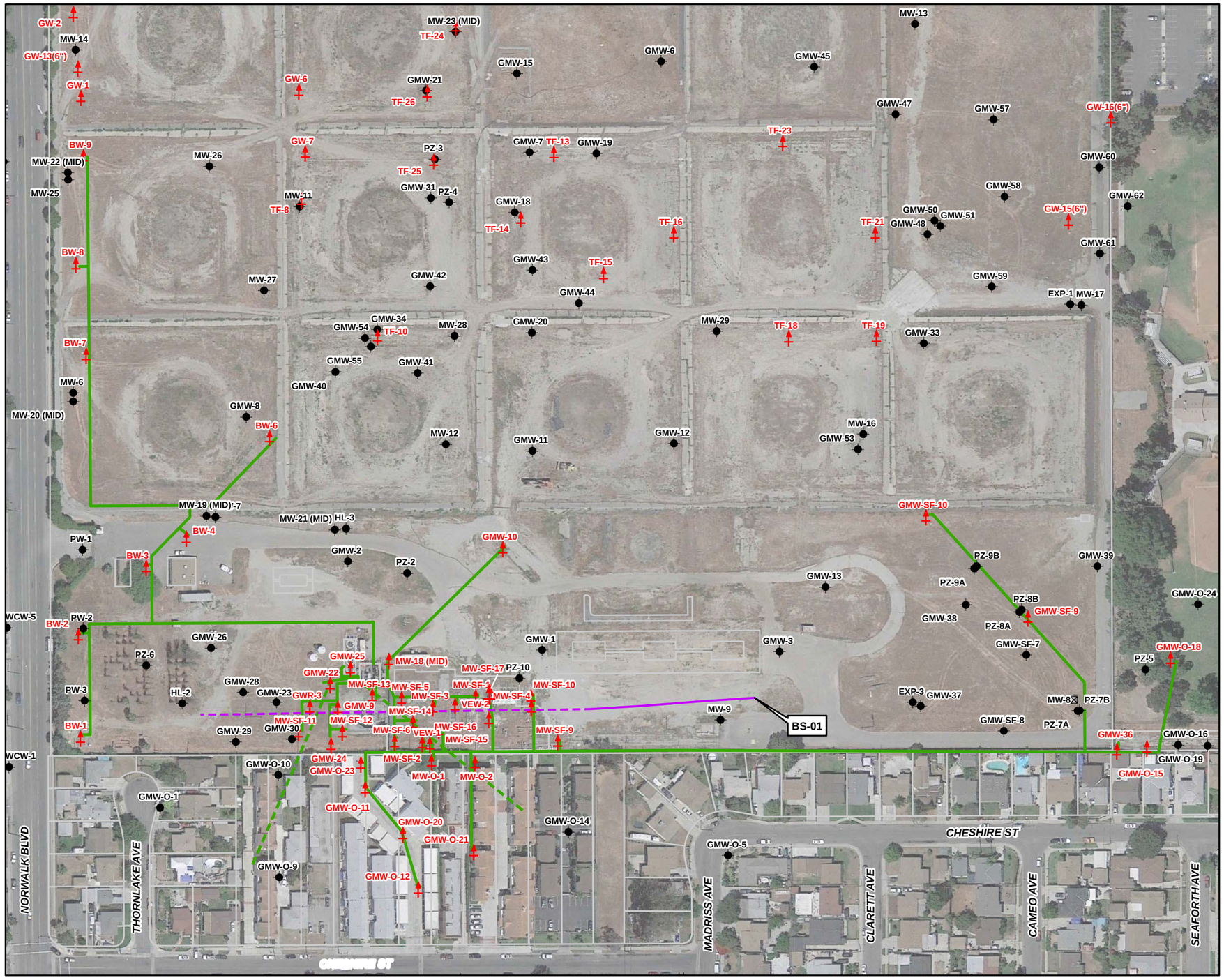


Figure 1
Site Location Map
SFPP Norwalk Pump Station
Norwalk, California

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



Legend

- Existing Groundwater Monitoring Well
- Existing Remediation Well
- Horizontal Biosparge Well (dashed line depicts approximate lateral extent of well screen)
- Kinder Morgan Remediation Piping Layout (above ground and below ground)
- Horizontal Vapor Extraction Well Piping

Imagery Source:
Google Earth April 17, 2013.

N

0 75 150 300
Feet

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

Attachment A
Laboratory Analytical Reports and Chain-of-Custody Documents

April 18, 2017

Dan Jablonski
CH2MHill
1000 Wilshire Blvd.
Los Angeles, CA 90017

TEL:
FAX:

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N023764

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on April 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Puri Romualdo
Laboratory Director

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

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

Analytical Comments for EPA 8260B:

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

Surrogates 1,2-dichloroethane-d4 and dibromofluoromethane recoveries biased high possibly due to matrix interference. Sample result was non-detect (ND) for analytes of interest therefore reanalysis of the sample was not necessary.

ASSET Laboratories

Date: *18-Apr-17*

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N023764
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023764-001A	EFF-04-07	Wastewater	4/7/2017 12:20:00 PM	4/7/2017	4/18/2017
N023764-001B	EFF-04-07	Wastewater	4/7/2017 12:20:00 PM	4/7/2017	4/18/2017
N023764-001C	EFF-04-07	Wastewater	4/7/2017 12:20:00 PM	4/7/2017	4/18/2017
N023764-001D	EFF-04-07	Wastewater	4/7/2017 12:20:00 PM	4/7/2017	4/18/2017

CLIENT: CH2MHill
Lab Order: N023764
Project: SFPP - Norwalk Site
Lab ID: N023764-001

Client Sample ID: EFF-04-07
Collection Date: 4/7/2017 12:20:00 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_170415A**	QC Batch: **61903**			PrepDate	**4/14/2017**		Analyst: **JJS**
Phenol	ND	0.33	1.0		µg/L	1	4/15/2017 04:31 PM
Surr: 1,2-Dichlorobenzene-d4	75.0	0	16-120		%REC	1	4/15/2017 04:31 PM
Surr: Phenol-d5	34.0	0	15-120		%REC	1	4/15/2017 04:31 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
EPA 8260B							
RunID: **MS8_170411A**	QC Batch: **R17VW052**			PrepDate			Analyst: **RB**
1,1-Dichloroethane	ND	0.13	0.50		ug/L	1	4/11/2017 12:20 PM
1,2-Dichloroethane	ND	0.13	0.50		ug/L	1	4/11/2017 12:20 PM
Benzene	ND	0.14	1.0		ug/L	1	4/11/2017 12:20 PM
Ethylbenzene	ND	0.14	1.0		ug/L	1	4/11/2017 12:20 PM
m,p-Xylene	ND	0.23	1.0		ug/L	1	4/11/2017 12:20 PM
MTBE	ND	0.13	1.0		ug/L	1	4/11/2017 12:20 PM
o-Xylene	ND	0.13	1.0		ug/L	1	4/11/2017 12:20 PM
Tert-Butanol	ND	1.8	5.0		ug/L	1	4/11/2017 12:20 PM
Toluene	0.17	0.14	2.0	J	ug/L	1	4/11/2017 12:20 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	4/11/2017 12:20 PM
Surr: 1,2-Dichloroethane-d4	124	0	72-119	S	%REC	1	4/11/2017 12:20 PM
Surr: 4-Bromofluorobenzene	102	0	76-119		%REC	1	4/11/2017 12:20 PM
Surr: Dibromofluoromethane	123	0	85-115	S	%REC	1	4/11/2017 12:20 PM
Surr: Toluene-d8	112	0	81-120		%REC	1	4/11/2017 12:20 PM
TPH EXTRACTABLE BY GC/FID							
EPA 3510C			**EPA 8015B**				
RunID: **NV00922-GC3_170411A**	QC Batch: **61859**			PrepDate	**4/11/2017**		Analyst: **JJS**
TPH-Diesel (C13-C22)	ND	16	26		ug/L	1	4/11/2017 02:05 PM
TPH-Oil (C23-C36)	ND	14	26		ug/L	1	4/11/2017 02:05 PM
Surr: Octacosane	106	0	26-152		%REC	1	4/11/2017 02:05 PM
Surr: p-Terphenyl	96.5	0	57-132		%REC	1	4/11/2017 02:05 PM
GASOLINE RANGE ORGANICS BY GC/FID							
EPA 8015B							
RunID: **NV00922-GC4_170410A**	QC Batch: **E17VW036**			PrepDate			Analyst: **RB**
TPH-Gasoline (C4-C12)	ND	16	50		ug/L	1	4/10/2017 10:50 PM
Surr: Chlorobenzene - d5	125	0	74-138		%REC	1	4/10/2017 10:50 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	**Client Sample ID:**	EFF-04-07
Lab Order:	N023764	**Collection Date:**	4/7/2017 12:20:00 PM
Project:	SFPP - Norwalk Site	**Matrix:**	WASTEWATER
Lab ID:	N023764-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **NV00922-AA1_170411A** QC Batch: **61853** PrepDate **4/11/2017** Analyst: **MG**							
Mercury	0.028	0.018	0.050	J	µg/L	1	4/11/2017 06:28 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170411B** QC Batch: **61857** PrepDate **4/11/2017** Analyst: **CEI**							
Copper	ND	0.26	0.50		µg/L	1	4/11/2017 01:14 PM
Lead	ND	0.037	0.50		µg/L	1	4/11/2017 01:14 PM
Zinc	10	0.27	1.0		µg/L	1	4/11/2017 01:14 PM
TOTAL TPH							
EPA 8015B							
RunID: **NV00922-GC3_170411A** QC Batch: **R114589** PrepDate Analyst: **JJS**							
Total TPH	ND	16	50		ug/L	1	4/11/2017

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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID **MB-61857**	SampType: **MBLK**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **4/11/2017**	RunNo: **114588**
Client ID: **PBW**	Batch ID: **61857**	TestNo: **EPA 200.8**		Analysis Date: **4/11/2017**	SeqNo: **2613665**

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-61857**	SampType: **LCS**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **4/11/2017**	RunNo: **114588**
Client ID: **LCSW**	Batch ID: **61857**	TestNo: **EPA 200.8**		Analysis Date: **4/11/2017**	SeqNo: **2613668**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.304	0.50	10.00	0	103	85	115				
Lead	9.612	0.50	10.00	0	96.1	85	115				
Zinc	105.906	1.0	100.0	0	106	85	115				

Sample ID **N023764-001C-DUP**	SampType: **DUP**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **4/11/2017**	RunNo: **114588**
Client ID: **ZZZZZZ**	Batch ID: **61857**	TestNo: **EPA 200.8**		Analysis Date: **4/11/2017**	SeqNo: **2613670**

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	10.616	1.0						10.27	3.31	20	

Sample ID **N023764-001C-MS**	SampType: **MS**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **4/11/2017**	RunNo: **114588**
Client ID: **ZZZZZZ**	Batch ID: **61857**	TestNo: **EPA 200.8**		Analysis Date: **4/11/2017**	SeqNo: **2613672**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	8.048	0.50	10.00	0	80.5	75	125				
Lead	8.987	0.50	10.00	0	89.9	75	125				
Zinc	101.256	1.0	100.0	10.27	91.0	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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N023764-001C-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114588
Client ID:	ZZZZZZ	Batch ID:	61857	TestNo:	EPA 200.8			Analysis Date:	4/11/2017	SeqNo:	2613673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	8.060	0.50	10.00	0	80.6	75	125	8.048	0.141	20	
Lead	9.003	0.50	10.00	0	90.0	75	125	8.987	0.181	20	
Zinc	102.051	1.0	100.0	10.27	91.8	75	125	101.3	0.782	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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID	MB-61853	SampType:	MBLK	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114593
Client ID:	PBW	Batch ID:	61853	TestNo:	EPA 245.1			Analysis Date:	4/11/2017	SeqNo:	2614053

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

Sample ID	LCS-61853	SampType:	LCS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114593
Client ID:	LCSW	Batch ID:	61853	TestNo:	EPA 245.1			Analysis Date:	4/11/2017	SeqNo:	2614055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.549	0.050	2.500	0	102	85	115				

Sample ID	N023764-001C-MS	SampType:	MS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114593
Client ID:	ZZZZZZ	Batch ID:	61853	TestNo:	EPA 245.1			Analysis Date:	4/11/2017	SeqNo:	2614056

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	3.051	0.050	2.500	0.02771	121	75	125				

Sample ID	N023764-001C-MSD	SampType:	MSD	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114593
Client ID:	ZZZZZZ	Batch ID:	61853	TestNo:	EPA 245.1			Analysis Date:	4/11/2017	SeqNo:	2614057

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.955	0.050	2.500	0.02771	117	75	125	3.051	3.20	20	

Sample ID	N023764-001C-DUP	SampType:	DUP	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	4/11/2017	RunNo:	114593
Client ID:	ZZZZZZ	Batch ID:	61853	TestNo:	EPA 245.1			Analysis Date:	4/11/2017	SeqNo:	2614058

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050						0.02771	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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID **MB-61859**	SampType: **MBLK**	TestCode: **8015_W_FP_**	Units: **ug/L**	Prep Date: **4/11/2017**	RunNo: **114589**
Client ID: **PBW**	Batch ID: **61859**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **4/11/2017**	SeqNo: **2613825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	ND	25									
Surr: Octacosane	79.675		80.00		99.6	26	152				
Surr: p-Terphenyl	72.656		80.00		90.8	57	132				

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID	MB-R114589	SampType:	MBLK	TestCode:	8015_W_SFP	Units:	ug/L	Prep Date:		RunNo:	114589
Client ID:	PBW	Batch ID:	R114589	TestNo:	EPA 8015B			Analysis Date:	4/11/2017	SeqNo:	2613840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID **E170410LCS**	SampType: **LCS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **114564**
Client ID: **LCSW**	Batch ID: **E17VW036**	TestNo: **EPA 8015B**		Analysis Date: **4/10/2017**	SeqNo: **2613112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	925.000	50	1000	0	92.5	67	136				
Surr: Chlorobenzene - d5	51148.000		50000		102	74	138				

Sample ID **E170410MB1**	SampType: **MBLK**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **114564**
Client ID: **PBW**	Batch ID: **E17VW036**	TestNo: **EPA 8015B**		Analysis Date: **4/10/2017**	SeqNo: **2613113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	ND	50									
Surr: Chlorobenzene - d5	55981.000		50000		112	74	138				

Sample ID **N023717-002BMS**	SampType: **MS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **114564**
Client ID: **ZZZZZZ**	Batch ID: **E17VW036**	TestNo: **EPA 8015B**		Analysis Date: **4/10/2017**	SeqNo: **2613116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	804.000	50	1000	0	80.4	67	136				
Surr: Chlorobenzene - d5	55059.000		50000		110	74	138				

Sample ID **N023717-002BMSD**	SampType: **MSD**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **114564**
Client ID: **ZZZZZZ**	Batch ID: **E17VW036**	TestNo: **EPA 8015B**		Analysis Date: **4/10/2017**	SeqNo: **2613117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	855.000	50	1000	0	85.5	67	136	804.0	6.15	30	
Surr: Chlorobenzene - d5	53900.000		50000		108	74	138		0	0	

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **R170411LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **114590**
Client ID: **LCSW** Batch ID: **R17VW052** TestNo: **EPA 8260B** Analysis Date: **4/11/2017** SeqNo: **2613820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	22.840	0.50	20.00	0	114	69	133				
1,2-Dichloroethane	19.640	0.50	20.00	0	98.2	69	132				
Benzene	19.820	1.0	20.00	0	99.1	81	122				
Ethylbenzene	19.950	1.0	20.00	0	99.8	73	127				
m,p-Xylene	42.250	1.0	40.00	0	106	76	128				
MTBE	18.860	1.0	20.00	0	94.3	65	123				
o-Xylene	20.500	1.0	20.00	0	103	80	121				
Tert-Butanol	89.770	5.0	100.0	0	89.8	70	130				
Toluene	19.230	2.0	20.00	0	96.2	77	122				
Xylenes, Total	62.750	2.0	60.00	0	105	75	125				
Surr: 1,2-Dichloroethane-d4	27.470		25.00		110	72	119				
Surr: 4-Bromofluorobenzene	25.500		25.00		102	76	119				
Surr: Dibromofluoromethane	27.730		25.00		111	85	115				
Surr: Toluene-d8	26.220		25.00		105	81	120				

Sample ID **R170411MB2** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **114590**
Client ID: **PBW** Batch ID: **R17VW052** TestNo: **EPA 8260B** Analysis Date: **4/11/2017** SeqNo: **2613821**

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	29.240		25.00		117	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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **R170411MB2**	SampType: **MBLK**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **114590**
Client ID: **PBW**	Batch ID: **R17VW052**	TestNo: **EPA 8260B**		Analysis Date: **4/11/2017**	SeqNo: **2613821**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	23.870		25.00		95.5	76	119				
Surr: Dibromofluoromethane	28.820		25.00		115	85	115				S
Surr: Toluene-d8	26.000		25.00		104	81	120				

Sample ID **N023764-001AMS**	SampType: **MS**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **114590**
Client ID: **ZZZZZZ**	Batch ID: **R17VW052**	TestNo: **EPA 8260B**		Analysis Date: **4/11/2017**	SeqNo: **2613823**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	23.220	0.50	20.00	0	116	69	133				
1,2-Dichloroethane	20.310	0.50	20.00	0	102	69	132				
Benzene	20.560	1.0	20.00	0	103	81	122				
Ethylbenzene	21.040	1.0	20.00	0	105	73	127				
m,p-Xylene	42.800	1.0	40.00	0	107	76	128				
MTBE	19.210	1.0	20.00	0	96.0	65	123				
o-Xylene	21.400	1.0	20.00	0	107	80	121				
Tert-Butanol	89.310	5.0	100.0	0	89.3	70	130				
Toluene	19.850	2.0	20.00	0.1700	98.4	77	122				
Xylenes, Total	64.200	2.0	60.00	0	107	75	125				
Surr: 1,2-Dichloroethane-d4	27.070		25.00		108	72	119				
Surr: 4-Bromofluorobenzene	26.160		25.00		105	76	119				
Surr: Dibromofluoromethane	26.720		25.00		107	85	115				
Surr: Toluene-d8	26.250		25.00		105	81	120				

Sample ID **N023764-001AMSD**	SampType: **MSD**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **114590**
Client ID: **ZZZZZZ**	Batch ID: **R17VW052**	TestNo: **EPA 8260B**		Analysis Date: **4/11/2017**	SeqNo: **2613824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	24.110	0.50	20.00	0	121	69	133	23.22	3.76	20	
1,2-Dichloroethane	20.200	0.50	20.00	0	101	69	132	20.31	0.543	20	
Benzene	20.320	1.0	20.00	0	102	81	122	20.56	1.17	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: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N023764-001AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **114590**
Client ID: **ZZZZZZ** Batch ID: **R17VW052** TestNo: **EPA 8260B** Analysis Date: **4/11/2017** SeqNo: **2613824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.620	1.0	20.00	0	103	73	127	21.04	2.02	20	
m,p-Xylene	41.690	1.0	40.00	0	104	76	128	42.80	2.63	20	
MTBE	20.070	1.0	20.00	0	100	65	123	19.21	4.38	20	
o-Xylene	21.160	1.0	20.00	0	106	80	121	21.40	1.13	20	
Tert-Butanol	96.290	5.0	100.0	0	96.3	70	130	89.31	7.52	20	
Toluene	19.610	2.0	20.00	0.1700	97.2	77	122	19.85	1.22	20	
Xylenes, Total	62.850	2.0	60.00	0	105	75	125	64.20	2.13	20	
Surr: 1,2-Dichloroethane-d4	27.620		25.00		110	72	119		0		
Surr: 4-Bromofluorobenzene	26.550		25.00		106	76	119		0		
Surr: Dibromofluoromethane	27.620		25.00		110	85	115		0		
Surr: Toluene-d8	25.790		25.00		103	81	120		0		

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N023764
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID **LCS-61903**	SampType: **LCS**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **4/14/2017**	RunNo: **114694**
Client ID: **LCSW**	Batch ID: **61903**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **4/15/2017**	SeqNo: **2618722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.700	1.0	6.000	0	45.0	24	120				
Surr: 1,2-Dichlorobenzene-d4	0.710		1.000		71.0	16	120				
Surr: Phenol-d5	0.420		1.000		42.0	15	120				

Sample ID **LCSD-61903**	SampType: **LCSD**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **4/14/2017**	RunNo: **114694**
Client ID: **LCSS02**	Batch ID: **61903**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **4/15/2017**	SeqNo: **2618723**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.560	1.0	6.000	0	42.7	24	120	2.700	5.32	20	
Surr: 1,2-Dichlorobenzene-d4	0.670		1.000		67.0	16	120		0		
Surr: Phenol-d5	0.360		1.000		36.0	15	120		0		

Sample ID **MB-61903**	SampType: **MBLK**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **4/14/2017**	RunNo: **114694**
Client ID: **PBW**	Batch ID: **61903**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **4/15/2017**	SeqNo: **2618724**

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	0.540		1.000		54.0	16	120				
Surr: Phenol-d5	0.240		1.000		24.0	15	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

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

CHAIN OF CUSTODY RECORD

DATE: 4/7/17
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:	Dan Jablonski	Attention:	Steve Defibaugh - Ref. AFE# 8119S	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 daniel.jablonski@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	4/7/17
Phone:	714-560-4802 Fax: 714-560-4801	Project Name:	**SFPP Norwalk**	ATL Project Manager:	Marlon Cartin		

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test: TPH-g, TPH-d, and TPH-oil, Total TPH (8015B)	BTEX, 1,1-DCA, 1,2-DCA, MTBE, TBA (8260B)	Cu, Pb, Zn (200.8)	Hg (245.1)	Phenol (8270)	Comments
	CONTAINER TYPE								A	V				
	# OF CONTAINERS								2	3				
	PRESERVATIVE								–	H				
	VOLUME (mL)								1000	40				
1	EFF-4-17	EFFLUENT	WW	G	4/7/17	1220	11	75	X	X	X	X	X	pH = 7.3 N023764 - 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
	4/7/17 1250		4-7-17 1419
Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
	4-7-17 1435	Yolanda Rodriguez	4/8/17 8:30 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:
2.8°C SR # 2
GSO #: 0342

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	

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:	4/7/2017	Workorder:	N023764
Rep sample Temp (Deg C):	2.8	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	Golden State Overnight		
Last 4 digits of Tracking No.:	0342	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 4/10/2017

Reviewed By: MBC 4/10/2017

ASSET Laboratories

WORK ORDER Summary

10-Apr-17

WorkOrder: N023764

Client ID: CH2HI03

Project: SFPP - Norwalk Site **QC Level:** RTNE **Date Received:** 4/7/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023764-001A	EFF-04-07	4/7/2017 12:20:00 PM	4/10/2017	Wastewater	EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☑	☐	☐	VW
			4/10/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☑	☐	☐	VW
N023764-001B			4/10/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☑	☐	☐	WW
			4/10/2017		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☑	☐	☐	WW
			4/10/2017		EPA 8015B	Total TPH	☑	☐	☐	WW
N023764-001C			4/10/2017			AQPREP TOTAL METALS: ICP, FLAA	☑	☐	☐	WW
			4/10/2017		EPA 200.8	TOTAL METALS BY ICPMS	☑	☐	☐	WW
			4/10/2017		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☑	☐	☐	WW
			4/10/2017			MERCURY PREP	☑	☐	☐	WW
N023764-001D			4/14/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	☑	☐	☐	WW
			4/14/2017		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☑	☐	☐	WW
N023764-002A	FOLDER	4/10/2017	4/10/2017		Folder	Folder	☐	☐	☐	LAB

ASSET LV Sample Control

From: Marlon Cartin (marlon@assetlaboratories.com) <marlon@assetlaboratories.com>
Sent: Saturday, April 08, 2017 10:56 AM
To: SampleControlLV; Yoandra Rodriguez; quennie@assetlaboratories.com
Subject: Fwd: SFPP Norwalk Midpoint 040417
Attachments: SFPP Norwalk Midpoint COC 040417.pdf; Untitled attachment 00007.htm

Please be guided accordingly.

Marlon B. Cartin
ASSET Laboratories
P: 702.307.2659 ext 410 M:702.439.0421

Sent from my iPhone

Begin forwarded message:

> **From:** "Cortes, Vidal/SCO" <Vidal.Cortes@ch2m.com>
> **Date:** April 7, 2017 at 2:19:15 PM PDT
> **To:** "Marlon B. Cartin" <marlon@assetlaboratories.com>, "Jablonski, Daniel/LAC" <Daniel.Jablonski@CH2M.com>, 'Molky Brar' <molky@assetlaboratories.com>
> **Cc:** "Carino, Vladimir/SCO" <Vladimir.Carino@CH2M.com>, "Irvine, Cameron/SAC" <Cameron.Irvine@CH2M.com>
> **Subject: RE: SFPP Norwalk Midpoint 040417**
>
> Marlon,
>
> It looks like we will not be exceeding any holding times for each analysis (14 days for all). Please run the midpoints that were collected on Tuesday, 4/4, on the quickest TAT possible. We will hold off on analyzing the Effluent and Influent samples collected today until we have reviewed the results of the sample collected on 4/4. Please confirm that we will not be exceeding any holding times for the effluent and influent samples.
>
> Thank you,
>
> **Vidal Cortes**
> *Environmental Engineer*
> **D** 1 714 435 6255
> **M** 1 949 400 0608
>
> **CH2M**
> 6 Hutton Centre Dr
> Suite 700
> Santa Ana, CA 92707
> www.ch2m.com | LinkedIn | Twitter | Facebook

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, April 07, 2017 1:54 PM

To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>; 'Molky Brar' <molky@assetlaboratories.com>
Cc: Carino, Vladimir/SCO <Vladimir.Carino@CH2M.com>
Subject: RE: SFPP Norwalk Midpoint 040417 [EXTERNAL]

Not yet. Courier is on his way now to pick-up the sample. He should be there in 30 minutes.
I'm really sorry Dan for what happened.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 **I** **F:** 702.307.2691 **I** **M:** 702.439.0421

From: Jablonski, Daniel/LAC [mailto:Daniel.Jablonski@CH2M.com]
Sent: Friday, April 07, 2017 1:48 PM
To: Marlon B. Cartin; Cortes, Vidal/SCO; 'Molky Brar'
Cc: Carino, Vladimir/SCO
Subject: RE: SFPP Norwalk Midpoint 040417

Can you confirm you have the effluent sample collected today too?
I'll let you know about the mid

Daniel Jablonski
Senior Project Manager
D 213.228.8271
M 818.257.3630

CH2M
Los Angeles, California
www.ch2m.com | LinkedIn | Twitter | Facebook

From: Marlon B. Cartin [mailto:marlon@assetlaboratories.com]
Sent: Friday, April 07, 2017 1:45 PM
To: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Cortes, Vidal/SCO <Vidal.Cortes@ch2m.com>; 'Molky Brar' <molky@assetlaboratories.com>
Cc: Carino, Vladimir/SCO <Vladimir.Carino@CH2M.com>
Subject: RE: SFPP Norwalk Midpoint 040417 [EXTERNAL]

Hi Dan,

Per conversation with you, we missed picking-up this sample on Tuesday. They went to the site today to pick-up the sample and we already have it. Do you still want us to proceed?

