

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 <u>7th</u> day of <u>August</u> 2017. at <u>2:43 p.m.</u>

Atyche (

(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, Cl 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

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- 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

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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.

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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.

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

Regards, CH2M HILL Engineers, Inc.

Judi-Carino

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

	Average Flow Rate (gpd)
Date	(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	10,052
05/02/17	11,886
05/03/17	
05/04/17	10,783 6,262
05/05/17	8,891
	8,564
05/06/17	
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

	Average Flow Rate (gpd)
Date	(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

SPPP Norwark Pump Station, Norwark, Co													Dis	charge Limits ^b
	Sampling	Analytical											Monthly	Daily
Analyte	Frequency	Method	Units	MDL	RL ^c	ML ^a	4/7/2017	5/8/2017	5/9/2017	5/10/2017	5/12/2017	6/16/2017	Average	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) ^u	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) ^a	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
рН	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

STTT NOTWORK TUMP Station	Maximum Daily Flow Rate	
	_	
Date	(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 04/28/17	29 35	
	29	
04/29/17	29	
04/30/17 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	

	Maximum Daily Flow Rate	
Date	(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 (<i>Macrocystis pyrifera</i>)	Reproduction	-1.5	Pass
	Growth	-0.62	Pass
Purple urchin (Strongylocentrotus purpuratus)	Fertilization	-0.20	Pass

Notes:

 $^{\rm a}$ 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				
		Measurement	EFF-05-08-TOX ^a	EFF-05-10-TOX ^a	EFF-05-12-TOX ^a		
Parameter Tests	Unit	Method	5/8/2017	5/10/2017	5/12/2017		
рН	s.u.	Field ^b	6.5	7.0	7.1		
рН	s.u.	Laboratory	7.2	7.2	7.1		
Temperature	°F	Field ^b	67.3	70.0	70.0		
Temperature	۴F	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

 μ S/cm = microSiemens per centimeter

mg/L = milligrams per liter

ppt = parts per trillion

s.u. = standard units

Figures

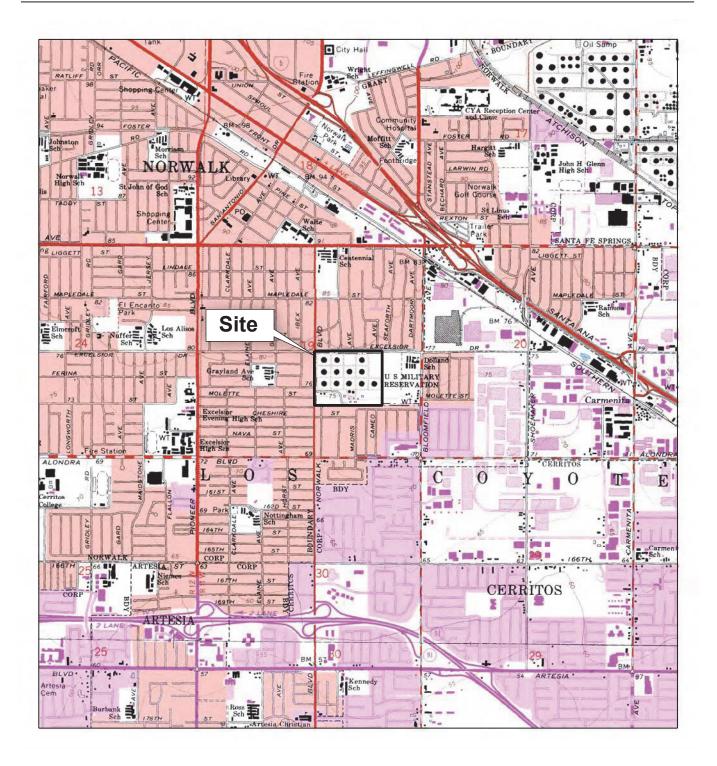


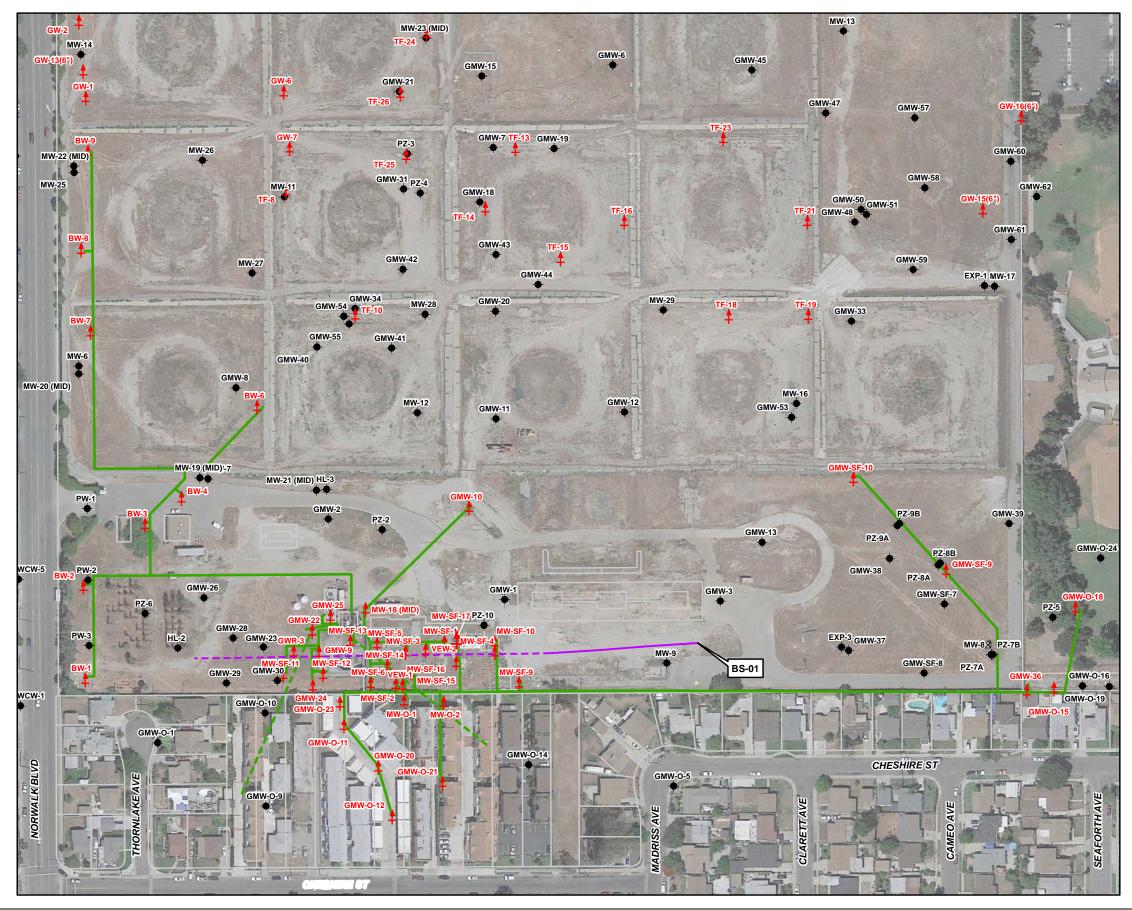


Figure 1 Site Location Map SFPP Norwalk Pump Station Norwalk, California

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.

EN1014151027SCO figure1.pdf 10/15





SCO662333.CR.03 gure2_rev1.ai 4/15

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.

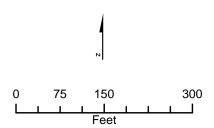


Figure 2 Remediation System Layout SFPP Norwalk Pump Station Norwalk, California



Attachment A Laboratory Analytical Reports and Chain-of-Custody Documents April 18, 2017

Dan Jablonski CH2MHill 1000 Wilshire Blvd. Los Angeles, CA 90017	CA-ELAPNo.: 2676 NV Cert. No.: NV-00922		
TEL: FAX:	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,

Puri Romualdo Laboratory Director

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Page 1 of 15

CLIENT:CH2MHillProject:SFPP - Norwalk SiteLab Order:N023764

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.



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CLIENT: Project: Lab Order: Contract No:	CH2MHill SFPP - Norwalk Site N023764		Work C	Order Sample	e 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



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ANALYTICAL RESULTS

Print Date: 18-Apr-17

CLIENT: Lab Order:	CH2MHill N023764				ient Sam _l Collection		EFF-04-07 /7/2017 12:20:	00 PM
Project:	SFPP - Norwalk	Site					VASTEWATE	
Lab ID:	N023764-001				14			Ι.
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATIL	E ORGANIC COM	POUNDS BY GC/	MS					
		EPA 3510C		EPA	8270C			
RunID: NV009	22-MS3_170415A	QC Batch: 61	903		Prepl	Date	4/14/2017	Analyst: JJS
Phenol		ND	0.33	1.0		µg/L	1	4/15/2017 04:31 PM
Surr: 1,2-Di	chlorobenzene-d4	75.0	0	16-120		%REC	1	4/15/2017 04:31 PM
Surr: Pheno	ol-d5	34.0	0	15-120		%REC	1	4/15/2017 04:31 PM
VOLATILE OR	GANIC COMPOU	NDS BY GC/MS						
				EPA	8260B			
RunID: MS8_1	70411A	QC Batch: R1	7VW052		Prepl	Date		Analyst: RB
1,1-Dichloroetl	hane	ND	0.13	0.50		ug/L	1	4/11/2017 12:20 PM
1,2-Dichloroeth	hane	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 PN
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-Di	chloroethane-d4	124	0	72-119	S	%REC	1	4/11/2017 12:20 PM
Surr: 4-Bror	mofluorobenzene	102	0	76-119		%REC	1	4/11/2017 12:20 PM
	nofluoromethane	123	0	85-115	S	%REC	1	4/11/2017 12:20 PN
Surr: Toluer	ne-d8	112	0	81-120		%REC	1	4/11/2017 12:20 PM
TPH EXTRAC	TABLE BY GC/FID				00450			
		EPA 3510C		EPA	8015B	_		
	22-GC3_170411A	QC Batch: 61			Prepl		4/11/2017	Analyst: JJS
TPH-Diesel (C	,	ND	16	26		ug/L	1	4/11/2017 02:05 PM
TPH-Oil (C23-	,	ND	14	26		ug/L	1	4/11/2017 02:05 PM
Surr: Octaco		106	0	26-152		%REC	1	4/11/2017 02:05 PM
Surr: p-Terp		96.5	0	57-132		%REC	1	4/11/2017 02:05 PM
GASOLINE RA	ANGE ORGANICS	BY GC/FID		EPA	8015B			
RunID: NV009	22-GC4_170410A	QC Batch: E1	7VW036		Prepl	Date		Analyst: RB
TPH-Gasoline	(C4-C12)	ND	16	50		ug/L	1	4/10/2017 10:50 PM
	benzene - d5	125	0	74-138		%REC	1	4/10/2017 10:50 PM
Qualifiers: B	Analyte detected in th	ne associated Method l	Blank	E	Value abo	ve quantitat	tion range	
Н	Holding times for pre-	paration or analysis ex	ceeded	J	Analyte de	etected belo	w quantitation lim	nits
ND	Not Detected at the F	Reporting Limit		S	Spike/Surr	rogate outsi	de of limits due to	matrix interference

DO Surrogate Diluted Out

ASSET LABORATORIES

Results are wet unless otherwise specified

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ANALYTICAL RESULTS

Print Date: 18-Apr-17

CLIENT:	CH2MHill			C	lient Samj	ole ID: E	FF-04-07	
Lab Orde	r: N023764				Collection	Date: 4	7/2017 12:20	:00 PM
Project:	SFPP - Norwalk S	lite			Ν	latrix: W	ASTEWATE	R
Lab ID:	N023764-001							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MERCUR	Y BY COLD VAPOR TECI	HNIQUE						
				EP.	A 245.1			
RunID: N	NV00922-AA1_170411A	QC Batch: 6	1853		Prep	Date	4/11/2017	Analyst: MG
Mercury		0.028	0.018	0.050	J	µg/L	1	4/11/2017 06:28 PM
TOTAL M	IETALS BY ICPMS							
				EP.	A 200.8			
RunID: N	NV00922-ICP7_170411B	QC Batch: 6	1857		Prep	Date	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 T	PH							
				EP/	A 8015B			
RunID: N	NV00922-GC3_170411A	QC Batch: F	114589		Prep	Date		Analyst: JJS
Total TP	Н	ND	16	50		ug/L	1	4/11/2017

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

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CLIENT: CH2MHill

Work Order: N023764

Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID MB	3-61857	SampType:	MBLK	TestCoo	le: 200.8_W_	SF Units: µg/L		Prep Dat	ie: 4/11/201	7	RunNo: 11	4588	
Client ID: PB	W	Batch ID:	61857	TestN	lo: EPA 200.	3		Analysis Dat	e: 4/11/201	7	SeqNo: 26	13665	
Analyte			Result	PQL		SPK Ref Val	%REC	Lowlimit	Highlimit [%RPD	RPDLimit	Qual
Analyte			Result	FQL	SFK Value	SFK Kei Vai	%REC	LOWLIIIII	HighLimit I	RED REI VAI	%RFD	REDLIIIII	Quai
Copper			ND	0.50									
Lead			ND	0.50									
Zinc			ND	1.0									
Sample ID LC	S-61857	SampType:	LCS	TestCoo	de: 200.8_W_	SF Units: µg/L		Prep Dat	ie: 4/11/201	7	RunNo: 11	4588	
Client ID: LC:	SW	Batch ID:	61857	Test	lo: EPA 200.	8		Analysis Dat	ie: 4/11/201	7	SeqNo: 26	13668	
Analyte			Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit F	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		1	105.906	1.0	100.0	0	106	85	115				
Sample ID NO:	23764-001C-DUP	SampType:	DUP	TestCoo	de: 200.8_W_	SF Units: µg/L		Prep Dat	e: 4/11/201	7	RunNo: 11	4588	
		1 21											
Client ID: ZZZ	ZZZZ	Batch ID:	61857		lo: EPA 200.	8			e: 4/11/201	7	SeqNo: 26	13670	
Client ID: ZZZ	ZZZZ		61857 Result		lo: EPA 200.	B SPK Ref Val	%REC	Analysis Dat	te: 4/11/201 HighLimit F		SeqNo: 26 4 %RPD	13670 RPDLimit	Qual
	ZZZZ			TestN	lo: EPA 200.			Analysis Dat			·		Qual
Analyte	ZZZZ		Result	TestN PQL	lo: EPA 200.			Analysis Dat		RPD Ref Val	%RPD	RPDLimit	Qual
Analyte Copper	zzzz	Batch ID:	Result ND	TestM PQL 0.50	lo: EPA 200.			Analysis Dat		RPD Ref Val	%RPD 0	RPDLimit 20	Qual
Analyte Copper Lead Zinc	2222 23764-001C-MS	Batch ID:	Result ND ND 10.616	TestN PQL 0.50 0.50 1.0	lo: EPA 200.			Analysis Dat		RPD Ref Val 0 0 10.27	%RPD 0 0	RPDLimit 20 20 20	Qual
Analyte Copper Lead Zinc	23764-001C-MS	Batch ID:	Result ND ND 10.616 MS	TestN PQL 0.50 0.50 1.0 TestCoo	lo: EPA 200.	SPK Ref Val	%REC	Analysis Dat LowLimit Prep Dat	HighLimit I	RPD Ref Val 0 0 10.27	%RPD 0 3.31	RPDLimit 20 20 20 4588	Qual
Analyte Copper Lead Zinc Sample ID N02	23764-001C-MS	Batch ID:	Result ND ND 10.616 MS	TestN PQL 0.50 0.50 1.0 TestCoo	lo: EPA 200.4 SPK value de: 200.8_W_ lo: EPA 200.4	SPK Ref Val	%REC	Analysis Dat LowLimit Prep Dat Analysis Dat	HighLimit F re: 4/11/201	RPD Ref Val 0 0 10.27 7 7	%RPD 0 3.31 RunNo: 114	RPDLimit 20 20 20 4588	Qual
Analyte Copper Lead Zinc Sample ID N02 Client ID: ZZ2	23764-001C-MS	Batch ID:	Result ND 10.616 MS 61857	TestN PQL 0.50 0.50 1.0 TestCoo TestN	lo: EPA 200.4 SPK value de: 200.8_W_ lo: EPA 200.4	SPK Ref Val SF Units: µg/L B	%REC	Analysis Dat LowLimit Prep Dat Analysis Dat	HighLimit F re: 4/11/201 re: 4/11/201	RPD Ref Val 0 0 10.27 7 7	%RPD 0 3.31 RunNo: 11 SeqNo: 26	RPDLimit 20 20 4588 13672	
Analyte Copper Lead Zinc Sample ID N02 Client ID: ZZ2 Analyte	23764-001C-MS	Batch ID:	Result ND 10.616 MS 61857 Result	TestN PQL 0.50 0.50 1.0 TestCoo TestN PQL	lo: EPA 200.4 SPK value de: 200.8_W_ lo: EPA 200.4 SPK value	SPK Ref Val SF Units: µg/L B SPK Ref Val	%REC	Analysis Dat LowLimit Prep Dat Analysis Dat LowLimit	HighLimit F re: 4/11/201 re: 4/11/201 HighLimit F	RPD Ref Val 0 0 10.27 7 7	%RPD 0 3.31 RunNo: 11 SeqNo: 26	RPDLimit 20 20 4588 13672	

Qualifiers:

J

S

- B Analyte detected in the associated Method Blank
 - Analyte detected below quantitation limits
 - w quantitation mints ND NO

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- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046
- H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order: N023764

Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N023764-001C-MSD	SampType: MSD	TestCoo	le: 200.8_W_	SF Units: µg/L		Prep Dat	te: 4/11/20	17	RunNo: 114	4588	
Client ID:	ZZZZZZ	Batch ID: 61857	TestN	lo: EPA 200.8	;		Analysis Dat	te: 4/11/20	17	SeqNo: 26	13673	
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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Page 7 of 15

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-MS	D 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-DUI	P 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:

J

S

- B Analyte detected in the associated Method Blank
- E Value above quantitation rangeND Not Detected at the Reporting Limit
- Analyte detected below quantitation limits
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES
- CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Page 8 of 15

<u>NEVADA</u> | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

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_F	P_ Units: ug/L		Prep Dat	te: 4/11/20	17	RunNo: 114	4589	
Client ID: PBW	Batch ID: 61859	TestNo	EPA 8015E	EPA 3510C		Analysis Dat	te: 4/11/20	17	SeqNo: 26	13825	
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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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

- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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CLIENT: CH2MHill Work Order: N023764

Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID MB-R114589	SampType: MBLK	TestCo	de: 8015_W_SFP Units: ug/L		Prep Dat	e:		RunNo: 11	4589	
Client ID: PBW	Batch ID: R114589	Test	No: EPA 8015B		Analysis Date	e: 4/11/20)17	SeqNo: 26	13840	
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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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E Value above quantitation range

ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order: N023764

Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID E170410LCS	SampType: LCS		le: 8015GAS	- 0		Prep Da			RunNo: 11		
Client ID: LCSW	Batch ID: E17VW036	TestN	lo: EPA 8015	В		Analysis Da	te: 4/10/20	017	SeqNo: 26	13112	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	925.000 51148.000	50	1000 50000	0	92.5 102	67 74	136 138				
Sample ID E170410MB1	SampType: MBLK	TestCod	le: 8015GAS	_W Units: ug/L		Prep Da	te:		RunNo: 11	4564	
Client ID: PBW	Batch ID: E17VW036	TestN	lo: EPA 8015	В		Analysis Da	te: 4/10/20	017	SeqNo: 26	13113	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	ND 55981.000	50	50000		112	74	138				
Sample ID N023717-002BMS	SampType: MS	TestCod	le: 8015GAS	_W Units: ug/L		Prep Da	te:		RunNo: 11	4564	
Sample ID N023717-002BMS Client ID: ZZZZZZ	SampType: MS Batch ID: E17VW036		le: 8015GAS lo: EPA 8015	- 0		Prep Da Analysis Da)17	RunNo: 11 SeqNo: 26		
	1 31		lo: EPA 8015	- 0	%REC	Analysis Da	te: 4/10/20	017 RPD Ref Val			Qual
Client ID: ZZZZZZ	Batch ID: E17VW036	TestN	lo: EPA 8015	B		Analysis Da	te: 4/10/20		SeqNo: 26	13116	Qual
Client ID: ZZZZZZ Analyte TPH-Gasoline (C4-C12)	Batch ID: E17VW036 Result 804.000	TestN PQL 50	lo: EPA 8015 SPK value 1000	B SPK Ref Val	%REC 80.4	Analysis Da LowLimit 67	te: 4/10/20 HighLimit 136 138		SeqNo: 26	13116 RPDLimit	Qual
Client ID: ZZZZZZ Analyte TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	Batch ID: E17VW036 Result 804.000 55059.000	TestN PQL 50 TestCod	lo: EPA 8015 SPK value 1000 50000	B SPK Ref Val 0	%REC 80.4 110	Analysis Da LowLimit 67 74	te: 4/10/20 HighLimit 136 138 te:	RPD Ref Val	SeqNo: 26 %RPD	13116 RPDLimit	Qual
Client ID: ZZZZZZ Analyte TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5 Sample ID N023717-002BMSD	Batch ID: E17VW036 Result 804.000 55059.000 SampType: MSD	TestN PQL 50 TestCod	lo: EPA 8015 SPK value 1000 50000 le: 8015GAS lo: EPA 8015	B SPK Ref Val 0	%REC 80.4 110	Analysis Da LowLimit 67 74 Prep Da Analysis Da	te: 4/10/20 HighLimit 136 138 te: te: te: 4/10/20	RPD Ref Val	SeqNo: 26 %RPD RunNo: 11	13116 RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES
- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

ND

Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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E Value above quantitation range

Not Detected at the Reporting Limit

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NEVADA | P:702.307.2659 F:702.307.269

Work Order: N023764 **Project:** SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID R170411LCS	SampType: LCS	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 114	1590	
Client ID: LCSW	Batch ID: R17VW052	Test	No: EPA 8260	в		Analysis Da	te: 4/11/20)17	SeqNo: 26 1	3820	
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				
МТВЕ	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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 114	1590	
Client ID: PBW	Batch ID: R17VW052	Test	No: EPA 8260	В		Analysis Da	te: 4/11/20)17	SeqNo: 26 1	3821	
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									
	ND										
Ethylbenzene	ND	1.0									
Ethylbenzene m,p-Xylene											
•	ND	1.0									
m,p-Xylene	ND ND	1.0 1.0									
m,p-Xylene MTBE	ND ND ND	1.0 1.0 1.0									
m,p-Xylene MTBE o-Xylene	ND ND ND ND	1.0 1.0 1.0 1.0									
m,p-Xylene MTBE o-Xylene Tert-Butanol	ND ND ND ND	1.0 1.0 1.0 1.0 5.0									

Qualifiers:

J

- B Analyte detected in the associated Method Blank Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

ASSET LABORATORIES Serving Clients with Passion and Professionalism"

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Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

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Work Order: N023764 **Project:** SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID R170411MB2	SampType:	MBLK	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	ite:		RunNo: 11	4590	
Client ID: PBW	Batch ID:	R17VW052	Test	No: EPA 8260	В		Analysis Da	ate: 4/11/20	017	SeqNo: 26	13821	
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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	ite:		RunNo: 11	4590	
Client ID: ZZZZZZ	Batch ID:	R17VW052	Test	No: EPA 8260	В		Analysis Da	ate: 4/11/20	017	SeqNo: 26	13823	
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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	ite:		RunNo: 11	4590	
Client ID: ZZZZZZ	Batch ID:	R17VW052	Test	No: EPA 8260	В		Analysis Da	ate: 4/11/20	017	SeqNo: 26	13824	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qua
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	

- B Analyte detected in the associated Method Blank
 - Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

J

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Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

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NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

Work Order: N023764 **Project:** SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID N023764-001AMSD	SampType: MSD	TestCod	de: 8260_WP_	_SF Units: ug/L	Prep Date:				RunNo: 114590		
Client ID: ZZZZZZ	Batch ID: R17VW052	Test№	No: EPA 8260	В		Analysis Dat	te: 4/11/20	17	SeqNo: 261	13824	
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	
МТВЕ	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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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ND Not Detected at the Reporting Limit CALIFORNIA | P:562.219.7435 F:562.219.7436

11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921

EPA ID CA01638

E Value above quantitation range

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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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
- J Analyte detected below quantitation limits
 - Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES

S

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

E Value above quantitation range Not Detected at the Reporting Limit

ND

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 Н Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

