



SFPP, L.P.
Operating Partnership

May 13, 2016

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

Re: Effluent Monitoring Report
January through March 2016
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 First Quarter 2016 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 13th day of May 2016.
at 1:53 p.m.

A handwritten signature in blue ink, appearing to read 'Stephen Defibaugh', is written over a horizontal line.

_____ (signature)

Stephen T. Defibaugh (printed name)

Remediation Project Manager (title)



CH2M
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Mr. Stephen Defibaugh
Kinder Morgan Energy Partners, L.P.
1100 Town and Country Road
Orange, California 92868

May 13, 2016

Subject: Effluent Monitoring Report, January 1 to March 31, 2016 (First Quarter 2016)
SFPP Norwalk Pump Station, 15306 Norwalk Boulevard, Norwalk, California
(NPDES No. CA0063509, CI No. 7497)

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 installed at the SFPP Norwalk Pump Station located within the Defense Fuel Support Point Norwalk, at 15306 Norwalk Boulevard, Norwalk, California (the site).

SFPP performed certain 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. This report describes NPDES monitoring activities during the period of January 1 to March 31, 2016.

Remediation Systems

SFPP currently operates remediation systems consisting of soil vapor extraction (SVE), total fluids extraction (TFE) of free product, GWE for hydraulic control, and treatment of extracted soil vapors and groundwater to address two specific areas at and near the site: the south-central area and the southeastern area. Operation of the West Side Barrier (WSB) GWE system (WSB 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. SFPP also operates a horizontal biosparge system to enhance mass removal of free-phase and dissolved-phase hydrocarbon constituents in the south-central area of the site. Further discussion of this system is provided below.

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 thermal oxidizer where VOCs are converted to carbon dioxide and water prior to being discharged to the atmosphere. Operation of the GWTS and SVE system is conducted in accordance with Permits to Construct (Application Nos. 569588 and 567723, respectively; ID 110835) issued by the South Coast Air Quality Management District (SCAQMD).

The main GWTS processes free product and groundwater from up to 20 extraction wells located in the south-central area and up to 5 extraction wells located in the southeastern area of the site. During the first quarter 2016, the GWTS extracted from 11 wells equipped with pneumatically operated top-loading total fluids pumps, including 10 wells in the south-central area (GMW-9, GMW-10, GMW-22, GMW-24, GMW-25, GMW-O-20, GMW-O-23, MW-SF-2, MW-SF-11, and MW-SF-12) and 3 wells in the southeastern area (GMW-36, GMW-O-15, and GMW-O-18). Free product and groundwater recovered by pneumatically operated top-loading total fluids pumps are piped to an oil-water separator (OWS). Free product 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) that are not treated in the LGAC. The treated groundwater then passes through polishing LGAC units prior to discharge in accordance with the NPDES permit (No. CA0063509, CI No. 7497).

SFPP recently completed installation of a horizontal biosparge system in the south-central area of the site. Construction of the biosparge well is documented in the report titled, *Horizontal Biosparge Well and Soil Vapor Monitoring Probe Completion Report* (CH2M, 2015). The biosparge system injects ambient air into the horizontal biosparge well, BS-01, via a rotary screw air compressor, at 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 commenced on January 6, 2016, and is anticipated to continue for approximately 1 year in order to evaluate the feasibility of system expansion.

Summary of Quarterly GWTS Operations

A total of 767,657 gallons of groundwater were extracted from the south-central and southeastern areas during the first quarter 2016. 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, with the following exceptions:

- The GWTS was turned off on February 9, 2016, to clean out the OWS, sump, equalization tank, and transfer tank. In both cases, the system was restarted on the same day.
- The GWTS was turned off on February 11, 2016, to facilitate collection of groundwater samples as part of a sulfur hexafluoride (SF6) tracer gas study for the biosparge pilot test. The system remained offline until March 16, 2016, for maintenance of the FBBRs.

The amount of free product that accumulated in the product holding tank of the GWTS was estimated to be 194 gallons during the first quarter 2016. Recovered free product was hauled away and disposed of at Kinder Morgan-approved disposal facilities as described in the Waste Hauling section of this report.

Routine Effluent Monitoring

During the first quarter 2016, effluent water samples were collected pursuant to the Waste Discharge Requirements (WDRs) under Order No. R4-2011-0095. Samples were collected at the Order-designated monitoring point EFF-001 (Remediation System Effluent), RSW-001 (50 feet upstream of the discharge in Coyote Creek) and RSW-002 (50 feet downstream of the discharge in Coyote Creek). Samples were collected at EFF-001 on a monthly and quarterly basis. Samples were also collected at EFF-001, RSW-001, and RSW-002 as part of the accelerated toxicity sampling program and Initial Investigation Toxicity Reduction Evaluation (TRE), which is further discussed below.

Toxicity samples were shipped to CH2M's Applied Sciences Laboratory (ASL) in Corvallis, Oregon, for analysis; all remaining compliance samples were shipped to Advanced Technology Laboratories (ATL) in Las Vegas, Nevada, for analysis. ASL and ATL are 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.

Atherinops affinis (topsmelt) was used in lieu of the previously used toxicity test species under this permit due to the slightly brackish (saline) water conditions of the effluent and receiving water, and as allowed by the permit. The rationale for using this test species was documented in the report titled, *Cause of Apparent Chronic Toxicity and Planned Corrective Action Plan*, prepared by CH2M and submitted to the Regional Water Quality Control Board on December 11, 2013.

Summary of Compliance Results

Monthly and Quarterly Sampling

Analytical results for the monthly and quarterly monitoring at the effluent are summarized in Tables 2 and 3. The discharge limits for the treatment system effluent were met during the reporting period. The laboratory reports and chain-of-custody documents for the monthly and quarterly samples collected during the first quarter 2016 are included in Appendix A.

Toxicity Sampling

As stated in the fourth quarter 2015 effluent monitoring report, the second round of TRE samples was collected from EFF 001 (24-hour composite effluent samples), RSW-001 (upstream grab samples), and RSW-002 (downstream grab samples) between January 20 and 25, 2016. TRE testing was performed as part of the accelerated monitoring and Initial Investigation TRE, which was triggered as a result of the September 2015 toxicity testing. As shown in Table 3, acute toxicity was in compliance (100 percent survival) at the effluent and the upstream and downstream receiving water. The chronic toxicity at the effluent exceeded the TRE trigger of 1.0 chronic toxicity unit (TUC) while the downstream chronic toxicity was below 1.0 TUC, indicating that the effluent does not cause or contribute to downstream chronic toxicity. However, the chronic test endpoint was invalid since the reference toxicant test results did not meet test acceptability criteria (TAC) as further described below.

The chronic reference toxicant test results for the second TRE sampling event fell outside of the recommended cumulative summary chart limits, suggesting that the tested topsmelt were less sensitive than normal. Reference toxicant testing is performed to document both initial and ongoing laboratory performance of the test method. While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reference toxicant test results may be used to assess the health and sensitivity of the test organisms. Reference toxicant test results within their respective cumulative summary chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

Because the reference toxicity test results for the second TRE sampling event were outside of the cumulative summary chart limits, one additional round of TRE samples will be collected at the effluent and receiving water in 2016. This next event will also satisfy the annual requirement to perform toxicity sampling at the treatment system effluent. Currently, there is only one known supplier of topsmelt for toxicity testing. Until these quality control issues can be resolved by the supplier (or a different supplier can be identified) additional toxicity sampling as part of the TRE is not recommended, unless it can be demonstrated that the supplier's topsmelt are within the acceptable reference toxicity range.

Waste Hauling

Following is a summary of liquid and solid waste removed from the site during the first quarter 2016.

Liquids

Approximately 4,425 gallons of flammable liquid waste was removed from the site during the first quarter 2016 by Patriot Environmental Services of 508 East E Street, Wilmington, California 90744. The waste included a mixture of recovered fuel product and water generated from cleaning out the OWS transfer tank, equalization tank, and sump. The waste was transported to Demenno/Kerdoon at 2000 North Alameda Street, Compton, California 90222. Provided below is a summary of quantities removed during each event:

- February 9, 2016 – 2,800 gallons
- March 15, 2016 – 2,200 gallons

Solids

Approximately 2,000 pounds of nonhazardous spent LGAC (carbon) was removed from the site on January 8, 2016, by Prominent Systems, Inc., of 13095 E. Temple Avenue, City of Industry, California 91746. The waste was transported to California Carbon Co. at 2825 East Grant Street, Wilmington, California 90744.

Approximately 800 pounds of nonhazardous spent vapor-phase granular activated carbon (VGAC) (carbon) was removed from the site on January 22, 2016, by Prominent Systems, Inc. The waste was transported to California Carbon Co.

Copies of the waste manifests are included in Appendix B.

Should you require any further information, please contact me at (714) 435-6255.

Regards,
CH2M HILL Engineers, Inc.



Vidal Cortes
Project Engineer

Attachments:

- Table 1 – Effluent Flow Rate Measurements, First Quarter 2016
- Table 2 – NPDES Effluent Monitoring, First Quarter 2016
- Table 3 – NPDES Effluent Acute and Chronic Toxicity Monitoring, First Quarter 2016
- Appendix A – Laboratory Analytical Reports and Chain-of-Custody Documents
- Appendix B – Waste Manifests

Tables

Table 1. Effluent Flow Rate Measurements, First Quarter 2016*SFPP Norwalk Pump Station, Norwalk, California*

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd³)
01/01/16	18,582
01/02/16	14,991
01/03/16	16,066
01/04/16	15,206
01/05/16	15,253
01/06/16	18,620
01/07/16	17,984
01/08/16	16,213
01/09/16	16,023
01/10/16	20,219
01/11/16	16,825
01/12/16	4,345
01/13/16	14,837
01/14/16	15,016
01/15/16	9,297
01/16/16	11,985
01/17/16	13,616
01/18/16	13,094
01/19/16	8,908
01/20/16	9,815
01/21/16	15,225
01/22/16	13,114
01/23/16	7,708
01/24/16	4,910
01/25/16	2,922
01/26/16	6,522
01/27/16	14,783
01/28/16	16,572
01/29/16	17,306
01/30/16	18,881
01/31/16	26,677
02/01/16	7,918
02/02/16	23,397
02/03/16	23,191
02/04/16	22,866
02/05/16	28,901
02/06/16	27,455
02/07/16	17,493
02/08/16	7,624
02/09/16	9,269
02/10/16	23,039
02/11/16	14,279
02/12/16	51
02/13/16	9
02/14/16	10
02/15/16	16
02/16/16	5
02/17/16	0
02/18/16	6
02/19/16	0
02/20/16	0
02/21/16	0
02/22/16	22
02/23/16	48
02/24/16	31
02/25/16	10

Table 1. Effluent Flow Rate Measurements, First Quarter 2016*SFPP Norwalk Pump Station, Norwalk, California*