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 **I** **F:** 702.307.2691 **I** **M:** 702.439.0421

From: Jablonski, Daniel/LAC [mailto:Daniel.Jablonski@CH2M.com]
Sent: Friday, April 07, 2017 11:26 AM

To: Cortes, Vidal/SCO; Marlon Cartin ; Molky Brar
Cc: Carino, Vladimir/SCO
Subject: RE: SFPP Norwalk Midpoint 040417

Can we get results by early afternoon?
James is getting samples now but please hold off on running TPH until we see the midpoint results.

Daniel Jablonski
Senior Project Manager
D 213.228.8271
M 818.257.3630

CH2M
Los Angeles, California
www.ch2m.com | LinkedIn | Twitter | Facebook

From: Cortes, Vidal/SCO
Sent: Friday, April 07, 2017 8:43 AM
To: Marlon Cartin <marlon@assetlaboratories.com>; Molky Brar <molky@assetlaboratories.com>
Cc: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Carino, Vladimir/SCO <Vladimir.Carino@CH2M.com>
Subject: RE: SFPP Norwalk Midpoint 040417

Marlon and Molky,

What is the status of this sample?

Thanks,

Vidal

From: Cortes, Vidal/SCO
Sent: Tuesday, April 04, 2017 9:01 AM
To: Dye, James (James_Dye@kindermorgan.com) <James_Dye@kindermorgan.com>
Cc: Jablonski, Daniel/LAC <Daniel.Jablonski@CH2M.com>; Marlon Cartin <marlon@assetlaboratories.com>; 'Molky Brar' <molky@assetlaboratories.com>; Carino, Vladimir/SCO <Vladimir.Carino@CH2M.com>
Subject: SFPP Norwalk Midpoint 040417

James,

For today's midpoint sampling we will only collect a sample from EFF_POL1.

Marlon and Molky,

Please schedule a pick up for today's sample.

Thanks,

Vidal Cortes

Environmental Engineer
D 1 714 435 6255
M 1 949 400 0608

CH2M
6 Hutton Centre Dr
Suite 700
Santa Ana, CA 92707
www.ch2m.com | LinkedIn | Twitter | Facebook

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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

Ship To
ATL INC
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: NOT REQUIRED

Tracking #: 535680342

SDS

LVS

A

LAS VEGAS

C89102A

65206278

Print Date: 4/7/2017 5:53 PM

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

2.8°C
SR #2

May 18, 2017

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

CA-ELAP No.: 2676
NV Cert. No.: NV-00922

Workorder No.: N024158

RE: SFPP-Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on May 09, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Puri Romualdo
Laboratory Director

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

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

ASSET Laboratories

Date: *18-May-17*

CLIENT: CH2MHill
Project: SFPP-Norwalk
Lab Order: N024158
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024158-001A	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001B	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001C	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001D	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001E	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001F	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001G	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001H	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001I	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017
N024158-001J	EFF-05-09	Wastewater	5/9/2017 12:30:00 PM	5/9/2017	5/18/2017

CLIENT: CH2MHill
Lab Order: N024158
Project: SFPP-Norwalk
Lab ID: N024158-001

Client Sample ID: EFF-05-09
Collection Date: 5/9/2017 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170510E** QC Batch: **62160**				PrepDate	**5/10/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/10/2017 07:46 AM
SETTLEABLE MATTER							
			SM2540F				
RunID: **NV00922-WC_170510K** QC Batch: **62180**				PrepDate	**5/10/2017**		Analyst: **QBM**
Settleable Matter	ND	0.095	0.095		ml/L	1	5/10/2017 12:05 PM
HEXANE EXTRACTABLE MATERIAL (HEM)							
			EPA 1664 _HEM REV B				
RunID: **NV00922-WC_170515A** QC Batch: **62232**				PrepDate	**5/15/2017**		Analyst: **LR**
Oil & Grease	ND	0.70	4.3		mg/L	1	5/15/2017 07:30 AM
TURBIDITY							
			SM 2130B				
RunID: **NV00922-WC_170510C** QC Batch: **R115120**				PrepDate			Analyst: **LR**
Turbidity	0.24	0.10	0.10		NTU	1	5/10/2017 11:10 AM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 3510C		**EPA 8270C**		
RunID: **NV00922-MS3_170514A** QC Batch: **62196**				PrepDate	**5/11/2017**		Analyst: **JJS**
Phenol	ND	0.33	1.0		µg/L	1	5/14/2017 10:54 PM
Surr: 1,2-Dichlorobenzene-d4	64.0	0	16-120		%REC	1	5/14/2017 10:54 PM
Surr: Phenol-d5	31.0	0	15-120		%REC	1	5/14/2017 10:54 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **NV00922-MS5_170510A** QC Batch: **P17VW072**				PrepDate			Analyst: **RB**
1,1-Dichloroethane	ND	0.13	0.50		ug/L	1	5/10/2017 11:26 AM
1,2-Dichloroethane	ND	0.13	0.50		ug/L	1	5/10/2017 11:26 AM
Benzene	ND	0.14	1.0		ug/L	1	5/10/2017 11:26 AM
Ethylbenzene	ND	0.14	1.0		ug/L	1	5/10/2017 11:26 AM
m,p-Xylene	ND	0.23	1.0		ug/L	1	5/10/2017 11:26 AM
MTBE	ND	0.13	1.0		ug/L	1	5/10/2017 11:26 AM
o-Xylene	ND	0.13	1.0		ug/L	1	5/10/2017 11:26 AM
Tert-Butanol	ND	1.8	5.0		ug/L	1	5/10/2017 11:26 AM
Toluene	ND	0.14	2.0		ug/L	1	5/10/2017 11:26 AM

Qualifiers:

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

CLIENT: CH2MHill
Lab Order: N024158
Project: SFPP-Norwalk
Lab ID: N024158-001

Client Sample ID: EFF-05-09
Collection Date: 5/9/2017 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
			EPA 8260B				
RunID: **NV00922-MS5_170510A**	QC Batch: **P17VW072**				PrepDate		Analyst: **RB**
Xylenes, Total	ND	1.5	2.0		ug/L	1	5/10/2017 11:26 AM
Surr: 1,2-Dichloroethane-d4	96.0	0	72-119		%REC	1	5/10/2017 11:26 AM
Surr: 4-Bromofluorobenzene	100	0	76-119		%REC	1	5/10/2017 11:26 AM
Surr: Dibromofluoromethane	93.0	0	85-115		%REC	1	5/10/2017 11:26 AM
Surr: Toluene-d8	103	0	81-120		%REC	1	5/10/2017 11:26 AM
TPH EXTRACTABLE BY GC/FID							
	EPA 3510C		**EPA 8015B**				
RunID: **NV00922-GC3_170510A**	QC Batch: **62175**				PrepDate	**5/10/2017**	Analyst: **MDM**
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	5/10/2017 02:03 PM
TPH-Oil (C23-C36)	15	14	25	J	ug/L	1	5/10/2017 02:03 PM
Surr: Octacosane	92.6	0	26-152		%REC	1	5/10/2017 02:03 PM
Surr: p-Terphenyl	95.0	0	57-132		%REC	1	5/10/2017 02:03 PM
GASOLINE RANGE ORGANICS BY GC/FID							
			EPA 8015B				
RunID: **NV00922-GC4_170510A**	QC Batch: **E17VW045**				PrepDate		Analyst: **RB**
TPH-Gasoline (C4-C12)	ND	16	50		ug/L	1	5/10/2017 10:55 AM
Surr: Chlorobenzene - d5	92.6	0	74-138		%REC	1	5/10/2017 10:55 AM
MERCURY BY COLD VAPOR TECHNIQUE							
			EPA 245.1				
RunID: **NV00922-AA1_170510A**	QC Batch: **62170**				PrepDate	**5/10/2017**	Analyst: **MG**
Mercury	0.037	0.018	0.050	J	µg/L	1	5/10/2017 11:08 AM
TOTAL METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_170510A**	QC Batch: **62173**				PrepDate	**5/10/2017**	Analyst: **CEI**
Copper	ND	0.26	0.50		µg/L	1	5/10/2017 04:24 PM
Lead	ND	0.037	0.50		µg/L	1	5/10/2017 04:24 PM
Zinc	5.3	0.27	1.0		µg/L	1	5/10/2017 04:24 PM
TOTAL TPH							
			EPA 8015B				
RunID: **NV00922-GC3_170510A**	QC Batch: **R115131**				PrepDate		Analyst: **MDM**
Total TPH	ND	16	100		ug/L	1	5/10/2017

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
Work Order: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID **LCS-62160**	SampType: **LCS**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **5/10/2017**	RunNo: **115122**
Client ID: **LCSW**	Batch ID: **62160**	TestNo: **SM2540D**		Analysis Date: **5/10/2017**	SeqNo: **2638817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	943.000	10	1000	0	94.3	80	120				

Sample ID **MB-62160**	SampType: **MBLK**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **5/10/2017**	RunNo: **115122**
Client ID: **PBW**	Batch ID: **62160**	TestNo: **SM2540D**		Analysis Date: **5/10/2017**	SeqNo: **2638818**

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 **N024153-001CDUP**	SampType: **DUP**	TestCode: **160.2_2540D**	Units: **mg/L**	Prep Date: **5/10/2017**	RunNo: **115122**
Client ID: **ZZZZZZ**	Batch ID: **62160**	TestNo: **SM2540D**		Analysis Date: **5/10/2017**	SeqNo: **2638824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	34.000	10						33.00	2.99	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID	MB-62180	SampType:	MBLK	TestCode:	160.5_2540F_	Units:	ml/L	Prep Date:	5/10/2017	RunNo:	115328
Client ID:	PBW	Batch ID:	62180	TestNo:	SM2540F			Analysis Date:	5/10/2017	SeqNo:	2649003

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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID **MB-62232**	SampType: **MBLK**	TestCode: **1664_HEM_**	Units: **mg/L**	Prep Date: **5/15/2017**	RunNo: **115240**
Client ID: **PBW**	Batch ID: **62232**	TestNo: **EPA 1664 _H**		Analysis Date: **5/15/2017**	SeqNo: **2645379**

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-62232**	SampType: **LCS**	TestCode: **1664_HEM_**	Units: **mg/L**	Prep Date: **5/15/2017**	RunNo: **115240**
Client ID: **LCSW**	Batch ID: **62232**	TestNo: **EPA 1664 _H**		Analysis Date: **5/15/2017**	SeqNo: **2645380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	32.500	4.0	40.00	0	81.2	78	114				

Sample ID **LCSD-62232**	SampType: **LCSD**	TestCode: **1664_HEM_**	Units: **mg/L**	Prep Date: **5/15/2017**	RunNo: **115240**
Client ID: **LCSS02**	Batch ID: **62232**	TestNo: **EPA 1664 _H**		Analysis Date: **5/15/2017**	SeqNo: **2645381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	32.000	4.0	40.00	0	80.0	78	114	32.50	1.55	18	

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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID **N024158-001G-DUP** SampType: **DUP** TestCode: **200.8_W_SF** Units: **µg/L** Prep Date: **5/10/2017** RunNo: **115135**
Client ID: **ZZZZZZ** Batch ID: **62173** TestNo: **EPA 200.8** Analysis Date: **5/10/2017** SeqNo: **2639126**

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	5.185	1.0						5.264	1.51	20	

Sample ID **N024158-001G-MS** SampType: **MS** TestCode: **200.8_W_SF** Units: **µg/L** Prep Date: **5/10/2017** RunNo: **115135**
Client ID: **ZZZZZZ** Batch ID: **62173** TestNo: **EPA 200.8** Analysis Date: **5/10/2017** SeqNo: **2639129**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.597	0.50	10.00	0	76.0	75	125				
Lead	8.816	0.50	10.00	0	88.2	75	125				
Zinc	87.176	1.0	100.0	5.264	81.9	75	125				

Sample ID **N024158-001G-MSD** SampType: **MSD** TestCode: **200.8_W_SF** Units: **µg/L** Prep Date: **5/10/2017** RunNo: **115135**
Client ID: **ZZZZZZ** Batch ID: **62173** TestNo: **EPA 200.8** Analysis Date: **5/10/2017** SeqNo: **2639130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.681	0.50	10.00	0	76.8	75	125	7.597	1.10	20	
Lead	8.716	0.50	10.00	0	87.2	75	125	8.816	1.14	20	
Zinc	88.837	1.0	100.0	5.264	83.6	75	125	87.18	1.89	20	

Sample ID **LCS-62173** SampType: **LCS** TestCode: **200.8_W_SF** Units: **µg/L** Prep Date: **5/10/2017** RunNo: **115135**
Client ID: **LCSW** Batch ID: **62173** TestNo: **EPA 200.8** Analysis Date: **5/10/2017** SeqNo: **2639131**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.499	0.50	10.00	0	95.0	85	115				
Lead	9.345	0.50	10.00	0	93.4	85	115				
Zinc	92.308	1.0	100.0	0	92.3	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	MB-62173	SampType:	MBLK	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115135
Client ID:	PBW	Batch ID:	62173	TestNo:	EPA 200.8			Analysis Date:	5/10/2017	SeqNo:	2639132

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									

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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID	MB-R115120	SampType:	MBLK	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	115120
Client ID:	PBW	Batch ID:	R115120	TestNo:	SM 2130B			Analysis Date:	5/10/2017	SeqNo:	2638668

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

Sample ID	N024158-001EDUP	SampType:	DUP	TestCode:	2130_W	Units:	NTU	Prep Date:		RunNo:	115120
Client ID:	ZZZZZZ	Batch ID:	R115120	TestNo:	SM 2130B			Analysis Date:	5/10/2017	SeqNo:	2638670

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Turbidity	0.230	0.10						0.2400	4.26	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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID	MB-62170	SampType:	MBLK	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115126
Client ID:	PBW	Batch ID:	62170	TestNo:	EPA 245.1			Analysis Date:	5/10/2017	SeqNo:	2638766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.021	0.050									J

Sample ID	LCS-62170	SampType:	LCS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115126
Client ID:	LCSW	Batch ID:	62170	TestNo:	EPA 245.1			Analysis Date:	5/10/2017	SeqNo:	2638767

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	N024158-001G-MS	SampType:	MS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115126
Client ID:	ZZZZZZ	Batch ID:	62170	TestNo:	EPA 245.1			Analysis Date:	5/10/2017	SeqNo:	2638768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.535	0.050	2.500	0.03660	99.9	75	125				

Sample ID	N024158-001G-MSD	SampType:	MSD	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115126
Client ID:	ZZZZZZ	Batch ID:	62170	TestNo:	EPA 245.1			Analysis Date:	5/10/2017	SeqNo:	2638769

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.552	0.050	2.500	0.03660	101	75	125	2.535	0.665	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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID **MB-62175**	SampType: **MBLK**	TestCode: **8015_W_FP_**	Units: **ug/L**	Prep Date: **5/10/2017**	RunNo: **115131**
Client ID: **PBW**	Batch ID: **62175**	TestNo: **EPA 8015B**	**EPA 3510C**	Analysis Date: **5/10/2017**	SeqNo: **2638833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	15.266	25									J
Surr: Octacosane	70.202		80.00		87.8	26	152				
Surr: p-Terphenyl	72.228		80.00		90.3	57	132				

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID	MB-R115131	SampType:	MBLK	TestCode:	8015_W_SFP	Units:	ug/L	Prep Date:		RunNo:	115131
Client ID:	PBW	Batch ID:	R115131	TestNo:	EPA 8015B			Analysis Date:	5/10/2017	SeqNo:	2638841

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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID **E170510LCS**	SampType: **LCS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115128**
Client ID: **LCSW**	Batch ID: **E17VW045**	TestNo: **EPA 8015B**		Analysis Date: **5/10/2017**	SeqNo: **2638791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	928.000	50	1000	0	92.8	67	136				
Surr: Chlorobenzene - d5	49973.000		50000		99.9	74	138				

Sample ID **E170510MB1**	SampType: **MBLK**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115128**
Client ID: **PBW**	Batch ID: **E17VW045**	TestNo: **EPA 8015B**		Analysis Date: **5/10/2017**	SeqNo: **2638792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	ND	50									
Surr: Chlorobenzene - d5	53123.000		50000		106	74	138				

Sample ID **N024158-001BMS**	SampType: **MS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115128**
Client ID: **ZZZZZZ**	Batch ID: **E17VW045**	TestNo: **EPA 8015B**		Analysis Date: **5/10/2017**	SeqNo: **2638794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	772.000	50	1000	0	77.2	67	136				
Surr: Chlorobenzene - d5	44328.000		50000		88.7	74	138				

Sample ID **N024158-001BMSD**	SampType: **MSD**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115128**
Client ID: **ZZZZZZ**	Batch ID: **E17VW045**	TestNo: **EPA 8015B**		Analysis Date: **5/10/2017**	SeqNo: **2638795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	865.000	50	1000	0	86.5	67	136	772.0	11.4	30	
Surr: Chlorobenzene - d5	48057.000		50000		96.1	74	138		0	0	

Qualifiers:

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

Calculations are based on raw values

CLIENT: CH2MHill
Work Order: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P170510LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115129**
Client ID: **LCSW** Batch ID: **P17VW072** TestNo: **EPA 8260B** Analysis Date: **5/10/2017** SeqNo: **2638798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	17.830	0.50	20.00	0	89.2	69	133				
1,2-Dichloroethane	19.640	0.50	20.00	0	98.2	69	132				
Benzene	20.890	1.0	20.00	0	104	81	122				
Ethylbenzene	21.220	1.0	20.00	0	106	73	127				
m,p-Xylene	44.110	1.0	40.00	0	110	76	128				
MTBE	16.440	1.0	20.00	0	82.2	65	123				
o-Xylene	22.720	1.0	20.00	0	114	80	121				
Tert-Butanol	88.590	5.0	100.0	0	88.6	70	130				
Toluene	19.570	2.0	20.00	0	97.9	77	122				
Xylenes, Total	66.830	2.0	60.00	0	111	75	125				
Surr: 1,2-Dichloroethane-d4	23.030		25.00		92.1	72	119				
Surr: 4-Bromofluorobenzene	25.920		25.00		104	76	119				
Surr: Dibromofluoromethane	22.330		25.00		89.3	85	115				
Surr: Toluene-d8	24.950		25.00		99.8	81	120				

Sample ID **P170510MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115129**
Client ID: **PBW** Batch ID: **P17VW072** TestNo: **EPA 8260B** Analysis Date: **5/10/2017** SeqNo: **2638799**

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	23.820		25.00		95.3	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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P170510MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115129**
Client ID: **PBW** Batch ID: **P17VW072** TestNo: **EPA 8260B** Analysis Date: **5/10/2017** SeqNo: **2638799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	25.360		25.00		101	76	119				
Surr: Dibromofluoromethane	23.530		25.00		94.1	85	115				
Surr: Toluene-d8	25.530		25.00		102	81	120				

Sample ID **N024158-001FMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115129**
Client ID: **ZZZZZZ** Batch ID: **P17VW072** TestNo: **EPA 8260B** Analysis Date: **5/10/2017** SeqNo: **2638801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	18.360	0.50	20.00	0	91.8	69	133				
1,2-Dichloroethane	19.060	0.50	20.00	0	95.3	69	132				
Benzene	20.620	1.0	20.00	0	103	81	122				
Ethylbenzene	21.320	1.0	20.00	0	107	73	127				
m,p-Xylene	43.700	1.0	40.00	0	109	76	128				
MTBE	16.000	1.0	20.00	0	80.0	65	123				
o-Xylene	21.840	1.0	20.00	0	109	80	121				
Tert-Butanol	74.040	5.0	100.0	0	74.0	70	130				
Toluene	19.650	2.0	20.00	0	98.2	77	122				
Xylenes, Total	65.540	2.0	60.00	0	109	75	125				
Surr: 1,2-Dichloroethane-d4	23.270		25.00		93.1	72	119				
Surr: 4-Bromofluorobenzene	25.860		25.00		103	76	119				
Surr: Dibromofluoromethane	22.580		25.00		90.3	85	115				
Surr: Toluene-d8	25.520		25.00		102	81	120				

Sample ID **N024158-001FMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115129**
Client ID: **ZZZZZZ** Batch ID: **P17VW072** TestNo: **EPA 8260B** Analysis Date: **5/10/2017** SeqNo: **2638802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	18.360	0.50	20.00	0	91.8	69	133	18.36	0	20	
1,2-Dichloroethane	19.550	0.50	20.00	0	97.8	69	132	19.06	2.54	20	
Benzene	20.540	1.0	20.00	0	103	81	122	20.62	0.389	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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N024158-001FMSD**	SampType: **MSD**	TestCode: **8260_WP_SF**	Units: **ug/L**	Prep Date:	RunNo: **115129**
Client ID: **ZZZZZZ**	Batch ID: **P17VW072**	TestNo: **EPA 8260B**		Analysis Date: **5/10/2017**	SeqNo: **2638802**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.900	1.0	20.00	0	104	73	127	21.32	1.99	20	
m,p-Xylene	42.500	1.0	40.00	0	106	76	128	43.70	2.78	20	
MTBE	16.640	1.0	20.00	0	83.2	65	123	16.00	3.92	20	
o-Xylene	22.020	1.0	20.00	0	110	80	121	21.84	0.821	20	
Tert-Butanol	82.910	5.0	100.0	0	82.9	70	130	74.04	11.3	20	
Toluene	19.660	2.0	20.00	0	98.3	77	122	19.65	0.0509	20	
Xylenes, Total	64.520	2.0	60.00	0	108	75	125	65.54	1.57	20	
Surr: 1,2-Dichloroethane-d4	24.310		25.00		97.2	72	119		0		
Surr: 4-Bromofluorobenzene	26.100		25.00		104	76	119		0		
Surr: Dibromofluoromethane	22.890		25.00		91.6	85	115		0		
Surr: Toluene-d8	25.560		25.00		102	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: N024158
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID **LCS-62196**	SampType: **LCS**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115236**
Client ID: **LCSW**	Batch ID: **62196**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **5/14/2017**	SeqNo: **2645243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.260	1.0	6.000	0	37.7	24	120				
Surr: 1,2-Dichlorobenzene-d4	0.610		1.000		61.0	16	120				
Surr: Phenol-d5	0.340		1.000		34.0	15	120				

Sample ID **LCSD-62196**	SampType: **LCSD**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115236**
Client ID: **LCSS02**	Batch ID: **62196**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **5/14/2017**	SeqNo: **2645244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	1.920	1.0	6.000	0	32.0	24	120	2.260	16.3	20	
Surr: 1,2-Dichlorobenzene-d4	0.580		1.000		58.0	16	120		0		
Surr: Phenol-d5	0.350		1.000		35.0	15	120		0		

Sample ID **MB-62196**	SampType: **MBLK**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115236**
Client ID: **PBW**	Batch ID: **62196**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **5/14/2017**	SeqNo: **2645245**

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	0.580		1.000		58.0	16	120				
Surr: Phenol-d5	0.300		1.000		30.0	15	120				

Qualifiers:

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

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

CHAIN OF CUSTODY RECORD

DATE: 5/9/17
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@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	5/9/17
Phone: 714-560-4802	Fax: 714-560-4801	Project Name:	SFPP Norwalk	ATL Project Manager:	Marlon Cartin		

Section E (Required Sample Information)

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test	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)	BOD (@ 20 deg. C)(SM5210B)	Total Suspended Solids (SM2540D); Turbidity (SM2130B)	Oil & Grease (1664)	Ammonia Nitrogen (as N) (SM-4500 NH3C)	Settleable Solids (SM2540F)					Comments
	CONTAINER TYPE									V	V	A	P	A	P	P	G	P	P					
	# OF CONTAINERS									3	3	2	1	2	1	1	2	1	1					
	PRESERVATIVE									H	H	--	N	--	--	--	S	S	--					
	VOLUME (mL)									40	40	1000	500	1000	1000	1000	1000	500	1000					
1	EFF-05-09	EFFLUENT	WW	G	5/9/17	1230	17	73		X	X	X	X	X	X	X	X	X	X					N024158-01
2																								Field pH = 7.3; Field Temperature = 73; Field Salinity = ▲ 9 (James Dye to collect) 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
	5/9/17 1300		5/9/17 15:16
Relinquished by (Signature and Printed Name)	Date / Time	Relinquished by (Signature and Printed Name)	Date / Time
	5/9/17 1530	Yoandra Rodriguez	5/10/17 8:25am
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:
1.9°C TR#2
650 #: 8294

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	

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:	5/9/2017	Workorder:	N024158
Rep sample Temp (Deg C):	1.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 8294 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:

5/18/2017

Checklist Completed By: YR 5/10/2017 Reviewed By: For MBC

ASSET Laboratories

WORK ORDER Summary

10-May-17

WorkOrder: N024158

Client ID: CH2HI03

Project: SFPP-Norwalk **QC Level:** RTNE **Date Received:** 5/9/2017

Comments: Field pH = 7.3; Field Temp = 7.3; Field Salinity = 9; 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
N024158-001A	EFF-05-09	5/9/2017 12:30:00 PM	5/16/2017	Wastewater		Oil and Grease Sample Prep	☐	☐	☐	WW
			5/16/2017		EPA 1664 _HEM Rev B	Hexane Extractable Material (HEM)	☐	☐	☐	WW
N024158-001B			5/10/2017		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☐	Consumed
N024158-001C			5/10/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☐	MDM
			5/10/2017		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☐	MDM
			5/10/2017		EPA 8015B	Total TPH	☐	☐	☐	MDM
N024158-001D			5/16/2017		SM2540F	SETTLEABLE MATTER	☐	☐	☐	WW
			5/16/2017			Setteable Matter	☐	☐	☐	WW
N024158-001E			5/16/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/16/2017			Total Suspended Solids Prep	☐	☐	☐	WW
			5/16/2017		SM 2130B	TURBIDITY	☐	☐	☐	WW
N024158-001F			5/10/2017		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	Consumed
N024158-001G			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			5/12/2017		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			5/12/2017			MERCURY PREP	☐	☐	☐	WW
N024158-001H			5/16/2017		SM4500-NH3C	AMMONIA-N	☐	☐	☑	SUB
N024158-001I			5/10/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	☐	☐	☐	WW
			5/16/2017		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WW
N024158-001J			5/16/2017		SM 5210 B	BIOCHEMICAL OXYGEN DEMAND	☐	☐	☑	SUB

ASSET Laboratories

WORK ORDER Summary

10-May-17

WorkOrder: N024158

Client ID: CH2HI03

Project: SFPP-Norwalk **QC Level:** RTNE **Date Received:** 5/9/2017

Comments: Field pH = 7.3; Field Temp = 7.3; Field Salinity = 9; 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
N024158-002A	FOLDER	5/10/2017	5/10/2017		Folder	Folder	☐	☐	☐	LAB
			5/10/2017		Folder	Folder	☐	☐	☐	LAB

Bc Labs
ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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: 562.219.7435
www.assetlaboratories.com

Client: Asset Labs	**Report to:**	**Bill to:**	**EDD Requirement**	**QA/QC**
Address:	**Company:**	**Address:**	Excel EDD ☐	RTNE ☐
Address:	**Email:**		Geotracker ☐	RWQCB ☐
			~~Labspec~~ ☐	~~CalTrans~~ ☐
Phone: **Fax:**	**Address:**	**Email to:** **PO#** N24158A	Others ☐	Level III ☐
Submitted By: Molly Brar		**Phone:** **Fax:**	Specify:	LEVEL IV ☐
Title:	**Phone:** **Fax:**		Global ID:	Regulatory ☐
Signature: **Date:**	**Sampler's Signature and Date:**			Specify State:

I hereby authorize ASSET Labs to perform the tests indicated below:

Project Name:

Project Number:

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.