Page 15 of 15

Advanced Technology Laboratories CHAIN OF CUSTODY RECORD 3151 W, Post Road 417 1.7 Las Vegas, NV 89118 DATE: Tel: 702-307-2659 Fax: 702-307-2691 PAGE: of Marion Cartin (marion@ati-labs.com) Section A Required Client Information: Section B Section C Section D Required Project Information: Invoice Information: Sampler Information: Company: Kinder Morgan Energy Partners Dan Jablonski Report To: Attention: Steve Defibaugh - Ref. AFE# 81195 Sampler James Dye Attention: Steve Defibaugh Name: Address: 1100 Yown & Country Road Сору То: Steve Defibaugh Kinder Morgan Energy Partners Company 7 Sampler Orange, CA 92868 right Name: Signature: 1100 Town & Country Road Email To: Purchase Order No.: steve defibaugh@kindermorgen.com Address: Sample 41 171 Cardel Jabionski@ch2m.com Phone: 714-560-4802 Fax: 714-560-4801 Orange, CA 92868 Date: Project Name: SFPP Norwalk ATL Project Marion Cartin 1 Manager:

Section	E Sample Information				(CONTAINER	ТУРЕ				v		1	1	1	1		F	1	Τ	1	Τ	
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\mathcal{C}	Relinquished by Signature and Printed Name):	Date / Time		Refinited by (Signature and Printed Name):		1 Bane /	8;30 m		kdays he followiing day if si	moles received after				
				/					3:00 PM.					
					Matrix;			Preservatives:			Container Type:			
					W = Water	WW = Wastewat	er	н = на	N = HNO3	S = H2SO4	7 = Tube	V = VOA	P = Pint	A = Amber
					Q = 0	P = Product	S = Soil	Z = Zn(AC)2	O = NaOH	T = Na2S2O3	jar	8 = Tediar	G = Glass	
					Others/Specify:			Others/Specify:			M = Metal	P = Plastic	C = Can	

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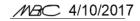
Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

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 Sta	ate Overnight					
Last 4 digits of Tracking No .:	0342			Packing	Material Used:	Bubble Wrap	
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None None		
		Sa	ample Recei	ot Checklist	1		
1. Shipping container/cooler in g	ood conditio				Yes 🗹	No 🗌	Not Present
2. Custody seals intact, signed, o	dated on shi	ppping container/	cooler?		Yes	No 🗌	Not Present
3. Custody seals intact on sampl	le bottles?				Yes	No 🗌	Not Present
4. Chain of custody present?					Yes 🗹	No 🗌	
5. Sampler's name present in CC	DC?				Yes 🗹	No 🗌	
6. Chain of custody signed when	n relinquishe	d and received?			Yes 🗹	No 🗌	
7. Chain of custody agrees with	sample label	ls?			Yes 🗹	No 🗌	
8. Samples in proper container/b	ottle?				Yes 🗹	No 🗌	
9. Sample containers intact?					Yes 🗹	No 🗌	
10. Sufficient sample volume for	indicated te	st?			Yes 🗹	No 🗌	
11. All samples received within h	olding time?	?			Yes 🗹	No 🗌	
12. Temperature of rep sample of	or Temp Blar	nk within acceptat	ole limit?		Yes 🗹	No 🗌	NA 🗌
13. Water - VOA vials have zero	headspace?	?			Yes 🗹	No 🗌	NA 🗌
14. Water - pH acceptable upon Example: pH > 12 for (CN	•	or Metals			Yes 🗹	No 🗌	NA 🗌
15. Did the bottle labels indicate	correct pres	ervatives used?			Yes 🗹	No 🗌	NA 🗌
16. Were there Non-Conformance Wa	ce issues at as Client not	•			Yes Yes	No 🗌 No 🗌	NA 🗹 NA 🗹
Comments:							

YR 🔣 4/10/2017

Reviewed By:



WORK O	RDER Summary	7				10-Apr-17				
Client ID:	CH2HI03					WorkOrde	er:	N023	764	ł
Project: Comments:	SFPP - Norwalk Site		QC Level: RTNE			Date Receive)17			
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	\checkmark			WW
N023764-001C			4/10/2017			AQPREP TOTAL METALS: ICP, FLAA	\checkmark			WW
			4/10/2017		EPA 200.8	TOTAL METALS BY ICPMS	\checkmark			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></marlon@assetlaboratories.com>
Sent:	Saturday, April 08, 2017 10:56 AM
То:	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" <<u>Vidal.Cortes@ch2m.com</u>> Date: April 7, 2017 at 2:19:15 PM PDT To: "Marlon B. Cartin" <<u>marlon@assetlaboratories.com</u>>, "Jablonski, Daniel/LAC" <<u>Daniel.Jablonski@CH2M.com</u>>, 'Molky Brar' <<u>molky@assetlaboratories.com</u>> Cc: "Carino, Vladimir/SCO" <<u>Vladimir.Carino@CH2M.com</u>>, "Irvine, Cameron/SAC" <<u>Cameron.Irvine@CH2M.com</u>> 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 To: Jablonski, Daniel/LAC <<u>Daniel.Jablonski@CH2M.com</u>>; Cortes, Vidal/SCO <<u>Vidal.Cortes@ch2m.com</u>>; 'Molky Brar' <<u>molky@assetlaboratories.com</u>> Cc: Carino, Vladimir/SCO <<u>Vladimir.Carino@CH2M.com</u>> 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 | F: 702.307.2691 | 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 <<u>Daniel.Jablonski@CH2M.com</u>>; Cortes, Vidal/SCO
<<u>Vidal.Cortes@ch2m.com</u>>; 'Molky Brar' <<u>molky@assetlaboratories.com</u>>
Cc: Carino, Vladimir/SCO <<u>Vladimir.Carino@CH2M.com</u>>
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 | F: 702.307.2691 | M: 702.439.0421 **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 <<u>marlon@assetlaboratories.com</u>>; Molky Brar <<u>molky@assetlaboratories.com</u>> Cc: Jablonski, Daniel/LAC <<u>Daniel.Jablonski@CH2M.com</u>>; Carino, Vladimir/SCO <<u>Vladimir.Carino@CH2M.com</u>> 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 <<u>Daniel.Jablonski@CH2M.com</u>>; Marlon Cartin <<u>marlon@assetlaboratories.com</u>>; 'Molky Brar' <<u>molky@assetlaboratories.com</u>>; Carino, Vladimir/SCO <<u>Vladimir.Carino@CH2M.com</u>> 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



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

May 18, 2017

Eric Davis CH2MHill 1000 Wilshire Blvd. Los Angeles, CA 90017	CA-ELAP No.: 2676 NV Cert. No.: NV-00922
TEL: FAX:	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,

Puri Romualdo Laboratory Director

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



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CLIENT:CH2MHillProject:SFPP-NorwalkLab Order:N024158

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.



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CLIENT:CH2MHillProject:SFPP-NorwalkLab 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



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	N024159			0.			00 DI (
Lab Order:	N024158					te: 5/9/2017 12:30	
Project:	SFPP-Norwalk				Matri	x: WASTEWATE	ER
Lab ID:	N024158-001						
Analyses		Result	MDL	PQL	Qual (Units DF	Date Analyzed
TOTAL NON-I	FILTERABLE RESID	DUE					
				SN	12540D		
RunID: NV00	922-WC_170510E	QC Batch: 62	160		PrepDate	5/10/2017	Analyst: LR
Suspended S Filterable)	olids (Residue, Non-	ND	10	10	mç	g/L 1	5/10/2017 07:46 AN
SETTLEABLE	MATTER						
				SM	12540F		
RunID: NV00	922-WC_170510K	QC Batch: 62	180		PrepDate	5/10/2017	Analyst: QBM
Settleable Ma	atter	ND	0.095	0.095	ml	/L 1	5/10/2017 12:05 PM
HEXANE EXT	RACTABLE MATER	NAL (HEM)					
				EPA 1664	_HEM REV B		
RunID: NV00	922-WC_170515A	QC Batch: 62	232		PrepDate	5/15/2017	Analyst: LR
Oil & Grease	_	ND	0.70	4.3	m	g/L 1	5/15/2017 07:30 AN
TURBIDITY			0.1.0			<i>y</i> – .	0,10,2011 01100 /
				SM	2130B		
	022 WC 470540C	QC Batch: R	16120		PrepDate		
	922-WC_170510C			.	•		Analyst: LR
Turbidity		0.24	0.10	0.10	NT	TU 1	5/10/2017 11:10 AN
SEMIVOLATII	LE ORGANIC COMP		MS		00700		
		EPA 3510C		EP/	A 8270C		
RunID: NV00	922-MS3_170514A	QC Batch: 62	196		PrepDate	5/11/2017	Analyst: JJS
Phenol		ND	0.33	1.0	μg		5/14/2017 10:54 PM
	ichlorobenzene-d4	64.0	0	16-120	%	REC 1	5/14/2017 10:54 PN
Surr: Phen	ol-d5	31.0	0	15-120	%	REC 1	5/14/2017 10:54 PM
VOLATILE OF	RGANIC COMPOUN	DS BY GC/MS					
				EP/	A 8260B		
RunID: NV00	922-MS5_170510A	QC Batch: P	7VW072		PrepDate		Analyst: RB
1,1-Dichloroe	thane	ND	0.13	0.50	ug	/L 1	5/10/2017 11:26 AM
1,2-Dichloroe	thane	ND	0.13	0.50	ug	/L 1	5/10/2017 11:26 AN
Benzene		ND	0.14	1.0	ug	/L 1	5/10/2017 11:26 AN
Ethylbenzene	•	ND	0.14	1.0	ug	/L 1	5/10/2017 11:26 AN
m,p-Xylene		ND	0.23	1.0	ug		5/10/2017 11:26 AN
MTBE		ND	0.13	1.0	ug		5/10/2017 11:26 AM
o-Xylene		ND	0.13	1.0	ug		5/10/2017 11:26 AM
Tert-Butanol		ND	1.8	5.0	ug		5/10/2017 11:26 AM
Toluene		ND	0.14	2.0	ug		5/10/2017 11:26 AM
Qualifiara D	Applyto d-tt-1 to 1	a accorded M-th 1	Plank	F	Value abarra	untitation re	
Qualifiers: B H	Analyte detected in the Holding times for prep			E J	-	antitation range d below quantitation lii	nits
ND		-	Accord	S	-	e outside of limits due t	
ND		Porting Linni		5			o matrix metholenee

CH2MHill

CLIENT:

ANALYTICAL RESULTS

Print Date: 18-May-17

Client Sample ID: EFF-05-09

Results are wet unless otherwise specified

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DO Surrogate Diluted Out

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Print Date: 18-May-17

ASSET Laboratories

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ANALYTICAL RESULTS

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CLIENT:	CH2MHill	Client Sample ID: EFF-05-09							
Lab Order:	N024158				Collection	Date: 5/	/9/2017 12:30	:00 PM	
Project:	SFPP-Norwalk				Μ	latrix: W	ASTEWATE	ER	
Lab ID:	N024158-001								
Analyses		Resu	lt MDL	PQL	Qual	Units	DF	Date Analyzed	
VOLATILE OF	RGANIC COMPOUN	DS BY GC/MS	i						
				EP	A 8260B				
RunID: NV00	922-MS5_170510A	QC Batch:	P17VW072		Prep[Date		Analyst: RB	
Xylenes, Tota	I	N	D 1.5	2.0		ug/L	1	5/10/2017 11:26 AM	
Surr: 1,2-D	ichloroethane-d4	96.	0 0	72-119		%REC	1	5/10/2017 11:26 AM	
Surr: 4-Bro	mofluorobenzene	10	0 0	76-119		%REC	1	5/10/2017 11:26 AM	
Surr: Dibro	mofluoromethane	93.	0 0	85-115		%REC	1	5/10/2017 11:26 AM	
Surr: Tolue	ne-d8	10	3 0	81-120		%REC	1	5/10/2017 11:26 AM	
TPH EXTRAC	TABLE BY GC/FID								
	E	EPA 3510C		EP	A 8015B				
RunID: NV00	922-GC3_170510A	QC Batch:	62175		Prep	Date	5/10/2017	Analyst: MDM	
TPH-Diesel (0		N	D 15	25		ug/L	1	5/10/2017 02:03 PM	
TPH-Oil (C23		1	5 14	25	J	ug/L	1	5/10/2017 02:03 PM	
Surr: Octao	cosane	92.	6 0	26-152		%REC	1	5/10/2017 02:03 PM	
Surr: p-Ter	phenyl	95.	0 0	57-132		%REC	1	5/10/2017 02:03 PM	
GASOLINE R	ANGE ORGANICS	BY GC/FID							
				EP	A 8015B				
RunID: NV00	922-GC4_170510A	QC Batch:	E17VW045		Prep	Date		Analyst: RB	
TPH-Gasoline	e (C4-C12)	N	D 16	50		ug/L	1	5/10/2017 10:55 AM	
Surr: Chlor	obenzene - d5	92.	6 0	74-138		%REC	1	5/10/2017 10:55 AM	
MERCURY BY	COLD VAPOR TEC	CHNIQUE							
				EP	A 245.1				
RunID: NV00	922-AA1_170510A	QC Batch:	62170		Prep	Date	5/10/2017	Analyst: MG	
Mercury		0.03	7 0.018	0.050	J	µg/L	1	5/10/2017 11:08 AM	
TOTAL META	LS BY ICPMS								
				EP	A 200.8				
RunID: NV00	922-ICP7_170510A	QC Batch:	62173		Prep	Date	5/10/2017	Analyst: CEI	
Copper		N	D 0.26	0.50		µg/L	1	5/10/2017 04:24 PM	
Lead		N	D 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									
				EP	A 8015B				
RunID: NV00	922-GC3_170510A	QC Batch:	R115131		Prep	Date		Analyst: MDM	
Total TPH		N	D 16	100		ug/L	1	5/10/2017	
0 110° -		• . •	1.01		** *				
Qualifiers: B H	Analyte detected in the Holding times for prep			E J		ve quantitat	ion range w quantitation lir	nits	
н ND	0 1 1	•	, callueu	J S	-		-	o matrix interference	
INL	Results are wet unless		d	DC	-	Diluted Out			
	results are wet unitss	such wise specific			-			<u>A</u> P:702.307.2659 F:702.30	
1									
	ASSET LABORAT	ORIES		FORNIA P:562.2 0 Artesia Blvd.,				V. Post Rd., Las Vegas, NV 8	

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CLIENT: CH2MHill

Work Order: N024158

SFPP-Norwalk **Project:**

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID LCS-62160 Client ID: LCSW	SampTyp Batch I	pe: LCS ID: 62160	TestCode: 160.2_2 TestNo: SM2540	U		Prep Date Analysis Date		RunNo: 115 SeqNo: 263		
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, N	Ion-Filter	943.000	10 100	0 0	94.3	80	120			
Sample ID MB-62160 Client ID: PBW		pe: MBLK ID: 62160	TestCode: 160.2_2 TestNo: SM254	U		Prep Date Analysis Date		RunNo: 115 SeqNo: 263		
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, N	Ion-Filter	ND	10							
Sample ID N024153-001CDU Client ID: ZZZZZZ		pe: DUP D: 62160	TestCode: 160.2_2 TestNo: SM2540	Ū		Prep Date Analysis Date		RunNo: 115 SeqNo: 263		
Analyte		Result	PQL SPK valu	e SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, N	Ion-Filter	34.000	10				33.00	2.99	5	

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - ASSET LABORATORIES

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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

Serving Clients with Passion and Professionalism"

Work Order: N024158 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID MB-62232 Client ID: PBW	SampType: MBLK Batch ID: 62232	TestCode: 1664_HEM_ Units: mg/L TestNo: EPA 1664 _H	Prep Date: 5/15/2017 Analysis Date: 5/15/2017	RunNo: 115240 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 Client ID: LCSW	SampType: LCS Batch ID: 62232	TestCode: 1664_HEM_ Units: mg/L TestNo: EPA 1664 _H	Prep Date: 5/15/2017 Analysis Date: 5/15/2017	RunNo: 115240 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 Client ID: LCSS02	SampType: LCSD Batch ID: 62232	TestCode: 1664_HEM_ Units: mg/L TestNo: EPA 1664 _H	Prep Date: 5/15/2017 Analysis Date: 5/15/2017	RunNo: 115240 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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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E Value above quantitation range

ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order: N024158 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N024158-001G-DUP	SampType: DUF	P TestCo	de: 200.8_W_	SF Units: µg/L		Prep Date	5/10/20	17	RunNo: 115	5135	
Client ID:	ZZZZZZ	Batch ID: 621	73 Test	No: EPA 200.8	•		Analysis Date	5/10/20	17	SeqNo: 263	39126	
Analyte		Res	sult PQL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper			ND 0.50						0	0	20	
Lead			ND 0.50						0	0	20	
Zinc		5.1	185 1.0						5.264	1.51	20	
Sample ID	0 N024158-001G-MS	SampType: MS	TestCo	de: 200.8_W_	SF Units: µg/L		Prep Date	5/10/20	17	RunNo: 11	5135	
Client ID:	ZZZZZZ	Batch ID: 621	73 Test	No: EPA 200.8	ł		Analysis Date	5/10/20	17	SeqNo: 263	39129	
Analyte		Res	sult PQL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper		7.5	597 0.50	10.00	0	76.0	75	125				
Lead		8.8	816 0.50	10.00	0	88.2	75	125				
Zinc		87.1	176 1.0	100.0	5.264	81.9	75	125				
Sample ID	N024158-001G-MSD	SampType: MSI	D TestCo	de: 200.8_W_	SF Units: µg/L		Prep Date	5/10/20	17	RunNo: 11	5135	
Sample ID Client ID:		SampType: MSI Batch ID: 621		de: 200.8_W_\$ No: EPA 200.8			Prep Date Analysis Date			RunNo: 115 SeqNo: 263		
•			73 Testi	No: EPA 200.8		%REC	Analysis Date	: 5/10/20				Qual
Client ID:		Batch ID: 621	73 Testi	No: EPA 200.8			Analysis Date	: 5/10/20	17	SeqNo: 263	39130	Qual
Client ID: Analyte		Batch ID: 621 Res	73 Testi sult PQL	No: EPA 200.8 SPK value	SPK Ref Val	%REC	Analysis Date	: 5/10/20 HighLimit	17 RPD Ref Val	SeqNo: 263 %RPD	89130 RPDLimit	Qual
Client ID: Analyte Copper		Batch ID: 621 Res	73 Testi sult PQL 681 0.50 716 0.50	No: EPA 200.8 SPK value 10.00	SPK Ref Val	%REC 76.8	Analysis Date LowLimit H	: 5/10/20 HighLimit 125	17 RPD Ref Val 7.597	SeqNo: 263 %RPD 1.10	8 9130 RPDLimit 20	Qual
Client ID: Analyte Copper Lead Zinc		Batch ID: 621 Res 7.6 8.7	73 Test! sult PQL 681 0.50 716 0.50 837 1.0	No: EPA 200.8 SPK value 10.00 10.00	SPK Ref Val 0 0 5.264	%REC 76.8 87.2	Analysis Date LowLimit H 75 75	: 5/10/20 HighLimit 125 125 125	17 RPD Ref Val 7.597 8.816 87.18	SeqNo: 263 %RPD 1.10 1.14	89130 RPDLimit 20 20 20	Qual
Client ID: Analyte Copper Lead Zinc	ZZZZZZ D LCS-62173	Batch ID: 621 Res 7.6 8.7 88.8	73 Test! sult PQL 681 0.50 716 0.50 837 1.0 s TestControl	No: EPA 200.8 SPK value 10.00 10.00 100.0	SPK Ref Val 0 0 5.264 SF Units: μg/L	%REC 76.8 87.2 83.6	Analysis Date LowLimit H 75 75 75	: 5/10/20 HighLimit 125 125 125 : 5/10/20	17 RPD Ref Val 7.597 8.816 87.18 17	SeqNo: 263 %RPD 1.10 1.14 1.89	RPDLimit 20 20 20 5135	Qual
Client ID: Analyte Copper Lead Zinc Sample ID	ZZZZZZ D LCS-62173	Batch ID: 621 Res 7.6 8.7 88.8 SampType: LCS	73 Test! sult PQL 681 0.50 716 0.50 837 1.0 S TestCo. 73 Test!	No: EPA 200.8 SPK value 10.00 10.00 100.0 de: 200.8_W_ No: EPA 200.8	SPK Ref Val 0 0 5.264 SF Units: μg/L	%REC 76.8 87.2 83.6	Analysis Date LowLimit H 75 75 75 Prep Date Analysis Date	: 5/10/20 HighLimit 125 125 125 : 5/10/20 : 5/10/20	17 RPD Ref Val 7.597 8.816 87.18 17	SeqNo: 263 %RPD 1.10 1.14 1.89 RunNo: 115	RPDLimit 20 20 20 5135	Qual
Client ID: Analyte Copper Lead Zinc Sample ID Client ID:	ZZZZZZ D LCS-62173	Batch ID: 621 Res 7.6 8.7 88.8 SampType: LCS Batch ID: 621 Res	73 Test! sult PQL 681 0.50 716 0.50 837 1.0 S TestCo. 73 Test!	No: EPA 200.8 SPK value 10.00 10.00 100.0 de: 200.8_W_ No: EPA 200.8	SPK Ref Val 0 0 5.264 SF Units: μg/L	%REC 76.8 87.2 83.6	Analysis Date LowLimit H 75 75 75 Prep Date Analysis Date	: 5/10/20 HighLimit 125 125 125 : 5/10/20 : 5/10/20	17 RPD Ref Val 7.597 8.816 87.18 17 17	SeqNo: 263 %RPD 1.10 1.14 1.89 RunNo: 115 SeqNo: 263	RPDLimit 20 20 20 5135 89131	
Client ID: Analyte Copper Lead Zinc Sample ID Client ID: Analyte	ZZZZZZ D LCS-62173	Batch ID: 621 Res 7.6 8.7 88.8 SampType: LCS Batch ID: 621 Res 9.4	73 Test! sult PQL 681 0.50 716 0.50 837 1.0 5 TestCoo 73 Test! sult PQL	No: EPA 200.8 SPK value 10.00 10.00 100.0 de: 200.8_W_3 No: EPA 200.8 SPK value	SPK Ref Val 0 0 5.264 SF Units: μg/L SPK Ref Val	%REC 76.8 87.2 83.6 %REC	Analysis Date LowLimit H 75 75 75 Prep Date Analysis Date LowLimit H	: 5/10/20 HighLimit 125 125 : 5/10/20 HighLimit	17 RPD Ref Val 7.597 8.816 87.18 17 17	SeqNo: 263 %RPD 1.10 1.14 1.89 RunNo: 115 SeqNo: 263	RPDLimit 20 20 20 5135 89131	

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - CALIFORNIA | P:562.219.7435 F:562.219.7436 ASSET LABORATORIES 11110 Artesia Blvd., Ste B, Cerritos, CA 90703

ELAP Cert 2921

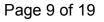
EPA ID CA01638

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R RPD outside accepted recovery limits

Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID MB-62173 Client ID: PBW	SampType: MBLK Batch ID: 62173	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8	Prep Date: 5/10/2017 Analysis Date: 5/10/2017	RunNo: 115135 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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



EPA ID CA01638

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ND

E Value above quantitation range Not Detected at the Reporting Limit

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R RPD outside accepted recovery limits Calculations are based on raw values

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

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order:N024158Project: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	S SampType: MS	TestCode: 245.1_W_LL Units: µg/L	Prep Date: 5/10/2017	RunNo: 115126
Sample ID N024158-001G-MS Client ID: ZZZZZZ	S SampType: MS Batch ID: 62170	TestCode: 245.1_W_LL Units: µg/L TestNo: EPA 245.1	Prep Date: 5/10/2017 Analysis Date: 5/10/2017	RunNo: 115126 SeqNo: 2638768
		10		
Client ID: ZZZZZZ	Batch ID: 62170	TestNo: EPA 245.1	Analysis Date: 5/10/2017	SeqNo: 2638768
Client ID: ZZZZZZ	Batch ID: 62170 Result 2.535	TestNo: EPA 245.1	Analysis Date: 5/10/2017 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 2638768
Client ID: ZZZZZZ Analyte Mercury	Batch ID: 62170 Result 2.535	TestNo: EPA 245.1 PQL SPK value SPK Ref Val 0.050 2.500 0.03660	Analysis Date: 5/10/2017 %REC LowLimit HighLimit RPD Ref Val 99.9 75 125	SeqNo: 2638768 %RPD RPDLimit Qual
Client ID: ZZZZZZ Analyte Mercury Sample ID N024158-001G-MS	Batch ID: 62170 Result 2.535 SD SampType: MSD	TestNo: EPA 245.1 PQL SPK value SPK Ref Val 0.050 2.500 0.03660 TestCode: 245.1_W_LL Units: µg/L	Analysis Date: 5/10/2017 %REC LowLimit HighLimit RPD Ref Val 99.9 75 125 Prep Date: 5/10/2017	SeqNo: 2638768 %RPD RPDLimit Qual RunNo: 115126

Qualifiers:

J

- B Analyte detected in the associated Method Blank
- Aethod Blank
 E
 Value above quantitation range

 limits
 ND
 Not Detected at the Reporting Limit
 - Analyte detected below quantitation limits ND Not Detected at the Re Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- S Spike/Surrogate outside
 - ELLADORAIORES IIIIO Arto
- CALIFORNIA P:562.219.7435 F:562.219.7436 1110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID MB-62175 Client ID: PBW	SampType: MBLK Batch ID: 62175	TestCode: 80 TestNo: EP	0			re: 5/10/2017 re: 5/10/2017	RunNo: 115 SeqNo: 263		
Analyte	Result	PQL SPK	K value SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Va	I %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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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E Value above quantitation range ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID MB-R115131 Client ID: PBW	SampType: MBLK Batch ID: R115131	TestCode: 8015_W_SFP Un TestNo: EPA 8015B	s: ug/L Prep Date: Analysis Date: 5/10/2017	RunNo: 115131 SeaNo: 2638841
Analyte	Result	PQL SPK value SPK Re		
Total TPH	ND	100		

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order:N024158Project:SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID E170510LCS	SampType: LCS	TestCode: 8015GAS_W	Units: ug/L		Prep Date	e:		RunNo: 115	5128	
Client ID: LCSW	Batch ID: E17VW045	TestNo: EPA 8015B			Analysis Date	e: 5/10/201	17	SeqNo: 263	8791	
Analyte	Result	PQL SPK value SPI	K Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	928.000 49973.000	50 1000 50000	0	92.8 99.9	67 74	136 138				
Sample ID E170510MB1	SampType: MBLK	TestCode: 8015GAS_W	Units: ug/L		Prep Date	e:		RunNo: 115	5128	
Client ID: PBW	Batch ID: E17VW045	TestNo: EPA 8015B			Analysis Date	e: 5/10/201	17	SeqNo: 263	8792	
Analyte	Result	PQL SPK value SPI	K Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	ND 53123.000	50 50000		106	74	138				
Sample ID N024158-001BMS	SampType: MS	TestCode: 8015GAS_W	Units: ug/L		Prep Date	e:		RunNo: 115	5128	
Client ID: ZZZZZZ	Batch ID: E17VW045	TestNo: EPA 8015B			Analysis Date	e: 5/10/201	17	SeqNo: 263	8794	
Analyte	Result	PQL SPK value SPI	K Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)										
Surr: Chlorobenzene - d5	772.000 44328.000	50 1000 50000	0	77.2 88.7	67 74	136 138				
			0 Units: ug/L			138		RunNo: 115	5128	
Surr: Chlorobenzene - d5	44328.000	50000	-	88.7	74	138	17	RunNo: 115 SeqNo: 263		
Surr: Chlorobenzene - d5 Sample ID N024158-001BMSD	44328.000 SampType: MSD	50000 TestCode: 8015GAS_W	Units: ug/L	88.7	74 Prep Date Analysis Date	138 e: e: 5/10/20 1	17 RPD Ref Val			Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- its ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES
- CALIFORNIA P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Work Order: N024158 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID P170510LCS	SampType: LCS	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:	RunNo: 115129				
Client ID: LCSW	Batch ID: P17VW072	Test	No: EPA 8260	В		Analysis Da	te: 5/10/20)17	SeqNo: 263	8798		
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					
МТВЕ	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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5129		
Client ID: PBW	Batch ID: P17VW072	Test	No: EPA 8260	В		Analysis Da	te: 5/10/20)17	SeqNo: 263	8799		
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										
МТВЕ	ND	1.0										
MTBE o-Xylene	ND ND	1.0 1.0										
o-Xylene	ND	1.0										
o-Xylene Tert-Butanol	ND ND	1.0 5.0										

Qualifiers:

J

S

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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ASSET LABORATORIES

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NEVADA | P:702.307.2659 F:702.307.269

Work Order: N024158 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID P170510MB3	SampType:	MBLK	TestCoo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 115129					
Client ID: PBW	Batch ID:	P17VW072	TestN	lo: EPA 8260	В		Analysis Da	te: 5/10/20)17	SeqNo: 26	38799				
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	TestCoo	de: 8260_WP	_SF Units: ug/L	Prep Date:				RunNo: 115129					
Client ID: ZZZZZZ	Batch ID:	P17VW072	TestN	lo: EPA 8260	В	Analysis Date: 5/10/2017)17	SeqNo: 26	38801				
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							
МТВЕ		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	TestCoo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5129				
Client ID: ZZZZZZ	Batch ID:	P17VW072	TestN	lo: EPA 8260	В		Analysis Da	te: 5/10/20	017	SeqNo: 26	38802				
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				

- B Analyte detected in the associated Method Blank
 - Analyte detected below quantitation limits
- E Value above quantitation range
 - ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

J

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Page 17 of 19

Work Order: N024158 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID N024158-001FMSD	SampType: MSD	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 115129				
Client ID: ZZZZZZ	Batch ID: P17VW072	TestN	lo: EPA 8260	В		Analysis Da	te: 5/10/20)17	SeqNo: 26	38802			
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			
МТВЕ	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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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E Value above quantitation range

ND Not Detected at the Reporting Limit

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Page 18 of 19

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

Serving Clients with Passion and Professionalism"

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:

J

S

- B Analyte detected in the associated Method Blank
- E Value above quantitation range ND Not Detected at the Reporting Limit
- Analyte detected below quantitation limits
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES Serving Clients with Passion and Professionalism"
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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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Page 19 of 19

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
	1	

DATE: <u>\$79/17</u> PAGE: _______of_____

M ≠ Metal

P ≈ Płastic

C = Can

ection A		Section B	Section C	Section D
leguired Clien	Information:	Required Project Information:	Invoice Information:	Sampler Information:
lompany:	Kinder Morgan Energy Partners Attention: Steve Defibaugh	Report To: Eric Davis	Attention: Steve Defibaugh - Ref. AFE# 81195	Sampler James Dye Name:
ddress:	1100 Town & Country Road Orange, CA 92868	Copy To: Steve Defibaugh	Company Kinder Morgen Energy Partners Name:	Sampler Signature:
mail To:	steve_defibaugh@kindermorgan.com etic.davis@ch2m.com	Purchase Order No.;	Address: 1100 Town & Country Road Orange, CA 92868	Sample 5/9/17
hone: 714	560-4802 Fax: 714-560-4801	Project Name: SFPP Norwalk	ATL Project Marlon Cartin Manager:	

Section	E Sample Information					CONTAINER	TYPE			v	v	Α	9	Ă	P	P	G	P	P	, [
Ineganeu	Sample monitation					F OF CONTAI	NERS			3	з	2	1	Ż	1	1	2	1	1	Ţ					
			1			PRESERVAT	IVE		灑	н	н	-	N		-	-	\$	5	-	-					
						VOLUME (*			101	40	40	1000	\$00	1000	1.000	1900	1900	500) 100	00					
TERS #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAN	PLING TIME	TOTAL # OF CONTAINERS	SAMPLE TEMPERATURE (⁰ F)	Analysis Test	BTEX, 1,1-DCA, 1,2-DCA, MT8E, TBA (82608)	1PH-gas (8015B)	PH-d, TPH-oil, Totai TPH (3015B)	Cu, Pb, Zn (200.8); Hg (245.1)	henot (8270)	රා (ළි 20 deg. CijSM52108)	Total Suspended Solids (SM2540D); Turbidity (SM2130B)	0ii & Grease (1664)	vrimonia Nötrogen (as N) (SIM-4500 NH3C)							Comments
1	EFF-05-09	EFFLUENT	ww	G	519/17	1230	17	73		x	x	x	x	X	x	X	X	X	x	N	024	41	58-	-01	Field pH = 7.3 Field Temperature = 73 ; Field Salinity = 49 (James Dye to collect)
2] [-						Report metals, TPH and VOC preliminary data on 24-hr TAT
3				1			1		1 [Ī						1		1					Report total Xylenes
4			1	1				T	1								1	-	1	-					
5			T	1			1		18								1	1	1						
6		 ······································						1									1	1	1	-		-			
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8		 	1	1			1	1	11								1	+	+	+			·		
9		 	1	1	1		1	1							<u> </u>		1	<u>†</u>	+			-			
10			1	1	1		1								 	<u> </u>	1	†	+						
11		 	1	1	1	[1			-							†	†	1			Ť			
12		 	1	†	1		1	1	1						[1	1		+			····	•	

	<u></u>												
	Relinquished by Elignature and Printed Starfor Relinquished by Elignature and Printed Starres	5/9/17 1300 Date/Time Date/Time S/9/17 15 3/	Relinquished by (Signature and Printed Name):	S/a/17 Dures Rodia	7 [5:1] Three		Turn Around Time () A = Same B = 24 Hou C = 48 Hou D = 72 Hou E = 5 Work	Day rs rs rs			C II		
<	Relinguisted by Olipisture and Printed Karre):		Relincylished by (Signature and Printed Name):	for the second	Time V	:2 (am	E = 10 Wor	-	ampies received after	1	#:	829	4
				Matrix:			Preservatives:			Container Typ	e:		
				W = Water	WW = Wastewate	tr	H = HCl	N = HNO3	5 = H25O4	T = Tube	V # VOA	P = Pint	A = Amber
				O ≖ Oil	P = Product	S = Soll	Z = Zn(AC)2	O = NaOH	T = Na2S2O3) = Jar	8 = Tediar	G = Glass	

Others/Specify:

Others/Specify:

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 St	ate Overnight						
Last 4 digits of Tracking No.:	8294			Packing	Material Used:	Bubble Wrap		
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None None			
		<u>Sa</u>	ample Recei	ot Checklist				
1. Shipping container/cooler in g	jood conditio	on?	-		Yes 🗹	No 🗌	Not Present	
2. Custody seals intact, signed,	dated on sh	ippping container/	cooler?		Yes 🗌	No 🗌	Not Present	\checkmark
3. Custody seals intact on samp	le bottles?				Yes 🗌	No 🗌	Not Present	\checkmark
4. Chain of custody present?					Yes 🗹	No 🗌		
5. Sampler's name present in C	OC?				Yes 🗹	No 🗌		
6. Chain of custody signed when	n relinquishe	ed and received?			Yes 🗹	No 🗌		
7. Chain of custody agrees with	sample labe	els?			Yes 🗹	No 🗌		
8. Samples in proper container/t	oottle?				Yes 🗹	No 🗌		
9. Sample containers intact?					Yes 🗹	No 🗌		
10. Sufficient sample volume for	r indicated te	est?			Yes 🗹	No 🗌		
11. All samples received within I	nolding time	?			Yes 🗹	No 🗌		
12. Temperature of rep sample	or Temp Bla	nk within acceptat	ole limit?		Yes 🗹	No 🗌	NA	
13. Water - VOA vials have zero	headspace	?			Yes 🗹	No 🗌	NA	
14. Water - pH acceptable upon Example: pH > 12 for (CN	•	or Metals			Yes 🗹	No 🗌	NA	
15. Did the bottle labels indicate	correct pres	servatives used?			Yes 🗹	No 🗌	NA	
16. Were there Non-Conforman W	ce issues at as Client no	-			Yes 🗌 Yes 🗌	No 🗌 No 🗌	NA NA	✓✓
0								

Comments:



Reviewed By:

- 5/18/2017

For MBC

10-May-17 WORK ORDER Summary WorkOrder: N024158 **Client ID:** CH2HI03 OC Level: RTNE **Project:** SFPP-Norwalk Date Received: 5/9/2017 Field pH = 7.3; Field Temp = 7.3; Field Salinity = 9; Report metals, TPH and VOC preliminary data on 24-hr TAT **Comments:** Hld MS Sub Storage Sample ID **Client Sample ID Date Collected** Date Due Matrix Test No Test Name N024158-001A EFF-05-09 5/9/2017 12:30:00 PM 5/16/2017 Wastewater Oil and Grease Sample Prep □ WW \square 5/16/2017 EPA 1664 HEM Hexane Extractable Material (HEM) WW Day B EPA 8015B N024158-001B 5/10/2017 GASOLINE RANGE ORGANICS BY Consumed GC/FID MDM N024158-001C 5/10/2017 EPA 3510C SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS 5/10/2017 EPA 8015B TPH EXTRACTABLE BY GC/FID MDM \square 5/10/2017 EPA 8015B Total TPH MDM U WW N024158-001D 5/16/2017 SM2540F SETTLEABLE MATTER WW WW 5/16/2017 Setteable Matter 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 EPA 8260B N024158-001F 5/10/2017 VOLATILE ORGANIC COMPOUNDS BY Consumed GC/MS WW N024158-001G 5/12/2017 AQPREP TOTAL METALS: ICP, FLAA □ WW 5/12/2017 EPA 200.8 TOTAL METALS BY ICPMS 5/12/2017 EPA 245.1 MERCURY BY COLD VAPOR WW \square \square TECHNIQUE 5/12/2017 MERCURY PREP U WW N024158-001H 5/16/2017 SM4500-NH3C AMMONIA-N SUB \square □ WW N024158-001I 5/10/2017 EPA 3510C SEPARATORY FUNNEL EXTRACTION: 8270C - SIM ☐ WW 5/16/2017 EPA 8270C SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS SUB N024158-001J 5/16/2017 SM 5210 B BIOCHEMICAL OXYGEN DEMAND

 \square

WORK C	10-May-17						
Client ID:	WorkOrder: N024158						
Project:	SFPP-Norwalk		QC Level	: RTNE			Date Received: 5/9/2017
Comments:	Field $pH = 7.3$; Field 7	Гетр = 7.3; Field Salini	ty = 9; Report meta	ls, TPH and V	OC preliminar	y 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	
			5/10/2017		Folder	Folder	

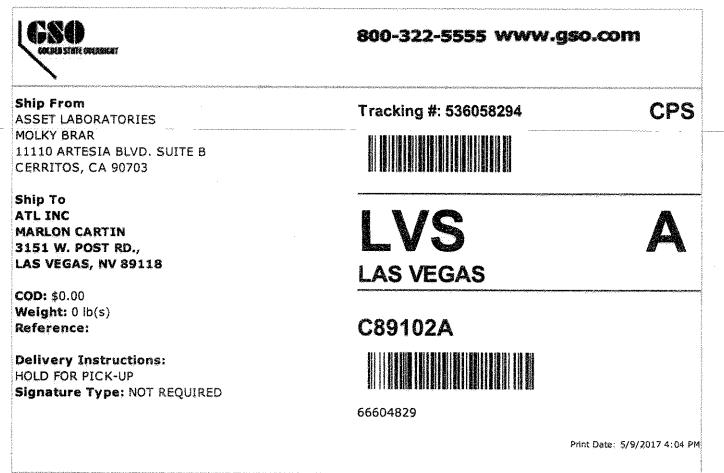


CHAIN OF CUSTODY RECORD

Contact us:

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

Client:	Asset L	ab	5	Report to:	1. 1. 1.			Bill to:								E	DD Requi	rement	Т	QA	VQC	Т	Sampe Receip	ot Cond	lition
Addres	s:			Company:				Address:								Excel			RTN					Y	
Addres	s:			Email:												Geotr			RW				1. Chilled		
								-	-							Labs			CalT	rans			. Headspace		
Phone:		Fax:		Address:				Email to:				PO#				Other			-	el III			3. Container Intact		
												N	241	58A						ELIV			4. Seal Present		
Submit	ted By: MOIK	D	MAC					Phone:				Fax:				Global	ID:		-	ulatory cify Sta		-	5. IR number 6. Method of	-	
Title:	1101	D	irar	Phone:	le.	ax:				1.1.1.										,			Cooling		
				i none.	["	ax:			Mat	trix				Analys	es Red	queste	d		1			5	Sample Temp:	_	
Signatu	ire:		Date:	Sampler's Signature	e and Date:			Ground	Sedin	ment					TT	T			-						
													1							-	_	-			_
Ihereby	authorize ASSET Labs to pe	rform the	e tests indicated below:					Potable [So				n'Arder	2								1	Courier:		
Project	Name:			1				NPDES [- Oth				2									z			
				Lattact to the validity and	1				Sol	lid 🗆			X						Time	ě	8	DTIO .	Tracking No.		
				I attest to the validity and with or intentionally misla	abeling the samp	le location, date or time	that tampering of collection is	Surface [4						pund	ontair	er Ty	RVA			
Project	Number:			considered fraud and ma Sampler's Name:	ay be grounds for	r legal action.							6						Turn Around	No. of contair	Container Type	PRESERVATION			-
										1			ONIO						2	Ň	S	4			
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Item No.	Laboratory Work Ord	er No.	Sample	e ID/Location		Date	Time	Water		olid	Others	Bo	Am												
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1	N024158-01		EFF-05-09		1000	5/2/17	1230	V				X	X						E	2	P				
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M.	d a	-	5/9/17 15	30										A < 24	Hrs or S	Same [ay TAT								
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					(oig		ine).			L	ate / Time			C = 2 V											
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chirquisite	to by (orginatore and Frinled in	ame):		Date / Time	Received by (Sig	nature and Printed Nar	me):	3-21		D	ate / Time		_	E = Ro			davs								
													TAT	Starts at samples r	AM the	followii	ng day if								
All samples	will be disposed in 45 days upon rece	ipt and reco	ords will be destroyed in 5 years upon submission of fi	inal report	. Trip Blanks and Equ	uipment Blanks are billable s	ample.						_	ervatives			m.			ant-1					
Less than	24 Hrs = 200% Next Day = 100	apply for rus	sh analysis	7	. Terms are net 30 De	is not responsible for sample bys.							H = H	CI N	= HNO3	S =	H2SO4	C = 4°C		= Tube	er Typ e		= VOA P =	Pint	-
			ject price. IV Data Packages. Surcharge applied on total project		 An reports are subm For subcontract and 	nitted in electronic format. P alysis. TAT and Surcharges w	lease inform ASSETLi ill vary.	aboratrories if ha	nd copy of re	eport is need	led.				= NaOH		Na2S2O3		J =	= Jar		B	= Tedlar G =	Glass	
			a specie an total project			ito = Laboratory C							Others	s/Specify:					M	= Met	al	P	= Plastic C =	- Can	



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.

1-9-0



Environmental Testing Laboratory Since 1949

Date of Report: 05/17/2017

Molky Brar

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

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

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

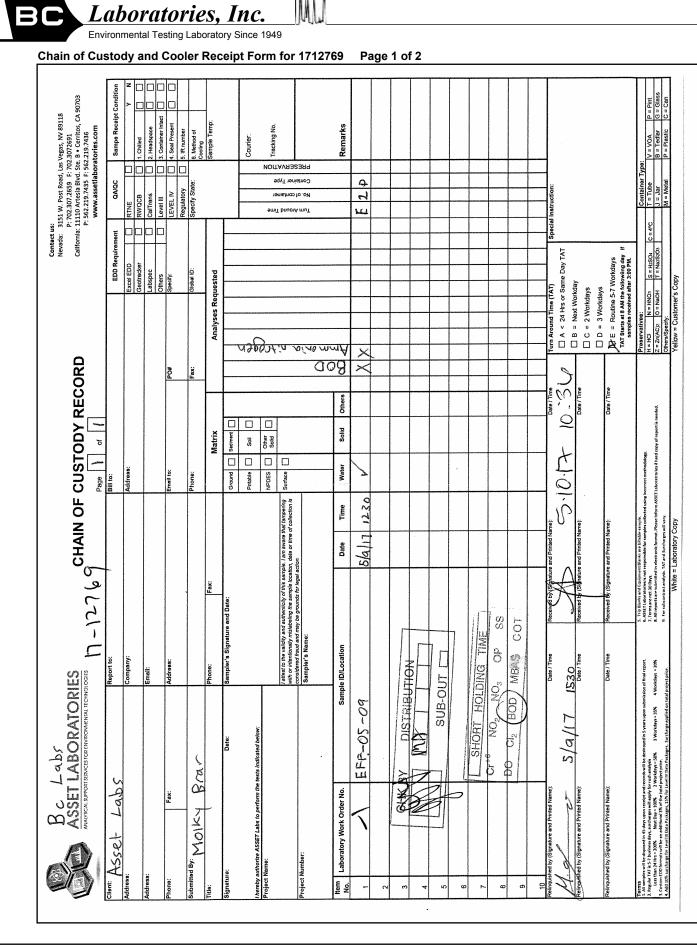
Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101



Environmental Testing Laboratory Since 1949

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Environmental Testing Laboratory Since 1949

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

Submission #: ローにつんの SHIPPING INFORM Fed Ex ロ UPS ロ Ontrac ロ BC Lab Field Service ロ Otherを	ATION	d Deliver	50	Ice Ch	HIPPING est 0/) er (Spe	None 🗆			FREE LI YES D W /	NO 🗆			
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202. NITRATE / NITRITE						ł							
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PT CHEMICAL OXYGEN DEMAND			1				1		1	1			
PIA PHENOLICS													
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10 ml VOA VIAL- 504 QT EPA 508/608/8080													
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Laboratories, Inc.

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

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

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Informati	on		
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:	EFF05-09	Lab Matrix:	Water
	Sampled By:		Sample Type:	Water

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Laboratories, Inc.

ASSET Laboratories 3151-3153 W. Post Rd

Las Vegas, NV 89118

Reported:05/17/201714:33Project:CerritosProject Number:Cerritos LabProject Manager:Molky Brar

Water Analysis (General Chemistry)

BCL Sample ID:	1712769-01	Client Sampl	e Name:	EFF05-0	9, 5/9/201	7 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 Dema	and - Seeded	ND	mg/L	1.5	1.5	SM17-5210B			2

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	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

Laboratories, Inc.

ASSET Laboratories 3151-3153 W. Post Rd Las Vegas, NV 89118 Reported:05/17/201714:33Project:CerritosProject Number:Cerritos LabProject 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:05/17/201714:33Project:CerritosProject Number:Cerritos LabProject Manager:Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

								Control L	<u>imits</u>	
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	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		

Laboratories, Inc.

ASSET Laboratories 3151-3153 W. Post Rd Las Vegas, NV 89118 Reported:05/17/201714:33Project:CerritosProject Number:Cerritos LabProject Manager:Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

									<u>Cont</u>	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[E1588	Use	d client sampl	e: Y - Des	cription: 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	Use	d client sampl	e: N								
Biochemical Oxygen Demand - Seeded	DUP	1712743-01	37.123	37.271		mg/L	0.4		20		



ASSET Laboratories Reported: 05/17/2017 14:33 3151-3153 W. Post Rd Project: Cerritos Las Vegas, NV 89118 Project Number: Cerritos Lab Project Manager: Molky Brar

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected

PQL Practical Quantitation Limit

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May 26, 2017

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

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
Maarooverig my ifora	Germination	No reduction	"Pass" (= non-toxic)
Macrocystis pyrifera	Growth	No reduction	"Pass" (= non-toxic)
Strongylocentrotus purpuratus	Fertilization	No reduction	"Pass" (= non-toxic)
Menidia beryllina	Survival	2.5%	"Pass" (= non-toxic)
Meniaia beryitina	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



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 27391.