Date	Average Flow Rate (gpd) (Maximum Daily Discharge Limit = 150,000 gpd^a)
02/26/16	26
02/27/16	15
02/28/16	16
02/29/16	54
03/01/16	88
03/02/16	0
03/03/16	0
03/04/16	0
03/05/16	0
03/06/16	0
03/07/16	0
03/08/16	0
03/09/16	0
03/10/16	0
03/11/16	0
03/12/16	0
03/13/16	0
03/14/16	0
03/15/16	0
03/16/16	1,923
03/17/16	4,344
03/18/16	4,279
03/19/16	4,126
03/20/16	3,969
03/21/16	6,456
03/22/16	11,271
03/23/16	10,014
03/24/16	10,306
03/25/16	10,403
03/26/16	10,257
03/27/16	10,114
03/28/16	10,518
03/29/16	10,874
03/30/16	10,842
03/31/16	10,607

Notes:

^a California Regional Water Quality Control Board Waste Discharge Requirements

gpd = gallons per day

Table 2. NPDES Effluent Monitoring, First Quarter 2016

SFPD Norwalk Pump Station, Norwalk, California

Analyte	Sampling Frequency	Analytical Method	Units	MDL ³	RL ³	ML ¹	1/19/2016	2/2/2016	3/29/2016	3/31/2016	Discharge Limits ²	
											Monthly Average	Daily Maximum
Temperature	Monthly	--	°F	--	--	NE	71	60.5	--	79.7	--	86
Oil and Grease	Monthly	EPA 1664A	mg/L	0.77	4.4	NE	<0.73	<0.79	<0.71	--	10	15
TPH as gas (C4-C12)	Monthly	EPA 8015B	µg/L	16	50	NE	33 J	30 J	42 J	--	--	--
TPH as Diesel (C13-C22)	Monthly	EPA 8015B	µg/L	16	25	NE	<15	<15	<15	--	--	--
TPH as Oil (C23+)	Monthly	EPA 8015B	µg/L	14	25	NE	<14	<14	<14	--	--	--
Total TPH	Monthly	EPA 8015B	µg/L	16	50	NE	33 J	30 J	42 J	--	NE	100
Settleable Solids	Monthly	SM 2540F	mL/L/hr	0.088	0.088	NE	<0.087	<0.091	<0.088	--	0.1	0.3
Total Suspended Solids	Monthly	SM 2540D	mg/L	10	10	NE	<10	<10	<10	--	50	75
Phenolics	Monthly	EPA 420.4	µg/L	10	50	50	<10	<10	11 J	--	300	NE
Benzene	Monthly	EPA 8260B	µg/L	0.036	1	2.0	<0.036	<0.036	<0.036	--	1	NE
1,1-Dichloroethane	Monthly	EPA 8260B	µg/L	0.022	0.5	1.0	<0.022	<0.022	<0.022	--	5	NE
1,2-Dichloroethane	Monthly	EPA 8260B	µg/L	0.06	0.5	2.0	<0.064	<0.064	<0.064	--	0.5	NE
Ethylbenzene	Monthly	EPA 8260B	µg/L	0.036	1	2.0	<0.036	<0.036	<0.036	--	10	NE
Toluene	Monthly	EPA 8260B	µg/L	0.042	2	2.0	<0.042	<0.042	<0.042	--	10	NE
Methyl tertiary-butyl ether	Monthly	EPA 8260B	µg/L	0.062	1	NE	<0.062	<0.062	<0.062	--	NE	5.0
Tertiary butyl alcohol	Monthly	EPA 8260B	µg/L	0.3	5	NE	<0.3	<0.3	<0.3	--	NE	12
Total Xylenes	Monthly	EPA 8260B	µg/L	1.5	2	NE	<1.5	<1.5	<1.5	--	10	NE
Copper (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.26	1	0.5	5.7	<0.26	<0.26	--	16	33
Copper (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.26	1	0.5	5.7	<0.26	<0.26	--	13	27
Lead (total recoverable) (dry weather)	Monthly	EPA 200.8	µg/L	0.053	0.5	0.5	1.5	<0.053	<0.053	--	8.2	15
Lead (total recoverable) (wet weather)	Monthly	EPA 200.8	µg/L	0.053	0.5	0.5	1.5	<0.053	<0.053	--	34	106
Mercury (total recoverable)	Monthly	EPA 245.1	µg/L	0.018	0.05	0.2	<0.018	0.023 J	<0.018	--	0.051	0.14
Selenium (total recoverable)	Monthly	EPA 200.8	µg/L	0.07	0.5	2.0	<0.07	0.14 J	<0.07	--	3.4	9.2
Thallium (total recoverable)	Monthly	EPA 200.8	µg/L	0.034	0.5	1.0	<0.034	0.14 J	0.2 J	--	6.3	13
Zinc (total recoverable) (wet weather) ⁴	Monthly	EPA 200.8	µg/L	0.039	10	1.0	15	1.8 J	<0.039	--	79	158
Chromium VI	Monthly	EPA 7199	µg/L	0.015	0.2	0.5	<0.015	<0.015	<0.015	--	8.1	16
pH	Quarterly	--	s.u.	--	--	NE	--	7.1	--	--	--	6.5/8.5
Ammonia Nitrogen (as N)	Quarterly	SM 4500 NH3C	mg/L	0.082	0.2	NE	--	<0.03	--	--	NE	NE
Di-isopropyl Ether	Quarterly	EPA 8260B	µg/L	0.017	1	NE	--	<0.017	--	--	NE	NE
Methylene Blue Active Substances	Quarterly	EPA 425.1	mg/L	0.015	0.1	NE	--	0.069 J	--	--	NE	NE
Tert-amyl-methyl Ether	Quarterly	EPA 8260B	µg/L	0.039	1	NE	--	<0.039	--	--	NE	NE
Turbidity	Quarterly	SM 2130B	NTU	0.1	0.1	NE	--	0.35	--	--	50	75
Methyl ethyl ketone	Quarterly	EPA 8260B	µg/L	0.48	10	NE	--	<0.48	--	--	50	NE
Other Priority Pollutants	Quarterly ⁵	--	--	--	--	--	--	--	--	--	NE	NE

Notes:

1. 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.
2. California Regional Water Quality Control Board Waste Discharge Requirements (WDRs).
3. The highest MDL and RL during this reporting period is shown.
4. There are no dry weather limitations for zinc.
5. Effluent monitoring shall occur quarterly for the first two years after the Order is adopted. After the first two years, effluent shall be monitored once per year.

-- = not measured or not analyzed

< = not detected above the MDL

° F = degrees Fahrenheit

µg/L = micrograms per liter

J = detected at a concentration below the RL and above the MDL.

Reported value is estimated.

MDL = laboratory method detection limit

mg/L = milligrams per liter

ML = minimum level. See note 1.

mL/L/hr = milliliters per liter per hour

NE = not established

NPDES = National Pollutant Discharge Elimination System

NTU = nephelometric turbidity units

RL = reporting limit

s.u. = standard units

TPH = total petroleum hydrocarbons

Table 3. NPDES Effluent Acute and Chronic Toxicity Monitoring, First Quarter 2016
SFPP Norwalk Pump Station, Norwalk, California

		Sampling Dates	1/20, 1/22, 1/25		
		Test dates	1/21 to 1/28		
		TRE 2			
Analyte ¹	Accelerated Trigger ²	Units	EFF-001 (Effluent)	RSW-001 (Upstream)	RSW-002 (Downstream)
Acute - <i>A. affinis</i> (top smelt) – Survival	<90% / <70%	% survival	100%	100%	100%
Chronic - <i>A. affinis</i> (top smelt) – Growth	>1.0	TUc	>1.0 ³	1.0 ³	1.0 ³

Notes:

¹ Acute and chronic toxicity analysis was conducted using EPA Method 600-R-95-136.

² Accelerated testing will be implemented if either the acute toxicity result is less or less than 70% survival in any single test, or if the chronic toxicity result is more

³ Concurrent reference toxicant outside cumulative summary chart limits; therefore, chronic test results are invalid

mg = milligrams

NOEC = no observed effect concentration

NPDES = National Pollutant Discharge Elimination System

TRE = toxicity reduction evaluation

TUc = chronic toxicity unit, where TUc = 100/NOEC

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

February 03, 2016

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

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

TEL:

FAX:

Workorder No.: N018441

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on January 20, 2016 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,



Glen Gesmundo
QA Manager

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.



ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGISTS

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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N018441

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.

Subcontracted Test:

Phenols was subcontracted to BC Laboratories.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Copper on QC samples N018441-001H-MS and N018441-001H-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N018441
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018441-001A	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001B	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001C	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001D	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001E	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001F	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001H	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001I	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016
N018441-001J	EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	1/20/2016	2/3/2016



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 03-Feb-16

CLIENT: CH2MHill
Lab Order: N018441
Project: SFPP - Norwalk Site
Lab ID: N018441-001

Client Sample ID: EFF-01-16
Collection Date: 1/19/2016 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
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TOTAL NON-FILTERABLE RESIDUE

SM2540D

RunID: WETCHEM_160120E	QC Batch: 55902				PrepDate: 1/20/2016		Analyst: LR
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	1/20/2016 12:56 PM

SETTLABLE MATTER

SM2540F

RunID: WETCHEM_160120F	QC Batch: 55908				PrepDate: 1/20/2016		Analyst: QBM
Settleable Matter	ND	0.087	0.087		ml/L	1	1/20/2016

HEXANE EXTRACTABLE MATERIAL (HEM)

EPA 1664 _HEM REV B

RunID: WETCHEM_160121B	QC Batch: 55929				PrepDate: 1/21/2016		Analyst: LR
Oil & Grease	ND	0.73	4.2		mg/L	1	1/21/2016 09:09 AM

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_160120A	QC Batch: P16VW016				PrepDate:		Analyst: QBM
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	1/21/2016 12:27 AM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	1/21/2016 12:27 AM
Benzene	ND	0.036	1.0		ug/L	1	1/21/2016 12:27 AM
Ethylbenzene	ND	0.036	1.0		ug/L	1	1/21/2016 12:27 AM
m,p-Xylene	0.040	0.024	1.0	J	ug/L	1	1/21/2016 12:27 AM
MTBE	ND	0.062	1.0		ug/L	1	1/21/2016 12:27 AM
o-Xylene	ND	0.042	1.0		ug/L	1	1/21/2016 12:27 AM
Tert-Butanol	ND	0.30	5.0		ug/L	1	1/21/2016 12:27 AM
Toluene	ND	0.042	2.0		ug/L	1	1/21/2016 12:27 AM
Xylenes, Total	ND	1.5	2.0		ug/L	1	1/21/2016 12:27 AM
Surr: 1,2-Dichloroethane-d4	102	0	72-119		%REC	1	1/21/2016 12:27 AM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	1/21/2016 12:27 AM
Surr: Dibromofluoromethane	102	0	85-115		%REC	1	1/21/2016 12:27 AM
Surr: Toluene-d8	101	0	81-120		%REC	1	1/21/2016 12:27 AM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: GC1_160120C	QC Batch: 55905				PrepDate: 1/20/2016		Analyst: MDM
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	1/21/2016 03:53 AM
TPH-Oil (C23-C36)	ND	14	25		ug/L	1	1/21/2016 03:53 AM
Surr: Octacosane	124	0	26-152		%REC	1	1/21/2016 03:53 AM