Sampler's Name:

Sampe Receipt Condition

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

Sample Temp:

Courier:

Tracking No.

Remarks

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Matrix: Water	Solid	Others	Analyses Requested: BOD	Ammonia nitrogen	Turn Around Time	No. of container	Container Type	PRESERVATION
1	N024158-01	EFF-05-09	5/9/17	1230	✓			X	X	E	2	P	
2													
3													
4													
5													
6													
7													
8													
9													
10													

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

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
M. G	5/9/17 1530		
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 followiing day if samples received after 3:00 PM.

Special Instruction:

Terms

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

Preservatives:

H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
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

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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

Ship To
ATL INC
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: NOT REQUIRED

Tracking #: 536058294 **CPS**

LVS **A**
LAS VEGAS

C89102A

66604829

Print Date: 5/9/2017 4:04 PM

Package 1 of 3

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

1-9-C
1 of 2

Date of Report: 05/17/2017

Molky Brar

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

Client Project:	Cerritos Lab
BCL Project:	Cerritos
BCL Work Order:	1712769
Invoice ID:	B267952

Enclosed are the results of analyses for samples received by the laboratory on 5/10/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Vanessa Sandoval
Client Service Rep

Authorized Signature

Table of Contents

Chain of Custody and Cooler Receipt Form for 1712769 Page 1 of 2

Bc Labs
ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

17-12769

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 Labs	Report to:	Bill to:
Address:	Company:	Address:
Address:	Email:	
Phone: / Fax:	Address:	Email to: / PO#:
Submitted By: Molky Brar		Phone: / Fax:
Title:	Phone: / Fax:	
Signature: / Date:	Sampler's Signature and Date:	
I hereby authorize ASSET Labs to perform the tests indicated below:		
Project Name:	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 Number:	Sampler's Name:	

EDD Requirement		QA/QC		Sampe Receipt Condition	Y	N
Excel EDD	☐	RTNE	☐			
Geotracker	☐	RWQCB	☐	1. Chilled	☐	☐
Labspec	☐	CalTrans	☐	2. Headspace	☐	☐
Others	☐	Level III	☐	3. Container Intact	☐	☐
Specify:		LEVEL IV	☐	4. Seal Present	☐	☐
		Regulatory	☐	5. IR number		
Global ID:		Specify State:		6. Method of Cooling		
				Sample Temp:		
				Courier:		
				Tracking No.		

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	BOD	Ammonia nitrogen	Turn Around Time	No. of container	Container Type	PRESERVATION	Remarks
1	1	EFF-05-09	5/9/17	1230	✓			X	X	E	2	P		
2														
3														
4														
5														
6														
7														
8														
9														
10														

Stamp: CHK BY [signature] DISTRIBUTION MX SUB-OUT ☐

Stamp: SHORT HOLDING TIME — Cr^{+6} NO_2 NO_3 OP SS DO Cl_2 (BOD) MBAS COT

Relinquished by (Signature and Printed Name)	Date / Time	Received by (Signature and Printed Name)	Date / Time
[signature]	5/9/17 1530	[signature]	5.10.17 10:34

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:

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

Preservatives:			
H = HCl	N = HNO_3	S = H_2SO_4	C = 4°C
Z = $Zn(AC)_2$	O = NaOH	T = $Na_2S_2O_3$	
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

Chain of Custody and Cooler Receipt Form for 1712769 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 of ___

Submission #: 17-12769

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐	Ice Chest ☒ None ☐ Box ☐	YES ☐ NO ☐
BC Lab Field Service ☐ Other ☒ (Specify) GSO	Other ☐ (Specify)_____	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: Type Thermometer ID: 207 Date/Time 5.10.17

Temperature: (A) 2.1 °C / (C) 2.9 °C Analyst Init 10:36

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES	A									
4oz / 8oz / 16oz PE UNPRES	~~B~~	IOC 51617								
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS	B									
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										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:_____

Sample Numbering Completed By: _____ Date/Time: 5-10-17 1200

A = Actual / C = Corrected

Rev 21 05/23/2016

[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1712769-01	**COC Number:**	---	**Receive Date:**	05/10/2017 10:36
	Project Number:	---	**Sampling Date:**	05/09/2017 12:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	EFF.-05-09	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Water

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

Water Analysis (General Chemistry)

BCL Sample ID: 1712769-01 | **Client Sample Name:** EFF.-05-09, 5/9/2017 12:30:00PM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Ammonia as NH3	ND	mg/L	0.13	0.025	EPA-350.1	ND		1
Biochemical Oxygen Demand - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-350.1	05/15/17	05/15/17 16:47	RCC	SC-1	1	B[E1588
2	SM17-5210B	05/11/17	05/11/17 06:55	HPR	SKA-1	1.525	B[E1853

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[E1588						
Ammonia as NH3	B[E1588-BLK1	ND	mg/L	0.13	0.025	
QC Batch ID: B[E1853						
Biochemical Oxygen Demand - Seeded	B[E1853-BLK1	ND	mg/L	1.0	1.0	

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

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: B[E1588										
Ammonia as NH3	B[E1588-BS1	LCS	1.2453	1.2160	mg/L	102		90 - 110		
QC Batch ID: B[E1853										
Biochemical Oxygen Demand - Seeded	B[E1853-BS1	LCS	195.50	198.00	mg/L	98.7		85 - 115		

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

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: B[E1588	Used client sample: Y - Description: EFF.-05-09, 05/09/2017 12:30										
Ammonia as NH3	DUP	1712769-01	ND	ND		mg/L			10		
	MS	1712769-01	ND	1.4541	1.3511	mg/L		108		90 - 110	
	MSD	1712769-01	ND	1.4499	1.3511	mg/L	0.3	107	10	90 - 110	
QC Batch ID: B[E1853	Used client sample: N										
Biochemical Oxygen Demand - Seeded	DUP	1712743-01	37.123	37.271		mg/L	0.4		20		

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

Reported: 05/17/2017 14:33
Project: Cerritos
Project Number: Cerritos Lab
Project Manager: Molky Brar

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit

Eric Davis
CH2M
1000 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90017

May 26, 2017

Eric,

I have enclosed our report "NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent: Species Screening" for the effluent samples collected on May 8, 10, and 12, 2017. This round of species screening testing was intended to provide a comparative assessment of the sensitivity of the alternative marine/estuarine test species to any toxicity that might be present in the SFPP Norwalk Pump Station effluent. As per your new NPDES permit, the test and the resultant data analysis conformed to the EPA's new 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 three species tests used in this assessment consisted of:

- 48-hr algal germination and growth test with giant kelp, *Macrocystis pyrifera*;
- echinoderm sperm fertilization test with purple urchin, *Strongylocentrotus purpuratus*; and
- 7-day survival and growth test with inland silversides, *Menidia beryllina*.

The results of these tests are summarized below, and indicated that there was no toxicity to any of the species tested:

Test Species	Test Endpoint	Percent (%) Effect	TST Analysis
Macrocystis pyrifera	Germination	No reduction	"Pass" (= non-toxic)
	Growth	No reduction	"Pass" (= non-toxic)
Strongylocentrotus purpuratus	Fertilization	No reduction	"Pass" (= non-toxic)
Menidia beryllina	Survival	2.5%	"Pass" (= non-toxic)
	Growth	No reduction	"Pass" (= non-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 Worrell
Sr. Aquatic Ecotoxicologist

Cc: Benny Pataray, CH2M
Vladimir Carino, CH2M
Cameron Irvine, CH2M

NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent: Species Screening

Samples collected May 8, 10, and 12, 2017

Prepared For

CH2M
1000 Wilshire Boulevard, Suite 2100
Los Angeles, CA 90017

Prepared By

Pacific EcoRisk, Inc.
2250 Cordelia Rd.
Fairfield, CA 94534

May 2017

PACIFIC ECORISK
ENVIRONMENTAL CONSULTING & TESTING

NPDES Compliance Chronic Toxicity Testing of the SFPP Norwalk Pump Station Effluent: Species Screening

Samples collected May 8, 10, and 12, 2017

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. As part of their NPDES Permit renewal process, SFPP Norwalk is required to perform a screening of the sensitivity of potential test organisms to any chronic toxicity that may exist in the SFPP Norwalk effluent. The current round of testing was intended to assess the sensitivity of three test species, including:

- 48-hr algal germination and growth test with giant kelp, *Macrocystis pyrifera*;
- echinoderm sperm fertilization test with purple urchin, *Strongylocentrotus purpuratus*; and
- 7-day survival and growth test with inland silversides, *Menidia beryllina*.

These tests were performed using effluent samples collected May 8, 10, and 12, 2017. In order to assess the sensitivity of the test organisms to toxicant stress, monthly reference toxicant tests were 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:

- Short-Term Methods for Measuring the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136); and
- 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 Samples

On May 8, 10, and 12, samples of SFPP Norwalk effluent 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.

Table 1. Initial water quality characteristics of the SFPP Norwalk effluent samples.

Sample Collection Date	Sample Receipt Date	Sample ID	Temp (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Conductivity (μS/cm)	Total Ammonia (mg/L N)
5/8/17	5/9/17	EFF-05-08-TOX	0.5	7.16	10.4	0.9	1870	<1.0
5/10/17	5/11/17	EFF-05-10-TOX	0.0	7.20	8.8	0.9	1774	<1.0
5/12/17	5/13/17	EFF-05-12-TOX	1.1	7.14	11.3	0.9	1717	<1.0

2.2 Algal Germination and Growth Toxicity Testing with *Macrocystis pyrifera*

The chronic toxicity test with *M. pyrifera* consists of exposing kelp zoospores to the effluent for 48 hrs, after which the effects on zoospore germination and subsequent gametophyte growth (measured as gametophyte [germ] tube length) determined. The specific procedures used in this test are described below.

Zoospores were obtained from adult kelp fronds (blades) collected from wild field populations (David Gutoff, San Diego, CA). Approximately 30 fronds were cleaned and then dried by scrubbing with clean paper towels, after which the blades were further desiccated by being exposed to air for approximately one hour. The desiccated kelp fronds were then rinsed with filtered seawater and placed into a beaker containing filtered seawater at 15˚C in order to induce release of zoospores. After allowing zoospore release for approximately one hour, the kelp fronds were removed from the beaker, and the remaining solution was allowed to settle for 30 minutes, after which approximately 25% of the overlying water was decanted from the top of the solution into a separate clean beaker. Zoospore density was determined using a hemacytometer, and was then adjusted as appropriate to provide correct inoculation volume for use in the effluent test.

The Lab Water Control medium for this test consisted of 1-μm filtered natural seawater (obtained from the U.C. Granite Canyon Marine Laboratory). The effluent was adjusted to the test salinity of approximately 33 ppt via addition of an artificial sea salt (Tropic Marin®). The effluent was tested at the "instream waste concentration" of 100% effluent (the only effluent concentration tested. As an additional QA measure, and in order to assess potential effects of the salt addition on the effluent, a Salt Control consisting of natural seawater diluted to the sample salinity [Table 1] using Type 1 lab water, after which the water was re-adjusted up to the test salinity using the artificial sea salt was prepared and tested. Routine water quality characteristics (pH, D.O., and salinity) were measured for each test solution prior to use in the test.

There were five replicates at each test treatment, each replicate consisting of a rectangular 450-mL polyethylene dish containing 200 mL of test solution. A standard glass microscope slide was placed into each replicate to provide a zoospore settling and germination substrate, after which the test was initiated by the addition of zoospores into each replicate to a final density of approximately 7,500 spores/mL. These replicate containers were randomly positioned within a temperature-controlled room at 15˚C, under cool-white fluorescent lighting on a 16L:8D photoperiod.

After 48 (±2) hrs exposure, the test was terminated, and final test solution water quality characteristics were determined. The contents of each replicate container were then preserved via addition of 5% glutaraldehyde. Each test replicate slide was subsequently examined microscopically to determine the percent successful germination of the settled zoospores and the growth of the resulting gametophyte, as measured by germ tube length. The resulting germination and germ tube length data were analyzed to evaluate any reductions caused by the

effluent; all statistical analyses were performed using the CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

2.2.1 Reference Toxicant Testing of the Giant Kelp *Macrocystis pyrifera*

In order to assess the sensitivity of the kelp test organisms to toxic stress, a monthly reference toxicant test was performed. This reference toxicant test was performed similarly to the effluent test, except that test solutions consisted of Lab Water Control medium (filtered seawater) spiked with $CuCl_2$ at concentrations of 5.6, 10, 18, 32, 56, 100 and 180 μg/L. The resulting test response data were analyzed to determine key dose-response point estimates (e.g., EC_{50}); all statistical analyses were made 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 reference toxicant test database for this species.

2.3 Echinoderm Fertilization Toxicity Testing with *Strongylocentrotus purpuratus*

The echinoderm sperm cell fertilization test consists of exposing purple sea urchin or sand dollar sperm to the effluent, after which effects on successful fertilization of the eggs are determined. The specific procedures used in this test are described below.

The Lab Water Control medium for this test consisted of 1-μm filtered natural seawater (obtained from the U.C. Granite Canyon Marine Laboratory). The effluent was adjusted to the test salinity of approximately 33 ppt via addition of an artificial sea salt (Tropic Marin®). The effluent was tested at the "instream waste concentration" of 100% effluent (the only effluent concentration tested). As an additional QA measure, and in order to assess potential effects of the salt addition on the effluent, a Salt Control consisting of natural seawater diluted to the sample salinity [Table 1] using Type 1 lab water, after which the water was re-adjusted up to the test salinity using the artificial sea salt was prepared and tested. Routine water quality characteristics (pH, D.O., and salinity) were measured for each test solution prior to use in this test.

Sperm and eggs were generated from gravid adult purple urchins, *S. purpuratus*. The gravid adult urchins were obtained from a commercial supplier (David Gutoff, San Diego, CA). Upon receipt at the PER lab, the urchins were held in tanks of aerated, filtered seawater at 12˚C. Spawning of the urchins was induced by injection with 0.5 M KCl, followed by vigorous shaking of the animals to stimulate gamete release, as per EPA guidelines. The gametes from each spawning individual were collected and examined microscopically; the gametes exhibiting the best quality (as determined from morphology and trial fertilization) were pooled to provide a composite of high quality sperm and a composite of high quality eggs.

There were four replicates at each test treatment. Each test replicate consisted of a 30-mL glass vial to which five mL of appropriate test solution was added. The test was initiated with the inoculation of an appropriate quantity of sperm into each replicate vial to achieve a final sperm-to-egg ratio of 500:1. After a 20-min exposure period, ~1000 eggs were inoculated into each vial.

After an additional 20-min exposure, the test was terminated with all of the test embryos being fixed by the addition of 5% glutaraldehyde.

The contents of each preserved test vial were subsequently examined microscopically to determine the percentage of embryos exhibiting complete fertilization. The resulting percent fertilization data were analyzed to evaluate any reductions caused by the effluent; all statistical analyses were performed using the CETIS® statistical software.

2.3.1 Reference Toxicant Testing of the Purple Urchin Embryos

In order to assess the sensitivity of the urchin sperm to toxicant stress, a monthly reference toxicant test was performed. The reference toxicant test was performed similarly to the effluent test, except that test solutions consisted of Lab Water Control medium spiked with KCl at concentrations of 0.25, 0.5, 1, 2, and 4 g/L KCl. The resulting test response data were analyzed to determine key dose-response point estimates (e.g., EC50); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the "typical response" range established by the mean ± 2 SD of the point estimates generated by the reference toxicant test database.

2.4 Survival and Growth Toxicity Testing with *Menidia beryllina*

The chronic toxicity test with *M. beryllina* consists of exposing the 7-11 day old 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 *M. beryllina* used in this test were obtained from a commercial supplier (Aquatic Indicators Inc., St. Augustine, FL). Upon receipt at the lab, the fish were placed in aerated tanks containing saltwater at 25 ppt, and were fed brine shrimp nauplii *ad libitum* during this pre-test holding period.

The Lab Water Control medium for this test consisted of Type 1 lab water (reverse-osmosis, de-ionized water) adjusted to a salinity of 25 ppt using a commercial artificial sea salt (Crystal Sea®-bioassay grade). Each day, an aliquot of effluent sample was similarly adjusted to a salinity of 25 ppt using the same artificial sea salt. The effluent was tested at the "instream waste concentration" of 100% effluent (the only effluent concentration tested). "New" water quality characteristics (pH, D.O., and salinity) 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 solution in a 600-mL glass beaker. The test was initiated by randomly allocating ten 10-day old fish into each replicate beaker. The beakers were randomly positioned in a temperature-controlled room at 25˚C (with temperature being monitored daily) under a 16L:8D photoperiod. The fish were fed freshly-hatched brine shrimp nauplii twice daily.

Each day of the test, fresh test solutions were prepared and characterized as before. Each replicate was examined, with any dead animals, uneaten food, wastes, and other detritus being removed. The number of live fish in each replicate was determined, after which approximately 80% of the test media in each beaker was carefully poured out and replaced with fresh test solution. "Old" water quality characteristics (pH, D.O., and salinity) were measured on the old test water 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 hrs 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 (n=10) to determine the "biomass value". The resulting survival and growth data were analyzed to evaluate any impairment caused by the effluent; all statistical analyses were made using CETIS® statistical software.

2.4.1 Reference Toxicant Testing of the *Menidia beryllina*

In order to assess the sensitivity of the test organisms to toxic stress, a monthly reference toxicant test was performed. This reference toxicant test was performed similarly to the effluent toxicity test, except that test solutions consisted of Lab Water Control medium spiked with KCl at concentrations of 0.5, 1, 1.25, 1.5, and 2 g/L. The resulting test response data were analyzed to determine key dose-response point estimates (e.g., EC_{50}); all statistical analyses were made 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 on *Macrocystis pyrifera*

The results of this test are summarized below in Table 2. The effluent "passed" the TST analysis for both germination and growth, indicating that the effluent was not toxic to *M. pyrifera*. The test data and summary of statistical analyses for this test are presented in Appendix B.

Table 2. Effects of SFPP Norwalk effluent on *Macrocystis pyrifera* germination and growth.

Effluent Treatment	Mean % Germination	Mean Gametophyte Germ Tube Length (μm)
Lab Water Control	93.4	16.1
Salt control	94.8	15.9
100% Effluent	94.8	16.2
Summary of Key Statistics		
Percent (%) Effect =	No reduction	No reduction
TST Analysis =	"Pass" (= non-toxic)	"Pass" (= non-toxic)

3.1.1 Reference Toxicant Toxicity to *Macrocystis pyrifera*

The results of this test are summarized below in Table 3. The EC_{50} of 158 μg/L $CuCl_2$ consistent with the "typical response" range established by the reference toxicant test database for this species, but the IC_{25} of 55.8 μg/L $CuCl_2$ was slightly outside of the typical range of 8.5 – 52.9 μg/L, indicating that the test organisms used for the monthly reference toxicant test were slightly less sensitive to toxicant stress than is typical. The test data and summary of statistical analyses for this test are presented in Appendix C.

Table 3. Reference toxicant testing: effects of $CuCl_2$ on *Macrocystis pyrifera* germination and growth.

$CuCl_2$ Treatment (μg/L)	Mean % Germination	Mean Gametophyte Germ Tube Length (μm)
Lab Water Control	96.6	15.4
5.6	95.0	14.8
10	**94.0***	15.1
18	**93.4***	14.4
32	**88.8***	13.1
56	**84.0***	11.5
100	**76.0***	10.2
180	**36.4***	8.12
Summary of Key Statistics		
Germination EC_{50} or Growth IC_{50} =	158 μg/L $CuCl_2$	>180[a] μg/L $CuCl_2$

* The response at this test treatment was significantly less than the Lab Control treatment response ($p < 0.05$).
a – As the IC50 was >180 μg/L, the IC_{25} of 55.8 μg/L was compared to the reference toxicant database to evaluate organism sensitivity.

3.2 Effects of SFPP Norwalk Effluent on Purple Urchins

The results of this test are summarized below in Table 4. The effluent "passed" the TST analysis for fertilization, indicating that the effluent was not toxic to purple urchin fertilization. The test data and summary of statistical analyses for this test are presented in Appendix D.

Table 4. Effects of SFPP Norwalk effluent on echinoderm (purple urchin) sperm fertilization.	
Effluent Treatment	Mean % Successful Fertilization
Lab Water Control	98.8
Salt Control	99.0
100% Effluent	99.0
Summary of Key Statistics	
Percent (%) Effect =	No reduction
TST Analysis =	"Pass" (= non-toxic)

3.2.1 Reference Toxicant Toxicity to Purple Urchins

The results of this test are summarized below in Table 5. The EC_{50} for this test was consistent with the "typical response" range established by the reference toxicant test database for this species, indicating that these organisms were responding to toxic stress in a typical fashion. The test data and summary of statistical analyses for this test are presented in Appendix E.

Table 5. Reference toxicant testing: effects of KCl on echinoderm (purple urchin) sperm.	
KCl Treatment (g/L)	Mean % Survival
Lab Water Control	98.0
0.25	98.3
0.5	97.8
1	**88.2***
2	**6.8***
4	**0.5***
Summary of Key Statistics	
EC_{50} =	1.48 g/L KCl

* The response at this test treatment was significantly less than the Lab Control treatment response ($p < 0.05$).

3.3 Effects of SFPP Norwalk Effluent on *Menidia beryllina*

The results of this test are summarized below in Table 6. The effluent "passed" the TST analysis for both survival and growth, indicating that the effluent was not toxic *M. beryllina*. The test data and summary of statistical analyses for this test are presented in Appendix F.

Table 6. Effects of SFPP Norwalk effluent on *Menidia beryllina* survival and growth.

Effluent Treatment	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	100	1.75
100% Effluent	97.5	1.86
Summary of Key Statistics		
Percent (%) Effect =	2.5% reduction	No reduction
TST Analysis =	"Pass" (= non-toxic)	"Pass" (= non-toxic)

3.3.1 Reference Toxicant Toxicity to *Menidia beryllina*

The results of this test are summarized below in Table 7. The survival EC_{50} and growth IC_{50} for this test was 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 G.

Table 7. Reference toxicant testing: effects of KCl on *Menidia beryllina* survival and growth.

KCl Treatment (g/L)	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	97.5	1.04
0.5	97.5	1.20
1	92.5	0.95
1.25	**60.0***	0.99
1.5	**55.0***	0.63
2	**0***	-
Summary of Key Statistics		
Survival EC_{50} or Growth IC_{50} =	1.42 g/L KCl	1.56 g/L KCl

* The response at this test treatment was significantly less than the Lab Control treatment response ($p < 0.05$).

4. SUMMARY AND CONCLUSIONS

This round of species screening testing was intended to provide a comparative assessment of the sensitivity of the alternative marine/estuarine test species to any toxicity that might be present in the SFPP Norwalk effluent. The three tests used in this assessment consisted of:

- 48-hr algal germination and growth test with giant kelp, *Macrocystis pyrifera*;
- echinoderm sperm fertilization test with purple urchin, *Strongylocentrotus purpuratus*; and
- 7-day survival and growth test with inland silversides, *Menidia beryllina*.