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



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

Samples collected May 8, 10, and 12, 2017

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- Appendix A Chain-of-Custody Records for the Collection and Delivery of the SFPP Norwalk Pump Station Effluent Samples
- 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*
- Appendix C Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Macrocystis pyrifera
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- Appendix E Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the Purple Urchin Sperm
- Appendix F Test Data and Summary of Statistical Analyses for the Evaluation of the Chronic Toxicity of SFPP Norwalk Effluent to *Menidia beryllina*
- Appendix G Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Menidia beryllina*

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 appropriatelycleaned containers; these samples were shipped via overnight delivery, on ice and under chainof-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)	рН	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 $1-\mu$ m 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 450mL 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 CuCl₂ at concentrations of 5.6, 10, 18, 32, 56, 100 and 180 μ g/L. 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" 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 $1-\mu$ m 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, deionized 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., EC50); 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 <i>Macrocystis pyrifera</i> 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						
S	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 EC50 of $158 \mu g/L CuCl_2$ consistent with the "typical response" range established by the reference toxicant test database for this species, but the IC25 of $55.8 \mu g/L CuCl_2$ was slightly outside of the typical range of $8.5 - 52.9 \mu g/L$, 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 <i>Macrocystis pyrifera</i> germination								
and growth.								
CuCl ₂ Treatment (μ g/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	180 36.4 * 8.12							
Sum	Summary of Key Statistics							
Germination EC50 or Growth IC50 =	$158 \mu g/L CuCl_2$	$>180^{a} \mu g/L CuCl_{2}$						

* The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05). a – As the IC50 was >180 μ g/L, the IC₂₅ of 55.8 μ g/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 EC50 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: effect	s 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	of Key Statistics
EC50 =	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 Nor	walk effluent on Menidia ber	yllina survival and growth.
Effluent Treatment	Mean % Survival	Mean Biomass Value (mg)
Lab Water Control	100	1.75
100% Effluent	97.5	1.86
S	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 EC50 and growth IC50 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 Menida	<i>ia beryllina</i> 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*	-
Sum	mary of Key Statistics	
Survival EC50 or Growth IC50 =	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
Maaroonstig myifara	Germination	No reduction	"Pass" (= non-toxic)
Macrocystis pyrifera	Growth	No reduction	"Pass" (= non-toxic)
Strongylocentrotus purpuratus	Fertilization	No reduction	"Pass" (= non-toxic)
Menidia beryllina	Survival	2.5% reduction	"Pass" (= non-toxic)
Menidia beryitina	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 IC25 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 Kristin Worrell <kworrel@p< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>DATE:</th><th>HAIN OF CUS</th><th></th><th>D</th></kworrel@p<>																										DATE:	HAIN OF CUS		D
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W = Waster WW = Waster H = HCI N = HNO3 S = H2SO4 T = Tube V = VOA P = Pint A = Amber O = O(i) P = Product S = Soli Z = Zn(ACj2 O = NaOH T = Na25203 J = Jar B = Tediar G = Glass		2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 2012 - 20		1	Matrix:			Preservatives:			Container Type	:		
D = Oli P ≈ Product S = Soil Z = Zn(AC)2 D ≈ NsOH T = Na2S2O3 J = Jar B = Tediar G ∝ Glass						WW = Wastewater			N = HNO3	S = H2SO4		1	P = Pint	A = Amber
						+	Soli							
					Others/Specify:	1		Others/Specify:	1		M = Metal	P = Plastic	C = Can	+

Pacific EcoRisk 2250 Cordella Road Fairfield, CA 94534

	CHAIN OF CUSTODY RECORD
DATE: PAGE:	

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 Sun	nmary Repo	rt						ort Date: Code:	26 N	•	9 (p 1 of 1) -6324-8576
Macrocystis C	Germination and	Growth Te	st							Pacifi	c EcoRisk
Batch ID: Start Date: Ending Date: Duration:	01-3454-2655 09 May-17 13:38 11 May-17 12:38 47h	B Prot	ocol: cies:	Growth-Germina EPA/600/R-95/ Macrocystis pyr David Gutoff	136 (1995)		Analy Dilue Brine Age:	nt: Filt	senia Jarami ered Seawat pic Marin		
	14-4163-3718 08 May-17 11:10 09 May-17 11:10 26h (0.5 °C)		rial: ce:	Eff Effluent SFPP Norwalk 3 EFF-05-08-TOX			Clien Proje		2M Hill 391		
Single Compa	arison Summary										
04-3580-7895	Mean Length	e	TST-V TST-V TST-V TST-V TST-V	verison Method Velch's t Test Velch's t Test Velch's t Test Velch's t Test Velch's t Test Velch's t Test			P-Value <1.0E-37 1.4E-06 <1.0E-37 <1.0E-37 <1.0E-37 4.7E-07	Salt Con 100% pa 100% pa Salt Con 100% pa	son Result trol passed g ssed germina ssed germina trol passed m ssed mean le ssed mean le	ermination ation rate ation rate nean length ength	
Germination I	Rate Summary		••••								
Conc-% 0 0	Code LW SA	Count 5 5	Mean 0.934 0.948	95% LCL 0.915 0.938	0.953 0.958	0.920 0.940	Max 0.950 0.960	Std Err 0.007 0.004	Std Dev 0.015 0.008	CV% 1.62% 0.88%	%Effect 0.00% -1.50%
100		5	0.948	0.932	0.964	0.930	0.960	0.006	0.013	1.38%	-1.50%
Mean Length Conc-% 0 0 100	Code LW SA	Count 5 5 5	Mean 16.1 15.9 16.2	95% LCL 15.6 15.6 16.1	95% UCL 16.6 16.3 16.4	Min 15.5 15.5 16	Max 16.5 16.3 16.3	Std Err 0.174 0.132 0.06	Std Dev 0.39 0.295 0.134	CV% 2.42% 1.85% 0.83%	%Effect 0.00% 1.24% -0.74%
Germination I	Rate Detail				-						
Conc-% 0 0 100	Code LW SA	Rep 1 0.920 0.940 0.960	Rep 2 0.920 0.940 0.930	0.930	Rep 4 0.950 0.950 0.960	Rep 5 0.950 0.960 0.950					
Mean Length	Detail										
Conc-% 0 0 100	Code LW SA	Rep 1 16.3 16.3 16.3	Rep 2 16 15.5 16.3	Rep 3 16.3 16 16.3	Rep 4 16.5 15.8 16.3	Rep 5 15.5 16 16					
Germination I	Rate Binomials										
Conc-% 0 0 100	Code LW SA	Rep 1 92/100 94/100 96/100	Rep 2 92/10 94/10 93/10	0 93/100 0 95/100	Rep 4 95/100 95/100 96/100	Rep 5 95/100 96/100 95/100					

Analyst: ______ QA:_____

						Test	Code:		/292/ 11	-6324-857
Macrocystis Germi	ination and Gro	wth Test						-	Pacif	ic EcoRisk
	4359-7931 May-17 10:32	Endpoint: Analysis:	Germination Ra Parametric Biog		Two Sampl		S Version: ial Results:	CETISv1 Yes	.9.2	
Data Transform	Alt	: Нур		TST_b		Comparis	on Result			
Angular (Corrected)		b < T		0.75		100% pas	sed germina	tion rate		
TST-Welch's t Test	t		·							
Control vs	Control II	Test	Stat Critical	DF	P-Type	P-Value	Decision(α:5%)		
Lab Water Contr	100*	21.5	1.89	7		<1.0E-37	Non-Signif	icant Effect		
ANOVA Table										
Source	Sum Squares	Mear	n Square	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.0022154		22154	1	2.45	0.1564		icant Effect		
Error	0.0072424	0.000	9053	8						
Total	0.0094578			9						
Distributional Test	s									
Attribute	Test			Test Stat	Critical	P-Value	Decision(α:1%)		
Variances	Variance Ratio	F Test		1.14	23.2	0.9017	Equal Vari	ances		
Distribution	Shapiro-Wilk V	V Normality Te	est	0.874	0.741	0.1107	Normal Dis	stribution		
Germination Rate	Summary									
Conc-%	Code Co	unt Mear	n 95% LCL	95% UCL	Median	Min	Мах	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	3 0.932	0.964	0.950	0.930	0.960	0.006	1.38%	-1.50%
Angular (Corrected	d) Transformed	Summary								
Conc-%	Code Co	ount Mear			Median	Min	Мах	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				···-					-	
					0.040	,				
Graphics			•		0.035					
Graphics			••••••		1			• • /	•	
Graphics			e		0.035			•••	•	
Graphics				1	0.035 0.030 0.025 0.020			•••	•	
Graphics			••••• 0	Centbred	0.035 0.030 0.025 0.020			•••	•	
Graphics	•		•	Centarred	0.035 0.030 0.025 0.020			••	•	
Graphics 1.0 0.9 0.8 0.7 0.7 0.6 0.6	•		e	Centered	0.035 0.025 0.025 0.015 0.005 0.005 0.000 0.000 0.000			•••	•	
Graphics 10 0.9 0.8 0.7 0.6 0.5 0.4			e	Centered	0.035 0.030 0.025 0.025 0.010 0.005 0.005 0.005		•	•••	•	3
Graphics 10 0.9 0.8 10 0.9 0.8 0.7 0.7 0.5 0.5 0.4 0.3				Centbred	0.035 0.020 0.020 0.020 0.000 0.000 0.000 0.000 0.000 0.000 0.000		•	•••	•	
Graphics 10 0.9 0.8 0.7 0.6 0.5 0.4	•			Centarred	0.035 0.020 0.025 0.020 0.010 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000 0.0000 0.0000 0.000000		•	••		- -
Graphics				Cantarred	0.035 0.020 0.025 0.020 0.015 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000		•	•••	•	
Graphics	0LW			Centered	0.035 0.030 0.025 0.020 0.010 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000	-1.5 -1.0	-0.5 0.0	05 1	0 15	2.0

Analyst:______QA:_____

CETIS Analyt	tical Repo	rt					-	ort Date: Code:	26 N	-	34 (p 2 of 2 1-6324-857
Macrocystis Gerr	mination and	Growth Tes	st	<u> </u>						Pacif	ic EcoRis
	6-3876-6457 6 May-17 10:3	-		an Length ametric Bio	equivalence	-Two Sample		S Version: ial Results:	CETISv1. Yes	.9.2	
Data Transform		Alt Hyp			TST_b		Comparis	on Result			
Untransformed		C*b < T	· · · · ·		0.75		100% pas	sed mean le	ength		
TST-Welch's t Te	st										· · · -
Control vs	Control II		Test Stat	Critical	DF	Р-Туре	P-Value	Decision(α:5%)		
Lab Water Contr	100*		28.8	2.02	5	CDF	4.7E-07	Non-Signi	ficant Effect		
ANOVA Table											
Source	Sum Squa	ires	Mean Squ	lare	DF	F Stat	P-Value	Decision(•	
Between	0.0359998		0.0359998		1	0.424	0.5334	Non-Signit	ficant Effect		
Error	0.679999		0.0849999)	8						
Total	0.715999				9						-
Distributional Te	sts										
Attribute	Test				Test Stat	Critical	P-Value	Decision(
Variances		tatio F Test			8.44	23.2	0.0625	Equal Var			
Distribution	Shapiro-W	ilk W Norma	ality Test		0.886	0.741	0.1527	Normal Di	stribution		
Mean Length Su	mmary										
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											
18 .—						0.5					~
						0.4		1			
16						0.3		t I	,	<u> </u>	
14						0.2		i i			
12 12					7	0.1					
					Center	0.0		• • • • • • • • • • • • • • • • • • •			
					-	5 -0.1		•			
12 						-0.2	. /				
						-	•/				
						-0.3		1			
8						-0.3					
8											
8 -						-0.4					
8 - - - - - - - - - - - - - - - - - - -	DLW		100			-0.4 -0.5 -0.6	•	-0.5 0.0	0.5 14	 0 1.5	2.0

Analyst: 1 QA: 1

Kelp (M. pyrifera) Development Toxicity Test Data

Client:	CH2M SFPP Norwalk Station	Test Start Date:	519117
Pre-aterial:	Effluent	Test End Date:	5/11/17
Test ID #:	72173	Enumeration Date:	5/16/17
Project #:	27391	Investigator:	W
Sample Sali	nity adjusted w Tropic Marin	Micrometer Conv. Factor:	2.5

	Ger	minatio	on		Len	gth Me	asureme	nts (in	ocular	microm	eter uni	ts)		M	ean
Treatment		# Spores Germinated	# Spores not Germinated	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Mean Length (µm)
lo	1	92	G	6	7	φ	φ	8	7	7	6	6	0	6.5	16.3
Lab Water Control	2	92	4	(1	6	6	7	4	1	0	6	6	$\langle \rangle$	6.4	16.0
ater (3	93	7	6	0	7	6	7	C,	6	6	7	6	6.5	16.3
b W	4	95	5	6	1	6	0	6	0	7	6	4	8,	6.6	110.5
Ľ	5	95	5	7	6	6	7	6	6	1	()	5	0	6.7	19.5
	1	91,	4	7	1	7	8	4	C	4	6	6	7	6.5	163
	2	93	7.	4	7	10	4	-7	6	7	8	6	6	6.5	11.3
100%	3	94	6	G	7	le	C	7	7	6	B	6	6	6.5	16.3
	4	90	4	C	7	6	7	6	4	C	6	7	6	6.5	16,3
	5	95	S	8	7	0	0	7	6	Ce	6	7	2	6.4	160

N/A

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

Client:	CH2M SI	FPP Norwalk	Station	Organism Log#:	10277 Age:
Test Material:		Effluent		Organism Supplier:	Gutoff
Test ID#:	72928	Project #:	27391	Control/Diluent:	Filtered Seawater
Test Date:	519117	Randomiz	ation:		
ımple Salinity a	djusted with :	Tropic	Marin		

		Day 0			
Treatment	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15,9	7.66	9.2	32.1	Date & Inoculation Time: 519117 1336
100%	15.9	7.53	7.0	32.5	Solution Prep/Inoculation:
					Sample ID: 46409
Meter ID	82A	PH 23	RD09	ELOY	New WQ:

	Day 1												
Treatment	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff								
Lab Water Control	15.0				Date: 6110117								
100%	15.0				Old WQ: AFF								
Meter ID	82A												

	······································	Day 2			· · · · · · · · · · · · · · · · · · ·
Treatment	Temperature (°C)	рН	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. Z	3311	Termination: 12361 JBL
Meter ID	82A	PH23	RD 12	ECO4	Old WQ: SD

	ical Rep						-	ort Date: Code:	131	-	15 (p 1 of 2 1-6324-857
Macrocystis Gern	nination an	d Growth	Test							Paci	fic EcoRisk
	-3580-7895 May-17 14			Sermination Ra		-Two Sampl		S Version:	CETISv1 : Yes	.9.2	
Data Transform		Alt Hyp)		TST_b		Comparis	on Result			
Angular (Corrected)	C*b < T			0.75		100% pas	sed germina	ation rate		
TST-Welch's t Tes	st										
Control vs	Control		Test St	at Critical	DF	P-Type	P-Value	Decision(a:5%)		
Salt Control	100*		23.2	2.02	5	CDF	1.4E-06		ficant Effec	t	
ANOVA Table											
Source	Sum Sqi	uares	Mean S	quare	DF	F Stat	P-Value	Decision(a:5%)		
Between	1.489E-0		1.489E-		1	0.00246	0.9617		ficant Effec	t	
Error	0.004852		0.00060	66	8						
Total	0.004854	14			9						
Distributional Tes	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variances					2.3	23.2	0.4390	Equal Var	iances		
Distribution	tribution Shapiro-Wilk W Normality Test					0.741	0.2293	Normal Di	stribution		
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 (Correcte	d) Transfo	rmed Sum	imary								
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		-			Cantered	-0.005 -0.010 -0.015 -0.020 -0.025 -0.030	•	0 0	•		
0.1	0 SA			00	_	-0.035 -0.040 -2.0	-1.5 -1.0	-0.5 0.0	0.5 1	.0 1.5	2.0

							Test	Code:		72927 1	1-6324-857
Macrocystis Gern	nination and	d Growth Te	st							Pacif	ic EcoRisl
	-0739-5580 May-17 14:1		•	an Length rametric Bioe	equivalence-	Two Sampl		S Version: ial Results		.9.2	
Data Transform		Alt Hyp			TST_b		Comparis	on Result			
Untransformed		C*b < T			0.75			sed mean l			
TST-Welch's t Tes	st										
Control vs	Control I	11	Test Stat	Critical	DF	P-Type	P-Value	Decision	(a:5%)		
Salt Control	100*		37.2	1.94	6	CDF	<1.0E-37		ificant Effect	t	
ANOVA Table											
Source	Sum Squa	ares	Mean Sq	uare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.255999		0.255999		1	4.88	0.0582		ificant Effect	t	
Error	0.419999		0.052499	Э	8			-			
Total	0.675998				9						
Distributional Tes	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Variance F	Ratio F Test			4.83	23.2	0.1562	Equal Variances			
Distribution	Shapiro-W	Vilk W Norma	alit y T est		0.878	0.741	0.1224	Normal D	istribution		
Mean Length Sum	ımary										
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						0.5 F		:			
		ł				0.4				•	/
16						E0		1			
14	-					0.3			/		
					Centered	-					
14					Centered	-		• •		,	
14					Centerred			• •			
14					Centiered	0.2		• •		,	
14					Centhird	0.2	•	•••		,	
14					Combined	0.2 0.1 0.0 -0.1	•	•••		,	
14					Centigred	0.2	•	•••		,	
14	0 54	1	100		Cantered	0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	-1.5 -1.0		0.5 14	0 15	2.0

	cal Repo						Test	Code:		72927 1	1-6324-857
Macrocystis Germ	ination and	Growth Te	st							Paci	fic EcoRisk
	7249-5499 <mark>May-</mark> 17 10:4			rmination Ra rametric Bioe		Two Sample		S Version: ial Results:	CETISv1. Yes	9.2	
Data Transform	_	Alt Hyp			TST_b		Comparis	on Result			
Angular (Corrected)		C*b < T			0.75			ol passed ge	ermination r	ate	
TST-Welch's t Tes	:										
Control vs	Control I	I	Test Stat	Critical	DF	P-Type	P-Value	Decision(a:5%)		
Lab Water Contr	Salt Cont	rol*	26.5	1.89	7		<1.0E-37		icant Effect		
ANOVA Table									i the		
Source	Sum Squa	ares	Mean Squ	Jare	DF	F Stat	P-Value	Decision(a:5%)		
Between	0.0021021		0.0021021	1	1	3.16	0.1135	Non-Signif	icant Effect		
Error	0.0053283		0.0006666)	8	_					
Total	0.0074303	3		· · · · · · · · · · · · · · · · · · ·	9						
Distributional Test	s										
Attribute	Test				Test Stat	Critical	P-Value	Decision(a:1%)		
Variances		Ratio F Test			2.63	23.2	0.3724	Equal Vari			
Distribution	Shapiro-W	/ilk W Norm	ality Test		0.878	0.741	0.1234	Normal Dis	stribution		
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	I) Transfor	med Summ	ary								
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	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											
1.0						0.035				1-	
0.9		3		9		0.030					
						0.025					
0.8 						0.020		1			
월 0.7 - 5					. 12	£ 0.015		1			
					Centored	0.010					
9 0.5						Ē		9	•		
0.4						0.000					_
0.0						-0.010					
						-0.015					
0.2						-0.020	1	é • [
-						E	1	i			
0.1						-0.025	1	1			
0.1	0 LW	1	0 SA			-0.025 -0.030 -2.0	-1.5 -1.0	-0.5 0.0	0.5 1.0	1.5	2.0

CETIS Analyti							Test	Code:		72927 1	1-6324-857
Macrocystis Germ	ination and	Growth Te	st								ic EcoRis
	2799-0021 May-17 10:47	•		an Length ametric Bioe	equivalence-	Two Sample		S Version: ial Results	CETISv1 : Yes	.9.2	
Data Transform		Alt Hyp			TST_b		Comparis	on Result			
Untransformed		C*b < T			0.75				nean length		
TST-Welch's t Tes	t										
Control vs	Control II		Test Stat	Critical	DF	P-Type	P-Value	Decision((a:5%)		
Lab Water Contr	Salt Contro	ol*	20.6	1.89	7	CDF	<1.0E-37	Non-Signi	ficant Effect		
ANOVA Table	r										
Source	Sum Squa	res	Mean Squ	iare	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.0999998		0.09999998	3	1	0.837	0.3870	Non-Signi	ficant Effect		
Error	0.955999		0.1195		8	_					
Total	1.056				9		·				
Distributional Tes	ts										
Attribute	Test				Test Stat	Critical	P-Value	Decision((α:1%)		
Variances	Variance R				1.75	23.2	0.6021	Equal Var	iances		
Distribution	Shapiro-Wi	ilk W Norma	ality Test		0.92	0.741	0.3603	Normal Di	stribution		
Mean Length Sum	mary										
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	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											
18						0.5		I		/	
16	******					0.4		1	•		
			L			0.3		1	/		
-						E E					
14						0.2		1	• /•		
					Pa sa	0.2		•	• •		
					Centored	0.2		• 1	• •		
12 24 24					Centrared	0.2		• •	• •		-
					Centerred	0.2 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1		• •	••	- 400 400 400 400 400	
					Centered	0.2 0.1 -0.1 -0.1 -0.1		• •	• •		
tip 12 12 8					Centered	0.2 0.1 0.0 -0.1 -0.2	•	•	•/•		
Hpbul 12 8 6 4					Centered	0.2 0.1 	•	•	•/•		
40 12 40 12 10 8					Centered	0.2	•	•	•/•		
Hondan Isa Meann Isa 8 6 4	0 LW	I	054		Centered	0.2	•			0 15	

Kelp (M. pyrifera) Development Toxicity Test Data

Client: _ Test Material:	CH2M SFPP Norwalk Station Salt Control	Test Start Date: Test End Date:	519117 Shilh
Test ID #:	72927	Enumeration Date:	5/16/17
Project #:	27391	Investigator:	10
Control/Diluent:	Filtered Seawater	Micrometer Conv. Factor:	2.5
Sample	Salinity adjusted with : Tropic Mar.		<i>v</i>

	Ger	minatic	n		Len	gth Me	asurem	ents (in	ocular	micron	neter un	its)		M	ean
Treatment		# Spores Germinated	# Spores not Germinated	LI	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Mean Length (µm)
lo	1	92	8	6	$\overline{}$	6	0	8	7	7	6	6	6	65	163
Control	2	92	S	Ŷ	G	6	7	8	7	6	6	6	6	6.4	16.0
ater	3	93	7	Û	6	7	6	7	S	6	6	7	6	6.5	16.3
Lab Water	4	95	5	10	2	6	4	6	Co	7	6	8	8	66	165
Ľ	5	95	5	7	0	4	7	Q		7	6	5	6	6.2	15.5
	1	94	6	6	7	Q	(7	7	T	6	6	6	6.5	163
trol	2	94	6	7	()	(p)	7	(0	7	5	6	6	G	6.2	15.5
Control	3	93	5	6	7	10	4	1	Q	7	6	6	7	6.4	160
Salt	4	95	5	C	6	7	G	7	C	6	6	7	6	63	15,4
	5	96	4	7	4	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	Organism Log#:	10277	Age:	N/A
Test Material:	Salt Control	Organism Supplier:	Gutoff		
Test ID#:	72927 Project #: 27391	Control/Diluent:	Filtered	Seawater	
Test Date:	5/9/17 Randomization:	Light Intensity	225.5		

Sample Salinity adjusted with : Tropic Marin

Day 0					
Treatment	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff
Lab Water Control	15.9	7.66	9.2	32.)	Date & Inoculation Time: 5/9/17 (33)
Salt Control	15-9	8.39	8.1	33.7	Solution Prep/Inoculation: APF 1336
Meter ID	02A	-7.53 7.53	MB 5/9/17 7-0	MB 5/9/17 32.5	New WQ: MB
		PH23	RD09	ECOY	

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	BZA				

Day 2						
Treatment	Temperature (°C)	рН	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 / TBL	
Meter ID	82A	PHZ3	RD12	Eco4	Old WQ: SD	

Appendix C

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



CETIS Sur	nmary Repo	ort						port Date st Code:	e: 16 l	16 May-17 16:01 (p 1 of 2) 72484 08-4127-1529		
Macrocystis (Germination and	d Growth Te	st							Pacifi	c EcoF	lisk
Batch ID: Start Date: Ending Date: Duration:	18-5173-3982 02 May-17 16:0 04 May-17 14:3 46h	4 Prot	ocol: cies:	Growth-Germir EPA/600/R-95/ Macrocystis py Gutoff	/136 (1995)		Dil	alyst: uent: ne: e:	Yesenia Jaramillo Filtered Seawater Not Applicable N/A			
-	13-4709-5454 02 May-17 16:0 02 May-17 16:0 n/a (14.3 °C)		erial: rce:	CuCl2 Copper chlorid Reference Tox In House				ent: oject:	Reference Toxic 27283	cant		
Multiple Com	parison Summa	ry										
Analysis ID 18-2917-5847 20-1373-6943	Endpoint Germination Ra Mean Length	te	Dunne	arison Method tt Multiple Com tt Multiple Com	parison Tes		NOEL 5.6 10	10 18	- TOEL 7.483 13.42	TU	PMS 1.639 2.4%	6
Point Estimat	e Summary	51								· · · · · · · · · · · · · · · · · · ·		
Analysis ID Endpoint Point Estimate Method 07-3821-7000 Germination Rate Regression: Log-Normal (Probit)							Level EC5 EC10 EC15 EC20 EC25 EC40	μg/L 44.5 58.9 71.1 82.6 94 130	95% LCL 37.1 51.2 63.5 75.2 86.7 122	95% UCL 51.1 65.7 77.9 89.4 101 139	TU	
06-9062-6073 Mean Length Linear Interpolation (ICPIN)							EC50 IC5 IC10 IC15 IC20 IC25 IC40 IC50	158 14.8 23.9 31.9 43.8 55.8 137 >180	148 10.5 21.3 28.4 39.3 51.1 126 n/a	171 19.2 27.6 37.6 48 65.6 146 n/a		
Germination F	Rate Summary		<u> </u>		ş							
<mark>Conc-µg/L</mark>	Code LW	Count 5	Mean	95% LCL	95% UCL	Min	Max	Std E		CV%	%Effe	
5.6 10 18 32 56 100 180		5 5 5 5 5	0.966 0.950 0.940 0.934 0.888 0.888 0.840 0.760 0.364	0.952 0.938 0.914 0.923 0.872 0.831 0.740 0.325	0.980 0.962 0.966 0.945 0.904 0.849 0.780 0.403	0.950 0.940 0.910 0.920 0.870 0.830 0.740 0.310	0.980 0.960 0.940 0.900 0.850 0.780 0.390	0.005 0.004 0.009 0.004 0.006 0.003 0.003 0.007 0.014	0.010 0.021 0.009 0.013 0.007 0.016	1.18% 1.05% 2.26% 0.96% 1.47% 0.84% 2.08% 8.60%	0.00% 1.66% 2.69% 3.31% 8.07% 13.04 21.33 62.32	% % %
Mean Length S	-											
Conc-µg/L 5.6 10 18 32 56 100	LW	5 5 5 5 5 5 5 5 5 5	Mean 15.4 14.8 15.1 14.4 13.1 11.5 10.2	95% LCL 15.1 14.4 14.8 14.3 12.7 11.2 9.84	15.7 15.1 15.4 14.6 13.5 11.9 10.5	Min 15 14.3 15 14.3 12.8 11.3 9.8	Max 15.5 15 15.5 14.5 13.5 11.8 10.5	Std E 0.1 0.128 0.1 0.049 0.139 0.112 0.124	0.224 0.286 0.224 0.11 0.311 0.251	CV% 1.45% 1.94% 1.48% 0.76% 2.38% 2.18% 2.73%	%Effe 0.00% 4.03% 1.95% 6.36% 15.06 25.06 33.90	%
80			8.12	7.92	8.32	8	8.3	0.073		2.02%	47.27	