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



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ANALYTICAL RESULTS
 Print Date: 03-Feb-16

CLIENT: CH2MHill
Lab Order: N018441
Project: SFPP - Norwalk Site
Lab ID: N018441-001

Client Sample ID: EFF-01-16
Collection Date: 1/19/2016 12:30:00 PM
Matrix: WASTEWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC/FID							
EPA 3510C				EPA 8015B			
RunID: GC1_160120C	QC Batch: 55905			PrepDate: 1/20/2016			Analyst: MDM
Surr: p-Terphenyl	113	0	57-132	%REC		1	1/21/2016 03:53 AM
GASOLINE RANGE ORGANICS BY GC/FID							
EPA 8015B							
RunID: GC4_160121A	QC Batch: E16VW005			PrepDate:			Analyst: QBM
TPH-Gasoline (C4-C12)	33	16	50	J ug/L		1	1/21/2016 02:32 PM
Surr: Chlorobenzene - d5	129	0	74-138	%REC		1	1/21/2016 02:32 PM
HEXAVALENT CHROMIUM BY IC							
EPA 7199							
RunID: IC6_160120A	QC Batch: R105414			PrepDate:			Analyst: RB
Hexavalent Chromium	ND	0.015	0.20	µg/L		1	1/20/2016 10:10 AM
MERCURY BY COLD VAPOR TECHNIQUE							
EPA 245.1							
RunID: AA1_160121A	QC Batch: 55899			PrepDate: 1/20/2016			Analyst: CEI
Mercury	ND	0.018	0.050	µg/L		1	1/21/2016 12:40 PM
TOTAL METALS BY COLLISION/REACTION CELL ICPMS							
EPA 200.8							
RunID: ICP7_160121D	QC Batch: 55909			PrepDate: 1/21/2016			Analyst: CEI
Selenium	ND	0.070	0.50	µg/L		1	1/21/2016 12:02 PM
TOTAL METALS BY ICPMS							
EPA 200.8							
RunID: ICP7_160121D	QC Batch: 55909			PrepDate: 1/21/2016			Analyst: CEI
Copper	5.7	0.26	0.50	µg/L		1	1/21/2016 12:02 PM
Lead	1.5	0.053	0.50	µg/L		1	1/21/2016 12:02 PM
Thallium	ND	0.034	0.50	µg/L		1	1/21/2016 12:02 PM
Zinc	15	0.039	10	µg/L		1	1/21/2016 12:02 PM
TOTAL TPH							
EPA 8015B							
RunID: GC1_160120C	QC Batch: R105371			PrepDate:			Analyst: MDM
Total TPH	33	16	50	J ug/L		1	1/20/2016

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: N018441
 Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: MB-55902	SampType: MBLK	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/20/2016	RunNo: 105437							
Client ID: PBW	Batch ID: 55902	TestNo: SM2540D	Analysis Date: 1/20/2016	SeqNo: 2208163							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	ND	10									

Sample ID: LCS-55902	SampType: LCS	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/20/2016	RunNo: 105437							
Client ID: LCSW	Batch ID: 55902	TestNo: SM2540D	Analysis Date: 1/20/2016	SeqNo: 2208164							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	960.000	10	1000	0	96.0	80	120				

Sample ID: N018421-001BDUP	SampType: DUP	TestCode: 160.2_2540D_ Units: mg/L	Prep Date: 1/20/2016	RunNo: 105437							
Client ID: ZZZZZ	Batch ID: 55902	TestNo: SM2540D	Analysis Date: 1/20/2016	SeqNo: 2208166							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	262.000	20						258.0	1.54	5	

Qualifiers:

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



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Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: MB-55908	SampType: MBLK	TestCode: 160.5_2540F_ Units: ml/L	Prep Date: 1/20/2016	RunNo: 105512							
Client ID: PBW	Batch ID: 55908	TestNo: SM2540F	Analysis Date: 1/20/2016	SeqNo: 2211363							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

- | | | | | | |
|---|--|----|-------------------------------------|---|--|
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Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID: MB-55929	SampType: MBLK	TestCode: 1664_HEM_W	Units: mg/L	Prep Date: 1/21/2016	RunNo: 105360						
Client ID: PBW	Batch ID: 55929	TestNo: EPA 1664_H		Analysis Date: 1/21/2016	SeqNo: 2205214						
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-55929	SampType: LCS	TestCode: 1664_HEM_W	Units: mg/L	Prep Date: 1/21/2016	RunNo: 105360						
Client ID: LCSSW	Batch ID: 55929	TestNo: EPA 1664_H		Analysis Date: 1/21/2016	SeqNo: 2205215						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease

35.600

4.0

40.00

0

89.0

78

114

Sample ID: LCSD-55929	SampType: LCSD	TestCode: 1664_HEM_W	Units: mg/L	Prep Date: 1/21/2016	RunNo: 105360						
Client ID: LCSS02	Batch ID: 55929	TestNo: EPA 1664_H		Analysis Date: 1/21/2016	SeqNo: 2205216						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease

34.900

4.0

40.00

0

87.2

78

114

35.60

1.99

18

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID: MB-55909	SampType: MBLK	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 1/21/2016	RunNo: 105385						
Client ID: PBW	Batch ID: 55909	TestNo: EPA 200.8		Analysis Date: 1/21/2016	SeqNo: 2206119						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: LCS-55909	SampType: LCS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 1/21/2016	RunNo: 105385						
Client ID: LCSW	Batch ID: 55909	TestNo: EPA 200.8		Analysis Date: 1/21/2016	SeqNo: 2206120						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.900	0.50	10.00	0	89.0	85	115				

Sample ID: N018441-001H-MS	SampType: MS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 1/21/2016	RunNo: 105385						
Client ID: ZZZZZZ	Batch ID: 55909	TestNo: EPA 200.8		Analysis Date: 1/21/2016	SeqNo: 2206124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	8.056	0.50	10.00	0	80.6	75	125				

Sample ID: N018441-001H-MSD	SampType: MSD	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 1/21/2016	RunNo: 105385						
Client ID: ZZZZZZ	Batch ID: 55909	TestNo: EPA 200.8		Analysis Date: 1/21/2016	SeqNo: 2206125						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	7.920	0.50	10.00	0	79.2	75	125	8.056	1.70	20	

Qualifiers:

- | | | |
|--|--|--|
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



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 Work Order: N018441
 Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: MB-55909		SampType: MBLK		TestCode: 200.8_W_SFPP Units: µg/L				Prep Date: 1/21/2016		RunNo: 105385		
Client ID: PBW		Batch ID: 55909		TestNo: EPA 200.8				Analysis Date: 1/21/2016		SeqNo: 2206192		
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										
Thallium	ND	0.50										
Zinc	ND	10										

Sample ID: LCS-55909		SampType: LCS		TestCode: 200.8_W_SFPP Units: µg/L				Prep Date: 1/21/2016		RunNo: 105385		
Client ID: LCSW		Batch ID: 55909		TestNo: EPA 200.8				Analysis Date: 1/21/2016		SeqNo: 2206193		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Copper	9.432	0.50	10.00	0	94.3	85	115					
Lead	10.468	0.50	10.00	0	105	85	115					
Thallium	10.162	0.50	10.00	0	102	85	115					
Zinc	95.055	10	100.0	0	95.1	85	115					

Sample ID: N018441-001H-MS		SampType: MS		TestCode: 200.8_W_SFPP Units: µg/L				Prep Date: 1/21/2016		RunNo: 105385		
Client ID: ZZZZZ		Batch ID: 55909		TestNo: EPA 200.8				Analysis Date: 1/21/2016		SeqNo: 2206197		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Copper	13.087	0.50	10.00	5.741	73.5	75	125				S	
Lead	11.701	0.50	10.00	1.508	102	75	125					
Thallium	8.972	0.50	10.00	0	89.7	75	125					
Zinc	93.470	10	100.0	15.23	78.2	75	125					

Sample ID: N018441-001H-MSD		SampType: MSD		TestCode: 200.8_W_SFPP Units: µg/L				Prep Date: 1/21/2016		RunNo: 105385		
Client ID: ZZZZZ		Batch ID: 55909		TestNo: EPA 200.8				Analysis Date: 1/21/2016		SeqNo: 2206198		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Copper	12.789	0.50	10.00	5.741	70.5	75	125	13.09	2.30	20	S	
Lead	11.725	0.50	10.00	1.508	102	75	125	11.70	0.210	20		

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



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Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: N018441-001H-MSD		SampType: MSD		TestCode: 200.8_W_SFPP Units: µg/L			Prep Date: 1/21/2016		RunNo: 105385		
Client ID: ZZZZZZ		Batch ID: 55909		TestNo: EPA 200.8			Analysis Date: 1/21/2016		SeqNo: 2206198		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	9.043	0.50	10.00	0	90.4	75	125	8.972	0.790	20	
Zinc	92.154	10	100.0	15.23	76.9	75	125	93.47	1.42	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: MB-55899	SampType: MBLK	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 1/20/2016	RunNo: 105361						
Client ID: PBW	Batch ID: 55899	TestNo: EPA 245.1		Analysis Date: 1/21/2016	SeqNo: 2205251						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID: LCS-55899	SampType: LCS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 1/20/2016	RunNo: 105361						
Client ID: LCSW	Batch ID: 55899	TestNo: EPA 245.1		Analysis Date: 1/21/2016	SeqNo: 2205252						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.411	0.050	2.500	0	96.4	85	115				

Sample ID: N018441-001H-MS	SampType: MS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 1/20/2016	RunNo: 105361						
Client ID: ZZZZZZ	Batch ID: 55899	TestNo: EPA 245.1		Analysis Date: 1/21/2016	SeqNo: 2205253						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.296	0.050	2.500	0	91.9	75	125				

Sample ID: N018441-001H-MSD	SampType: MSD	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 1/20/2016	RunNo: 105361						
Client ID: ZZZZZZ	Batch ID: 55899	TestNo: EPA 245.1		Analysis Date: 1/21/2016	SeqNo: 2205254						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.319	0.050	2.500	0	92.8	75	125	2.296	0.991	20	

Qualifiers:

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



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CLIENT: CH2Mhill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID: N018445-002AMSD	SampType: MSD	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 105414						
Client ID: ZZZZZZ	Batch ID: R105414	TestNo: EPA 7199		Analysis Date: 1/20/2016	SeqNo: 2207266						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.301	0.20	5.000	7.647	93.1	85	115	12.38	0.672	20	