The results of these tests are summarized below, and indicated that there was no significant compliance-related toxicity to any of the species tested:

Test Species	Test Endpoint	Percent (%) Effect	TST Analysis
Macrocystis pyrifera	Germination	No reduction	"Pass" (= non-toxic)
	Growth	No reduction	"Pass" (= non-toxic)
Strongylocentrotus purpuratus	Fertilization	No reduction	"Pass" (= non-toxic)
Menidia beryllina	Survival	2.5% reduction	"Pass" (= non-toxic)
	Growth	No reduction	"Pass" (= non-toxic)

4.1 QA/QC Summary

Test Conditions – The dissolved oxygen was measured as 3.6 mg/L in the 100% effluent treatment on 5/11, so the test was aerated per EPA guidance. Otherwise, all other 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 – The kelp reference toxicant IC_{25} was slightly above the upper threshold of the "typical response" ranges established by the reference toxicant test databases for these species, indicating that these test organisms used for the monthly reference toxicant test were slightly less sensitive to toxicant stress than is typical. All other 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 Samples

Pacific EcoRisk
2250 Cordelia Road
Fairfield, CA 94534
Tel: (707) 207-7760 Fax: (707) 207-7916
Kristin Worrell <kworrell@pacificecorisk.com>

CHAIN OF CUSTODY RECORD

DATE: 5/8/17
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 - [redacted]	Sampler Name: (James Dye)	VLAD CARINO
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@cb7m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	5/8/17
Phone:	714-560-4802 Fax: 714-560-4801	Project Name:	SFPP Norwalk	[redacted] Project Manager:	[redacted]		

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test: Inland silverside, *Menidia beryllina* (Survival and Growth Test Method 1006.0)	Red abalone, *Haliotis rufescens* (Larval Shell Development Test Method)	Giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0)
	CONTAINER TYPE						P				
	# OF CONTAINERS						2				
	PRESERVATIVE						C				
	VOLUME (mL)						20,000				
1	~~EFF-05-08-TOX~~ [redacted]	EFFLUENT	WW	C	5/8/17	10:00	2		X	X	X
2	EFF-05-08-TOX										
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

Comments

Report (measured at lab): pH, DO, temp, conductivity, hardness, salinity, chlorine, ammonia

Field pH = ____; Field Temperature = ____ (°C); Field Salinity = ____ (ppt)
(James Dye to collect)

FIELD MEASUREMENT:
pH - 6.45
TEMP - 19.61°C
salinity - 0.9ppt

Received 5/8/17

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Vlad Carino	5/8/17 11:10	Ellen Cass	5/9/17 11:10
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:

Ship samples on wet ice (4±2 °C) for next day delivery
Lab to report preliminary toxicity results immediately if tests are expected to result in a 'fail'

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 Road
Fairfield, CA 94534
Tel: (707) 207-7760 Fax: (707) 207-7916
Kristin Worrell <kworrell@pacificecorisk.com>

CHAIN OF CUSTODY RECORD

DATE: 5/10/17
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~~ VC VLAD CARINO
Address:	1100 Town & Country Road Orange, CA 92868	Copy To:	Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler Signature:	Vlad Carino
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	5/10/17
Phone: 714-560-4802	Fax: 714-560-4801	Project Name:	SFPP Norwalk	ATL Project Manager:			

Section E (Required Sample Information)

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test: Inland silverside, *Menidia beryllina* (Survival and Growth Test Method 1006.0)	Red abalone, *Haliotis rufescens* (Larval Shell Development Test Method)	Giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0)	Comments
	CONTAINER TYPE						P					
	# OF CONTAINERS						2					
	PRESERVATIVE						--					
	VOLUME (mL)						10000					
1	EFF-05_10-TOX	EFFLUENT	WW	C	5/10/17	1000	2		x	x	x	Report (measured at lab): pH, DO, temp, conductivity, hardness, salinity, chlorine, ammonia
2												
3												Field pH = ____; Field Temperature = ____ (°C); Field Salinity = _____ (ppt)
4												(James Dye to collect)
5												
6												FIELD MEASUREMENTS:
7												pH - 6.98
8												TEMP - 20.98 °C
9												salinity 0.9 PPT
10												
11												HORIBA U52 #21195
12												

Relinquished by (Signature and Printed Name):	Date / Time	Received by (Signature and Printed Name):	Date / Time
Vlad Carino	5/10/17 11:30	Trevor Fischer Trevor Fischer	5/11/17 1055 PER
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 = 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:
Ship samples on wet ice (4±2 °C) for next day delivery
Lab to report preliminary toxicity results immediately if tests are expected to result in a 'fail'

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 Road
Fairfield, CA 94534
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Kristin Worrell <kworrell@pacificecorisk.com>

CHAIN OF CUSTODY RECORD

DATE: 5/12/17
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:	VLADIMIR CARINO
Address:	1100 Town & Country Road Orange, CA 92868	Copy To:	Steve Defibaugh	Company Name:	Kinder Morgan Energy Partners	Sampler Signature:	Vlad Carino
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	5/12/17
Phone: 714-560-4802	Fax: 714-560-4801	Project Name:	**SFPP Norwalk**	ATL Project Manager:			

Section E Required Sample Information

ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (°F)	Analysis Test: Inland silverside, *Menidia beryllina* (Survival and Growth Test Method 1006.0)	Red abalone, *Haliotis rufescens* (Larval Shell Development Test Method)	Giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0)	Comments
	CONTAINER TYPE						P					
	# OF CONTAINERS						2					
	PRESERVATIVE						–					
	VOLUME (mL)						10000					
1	EFF-05-12-TOX	EFFLUENT	WW	C	5/12/17	1000	2	–	X	X	X	Report (measured at lab): pH, DO, temp, conductivity, hardness, salinity, chlorine, ammonia
2												
3												Field pH = ____ ; Field Temperature = ____ (°C); Field Salinity = _____ (ppt)
4												(James Dye to collect)
5												
6												FIELD MEASUREMENTS:
7												pH - 7.08
8												Temp - 10.88°C
9												Salinity - 0.9ppt
10												Horiba U52 #21195
11												
12												

Relinquished by (Signature and Printed Name):	Date / Time	Relinquished by (Signature and Printed Name):	Date / Time
Vlad Carino	5/12/17 1200	Nyala Ali	5/13/17 1315
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 5:00 PM.

Special Instruction:

Ship samples on wet ice (4±2 °C) for next day delivery
Lab to report preliminary toxicity results immediately if tests are expected to result in a 'fail'

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	

Appendix B

Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk Effluent to the Giant Kelp *Macrocystis pyrifera*

CETIS Summary Report

Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Batch ID:	01-3454-2655	**Test Type:**	Growth-Germination	**Analyst:**	Yesenia Jaramillo
Start Date:	09 May-17 13:38	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Filtered Seawater
Ending Date:	11 May-17 12:38	**Species:**	Macrocystis pyrifera	**Brine:**	Tropic Marin
Duration:	47h	**Source:**	David Gutoff	**Age:**	N/A

Sample ID:	14-4163-3718	**Code:**	Eff	**Client:**	CH2M Hill
Sample Date:	08 May-17 11:10	**Material:**	Effluent	**Project:**	27391
Receipt Date:	09 May-17 11:10	**Source:**	SFPP Norwalk Station		
Sample Age:	26h (0.5 °C)	**Station:**	EFF-05-08-TOX		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
13-7249-5499	Germination Rate	TST-Welch's t Test	<1.0E-37	Salt Control passed germination rate
04-3580-7895	Germination Rate	TST-Welch's t Test	1.4E-06	100% passed germination rate
07-4359-7931	Germination Rate	TST-Welch's t Test	<1.0E-37	100% passed germination rate
12-2799-0021	Mean Length	TST-Welch's t Test	<1.0E-37	Salt Control passed mean length
07-0739-5580	Mean Length	TST-Welch's t Test	<1.0E-37	100% passed mean length
16-3876-6457	Mean Length	TST-Welch's t Test	4.7E-07	100% passed mean length

Germination Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	5	0.934	0.915	0.953	0.920	0.950	0.007	0.015	1.62%	0.00%
0	SA	5	0.948	0.938	0.958	0.940	0.960	0.004	0.008	0.88%	-1.50%
100		5	0.948	0.932	0.964	0.930	0.960	0.006	0.013	1.38%	-1.50%

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	5	16.1	15.6	16.6	15.5	16.5	0.174	0.39	2.42%	0.00%
0	SA	5	15.9	15.6	16.3	15.5	16.3	0.132	0.295	1.85%	1.24%
100		5	16.2	16.1	16.4	16	16.3	0.06	0.134	0.83%	-0.74%

Germination Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	0.920	0.920	0.930	0.950	0.950
0	SA	0.940	0.940	0.950	0.950	0.960
100		0.960	0.930	0.940	0.960	0.950

Mean Length Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	16.3	16	16.3	16.5	15.5
0	SA	16.3	15.5	16	15.8	16
100		16.3	16.3	16.3	16.3	16

Germination Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	92/100	92/100	93/100	95/100	95/100
0	SA	94/100	94/100	95/100	95/100	96/100
100		96/100	93/100	94/100	96/100	95/100

Macrocystis Germination and Growth Test — Pacific EcoRisk

Analysis ID:	07-4359-7931	**Endpoint:**	Germination Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:32	**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 germination rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		100*	21.5	1.89	7	CDF	<1.0E-37	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0022154	0.0022154	1	2.45	0.1564	Non-Significant Effect
Error	0.0072424	0.0009053	8			
Total	0.0094578		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.14	23.2	0.9017	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.874	0.741	0.1107	Normal Distribution

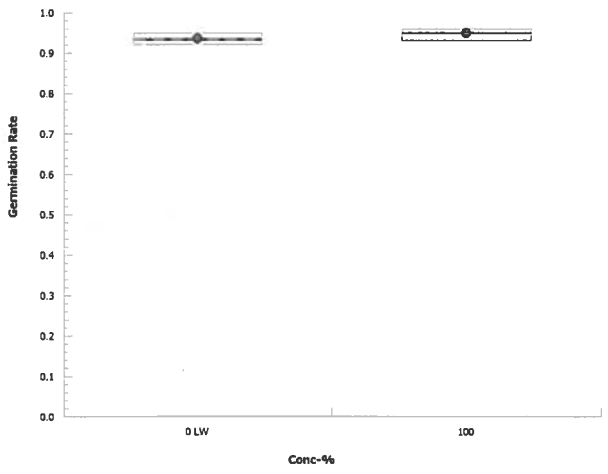
Germination Rate Summary

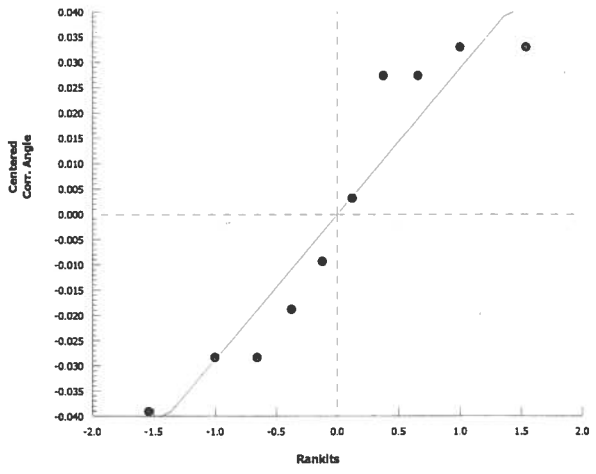
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	0.934	0.915	0.953	0.930	0.920	0.950	0.007	1.62%	0.00%
100		5	0.948	0.932	0.964	0.950	0.930	0.960	0.006	1.38%	-1.50%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	1.31	1.27	1.35	1.3	1.28	1.35	0.0139	2.37%	0.00%
100		5	1.34	1.31	1.38	1.35	1.3	1.37	0.013	2.17%	-2.27%

Graphics





Macrocystis Germination and Growth Test — Pacific EcoRisk

Analysis ID:	16-3876-6457	**Endpoint:**	Mean Length	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:32	**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 length

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		100*	28.8	2.02	5	CDF	4.7E-07	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0359998	0.0359998	1	0.424	0.5334	Non-Significant Effect
Error	0.679999	0.0849999	8			
Total	0.715999		9			

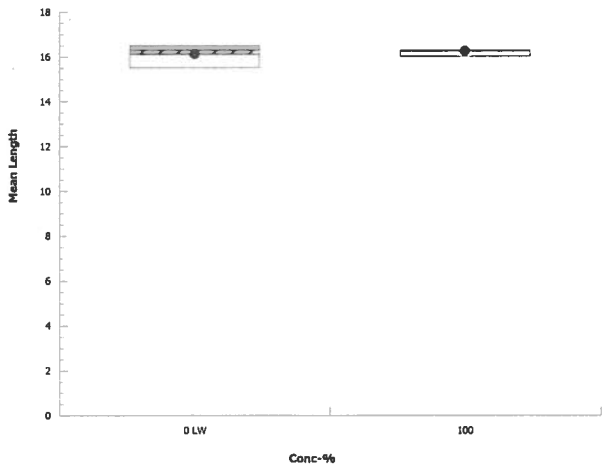
Distributional Tests

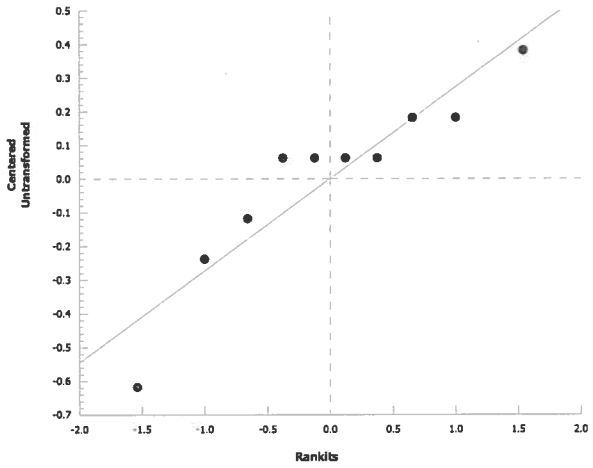
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	8.44	23.2	0.0625	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.886	0.741	0.1527	Normal Distribution

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	16.1	15.6	16.6	16.3	15.5	16.5	0.174	2.42%	0.00%
100		5	16.2	16.1	16.4	16.3	16	16.3	0.06	0.83%	-0.74%

Graphics





Kelp (M. *pyrifera*) Development Toxicity Test Data

Client: **CH2M SFPP Norwalk Station**
Pre-aterial: Effluent
Test ID #: 72173
Project #: 27391
Sample Salinity adjusted w Tropic Marin

Test Start Date: 5/9/17
Test End Date: 5/11/17
Enumeration Date: 5/16/17
Investigator: [illegible]
Micrometer Conv. Factor: 2.5

Germination				Length Measurements (in ocular micrometer units)										Mean	
Treatment		# Spores Germinated	# Spores not Germinated	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Mean Length (µm)
Lab Water Control	1	92	8	6	7	6	6	8	7	7	6	6	6	6.5	16.3
	2	92	8	6	6	6	7	8	7	6	6	6	6	6.4	16.1
	3	93	7	6	6	7	6	7	8	6	6	7	6	6.5	16.3
	4	95	5	6	7	6	6	6	6	7	6	8	8	6.6	16.5
	5	95	5	7	6	6	7	6	6	7	6	5	8	6.2	15.5
100%	1	96	4	7	6	7	8	6	6	6	6	6	7	6.5	16.3
	2	93	7	6	7	6	6	7	6	7	8	6	6	6.5	16.3
	3	94	6	6	7	6	6	7	7	6	8	6	6	6.5	16.3
	4	96	4	6	7	6	7	6	8	6	6	7	6	6.5	16.3
	5	95	5	8	7	6	6	7	6	6	6	7	7	6.4	16.0

Kelp (M. *pyrifera*) Development Toxicity Test Water Chemistry Data

Client: **CH2M SFPP Norwalk Station**
Test Material: Effluent
Test ID#: 72928 Project #: 27391
Test Date: 5/9/17 Randomization: —
mple Salinity adjusted with : Tropic Marin

Organism Log#: 10277 Age: N/A
Organism Supplier: Cutoff
Control/Diluent: Filtered Seawater

Day 0					
Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.9	7.66	9.2	32.1	Date & Inoculation Time: 5/9/17 1338
100%	15.9	7.53	7.0	32.5	Solution Prep/Inoculation: ARF
					Sample ID: 46409
Meter ID	82A	PH23	RD09	EC04	New WQ: MB

Day 1					
Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.0				Date: 5/10/17
100%	15.0				Old WQ: ARF
Meter ID	82A				

Day 2					
Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.9	7.75	7.9	32.1	Date: 5/11/17
100%	15.9	8.16	8.2	33.1	Termination: 1238 / JBL
Meter ID	82A	PH23	RD12	EC04	Old WQ: SD

Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Analysis ID:	04-3580-7895	**Endpoint:**	Germination Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	19 May-17 14:14	**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 germination rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Salt Control		100*	23.2	2.02	5	CDF	1.4E-06	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	1.489E-06	1.489E-06	1	0.00246	0.9617	Non-Significant Effect
Error	0.0048529	0.0006066	8			
Total	0.0048544		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	2.3	23.2	0.4390	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.902	0.741	0.2293	Normal Distribution

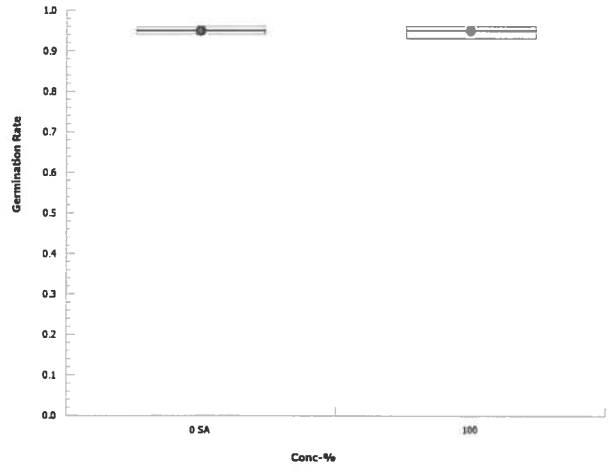
Germination Rate Summary

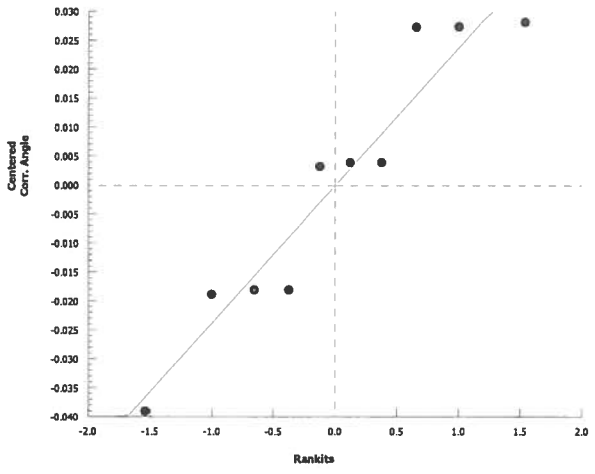
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SA	5	0.948	0.938	0.958	0.950	0.940	0.960	0.004	0.88%	0.00%
100		5	0.948	0.932	0.964	0.950	0.930	0.960	0.006	1.38%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SA	5	1.34	1.32	1.37	1.35	1.32	1.37	0.00857	1.43%	0.00%
100		5	1.34	1.31	1.38	1.35	1.3	1.37	0.013	2.17%	-0.06%

Graphics





Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Analysis ID: 07-0739-5580 **Endpoint:** Mean Length **CETIS Version:** CETISv1.9.2
Analyzed: 19 May-17 14:15 **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 length

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Salt Control		100*	37.2	1.94	6	CDF	<1.0E-37	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.255999	0.255999	1	4.88	0.0582	Non-Significant Effect
Error	0.419999	0.0524999	8			
Total	0.675998		9			

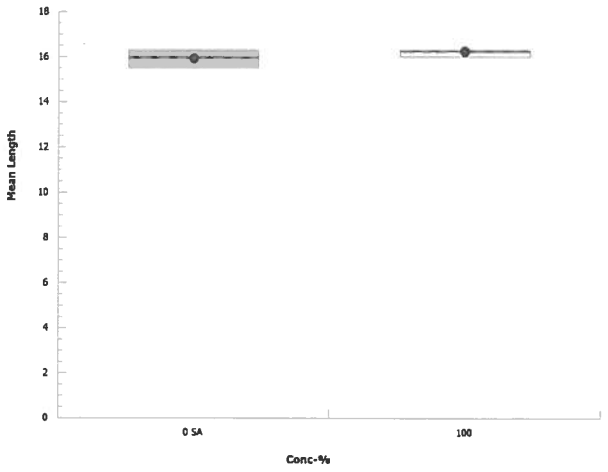
Distributional Tests

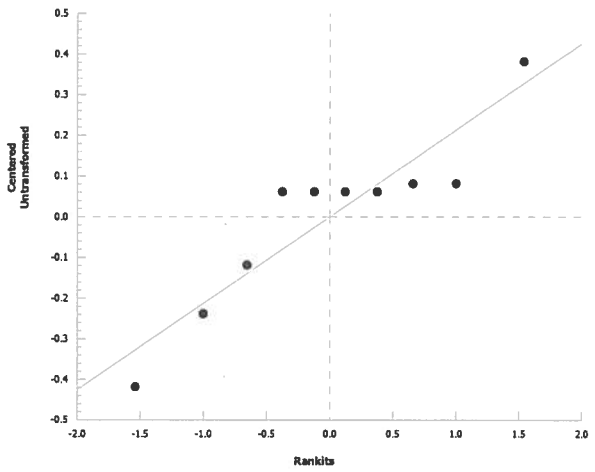
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	4.83	23.2	0.1562	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.878	0.741	0.1224	Normal Distribution

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SA	5	15.9	15.6	16.3	16	15.5	16.3	0.132	1.85%	0.00%
100		5	16.2	16.1	16.4	16.3	16	16.3	0.06	0.83%	-2.01%

Graphics





Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Analysis ID:	13-7249-5499	**Endpoint:**	Germination Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	Salt Control passed germination rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		Salt Control*	26.5	1.89	7	CDF	<1.0E-37	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0021021	0.0021021	1	3.16	0.1135	Non-Significant Effect
Error	0.0053283	0.0006660	8			
Total	0.0074303		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	2.63	23.2	0.3724	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.878	0.741	0.1234	Normal Distribution

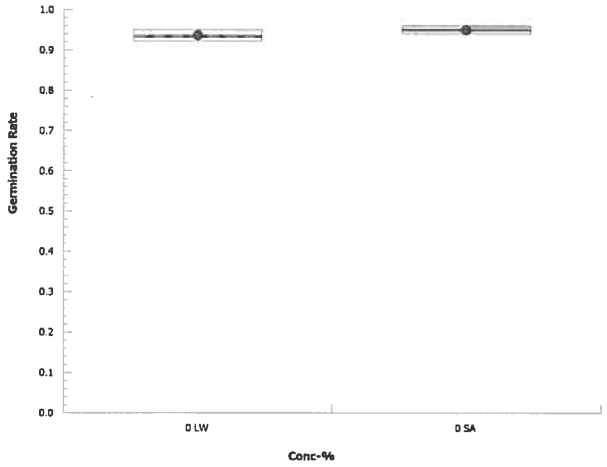
Germination Rate Summary

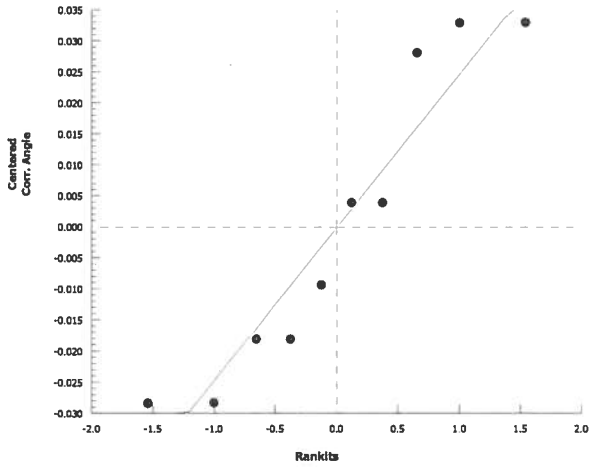
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	0.934	0.915	0.953	0.930	0.920	0.950	0.007	1.62%	0.00%
0	SA	5	0.948	0.938	0.958	0.950	0.940	0.960	0.004	0.88%	-1.50%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	1.31	1.27	1.35	1.3	1.28	1.35	0.0139	2.37%	0.00%
0	SA	5	1.34	1.32	1.37	1.35	1.32	1.37	0.00857	1.43%	-2.21%

Graphics





Macrocystis Germination and Growth Test — Pacific EcoRisk

Analysis ID:	12-2799-0021	**Endpoint:**	Mean Length	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	Salt Control passed mean length

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		Salt Control*	20.6	1.89	7	CDF	<1.0E-37	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0999998	0.0999998	1	0.837	0.3870	Non-Significant Effect
Error	0.955999	0.1195	8			
Total	1.056		9			

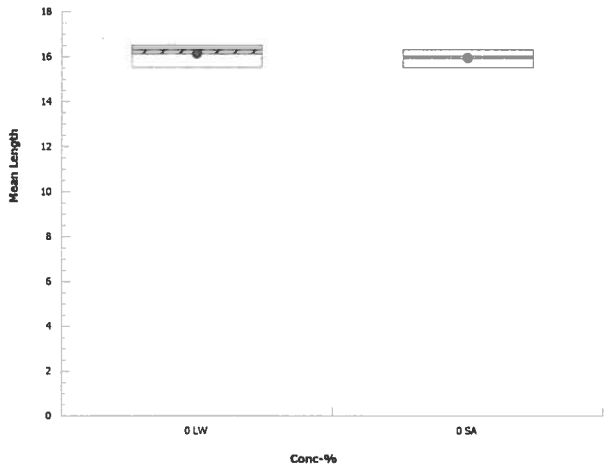
Distributional Tests

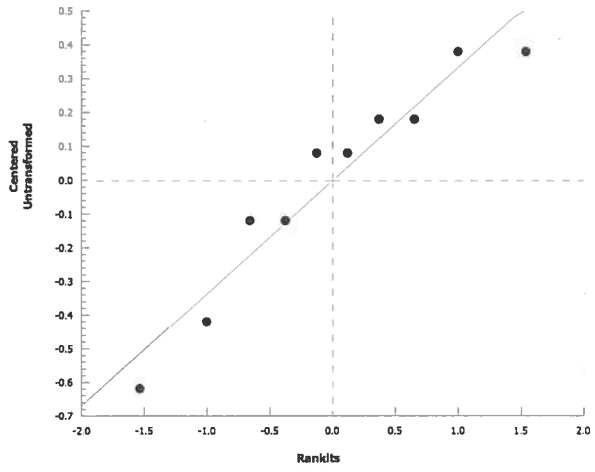
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.75	23.2	0.6021	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.92	0.741	0.3603	Normal Distribution

Mean Length Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	5	16.1	15.6	16.6	16.3	15.5	16.5	0.174	2.42%	0.00%
0	SA	5	15.9	15.6	16.3	16	15.5	16.3	0.132	1.85%	1.24%

Graphics





Kelp (M. *pyrifera*) Development Toxicity Test Data

Client: **CH2M SFPP Norwalk Station**
Test Material: Salt Control
Test ID #: 72927
Project #: 27391
Control/Diluent: Filtered Seawater
Sample Salinity adjusted with : Tropic Mar

Test Start Date: 5/9/17
Test End Date: 5/11/17
Enumeration Date: 5/16/17
Investigator: TW
Micrometer Conv. Factor: 2.5

Germination				Length Measurements (in ocular micrometer units)										Mean	
Treatment		# Spores Germinated	# Spores not Germinated	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Mean Length (µm)
Lab Water Control	1	92	8	6	7	6	6	8	7	7	6	6	6	6.5	16.3
	2	92	8	6	6	6	7	8	7	6	6	6	6	6.4	16.0
	3	93	7	6	6	7	6	7	8	6	6	7	6	6.5	16.3
	4	95	5	6	7	6	6	6	6	7	6	8	8	6.6	16.5
	5	95	5	7	6	6	7	6	6	7	6	5	6	6.2	15.5
Salt Control	1	94	6	6	7	6	6	7	7	8	6	6	6	6.5	16.3
	2	94	6	7	6	6	7	6	7	5	6	6	6	6.2	15.5
	3	95	5	6	7	6	6	7	6	7	6	6	7	6.4	16.0
	4	95	5	6	6	7	6	7	6	6	6	7	6	6.3	15.8
	5	96	4	7	6	6	7	6	7	6	6	6	7	6.4	16.0