CA: SD Analyst:

CETIS Summary Report

Macrocysti	s Germination and	Growth Test
------------	-------------------	-------------

1(6	May-17	16:0
		70404	10

Report Date:

Test Code:

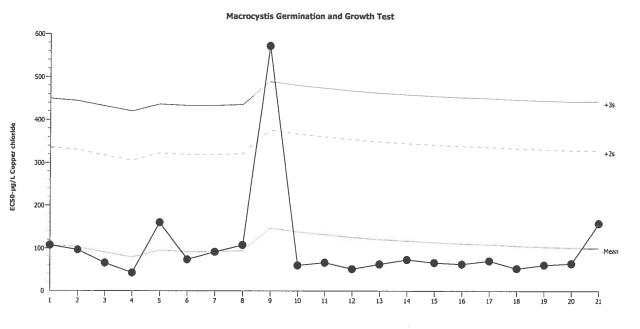
:01 (p 2 of 2) 72484 | 08-4127-1529

Pacific EcoRisk

Germination R	ate 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 D	etail			· ·			
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 Ra	ate Binomials	5					
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	1000	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	

______SD____

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
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CETIS QC Plot

Point	Year	Month	Day	Time	QC Data	Deita	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
	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

4) QA: SD Analyst:

Test Type: Protocol:	Growth-Germination EPA/600/R-95/136 (1995)	Organism: Macrocystis pyrifera (Giant Kelp) Endpoint: Mean Length	Material: Copper chloride Source: Reference Toxicant-REF
		Macrocystis Germination and Growth Test	
IC25-pg/L Copper chloride	70 60 50 40 30		+35 +25 Mean
102			-25 -25 -25 -25 -25 -25 -25 -25 -25 -25

+2s Warning Limit: 52.92

CETIS QC Plot

Macrocystis Germination and Growth Test

+3s Action Limit: 64.02

Pacific EcoRisk

Quality Control Data

Sigma: 11.1

CV:

36.10%

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

	<i>pyrifera</i>) Developm rence Toxicant	ent Reference	Toxicant Test V Organism Log#:		t ry Data Age: N/A			
· · · · · ·	opper (as CuCl ₂)		Organism Supplier:	Gut	ff			
Test ID#: 72484 Test Date: 5 / 2 / 1 / 7	Project #: 27283 Randomization:		Control/Diluent: Light Intensity:		-Y1.5			
			Light Intensity.		-11.5			
Treatment (µg Cu/L)	Temperature (°C)	pH	D.O. (mg/L)	Salinity (ppt)	Signoff			
Control		-7-7.7	97		Test Solution Plep:			
5.6	14.3	7.75	9.7	32-1 32-6	New WQ: 7			
10	14.3	712	9.1		Innoculation Date:			
18	14.3	772	9.8	32.7	Innoculation Time:			
32	14.3	1.73	G S	32 5	1604 Innoculation Signoff:			
56	14.3	7.14	9.7	37.7	- TK-F			
100	14,3	713	9.8	27.7				
180	14.3	7.73	97	326				
Meter ID	32A	PHZS	6.010	£(10				
				<i>F</i>				
		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							
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)	Simoff			
Control	14.8	7.76			Signoff Termination Date:			
5.6	14.8	7.18	8.1	33.1	Termination Da <u>te</u> : <u>5/4/17</u> Termination Time:			
10	14.0	7.80		33,3	1 1 - 1 31			
18	14.8	7.81	8.2 8.2	33.2	Termination Signoff JBL Old WQ:			
32	14.8		8.0	332	WW. WC			
56	14.8	7.82	8.3					
100	14.8	7.83		33.4				
180	17.0	7.83	3.2	33.9 33.9				
Meter ID		PHZI	8.1 RDII					

1 40010 20	Kelp (<i>M. pyrifera</i>) Development Toxicity Test Data														
Client:		Reference	e Toxicant												511, 111
Test Ma			per (as Cu								'		_ Enu		= <u>5[16]14</u> - Al
	Control Medium: Filtered Seawater					Test ID #: 72484 Project #: 27283 Micrometer Conv. Factor: 2.5							-	mvesugator	- <u></u>
		1	ination		Length Measurements (in ocular micrometer units)								_		
μg Cu/L	Rep	# Spores Germinated	# Spores not Germinated	Li	L2	L3	L4	L5	L6	L7	L8	L9	L10	MEAN	Corrected Mean Length (μm)
	А	95	5	-1	7	()	10	9	Q	G	(,	7	6	6.2	15.5
	В	94	R	-7	6	6	G	10	10	10	1	10	7	62	15,5
Control	С	97	3	()	-7	1,	7,	7	(,	5	5	6	G	6.0	150
	D	97	3	G	6	-	7	6	(1)	10	(a	-7	S	6.1	15,5
	E	96	Ĺ	Ś	7	U	0	$\overline{}$	6	6	7	ζ	G	lo.1	15.5
	А	941	6.	()	S	(2	Ċ	2	6	6	7	6	3	6.0	15.0
	В	96	4	7	()	6	(0	5	6	9	0	6	7	5.7	14.3
5.6	С	95	5	6	5	$\overline{\gamma}$	10	6	5	5	(n	(1	7	5.9	14.6
	D	94	6	$\overline{}$	0	6	7	()	5	0	G	S	6	6.0	15.0
	Е	96	4	6	7	6	Ú	Š	0	\neg	5	5	6	5.9	14.8
	А	Q1.	21	10	7	6	7	5	5	6	4	Ģ	6	6.Ù	15.0
-	В	96	U'	Ý T	6	()		6	Í S	6	7	CI	6	60	15.0
10	С	94	6	Ù	7	Ũ	U	5	7	6	6	6	6	6.1	15.5
	D	91	9	5	4	6	7	()	6	5	7	Q	0	6.0	150
	Е	93	7	7	6	5	(1	10	6	6	5	7	6	6.0	15.0
-	A	94	6	G	6	5	.7	6	S	6	6	5	6	5.9	14.5
	В	93	7	6	S	5	6	6	6	7	\neg	4	6	5.9	14.5
18	С	94	6	6	4	0	0	5	5	6	7	()	Ø	5.7	14.3
	D	92	8	0	6	5	Ce	6	Q	6	5	C	6	576	M.5
	E	94	0	0	6	-7	5	6	6	4	9	9	6	5.7	14.3
		90	10	9	5	6	5	S	\bigcirc	5	6	5	6	54	13.5
-	В	81		4	5	ip	6	5	.5	5	0	5	6	5.3	13.3
32	С	94	12	9	4	5	<u> </u>	5	6	2	S	5	S	51	12.8
-	D	40	10	5	5	1-1	$ \rho $	0	5	5	5	5	6	5.7	13.0
	E	87	13	5	5	6	5	4	5	6	(/	5	4	5.1	12.8
	A	84	16	4	\leq	5	6	U	5	4	5	2	9	4.5	11.3
	B	85	15	Ĝ	5	()	4	5	5	5	-1	4	3	4.7	11-8
56	}-	\$3	17	2	5	9	4	5	4	S	5	l	5	4.7	11.8
-		<u><u>34</u></u>	10	3	4	5	4	5	5	S	5	_5	9	4.6	11.5
	E	54	14	ς,	フ	6	5	4	S	5	5	3	4	4.5	11.3

Pacific E	CoRisk
-----------	---------------

			ŀ	Selp (Ip (M. pyrifera) Development Test Start Date: C2 2 1 7						Test	Data			
Client:		Reference	e Toxicant		Test St	tart Date:	612	17	Test F	End Date:	<u> </u>	117	Епи	meration Date:	Spieln
Test Ma	aterial:	Co	pper chlori	de	1	'est 1D #:	72-	18-1	. 1	Project #:	27	283	-		2/
Control	Medium:	Fili	ered Seawat	ier				Microm	eter Con	v. Factor:	2	.5	-		
		Germi	nation			Length	Measure		÷ ••						
μg Cu/L	Rep	# Spores Germinated	# Spores not Germinated	LI	L2 L3 L4 L5 L6 L7 L8 L9								LIO	MEAN	Corrected Mean Length (µm)
	A	76	24	3	5	L	4	5	5	4	Ц	3	5	4.7	10.5
	В	74	22	Ц	5	3	Ú]	4	3	5	Y	4	5	4.1	10.3
100	C	77	23	Ч	Ú	S	L	3	4	4	3	5	4	4.0	10.0
	D	74	24	3	3	4	5	4	5	3	ÿ	4	4	3.9	96
	E	75	25	4	4	3	21	5	5	3	(3)	Ц	IJ	4.1	10.3
	А	37	63	3	3	3	4	5	3	3	3	4	3	21	8.0
	В	39	61	U	3	3	4	3	4	3	3	3	3	33	83
180	C	3	69	3	3	3	4	4	3	3	3	3	4	3.3	83
	D	37	(13)	Ž	Ú	3	3	3	4	3	3	3	3	3.2	8,0
	E	29	62	3	3	3	4	3	3	3	4	3	3	3.2	4.0

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 Sun	nmary Repo	rt					•	ort Dat Code:		26 N	-	45 (p 1 of 1) 4-0425-3219
Echinoid Fert	tilization Test										Pacit	fic EcoRisk
Batch ID: Start Date: Ending Date: Duration:	15-2321-8034 09 May-17 13:50 13 May-17 14:10 4d Oh) F) S	est Type: Protocol: Species: Source:	Fertilization EPA/600/R-95/ Strongylocentro Gutoff		tus	Ana Dilu Brin Age	e:	Filtere	iia Jaramii d Seawat Marin		
	21-4581-9023 08 May-17 11:10 09 May-17 11:10 27h (0.5 °C)) N) S	Code: /laterial: Source: Station:	Eff Effluent SF PP Norwalk EFF-05-08-TO			Clie Proj		CH2M 27391			
Single Compa	arison Summary		· · · · · · · · · · · · · · · · · · ·									
05-6242-9088	Endpoint Fertilization Rate Fertilization Rate)	TST-V TST-V	a rison Method Velch's t Test Velch's t Test Velch's t Test			P-Value 4.1E-04 1.7E-05 6.5E-05	Salt 100%	Control % passe	n Result passed fe d fertilizated fertilizated	ertilization i tion rate	rate
Fertilization R	Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std I	Err	Std Dev	CV%	%Effect
0 0 100	LW SA	4 4 4	0.988 0.990 0.990	0.967 0.958 0.977	1.000 1.000 1.000	0.970 0.960 0.980	1.000 1.000 1.000	0.000 0.010 0.004	0	0.013 0.020 0.008	1.27% 2.02% 0.82%	0.00% -0.25% -0.25%
Fertilization R	ate Detail											
Conc-%	Code LW	Rep 1 0.990	Rep 2	0.990	Rep 4							
0 100	SA	0.960 0.980	1.000 0.990	1.000 0.990	1.000							
Fertilization R	ate Binomials								_			
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4							
0 0 100	LW SA	99/100 96/100 98/100	100/10	00 100/100	100/100 100/100 100/100							

CETIS Analy	tical Rep	ort					-	ort Date: Code:	19 I	-	13 (p 1 of 1 4-0425-321
Echinoid Fertiliz	zation Test									Paci	fic EcoRisk
	5-6242-9088 9 May-17 14			ertilization Ra arametric Bio		Two Samp		IS Version: cial Results:	CETISv1 Yes	.9.2	
Data Transform		Alt Hy	/p		TST_b		Comparis	son Result			
Angular (Correcte	ed)	C*b < '	т		0.75		100% pas	sed fertilizat	tion rate		
TST-Weich's t T	est										
Control vs	Control	11	Test Sta	t Critical	DF	P-Type	P-Value	Decision(α:5%)		
Lab Water Contr	100*		13.9	2.02	5	CDF	1.7E-05		ficant Effec	t	
ANOVA Table									··· ·		
Source	Sum Sq	uares	Mean So	quare	DF	F Stat	P-Value	Decision(a:5%)		
Between	0.000129		0.00012		1	0.0643	0.8082		ficant Effec	t	
Error	0.01207	53	0.002012	25	6						
Total	0.012204	48			7	_					
Distributional Te	ests										
Attribute	Test				Test Stat	Critical	P-Value	Decision(α:1%)		
Variances	Variance	Ratio F T	est		1.85	47.5	0.6262	Equal Var			
Distribution	Shapiro-	Wilk W No	ormality Test		0.93	0.645	0.5189	Normal Di	stribution		
Fertilization Rat	e 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 (Correc	ted) Transfo	rmed Su	mmary								· · · · · · · ·
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							<u></u>				······································
1.0						0.06				/	•
0.9						0.05		l I		•	
8.0						0.04		l I			
B 0.7						0.03		1			
tion a					pera	9 0.02 -		1			
a.0 15					Centered	8 0.00			• •		
× 0.5						-0.01		•			
0.4						-0.02					
0.3						-0.03	/				
0.2						-0.04		l I			
						-0.05	/ •	I.			
0.1						-0.06					
0.0	0 LW	1	10	0	1	-0.07	-1.0	-0.5 0.0	0.5	1.0	1.5

Anaiyst: _____ QA:____

Echinoderm Fertilization Toxicity Test Data Sheet

Client: Test Material: Test Species: Test ID #:	cies: <u>Strongylocentrotus purpuratus</u> D #: 72927		Test Enumera	Start Date: 5/9 End Date: 5/9 ation Date: 5/9 vestigator: Jf	
Project #:	27391		Sample Sa	alinity adjusted with :	Tropic Marin
Treatment Replicate		Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization
	Α	99	1	100	99
Lab Water	В	97	3	100	97
Control	С	99	1	100	99

D

А

В

С

D

100%

Echinoderm Fertilization Toxicity Test Water Chemistry Data

Client: Test Material: Test Species Test ID#:		FPP Norwalk Station Effluent ocentrotus purpuratus Project #: 27391	- -	Organism Log#: Drganism Supplier: Control/Diluent: Test Date: nple Salinity adjust	Guto 5/9/17	Age: N/A FSW Randomization: - Tropic Marin
Treatme	ent	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	#29-7- 30.3	Sample ID: 46409
Meter I	D	35A	0423	RD09	ECOY	Test Solution Prep: JBL
						New WQ: MB
						Innoculation Time: 1350
						Innoculation Signoff: JBL

Echinoid Fe	ertilizat	ion Test										4-0425-321
Analysis ID:	15-	5208-9820	F	ndpoint: Fe	artilization Ra	te		CET	IS Version:	CETISv1		
Analyzed:		May-17 10:		•	arametric Bio		-Two Samp		ial Results		.5.2	
Data Transf			Alt Hyp	o		TST_b		Comparis	son Result			
Angular (Cor	rrected)		C*b < T	•		0.75		100% pas	sed fertiliza	tion rate		
TST-Welch's	s t Tes	t										
Control	vs	Control	11	Test Sta	t Critical	DF	P-Type	P-Value	Decision	(α:5%)		
Salt Control		100*		10.6	2.02	5	CDF	6.5E-05	Non-Sign	ificant Effec	t	
ANOVA Tab	le											
Source		Sum Squ	ares	Mean Sc	uare	DF	F Stat	P-Value	Decision	(α:5%)		
Between		0.0002084	4	0.000208	34	1	0.0584	0.8171	Non-Sign	ificant Effect	t	
Error		0.021415		0.003569	3	6	_					
Total		0.021623	9		- 1	7						
Distribution	al Test	s										
Attribute		Test		_		Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances		Variance	Ratio F Te	est		4.05	47.5	0.2805	Equal Va	riances		
Distribution		Shapiro-V	Vilk W No	rmality Test		0.824	0.645	0.0512	Normal D	istribution		
Fertilization	Rate S	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 (Co	rrected	d) Transfor	med Sum	nmary								
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						·						
1.0	;*==		7				0.06					
0.9	L						-		l.			•
							0.04		E E	••/	•	
0.8 							0.02		T.			
ar 0.7						Z	률 0.00		- • • +			
peziji						Centbered	-0.02 -					
E 0.5								. /				
0.4							-0.04	•	1			
0.3							-0.06		1			
							-0.08		1			
									1			
0.2							-					
0.2							-0.10		l.			
-		0 54		100		L	-0.10 -0.12 -1.5	-1.0	-0.5 0.0	0.5	1.0	1.5

CETIS Analytic		rt					•	ort Date: Code:	20 10	-	\$5 (p 1 of 1) 4-0425-3219
Echinoid Fertilizatio	on Test									Pacif	ic EcoRisk
	737-7262 /lay-17 10:4			tilization Rat ametric Bioe		Two Sample		S Version: ial Results:	CETISv1 : Yes	.9.2	
Data Transform		Alt Hyp	;		TST_b		Comparis	on Result			
Angular (Corrected)		C*b < T			0.75		Salt Contr	ol passed fe	ertilization ra	te	
TST-Welch's t Test											
Control vs	Control II		Test Stat	Critical	DF	P-Type	P-Value	Decision((a:5%)		
Lab Water Contr	Salt Contr	rol*	9.06	2.13	4	CDF	4.1E-04	Non-Signi	ficant Effect		
ANOVA Table											
Source	Sum Squa	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision((α:5%)		
Between	0.0006665		0.0006665		1	0.16	0.7031	Non-Signi	ficant Effect		
Error	0.0250141		0.0041690)	6						
Total	0.0256806				7						
Distributional Tests	3										
Attribute	Test				Test Stat		P-Value	Decision	(α:1%)		
Variances	Variance F	Ratio F Test			2.19	47.5	0.5359	Equal Var			
Distribution	Shapiro-W	/ilk W Norm	ality Test		0.823	0.645	0.0500	Normal Di	istribution		
Fertilization Rate S	ummary										
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	l) Transfor	med Summ	ary								
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											
1.0		-				0.06				_	
0.9								-			
0.9						0.04		1	• •		
0.8						0.02		l l			
80.7 80.7 10.7 10.6 11.0 10.6 11.0 10.6					3			<u>+</u>			
20.6					Centared	TA L					
					-	ິ -0.02 -					
0.4						-0.04					
						-0.06					
0.3						-0.08	•	l I			
						-o.ue		L L			
0.2											
0.2						-0.10		1			
	0 LW		0 SA		_	-0.10	-1.0	-0.5 0.0	0.5	1.0	1.5

Analyst: QA

Echinoderm Fertilization Toxicity Test Data Sheet

Client: Test Material: Test Species: Test ID #: Project #: Sample Salinity a		M SFPP Norwalk Station Eff S. purpuratus 72927 27391 ted with :Tro	Test Enumera	Start Date: $5/9$ End Date: $5/9$ ation Date: $5/9$ vestigator: 3	1/17 1/17 1/17 3L
Treatment Replicate		Number of Fertilized Eggs	Number of Unfertilized Eggs	Total Number of Eggs	Percent Fertilization
	A QQ		4	100	96
Salt Control	в 100		0	100	100
	С	100	0	100	100
	D	100	0	100	100

Meter ID

35A

Innoculation Time & Signoff: 1350/JBL

Echinoderm Fertilization Toxicity Test Water Chemistry Data

Client: CH2M S	SFPP Norwalk Station	_	Organism Log#:	10276	Age: N/A
Test Material:	Salt Control	_	Organism Supplier:	Guto)A
	cus - S. purpuratus (circle		Control/Diluent:		FSW
Test II)#:414 -67257	Project #:54 25589- 2	7391	Test Date:	5/9/17	Randomization:
Sample Salinity adjusted w	ith :Tropic Mar	iλ			
Treatment	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff
Treatment Control	Temperature (°C)	рН 7.66	D.O. (mg/L)	Salinity (ppt) 32 . 2	Signoff Test Solution Prep: JBL

PH23

RDOG

EC04

Appendix E

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

CETIS Sui	mmary Rep	ort						port Date st Code:	: 06 M	May-17 15:4 72485 10		
Echinoid Fer	tilization Test									Pacifi	c Ecol	Risk
Batch ID: Start Date: Ending Date: Duration:	20-7228-2985 02 May-17 14: 02 May-17 14: 19m	09 28	Test Type: Protocol: Species: Source:	Fertilization EPA/600/R-9 Strongylocen David Gutoff	•	,	Dil	uent: ne:	Yesenia Jarami Filtered Seawat Not Applicable N/A		<u> </u>	
	13-3512-3138 : 02 May-17 14: : 02 May-17 14: n/a (12.7 °C)	09 09	Code: Material: Source: Station:	KCI Potassium ch Reference To In House					Reference Toxic 27284	cant	<u> </u>	
Multiple Com	parison Summ	ary										-
Analysis ID	Endpoint		Comp	arison Metho	d		NOEL	LOEL	TOEL	ти	PMS	D 🗸
12-5282-8436	Fertilization Ra	ate		ett Multiple Cor		est	0.5	1	0.7071		3.32	
Point Estimat	te Summary					<u> </u>			·			
Analysis ID	Endpoint		Point	Estimate Met	hod		Level	g/L	95% LCL	95% UCL	TU	
_	Fertilization Ra	ite		Interpolation (EC5 EC10 EC15 EC20 EC25 EC40 EC50	0.738 0.997 1.06 1.12 1.18 1.36	0.571 0.669 0.882 1 1.07 1.28	1.17 1.11 1.16 1.21 1.27 1.43	10	
							ECOU	1.48	1.42	1.54		
	Rate Summary	_										
Conc-g/L 0	Code LW	Count 4	<u>Mean</u> 0.980	95% LCI			Max	Std Ei		CV%	%Eff	
0.25		4	0.980	0.957 0.967	1.000 0.998	0.970 0.970	1.000 0.990	0.007 0.005	0.014 0.010	1.44% 0.97%	0.009	
0.5		4	0.978	0.970	0.985	0.970	0.980	0.003	0.005	0.51%	0.269	
1		4	0.882	0.775	0.990	0.810	0.940	0.034	0.068	7.65%	9.959	
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	9%
Fertilization R	ate 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 R	ate Binomials											
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4							
0	LW	97/100			97/100							
0.25		98/100			99/100							
0.5		97/100			98/100							
1		94/100			94/100							ĺ
2		7/100	7/100	4/100	9/100							
4		1/100	0/100	1/100	0/100							5

CETIS Q	C Plot		Repo	rt Date: — 06 May-17 15:50 (1 of 1
Echinoid F	ertilization Test	 		Pacific EcoRisk
	Fertilization EPA/600/R-95/136 (1995)	Strongylocentrotus purpuratus (Purpl Fertilization Rate	Material: Source:	Potassium chloride Reference Toxicant-REF
	25-	Echinoid Fertilization Test		
	2.5			
	2.0-			+35
thoride	1.5	 		+25

EC50-g/L Potassium c	1.0		•							-				•	-			
	0.0																	
		-	3	4 5	6	7	8	å	10	11	12	13	14	15	16	17	18	19

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

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 20:02 Mar 10 0.8828 -0.09346 -0.2497 20-7208-3996 03-1609-4614 4 10 16:10 0.7468 Apr -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 14:30 2 1.27 0.2933 Jun 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 14:39 Apr 8 1.275 0.2992 0.7993 03-1545-6837 06-8821-2398 13 17 15:11 1.684 May 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 Oct 16 14 16:12 1.057 0.08108 0.2166 06-6913-6140 12-8546-0677 17 2017 20 13:28 0.8968 Jan -0.07951 -0.2124 05-7233-8327 13-7316-7465