Qualifiers:

- | | | |
|--|--|--|
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Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-55905	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 1/20/2016	RunNo: 105371						
Client ID: PBW	Batch ID: 55905	TestNo: EPA 8015B EPA 3510C		Analysis Date: 1/21/2016	SeqNo: 2205569						
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	105.577		80.00		132	26	152				
Surr: p-Terphenyl	96.001		80.00		120	57	132				

Qualifiers:

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



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NEVADA
 3151 W. Post Rd., Las Vegas, NV 89118
 P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R105371	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 105371						
Client ID: PBW	Batch ID: R105371	TestNo: EPA 8015B		Analysis Date: 1/20/2016	SeqNo: 2205571						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
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CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: E160121LCS	SampType: LCS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105373							
Client ID: LCSW	Batch ID: E16VW005	TestNo: EPA 8015B	Analysis Date: 1/21/2016	SeqNo: 2206289							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	1047.000	50	1000	0	105	67	136				
Surr: Chlorobenzene - d5	55694.000		50000		111	74	138				

Sample ID: E160121MB1	SampType: MBLK	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105373							
Client ID: PBW	Batch ID: E16VW005	TestNo: EPA 8015B	Analysis Date: 1/21/2016	SeqNo: 2206290							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	42.000	50									J
Surr: Chlorobenzene - d5	61797.000		50000		124	74	138				

Sample ID: E160121LCS	SampType: LCS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105373							
Client ID: LCSW	Batch ID: E16VW005	TestNo: EPA 8015B	Analysis Date: 1/21/2016	SeqNo: 2206292							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	980.000	50	1000	0	98.0	67	136				
Surr: Chlorobenzene - d5	56869.000		50000		114	74	138				

Sample ID: N018441-001JMS	SampType: MS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105373							
Client ID: ZZZZZ	Batch ID: E16VW005	TestNo: EPA 8015B	Analysis Date: 1/21/2016	SeqNo: 2206293							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	889.000	50	1000	33.00	85.6	67	136				
Surr: Chlorobenzene - d5	51354.000		50000		103	74	138				

Sample ID: N018441-001JMSD	SampType: MSD	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105373							
Client ID: ZZZZZ	Batch ID: E16VW005	TestNo: EPA 8015B	Analysis Date: 1/21/2016	SeqNo: 2206294							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH-Gasoline (C4-C12)	888.000	50	1000	33.00	85.5	67	136	889.0	0.113	30	
-----------------------	---------	----	------	-------	------	----	-----	-------	-------	----	--

Qualifiers:

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



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CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: N018441-001JMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105373						
Client ID: ZZZZZ	Batch ID: E16VW005	TestNo: EPA 8015B		Analysis Date: 1/21/2016	SeqNo: 2206294						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	52808.000		50000		106	74	138		0	0	

Qualifiers:

- | | | |
|--|--|--|
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CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160120LCS		SampType: LCS		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 105379		
Client ID: LCSSW		Batch ID: P16VW016		TestNo: EPA 8260B				Analysis Date: 1/20/2016		SeqNo: 2205967		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1-Dichloroethane	18.180	0.50	20.00	0	90.9	69	133					
1,2-Dichloroethane	20.240	0.50	20.00	0	101	69	132					
Benzene	20.320	1.0	20.00	0	102	81	122					
Ethylbenzene	20.000	1.0	20.00	0	100	73	127					
m,p-Xylene	41.640	1.0	40.00	0	104	76	128					
MTBE	21.670	1.0	20.00	0	108	65	123					
o-Xylene	21.040	1.0	20.00	0	105	80	121					
Tert-Butanol	113.740	5.0	100.0	0	114	70	130					
Toluene	20.040	2.0	20.00	0	100	77	122					
Xylenes, Total	62.680	2.0	60.00	0	104	75	125					
Surr: 1,2-Dichloroethane-d4	25.260		25.00		101	72	119					
Surr: 4-Bromofluorobenzene	26.410		25.00		106	76	119					
Surr: Dibromofluoromethane	24.400		25.00		97.6	85	115					
Surr: Toluene-d8	25.850		25.00		103	81	120					

Sample ID: P160120LCSD		SampType: LCSD		TestCode: 8260_WP_SF		Units: ug/L		Prep Date:		RunNo: 105379		
Client ID: LCSS02		Batch ID: P16VW016		TestNo: EPA 8260B				Analysis Date: 1/20/2016		SeqNo: 2205968		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1-Dichloroethane	18.060	0.50	20.00	0	90.3	69	133	18.18	0.662	20		
1,2-Dichloroethane	20.010	0.50	20.00	0	100	69	132	20.24	1.14	20		
Benzene	19.930	1.0	20.00	0	99.7	81	122	20.32	1.94	20		
Ethylbenzene	19.620	1.0	20.00	0	98.1	73	127	20.00	1.92	20		
m,p-Xylene	41.030	1.0	40.00	0	103	76	128	41.64	1.48	20		
MTBE	22.140	1.0	20.00	0	111	65	123	21.67	2.15	20		
o-Xylene	21.020	1.0	20.00	0	105	80	121	21.04	0.0951	20		
Tert-Butanol	114.770	5.0	100.0	0	115	70	130	113.7	0.901	20		
Toluene	19.800	2.0	20.00	0	99.0	77	122	20.04	1.20	20		
Xylenes, Total	62.050	2.0	60.00	0	103	75	125	62.68	1.01	20		
Surr: 1,2-Dichloroethane-d4	25.730		25.00		103	72	119		0			

Qualifiers:

- | | | |
|--|--|--|
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CLIENT: CH2MHill
Work Order: N018441
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160120LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 105379						
Client ID: LCSS02	Batch ID: P16VW016	TestNo: EPA 8260B	Analysis Date: 1/20/2016	SeqNo: 2205968							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.080		25.00		104	76	119		0		
Surr: Dibromofluoromethane	24.200		25.00		96.8	85	115		0		
Surr: Toluene-d8	25.440		25.00		102	81	120		0		

Sample ID: P160120MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 105379						
Client ID: PBW	Batch ID: P16VW016	TestNo: EPA 8260B	Analysis Date: 1/20/2016	SeqNo: 2205969							
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	0.060	1.0									J
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	24.550		25.00		98.2	72	119				
Surr: 4-Bromofluorobenzene	25.000		25.00		100	76	119				
Surr: Dibromofluoromethane	24.750		25.00		99.0	85	115				
Surr: Toluene-d8	25.430		25.00		102	81	120				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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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: 1/20/2016 Workorder: N018441
 Rep sample Temp (Deg C): 1.2 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 7839 Packing Material Used: Bubble Wrap
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

- | | | | |
|---|---|--|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 16. Were there Non-Conformance issues at login?
Was Client notified? | Yes <input checked="" type="checkbox"/>
Yes <input type="checkbox"/> | No <input type="checkbox"/>
No <input type="checkbox"/> | NA <input type="checkbox"/>
NA <input checked="" type="checkbox"/> |

Comments: Sample for metals was adjusted to <2.0

ASSET Laboratories

WORK ORDER Summary

21-Jan-16

WorkOrder: N018441

Client ID: CH2HI03

Project: SFPP - Norwalk Site

QC Level: RTNE

Date Received: 1/20/2016

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N018441-001A	EFF-01-16	1/19/2016 12:30:00 PM	1/27/2016	Wastewater		Oil and Grease Sample Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/27/2016		EPA 1664 _HEM	Hexane Extractable Material (HEM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018441-001B			1/22/2016		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
N018441-001C			1/27/2016		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
			1/27/2016		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
			1/27/2016		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
N018441-001D			1/27/2016		SM2540F	SETTLEABLE MATTER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
			1/27/2016			Setteable Matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
N018441-001E			1/27/2016		EPA 7199	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RB
N018441-001F			1/27/2016		EPA 420.1	PHENOLICS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N018441-001H			1/22/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/22/2016		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/22/2016		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/22/2016		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			1/22/2016			MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018441-001I			1/27/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
			1/27/2016			Total Suspended Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR
N018441-001J			1/27/2016		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N018441-002A	FOLDER		1/22/2016		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



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TEL: 702.3072659 FAX: 702.3072691

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: James Dye

20-Jan-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 420.1		
N018441-001F / EFF-01-16	Wastewater	1/19/2016 12:30:00 PM	32OZA	1		

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

Please use PO#: N18441A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

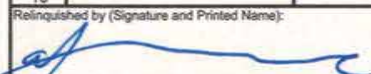
Relinquished by: <u>Marlon Cartin</u>	Date/Time <u>1/19/20 @ 17:00</u>	Received by: _____	Date/Time _____
Relinquished by: _____	_____	Received by: _____	_____

CHAIN OF CUSTODY RECORD

Contact us:
 Nevada: 3151 W. Post Road, Las Vegas, NV 89118
 P: 702.307.2659 F: 702.307.2691
 California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
 P: 562.219.7435 F: 562.219.7436
 www.assetlaboratories.com

Client: Asset Labs		Report to:		Bill to:		EDD Requirement		QA/QC		Sample Receipt Condition	
Address:		Company:		Address:		Excel EDD	<input type="checkbox"/>	RTNE	<input type="checkbox"/>	Y N	
Address:		Email:				Geotracker	<input type="checkbox"/>	RWQCB	<input type="checkbox"/>	1. Chilled <input type="checkbox"/> <input type="checkbox"/>	
Address:						Labspec	<input type="checkbox"/>	CalTrans	<input type="checkbox"/>	2. Headspace <input type="checkbox"/> <input type="checkbox"/>	
Phone:		Fax:		Address:		Others	<input type="checkbox"/>	Level III	<input type="checkbox"/>	3. Container Intact <input type="checkbox"/> <input type="checkbox"/>	
Submitted By: Molky Brown				Email to:		Specify:		LEVEL IV	<input type="checkbox"/>	4. Seal Present <input type="checkbox"/> <input type="checkbox"/>	
Title:		Phone:		Fax:		Global ID:		Regulatory	<input type="checkbox"/>	5. IR number	
Signature:		Date:		Sampled By:		Matrix		Analyses Requested		Specify State:	
I hereby authorize ASSET Labs to perform the tests indicated below:						Ground	<input type="checkbox"/>	Sediment	<input type="checkbox"/>	6. Method of Cooling	
Project Name:						Potable	<input type="checkbox"/>	Soil	<input type="checkbox"/>	Sample Temp:	
SFP - Norwalk site						NPDES	<input type="checkbox"/>	Other Solid	<input type="checkbox"/>	Courier:	
Project Number:		Signature:		Date:		Surface	<input type="checkbox"/>			Tracking No.	
										PRESERVATION	

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Remarks
1		EFF-01-16	1/9/16	12:30	WW		X Phenol (420.1)	ELGS
2								
3								
4								
5								
6								
7								
8								
9								
10								

Relinquished by (Signature and Printed Name): 	Date / Time: 1-9-16 15:25	Received by (Signature and Printed Name):	Date / Time:	Turn Around Time (TAT) <input type="checkbox"/> A < 24 Hrs or Same Day TAT <input type="checkbox"/> B = Next Workday <input type="checkbox"/> C = 2 Workdays <input type="checkbox"/> D = 3 Workdays <input type="checkbox"/> E = Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.	Special Instruction: 5 Day TAT Req.
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:		
Relinquished by (Signature and Printed Name):	Date / Time:	Received by (Signature and Printed Name):	Date / Time:		

Terms 1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report. 2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis. Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 35% 4 Workdays = 20% 3. Custom EDD formats will be an additional 3% of the total project price. 4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.	5. Trip Blanks and Equipment Blanks are billable sample. 6. ASSET Laboratories is not responsible for samples collected using incorrect methodology. 7. Terms are net 30 Days. 8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed. 9. For subcontract analysis, TAT and Surcharges will vary.	Preservatives: H = HCl N = HNO ₃ S = H ₂ SO ₄ C = 4°C Z = Zn(AC) ₂ O = NaOH T = Na ₂ S ₂ O ₃ Others/Specify:
Container Type: T = Tube V = VOA P = Pint J = Jar B = Tedlar G = Glass M = Metal P = Plastic C = Can		



800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Tracking #: 530627839

CPS



Ship To
ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

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

C89102A

Delivery Instructions:
HOLD FOR PICK UP
Signature Type: REQUIRED



47253312

Print Date: 1/19/2016 3:40 PM

Package 1 of 2

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.