Kelp (M. *pyrifera*) Development Toxicity Test Water Chemistry Data

Client: **CH2M SFPP Norwalk Station**
Test Material: Salt Control
Test ID#: 72927 Project #: 27391
Test Date: 5/9/17 Randomization: —
Sample Salinity adjusted with : Tropic Marin

Organism Log#: 10277 Age: N/A
Organism Supplier: Gutoff
Control/Diluent: Filtered Seawater
Light Intensity 225.5

Day 0

Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.9	7.66	9.2	32.1	Date & Inoculation Time: 5/9/17 1338
Salt Control	15.9	8.39	8.1	33.7	Solution Prep/Inoculation: ARF 1338
Meter ID	82A	~~7.53~~ MB 5/9/17 PH23	~~7.0~~ MB 5/9/17 RD09	~~32.5~~ MB 5/9/17 EC04	New WQ: MB

Day 1

Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.0				Date: 5/10/17
Salt Control	15.0				Old WQ: ARF
Meter ID	82A				

Day 2

Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.9	7.75	7.9	32.1	Date: 5/11/17
Salt Control	15.9	7.85	8.1	33.3	Termination: 1238 / JBL
Meter ID	82A	PH23	RD12	EC04	Old WQ: SD

Appendix C

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Macrocystis pyrifera*

CETIS Summary Report

Macrocystis Germination and Growth Test — Pacific EcoRisk

Batch ID:	18-5173-3982	Test Type:	Growth-Germination	Analyst:	Yesenia Jaramillo
Start Date:	02 May-17 16:04	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Filtered Seawater
Ending Date:	04 May-17 14:31	Species:	Macrocystis pyrifera	Brine:	Not Applicable
Duration:	46h	Source:	Gutoff	Age:	N/A

Sample ID:	13-4709-5454	Code:	CuCl2	Client:	Reference Toxicant
Sample Date:	02 May-17 16:04	Material:	Copper chloride	Project:	27283
Receipt Date:	02 May-17 16:04	Source:	Reference Toxicant		
Sample Age:	n/a (14.3 °C)	Station:	In House		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
18-2917-5847	Germination Rate	Dunnett Multiple Comparison Test	5.6	10	7.483		1.63%
20-1373-6943	Mean Length	Dunnett Multiple Comparison Test	10	18	13.42		2.4%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	µg/L	95% LCL	95% UCL	TU ✓
07-3821-7000	Germination Rate	Regression: Log-Normal (Probit)	EC5	44.5	37.1	51.1	
			EC10	58.9	51.2	65.7	
			EC15	71.1	63.5	77.9	
			EC20	82.6	75.2	89.4	
			EC25	94	86.7	101	
			EC40	130	122	139	
			EC50	158	148	171	
06-9062-6073	Mean Length	Linear Interpolation (ICPIN)	IC5	14.8	10.5	19.2	
			IC10	23.9	21.3	27.6	
			IC15	31.9	28.4	37.6	
			IC20	43.8	39.3	48	
			IC25	55.8	51.1	65.6	
			IC40	137	126	146	
			IC50	>180	n/a	n/a	

Germination Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	5	0.966	0.952	0.980	0.950	0.980	0.005	0.011	1.18%	0.00%
5.6		5	0.950	0.938	0.962	0.940	0.960	0.004	0.010	1.05%	1.66%
10		5	0.940	0.914	0.966	0.910	0.960	0.009	0.021	2.26%	2.69%
18		5	0.934	0.923	0.945	0.920	0.940	0.004	0.009	0.96%	3.31%
32		5	0.888	0.872	0.904	0.870	0.900	0.006	0.013	1.47%	8.07%
56		5	0.840	0.831	0.849	0.830	0.850	0.003	0.007	0.84%	13.04%
100		5	0.760	0.740	0.780	0.740	0.780	0.007	0.016	2.08%	21.33%
180		5	0.364	0.325	0.403	0.310	0.390	0.014	0.031	8.60%	62.32%

Mean Length Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	5	15.4	15.1	15.7	15	15.5	0.1	0.224	1.45%	0.00%
5.6		5	14.8	14.4	15.1	14.3	15	0.128	0.286	1.94%	4.03%
10		5	15.1	14.8	15.4	15	15.5	0.1	0.224	1.48%	1.95%
18		5	14.4	14.3	14.6	14.3	14.5	0.049	0.11	0.76%	6.36%
32		5	13.1	12.7	13.5	12.8	13.5	0.139	0.311	2.38%	15.06%
56		5	11.5	11.2	11.9	11.3	11.8	0.112	0.251	2.18%	25.06%
100		5	10.2	9.84	10.5	9.8	10.5	0.124	0.277	2.73%	33.90%
180		5	8.12	7.92	8.32	8	8.3	0.0735	0.164	2.02%	47.27%

Macrocystis Germination and Growth Test — Pacific EcoRisk

Germination Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	0.950	0.980	0.970	0.970	0.960
5.6		0.940	0.960	0.950	0.940	0.960
10		0.960	0.960	0.940	0.910	0.930
18		0.940	0.930	0.940	0.920	0.940
32		0.900	0.890	0.880	0.900	0.870
56		0.840	0.850	0.830	0.840	0.840
100		0.760	0.780	0.770	0.740	0.750
180		0.370	0.390	0.310	0.370	0.380

Mean Length Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	15.5	15.5	15	15.5	15.5
5.6		15	14.3	14.8	15	14.8
10		15	15	15.5	15	15
18		14.5	14.5	14.3	14.5	14.3
32		13.5	13.3	12.8	13	12.8
56		11.3	11.8	11.8	11.5	11.3
100		10.5	10.3	10	9.8	10.3
180		8	8.3	8.3	8	8

Germination Rate Binomials

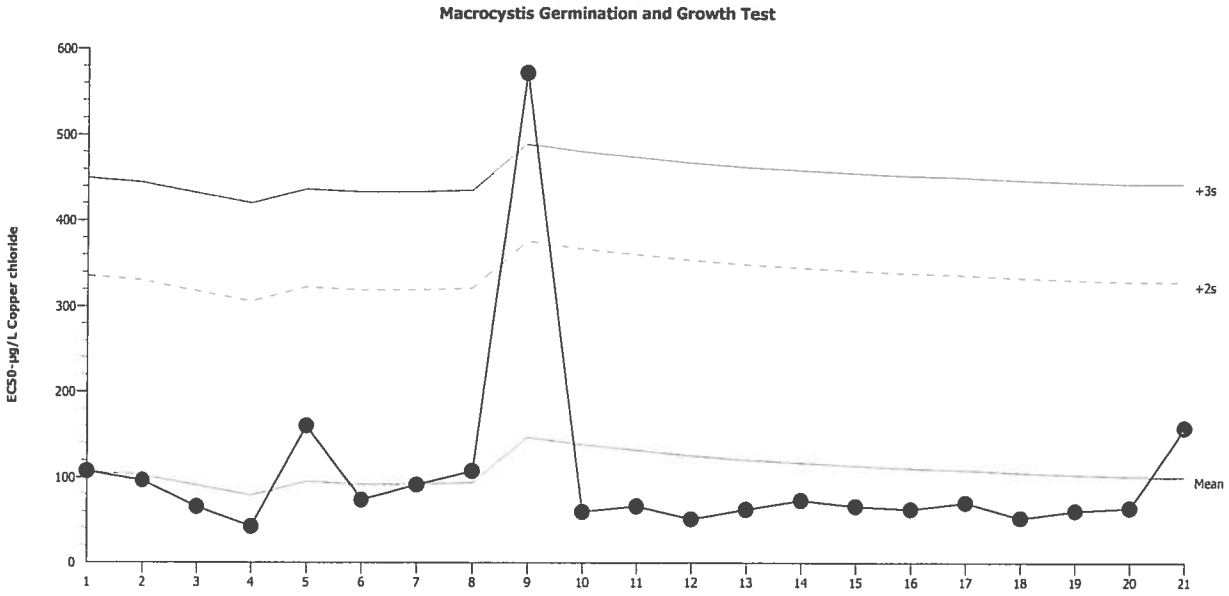
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	LW	95/100	98/100	97/100	97/100	96/100
5.6		94/100	96/100	95/100	94/100	96/100
10		96/100	96/100	94/100	91/100	93/100
18		94/100	93/100	94/100	92/100	94/100
32		90/100	89/100	88/100	90/100	87/100
56		84/100	85/100	83/100	84/100	84/100
100		76/100	78/100	77/100	74/100	75/100
180		37/100	39/100	31/100	37/100	38/100

CETIS QC Plot

Report Date: 16 May-17 14:32 (1 of 1)

Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Test Type:	Growth-Germination	**Organism:**	Macrocystis pyrifera (Giant Kelp)	**Material:**	Copper chloride
Protocol:	EPA/600/R-95/136 (1995)	**Endpoint:**	Germination Rate	**Source:**	Reference Toxicant-REF



Mean:	100.5	**Count:**	20	**-2s Warning Limit:**	-127.7	**-3s Action Limit:**	-241.8
Sigma:	114.1	**CV:**	114.00%	**+2s Warning Limit:**	328.7	**+3s Action Limit:**	442.8

Quality Control Data

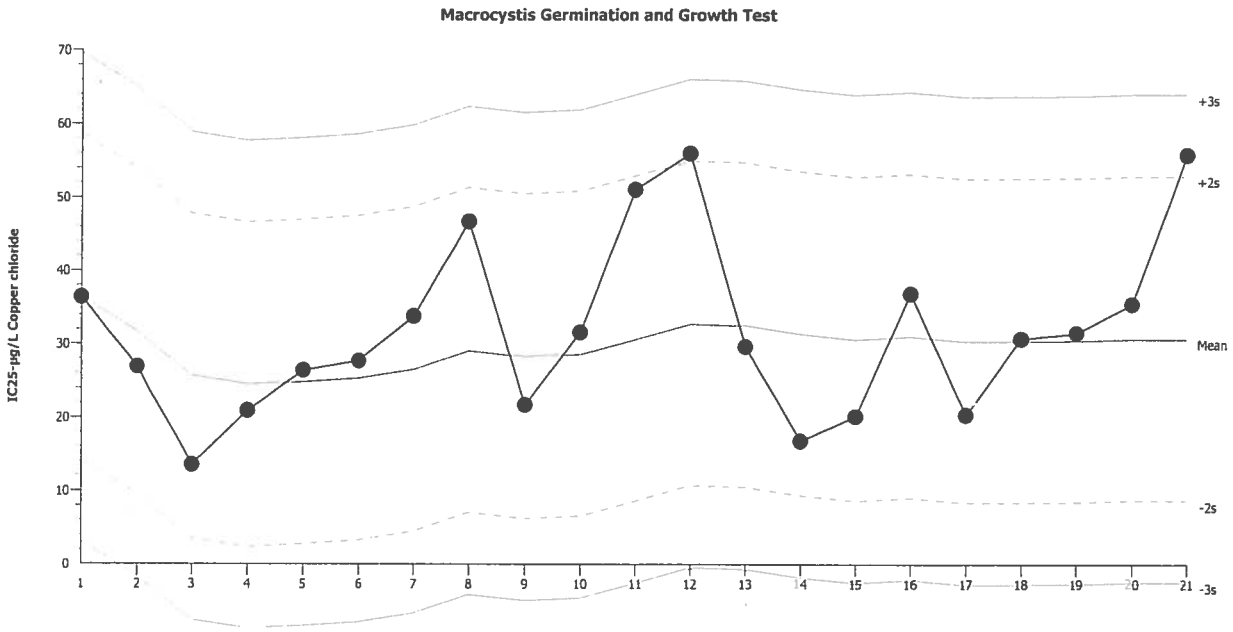
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2009	Feb	28	15:15	107.4	6.854	0.06007			12-1143-1603	12-9820-3193
2		Mar	14	18:35	96.37	-4.13	-0.0362			19-5641-8483	05-8506-0097
3			31	17:10	65.64	-34.86	-0.3055			17-0663-7956	04-7282-8436
4		Apr	11	14:20	42.64	-57.86	-0.5071			04-4563-2744	18-2165-7128
5			23	17:30	160.6	60.12	0.5269			17-7966-2450	06-9546-8884
6		May	6	16:10	73.75	-26.75	-0.2344			03-3186-2961	03-6247-5816
7	2013	Jan	30	14:45	91.4	-9.104	-0.07979			06-8508-3851	17-7991-3930
8		Feb	6	16:15	107.7	7.185	0.06297			11-3056-1267	03-3281-0263
9		Jul	24	15:10	572.1	471.6	4.133	(+)	(+)	13-4610-5540	07-9402-7487
10	2015	Nov	5	15:25	60.03	-40.47	-0.3547			17-6449-9142	08-5336-1355
11		Dec	29	15:30	66.44	-34.06	-0.2985			05-6611-4336	12-7788-9754
12	2016	Jan	14	15:25	51.34	-49.16	-0.4308			17-6824-0217	02-7384-9815
13		Feb	11	17:55	62.82	-37.68	-0.3303			09-8398-8624	10-8778-7063
14		May	11	17:01	73.46	-27.04	-0.237			10-0416-5084	03-7997-2979
15		Oct	26	16:30	66.49	-34.01	-0.2981			13-5580-5678	11-9854-6523
16		Nov	30	16:00	62.96	-37.54	-0.329			09-1674-9341	03-7124-9614
17	2017	Feb	15	16:00	70.55	-29.95	-0.2624			11-9574-3901	05-9177-7581
18			22	15:48	52.57	-47.93	-0.4201			11-3123-4750	17-9941-0805
19		Mar	1	16:25	60.97	-39.53	-0.3464			18-8365-7497	06-8570-1961
20			24	15:50	64.33	-36.17	-0.317			16-2369-0361	17-0636-9263
21		May	2	16:04	158.2	57.65	0.5053			08-4127-1529	07-3821-7000

CETIS QC Plot

Report Date: 19 May-17 16:18 (1 of 1)

Macrocystis Germination and Growth Test — **Pacific EcoRisk**

Test Type:	Growth-Germination	**Organism:**	Macrocystis pyrifera (Giant Kelp)	**Material:**	Copper chloride
Protocol:	EPA/600/R-95/136 (1995)	**Endpoint:**	Mean Length	**Source:**	Reference Toxicant-REF



Mean:	30.72	**Count:**	20	**-2s Warning Limit:**	8.524	**-3s Action Limit:**	-2.576
Sigma:	11.1	**CV:**	36.10%	**+2s Warning Limit:**	52.92	**+3s Action Limit:**	64.02

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2009	Feb	28	15:15	36.41	5.687	0.5124			12-1143-1603	19-7989-7320
2		Mar	14	18:35	26.89	-3.83	-0.345			19-5641-8483	02-6572-0942
3			31	17:10	13.55	-17.17	-1.547			17-0663-7956	19-9052-0522
4		Apr	11	14:20	20.91	-9.81	-0.8837			04-4563-2744	01-0372-1594
5			23	17:30	26.39	-4.327	-0.3898			17-7966-2450	02-9784-1910
6		May	6	16:10	27.7	-3.021	-0.2722			03-3186-2961	09-7124-6571
7	2013	Jan	30	14:45	33.8	3.08	0.2775			06-8508-3851	17-0208-8428
8		Feb	6	16:15	46.73	16.01	1.442			11-3056-1267	17-2307-7065
9		Jul	24	15:10	21.69	-9.026	-0.8131			13-4610-5540	00-8404-8807
10	2015	Nov	5	15:25	31.6	0.8813	0.07939			17-6449-9142	19-8372-8712
11		Dec	29	15:30	51.07	20.35	1.833			05-6611-4336	09-4158-5062
12	2016	Jan	14	15:25	56	25.28	2.277	(+)		17-6824-0217	08-0278-3221
13		Feb	11	17:55	29.67	-1.053	-0.09489			09-8398-8624	05-0071-6836
14		May	11	17:01	16.81	-13.91	-1.253			10-0416-5084	10-8856-0736
15		Oct	26	16:30	20.17	-10.55	-0.9508			13-5580-5678	09-9943-0268
16		Nov	30	16:00	36.92	6.2	0.5586			09-1674-9341	07-3581-9689
17	2017	Feb	15	16:00	20.37	-10.35	-0.9327			11-9574-3901	14-4620-3223
18			22	15:48	30.75	0.03	0.002703			11-3123-4750	05-5940-5872
19		Mar	1	16:25	31.53	0.8133	0.07327			18-8365-7497	19-8534-6385
20			24	15:50	35.51	4.789	0.4315			16-2369-0361	03-6027-8897
21		May	2	16:04	55.84	25.12	2.263	(+)		08-4127-1529	06-9062-6073

Kelp (*M. pyrifera*) Development Reference Toxicant Test Water Chemistry Data

Client: **Reference Toxicant** Organism Log#: 10260 Age: N/A
Test Material: Copper (as $CuCl_2$) Organism Supplier: Cutoff
Test ID#: 72484 Project #: 27283 Control/Diluent: Filtered Seawater
Test Date: 5/2/17 Randomization: — Light Intensity: 241.5

Day 0

Treatment (µg Cu/L)	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	14.3	7.73	9.7	32.1	Test Solution Prep: ARF
5.6	14.3	7.73	9.7	32.6	New WQ: N
10	14.3	7.73	9.6	32.5	Innoculation Date: 5/2/17
18	14.3	7.73	9.8	32.7	Innoculation Time: 1604
32	14.3	7.73	9.8	32.5	Innoculation Signoff: ARF
56	14.3	7.74	9.7	32.7	
100	14.3	7.73	9.8	32.7	
180	14.3	7.73	9.7	32.6	
Meter ID	32A	PH23	RD10	EC10	

Day 1

Treatment (µg Cu/L)	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	14.3				Date: 5/3/17
5.6	14.3				WQ Signoff: CD
10	14.3				
18	14.3				
32	14.3				
56	14.3				
100	14.3				
180	14.3				
Meter ID	32A				

Day 2

Treatment (µg Cu/L)	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	14.8	7.76	8.1	33.1	Termination Date: 5/4/17
5.6	14.8	7.78	8.1	33.3	Termination Time: 1431
10	14.8	7.80	8.2	33.2	Termination Signoff: JBL
18	14.8	7.81	8.2	33.2	Old WQ: WC
32	14.8	7.82	8.0	33.8	
56	14.8	7.83	8.3	33.4	
100	14.8	7.83	8.2	33.9	
180	14.8	7.84	8.1	33.9	
Meter ID	32A	PH21	RD11	EC09	

Kelp (*M. pyrifera*) Development Toxicity Test Data

Client: **Reference Toxicant** Test Start Date: 5/2/17 Test End Date: 5/4/17 Enumeration Date: 5/16/17

Test Material: Copper (as CuCl2) Test ID #: 72484 Project #: 27283 Investigator: AN

Control Medium: Filtered Seawater Micrometer Conv. Factor: 2.5

		Germination		Length Measurements (in ocular micrometer units)											
µg Cu/L	Rep	# Spores Germinated	# Spores not Germinated	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Corrected Mean Length (µm)
Control	A	95	5	7	7	6	6	5	6	6	6	7	6	6.2	15.5
	B	98	2	7	6	6	5	6	6	6	7	6	7	6.2	15.5
	C	97	3	6	7	6	6	7	6	5	5	6	6	6.0	15.0
	D	97	3	5	6	7	7	6	6	6	6	7	5	6.1	15.5
	E	96	4	5	7	6	6	7	6	6	7	5	6	6.1	15.5
5.6	A	94	6	6	5	6	6	7	6	6	7	6	5	6.0	15.0
	B	96	4	7	6	6	6	5	6	5	6	6	7	5.7	14.3
	C	95	5	6	5	7	6	6	5	5	6	6	7	5.9	14.8
	D	94	6	7	6	6	7	6	5	6	6	5	6	6.0	15.0
	E	96	4	6	7	6	6	5	6	7	5	5	6	5.9	14.8
10	A	96	4	6	7	6	7	5	5	6	6	6	6	6.0	15.0
	B	96	4	7	6	6	5	6	5	6	7	6	6	6.0	15.0
	C	94	6	6	7	6	6	5	7	6	6	6	6	6.1	15.5
	D	91	9	5	6	6	7	6	6	5	7	6	6	6.0	15.0
	E	93	7	7	6	5	6	6	6	6	5	7	6	6.0	15.0
18	A	94	6	6	6	5	7	6	5	6	6	5	6	5.8	14.5
	B	93	7	6	5	5	6	6	6	7	7	4	6	5.8	14.5
	C	94	6	6	4	6	6	5	5	6	7	6	6	5.7	14.3
	D	92	8	6	6	5	6	6	6	6	5	6	6	5.8	14.5
	E	94	6	6	6	7	5	6	6	6	5	4	6	5.7	14.3
32	A	90	10	5	5	6	5	5	6	5	6	5	6	5.4	13.5
	B	89	11	4	5	6	6	5	5	5	6	5	6	5.3	13.3
	C	88	12	5	6	5	4	5	6	5	5	5	5	5.1	12.8
	D	90	10	5	5	4	6	6	5	5	5	5	6	5.2	13.0
	E	87	13	5	5	6	5	4	5	6	6	5	4	5.1	12.8
56	A	84	16	4	5	5	6	4	5	4	5	5	5	4.5	11.3
	B	85	15	6	5	4	4	5	5	5	4	4	3	4.7	11.8
	C	83	17	3	5	5	4	5	4	5	5	6	5	4.7	11.8
	D	84	16	3	4	5	4	5	5	5	5	5	5	4.6	11.5
	E	84	16	5	5	6	3	4	5	5	5	3	4	4.5	11.3

Kelp (*M. pyrifera*) Development Toxicity Test Data

Client: Reference Toxicant Test Start Date: 5/2/17 Test End Date: 5/4/17 Enumeration Date: 5/16/17

Test Material: Copper chloride Test ID #: 72484 Project #: 27283 Investigator: JV

Control Medium: Filtered Seawater Micrometer Conv. Factor: 2.5

		Germination		Length Measurements (in ocular micrometer units)											
µg Cu/L	Rep	# Spores Germinated	# Spores not Germinated	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Corrected Mean Length (µm)
100	A	76	24	3	5	4	4	5	5	4	4	3	5	4.2	10.5
	B	78	22	4	5	3	4	4	3	5	4	4	5	4.1	10.3
	C	77	23	4	4	5	4	3	4	4	3	5	4	4.0	10.0
	D	74	26	3	3	4	5	4	5	3	4	4	4	3.9	9.8
	E	75	25	4	4	3	4	5	5	3	5	4	4	4.1	10.3
180	A	37	63	3	3	3	4	5	3	3	3	4	3	3.2	8.0
	B	39	61	4	3	3	4	3	4	3	3	3	3	3.3	8.3
	C	31	69	3	3	3	4	4	3	3	3	3	4	3.3	8.3
	D	37	63	3	4	3	3	3	4	3	3	3	3	3.2	8.0
	E	38	62	3	3	3	4	3	3	3	4	3	3	3.2	8.0

Appendix D

Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk Effluent to Purple Urchin Sperm Fertilization

CETIS Summary Report

Echinoid Fertilization Test — **Pacific EcoRisk**

Batch ID:	15-2321-8034	**Test Type:**	Fertilization	**Analyst:**	Yesenia Jaramillo
Start Date:	09 May-17 13:50	**Protocol:**	EPA/600/R-95/136 (1995)	**Diluent:**	Filtered Seawater
Ending Date:	13 May-17 14:10	**Species:**	Strongylocentrotus purpuratus	**Brine:**	Tropic Marin
Duration:	4d 0h	**Source:**	Gutoff	**Age:**	N/A

Sample ID:	21-4581-9023	**Code:**	Eff	**Client:**	CH2M Hill
Sample Date:	08 May-17 11:10	**Material:**	Effluent	**Project:**	27391
Receipt Date:	09 May-17 11:10	**Source:**	SFPP Norwalk Station		
Sample Age:	27h (0.5 °C)	**Station:**	EFF-05-08-TOX		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
12-6737-7262	Fertilization Rate	TST-Welch's t Test	4.1E-04	Salt Control passed fertilization rate
05-6242-9088	Fertilization Rate	TST-Welch's t Test	1.7E-05	100% passed fertilization rate
15-5208-9820	Fertilization Rate	TST-Welch's t Test	6.5E-05	100% passed fertilization rate

Fertilization Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.988	0.967	1.000	0.970	1.000	0.006	0.013	1.27%	0.00%
0	SA	4	0.990	0.958	1.000	0.960	1.000	0.010	0.020	2.02%	-0.25%
100		4	0.990	0.977	1.000	0.980	1.000	0.004	0.008	0.82%	-0.25%

Fertilization Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	0.990	0.970	0.990	1.000
0	SA	0.960	1.000	1.000	1.000
100		0.980	0.990	0.990	1.000

Fertilization Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	99/100	97/100	99/100	100/100
0	SA	96/100	100/100	100/100	100/100
100		98/100	99/100	99/100	100/100

CETIS Analytical Report

Echinoid Fertilization Test — **Pacific EcoRisk**

Analysis ID:	05-6242-9088	**Endpoint:**	Fertilization Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	19 May-17 14:13	**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 fertilization rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		100*	13.9	2.02	5	CDF	1.7E-05	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0001295	0.0001295	1	0.0643	0.8082	Non-Significant Effect
Error	0.0120753	0.0020125	6			
Total	0.0122048		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.85	47.5	0.6262	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.93	0.645	0.5189	Normal Distribution

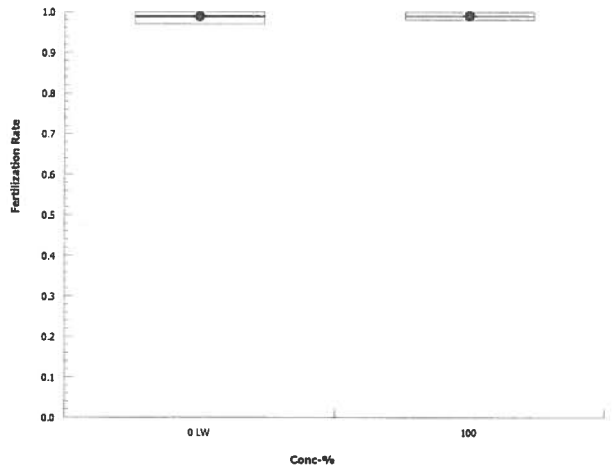
Fertilization Rate Summary

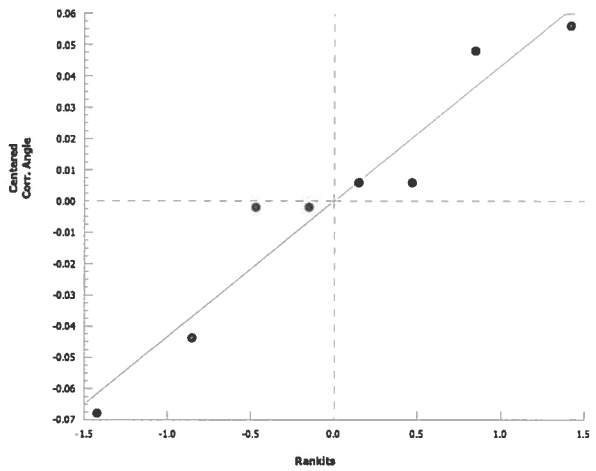
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.988	0.967	1.000	0.990	0.970	1.000	0.006	1.27%	0.00%
100		4	0.990	0.977	1.000	0.990	0.980	1.000	0.004	0.82%	-0.25%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.46	1.38	1.55	1.47	1.4	1.52	0.0256	3.49%	0.00%
100		4	1.47	1.41	1.53	1.47	1.43	1.52	0.0188	2.55%	-0.55%