1.203

0.06892

-0.6603

1.348

Analyst: (1) QA: CJD

-25

20 21

02-6596-3818

19-8512-2473

10-8301-3688

10-7410-4470

10-1524-9509

07-9956-4780

04-7172-4001

16-8109-4546

001-771-848-3

18

19

20

21

Feb

Арг

May

3

23

13

2

14:13

15:45

14:36

14:09

1.427

1.002

0.7292

1.481

0.4504

0.0258

-0.2471

0.5045

CETIS QC

Quality Control Data

Test Species:	D.ex	Reference Toxicant Potassium Chloride centricus - S. purpuratu. 72485 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			
	A	97	3	100	97			
Control	В	98	2	100	98			
	С	100	0	100	100			
	D	97	3	100	97			
	Α	98	2	100	98			
0.25	В	97	3	100	97			
	С	99	1	100	99			
	D	99	l	10Ò	99			
	A	97	3	100	97			
0.5	В	98	2	100	98			
	с	98	2	100	98			
	D	98	2	100	98			
	Α	94	b	100	94			
1	В	84	16	100	84			
-	С	81	19	100	81			
	D	94	6	100	94			
	А	7	93	100	1			
2	В	7	93	100	7			
-	С	4	96	100	Ц			
	D	9	91	100	9			
	А		99	100	1			
4	В	0	100	100	0			
-	С		99	100	I			
	D	0	100	100	0			

Echinoderm Fertilization Reference Toxicant Test Data Sheet

Test Material: Pota	rence Toxicant ssium Chloride S. purpuratus (circle) Project #: 27284	- - -	Organism Log#: Organism Supplier: Control/Diluent: Test Date:	Gı	Age: N/A LTOFF tered Seawater Randomization:
Treatment (g/L KCl)	Temperature (°C)	рН	D.O. (mg/L)	Salinity (ppt)	Signoff
Control	12.7	7.7.2	91	32.1	Date: 5/2/17
0.25	12.7	7.72	9.1	32.5	Test Solution Prep: JBL
0.5	12.7		9.2	32.8	New WQ:
	12.7	7.72	9.1	33.4	Innoculation Time: 1408-512
2	12.7	17.72	9.1	34.4	Innoculation Signoff: TBL
4	12.7	7.73	9.1	363	
Meter ID	35A	PH 23	ROID	Ecio	

Echinoderm Fertilization Reference Toxicant Test Water Chemistry Data

C D

				· · · · · · · · · · · · · · · · · · ·	1
		Reference Toxicant		est Start Date: 5/2	<u>/)7</u>
Test Material		Potassium Chloride		est End Date: $5/7$	2/17
Test Species:	<u></u>	excentricus - S. purpuratus 72485	<u>s (circle)</u> Enum	ieration Date: 5/3	
Test ID #: Project #:				Investigator:	JBL
		2/204			
Treatment		Number of Fertilized	Number of Unfertilized		
F	Replicate	Eggs	Eggs	Total Number of Eggs	Percent Fertilization
			-88-		
	A	97	5	100	97
Lab Control (Natural	В	98	2	100	98
Sea Water)	с	100	0	100	100
	D	97	3	100	97
	A	影 100-0	JBL 513 0 100	100	100
Sperm Blank (eggs only)	В	1843 99-1	1813 + 99	100	qq
Lab Water Control	с	1843 - QQ - 1	99	100	99
	D		99	100	99
	А	0	100	100	100
Sperm Blank (eggs only)	В		99	100	99
4 g/L Control	с		99	001	99
	D		99	10()	99
	A				
	В				

Echinoderm Fertilization Reference Toxicant Test Data Sheet

Appendix F

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

CETIS Sun	nmary Repo	rt					•	ort Date: Code:	26 1	26 May-17 10:28 (p 1 of 1 72929 04-5448-3566		
Chronic Larv	al Fish Survival	and Gro	wth Test							,	ic EcoRisk	
Batch ID: Start Date: Ending Date: Duration: Sample ID:	ate: 09 May-17 15:56 Protocol: Date: 16 May-17 07:10 Species: on: 6d 15h Source:		Protocol: Species: Source:	Growth-Surviva EPA/821/R/02/ Menidia beryllir Aquatic Indicate	014 (2002) na		Anal Dilue Brin Age: Clier	ent: Not e: Cry 11	stin Worrell Applicable stal Sea 2M Hill			
Sample Date: Receipt Date: Sample Age:	08 May-17 11:10 09 May-17 11:10 29h			terial: Effluent urce: SFPP Norwalk Station				ect: 273				
Analysis ID 03-6695-7188	arison Summary Endpoint 7d Survival Rate Mean Dry Bioma	!	TST-V	p <mark>arison Method</mark> Welch's t Test Welch's t Test			P-Value 0.0023 0.0102	100% pas	son Result ssed 7d surv	vival rate	-mg	
7d Survival R	ate Summary											
Conc-%	Code	Count			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 Bio	mass-mg Summ	ary										
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 R	ate Detail					· · · · · · · · · · · · · · · · · · ·	<u></u>					
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 Bio	mass-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 R	ate 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							

CET		tical Re							ort Date: Code:		-	10 (p 2 of)4-5448-356
Chro	nic Larval	Fish Surviva	al and Grov	wth Test				<u> </u>			Pac	ific EcoRis
Analy Analy		03-6695-7188 19 May-17 14		•	l Survival Rat arametric Bio		-Two Samp		IS Version cial Result		1.9.2	
Data	Transform		Alt Hyp	2		TST_b		Comparis	son Result	1		
Angu	lar (Correct	ed)	C*b < T			0.75		100% pas	ssed 7d su	vival rate		
TST-	Nelch's t T	est										<u> </u>
Cont	rol vs	Contro	1 11	Test Sta	t Critical	DF	P-Type	P-Value	Decisio	ı(α:25%)		
_ab V	Vater Contr	100*		7.66	0.765	3		0.0023		nificant Effect	t	
	/A Table											
									_			
Sour		Sum Sq		Mean Sc		DF	F Stat	P-Value	Decision			
Betwe Error	en	0.00331 0.01991		0.003319		1	1	0.3559	Non-Sigi	nificant Effect	t	
Total		0.01991		0.003318	19	6 7						
	huting 1 T						<u> </u>					<u> </u>
	butional To											
Attrib Ariai		Test				Test Stat		P-Value	Decision			
/ariai				Variance Tes		9	13.7	0.0240	Equal Va			
	oution			ty of Variance rmality Test	lest	1 0.706	13.7 0.645	0.3559	Equal Va		t	
-		·····				0.700	0.045	0.0027		mal Distribut		
d Su	rvival Rate	Summary										
Conc	-%	Code	Count	Mean	95% LCL		Median	Min	Max	Std Err	CV%	%Effect
)		LW	4	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.00%	0.00%
00			4	0.975	0.895	1.000	1.000	0.900	1.000	0.025	5.13%	2.50%
ngu	lar (Correc	ted) Transfo	ormed Sum	mary								
Conc	-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
)		LW	4	1.41	1.41	1.41	1.41	1.41	1.41	0	0.00%	0.00%
00			4	1.37	1.24	1.5	1.41	1.25	1.41	0.0407	5.94%	2.89%
raph	nics											
•												
	1.0	•					0.06		i		/	
	0.9			L			0.04		1	•	•	
	8.0						0.02					
ate ate	0.7						0.00		• • • -	•		
7d Survival Rate						2	eles -0.02 -					
Surv	0.5					Centered	5 -0.04		1			
74	0.5								1			
	0.4						-0.06		I T			
	0.3						-0.08		I I			
	6.0						-0.10		I I			
	0.2						-0.12		1			
	0.1						-0.14		1			
							-					
	0.0						and E					
	0.0	0 LW		100		_	-0.16 -1.5	-1.0	-0.5 0.0	0.5	1.0	1.5

OA: ARF - 1 Analyst:

CETIS Analytic	cal Report					-	ort Date: Code:	19	-	10 (p 4 of 4 4-5448-356
Chronic Larval Fis	h Survival and	Growth Test							Pacif	ic EcoRisk
	0504-5938 May-17 14:10	Endpoint: Analysis:	Mean Dry Biom Parametric Bio	-	Two Samp		IS Version: ial Results		1.9.2	
Data Transform	Alt	: Нур		TST_b		Comparis	son Result			
Untransformed		b < T		0.75			sed mean c	Iry biomass	-mg	
TST-Welch's t Test	t			÷						
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-Signi	ificant Effec	t	
ANOVA Table										
Source	Sum Squares	Mean	Square	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0.0239802	0.023		1	0.737	0.4237		ificant Effec	t	
Error	0.195291	0.032	5486	6			5			
Total	0.219272			7						
Distributional Test	s									
Attribute	Test			Test Stat	Critical	P-Value	Decision	(α:1%)		
Variances	Variance Ratio	F Test		3.45	47.5	0.3363	Equal Var		,	
Distribution	0.96	0.645	0.8138	Normal Di						
Mean Dry Biomass	-mg Summary									
Conc-%	Code Co	unt 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%
Craphics 25 20 20 20 15 15 10 05			·	Centerred	0.35 0.20 0.25 0.20 0.25 0.15 0.00 0.05 0.05 0.05 0.05 0.05 0.0		•	•	•	•
0.0					-0.20	/				- 1

Analyst: QA: ARE

Client:		CH2M SI	FPP Norwa	alk Statio	n		Organisr	n Log#:	102.	7/ Age: 11dap		
Test Material:			Effluent			Or	ganism S				tic Indic	
Test ID#:	72	929	Project #:	27.	391		Control/	Diluent:		Cryst	al Sea @	25 ppt
Test Date:	5191	57	Rand	omization:	4.21	Con	trol Wate	-			4	
					1							
Treatment	Temp	r	Н	D.O. (mg/L)	Salinit	v (ppt)	#	t Live O	rganism		
(% Effluent)	(°C)	new	old	new	old	new	old	Α	В	C	D	SIGN-OFF
Lab Control	245	8.03		77		24.8		ιυ	10	[1]	(0	Date 99117 Sample 10, 409 Test Solution Prep.
100%	24.4	7:78		8.4		24.5		lo	10	10	10	New WQ MS Initiation Time 6 Initiation Signoff
Meter ID	[1]N	phia		Rpiz		ELID						
Lab Control	24.6	8.15	792	S.O	6.6	25.0	25.1	10	10	10	10	Date: 5/10/17 Sample ID: 46409 Test Solution Prep: 52
100%	24.6	7.95	T.16	7.1	6.3	24.3	25.0	10	10	10	10	New WQ: Renewal Time 1045 Renewal Signoff JBL
Meter ID	100A	PH19	PHIG	polo	RDID	Ecsy	Ecoy					Old WQ: YJ
Lab Control	24.0	8.25	7.82	7.9	7. (24.5	24.9	10	10	10	10	Date: <u>S 11 17</u> Sample ID: <u>G S 7</u> Test Solution Prep: TK
100%	24.4	7.51	8.09	7.8	7.1	24.7	24.6	10	10	10	lu	New WQ SD Renewal Time 1310 Renewal Signoff
Meter ID	72A	PH23	PHIQ	PDIZ	RDIU	EC04	Ervy					Old WQ
Lab Control	24.2	8.19	7.88	7.9	7.1	24.7	24.9	10	10	10	jo	Date 5/12/17 Sample ID 46457 Test Solution Prop
100%	24.B	רד.ד	8.07	7.8	7.0	25.1	24.7	10	10	10	9	New WQ: SD Renewal Time: SIQ Renewal Signoff:
Meter ID	103A	PHI9	PHI9	PDII	RDII	604	ECOY					Old WO: TK

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

Client:			PP Norv				Organis	m Log#:	102	71	Age:	Ildan		
Test Material:						EF O	rganism S	Supplier:	Aquatic Indicators					
			Project #:	27	391									
Test Date:		5/4	1/17			Control Water Batch:					(196			
	I	i							-					
Treatment	Temp		oH 1	D.O.	(mg/L)	Salini	ty (ppt)		# Live O		s	SIGN-OFF		
(% Effluent)	(°C)	new	old	new	old	new	old	A	B	С	D			
Lab Control	24.2	8.12	7.26	۶.8	7-1	24.1	25.6	ID	10	10	10	Date Sample ID GANATO Test Solution Prep. TIC		
100%	242	7,5D	4.18	8.7	72	24, L	25.7	10	10	10	9	New WQ Renewal Time J 4/35 Renewal Signoff		
Meter ID	IOUA	PH23	P1+21	eoiz	1010	Ecoy	ELIO					Old WQ EC		
Lab Control	24.6	8.05	7.159	8.1	7.1	24.7	Z.F.O	iD	10	10	10	Date: Sample ID 46470 Test Solution Prep TK		
100%	24.9	7.74	7.88	8.5	7.4	24,7	25:2	. (U	10	10	9	Renewal Time Renewal Signoff Renewal Signoff		
Meter ID	67A	PHIM	PHIQ	ROR_	POZ	Georg	Erog					Old WQ SH		
Lab Control			7.54							10		Date: 5 15 17		
100%	25.1	7,48	8.09	7.6	6.3	રૂપ,પ	25.1	lo	Ũ	10	9	New WQ: 2 Renewal Time: 1200 Renewal Signoff: 7		
Meter ID	103A	PH23	PH19	Rpo 9	RPIO	Ē104	Ecis					old wo: TA		
Lab Control	25.3		7.75		7.2		25.5	10	10	10	0	Termination Date 5/16/17 Termination Time 0710 Termination Signoff		
100%	25,0		8.12		7.3		25.1	10	10	10	9	Old WO &		
Meter ID	103A		pH23		Roog		ELIO							

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

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:	Yu
Test Date:	5/9/17	Final Weight Date:	5-1917	Sign-off:	Ťu

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	1,748
2	В	411.60	429.47	10	1.787
3	С	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	В	411.20	427.62	10	1.642
7	С	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		Bac OU	Bal D/		

Appendix G

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



CETIS Su	ETIS Summary Report								e: 10	3 May-17 12:2 72474 14	3 (p 1 of 2) -0438-7078
Chronic Lan	val Fish Surviv	al and G	rowth Test							Pacifi	c EcoRisk
Batch ID: Start Date: Ending Date Duration:	13-3590-7651 02 May-17 12 : 09 May-17 09 6d 21h	:45	Test Type: Protocol: Species: Source:	Growth-Surviv EPA/821/R/02 Menidia berylli Aquatic Indica	2/014 (2002) ina		D B	nalyst: iluent: rine: ge:	Krista Prosse Laboratory W Crystal Sea 10		
Receipt Date	05-2666-0216 2: 02 May-17 12 2: 02 May-17 12 n/a (25.8 °C)	:45	Code: Material: Source: Station:	KCI Potassium chl Reference Tox In House				lient: roject:	Reference To 27279	xicant	
Multiple Con	nparison Summ	nary									<u> </u>
Analysis ID	Endpoint			arison Method			NOEL	LOEL		TU	PMSD 🗸
	5 7d Survival R			ett Multiple Corr	•		1	1.25	1.118		22.0%
	Mean Dry Bio	mass-mg	, Dunne	ett Multiple Com	iparison Tes	1	1	> 1	n/a		29.5%
Point Estima	te Summary										
Analysis ID	Endpoint		Point	Estimate Meth	lod		Level	g/L	95% LC	L 95% UCL	TU 🗸
16-0746-2201	7d Survival Ra	ate	Regre	ssion: Log-Norr	nal (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 Bior	nass- m g	Linear	Interpolation (I	CPIN)		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 R	ate Summary										
Conc-g/L	Code	Coun	it Mean	95% LCL	95% UCL	Min	Max	Std E	rr 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		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		37.85%	43.59%
2		4	0.000	0.000	0.000	0.000	0.000	0.000	0.000		100.00%
Mean Dry Bio	mass-mg Sum	mary							·····		
Conc-g/L	Code	Count		95% LCL		Min	Max	Std Ei	rr Std Dev	CV%	%Effect
)	LW	4	1.04	0.866	1.21	0.9	1.14	0.0537	7 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	0.040	0.0993			
2		-	0.025	0.515	0.940	0.349	0.813	0.0993	0.199	31.60%	39.37%

CETIS 7/2/6/89.2.6

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CETIS Summary Report

7d Survival Rate Detail

Conc-g/L

0

Chronic Larval Fish Survival and Growth Test

Code

LW

	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 Bio	mass-mg Deta	ail					- · · · · -
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 R	ate Binomials					 	
Conc-g/L	Code	Rep 1	Rep 2	Rep 3	Rep 4		
			0/40	10/10	10/10		
0	LW	10/10	9/10				
	LW	10/10 9/10	9/10 10/10	10/10	10/10		
0.5	LW				10/10 10/10		
0.5 1	LW	9/10	10/10	10/10			
0 0.5 1 1.25 1.5	LŴ	9/10 8/10	10/10 10/10	10/10 9/10	10/10		

Rep 1

1.000

Rep 2

0.900

Rep 3

1.000

Rep 4

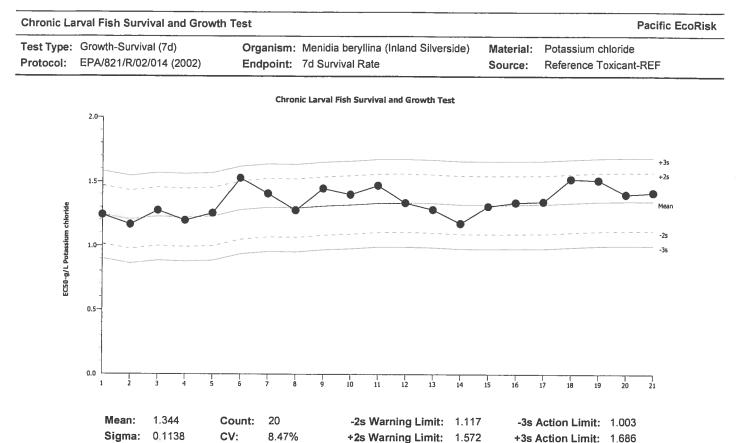
1.000

13 May-17 12:23 (p 2 of 2)
72474 14-0438-7078

Pacific EcoRisk

Analyst: L° QA: M

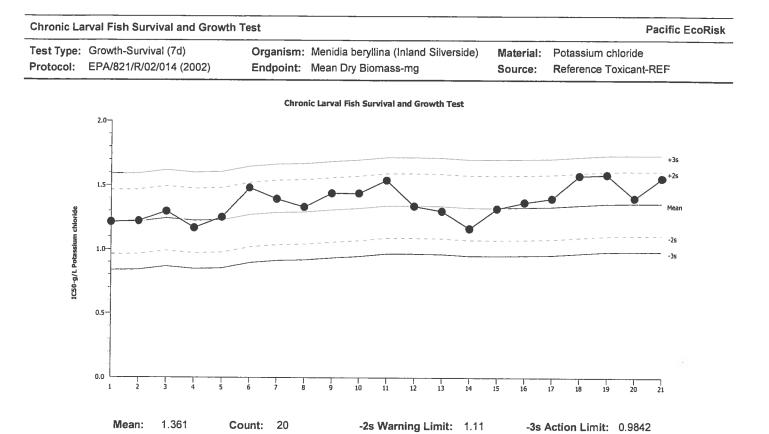
CETIS QC Plot



Si	g	m	a	•

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
1		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
5		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
3	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
0			21	14:30	1.401	0.05656	0.497			11-0396-9359	06-2353-9329
1		May	17	17:26	1.471	0.1268	1.114			16-1029-2368	11-0924-4635
2		Jun	14	16:20	1.335	-0.00869	-0.07636			01-7714-8063	01-8731-4560
3		Aug	11	11:00	1.282	-0.06173	-0.5424			13-8865-1126	07-8914-4891
4		Sep	15	15:00	1.175	-0.1688	-1.484			01-0258-4616	14-9982-6942
5		Oct	20	14:15	1.308	-0.03624	-0.3184			15-1275-8596	02-1621-8501
6		Nov	9	13:55	1.338	-0.00591	-0.05192			05-9589-4435	11-3608-2942
7			11	14:50	1.345	0.001384	0.01216			16-4947-4914	05-3176-6608
8			15	15:51	1.522	0.1775	1.56			18-8138-0840	07-2242-1159
	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
!1		May	2	12:45	1.416	0.07156	0.6288			14-0438-7078	16-0746-2201



+2s Warning Limit: 1.612

Report Date:

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

Quali	ty (Control	Data

Sigma:

0.1255

CV:

9.22%

CETIS QC Plot

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
	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

+3s Action Limit: 1.737

Test Material: Potassium Chloride Control/Diluent: DI + Crystal Sea @ 25 ppt Test IDF: 72474 Project # 27279 Control Water Back: 1194 Test Date: $5/2/17$ Randomization: 1194 1194 Test Date: $5/2/17$ Randomization: 1194 Stiller, (pp) # Live Organisms Stiller, (pp) Treatment (g/L KCI) new oid new oid new oid new oid A B C D 0.5 7.5.4 8.7.47 7.7.4 20.9 20.0 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	Client:		Refe	rence To:	xicant		-	Organism	n Log#:	102	53	Age:	10 DAYCOID	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Test Material:		Pota	ssium Ch	loride	·								
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				Project #										
(g/L KCI) (C) new old new old new old A B C D Control 25.6 9.74 7.7 24.9 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <	Test Date:	_5/2/	17	-				Randomi	ization:		<u> </u>	6.2	2	
Control 75 new old new old N B C D 0.5 75.5 9.74 77 249 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10		Temp	p	θH	H D.O. (mg/L)			ty (ppt)	# Live Organisms				SIGN-OFF	
0.5 1.71 1.75 1.56 1.56 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(g/L KCI)	(°C)	new	old	new	old	new	old	A	B	C	D		
0.5 1.71 1.75 1.56 1.56 1.6 1.6 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Control	25.5	9.39		7.7		249		10	10	10	10	Date: 5/2/17	
1 $(1, 1, 2, 3, 4, 1/2)$ $(1, 1, 2, 4, 1/2)$ $(1, 2, 3, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0, 1/2)$ $(1, 0,$	0.5	25.5	8.39		7.4,		SID		10	10	10	10		
1.25 $2c, g, g, g, y, 0$ $7q, g, 0$ $3\mu, 3$ 10 N N New WC 1.5 $15, g, g, 0, 0$ $3\mu, 3$ $10, 10$ $10, 10$ $10, 10, 10$ $10, 10, 10, 10, 10, 10, 10, 10, 10, 10, $	1	25.8	9.417		79		X, Õ		10	10	10	10	Test Solution Prep:	
1.5 75.8 6.40 9.0 $26^{\circ}5$ 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <	1.25	25.8	8.4Ŭ		79				10	10	ю	10		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1.5	25.8	8.40		100				lD	10	10	10	1711	
Meter ID $3/A$ $fHLb$ ROO FHD FHD IO FHD 0.5 2.4 , 2 8.27 7.02 7.9 7.0 25.1 25.4 10 9 10 10 IO	2	25.8	8,40		Š,O				10	10	10	ĺÙ	Initiation Signoff:	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Meter ID	31A-	PH23		RNU		FLID							
0.5 2.5.2 8.30 7.02 7.9 6.9 25.6 26.2 9 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10<	Control	25.2	8.27	7.02	· ·	7.0		25.4	10	9	10	10	5/3/17	
1 25,3 8.32 7.07 8.0 6.9 26.1 26.5 10 10 10 10 10 7 7 8.7 7 8.7 8.7 7 8.7 26.4 26.6 6 10 10 9 New W0 <	0.5	25.2	8.30		7.9	6.9	25.6	· · · · ·	9	10	i	ID	Lot No.	
1.2. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1. 1.1.	1	25,3	8.32	7.07	8.0	12	26.1		10			10	Test Solution Prep:	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1.25				٦,٩							9	New WQ:	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1.5	25.1	8.33		80							7	Renewal Time:	
Meter ID 103A PH 23 PH 15 R0 10 \mathcal{R} 010 \mathcal{R} 00 \mathcal{E} 0 \mathcal{R} 010 </td <td>2</td> <td>25.1</td> <td></td> <td></td> <td></td> <td>6.9</td> <td>27.1</td> <td></td> <td>1</td> <td></td> <td></td> <td>19</td> <td>Renewal Signoff:</td>	2	25.1				6.9	27.1		1			19	Renewal Signoff:	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Meter ID	103A					ELLO						Old WQ:	
0.5 294 8.05 1.18 1.7 0.1 25.9 26.0 94 10 10 10 56 1 250 8.13 7.80 7.7 6.4 25.9 26.6 10 10 94 10 Test Solution Preps 1.25 24.9 8.16 7.82 7.8 6.2 26.2 26.7 6 94 10 94 10 94 10 94 10 94 10 94 10 94 10 94 10 94 10 94 10 10 94 10 10 94 10 10 94 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	Control		7.84			5.9			10	9	10	10	Date: 5/4/17	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.5	749			7.7	6.1	25.4	50 5H/17		10		10	Lot No. 5 (a	
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 3.19 7.81 7.8 6.3 26.4 27.1 10 9 10 7 Renewal Time: 1045 2 24.8 3.19 7.81 7.8 6.2 27.0 27.5 7 2 1 2 Renewal Signoff: 1045 2 24.6 8.21 7.83 7.9 6.2 27.0 27.5 7 2 1 2 Renewal Signoff: 1045 2 24.6 8.21 7.83 7.9 6.2 27.0 27.5 7 2 1 2 Renewal Signoff: 1045 4 100A PH21 PH19 RD11 RD12 60.9 E004 10 10 10 10 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 <td>1</td> <td></td> <td>8.13</td> <td>7.80</td> <td>-1-7</td> <td>6.4</td> <td></td> <td></td> <td>· · ·</td> <td><u> </u></td> <td></td> <td>10</td> <td>Test Solution Prep:</td>	1		8.13	7.80	-1-7	6.4			· · ·	<u> </u>		10	Test Solution Prep:	
1.5 24.8 3.19 7.81 7.8 6.3 26.4 27.1 10 9 10 7 Renewal Time: 2 24.6 8.21 7.83 7.9 6.2 27.0 27.5 7.2 1 2 1 2 24.6 21.7 27.5 7.2 1 2 7.83 7.9 6.2 27.5 7.2 1 2 7.83 7.9 6.2 27.5 7.2 1 2 7.83 7.9 6.2 27.5 7.2 1 2 7.8 7.9 7.9 7.5 7.2 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1 </td> <td></td> <td></td> <td>10</td> <td></td> <td>New WQ:</td>								1			10		New WQ:	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.5	248	8.19				26.4			9	- <u>-</u>	7	Renewal Time:	
Meter ID IOOA PH21 PH19 RD11 RD12 EC09 EC04 Old WU: SD Control 25.2 4.20 7.78 7.8 0.1 24.9 25.0 10 9 10 10 $Date:$ $5/5/17$ 0.5 25.3 8.21 7.74 7.8 0.4 25.5 25.3 9 10 10 10 $Date:$ $5/5/17$ 1 25.3 8.21 7.74 7.8 0.4 25.5 25.3 9 10 10 10 $Date:$ $5/5/17$ 1 25.3 8.21 7.74 7.8 0.4 25.5 25.3 9 10 10 10 $Test Solution Prep: EP$ 1.25 25.4 6.272 7.74 7.9 0.7 24.3 24.1 6 9 9 9 $Renewal Time:$ 1.5 25.4 6.73 7.72 8.6 0.6 24.9 9 9 6 $Renewal Time:$ <t< td=""><td>2</td><td></td><td></td><td></td><td>7.9</td><td></td><td></td><td></td><td>-</td><td></td><td>1</td><td>7.</td><td>Renewal Signoff:</td></t<>	2				7.9				-		1	7.	Renewal Signoff:	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Meter ID			PHI9			6009						Old WQ: SD	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Control			7.78					i tor	9	10	10	Date: 5/5/17	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.5		- C-										Lot No. 5/2	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1								·				Test Solution Prep:	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.25		-									G	New WQ: BI	
2 25.4 8.24 7.74 8.1 6.8 27.0 26.9 1 2 0 1 TK	1.5						-						Renewal Time:	
	2											1	Renewal Signoff:	
= 3 + 4 + 1 + 1 + 2 + 1 + 1 + 1 + 1 + 1 + 1 + 1	Meter ID		Ph 23		PJ72		i	EL09				1	OId WQ: MB	