*1.2c
1042*



Date of Report: 02/03/2016

Molky Brar

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

Client Project: SFPP-Norwalk site
BCL Project: Water Analysis
BCL Work Order: 1601955
Invoice ID: B225708

Enclosed are the results of analyses for samples received by the laboratory on 1/20/2016. 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

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CHAIN-OF-CUSTODY RECORD

Page 1 of 1



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

16-01955

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: James Dye

20-Jan-16

Table with columns: Sample ID, Matrix, Date Collected, Bottle Type, Requested Tests. Row 1: N018441-001F / EFF-01-16, Wastewater, 1/19/2016 12:30:00 PM, 32OZA, 1, EPA 420.1

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

Please use PO#: N18441A Please email Invoices and Account Receivable Statements to Asse/AP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Relinquished by: Marlon Cartin Date/Time: 1/19/20 @ 17:00
Received by:
Received by:
Date/Time



CONTACT US: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
11060 Arroyo Blvd., Ste C, Carrizo, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD
Page 1 of 1

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
16-01955



Client: Asset Labs
 Report to: Asset Labs
 Company: Asset Labs
 Address: [Blank]
 Email: [Blank]
 Phone: [Blank]
 Submitted By: Molky Brav
 Title: [Blank]
 Signature: [Blank]
 Date: [Blank]
 Project Name: SPPP - Norwalk site
 Project Number: [Blank]
 I hereby authorize ASSET Labs to perform the tests indicated below.

Sample ID/Location: EFF-01-16
 Date: 1/9/16 12:30
 Time: 12:30
 Matrix: [Blank]
 Analytes Requested: Phenol (420.1)
 EDD Requirement: [Blank]
 QA/QC: [Blank]
 Sample Receipt Condition: [Blank]

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Remarks
1		EFF-01-16	1/9/16	12:30	W			FLGS
2								
3								
4								
5								
6								
7								
8								
9								
10								

Received by (Signature and Printed Name): [Signature] 1/20/16
 Date / Time: 1-19-16 15:25
 Turn Around Time (TAT): [Blank]
 Special Instruction: 5 Day TAT Req.

Container Type: [Blank]
 Preservation: [Blank]
 Turn Around Time: [Blank]

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BC LABORATORIES INC. COOLER RECEIPT FORM Page 3 Of 3

Submission #: 16-01955

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

SHIPPING CONTAINER: Ice Chest None Box Other (Specify) _____

FREE LIQUID: YES NO

Refrigerant: Ice Blue Ice None Other Comments: _____

Custody Seals: Ice Chest Containers None Comments: _____

Intact? Yes No Intact? Yes No

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

COC Received: YES NO

Emissivity: 0.95 Container: Amber Thermometer ID: 208 Date/Time: 1/20/16

Temperature: (A) 3.7 °C / (C) 3.7 °C Analyst Init: NSC 800

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr ⁴										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER <i>at hand w H2SO4</i>										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: _____ Date/Time: 1-20-16 800 Rev 20 07/24/2015

Sample Numbering Completed By: _____ A = Actual / C = Corrected

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



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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1601955-01	COC Number:	---	Receive Date:	01/20/2016 08:00
	Project Number:	---	Sampling Date:	01/19/2016 12:30
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	EFF-01-06	Lab Matrix:	Water
	Sampled By:	---	Sample Type:	Water

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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

BCL Sample ID: 1601955-01	Client Sample Name: EFF-01-06, 1/19/2016 12:30:00PM
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Phenolics	ND	ug/L	50	10	EPA-420.4	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-420.4	01/25/16	01/25/16 12:54	TDC	KONE-1	1	BZA1975

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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZA1975						
Total Phenolics	BZA1975-BLK1	ND	ug/L	50	10	

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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZA1975										
Total Phenolics	BZA1975-BS1	LCS	523.00	500.00	ug/L	105		85 - 115		

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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab Quals
								Percent Recovery	Percent Recovery	
QC Batch ID: BZA1975		Used client sample: N								
Total Phenolics	DUP	1601527-02	17124	17326		ug/L	1.2		20	
	MS	1601527-02	17124	17326	500.00	ug/L		40.4	80 - 120	A03
	MSD	1601527-02	17124	17450	500.00	ug/L	0.7	65.2	20 80 - 120	A03

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

Reported: 02/03/2016 16:01
Project: Water Analysis
Project Number: SFPP-Norwalk site
Project Manager: Molky Brar

Notes And Definitions

- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit
- A03 The sample concentration is more than 4 times the spike level.

February 15, 2016

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

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

TEL:

FAX:

Workorder No.: N018642

RE: SFPP - Norwalk Site

Attention: Dan Jablonski

Enclosed are the results for sample(s) received on February 03, 2016 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,



Glen Gesmundo
QA Manager

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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NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N018642

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.

Subcontracted Test:

Phenol, MBAS and Ammonia were subcontracted to BC Laboratories.



CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N018642
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N018642-001A	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001B	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001C	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001D	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001E	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001F	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001G	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001H	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001I	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001J	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016
N018642-001K	EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	2/3/2016	2/15/2016



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 15-Feb-16

CLIENT: CH2MHill
Lab Order: N018642
Project: SFPP - Norwalk Site
Lab ID: N018642-001

Client Sample ID: EFF-02-02
Collection Date: 2/2/2016 1:45:00 PM
Matrix: WASTEWATER

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

TOTAL NON-FILTERABLE RESIDUE

SM2540D

RunID: WETCHEM_160204A	QC Batch: 56124				PrepDate: 2/4/2016		Analyst: LR
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	2/4/2016 11:03 AM

SETTLABLE MATTER

SM2540F

RunID: WETCHEM_160203G	QC Batch: 56102				PrepDate: 2/3/2016		Analyst: QBM
Settleable Matter	ND	0.091	0.091		ml/L	1	2/3/2016

TURBIDITY

SM 2130B

RunID: WETCHEM_160203B	QC Batch: R105648				PrepDate:		Analyst: LR
Turbidity	0.35	0.10	0.10		NTU	1	2/3/2016 02:00 PM

HEXANE EXTRACTABLE MATERIAL (HEM)

EPA 1664 _HEM REV B

RunID: WETCHEM_160205A	QC Batch: 56146				PrepDate: 2/5/2016		Analyst: LR
Oil & Grease	ND	0.79	4.5		mg/L	1	2/5/2016 08:49 AM

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_160203A	QC Batch: P16VW024				PrepDate:		Analyst: QBM
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	2/3/2016 12:37 PM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	2/3/2016 12:37 PM
2-Butanone	ND	0.48	10		ug/L	1	2/3/2016 12:37 PM
Benzene	ND	0.036	1.0		ug/L	1	2/3/2016 12:37 PM
Di-isopropyl ether	ND	0.017	1.0		ug/L	1	2/3/2016 12:37 PM
Ethylbenzene	ND	0.036	1.0		ug/L	1	2/3/2016 12:37 PM
m,p-Xylene	ND	0.024	1.0		ug/L	1	2/3/2016 12:37 PM
MTBE	ND	0.062	1.0		ug/L	1	2/3/2016 12:37 PM
o-Xylene	ND	0.042	1.0		ug/L	1	2/3/2016 12:37 PM
Tert-amyl methyl ether	ND	0.039	1.0		ug/L	1	2/3/2016 12:37 PM
Tert-Butanol	ND	0.30	5.0		ug/L	1	2/3/2016 12:37 PM
Toluene	ND	0.042	2.0		ug/L	1	2/3/2016 12:37 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	2/3/2016 12:37 PM
Surr: 1,2-Dichloroethane-d4	111	0	72-119		%REC	1	2/3/2016 12:37 PM
Surr: 4-Bromofluorobenzene	102	0	76-119		%REC	1	2/3/2016 12:37 PM
Surr: Dibromofluoromethane	111	0	85-115		%REC	1	2/3/2016 12:37 PM

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



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ANALYTICAL RESULTS

Print Date: 15-Feb-16

CLIENT: CH2MHill
Lab Order: N018642
Project: SFPP - Norwalk Site
Lab ID: N018642-001

Client Sample ID: EFF-02-02
Collection Date: 2/2/2016 1:45:00 PM
Matrix: WASTEWATER

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

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_160203A	QC Batch: P16VW024				PrepDate:		Analyst: QBM
Surr: Toluene-d8	104	0	81-120		%REC	1	2/3/2016 12:37 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: GC3_160205A	QC Batch: 56111				PrepDate: 2/4/2016		Analyst: MDM
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	2/5/2016 09:41 PM
TPH-Oil (C23-C36)	ND	14	25		ug/L	1	2/5/2016 09:41 PM
Surr: Octacosane	88.9	0	26-152		%REC	1	2/5/2016 09:41 PM
Surr: p-Terphenyl	91.6	0	57-132		%REC	1	2/5/2016 09:41 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: GC4_160208B	QC Batch: E16VW012				PrepDate:		Analyst: QBM
TPH-Gasoline (C4-C12)	30	16	50	J	ug/L	1	2/8/2016 04:41 PM
Surr: Chlorobenzene - d5	103	0	74-138		%REC	1	2/8/2016 04:41 PM

HEXAVALENT CHROMIUM BY IC

EPA 7199

RunID: IC7_160203A	QC Batch: R105699				PrepDate:		Analyst: RB
Hexavalent Chromium	ND	0.015	0.20		µg/L	1	2/3/2016 11:36 AM

MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: AA1_160205A	QC Batch: 56110				PrepDate: 2/4/2016		Analyst: CEI
Mercury	0.023	0.018	0.050	J	µg/L	1	2/5/2016 11:19 AM

TOTAL METALS BY COLLISION/REACTION CELL ICPMS

EPA 200.8

RunID: ICP7_160205B	QC Batch: 56104				PrepDate: 2/3/2016		Analyst: CEI
Selenium	0.14	0.070	0.50	J	µg/L	1	2/5/2016 11:23 AM

TOTAL METALS BY ICPMS

EPA 200.8

RunID: ICP7_160205B	QC Batch: 56104				PrepDate: 2/3/2016		Analyst: CEI
Copper	ND	0.26	0.50		µg/L	1	2/5/2016 11:23 AM
Lead	ND	0.053	0.50		µg/L	1	2/5/2016 11:23 AM

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



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ANALYTICAL RESULTS

Print Date: 15-Feb-16

CLIENT: CH2MHill
Lab Order: N018642
Project: SFPP - Norwalk Site
Lab ID: N018642-001

Client Sample ID: EFF-02-02
Collection Date: 2/2/2016 1:45:00 PM
Matrix: WASTEWATER

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

TOTAL METALS BY ICPMS

EPA 200.8

RunID: ICP7_160205B	QC Batch: 56104			PrepDate: 2/3/2016		Analyst: CEI
Thallium	0.14	0.034	0.50	J	µg/L	1 2/5/2016 11:23 AM
Zinc	1.8	0.039	10	J	µg/L	1 2/5/2016 11:23 AM

TOTAL TPH

EPA 8015B

RunID: GC3_160205A	QC Batch: R105707			PrepDate:		Analyst: MDM
Total TPH	30	16	50	J	ug/L	1 2/5/2016

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



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CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID: MB-56124	SampType: MBLK	TestCode: 160.2_2540D_	Units: mg/L	Prep Date: 2/4/2016	RunNo: 105728						
Client ID: PBW	Batch ID: 56124	TestNo: SM2540D	Analysis Date: 2/4/2016	SeqNo: 2223712							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	ND	10									

Sample ID: LCS-56124	SampType: LCS	TestCode: 160.2_2540D_	Units: mg/L	Prep Date: 2/4/2016	RunNo: 105728						
Client ID: LCSW	Batch ID: 56124	TestNo: SM2540D	Analysis Date: 2/4/2016	SeqNo: 2223713							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	1008.000	10	1000	0	101	80	120				

Sample ID: N018649-002ADUP	SampType: DUP	TestCode: 160.2_2540D_	Units: mg/L	Prep Date: 2/4/2016	RunNo: 105728						
Client ID: ZZZZZ	Batch ID: 56124	TestNo: SM2540D	Analysis Date: 2/4/2016	SeqNo: 2223719							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter)	75.000	10						75.00	0	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
 - E Value above quantitation range
 - ND Not Detected at the Reporting Limit
 - DO Surrogate Diluted Out
 - H Holding times for preparation or analysis exceeded
 - R RPD outside accepted recovery limits
- Calculations are based on raw values



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Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID: MB-56102	SampType: MBLK	TestCode: 160.5_2540F_ Units: ml/L	Prep Date: 2/3/2016	RunNo: 105874							
Client ID: PBW	Batch ID: 56102	TestNo: SM2540F	Analysis Date: 2/3/2016	SeqNo: 2231943							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

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



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ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual										
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Sample ID: MB-56146</td> <td style="width: 20%;">SampType: MBLK</td> <td style="width: 30%;">TestCode: 1664_HEM_W Units: mg/L</td> <td style="width: 20%;">Prep Date: 2/5/2016</td> <td style="width: 10%;">RunNo: 105724</td> </tr> <tr> <td>Client ID: PBW</td> <td>Batch ID: 56146</td> <td>TestNo: EPA 1664_H</td> <td>Analysis Date: 2/5/2016</td> <td>SeqNo: 2223228</td> </tr> </table> </div>												Sample ID: MB-56146	SampType: MBLK	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724	Client ID: PBW	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223228
Sample ID: MB-56146	SampType: MBLK	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724																	
Client ID: PBW	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223228																	
Oil & Grease	ND	4.0																			
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Sample ID: LCS-56146</td> <td style="width: 20%;">SampType: LCS</td> <td style="width: 30%;">TestCode: 1664_HEM_W Units: mg/L</td> <td style="width: 20%;">Prep Date: 2/5/2016</td> <td style="width: 10%;">RunNo: 105724</td> </tr> <tr> <td>Client ID: LCSSW</td> <td>Batch ID: 56146</td> <td>TestNo: EPA 1664_H</td> <td>Analysis Date: 2/5/2016</td> <td>SeqNo: 2223229</td> </tr> </table> </div>												Sample ID: LCS-56146	SampType: LCS	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724	Client ID: LCSSW	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223229
Sample ID: LCS-56146	SampType: LCS	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724																	
Client ID: LCSSW	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223229																	
Oil & Grease	32.200	4.0	40.00	0	80.5	78	114														
<div style="border: 1px solid black; padding: 5px;"> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Sample ID: LCSD-56146</td> <td style="width: 20%;">SampType: LCSD</td> <td style="width: 30%;">TestCode: 1664_HEM_W Units: mg/L</td> <td style="width: 20%;">Prep Date: 2/5/2016</td> <td style="width: 10%;">RunNo: 105724</td> </tr> <tr> <td>Client ID: LCSS02</td> <td>Batch ID: 56146</td> <td>TestNo: EPA 1664_H</td> <td>Analysis Date: 2/5/2016</td> <td>SeqNo: 2223230</td> </tr> </table> </div>												Sample ID: LCSD-56146	SampType: LCSD	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724	Client ID: LCSS02	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223230
Sample ID: LCSD-56146	SampType: LCSD	TestCode: 1664_HEM_W Units: mg/L	Prep Date: 2/5/2016	RunNo: 105724																	
Client ID: LCSS02	Batch ID: 56146	TestNo: EPA 1664_H	Analysis Date: 2/5/2016	SeqNo: 2223230																	
Oil & Grease	32.400	4.0	40.00	0	81.0	78	114	32.20	0.619	18											

Qualifiers:

- | | | |
|--|--|--|
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CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID: MB-56104	SampType: MBLK	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105704						
Client ID: PBW	Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2222065						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID: LCS-56104	SampType: LCS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105704						
Client ID: LCSW	Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2222066						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.620	0.50	10.00	0	96.2	85	115				

Sample ID: N018642-001H-MS	SampType: MS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105704						
Client ID: ZZZZZ	Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2222070						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.193	0.50	10.00	0.1393	90.5	75	125				

Sample ID: N018642-001H-MSD	SampType: MSD	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 2/3/2016	RunNo: 105704						
Client ID: ZZZZZ	Batch ID: 56104	TestNo: EPA 200.8		Analysis Date: 2/5/2016	SeqNo: 2222071						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	9.312	0.50	10.00	0.1393	91.7	75	125	9.193	1.28	20	

Qualifiers:

- | | | |
|--|--|--|
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 Work Order: N018642
 Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: MB-56104		SampType: MBLK		TestCode: 200.8_W_SFPP Units: µg/L		Prep Date: 2/3/2016		RunNo: 105704			
Client ID: PBW		Batch ID: 56104		TestNo: EPA 200.8		Analysis Date: 2/5/2016		SeqNo: 2222159			
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									
Thallium	ND	0.50									
Zinc	ND	10									

Sample ID: LCS-56104		SampType: LCS		TestCode: 200.8_W_SFPP Units: µg/L		Prep Date: 2/3/2016		RunNo: 105704			
Client ID: LCSW		Batch ID: 56104		TestNo: EPA 200.8		Analysis Date: 2/5/2016		SeqNo: 2222160			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.101	0.50	10.00	0	101	85	115				
Lead	9.753	0.50	10.00	0	97.5	85	115				
Thallium	10.909	0.50	10.00	0	109	85	115				
Zinc	95.888	10	100.0	0	95.9	85	115				

Sample ID: N018642-001H-MS		SampType: MS		TestCode: 200.8_W_SFPP Units: µg/L		Prep Date: 2/3/2016		RunNo: 105704			
Client ID: ZZZZZ		Batch ID: 56104		TestNo: EPA 200.8		Analysis Date: 2/5/2016		SeqNo: 2222164			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.857	0.50	10.00	0	78.6	75	125				
Lead	10.061	0.50	10.00	0	101	75	125				
Thallium	9.771	0.50	10.00	0.1351	96.4	75	125				
Zinc	85.268	10	100.0	1.797	83.5	75	125				

Sample ID: N018642-001H-MSD		SampType: MSD		TestCode: 200.8_W_SFPP Units: µg/L		Prep Date: 2/3/2016		RunNo: 105704			
Client ID: ZZZZZ		Batch ID: 56104		TestNo: EPA 200.8		Analysis Date: 2/5/2016		SeqNo: 2222165			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.866	0.50	10.00	0	78.7	75	125	7.857	0.105	20	
Lead	10.066	0.50	10.00	0	101	75	125	10.06	0.0489	20	

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
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CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: N018642-001H-MSD		SampType: MSD		TestCode: 200.8_W_SFPP Units: µg/L			Prep Date: 2/3/2016		RunNo: 105704		
Client ID: ZZZZZZ		Batch ID: 56104		TestNo: EPA 200.8			Analysis Date: 2/5/2016		SeqNo: 2222165		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	9.737	0.50	10.00	0.1351	96.0	75	125	9.771	0.349	20	
Zinc	85.211	10	100.0	1.797	83.4	75	125	85.27	0.0667	20	

Qualifiers:

- | | | |
|--|--|--|
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ANALYTICAL QC SUMMARY REPORT

TestCode: 2130_W

Sample ID: MB-R105648	SampType: MBLK	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 105648						
Client ID: PBW	Batch ID: R105648	TestNo: SM 2130B		Analysis Date: 2/3/2016	SeqNo: 2217471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	ND	0.10									
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Sample ID: N018642-001E DUP	SampType: DUP	TestCode: 2130_W	Units: NTU	Prep Date:	RunNo: 105648						
Client ID: ZZZZZZ	Batch ID: R105648	TestNo: SM 2130B		Analysis Date: 2/3/2016	SeqNo: 2217473						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Turbidity	0.340	0.10				0.3500	2.90	30			
-----------	-------	------	--	--	--	--------	------	----	--	--	--

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID: MB-56110	SampType: MBLK	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 2/4/2016	RunNo: 105725						
Client ID: PBW	Batch ID: 56110	TestNo: EPA 245.1		Analysis Date: 2/5/2016	SeqNo: 2223338						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.050									

Sample ID: LCS-56110	SampType: LCS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 2/4/2016	RunNo: 105725						
Client ID: LCBW	Batch ID: 56110	TestNo: EPA 245.1		Analysis Date: 2/5/2016	SeqNo: 2223339						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.622	0.050	2.500	0	105	85	115				