Graphics





Echinoderm Fertilization Toxicity Test Data Sheet

Client: **CH2M SFPP Norwalk Station**
Test Material: Effluent
Test Species: *Strongylocentrotus purpuratus*
Test ID #: 72927
Project #: 27391

Test Start Date: 5/9/17
Test End Date: 5/9/17
Enumeration Date: 5/9/17
Investigator: JBL
Sample Salinity adjusted with : Tropic Marin

Treatment	Replicate	Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization
Lab Water Control	A	99	1	100	99
	B	97	3	100	97
	C	99	1	100	99
	D	100	0	100	100
100%	A	98	2	100	98
	B	99	1	100	99
	C	99	1	100	99
	D	100	0	100	100

Echinoderm Fertilization Toxicity Test Water Chemistry Data

Client: **CH2M SFPP Norwalk Station**
Test Material: Effluent
Test Species: *Strongylocentrotus purpuratus*
Test ID#: 72927 Project #: 27391

Organism Log#: 10276 Age: N/A
Organism Supplier: Gutoff
Control/Diluent: FSW
Test Date: 5/9/17 Randomization: -
Sample Salinity adjusted with : Tropic Marin

Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	12.1	7.66	10.1	32.2	Date: 5/9/17
100%	12.1	7.62	9.2	JBL 5/9 ~~29.7~~ 30.3	Sample ID: 46409
Meter ID	35A	pH23	RD09	EC04	Test Solution Prep: JBL
					New WQ: MB
					Innoculation Time: 1350
					Innoculation Signoff: JBL

CETIS Analytical Report

Echinoid Fertilization Test — **Pacific EcoRisk**

Analysis ID:	15-5208-9820	**Endpoint:**	Fertilization Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:40	**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 fertilization rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Salt Control		100*	10.6	2.02	5	CDF	6.5E-05	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0002084	0.0002084	1	0.0584	0.8171	Non-Significant Effect
Error	0.0214155	0.0035693	6			
Total	0.0216239		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	4.05	47.5	0.2805	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.824	0.645	0.0512	Normal Distribution

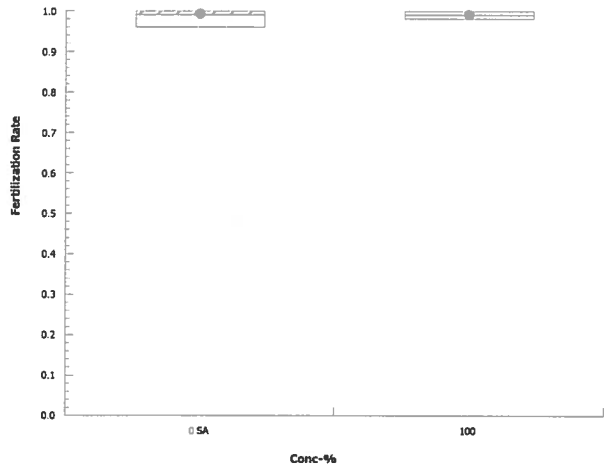
Fertilization Rate Summary

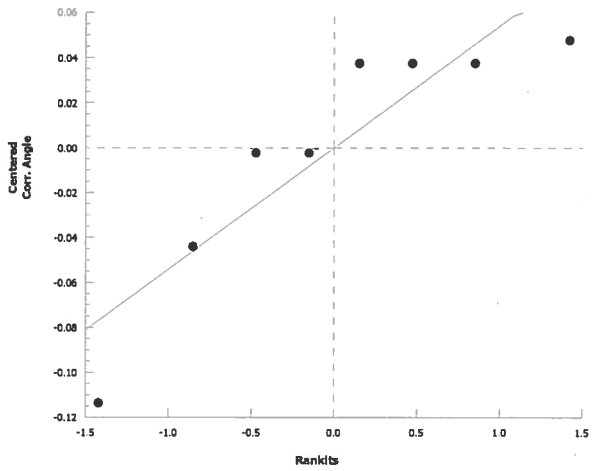
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SA	4	0.990	0.958	1.000	1.000	0.960	1.000	0.010	2.02%	0.00%
100		4	0.990	0.977	1.000	0.990	0.980	1.000	0.004	0.82%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	SA	4	1.48	1.36	1.6	1.52	1.37	1.52	0.0378	5.10%	0.00%
100		4	1.47	1.41	1.53	1.47	1.43	1.52	0.0188	2.55%	0.69%

Graphics





CETIS Analytical Report

Echinoid Fertilization Test — **Pacific EcoRisk**

Analysis ID:	12-6737-7262	**Endpoint:**	Fertilization Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	26 May-17 10:44	**Analysis:**	Parametric Bioequivalence-Two Sample	**Official Results:**	Yes

Data Transform	Alt Hyp	TST_b	Comparison Result
Angular (Corrected)	C*b < T	0.75	Salt Control passed fertilization rate

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:5%)
Lab Water Contr		Salt Control*	9.06	2.13	4	CDF	4.1E-04	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0006665	0.0006665	1	0.16	0.7031	Non-Significant Effect
Error	0.0250141	0.0041690	6			
Total	0.0256806		7			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	2.19	47.5	0.5359	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.823	0.645	0.0500	Normal Distribution

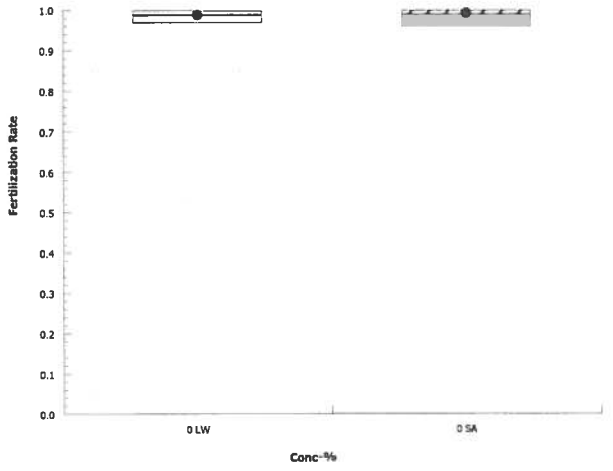
Fertilization Rate Summary

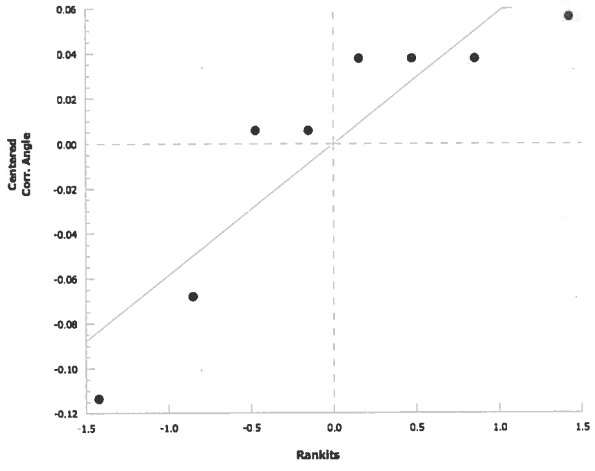
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	0.988	0.967	1.000	0.990	0.970	1.000	0.006	1.27%	0.00%
0	SA	4	0.990	0.958	1.000	1.000	0.960	1.000	0.010	2.02%	-0.25%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.46	1.38	1.55	1.47	1.4	1.52	0.0256	3.49%	0.00%
0	SA	4	1.48	1.36	1.6	1.52	1.37	1.52	0.0378	5.10%	-1.25%

Graphics





Echinoderm Fertilization Toxicity Test Data Sheet

Client: CH2M SFPP Norwalk Station
Test Material: Eff
Test Species: S. purpuratus
Test ID #: 72927
Project #: 27391

Test Start Date: 5/9/17
Test End Date: 5/9/17
Enumeration Date: 5/9/17
Investigator: JBL

Sample Salinity adjusted with : Tropic Marin

Treatment	Replicate	Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization
Salt Control	A	96	4	100	96
	B	100	0	100	100
	C	100	0	100	100
	D	100	0	100	100

Echinoderm Fertilization Toxicity Test Water Chemistry Data

Client: **CH2M SFPP Norwalk Station**
Test Material: Salt Control
Test Species *D. excentricus - S. purpuratus (circle)*
Test ID#: JBL 5/9 ~~67257~~ 72927 Project #: JBL 5/9 ~~25589~~ 27391
Sample Salinity adjusted with : _____ Tropic Marin

Organism Log#: 10276 Age: N/A
Organism Supplier: Gutoff
Control/Diluent: FSW
Test Date: 5/9/17 Randomization: –

Treatment	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	12.1	7.66	10.1	32.2	Test Solution Prep: JBL
Salt Control	12.1	8.4	8.1	33.0	New WQ: MB
Meter ID	35A	pH23	RD09	EC04	Innoculation Time & Signoff: 1350/JBL

Appendix E

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Purple Urchin Sperm

CETIS Summary Report

Echinoid Fertilization Test — Pacific EcoRisk

Batch ID:	20-7228-2985	Test Type:	Fertilization	Analyst:	Yesenia Jaramillo
Start Date:	02 May-17 14:09	Protocol:	EPA/600/R-95/136 (1995)	Diluent:	Filtered Seawater
Ending Date:	02 May-17 14:28	Species:	Strongylocentrotus purpuratus	Brine:	Not Applicable
Duration:	19m	Source:	David Gutoff	Age:	N/A

Sample ID:	13-3512-3138	Code:	KCl	Client:	Reference Toxicant
Sample Date:	02 May-17 14:09	Material:	Potassium chloride	Project:	27284
Receipt Date:	02 May-17 14:09	Source:	Reference Toxicant		
Sample Age:	n/a (12.7 °C)	Station:	In House		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD	✓
12-5282-8436	Fertilization Rate	Dunnett Multiple Comparison Test	0.5	1	0.7071		3.32%	

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	g/L	95% LCL	95% UCL	TU	✓
16-8109-4546	Fertilization Rate	Linear Interpolation (ICPIN)	EC5	0.738	0.571	1.17		
			EC10	0.997	0.669	1.11		
			EC15	1.06	0.882	1.16		
			EC20	1.12	1	1.21		
			EC25	1.18	1.07	1.27		
			EC40	1.36	1.28	1.43		
			EC50	1.48	1.42	1.54		

Fertilization Rate Summary

Conc-g/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	0.980	0.957	1.000	0.970	1.000	0.007	0.014	1.44%	0.00%
0.25		4	0.983	0.967	0.998	0.970	0.990	0.005	0.010	0.97%	-0.26%
0.5		4	0.978	0.970	0.985	0.970	0.980	0.003	0.005	0.51%	0.26%
1		4	0.882	0.775	0.990	0.810	0.940	0.034	0.068	7.65%	9.95%
2		4	0.068	0.035	0.100	0.040	0.090	0.010	0.021	30.54%	93.11%
4		4	0.005	0.000	0.014	0.000	0.010	0.003	0.006	115.47%	99.49%

Fertilization Rate Detail

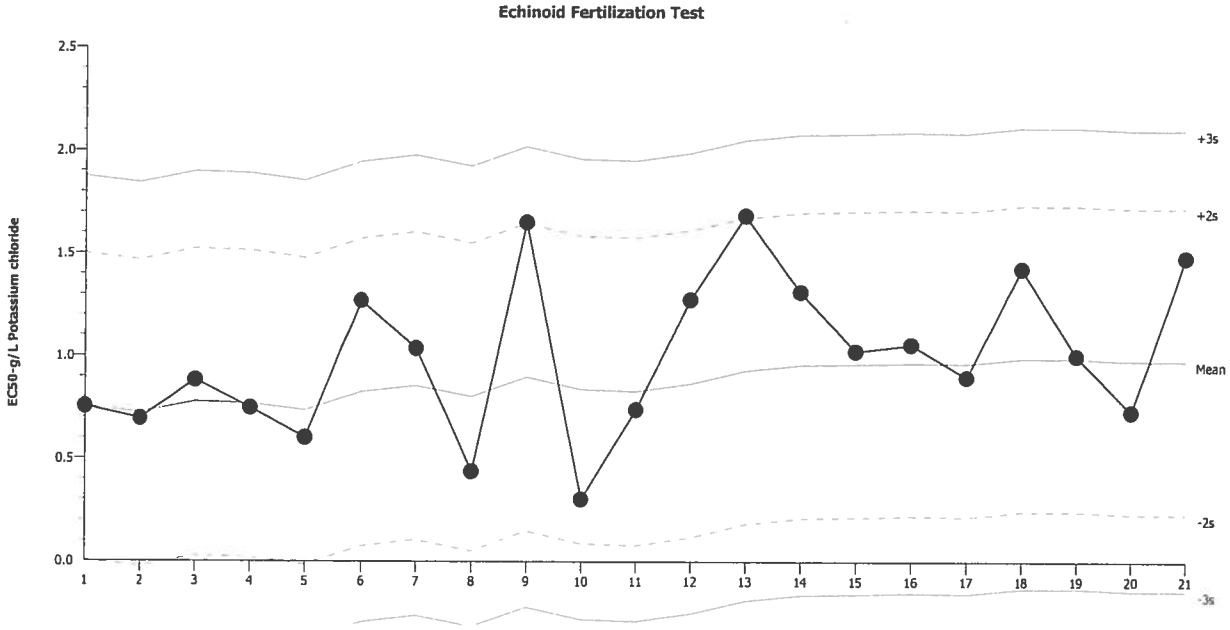
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	0.970	0.980	1.000	0.970
0.25		0.980	0.970	0.990	0.990
0.5		0.970	0.980	0.980	0.980
1		0.940	0.840	0.810	0.940
2		0.070	0.070	0.040	0.090
4		0.010	0.000	0.010	0.000

Fertilization Rate Binomials

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	97/100	98/100	100/100	97/100
0.25		98/100	97/100	99/100	99/100
0.5		97/100	98/100	98/100	98/100
1		94/100	84/100	81/100	94/100
2		7/100	7/100	4/100	9/100
4		1/100	0/100	1/100	0/100

Echinoid Fertilization Test **Pacific EcoRisk**

Test Type:	Fertilization	**Organism:**	Strongylocentrotus purpuratus (Purpl	**Material:**	Potassium chloride
Protocol:	EPA/600/R-95/136 (1995)	**Endpoint:**	Fertilization Rate	**Source:**	Reference Toxicant-REF



Mean:	0.9763	**Count:**	20	**-2s Warning Limit:**	0.2277	**-3s Action Limit:**	-0.1466
Sigma:	0.3743	**CV:**	38.30%	**+2s Warning Limit:**	1.725	**+3s Action Limit:**	2.099

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2014	Oct	24	13:55	0.7534	-0.2229	-0.5954			19-6145-2265	12-6923-6106
2	2015	Feb	3	15:46	0.6931	-0.2832	-0.7565			20-6424-3961	03-3734-1955
3		Mar	10	20:02	0.8828	-0.09346	-0.2497			03-1609-4614	20-7208-3996
4		Apr	10	16:10	0.7468	-0.2295	-0.6131			15-9484-2853	06-6830-8445
5			25	14:32	0.6019	-0.3744	-1			09-2428-9441	06-9565-7983
6		Jun	2	14:30	1.27	0.2933	0.7837			06-9858-7960	06-6679-5492
7			11	14:20	1.037	0.06092	0.1628			20-4039-2705	01-3137-2007
8		Jul	9	17:00	0.4376	-0.5387	-1.439			00-5468-3844	08-8667-5284
9		Oct	16	15:40	1.651	0.6745	1.802			09-6374-5200	17-9336-2268
10		Nov	11	14:37	0.3027	-0.6736	-1.8			08-9845-5289	17-1783-5976
11	2016	Mar	10	15:25	0.7383	-0.238	-0.6358			14-9143-6806	09-1626-0901
12		Apr	8	14:39	1.275	0.2992	0.7993			03-1545-6837	06-8821-2398
13		May	17	15:11	1.684	0.7082	1.892			03-7076-0085	10-4385-7250
14		Jul	12	13:57	1.314	0.3376	0.9019			20-7227-5918	06-1499-4390
15		Sep	15	13:56	1.025	0.04851	0.1296			03-9346-7049	16-4525-9048
16		Oct	14	16:12	1.057	0.08108	0.2166			06-6913-6140	12-8546-0677
17	2017	Jan	20	13:28	0.8968	-0.07951	-0.2124			05-7233-8327	13-7316-7465
18		Feb	3	14:13	1.427	0.4504	1.203			02-6596-3818	10-1524-9509
19			23	15:45	1.002	0.0258	0.06892			19-8512-2473	07-9956-4780
20		Apr	13	14:36	0.7292	-0.2471	-0.6603			10-8301-3688	04-7172-4001
21		May	2	14:09	1.481	0.5045	1.348			10-7410-4470	16-8109-4546

Echinoderm Fertilization Reference Toxicant Test Data Sheet

Client: **Reference Toxicant**
Test Material: Potassium Chloride
Test Species: *D. excentricus - S. purpuratus (circle)*
Test ID #: 72485
Project #: 27284

Test Start Date: 5/2/17
Test End Date: 5/2/17
Enumeration Date: 5/3/17
Investigator: JBL

Concentration (g/L KCl)	Replicate	Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Normal Fertilization
Control	A	97	3	100	97
	B	98	2	100	98
	C	100	0	100	100
	D	97	3	100	97
0.25	A	98	2	100	98
	B	97	3	100	97
	C	99	1	100	99
	D	99	1	100	99
0.5	A	97	3	100	97
	B	98	2	100	98
	C	98	2	100	98
	D	98	2	100	98
1	A	94	6	100	94
	B	84	16	100	84
	C	81	19	100	81
	D	94	6	100	94
2	A	7	93	100	7
	B	7	93	100	7
	C	4	96	100	4
	D	9	91	100	9
4	A	1	99	100	1
	B	0	100	100	0
	C	1	99	100	1
	D	0	100	100	0

Echinoderm Fertilization Reference Toxicant Test Water Chemistry Data

Client: **Reference Toxicant**
Test Material: Potassium Chloride
Test Species: *D. excentricus* / *S. purpuratus (circle)*
Test ID#: 72485 Project #: 27284

Organism Log#: 10261 Age: N/A
Organism Supplier: Gutoff
Control/Diluent: Filtered Seawater
Test Date: ~~5/2~~ 5/2/17 Randomization: –
JBL 5/2

Treatment (g/L KCl)	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	12.7	7.72	9.1	32.1	Date: 5/2/17
0.25	12.7	7.72	9.1	32.5	Test Solution Prep: JBL
0.5	12.7	7.72	9.2	32.8	New WQ: ✓
1	12.7	7.72	9.1	33.4	Innoculation Time: 1409 ~~1408~~ JBL 5/2
2	12.7	7.72	9.1	34.4	Innoculation Signoff: JBL
4	12.7	7.73	9.1	36.3	
Meter ID	35A	Pit 23	RDO	EC10	

Echinoderm Fertilization Reference Toxicant Test Data Sheet

Client: **Reference Toxicant**
Test Material: Potassium Chloride
Test Species: *D. excentricus - S. purpuratus (circle)*
Test ID #: ~~72485~~
Project #: 27284

Test Start Date: 5/2/17
Test End Date: 5/2/17
Enumeration Date: 5/3/17
Investigator: JBL

Treatment	Replicate	Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization
Lab Control (Natural Sea Water)	A	97	3	100	97
	B	98	2	100	98
	C	100	0	100	100
	D	97	3	100	97
Sperm Blank (eggs only) Lab Water Control	A	JBL 5/3 ~~100~~ 0	JBL 5/3 ~~0~~ 100	100	100
	B	JBL 5/3 ~~99~~ 1	JBL 5/3 + 99	100	99
	C	JBL 5/3 ~~99~~ 1	99	100	99
	D	1	99	100	99
Sperm Blank (eggs only) 4 g/L Control	A	0	100	100	100
	B	1	99	100	99
	C	1	99	100	99
	D	1	99	100	99
	A				
	B				
	C				
	D				

Appendix F

Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk Effluent to *Menidia beryllina*

CETIS Summary Report

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Batch ID:	00-6660-8920	**Test Type:**	Growth-Survival (7d)	**Analyst:**	Kristin Worrell
Start Date:	09 May-17 15:56	**Protocol:**	EPA/821/R/02/014 (2002)	**Diluent:**	Not Applicable
Ending Date:	16 May-17 07:10	**Species:**	Menidia beryllina	**Brine:**	Crystal Sea
Duration:	6d 15h	**Source:**	Aquatic Indicators, FL	**Age:**	11

Sample ID:	18-1826-1096	**Code:**	Eff	**Client:**	CH2M Hill
Sample Date:	08 May-17 11:10	**Material:**	Effluent	**Project:**	27391
Receipt Date:	09 May-17 11:10	**Source:**	SFPP Norwalk Station		
Sample Age:	29h	**Station:**	EFF-05-08-TOX		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
03-6695-7188	7d Survival Rate	TST-Welch's t Test	0.0023	100% passed 7d survival rate
07-0504-5938	Mean Dry Biomass-mg	TST-Welch's t Test	0.0102	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%
100		4	0.975	0.895	1.000	0.900	1.000	0.025	0.050	5.13%	2.50%

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	LW	4	1.75	1.56	1.94	1.59	1.88	0.0605	0.121	6.92%	0.00%
100		4	1.86	1.5	2.22	1.64	2.17	0.112	0.225	12.09%	-6.26%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.000	1.000	1.000	1.000
100		1.000	1.000	1.000	0.900

Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.75	1.79	1.59	1.88
100		2.17	1.64	1.87	1.76

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	9/10

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	03-6695-7188	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	19 May-17 14:10	**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	DF	P-Type	P-Value	Decision(α:25%)
Lab Water Contr		100*	7.66	0.765	3	CDF	0.0023	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0033199	0.0033199	1	1	0.3559	Non-Significant Effect
Error	0.0199195	0.0033199	6			
Total	0.0232394		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

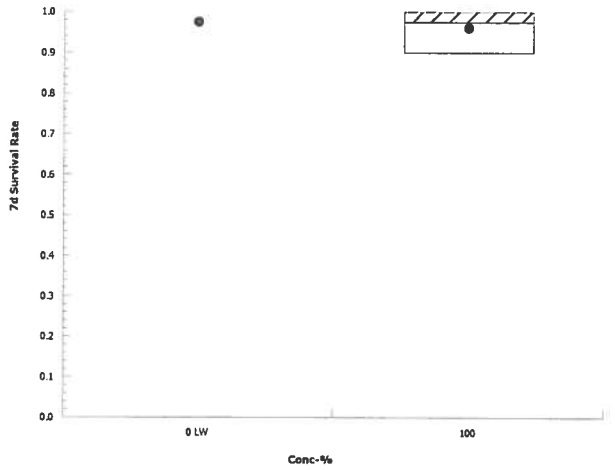
7d Survival Rate Summary

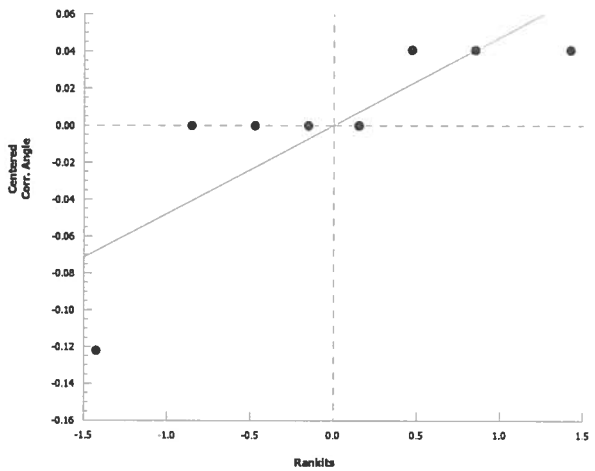
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
100		4	0.975	0.895	1.000	1.000	0.900	1.000	0.025	5.13%	2.50%

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	1.37	1.24	1.5	1.41	1.25	1.41	0.0407	5.94%	2.89%

Graphics





Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Analysis ID:	07-0504-5938	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.2
Analyzed:	19 May-17 14:10	**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*	4.51	0.765	3	CDF	0.0102	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0239802	0.0239802	1	0.737	0.4237	Non-Significant Effect
Error	0.195291	0.0325486	6			
Total	0.219272		7			

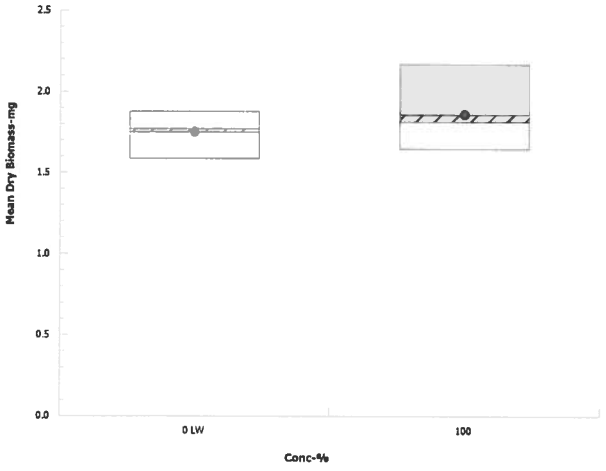
Distributional Tests

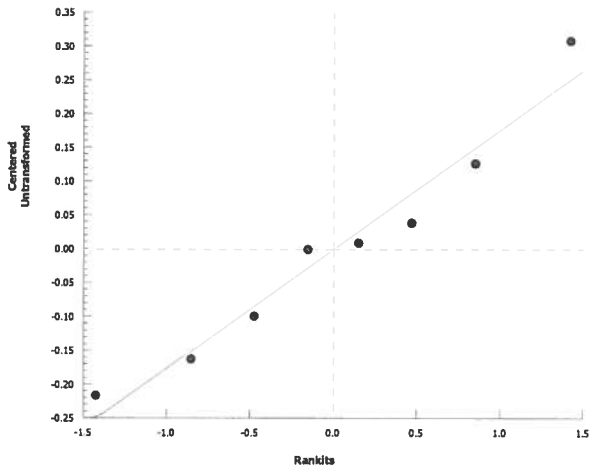
Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	3.45	47.5	0.3363	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.96	0.645	0.8138	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	LW	4	1.75	1.56	1.94	1.77	1.59	1.88	0.0605	6.92%	0.00%
100		4	1.86	1.5	2.22	1.81	1.64	2.17	0.112	12.09%	-6.26%