7 Day Chronic Menidia Beryllina Toxicity Test Data

2

Client	:	Refe	rence To	xicant		_	Organism	n Log#:	102	53	Age:	10 drys DIA
Test Material:	:	Pota	ssium Ch	loride		_	Control/E	Diluent:		DI + (Crystal	Sea @ 25 ppt
Test ID#:	- 72	474	Project #	. 27	279	Cont	rol Water	Batch:			119	4
Test Date:		117	-				Randomi	zation:			4.	63
Treatment	Temp	P	ьН	D.O.	(mg/L)	Salini	ty (ppt)	#	Live C	rganisr	ns	SIGN-OFF
(g/L KCl)	(°C)	new	old	new	old	new	old	A	В	С	D	
Control	25.3	8.07	7.79	8.1	6.7	25 j	25.0	10	9	10	10	Date: 5/6/17 Lot No. 5/
0.5	2512		7.80	8.0	6.7	25.3	25.6	G	10	(<i>Ö</i>	10	Lot No. 56
1	25,1	8-11	7.78	8.0	10.8	25.8	1.1.1	9	10	9		56 Test Solution Prep: P
1.25	25,0	8-10	7.77	8.1	6.8		210.3	6	7	9	9	New WO: MY
1.5	25.1	8.12	7.76	8.1	6.9	26.4	26.6	8	7	G	6	New WQ: MD Renewal Time: 093 S
2	25.1	8.13	7.78	8.1	7.2	26.8	26.8	1	2		1	Renewal Signoff: RG
Meter ID	100A				RDIU		ECIL		Í			
Control	25.4		7.81	7.8		24.6	24.8	10	9	iО	10	Date: 5/7/17 Lot No. 56
0.5	25.4	8.03	7.78	7.9	7.4	24.8	25.3	9	10	10	10	Lot No.
1			7.76	7.9	7.3		210.D	G	10	9	10	Test Solution Prep:
1.25		8.05	7.80	7.9	7.3		24.3		6	8	9	50 Test Solution Prep: SH New WQ: MB
1.5		8.05	7.76	7.9	7.3	1	26.4	7	6	9	6	Renewal Time: 1020 Renewal Signoff: JBL Old WQ: MB
2	i i		7.97	7.9	7.2		26.6	6	l	-	0	Renewal Signoff:
Meter ID	120A		DH19		RO10	ECIU						OId WQ: MB
Control	15.0	R.13		7.8	7.3	24.8	24.9	16	9	(U	8888888	
0.5	25.1	8,16			7.2	25,5	25,9	9	10	10	10	Date: 5/8/17 Lot No. 5(2
1			7.76				26.5	9	10	9	10	Test Solution Prep:
1.25	25.0	8.18	<u>יין יו</u> רר ר	7.9	7. ()	26,3	26.6	3	6	8	a	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:
2	25.3	820	7.79	8.1	7.0	27.0	27.4		0	,	5	Renewal Signoff:
Meter ID		PH23	PHZI	RIV9	RDII	£(1)	ECI0					Old WQ: CTD
Control	255		7.86		7.6		25.4	10	9	10		Date: 5/9/17
0.5	25.5						25.8	9	to	10		D / / / / Termination Time: O 9 2 Let
1	255		7.88		6.6			8		0		Termination Signoff:
1.25	25.5		7.85		6.7		26.5	20	10		10	Old WQ: SD
1.5	25.6		7.91		6.8		26.6	1	6	8	3	ىرى
2	- J . E		7.90		6.7		26.8	6	5	8	3	
Meter ID	— 72A		Duas							-		
	1 614		PH23		RD 09		EC04					

7 Day Chronic Menidia Beryllina Toxicity Test Data

	Reference Toxic			474 Project #	
Test Date	5/2/17			0/17 Sign-off:	
Pan ID	Treatment Replicate	Initial Pan Weight (mg)	Final Pan Weight (mg)	Initial # of Organisms	Biomass Value (mg)
1	Control A	41290	423.86	10	1.10
2	В	410.24	419.24	10	0.900
3	С	416.84	428.28	to	1.14
4	D	411.85	421.93	lõ	1-01
5	0.5 A	416.55	427.79	ισ	1.12
6	В	417.41	430.15	ίΰ	1 27
7	С	412.17	424.65	iO	1.25
8	D	408.19	419.57	10	1-14
9	1 A	410.85	420.70	ίσ	N.985
10	В	416.19	426.70	(0	1.05
11	С	413.99	426.56	10	1.26
12	D	413.54	418.59	j0	0.505
13	1.25 A	416:33	429.00	io	1.27
14	В	420.41	427.9/	10	0.750
15	С	407.17	417.48	10	1.03
16	D	413.52	422.49	10	0.897
17	1.5 A	411.18	418.23	í0	0.705
18	В	413.26	419.74	10	0.648
19	С	412.85	420.9B	0	0.813
20	D	416,33	419.82	lu	0.349
21	2 A	415.34 -413-18 strin	·	10	
22	В	415.24	-	10	
23	С	410.07	_	10	
24	D	415.43	<i></i>	10	_
QA 1		409.78	409,76		
QA 2		418.75	418.77		
QA3		413.32	413.32		
Balance ID:		Baicit	BALOY		

Menidia beryllina Dry Weight Data Sheet

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,

Puri Romualdo Laboratory Director

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



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Page 1 of 15

CLIENT:CH2MHillProject:SFPP-NorwalkLab 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.



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CLIENT:CH2MHillProject:SFPP-NorwalkLab 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



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ANALYTICAL RESULTS

Print Date: 23-Jun-17

Result		(/16/2017 1:30:	00 PM
Result			Л			
Result			IVI	atrix: W	ASTEWATE	R
Result						
	MDL	PQL	Qual	Units	DF	Date Analyzed
NDS BY GC	/MS	EPA	8270C			
QC Batch: 62	629		PrepD	ate	6/23/2017	Analyst: JJS
ND	0.33	1.0		µg/L	1	6/23/2017 11:23 AM
76.0	0	16-120		%REC	1	6/23/2017 11:23 AM
28.0	0	15-120		%REC	1	6/23/2017 11:23 AM
BY GC/MS						
		EPA	8260B			
QC Batch: P	7VW098		PrepD	ate		Analyst: RB
ND	0.13	0.50		ug/L	1	6/20/2017 05:02 AM
ND	0.13	0.50		ug/L	1	6/20/2017 05:02 AN
ND	0.14	1.0		ug/L	1	6/20/2017 05:02 AN
ND	0.14	1.0		ug/L	1	6/20/2017 05:02 AN
ND	0.23	1.0		ug/L	1	6/20/2017 05:02 AM
ND	0.13	1.0		ug/L	1	6/20/2017 05:02 AM
ND	0.13	1.0		ug/L	1	6/20/2017 05:02 AM
ND	1.8	5.0		ug/L	1	6/20/2017 05:02 AN
ND	0.14	2.0		ug/L	1	6/20/2017 05:02 AM
ND	1.5	2.0		ug/L	1	6/20/2017 05:02 AM
103	0	72-119		%REC	1	6/20/2017 05:02 AM
99.0	0	76-119		%REC	1	6/20/2017 05:02 AM
103 102	0 0	85-115 81-120		%REC %REC	1 1	6/20/2017 05:02 AM 6/20/2017 05:02 AM
102	0	01-120		MREC	I	0/20/2017 03.02 AM
A 3510C		EPA	8015B			
QC Batch: 62	2573		PrepD	ate	6/19/2017	Analyst: QCE
ND	16	26		ug/L	1	6/19/2017 04:32 PM
20	14	26	J	ug/L	1	6/19/2017 04:32 PM
94.1	0	26-152		%REC	1	6/19/2017 04:32 PM
89.4	0	57-132		%REC	1	6/19/2017 04:32 PM
GC/FID		504	00455			
	3.00050	EPA	8015B	ata.		
	17VW056		PrepD			Analyst: RB
				-		6/17/2017 05:27 PM
105	0	74-138		%REC	1	6/17/2017 05:27 PM
sc	ND 105 ociated Method		105 0 74-138	105 0 74-138	105 0 74-138 %REC	105 0 74-138 [©] REC 1

S Spike/Surrogate outside of limits due to matrix interference

DO Surrogate Diluted Out

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ND Not Detected at the Reporting Limit

ASSET LABORATORIES

Results are wet unless otherwise specified

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 ELAP Cert 2921
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 Cert 4046

ANALYTICAL RESULTS

Print Date: 23-Jun-17

CLIENT:	CH2MHill			C	lient Samj	ole ID: E	FF-06-16	
Lab Order:	N024624				Collection	Date: 6/	16/2017 1:30:	00 PM
Project:	SFPP-Norwalk				Μ	latrix: W	ASTEWATE	R
Lab ID:	N024624-001							
Analyses		Result	MDL	PQL	Qual	Units	DF	Date Analyzed
MERCURY	BY COLD VAPOR TEC	CHNIQUE						
				EP	A 245.1			
RunID: NV	00922-AA1_170619A	QC Batch: 62	567		Prep	Date	6/19/2017	Analyst: MG
Mercury		0.048	0.018	0.050	J	µg/L	1	6/19/2017 11:46 AM
TOTAL MET	TALS BY ICPMS							
				EP.	A 200.8			
RunID: NV	00922-ICP7_170619A	QC Batch: 62	572		Prep	Date	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	1							
				EPA	A 8015B			
RunID: NV	00922-GC3_170619A	QC Batch: R1	15844		Prep	Date		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

ASSET LABORATORIES

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CLIENT: CH2MHill

Work Order: N024624

SFPP-Norwalk **Project:**

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 Lead	ND ND	0.50 0.50		
Zinc	ND	1.0		
2110	110	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 Qua
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	
		1.0 100.0 0 TestCode: 200.8_W_SF Units: µg/L	94.0 85 115 Prep Date: 6/19/2017	RunNo: 115841
Sample ID N024624-001D-DU				RunNo: 115841 SeqNo: 2669752
Sample ID N024624-001D-DU Client ID: ZZZZZZ	JP SampType: DUP	TestCode: 200.8_W_SF Units: µg/L	Prep Date: 6/19/2017	SeqNo: 2669752
Zinc Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper	JP SampType: DUP Batch ID: 62572	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8	Prep Date: 6/19/2017 Analysis Date: 6/19/2017	SeqNo: 2669752
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte	JP SampType: DUP Batch ID: 62572 Result	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 2669752 %RPD RPDLimit Qual
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper Lead	JP SampType: DUP Batch ID: 62572 Result ND	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 2669752 %RPD RPDLimit Qua 0 20
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper Lead Zinc	JP SampType: DUP Batch ID: 62572 Result ND ND 8.445	TestCode: 200.8_W_SF Units: μg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 0.50	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val 0 0	SeqNo: 2669752 %RPD RPDLimit Qua 0 20 0 20
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper	JP SampType: DUP Batch ID: 62572 Result ND ND 8.445	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 0.50 1.0	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val 0 0 7.286	SeqNo: 2669752 %RPD RPDLimit Qua 0 20 0 20 14.7 20
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper Lead Zinc Sample ID N024624-001D-MS Client ID: ZZZZZ	JP SampType: DUP Batch ID: 62572 Result ND ND 8.445 S SampType: MS	TestCode: 200.8_W_SF Units: μg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 0.50 1.0 TestCode: 200.8_W_SF Units: μg/L	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val 0 0 0 7.286 Prep Date: 6/19/2017	SeqNo: 2669752 %RPD RPDLimit Qua 0 20 0 20 14.7 20 RunNo: 115841 SeqNo: 2669755
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper Lead Zinc Sample ID N024624-001D-MS	JP SampType: DUP Batch ID: 62572 Result ND ND 8.445 S SampType: MS Batch ID: 62572	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val 0.50 1.0 TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val %REC Prep Date: 6/19/2017 %REC Prep Date: 6/19/2017 %REC Prep Date: 6/19/2017 %REC 6/19/2017 6/19/2017	SeqNo: 2669752 %RPD RPDLimit Qua 0 20 0 20 14.7 20 RunNo: 115841 SeqNo: 2669755
Sample ID N024624-001D-DU Client ID: ZZZZZZ Analyte Copper Lead Zinc Sample ID N024624-001D-MS Client ID: ZZZZZZ Analyte	JP SampType: DUP Batch ID: 62572 Result ND ND 8.445 S SampType: MS Batch ID: 62572 Result	TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value 0.50 0.50 1.0 TestCode: 200.8_W_SF Units: µg/L TestCode: 200.8_W_SF Units: µg/L TestNo: EPA 200.8 PQL SPK value SPK Ref Val	Prep Date: 6/19/2017 Analysis Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val %REC Prep Date: 6/19/2017 %REC Prep Date: 6/19/2017 %REC LowLimit HighLimit RPD Ref Val	SeqNo: 2669752 %RPD RPDLimit Qua 0 20 0 20 14.7 20 RunNo: 115841 SeqNo: 2669755

Qualifiers:

J

S

B Analyte detected in the associated Method Blank

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ELAP Cert 2921

EPA ID CA01638

- E Value above quantitation range
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - CALIFORNIA | P:562.219.7435 F:562.219.7436 NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 11110 Artesia Blvd., Ste B, Cerritos, CA 90703

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

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CLIENT: CH2MHill Work Order: N024624

Project: SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N024624-001D-MSD	SampType: MSD	TestCoo	le: 200.8_W_	SF Units: µg/L		Prep Dat	e: 6/19/20	17	RunNo: 11	5841	
Client ID:	ZZZZZZ	Batch ID: 62572	TestN	lo: EPA 200.8	3		Analysis Dat	e: 6/19/20	17	SeqNo: 266	69756	
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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

Page 7 of 15

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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CLIENT: CH2MHill

Work Order: N024624 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID MB-62	567 SampType: MBLK	TestCode: 245.1_W_L	.L Units: µg/L	Prep Date:	6/19/2017	RunNo: 1158	38
Client ID: PBW	Batch ID: 62567	TestNo: EPA 245.1		Analysis Date	6/19/2017	SeqNo: 2669	600
Analyte	Resul	PQL SPK value	SPK Ref Val	%REC LowLimit H	HighLimit RPD Ref Val	%RPD F	RPDLimit Qual
Mercury	0.021	0.050					J
Sample ID LCS-62	SampType: LCS	TestCode: 245.1_W_L	L Units: µg/L	Prep Date:	6/19/2017	RunNo: 1158	38
Client ID: LCSW	Batch ID: 62567	TestNo: EPA 245.1		Analysis Date:	6/19/2017	SeqNo: 26690	601
Analyte	Resul	PQL SPK value	SPK Ref Val	%REC LowLimit H	HighLimit RPD Ref Val	%RPD F	RPDLimit Qual
Mercury	2.404	0.050 2.500	0	96.2 85	115		
Sample ID N02462	24-001D-MS SampType: MS	TestCode: 245.1_W_L	L Units: µg/L	Prep Date:	6/19/2017	RunNo: 1158	38
Client ID: ZZZZZ							
	Z Batch ID: 62567	TestNo: EPA 245.1		Analysis Date	6/19/2017	SeqNo: 26690	502
Analyte	Z Batch ID: 62567 Resul		SPK Ref Val	,	: 6/19/2017 HighLimit RPD Ref Val	·	6 02 RPDLimit Qual
Analyte Mercury		PQL SPK value	SPK Ref Val 0.04809	,		·	
	Resul 2.368	PQL SPK value	0.04809	%REC LowLimit H 92.8 75	HighLimit RPD Ref Val	·	RPDLimit Qual
Mercury	Resul 2.368 24-001D-MSD SampType: MSD	PQL SPK value 0.050 2.500	0.04809	%REC LowLimit H 92.8 75	HighLimit RPD Ref Val 125 : 6/19/2017	%RPD F	RPDLimit Qual
Mercury Sample ID N02462	Resul 2.368 24-001D-MSD SampType: MSD	PQL SPK value 0.050 2.500 TestCode: 245.1_W_L TestNo: EPA 245.1	0.04809	%REC LowLimit H 92.8 75 Prep Date Analysis Date	HighLimit RPD Ref Val 125 : 6/19/2017	%RPD F RunNo: 1158 SeqNo: 2669	RPDLimit Qual

Qualifiers:

S

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
 - Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES
- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID MB-62573	SampType: MBLK	TestCode	e: 8015_W_F	P_ Units: ug/L		Prep Dat	e: 6/19/2017	RunNo: 11584	44	
Client ID: PBW	Batch ID: 62573	TestNo	DE EPA 8015E	B EPA 3510C		Analysis Dat	e: 6/19/2017	SeqNo: 2669	787	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD Ref Va	al %RPD F	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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

Serving Clients with Passion and Professionalism"

Page 9 of 15

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 801	5B		Analysis Da	te: 6/19/20)17	SeqNo: 26	69802	
Analyte	Result	PQL SPK value	e 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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out



- CALIFORNIA | P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

NEVADA | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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CLIENT: CH2MHill

Work Order:N024624Project:SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID E170617LCS	SampType: LCS	TestCode: 8015GAS	_W Units: ug/L		Prep Dat	te:		RunNo: 115	5821	
Client ID: LCSW	Batch ID: E17VW056	TestNo: EPA 801	5B		Analysis Dat	te: 6/17/20	17	SeqNo: 266	69309	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	1053.000 49615.000	50 1000 50000	0	105 99.2	67 74	136 138				
Sample ID E170617MB1	SampType: MBLK	TestCode: 8015GAS	S_W Units: ug/L		Prep Dat	te:		RunNo: 115	5821	
Client ID: PBW	Batch ID: E17VW056	TestNo: EPA 801	5B		Analysis Dat	te: 6/17/20	17	SeqNo: 266	69310	
Analyte	Result	PQL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	ND 56114.000	50 50000		112	74	138				
Sample ID N024624-001BMS	SampType: MS	TestCode: 8015GAS	_W Units: ug/L		Prep Dat	te:		RunNo: 115	5821	
Client ID: ZZZZZZ	Batch ID: E17VW056	TestNo: EPA 801	5B			te: 6/17/20	17	SeqNo: 266	0242	
	Batch 1D. E17 VV056				Analysis Da		••	0eq110. 200	9312	
Analyte	Result		SPK Ref Val	%REC			RPD Ref Val	%RPD	RPDLimit	Qual
Analyte TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5										Qual
TPH-Gasoline (C4-C12)	Result 1062.000	PQL SPK value	SPK Ref Val 0	%REC 106	LowLimit 67	HighLimit 136 138			RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5	Result 1062.000 49210.000	PQL SPK value 50 1000 50000	SPK Ref Val 0 s_W Units: ug/L	%REC 106 98.4	LowLimit 67 74	HighLimit 136 138 te:	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5 Sample ID N024624-001BMSD	Result 1062.000 49210.000 SampType:	PQL SPK value 50 1000 50000 50000 TestCode: 8015GAS TestNo: EPA 8015	SPK Ref Val 0 s_W Units: ug/L	%REC 106 98.4	LowLimit 67 74 Prep Dat Analysis Dat	HighLimit 136 138 te: te: 6/17/20	RPD Ref Val	%RPD RunNo: 115	RPDLimit	Qual
TPH-Gasoline (C4-C12) Surr: Chlorobenzene - d5 Sample ID N024624-001BMSD Client ID: ZZZZZ	Result 1062.000 49210.000 SampType: MSD Batch ID: E17VW056	PQL SPK value 50 1000 50000 50000 TestCode: 8015GAS TestNo: EPA 8015	SPK Ref Val 0 5_W Units: ug/L 5B	%REC 106 98.4	LowLimit 67 74 Prep Dat Analysis Dat	HighLimit 136 138 te: te: 6/17/20	RPD Ref Val	%RPD RunNo: 115 SeqNo: 266	RPDLimit 5821 59313	

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - ASSET LABORATORIES
- CALIFORNIA P:562.219.7435 F:562.219.7436 1110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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<u>NEVADA</u> | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046

CLIENT: CH2MHill

Work Order:N024624Project:SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID P170619LCS	SampType: LCS	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 115	5869	
Client ID: LCSW	Batch ID: P17VW098	TestN	lo: EPA 8260	В		Analysis Da	te: 6/20/20)17	SeqNo: 267	70679	
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				
МТВЕ	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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 115	5869	
Client ID: PBW	Batch ID: P17VW098	TestN	lo: EPA 8260	В		Analysis Da	te: 6/20/20)17	SeqNo: 267	70680	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HiahLimit	RPD Ref Val	%RPD	RPDLimit	Qual
					JULICE O		5				
1,1-Dichloroethane	ND	0.50			JULE O		5				
1,1-Dichloroethane 1,2-Dichloroethane	ND ND	0.50 0.50			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		<u> </u>				
,					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
1,2-Dichloroethane	ND	0.50			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
1,2-Dichloroethane Benzene	ND ND	0.50 1.0			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		J				
1,2-Dichloroethane Benzene Ethylbenzene	ND ND ND	0.50 1.0 1.0									
1,2-Dichloroethane Benzene Ethylbenzene m,p-Xylene	ND ND ND ND	0.50 1.0 1.0 1.0									
1,2-Dichloroethane Benzene Ethylbenzene m,p-Xylene MTBE	ND ND ND ND	0.50 1.0 1.0 1.0 1.0									
1,2-Dichloroethane Benzene Ethylbenzene m,p-Xylene MTBE o-Xylene	ND ND ND ND ND	0.50 1.0 1.0 1.0 1.0 1.0									
1,2-Dichloroethane Benzene Ethylbenzene m,p-Xylene MTBE o-Xylene Tert-Butanol	ND ND ND ND ND ND	0.50 1.0 1.0 1.0 1.0 1.0 5.0									