Sample ID: N018642-001H-MS	SampType: MS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 2/4/2016	RunNo: 105725						
Client ID: ZZZZZZ	Batch ID: 56110	TestNo: EPA 245.1		Analysis Date: 2/5/2016	SeqNo: 2223340						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.497	0.050	2.500	0.02315	99.0	75	125				

Sample ID: N018642-001H-MSD	SampType: MSD	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 2/4/2016	RunNo: 105725						
Client ID: ZZZZZZ	Batch ID: 56110	TestNo: EPA 245.1		Analysis Date: 2/5/2016	SeqNo: 2223341						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	2.479	0.050	2.500	0.02315	98.2	75	125	2.497	0.722	20	

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID: MB-56111	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 2/4/2016	RunNo: 105707						
Client ID: PBW	Batch ID: 56111	TestNo: EPA 8015B EPA 3510C		Analysis Date: 2/5/2016	SeqNo: 2221678						
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	69.806		80.00		87.3	26	152				
Surr: p-Terphenyl	73.785		80.00		92.2	57	132				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID: MB-R105707	SampType: MBLK	TestCode: 8015_W_SFP	Units: ug/L	Prep Date:	RunNo: 105707						
Client ID: PBW	Batch ID: R105707	TestNo: EPA 8015B		Analysis Date: 2/5/2016	SeqNo: 2231833						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: E160208LCS2	SampType: LCS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105748						
Client ID: LCSW	Batch ID: E16VW012	TestNo: EPA 8015B		Analysis Date: 2/8/2016	SeqNo: 2225105						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	894.000	50	1000	0	89.4	67	136				
Surr: Chlorobenzene - d5	50555.000		50000		101	74	138				

Sample ID: E160208MB2	SampType: MBLK	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105748						
Client ID: PBW	Batch ID: E16VW012	TestNo: EPA 8015B		Analysis Date: 2/8/2016	SeqNo: 2225106						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	36.000	50									J
Surr: Chlorobenzene - d5	56680.000		50000		113	74	138				

Sample ID: N018642-001BMS	SampType: MS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105748						
Client ID: ZZZZZ	Batch ID: E16VW012	TestNo: EPA 8015B		Analysis Date: 2/8/2016	SeqNo: 2225110						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	892.000	50	1000	30.00	86.2	67	136				
Surr: Chlorobenzene - d5	50243.000		50000		100	74	138				

Sample ID: N018642-001BMSD	SampType: MSD	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105748						
Client ID: ZZZZZ	Batch ID: E16VW012	TestNo: EPA 8015B		Analysis Date: 2/8/2016	SeqNo: 2225111						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	826.000	50	1000	30.00	79.6	67	136	892.0	7.68	30	
Surr: Chlorobenzene - d5	48040.000		50000		96.1	74	138		0	0	

Sample ID: E160212LCS2	SampType: LCS	TestCode: 8015GAS_WS	Units: ug/L	Prep Date:	RunNo: 105852						
Client ID: LCSW	Batch ID: E16VW012	TestNo: EPA 8015B		Analysis Date: 2/12/2016	SeqNo: 2231085						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	833.000	50	1000	0	83.3	67	136				

Qualifiers:

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



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NEVADA
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 P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID: E160212LCS2	SampType: LCS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105852							
Client ID: LCSW	Batch ID: E16VW012	TestNo: EPA 8015B	Analysis Date: 2/12/2016	SeqNo: 2231085							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Chlorobenzene - d5	46161.000		50000		92.3	74	138				

Sample ID: E160212MB2	SampType: MBLK	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105852							
Client ID: PBW	Batch ID: E16VW012	TestNo: EPA 8015B	Analysis Date: 2/12/2016	SeqNo: 2231086							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	32.000	50									J
Surr: Chlorobenzene - d5	53319.000		50000		107	74	138				

Sample ID: N018735-003AMS	SampType: MS	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105852							
Client ID: ZZZZZ	Batch ID: E16VW012	TestNo: EPA 8015B	Analysis Date: 2/12/2016	SeqNo: 2231091							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	837.000	50	1000	37.00	80.0	67	136				
Surr: Chlorobenzene - d5	48392.000		50000		96.8	74	138				

Sample ID: N018735-003AMSD	SampType: MSD	TestCode: 8015GAS_WS Units: ug/L	Prep Date:	RunNo: 105852							
Client ID: ZZZZZ	Batch ID: E16VW012	TestNo: EPA 8015B	Analysis Date: 2/12/2016	SeqNo: 2231092							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	858.000	50	1000	37.00	82.1	67	136	837.0	2.48	30	
Surr: Chlorobenzene - d5	50478.000		50000		101	74	138		0	0	

Qualifiers:

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



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
 Work Order: N018642
 Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160203LCS		SampType: LCS		TestCode: 8260_WP_SF			Units: ug/L		Prep Date:		RunNo: 105653	
Client ID: LCSW		Batch ID: P16VW024		TestNo: EPA 8260B			Analysis Date: 2/3/2016		SeqNo: 2217801			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1-Dichloroethane	21.140	0.50	20.00	0	106	69	133					
1,2-Dichloroethane	20.420	0.50	20.00	0	102	69	132					
2-Butanone	237.680	10	200.0	0	119	49	136					
Benzene	20.930	1.0	20.00	0	105	81	122					
Di-isopropyl ether	21.690	1.0	20.00	0	108	70	130					
Ethylbenzene	20.330	1.0	20.00	0	102	73	127					
m,p-Xylene	42.150	1.0	40.00	0	105	76	128					
MTBE	20.990	1.0	20.00	0	105	65	123					
o-Xylene	21.430	1.0	20.00	0	107	80	121					
Tert-amyl methyl ether	21.140	1.0	20.00	0	106	70	130					
Tert-Butanol	103.120	5.0	100.0	0	103	70	130					
Toluene	21.140	2.0	20.00	0	106	77	122					
Xylenes, Total	63.580	2.0	60.00	0	106	75	125					
Surr: 1,2-Dichloroethane-d4	26.510		25.00		106	72	119					
Surr: 4-Bromofluorobenzene	26.800		25.00		107	76	119					
Surr: Dibromofluoromethane	26.470		25.00		106	85	115					
Surr: Toluene-d8	26.390		25.00		106	81	120					

Sample ID: P160203LCSD		SampType: LCSD		TestCode: 8260_WP_SF			Units: ug/L		Prep Date:		RunNo: 105653	
Client ID: LCSS02		Batch ID: P16VW024		TestNo: EPA 8260B			Analysis Date: 2/3/2016		SeqNo: 2217802			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
1,1-Dichloroethane	21.460	0.50	20.00	0	107	69	133	21.14	1.50	20		
1,2-Dichloroethane	21.390	0.50	20.00	0	107	69	132	20.42	4.64	20		
2-Butanone	224.210	10	200.0	0	112	49	136	237.7	5.83	20		
Benzene	21.310	1.0	20.00	0	107	81	122	20.93	1.80	20		
Di-isopropyl ether	22.450	1.0	20.00	0	112	70	130	21.69	3.44	20		
Ethylbenzene	20.600	1.0	20.00	0	103	73	127	20.33	1.32	20		
m,p-Xylene	42.830	1.0	40.00	0	107	76	128	42.15	1.60	20		
MTBE	21.840	1.0	20.00	0	109	65	123	20.99	3.97	20		

Qualifiers:

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



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CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160203LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 105653						
Client ID: LCSS02	Batch ID: P16VW024	TestNo: EPA 8260B	Analysis Date: 2/3/2016	SeqNo: 2217802							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	21.540	1.0	20.00	0	108	80	121	21.43	0.512	20	
Tert-amyl methyl ether	21.910	1.0	20.00	0	110	70	130	21.14	3.58	20	
Tert-Butanol	116.680	5.0	100.0	0	117	70	130	103.1	12.3	20	
Toluene	21.170	2.0	20.00	0	106	77	122	21.14	0.142	20	
Xylenes, Total	64.370	2.0	60.00	0	107	75	125	63.58	1.23	20	
Surr: 1,2-Dichloroethane-d4	27.020		25.00		108	72	119		0		
Surr: 4-Bromofluorobenzene	27.100		25.00		108	76	119		0		
Surr: Dibromofluoromethane	26.770		25.00		107	85	115		0		
Surr: Toluene-d8	26.430		25.00		106	81	120		0		

Sample ID: P160203MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 105653						
Client ID: PBW	Batch ID: P16VW024	TestNo: EPA 8260B	Analysis Date: 2/3/2016	SeqNo: 2217803							
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									
2-Butanone	ND	10									
Benzene	ND	1.0									
Di-isopropyl ether	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	0.030	1.0									J
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-amyl methyl ether	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	27.940		25.00		112	72	119				
Surr: 4-Bromofluorobenzene	25.700		25.00		103	76	119				
Surr: Dibromofluoromethane	27.680		25.00		111	85	115				

Qualifiers:

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



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CLIENT: CH2MHill
Work Order: N018642
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160203MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 105653						
Client ID: PBW	Batch ID: P16VW024	TestNo: EPA 8260B		Analysis Date: 2/3/2016	SeqNo: 2217803						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	25.680		25.00		103	81	120				

Qualifiers:

- | | | |
|--|--|--|
| B Analyte detected in the associated Method Blank | E Value above quantitation range | H Holding times for preparation or analysis exceeded |
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 Marlon Cartin (marlon@atl-labs.com)

CHAIN OF CUSTODY RECORD

DATE: 2/2/16
 PAGE: 1 OF 1

T: 0.90C IR #2

LABORATORY CLIENT: Kinder Morgan Energy Partners, Attn: Steve Defibaugh				CLIENT PROJECT NAME / NUMBER: SFPP - Norwalk Site												P.O. NO.:						
ADDRESS: 1100 Town & Country Road				PROJECT CONTACT: James Dye												QUOTE NO.:						
CITY: Orange, CA 92868				SAMPLER(S): (SIGNATURE) 												LAB USE ONLY <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>						
TEL: 714-560-4802		FAX: 714-560-4601		E-MAIL: james.dye@kindermorgan.com																		
TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input checked="" type="checkbox"/> 48HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS				REQUESTED ANALYSIS																		
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> RWQCB REPORTING <input type="checkbox"/> ARCHIVE SAMPLES UNTIL <u> </u> / <u> </u> / <u> </u>																						
SPECIAL INSTRUCTIONS Report to D. Jablonski/CH2M HILL, cc: KMEP Direct Bill KMEP/SFPP - Steve Defibaugh-ref. AFE# 81195 "J" flags required/Use lowest possible detection limit - all methods.																						
LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING		MAT- RIX	NO. OF CONT.	Oil & Grease (1664)	TPH-g, TPH-d, and TPH-oil (8015B)	Settleable Solids (SM2540F)	Total Suspended Solids (SM2540D)	Phenol (420.1)	BTEX, 1,1-DCA, 1,2-DCA (8260B)	MTBE and TBA, (8260B) 48HR TAT	Cu, Pb, Se, Ti, and Zn (200.8); 48 Hr TAT	Hg (245.1); 48 Hr TAT	Cr VI (7199)	Ammonia Nitrogen (as N) (SM-4500 NH3C)	DIPE, TAME, and MEK (8260B)	MBA s (SM 5540C)	Turbidity (SM2130B)	Comments	
			DATE	TIME																		
	EFF-02-02	Effluent	2/2/16	1345	WW		X	X	X	X	X	X	X	X	X	X	X	X	X	X	NO10642-1	
Relinquished by: (Signature) 						Received by: (Signature) 						Date: 2-2-16		Time: 16:36								
Relinquished by: (Signature) 						Received by: (Signature) 						Date: 2/3/16		Time: 8:25 am								
Relinquished by: (Signature) 						Received by: (Signature) 						Date:		Time:								