Graphics





7 Day Chronic Inland Silverside (M. beryllina) Toxicity Test Data

Client: **CH2M SFPP Norwalk Station** Organism Log#: 10271 Age: 11 day

Test Material: Effluent Organism Supplier: Aquatic Indicators

Test ID#: 72929 Project #: 27391 Control/Diluent: Crystal Sea @ 25 ppt

Test Date: 5/9/17 Randomization: 4.2.1 Control Water Batch: 1196

Treatment (% Effluent)	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Salinity (ppt) new	Salinity (ppt) old	# Live Organisms A	B	C	D	SIGN-OFF
Lab Control	24.5	8.03		7.7		24.8		10	10	10	10	Date: 5/9/17 Sample ID: 46409 Test Solution Prep: BN
100%	24.4	7.78		8.4		24.5		10	10	10	10	New WQ: MS Initiation Time: 1556 Initiation Signoff: RB
Meter ID	103M	PH19		RD12		EC10						
Lab Control	24.6	8.15	7.92	8.0	6.6	25.0	25.1	10	10	10	10	Date: 5/10/17 Sample ID: 46409 Test Solution Prep: JL
100%	24.6	7.95	8.10	8.1	6.3	24.3	25.0	10	10	10	10	New WQ: YJ Renewal Time: 1045 Renewal Signoff: JBL
Meter ID	100A	PH19	PH19	RD10	RD10	EC04	EC04					Old WQ: YJ
Lab Control	24.0	8.25	7.82	7.9	7.1	24.5	24.9	10	10	10	10	Date: 5/11/17 Sample ID: 46457 Test Solution Prep: TK
100%	24.4	7.51	8.08	7.8	7.1	24.7	24.6	10	10	10	10	New WQ: SD Renewal Time: 1310 Renewal Signoff: ML
Meter ID	72A	PH23	PH19	RD12	RD10	EC04	EC04					Old WQ: JAM
Lab Control	24.2	8.19	7.88	7.9	7.1	24.7	24.9	10	10	10	10	Date: 5/12/17 Sample ID: 46457 Test Solution Prep: EP
100%	24.8	7.77	8.07	7.8	7.0	25.1	24.7	10	10	10	9	New WQ: SD Renewal Time: 1312 Renewal Signoff: APT
Meter ID	103A	PH19	PH19	RD11	RD11	EC04	EC04					Old WQ: TK

7 Day Chronic Inland Silverside (M. beryllina) Toxicity Test Data

Client: **CH2M SFPP Norwalk Station**
Test Material: ~~LSB1CTD0 (Control Tank Day 0)~~ ECF
Test ID#: 72929 Project #: 27391
Test Date: 5/9/17

Organism Log#: 10271 Age: 11dayp
Organism Supplier: Aquatic Indicators
Control/Diluent: Crystal Sea @ 25 ppt
Control Water Batch: 1196

Treatment (% Effluent)	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Salinity (ppt) new	Salinity (ppt) old	# Live Organisms A	# Live Organisms B	# Live Organisms C	# Live Organisms D	SIGN-OFF
Lab Control	24.2	8.12	7.26	7.8	7.1	24.1	25.6	10	10	10	10	Date: 5/13/17 Sample ID: 46470 Test Solution Prep: TK
100%	24.2	7.50	8.18	8.7	7.2	24.2	25.7	10	10	10	9	New WQ: JM Renewal Time: 1435 Renewal Signoff: M
Meter ID	10UA	PH23	PH21	RDO12	RDO10	ECO4	EC10					Old WQ: EC
Lab Control	24.6	8.05	7.59	8.1	7.1	24.7	25.0	10	10	10	10	Date: 5/14/17 Sample ID: 46470 Test Solution Prep: TK
100%	24.9	7.74	7.88	8.5	7.4	24.7	25.2	10	10	10	9	New WQ: MS Renewal Time: 1030 Renewal Signoff: SH
Meter ID	07A	PH19	PH19	RDO2	RDO2	ECO4	EC09					Old WQ: SH
Lab Control	24.8	7.91	7.54	7.8	6.3	24.4	24.9	10	10	10	10	Date: 5/15/17 Sample ID: 46470 Test Solution Prep: TK
100%	25.1	7.48	8.09	7.6	6.3	24.4	25.1	10	10	10	9	New WQ: J Renewal Time: 1200 Renewal Signoff: JL
Meter ID	103A	pH23	PH19	RDO9	RDO10	ECO4	EC09					Old WQ: TA
Lab Control	25.3		7.75		7.2		25.5	10	10	10	10	Termination Date: 5/16/17 Termination Time: 0710 Termination Signoff: JBL
100%	25.0		8.12		7.3		25.1	10	10	10	9	Old WQ: JL
Meter ID	103A		pH23		RDO9		EC10					

Chronic Inland Silverside Dry Weight and Biomass Data

Client: **CH2M SFPP Norwalk Station** Test ID #: 72929 Project # 27391

Sample: Effluent Tare Weight Date: 5-15-17 Sign-off: [illegible]

Test Date: 5/9/17 Final Weight Date: 5-19-17 Sign-off: [illegible]

Pan ID	Concentration	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Lab Control	A	414.66	432.14	10	~~1.715~~ 1.748
2		B	411.60	429.47	10	1.787
3		C	414.08	429.94	10	1.586
4		D	410.42	429.17	10	1.875
5	100%	A	413.06	434.72	10	2.166
6		B	411.20	427.62	10	1.642
7		C	410.36	429.03	10	1.867
8		D	414.03	431.62	10	1.759
QA 1			412.31	412.35		
QA 2			411.08	411.10		
Balance ID			Bal 04	Bal 01		

Appendix G

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Menidia beryllina*

Chronic Larval Fish Survival and Growth Test — Pacific EcoRisk

Batch ID:	13-3590-7651	Test Type:	Growth-Survival (7d)	Analyst:	Krista Prosser
Start Date:	02 May-17 12:45	Protocol:	EPA/821/R/02/014 (2002)	Diluent:	Laboratory Water
Ending Date:	09 May-17 09:24	Species:	Menidia beryllina	Brine:	Crystal Sea
Duration:	6d 21h	Source:	Aquatic Indicators, FL	Age:	10

Sample ID:	05-2666-0216	Code:	KCl	Client:	Reference Toxicant
Sample Date:	02 May-17 12:45	Material:	Potassium chloride	Project:	27279
Receipt Date:	02 May-17 12:45	Source:	Reference Toxicant		
Sample Age:	n/a (25.8 °C)	Station:	In House		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD ✓
07-8832-0645	7d Survival Rate	Dunnett Multiple Comparison Test	1	1.25	1.118		22.0%
18-5581-4349	Mean Dry Biomass-mg	Dunnett Multiple Comparison Test	1	> 1	n/a		29.5%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	g/L	95% LCL	95% UCL	TU ✓
16-0746-2201	7d Survival Rate	Regression: Log-Normal (Probit)	EC5	1	0.771	1.13	
			EC10	1.08	0.873	1.2	
			EC15	1.14	0.947	1.25	
			EC20	1.19	1.01	1.3	
			EC25	1.23	1.07	1.33	
			EC40	1.34	1.21	1.45	
			EC50	1.42	1.3	1.54	
05-2314-8444	Mean Dry Biomass-mg	Linear Interpolation (ICPIN)	IC5	0.688	0.525	1.64	
			IC10	0.876	0.549	1.58	
			IC15	1.26	0.454	1.42	
			IC20	1.31	0.567	1.46	
			IC25	1.35	0.679	1.52	
			IC40	1.47	1.29	1.64	
			IC50	1.56	1.36	1.7	

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	0.975	0.895	1.000	0.900	1.000	0.025	0.050	5.13%	0.00%
0.5		4	0.975	0.895	1.000	0.900	1.000	0.025	0.050	5.13%	0.00%
1		4	0.925	0.773	1.000	0.800	1.000	0.048	0.096	10.35%	5.13%
1.25		4	0.600	0.150	1.000	0.200	0.800	0.141	0.283	47.14%	38.46%
1.5		4	0.550	0.219	0.881	0.300	0.800	0.104	0.208	37.85%	43.59%
2		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	1.04	0.866	1.21	0.9	1.14	0.0537	0.107	10.35%	0.00%
0.5		4	1.2	1.08	1.32	1.12	1.27	0.038	0.076	6.36%	-15.33%
1		4	0.95	0.443	1.46	0.505	1.26	0.159	0.318	33.51%	8.44%
1.25		4	0.986	0.637	1.34	0.75	1.27	0.11	0.22	22.26%	4.89%
1.5		4	0.629	0.313	0.945	0.349	0.813	0.0993	0.199	31.60%	39.37%
2		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	0.900	1.000	1.000
0.5		0.900	1.000	1.000	1.000
1		0.800	1.000	0.900	1.000
1.25		0.200	0.600	0.800	0.800
1.5		0.600	0.500	0.800	0.300
2		0.000	0.000	0.000	0.000

Mean Dry Biomass-mg Detail

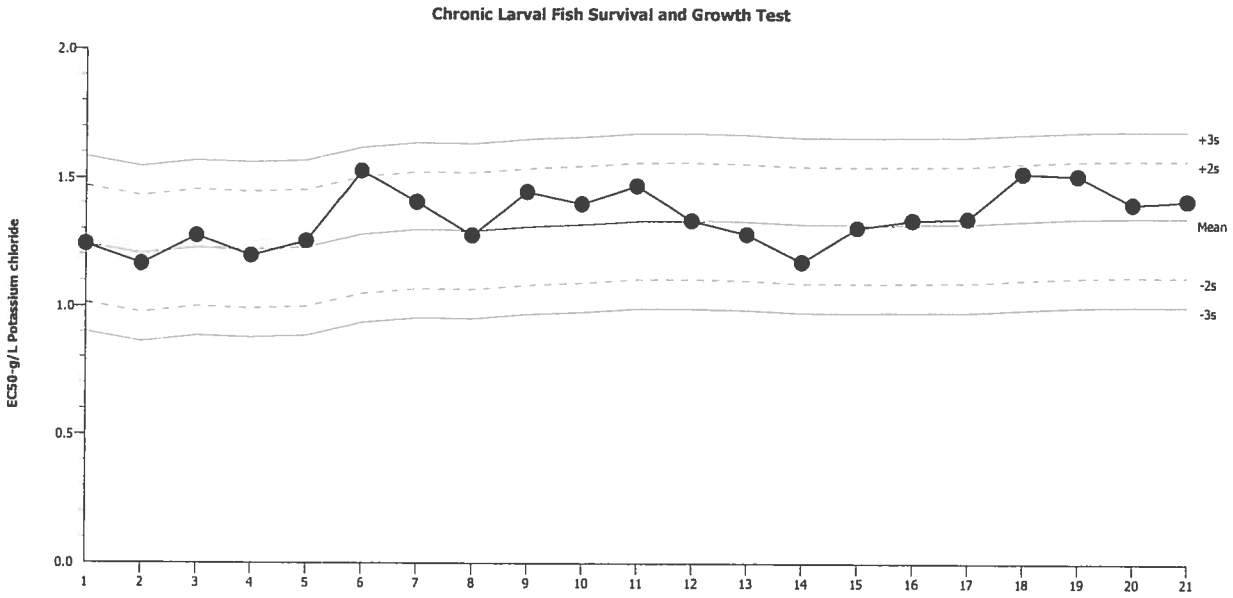
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	1.1	0.9	1.14	1.01
0.5		1.12	1.27	1.25	1.14
1		0.985	1.05	1.26	0.505
1.25		1.27	0.75	1.03	0.897
1.5		0.705	0.648	0.813	0.349
2		0	0	0	0

7d Survival Rate Binomials

Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	LW	10/10	9/10	10/10	10/10
0.5		9/10	10/10	10/10	10/10
1		8/10	10/10	9/10	10/10
1.25		2/10	6/10	8/10	8/10
1.5		6/10	5/10	8/10	3/10
2		0/10	0/10	0/10	0/10

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Test Type:	Growth-Survival (7d)	**Organism:**	Menidia beryllina (Inland Silverside)	**Material:**	Potassium chloride
Protocol:	EPA/821/R/02/014 (2002)	**Endpoint:**	7d Survival Rate	**Source:**	Reference Toxicant-REF



Mean:	1.344	**Count:**	20	**-2s Warning Limit:**	1.117	**-3s Action Limit:**	1.003
Sigma:	0.1138	**CV:**	8.47%	**+2s Warning Limit:**	1.572	**+3s Action Limit:**	1.686

Quality Control Data

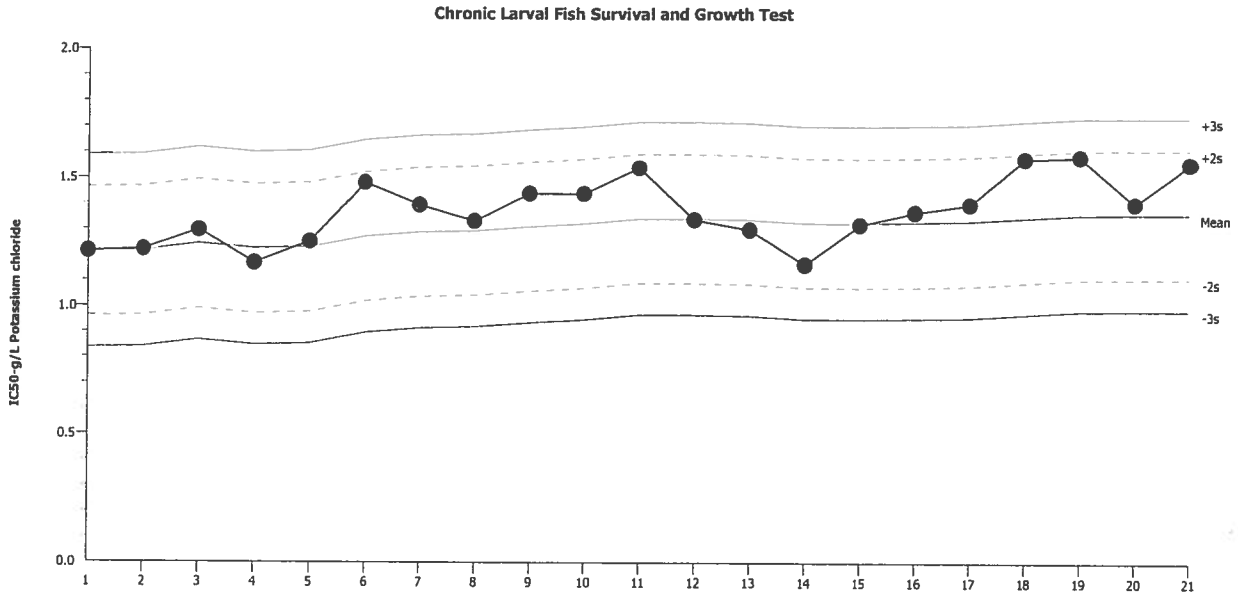
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Sep	8	15:40	1.242	-0.1024	-0.8997			11-5968-6061	02-7200-3684
2			17	13:15	1.165	-0.1789	-1.572			15-1777-8690	11-7647-1584
3			29	13:40	1.275	-0.06901	-0.6064			10-8966-1661	09-6405-3008
4		Oct	27	16:25	1.198	-0.1463	-1.285			07-2901-3458	09-2904-0544
5		Nov	12	17:15	1.254	-0.09013	-0.792			21-3601-4255	10-6362-6853
6		Dec	8	17:30	1.528	0.1837	1.614			18-9855-5264	11-8158-0633
7			15	10:30	1.407	0.06291	0.5528			10-8028-9152	14-4532-9994
8	2016	Jan	12	18:00	1.277	-0.06704	-0.5891			19-7746-5176	01-9879-8672
9		Apr	12	9:53	1.447	0.103	0.9048			06-8408-4347	05-4762-3466
10			21	14:30	1.401	0.05656	0.497			11-0396-9359	06-2353-9329
11		May	17	17:26	1.471	0.1268	1.114			16-1029-2368	11-0924-4635
12		Jun	14	16:20	1.335	-0.00869	-0.07636			01-7714-8063	01-8731-4560
13		Aug	11	11:00	1.282	-0.06173	-0.5424			13-8865-1126	07-8914-4891
14		Sep	15	15:00	1.175	-0.1688	-1.484			01-0258-4616	14-9982-6942
15		Oct	20	14:15	1.308	-0.03624	-0.3184			15-1275-8596	02-1621-8501
16		Nov	9	13:55	1.338	-0.00591	-0.05192			05-9589-4435	11-3608-2942
17			11	14:50	1.345	0.001384	0.01216			16-4947-4914	05-3176-6608
18			15	15:51	1.522	0.1775	1.56			18-8138-0840	07-2242-1159
19	2017	Mar	7	13:10	1.513	0.1686	1.482			19-7207-0550	17-7555-0314
20			24	14:20	1.402	0.05807	0.5103			17-7243-9145	18-5577-7629
21		May	2	12:45	1.416	0.07156	0.6288			14-0438-7078	16-0746-2201

CETIS QC Plot

Report Date: 13 May-17 12:24 (1 of 1)

Chronic Larval Fish Survival and Growth Test — **Pacific EcoRisk**

Test Type:	Growth-Survival (7d)	**Organism:**	Menidia beryllina (Inland Silverside)	**Material:**	Potassium chloride
Protocol:	EPA/821/R/02/014 (2002)	**Endpoint:**	Mean Dry Biomass-mg	**Source:**	Reference Toxicant-REF



Mean:	1.361	**Count:**	20	**-2s Warning Limit:**	1.11	**-3s Action Limit:**	0.9842
Sigma:	0.1255	**CV:**	9.22%	**+2s Warning Limit:**	1.612	**+3s Action Limit:**	1.737

Quality Control Data

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2015	Sep	8	15:40	1.213	-0.1476	-1.176			11-5968-6061	02-9600-3333
2			17	13:15	1.221	-0.1401	-1.117			15-1777-8690	17-8900-5834
3			29	13:40	1.296	-0.06464	-0.5151			10-8966-1661	10-1846-5613
4		Oct	27	16:25	1.168	-0.1927	-1.535			07-2901-3458	11-3942-5784
5		Nov	12	17:15	1.251	-0.1103	-0.8791			21-3601-4255	09-9330-4792
6		Dec	8	17:30	1.481	0.1198	0.9544			18-9855-5264	17-1487-0188
7			15	10:30	1.393	0.03245	0.2586			10-8028-9152	18-0991-8593
8	2016	Jan	12	18:00	1.331	-0.03008	-0.2397			19-7746-5176	20-4098-1243
9		Apr	12	9:53	1.438	0.07733	0.6162			06-8408-4347	19-1749-2408
10			21	14:30	1.438	0.07718	0.615			11-0396-9359	02-6199-6490
11		May	17	17:26	1.54	0.1789	1.425			16-1029-2368	17-9189-5139
12		Jun	14	16:20	1.337	-0.02355	-0.1877			01-7714-8063	09-3544-1499
13		Aug	11	11:00	1.298	-0.06259	-0.4987			13-8865-1126	18-0939-3159
14		Sep	15	15:00	1.163	-0.1977	-1.575			01-0258-4616	17-7855-4939
15		Oct	20	14:15	1.319	-0.04239	-0.3378			15-1275-8596	19-6097-2551
16		Nov	9	13:55	1.367	0.006188	0.04931			05-9589-4435	10-9991-8437
17			11	14:50	1.398	0.03657	0.2914			16-4947-4914	07-4049-8496
18			15	15:51	1.575	0.2143	1.708			18-8138-0840	05-5810-6920
19	2017	Mar	7	13:10	1.584	0.2229	1.776			19-7207-0550	04-4128-1602
20			24	14:20	1.402	0.04065	0.3239			17-7243-9145	19-9836-7382
21		May	2	12:45	1.556	0.1951	1.554			14-0438-7078	05-2314-8444

7 Day Chronic *Menidia Beryllina* Toxicity Test Data

Client: **Reference Toxicant** Organism Log#: 10253 Age: 10 DAYS old

Test Material: **Potassium Chloride** Control/Diluent: DI + Crystal Sea @ 25 ppt

Test ID#: 72474 Project #: 27279 Control Water Batch: 1194

Test Date: 5/2/17 Randomization: 4.6.3

Treatment (g/L KCl)	Temp (°C)	pH new	pH old	D.O. (mg/L) new	D.O. (mg/L) old	Salinity (ppt) new	Salinity (ppt) old	# Live Organisms A	B	C	D	SIGN-OFF
Control	25.6	8.39		7.7		24.9		10	10	10	10	Date: 5/2/17
0.5	25.8	8.39		7.6		25.6		10	10	10	10	Lot No. 56
1	25.8	8.40		7.9		26.0		10	10	10	10	Test Solution Prep: BV
1.25	25.8	8.40		7.9		26.3		10	10	10	10	New WQ: N
1.5	25.8	8.40		8.0		26.5		10	10	10	10	Initiation Time: 1245
2	25.8	8.40		8.0		26.9		10	10	10	10	Initiation Signoff:
Meter ID	3/A	PH23		RD10		EC10						
Control	25.2	8.27	7.02	7.9	7.0	25.1	25.4	10	9	10	10	Date: 5/3/17
0.5	25.2	8.30	7.02	7.9	6.9	25.6	26.2	9	10	10	10	Lot No. 56
1	25.3	8.32	7.07	8.0	6.9	26.1	26.5	10	10	10	10	Test Solution Prep: 5/3/17 SE BV
1.25	25.0	8.33	7.10	7.9	6.7	26.4	26.6	6	10	10	9	New WQ: WC
1.5	25.1	8.33	7.13	8.0	6.8	26.6	26.9	10	9	10	7	Renewal Time: 1324
2	25.1	8.35	7.15	8.0	6.9	27.1	27.1	5	3	3	4	Renewal Signoff: HF
Meter ID	103A	PH23	PH15	RD16	RD10	EC10	EC10					Old WQ: Le
Control	25.0	7.84	7.75	7.8	5.9	24.7	25.3	10	9	10	10	Date: 5/4/17
0.5	24.9	8.03	7.78	7.7	6.1	25.4	SD 5/4/17 26.0	9	10	10	10	Lot No. 56
1	25.0	8.13	7.80	7.7	6.4	25.9	26.6	10	10	9	10	Test Solution Prep: SH
1.25	24.9	8.16	7.82	7.8	6.2	26.2	26.7	6	9	10	9	New WQ: WC
1.5	24.8	8.19	7.81	7.8	6.3	26.4	27.1	10	9	10	7	Renewal Time: 1045
2	24.6	8.21	7.83	7.9	6.2	27.0	27.5	7	2	1	2	Renewal Signoff: SH
Meter ID	100A	PH21	PH19	RD11	RD12	EC09	EC04					Old WQ: SD
Control	25.2	8.20	7.78	7.8	6.1	24.9	25.0	10	9	10	10	Date: 5/5/17
0.5	25.3	8.21	7.74	7.8	6.4	25.5	25.3	9	10	10	10	Lot No. 56
1	25.3	8.22	7.73	7.8	6.10	26.0	26.0	10	10	9	10	Test Solution Prep: EP
1.25	25.4	8.22	7.74	7.9	6.7	26.3	26.1	6	9	9	9	New WQ: BV
1.5	25.4	8.23	7.72	8.0	6.9	26.5	26.4	8	9	9	6	Renewal Time: 1415
2	25.4	8.24	7.74	8.1	6.8	27.0	26.9	1	2	0	1	Renewal Signoff: TK
Meter ID	81A	PH23	PH21	RD12	RD10	EC04	EC09					Old WQ: MB

7 Day Chronic *Menidia Beryllina* Toxicity Test Data

Client: **Reference Toxicant** Organism Log#: 10253 Age: 10 days old

Test Material: **Potassium Chloride** Control/Diluent: DI + Crystal Sea @ 25 ppt

Test ID#: 72474 Project #: 27279 Control Water Batch: 1194

Test Date: 5/2/17 Randomization: 4-6-3

Treatment (g/L KCl)	Temp (°C)	pH		D.O. (mg/L)		Salinity (ppt)		# Live Organisms				SIGN-OFF
		new	old	new	old	new	old	A	B	C	D	
Control	25.3	8.07	7.79	8.1	6.7	25.1	25.0	10	9	10	10	Date: 5/6/17
0.5	25.2	8.09	7.80	8.0	6.7	25.3	25.6	9	10	10	10	Lot No. 56
1	25.1	8.11	7.78	8.0	6.8	25.8	26.2	9	10	9	10	Test Solution Prep: EP
1.25	25.0	8.10	7.77	8.1	6.8	26.2	26.3	6	7	9	9	New WQ: MB
1.5	25.1	8.12	7.76	8.1	6.9	26.4	26.6	8	7	9	6	Renewal Time: 0935
2	25.1	8.13	7.78	8.1	7.2	26.8	26.8	1	2	–	1	Renewal Signoff: RG
Meter ID	100A	PH21	PH21	RD10	RD10	EC11	EC11					Old WQ: MB
Control	25.4	7.99	7.81	7.8	7.3	24.6	24.8	10	9	10	10	Date: 5/7/17
0.5	25.4	8.03	7.78	7.9	7.4	24.8	25.3	9	10	10	10	Lot No. 56
1	25.3	8.04	7.78	7.9	7.3	25.5	26.0	9	10	9	10	Test Solution Prep: SH
1.25	25.0	8.05	7.80	7.9	7.3	25.7	26.3	6	6	8	9	New WQ: MB
1.5	25.6	8.05	7.76	7.9	7.3	25.9	26.4	7	6	9	6	Renewal Time: 1020
2	25.4	8.07	7.97	7.9	7.3	26.6	26.6	6	1	–	0	Renewal Signoff: JBL
Meter ID	100A	PH19	PH19	RD10	RD10	EC10	EC10					Old WQ: MB
Control	25.0	8.13	7.75	7.8	7.3	24.8	24.9	10	9	10	10	Date: 5/8/17
0.5	25.1	8.16	7.75	7.8	7.2	25.5	25.9	9	10	10	10	Lot No. 56
1	25.0	8.17	7.76	7.9	7.1	26.0	26.5	9	10	9	10	Test Solution Prep: EP
1.25	25.0	8.18	7.77	7.9	7.0	26.3	26.6	3	6	8	9	New WQ: TF
1.5	25.1	8.19	7.77	8.0	6.9	26.5	27.0	7	5	8	3	Renewal Time: 1020
2	25.3	8.20	7.79	8.1	7.0	27.0	27.4	–	0	–	–	Renewal Signoff: SF
Meter ID	98A	PH23	PH21	RD09	RD11	EC11	EC10					Old WQ: CJD
Control	25.5		7.86		7.0		25.4	10	9	10	10	Date: 5/9/17
0.5	25.5		7.88		6.6		25.8	9	10	10	10	Termination Time: 0924
1	25.5		7.85		6.7		26.5	8	10	9	10	Termination Signoff: RG
1.25	25.5		7.91		6.8		26.6	2	6	8	8	Old WQ: SD
1.5	25.6		7.90		6.7		26.8	6	5	8	3	
2	—		—		—		—	–	—	–	–	
Meter ID	72A		PH23		RD09		EC04					

Menidia beryllina Dry Weight Data Sheet

Client: **Reference Toxicant** Test ID #: 72474 Project # 27279

Sample: **Potassium Chloride** Tare Weight Date: 5/9/17 Sign-off: BR

Test Date: 5/2/17 Final Weight Date: 5/10/17 Sign-off: RB

Pan ID	Treatment	Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control	A	412.90	423.86	10	1.10
2		B	410.24	419.24	10	0.900
3		C	416.84	428.28	10	1.14
4		D	411.85	421.93	10	1.01
5	0.5	A	416.55	427.79	10	1.12
6		B	417.41	430.15	10	1.27
7		C	412.17	424.65	10	1.25
8		D	408.19	419.57	10	1.14
9	1	A	410.85	420.70	10	0.985
10		B	416.19	426.70	10	1.05
11		C	413.99	426.56	10	1.26
12		D	413.54	418.59	10	0.505
13	1.25	A	416.33	429.00	10	1.27
14		B	420.41	427.91	10	0.750
15		C	407.17	417.98	10	1.03
16		D	413.52	422.49	10	0.897
17	1.5	A	411.18	418.23	10	0.705
18		B	413.26	419.74	10	0.648
19		C	412.85	420.98	10	0.813
20		D	416.33	419.82	10	0.349
21	2	A	~~413~~ 415.34 BP 5/4/17	—	10	—
22		B	415.24	—	10	—
23		C	410.07	—	10	—
24		D	415.43	—	10	—
QA 1			409.78	409.76		
QA 2			418.75	418.77		
QA3			413.32	413.32		
Balance ID:			BAL04	BAL04		

June 23, 2017

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

TEL:
FAX:

Workorder No.: N024624

RE: SFPP-Norwalk

Attention: Eric Davis

Enclosed are the results for sample(s) received on June 16, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

for

Puri Romualdo
Laboratory Director

CLIENT: CH2MHill
Project: SFPP-Norwalk
Lab Order: N024624

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

Samples were received intact with proper chain of custody documentation.