Qualifiers:

J

S

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- Analyte detected below quantitation limits

ASSET LABORATORIES

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ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
 - <u>CALIFORNIA</u>|P:562.219.7435 F:562.219.7436 11110 Artesia Blvd., Ste B, Cerritos, CA 90703

ELAP Cert 2921

EPA ID CA01638

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CLIENT: CH2MHill

Work Order: N024624 **Project:** SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID P170619MB3	SampType: MBLK	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5869	
Client ID: PBW	Batch ID: P17V	V098 Test	No: EPA 8260	В		Analysis Da	te: 6/20/20)17	SeqNo: 26	70680	
Analyte	Resul	t 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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5869	
Client ID: ZZZZZZ	Batch ID: P17V	N098 Test	No: EPA 8260	В		Analysis Da	te: 6/20/20)17	SeqNo: 26	70683	
Analyte	Resul	t 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	0 1.0	20.00	0	108	81	122				
Ethylbenzene	20.180	0 1.0	20.00	0	101	73	127				
m,p-Xylene	40.650	0 1.0	40.00	0	102	76	128				
MTBE	22.740	0 1.0	20.00	0	114	65	123				
o-Xylene	20.660	0 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	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5869	
Client ID: ZZZZZZ	Batch ID: P17V	N098 Test	No: EPA 8260	В		Analysis Da	te: 6/20/20	017	SeqNo: 26	70684	
Analyte	Resul	t 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:

J

- B Analyte detected in the associated Method Blank
 - Analyte detected below quantitation limits
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

ASSET LABORATORIES Serving Clients with Passion and Professionalism"

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H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits

Calculations are based on raw values

CLIENT: CH2MHill

Work Order:N024624Project:SFPP-Norwalk

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID N024624-001AMSD	SampType: MSD	TestCo	de: 8260_WP	_SF Units: ug/L		Prep Da	te:		RunNo: 11	5869	
Client ID: ZZZZZZ	Batch ID: P17VW098	Test	No: EPA 8260	В		Analysis Da	te: 6/20/20	17	SeqNo: 26	70684	
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	
МТВЕ	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
- J Analyte detected below quantitation limits
- S Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out

Serving Clients with Passion and Professionalism"

 limits
 ND
 Not Detect

 e to matrix interference
 DO
 Surrogate

 CALIFORNIA
 P:562.219.7435
 F:562.219.7436

 11110
 Artesia
 Bi/dx, Ste B, Cerritos, CA 90703

 ELAP Cert 2921
 Cert 2921

EPA ID CA01638

Not Detected at the Reporting Limit

E Value above quantitation range

<u>NEVADA</u> | P:702.307.2659 F:702.307.269 3151 W. Post Rd., Las Vegas, NV 89118 ELAP Cert 2676 | NV Cert NV00922 ORELAP/NELAP Cert 4046 H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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CLIENT: CH2MHill

Work Order:N024624Project: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:

J

S

- B Analyte detected in the associated Method Blank
- E Value above quantitation rangeND Not Detected at the Reporting Limit
- Analyte detected below quantitation limits
- Spike/Surrogate outside of limits due to matrix interference DO Surrogate Diluted Out
- ASSET LABORATORIES
- CALIFORNIA P:562.219.7435 F:562.219.7436 1110 Artesia Blvd., Ste B, Cerritos, CA 90703 ELAP Cert 2921 EPA ID CA01638

H Holding times for preparation or analysis exceeded

R RPD outside accepted recovery limits Calculations are based on raw values

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NEVADA | P:702.307.2659 F:702.307.269

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 CL	ISTODY	RECORD	
DATE:	6/16	117		
PAGE:		of	I	

Section A		Section B	Section C	Section D
Required Client	Information:	Reguired Project Information:	Invoice information:	Sampler Information:
Company:	Kinder Morgan Energy Partners	Report To: Eric Davis	Attention: Steve Defibaugh - Ref. AFE# 81295	Sampler James Dye
	Attention: Steve Defibaugh			Name:
Address:	1100 Town & Country Road	Copy To: Steve Defibaugh	Company Kinder Morgan Energy Partners	Sampler
	Orange, CA 92868		Name:	Signature:
Emall To:	steve defibaugh@kindermorgan.com	Purchase Order No.:		Sample /////
	eric.dzyjs@ch2m.com		Orange, CA 92868	Date:
Phone: 714-	560-4802 Fax: 714-560-4801	Project Name: SFPP Norwalk	ATL Project Marion Cartin	
			Manager!	

Section Required	E Sample Information					ONTAINER T			V	V	A	P	A			 		ļ	
	i	· · · · · · · · · · · · · · · · · · ·			[OF CONTAIN	·····		3		3	1 N	2	 	 	 		ļ	
						PRESERVATI			н 40	H				 	 	 		<u> </u>	
						VOLUME (n	1L)		40	40	1000	500	1000	 	 	 +	+		
15M #	SAMPLE ID	LOCATION/ DESCRIPTION	MATRIX	SAMPLE TYPE (G=GRAB C=COMP)	SAMF		TOTAL # OF CONTAINERS	Analysis Test	BTEX, 1,1-DCA, 1,2-DCA, MTBE, TBA (8260B)	1PH-gas (80158)	[PH-4, TPH-oil, Total TPH (80158)	Cu, Ph. Zv [200.8]; Hg [245.1]	enoi (82.70)						
	EFF-06-16	EFFLUENT	ww		DATE 6/16/7	TIME			a X	x	⊊ x	X	£ x	 	 	 	-	+	Comments N024624 - 01
2		ELLENGUI	14.44	9	CHON	1970			<u> </u>			1	<u> </u>	 	 	 -+			Report metals, TPH and VOC preliminary data on 24-hr TAT
-		1					 			+	+	<u> </u>		 	 	 +			Report total Xylenes
4			1							+		+		 	 	 	+	<u> </u>	
5			1							1				 	 	 		-	***************************************
6														 					
7										1		1		 		 -			
8								1000	Γ	1		1		 		 		1	
9																			
10																			
11																			
17																		1	

Relinquished by (Signature and Printed game): Date / Time	Relinquished by (Signature and Printed Name):	Dat	e / Time		Turn Around Time	(TAT):		Special Instruct	ion:		
		-			[] A ≍ Sam	e Day					
6/16/17 1450	Ale	- Gliu	111 1	450	B = 24 Ho						
Relinguished by (Signatere and Printed Name): Date / Yime	Definquished by (Signature and Printed Name):	Dat	e≩ĭime								
VIII C		τ.	1	- 14	D = 72 H	ours		1			
AA	FERN WEMS	6/17	- 17	7:55	KE = 5 Wo	rkdays					
Relin guished by (Signature and Printed Name): Date / Time	Resinguished by (Signature and Printed Name):	Dat	e/Time		Ē = 10 W	orkdays					
					TAT Starts at 8 Al	Vi the followiing day if 3:00 PM.	samples received after				
		Matrix;			Preservatives:			Container Typ	e;		
12	H 2 7.7°C	W = Water	WW = Wastewat	er	H = HCI	N = HNO3	S = H2SO4	T = Tube	V = VOA	P = Pint	A = Amber
	50 8755	0 = 0il	P = Product	S = Soll	Z = Zn{AC}2	O ≈ NaOH	T = Na2\$2O3] = jar	B = Tediar	G = Glass	
l	50 8755	Others/Specify:			Others/Specify:			M = Metai	P = Plastic	C = Can	

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 St	ate Overnight						
Last 4 digits of Tracking No .:	8755			Packing	Material Used:	Bubble Wrap		
Cooling process:	✓ Ice	Ice Pack	Dry Ice	Other	None None			
		Si	ample Recei	ot Checklist				
1. Shipping container/cooler in g	ood conditic				Yes 🗹	No 🗌	Not Present	
2. Custody seals intact, signed,	dated on shi	ippping container/	cooler?		Yes	No 🗌	Not Present	\checkmark
3. Custody seals intact on samp	le bottles?				Yes	No 🗌	Not Present	\checkmark
4. Chain of custody present?					Yes 🔽	No 🗌		
5. Sampler's name present in C	OC?				Yes 🔽	No 🗌		
6. Chain of custody signed when	n relinquishe	ed and received?			Yes 🗹	No 🗌		
7. Chain of custody agrees with	sample labe	ls?			Yes 🗹	No 🗌		
8. Samples in proper container/b	oottle?				Yes 🗹	No 🗌		
9. Sample containers intact?					Yes 🗹	No 🗌		
10. Sufficient sample volume for	indicated te	est?			Yes 🗹	No 🗌		
11. All samples received within h	nolding time	?			Yes 🗹	No 🗌		
12. Temperature of rep sample of	or Temp Bla	nk within acceptal	ble limit?		Yes 🔽	No 🗌	NA	
13. Water - VOA vials have zero	headspace	?			Yes 🗹	No 🗌	NA	
14. Water - pH acceptable upon Example: pH > 12 for (CN	•	or Metals			Yes 🗹	No 🗌	NA	
15. Did the bottle labels indicate	correct pres	servatives used?			Yes 🗹	No 🗌	NA	
16. Were there Non-Conforman W	ce issues at as Client no	-			Yes Yes	No 🗌 No 🗌	NA NA	✓✓
Comments:								



RDER Summary					18-Jun-17					
СН2НІ03					WorkOrde	er: 1	N024	624		
SFPP-Norwalk copy Steve Defibaugh		QC Leve	I: RTNE		Date Receive	ed: 6	6/16/2	2017		
Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage	
EFF-06-16	6/16/2017 1:30:00 PM	6/19/2017	Wastewater	EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS				VW	
		6/19/2017		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID				VW	
		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	
		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	
		6/23/2017		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: 8270C - SIM				WW	
		6/23/2017		EPA 8270C	SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS				WW	
FOLDER	6/19/2017	6/19/2017		Folder	Folder				LAB	
		6/19/2017		Folder	Folder				LAB	
	CH2HI03 SFPP-Norwalk copy Steve Defibaugh Client Sample ID EFF-06-16	SFPP-Norwalk copy Steve Defibaugh Client Sample ID Date Collected EFF-06-16 6/16/2017 1:30:00 PM Image: Collected structure Image: Collected structure Image: Collected structure Image: Collected structure<	CH2HI03 SFPP-Norwalk QC Level copy Steve Defibaugh Date Collected Date Due EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 CH2HI03 1 1 EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 CH2 1 1 CH2 1 1	CH2HI03 SFPP-Norwalk QC Level: RTNE copy Steve Defibaugh Date Collected Date Due Matrix EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewater 6/19/2017 6/19/2017 6/19/2017 Vastewater 6/19/2017 6/19/2017 6/19/2017 Vastewater 6/19/2017 6/19/2017 6/19/2017 Vastewater 6/19/2017 6/19/2017 Vastewater 6/19/2017 FOLDER 6/19/2017 6/19/2017 Vastewater	CH2HI03 SFPP-Norwalk QC Level: KTNE Client Sample D Date Collected Matrix Test No EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewater EPA 82088 EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewater EPA 82088 Client Sample D 10/10/2017 Wastewater EPA 80158 Client Sample D 10/10/2017 EPA 80158 EPA 80158	WorkOrd CH2H103 SFPP-Norwalk CCLevel: RTNE Date Receive COLENT Sample D Date Collected Matrix Test Name Date Receive Client Sample D Date Collected Matrix Test Name Cereve: RTNE Date Receive Client Sample D Date Collected Matrix Test Name Cereve: RTNE Date Receive Client Sample D Date Collected Matrix Test Name Cereve: RTNE Cereve: RTNE <th colspa<="" td=""><td>CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: <th< td=""><td>CH2H103 WorkOre: W024 SFPP-Norwalk QC Level: RTNE Date Receivel: %16/2 copy Steve Defibuigh Matrix Test No Matrix Test No Matrix Marix Marix Marix Marix Marix Test No Matrix Marix Ma</td><td>CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 Cient Sample ID Date Collected Matix Tes No Tes Name Hd Ms Set EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewate EPA 80158 GASOLINE RANGE ORGANICS BY _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _</td></th<></td></th>	<td>CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: <th< td=""><td>CH2H103 WorkOre: W024 SFPP-Norwalk QC Level: RTNE Date Receivel: %16/2 copy Steve Defibuigh Matrix Test No Matrix Test No Matrix Marix Marix Marix Marix Marix Test No Matrix Marix Ma</td><td>CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 Cient Sample ID Date Collected Matix Tes No Tes Name Hd Ms Set EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewate EPA 80158 GASOLINE RANGE ORGANICS BY _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _</td></th<></td>	CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: Date Received: <th< td=""><td>CH2H103 WorkOre: W024 SFPP-Norwalk QC Level: RTNE Date Receivel: %16/2 copy Steve Defibuigh Matrix Test No Matrix Test No Matrix Marix Marix Marix Marix Marix Test No Matrix Marix Ma</td><td>CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 Cient Sample ID Date Collected Matix Tes No Tes Name Hd Ms Set EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewate EPA 80158 GASOLINE RANGE ORGANICS BY _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _</td></th<>	CH2H103 WorkOre: W024 SFPP-Norwalk QC Level: RTNE Date Receivel: %16/2 copy Steve Defibuigh Matrix Test No Matrix Test No Matrix Marix Marix Marix Marix Marix Test No Matrix Marix Ma	CH2H103 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 SFPP-Norwalk QC Level: RTNE Date Received: %16/2017 Cient Sample ID Date Collected Matix Tes No Tes Name Hd Ms Set EFF-06-16 6/16/2017 1:30:00 PM 6/19/2017 Wastewate EPA 80158 GASOLINE RANGE ORGANICS BY _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _



Reference: Delivery Instructions: HOLD FOR PICK UP

HOLD FOR PICK UP Signature Type: NOT REQUIRED 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.

1 H 2 3.7°C

Attachment B Waste Manifests

Ple	ase prir	nt or type. (Form desig			iter.)							IB No. 2050-0039
	W/	ASTE MANIFEST	1. Generator ID Numbe	00 33	5962	1	8. Emergency Resp 808 - 424	-9300		tTracking N 224	4008	JJK
		nerator's Name and Mailin $SFPPLP$	ng Address	A	TTN: KAR	INA G	enerator's Site Add	ress (if different t		in ST	ADT TO N	
	1 11	AT TOWN B	COUNTRY		1	- ANNOLLE	577	P L F	WALK	BLUD	11/100-	
	Gener	ORANGE 14	1A 92868	1873		1	Ala O	WACH	Ciz (3165	7	
	6. Tran	nsporter 1 Company Nam	e						0.0. 217110	Humbol		
	L		HATRIO,	I ENVIR	ONMENTA	L SER	VICIES		CAD	053	86679	4
	1. Irar	nsporter 2 Company Nam	e						U.S. EPA ID	Number		
	8. Des	signated Facility Name and	d Site Address		. t «			· · · · ·	U.S. EPA ID	Number		
	FIL	LTER RECY	CLING SE	7 VIC-12 -	LNC							
	B	LOOMINGTON YS Phone: 909-4	1 CA 9231	16						5 9	82444	1101
	9a.	9b. U.S. DOT Description			rd Class ID Number		10.00	ontainers			02779	401
	HM	and Packing Group (if a		-p			No.	Туре	11. Total Quantity	12. Unit Wt./Vol.	13. Wast	e Codes
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GENERATOR		2.		a Capacity and a second	L7 161				1-	1		
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	\vdash	3.						_				
		4.										
											İ	
	14. Spe	ecial Handling Instructions	s and Additional Informat	tion		1)(5)(-0	TANGNOS	TRR TRE	ATMENT	-2057	TEN UT	STREAM
	X				R	AL FILT	ERS (LC	AC).	12031	523	<u> </u>	5/142/11
					Ð							
	15. G	ENERATOR'S/OFFEROF	R'S CERTIFICATION: 1	hereby declare that	at the contents of this	consignment are	fully and accurately	described above	by the proper st	ipping name	, and are classified	l, packaged,
	E E	narked and labeled/placard xporter, I certify that the co	ontents of this consignm	ent conform to the	terms of the attached	d EPA Acknowled	gment of Consent.	1		. If export shi	ipment and I am th	e Primary
		certify that the waste minin ator's/Offeror's Printed/Typ	The second s	tified in 40 CFR 26	2.27(a) (if I am a large	e quantity genera Signat		small quantity get	nerator) is true.		Month	Day Year
↓		JAMI	ES DYPE	5				K			141	11/17
TRANSPORTER INT'L	-	ernational Shipments	Import to U.S.			Export from U.S.	Port o	f entry/exit:				
R		oorter signature (for export nsporter Acknowledgment					Date le	eaving U.S.:				
RTE	The second se	orter 1 Printed/Typed Nam				Signati	ıre				Month	Day Year
SPC	Ŧ				Storm Contractor							
RAN	Transpo	orter 2 Printed/Typed Nam	1º	larre	- 1	Signati	Ire	11	1.11	1	Month	Day Year
► ★	18. Disc	crepancy		all	<u> </u>	E	57	f = []	·//	-/	7	112
	18a. Dis	screpancy Indication Space	ce 🗌 Quantity		Туре		Residue	,	Partial Rej	ection		ull Rejection
			USL PL THE DEPOSITION							000011		
≿	18b. Alt	ternate Facility (or Genera	itor)				Manifest Refere	nce Number:	U.S. EPA ID N	lumber		
DESIGNATED FACILITY												
DFA		's Phone:										
ATE	180. 519	gnature of Alternate Facilit	y (or Generator)								Month	Day Year
SIGN	19. Haz	zardous Waste Report Mar	nagement Method Code	s (i.e., codes for ha	azardous waste treatr	ment, disposal, ar	nd recycling system	s)	10 C			
Ĕ	1.		2.			3.		<u>.</u>	4.			
	00 5		0									
	the second s	signated Facility Owner or Typed Name	Operator: Certification o	or receipt of hazard	ous materials covere	d by the manifest Signatu		Item 18a		AL 1982	Month	Day Year
Ť						l						
EPA	Form 8	3700-22 (Rev. 3-05) Pr	revious editions are o	bsolete.		DES	IGNATED F	ACILITY T	O DESTIN	ATION	STATE (IF I	REQUIRED)

	ZARDOUS	1. Generator ID Number	-	2. Page 1 of	Emergency	y Response	Phone	4. Waste Tra	acking Num	
	MANIFEST	CAT080033952		1	552-448-	9510				
5. Generator	's Name and Mailing				Generator's S	Site Address	(if different t	han mailing addre	SS)	
		· · · · · ·	t Country Road		153	05 Norw	aik Bivd.			
		Orange, CA S				walk, CA				
Concretoric	Phone: 714-560-		2000	1 des						
6 Transporte	er 1 Company Nam	-400/						U.S. EPA ID		
o		Southbay Industrial	Services inc							AR000193185
7 Transporte	er 2 Company Nam							U.S. EPA ID	Number	
7. manopola	51 2 0 0 mp - j						1000			
8. Designate	ed Facility Name an	180 W. Má	roling Services, inc. onte Ave. on, CA 92316 USA	2		No.		U.S. EPA ID	Number C.	AD982444481
	none: 909-421-3	2012					1		1	
205 9						10. Cont	ainers	11. Total	12. Unit	
9. W	aste Shipping Name	e and Description 🗢			-	No.	Туре	Quantity	Wt./Vol.	and the second
1.	Non Hazardo	us Waste Liquid				1	Π	2	G	
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3.1	- Groundwater	ions and Additional Information from well development when handling materia	3	Profile # 1 Direct 81	7040713 to Kinder	Morgan	Attn: Stev	e Defibaugh	2	
3.1 V/(24	- Groundwater ear proper PPE hour ernergen	fom well development 5 when handling materia 10 number 552-448-95	al 10	Direct Bill this consignment t according to app	to Kinder are fully and a icable interna	courately de	escaled abo	verby the proper s	hipping nam	
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NON-HAZARDOUS WASTE MANIFEST

DW 1702321192

	Ase print or type (Form designed for use on elite (NON-HAZARDOUS WASTE MANIFEST	(12 pitch) typewriter) 1. Generator's US EPA II		T08003396	2	Manifest Document No	DW1702321192	2. Page 1
	3. Generator's Name and Mailing Address Sfop. L.P. Norwalk Station 1530G Norwalk Boulevard Norwalk CA 90651 4. Generator's Phone (1714) 560-4887					SILE AND		of
	5. Transporter 1 Company Name Clean Harbors Environmental	Service, Inc.		US EPA ID Number D 0 3 9 3 2 2 2 5	0	A. State Trans B. Transporter	and the second se	5000
	7. Transporter 2 Company Name	8. 		US EPA ID Number		C. State Trans D. Transporter	sporter's ID	
	9. Designated Facility Name and Site Address Clean Harbors Wilmington LL 1737 East Denni Street Wilmington, CA 90744	10 C		US EPA ID Number CAD0444291	335	E. State Facilit F. Facility's Ph	iy's ID	
	11. WASTE DESCRIPTION		and the second secon			(310) 83	5-9998	
	a. NON HAZARDOUS, NON D.O.T	REGILLATED (SC	1111		No.	Type	13. Total Quantity	14, Unit Wt./Vol.
			<i></i>)		2	Dina	600	P
GWZU	b. NON D.O.T. REGULATED			2	1	Din	250	P
ERAT	C					,		
O R	d.							
!	G. Additional Descriptions for Materials Listed Above							
	11a.CH1418957 2X 55 11b.CH1419004 1X 55 15. Special Handling Instructions and Additional Inform			53082			des for Wastes Listed Above	
		nation					PHONE #: (800) 48 Sfpp, L.P. Norwalk	
	16. GENERATOR'S CERTIFICATION: I hereby certify in proper condition for transport. The materials des	that the contents of this ship	pment are	fully and accurately described	d and are in a	Il respects		
	Printed/Typed Name			nature				Date
I	7. Transporter 1 Acknowledgement of Receipt of Mat	terials		(phil	1L_		Month 5	Day Year 12 17
1 12 1-		Contract of the owner water and the second		natura	7		Month	Date
RANNE	Printed Typed Name Earth	NG	Sig	mu i	/	246. Trin	C	Day Year 12/17
	Printed/Typed Name 18. Transporter 2 Acknowledgement of Jeceipt of Mat Printed/Typed Name	N-G erials	-6	MM/ I			Month	Day Year 1217 Date Day Year
	Printed/Typed Name 18. Transporter 2 Acknowledgement of Jeceipt of Mat Printed/Typed Name 19. Discrepancy Indication Space		Sig				5	12/17 Date
	Printed/Typed Name 18. Transporter 2 Acknowledgement of Pecceipt of Mat Printed/Typed Name		Sig		em 19.		Month	12/17 Date

12	et e orhe to luce. Anive cases for one for effe (12	-olion) typewriter,)								Charles I	
	NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number NOT REQUIRED		2. Page 1 of 3. E 1	mergency Response (800) 624-9136	Phone	4. Waste T	racking Num	ber)4025		
	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										
	6. Transporter 1 Company Nan PATRIOT ENVIRONME 7. Transporter 2 Company Nan					U.S. EPA ID Number CAD053866794					
						U.S. EPA ID Number					
	8. Designated Facility Name an CROSBY & OVERTON 1630 WEST 17 TH S LONG BEACH Facility's Phone: 800-82'	5			U.S. EPA ID Number CAD028409019						
	9. Waste Shipping Name and Description			10. Containers			11. Total, 12. Unit				
GENERATOR	1. NON HAZARDOL HYDROCARBON	US WASTE, LIQUID (WASTE S)	WATER W/TRACE	ARSENIC &	No.	Type TP	Quantity	Wt./Vol.			
- GENE	2.			5	07		1 year				
	3.								in de la composition br>Composition de la composition de la comp		
	4.		A								
	18: Anotice Handling Instruction	PERIMPHANDEING WAST						2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
	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/Offeor's Printed/Typed Name Signature Month Day Year Month Day Year										
	15: International Shipments Transporter Signature (for export 16: Transporter Acknowledgment		Ē	Export from U.S	Port of entry Date leaving						
HONS	Transporter 1 Printed/Typed Nam	Villacron	/	Signature Signature	237	61/1	the	2	Month Day Month Day	Year Year Year	
	17. Discrepancy 17a. Discrepancy Indication Space	e Quantity	Птуре	[Residue	[Partial Rejec	tion	Full Reject	ion	
	7b. Alternate Facility (or Generate	Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID 1									
] [1	lity's Phone: Signature of Alternate Facility (or Generator)								Month Day	Year	
	121 at a 21 Alter at a 21 Alte				an a						
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a											
P	rinted/lyped Name			Signature			·		Month Day	Year	
	Petrola - Primed 1 Aut 937-65		ESIGNATED FAC	ILITY TO GEN	ERATOR		Reorder P	art# MA 913-897	NIFEST-CEN	HWYC .	

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