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

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

Samples were analyzed within method holding time.

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

ASSET Laboratories

Date: *23-Jun-17*

CLIENT: CH2MHill
Project: SFPP-Norwalk
Lab Order: N024624
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024624-001A	EFF-06-16	Wastewater	6/16/2017 1:30:00 PM	6/16/2017	6/23/2017
N024624-001B	EFF-06-16	Wastewater	6/16/2017 1:30:00 PM	6/16/2017	6/23/2017
N024624-001C	EFF-06-16	Wastewater	6/16/2017 1:30:00 PM	6/16/2017	6/23/2017
N024624-001D	EFF-06-16	Wastewater	6/16/2017 1:30:00 PM	6/16/2017	6/23/2017
N024624-001E	EFF-06-16	Wastewater	6/16/2017 1:30:00 PM	6/16/2017	6/23/2017

CLIENT: CH2MHill
Lab Order: N024624
Project: SFPP-Norwalk
Lab ID: N024624-001

Client Sample ID: EFF-06-16
Collection Date: 6/16/2017 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_170623A**	QC Batch: **62629**				PrepDate	**6/23/2017**	Analyst: **JJS**
Phenol	ND	0.33	1.0		µg/L	1	6/23/2017 11:23 AM
Surr: 1,2-Dichlorobenzene-d4	76.0	0	16-120		%REC	1	6/23/2017 11:23 AM
Surr: Phenol-d5	28.0	0	15-120		%REC	1	6/23/2017 11:23 AM
VOLATILE ORGANIC COMPOUNDS BY GC/MS							
					EPA 8260B		
RunID: **NV00922-MS5_170619A**	QC Batch: **P17VW098**				PrepDate		Analyst: **RB**
1,1-Dichloroethane	ND	0.13	0.50		ug/L	1	6/20/2017 05:02 AM
1,2-Dichloroethane	ND	0.13	0.50		ug/L	1	6/20/2017 05:02 AM
Benzene	ND	0.14	1.0		ug/L	1	6/20/2017 05:02 AM
Ethylbenzene	ND	0.14	1.0		ug/L	1	6/20/2017 05:02 AM
m,p-Xylene	ND	0.23	1.0		ug/L	1	6/20/2017 05:02 AM
MTBE	ND	0.13	1.0		ug/L	1	6/20/2017 05:02 AM
o-Xylene	ND	0.13	1.0		ug/L	1	6/20/2017 05:02 AM
Tert-Butanol	ND	1.8	5.0		ug/L	1	6/20/2017 05:02 AM
Toluene	ND	0.14	2.0		ug/L	1	6/20/2017 05:02 AM
Xylenes, Total	ND	1.5	2.0		ug/L	1	6/20/2017 05:02 AM
Surr: 1,2-Dichloroethane-d4	103	0	72-119		%REC	1	6/20/2017 05:02 AM
Surr: 4-Bromofluorobenzene	99.0	0	76-119		%REC	1	6/20/2017 05:02 AM
Surr: Dibromofluoromethane	103	0	85-115		%REC	1	6/20/2017 05:02 AM
Surr: Toluene-d8	102	0	81-120		%REC	1	6/20/2017 05:02 AM
TPH EXTRACTABLE BY GC/FID							
	EPA 3510C				**EPA 8015B**		
RunID: **NV00922-GC3_170619A**	QC Batch: **62573**				PrepDate	**6/19/2017**	Analyst: **QCE**
TPH-Diesel (C13-C22)	ND	16	26		ug/L	1	6/19/2017 04:32 PM
TPH-Oil (C23-C36)	20	14	26	J	ug/L	1	6/19/2017 04:32 PM
Surr: Octacosane	94.1	0	26-152		%REC	1	6/19/2017 04:32 PM
Surr: p-Terphenyl	89.4	0	57-132		%REC	1	6/19/2017 04:32 PM
GASOLINE RANGE ORGANICS BY GC/FID							
					EPA 8015B		
RunID: **NV00922-GC4_170617A**	QC Batch: **E17VW056**				PrepDate		Analyst: **RB**
TPH-Gasoline (C4-C12)	ND	16	50		ug/L	1	6/17/2017 05:27 PM
Surr: Chlorobenzene - d5	105	0	74-138		%REC	1	6/17/2017 05:27 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: N024624
Project: SFPP-Norwalk
Lab ID: N024624-001

Client Sample ID: EFF-06-16
Collection Date: 6/16/2017 1:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: **NV00922-AA1_170619A** QC Batch: **62567** PrepDate **6/19/2017** Analyst: **MG**							
Mercury	0.048	0.018	0.050	J	µg/L	1	6/19/2017 11:46 AM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170619A** QC Batch: **62572** PrepDate **6/19/2017** Analyst: **CEI**							
Copper	ND	0.26	0.50		µg/L	1	6/19/2017 01:28 PM
Lead	ND	0.037	0.50		µg/L	1	6/19/2017 01:28 PM
Zinc	7.3	0.27	1.0		µg/L	1	6/19/2017 01:28 PM
TOTAL TPH							
EPA 8015B							
RunID: **NV00922-GC3_170619A** QC Batch: **R115844** PrepDate Analyst: **QCE**							
Total TPH	20	16	100	J	ug/L	1	6/19/2017

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
Work Order: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID **MB-62572**	SampType: **MBLK**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **6/19/2017**	RunNo: **115841**
Client ID: **PBW**	Batch ID: **62572**	TestNo: **EPA 200.8**		Analysis Date: **6/19/2017**	SeqNo: **2669749**

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-62572**	SampType: **LCS**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **6/19/2017**	RunNo: **115841**
Client ID: **LCSW**	Batch ID: **62572**	TestNo: **EPA 200.8**		Analysis Date: **6/19/2017**	SeqNo: **2669750**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	9.539	0.50	10.00	0	95.4	85	115				
Lead	9.787	0.50	10.00	0	97.9	85	115				
Zinc	94.003	1.0	100.0	0	94.0	85	115				

Sample ID **N024624-001D-DUP**	SampType: **DUP**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **6/19/2017**	RunNo: **115841**
Client ID: **ZZZZZZ**	Batch ID: **62572**	TestNo: **EPA 200.8**		Analysis Date: **6/19/2017**	SeqNo: **2669752**

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	8.445	1.0						7.286	14.7	20	

Sample ID **N024624-001D-MS**	SampType: **MS**	TestCode: **200.8_W_SF**	Units: **µg/L**	Prep Date: **6/19/2017**	RunNo: **115841**
Client ID: **ZZZZZZ**	Batch ID: **62572**	TestNo: **EPA 200.8**		Analysis Date: **6/19/2017**	SeqNo: **2669755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.991	0.50	10.00	0	79.9	75	125				
Lead	8.925	0.50	10.00	0	89.3	75	125				
Zinc	97.396	1.0	100.0	7.286	90.1	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N024624-001D-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	6/19/2017	RunNo:	115841
Client ID:	ZZZZZZ	Batch ID:	62572	TestNo:	EPA 200.8			Analysis Date:	6/19/2017	SeqNo:	2669756

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.978	0.50	10.00	0	79.8	75	125	7.991	0.164	20	
Lead	8.953	0.50	10.00	0	89.5	75	125	8.925	0.306	20	
Zinc	97.353	1.0	100.0	7.286	90.1	75	125	97.40	0.0447	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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID	MB-62567	SampType:	MBLK	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	6/19/2017	RunNo:	115838
Client ID:	PBW	Batch ID:	62567	TestNo:	EPA 245.1			Analysis Date:	6/19/2017	SeqNo:	2669600

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.021	0.050									J

Sample ID	LCS-62567	SampType:	LCS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	6/19/2017	RunNo:	115838
Client ID:	LCSW	Batch ID:	62567	TestNo:	EPA 245.1			Analysis Date:	6/19/2017	SeqNo:	2669601

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.404	0.050	2.500	0	96.2	85	115				

Sample ID	N024624-001D-MS	SampType:	MS	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	6/19/2017	RunNo:	115838
Client ID:	ZZZZZZ	Batch ID:	62567	TestNo:	EPA 245.1			Analysis Date:	6/19/2017	SeqNo:	2669602

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.368	0.050	2.500	0.04809	92.8	75	125				

Sample ID	N024624-001D-MSD	SampType:	MSD	TestCode:	245.1_W_LL	Units:	µg/L	Prep Date:	6/19/2017	RunNo:	115838
Client ID:	ZZZZZZ	Batch ID:	62567	TestNo:	EPA 245.1			Analysis Date:	6/19/2017	SeqNo:	2669603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.300	0.050	2.500	0.04809	90.1	75	125	2.368	2.92	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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID **MB-62573**	SampType: **MBLK**	TestCode: **8015_W_FP_**	Units: **ug/L**	Prep Date: **6/19/2017**	RunNo: **115844**
Client ID: **PBW**	Batch ID: **62573**	TestNo: **EPA 8015B** **EPA 3510C**		Analysis Date: **6/19/2017**	SeqNo: **2669787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	ND	25									
TPH-Oil (C23-C36)	19.860	25									J
Surr: Octacosane	70.475		80.00		88.1	26	152				
Surr: p-Terphenyl	66.921		80.00		83.7	57	132				

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID	MB-R115844	SampType:	MBLK	TestCode:	8015_W_SFP	Units:	ug/L	Prep Date:		RunNo:	115844
Client ID:	PBW	Batch ID:	R115844	TestNo:	EPA 8015B			Analysis Date:	6/19/2017	SeqNo:	2669802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	19.860	100									J

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID **E170617LCS**	SampType: **LCS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115821**
Client ID: **LCSW**	Batch ID: **E17VW056**	TestNo: **EPA 8015B**		Analysis Date: **6/17/2017**	SeqNo: **2669309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1053.000	50	1000	0	105	67	136				
Surr: Chlorobenzene - d5	49615.000		50000		99.2	74	138				

Sample ID **E170617MB1**	SampType: **MBLK**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115821**
Client ID: **PBW**	Batch ID: **E17VW056**	TestNo: **EPA 8015B**		Analysis Date: **6/17/2017**	SeqNo: **2669310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	ND	50									
Surr: Chlorobenzene - d5	56114.000		50000		112	74	138				

Sample ID **N024624-001BMS**	SampType: **MS**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115821**
Client ID: **ZZZZZZ**	Batch ID: **E17VW056**	TestNo: **EPA 8015B**		Analysis Date: **6/17/2017**	SeqNo: **2669312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1062.000	50	1000	0	106	67	136				
Surr: Chlorobenzene - d5	49210.000		50000		98.4	74	138				

Sample ID **N024624-001BMSD**	SampType: **MSD**	TestCode: **8015GAS_W**	Units: **ug/L**	Prep Date:	RunNo: **115821**
Client ID: **ZZZZZZ**	Batch ID: **E17VW056**	TestNo: **EPA 8015B**		Analysis Date: **6/17/2017**	SeqNo: **2669313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	1124.000	50	1000	0	112	67	136	1062	5.67	30	
Surr: Chlorobenzene - d5	50886.000		50000		102	74	138		0	0	

Qualifiers:

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

CLIENT: CH2MHill
Work Order: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P170619LCS** SampType: **LCS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **LCSW** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	19.740	0.50	20.00	0	98.7	69	133				
1,2-Dichloroethane	20.200	0.50	20.00	0	101	69	132				
Benzene	20.350	1.0	20.00	0	102	81	122				
Ethylbenzene	19.400	1.0	20.00	0	97.0	73	127				
m,p-Xylene	39.110	1.0	40.00	0	97.8	76	128				
MTBE	19.970	1.0	20.00	0	99.8	65	123				
o-Xylene	20.210	1.0	20.00	0	101	80	121				
Tert-Butanol	96.940	5.0	100.0	0	96.9	70	130				
Toluene	19.560	2.0	20.00	0	97.8	77	122				
Xylenes, Total	59.320	2.0	60.00	0	98.9	75	125				
Surr: 1,2-Dichloroethane-d4	26.270		25.00		105	72	119				
Surr: 4-Bromofluorobenzene	24.650		25.00		98.6	76	119				
Surr: Dibromofluoromethane	27.270		25.00		109	85	115				
Surr: Toluene-d8	25.470		25.00		102	81	120				

Sample ID **P170619MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **PBW** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670680**

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	25.770		25.00		103	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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **P170619MB3** SampType: **MBLK** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **PBW** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	24.680		25.00		98.7	76	119				
Surr: Dibromofluoromethane	26.080		25.00		104	85	115				
Surr: Toluene-d8	25.500		25.00		102	81	120				

Sample ID **N024624-001AMS** SampType: **MS** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **ZZZZZZ** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	21.540	0.50	20.00	0	108	69	133				
1,2-Dichloroethane	21.430	0.50	20.00	0	107	69	132				
Benzene	21.590	1.0	20.00	0	108	81	122				
Ethylbenzene	20.180	1.0	20.00	0	101	73	127				
m,p-Xylene	40.650	1.0	40.00	0	102	76	128				
MTBE	22.740	1.0	20.00	0	114	65	123				
o-Xylene	20.660	1.0	20.00	0	103	80	121				
Tert-Butanol	113.740	5.0	100.0	0	114	70	130				
Toluene	20.890	2.0	20.00	0	104	77	122				
Xylenes, Total	61.310	2.0	60.00	0	102	75	125				
Surr: 1,2-Dichloroethane-d4	28.390		25.00		114	72	119				
Surr: 4-Bromofluorobenzene	24.850		25.00		99.4	76	119				
Surr: Dibromofluoromethane	27.960		25.00		112	85	115				
Surr: Toluene-d8	25.940		25.00		104	81	120				

Sample ID **N024624-001AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **ZZZZZZ** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	21.190	0.50	20.00	0	106	69	133	21.54	1.64	20	
1,2-Dichloroethane	21.050	0.50	20.00	0	105	69	132	21.43	1.79	20	
Benzene	21.740	1.0	20.00	0	109	81	122	21.59	0.692	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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID **N024624-001AMSD** SampType: **MSD** TestCode: **8260_WP_SF** Units: **ug/L** Prep Date: RunNo: **115869**
Client ID: **ZZZZZZ** Batch ID: **P17VW098** TestNo: **EPA 8260B** Analysis Date: **6/20/2017** SeqNo: **2670684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	20.720	1.0	20.00	0	104	73	127	20.18	2.64	20	
m,p-Xylene	41.960	1.0	40.00	0	105	76	128	40.65	3.17	20	
MTBE	21.160	1.0	20.00	0	106	65	123	22.74	7.20	20	
o-Xylene	21.390	1.0	20.00	0	107	80	121	20.66	3.47	20	
Tert-Butanol	111.390	5.0	100.0	0	111	70	130	113.7	2.09	20	
Toluene	20.790	2.0	20.00	0	104	77	122	20.89	0.480	20	
Xylenes, Total	63.350	2.0	60.00	0	106	75	125	61.31	3.27	20	
Surr: 1,2-Dichloroethane-d4	26.780		25.00		107	72	119		0		
Surr: 4-Bromofluorobenzene	24.550		25.00		98.2	76	119		0		
Surr: Dibromofluoromethane	26.840		25.00		107	85	115		0		
Surr: Toluene-d8	25.440		25.00		102	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: N024624
Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270WATER_SIMEXT

Sample ID **LCS-62629**	SampType: **LCS**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **6/23/2017**	RunNo: **115928**
Client ID: **LCSW**	Batch ID: **62629**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **6/23/2017**	SeqNo: **2672973**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.460	1.0	6.000	0	41.0	24	120				
Surr: 1,2-Dichlorobenzene-d4	0.690		1.000		69.0	16	120				
Surr: Phenol-d5	0.320		1.000		32.0	15	120				

Sample ID **LCSD-62629**	SampType: **LCSD**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **6/23/2017**	RunNo: **115928**
Client ID: **LCSS02**	Batch ID: **62629**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **6/23/2017**	SeqNo: **2672974**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenol	2.130	1.0	6.000	0	35.5	24	120	2.460	14.4	20	
Surr: 1,2-Dichlorobenzene-d4	0.640		1.000		64.0	16	120		0		
Surr: Phenol-d5	0.340		1.000		34.0	15	120		0		

Sample ID **MB-62629**	SampType: **MBLK**	TestCode: **8270WATER_**	Units: **µg/L**	Prep Date: **6/23/2017**	RunNo: **115928**
Client ID: **PBW**	Batch ID: **62629**	TestNo: **EPA 8270C** **EPA 3510C**		Analysis Date: **6/23/2017**	SeqNo: **2672975**

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	0.700		1.000		70.0	16	120				
Surr: Phenol-d5	0.270		1.000		27.0	15	120				

Qualifiers:

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

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

CHAIN OF CUSTODY RECORD

DATE: 6/16/17
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:	[signature]
Email To:	steve_defibaugh@kindermorgan.com eric.davis@ch2m.com	Purchase Order No.:		Address:	1100 Town & Country Road Orange, CA 92868	Sample Date:	6/16/17
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	3	1	2	
					PRESERVATIVE			H	H	--	N	--	
					VOLUME (mL)			40	40	1000	500	1000	
ITEM #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLING DATE	SAMPLING 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)	Cu, Pb, Zn (200.8); Hg (245.1)	Phenol (8270)	Comments
1	EFF-06-16	EFFLUENT	WW	G	6/16/17	1330	11	X	X	X	X	X	N024624 - 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
[signature]	6/16/17 1450	[signature]	6/16/17 1450
[signature]	6/16/17 1507	FEnw [illegible]	6/17/17 7:55

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:

IR # 2 7.7°C
650 8755

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:	6/16/2017	Workorder:	N024624
Rep sample Temp (Deg C):	3.7	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: Golden State Overnight

Last 4 digits of Tracking No.: 8755 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 6/17/2017

Reviewed By: MBC 6/19/2017

ASSET Laboratories

WORK ORDER Summary

18-Jun-17

WorkOrder: N024624

Client ID: CH2HI03

Project: SFPP-Norwalk **QC Level:** RTNE **Date Received:** 6/16/2017

Comments: copy Steve Defibaugh

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024624-001A	EFF-06-16	6/16/2017 1:30:00 PM	6/19/2017	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	VW
N024624-001B			6/19/2017		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	☐	☐	☐	VW
N024624-001C			6/19/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	☐	☐	☐	WW
			6/19/2017		EPA 8015B	TPH EXTRACTABLE BY GC/FID	☐	☐	☐	WW
			6/19/2017		EPA 8015B	Total TPH	☐	☐	☐	WW
N024624-001D			6/19/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/19/2017		EPA 200.8	TOTAL METALS BY ICPMS	☐	☐	☐	WW
			6/19/2017		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	☐	☐	☐	WW
			6/19/2017			MERCURY PREP	☐	☐	☐	WW
N024624-001E			6/23/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM	☐	☐	☐	WW
			6/23/2017		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	☐	☐	☐	WW
N024624-002A	FOLDER	6/19/2017	6/19/2017		Folder	Folder	☐	☐	☐	LAB
			6/19/2017		Folder	Folder	☐	☐	☐	LAB

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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

Ship To
ATL INC
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: NOT REQUIRED

Tracking #: 536538755

SDS

LVS

A

LAS VEGAS

C89102A

68314393

Print Date: 6/16/2017 5:50 PM

Package 1 of 3

LABEL INSTRUCTIONS:

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

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

pk # 2 3.7°C

Attachment B
Waste Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: CAT080033962
2. Page 1 of: 1
3. Emergency Response Phone: 866-424-9300
4. Manifest Tracking Number: 002244008 JJK

5. Generator's Name and Mailing Address: SFPP LP
1100 TOWN & COUNTRY
ORANGE CA 92868
ATTN: KARINA HANKINS
Generator's Phone: 714-560-4873

Generator's Site Address (if different than mailing address): SFPP LP NORWALK STATION
15306 NORWALK BLVD
NORWALK CA 90651

6. Transporter 1 Company Name: PATRIOT ENVIRONMENTAL SERVICES
U.S. EPA ID Number: CAD053866794

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address: FILTER RECYCLING SERVICES INC
180 W. MONTE AVENUE
BLOOMINGTON CA 92316
Facility's Phone: 909-421-2002
U.S. EPA ID Number: CAD 982444481

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)	1	DM	100	P	352
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information: 1)(S)GROUNDWATER TREATMENT SYSTEM UPSTREAM BAG FILTERS (LGAC) - 12031523

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 DYE
Signature:
Month: 4 Day: 11 Year: 17

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
Signature
Month Day Year

Transporter 2 Printed/Typed Name: Ernesto Villarreal
Signature:
Month: 4 Day: 11 Year: 15

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.

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
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type.
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	CAT000033952	1	562-448-9510	

5. Generator's Name and Mailing Address
SFPP, L.P.
1100 Town and Country Road
Orange, CA 92868

Generator's Site Address (if different than mailing address)
15306 Norwalk Blvd.
Norwalk, CA 90650

Generator's Phone: 714-560-4887

6. Transporter 1 Company Name
Southbay Industrial Services Inc

U.S. EPA ID Number
CAR000193185

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Filter Recycling Services, Inc.
180 W. Monte Ave.
Bloomington, CA 92316 USA

U.S. EPA ID Number
CAD982444481

Facility's Phone: 909-421-2012

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Non Hazardous Waste Liquid	1	TT	2000	G
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

9.1- Groundwater from well development
Wear proper PPE when handling material
24 hour emergency number 562-448-9510

Profile # 17040713
Direct Bill to Kinder Morgan Attn: Steve Defibaugh

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: 4 Day: 21

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: SAINT ANDERSON
Signature:
Month: 04 Day: 21

Transporter 2 Printed/Typed Name
Signature
Month Day

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

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name
Signature
Month Day

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

DW 1702321192

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAT080033962

Manifest Document No: DW1702321192

2. Page 1 of 1

3. Generator's Name and Mailing Address
Sfpp, L.P. Norwalk Station
15306 Norwalk Boulevard
Norwalk CA 90651

4. Generator's Phone (714) 560-4887

Site Address: SAME

5. Transporter 1 Company Name: Clean Harbors Environmental Service, 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 HAZARDOUS, NON D.O.T. REGULATED, (SOIL)	2	DM	6000	P
b. NON D.O.T. REGULATED	1	DM	250	P
c.				
d.				

G. Additional Descriptions for Materials Listed Above
11a.CH1418957 2X55
11b.CH1419004 1X55

83082

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY PHONE #: (800) 483-3718
GENERATOR: Sfpp, L.P. Norwalk Station

GENERATOR

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: X JAMES DYE | Signature | Date: Month 5 Day 12 Year 17

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Ramiro Espinoza | Signature | Date: Month 5 Day 12 Year 17

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

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
NOT REQUIRED	1	(800) 624-9136	NH 0204025

GENERATOR

5. Generator's Name and Mailing Address
SFPP, LP (NORWALK STATION)
1100 TOWN AND COUNTRY RD. ATTN: KARINA HANKINS
ORANGE CA 92868
Generator's Phone: 714-560-4400

Generator's Site Address (if different than mailing address)
15306 NORWALK BLVD
NORWALK, CA 90650

6. Transporter 1 Company Name
PATRIOT ENVIRONMENTAL SERVICES
U.S. EPA ID Number
CAD053866794

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
CROSBY & OVERTON
1630 WEST 17 TH STREET
LONG BEACH CA 90813
Facility's Phone: 800-827-6729
U.S. EPA ID Number
CAD028409019

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS WASTE, LIQUID (WASTEWATER W/TRACE ARSENIC & HYDROCARBONS)	004	TP	1,000	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
WEAR APPROPRIATE PPE WHEN HANDLING WASTE
9b1.) PROFILE NUMBER:105188
PATRIOT JOB NUMBER:01-17-00530

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: X JAMES DYE
Signature: X
Month: 6 Day: 1 Year: 17

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: Ernesto Villarreal
Signature:
Month: 6 Day: 1 Year: 17

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
Signature
Month: Day: Year:

DESIGNATED FACILITY TO GENERATOR