Revised: 08/23/12

ASSET Laboratories

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

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

Cooler Received/Opened On: 2/3/2016 Workorder: N018642
 Rep sample Temp (Deg C): 0.9 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 7954 Packing Material Used: Bubble Wrap
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

- | | | | |
|---|---|-----------------------------|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 16. Were there Non-Conformance issues at login?
Was Client notified? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: MBC *MBC* 2/3/2016

Reviewed By: *gsg* 02/05/16

ASSET Laboratories

WORK ORDER Summary

03-Feb-16

WorkOrder: N018642

Client ID: CH2HI03

Project: SFPP - Norwalk Site

QC Level: RTNE

Date Received: 2/3/2016

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N018642-001A	EFF-02-02	2/2/2016 1:45:00 PM	2/10/2016	Wastewater		Oil and Grease Sample Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016		EPA 1664_HEM	Hexane Extractable Material (HEM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001B			2/10/2016		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N018642-001C			2/10/2016		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001D			2/10/2016		SM2540F	SETTLEABLE MATTER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016			Setteable Matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001E			2/10/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016			Total Suspended Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/10/2016		SM 2130B	TURBIDITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001F			2/10/2016		EPA 420.1	PHENOLICS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N018642-001G			2/5/2016		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N018642-001H			2/5/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/5/2016		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/5/2016		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/5/2016		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			2/5/2016			MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001I			2/10/2016		EPA 7199	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N018642-001J			2/10/2016		SM4500-NH3C	AMMONIA-N	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB

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WORK ORDER Summary

03-Feb-16

WorkOrder: N018642

Client ID: CH2HI03

Project: SFPP - Norwalk Site

QC Level: RTNE

Date Received: 2/3/2016

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N018642-001K	EFF-02-02	2/2/2016 1:45:00 PM	2/10/2016	Wastewater	SM 5540 C	SURFACTANTS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N018642-002A	FOLDER		2/5/2016		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

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

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: James Dye

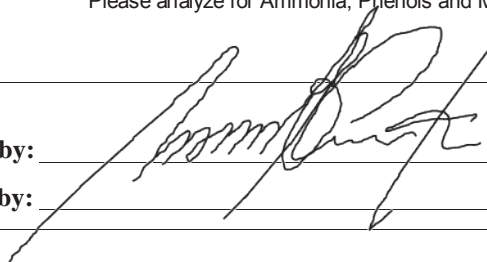
03-Feb-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests		
				EPA 420.1	SM 5540 C	SM4500-NH3C
N018642-001F / EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	32OZA	1		
N018642-001J / EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	16OZP			1
N018642-001K / EFF-02-02	Wastewater	2/2/2016 1:45:00 PM	32OZP		1	

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

Please use PO#: N18642A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT

Please analyze for Ammonia, Phenols and MBAS.

Relinquished by: 	Date/Time	Received by: _____	Date/Time
	2/2/15 @ 15:10		Received by: _____



800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Tracking #: 530787954

CPS



Ship To
ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

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

C89102A

Delivery Instructions:
HOLD FOR PICK UP
Signature Type: REQUIRED



47809109

Print Date: 2/2/2016 5:32 PM

Package 1 of 2

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.

0.9⁰c
JR# 2



Date of Report: 02/12/2016

Molky Brar

ASSET Laboratories

3151-3153 W. Post Rd

Las Vegas, NV 89118

Client Project: SFPP-Norwalk Site

BCL Project: Cerritos

BCL Work Order: 1603263

Invoice ID: B226566

Enclosed are the results of analyses for samples received by the laboratory on 2/3/2016. 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

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1603263-01 - EFF-02-02

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CHAIN-OF-CUSTODY RECORD

Page 1 of 1



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

10-03263
QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler: James Dye

03-Feb-16

Table with columns: Sample ID, Matrix, Date Collected, Bottle Type, EPA 420.1, Requested Tests. Rows include waste water samples with dates 2/2/2016 and test codes like SM 5540 C and SM4500-NH3C.

General Comments:

Please email sample receipt acknowledgement to the PM.
Please use PO#: N18642A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.N@assetlaboratories.com by: Normal TAT
Please analyze for Ammonia, Phenols and MBAS.

Signature and Date/Time fields for Relinquished by and Received by.

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Contact Us: Nevada: 3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691 California: 1060 Artesia Blvd., Ste. C, Cerritos, CA 90703 P: 562.219.7435 F: 562.219.7436 www.assetlaboratories.com

RUSKIN

CHAIN OF CUSTODY RECORD

Page 1 of 1



Client: **Asset Labs**
 Report to: **Asset Labs**
 Company: **Asset Labs**
 Address: **10101 S. 200th St., Kent, WA 98032**
 Email: **asset@assetlabs.com**
 Phone: **206.835.1234**
 Address: **10101 S. 200th St., Kent, WA 98032**
 Fax: **206.835.1234**
 Submitted By: **Molly Brar**
 Title: **Analyst**
 Signature: **[Signature]**
 Date: **2/2/16**

I hereby authorize ASSET Labs to perform the tests indicated below:
 Project Name: **SFP - Norwalk site**
 Project Number: **16-03263**

Signature: **[Signature]**
 Date: **2/2/16**

Sampled By: **[Signature]**
 Date: **2/2/16**

Matrix:
 Ground Sediment
 Poreable Soil
 NPDES Other Solid
 Surface

Matrix Description: **MBAs (SM 5540C) Phenol (420.1) XXX**

Signature and Printed Name: **[Signature] P. Jimenez**
 Date / Time: **2-2-16 15:10**

Signature and Printed Name: **[Signature]**
 Date / Time: **2-2-16 15:10**

Signature and Printed Name: **[Signature]**
 Date / Time: **2-2-16 15:10**

Item No.	Laboratory Work Order No.	Sample ID/Location	Date	Time	Water	Solid	Others	Remarks
1	EFF-02-02		2/2/16	1345	WW			
2								
3								
4								
5								
6								
7								
8								
9								
10								

Turn Around Time (TAT): **5 Day TAT**
 Special Instruction: **Reg**

Container Type: **V = VOA, P = Pint, T = Tub, B = Triliter, G = Glass, J = Jar, W = Water, M = Metal, C = Can**

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BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 16-03263

SHIPPING INFORMATION: Fed Ex, UPS, Ontrac, Hand Delivery, BC Lab Field Service, Other (Specify) GSO. SHIPPING CONTAINER: Ice Chest, None, Box, Other (Specify). FREE LIQUID: YES, NO.

Refrigerant: Ice, Blue Ice, None, Other. Comments:

Custody Seals: Ice Chest, Containers, None. Intact? Yes, No.

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

COC Received: YES, NO. Emissivity: 0.97. Container: PE. Thermometer ID: 208. Date/Time: 2-3-16. Analyst Init: AD 10:25. Temperature: (A) 2.0 °C, (C) 1.5 °C.

Table with columns: SAMPLE CONTAINERS, SAMPLE NUMBERS (1-10). Rows include: QT PE UNPRES, INORGANIC CHEMICAL METALS, PT CYANIDE, PT NITROGEN FORMS, PT TOTAL SULFIDE, PT TOTAL ORGANIC CARBON, PT CHEMICAL OXYGEN DEMAND, PIA PHENOLICS, QT EPA 1664, PT ODOR, RADIOLOGICAL, BACTERIOLOGICAL, QT EPA 508/608/8080, QT EPA 515.1/8150, QT EPA 525, QT EPA 525 TRAVEL BLANK, 40ml EPA 547, 40ml EPA 531.1, 8oz EPA 548, QT EPA 549, QT EPA 8015M, QT EPA 8270, 8oz / 16oz / 32oz AMBER, 8oz / 16oz / 32oz JAR, SOIL SLEEVE, PCB VIAL, PLASTIC BAG, TEDLAR BAG, FERROUS IRON, ENCORE, SMART KIT, SUMMA CANISTER.

Comments: Sample Numbering Completed By: [Signature] Date/Time: 2-3-16 [Signature] Rev 20 07/24/2015 A = Actual / C = Corrected

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

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1603263-01	COC Number:	---	Receive Date:	02/03/2016 10:25
	Project Number:	---	Sampling Date:	02/02/2016 13:45
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	EFF-02-02	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water

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

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

BCL Sample ID: 1603263-01	Client Sample Name: EFF-02-02, 2/2/2016 1:45:00PM, Client
----------------------------------	--

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
MBAS	0.069	mg/L	0.10	0.015	EPA-425.1	ND	J	1
Total Phenolics	ND	ug/L	50	10	EPA-420.4	ND		2
Ammonia as NH3	ND	mg/L	0.13	0.030	EPA-350.1	ND		3

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-425.1	02/03/16	02/03/16 10:00	JMN	MANUAL	1	BZB0224
2	EPA-420.4	02/10/16	02/10/16 13:10	TDC	KONE-1	1	BZB1051
3	EPA-350.1	02/08/16	02/09/16 09:36	JMH	SC-1	1	BZB0797

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

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZB0224						
MBAS	BZB0224-BLK1	ND	mg/L	0.10	0.015	
QC Batch ID: BZB0797						
Ammonia as NH3	BZB0797-BLK1	ND	mg/L	0.13	0.030	
QC Batch ID: BZB1051						
Total Phenolics	BZB1051-BLK1	ND	ug/L	50	10	

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Las Vegas, NV 89118

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZB0224										
MBAS	BZB0224-BS1	LCS	0.19410	0.20000	mg/L	97.0		85 - 115		
QC Batch ID: BZB0797										
Ammonia as NH3	BZB0797-BS1	LCS	1.1556	1.2160	mg/L	95.0		90 - 110		
QC Batch ID: BZB1051										
Total Phenolics	BZB1051-BS1	LCS	491.91	500.00	ug/L	98.4		85 - 115		

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

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZB0224		Used client sample: N								
MBAS	DUP	1603065-01	0.060000	0.060000		mg/L	0		20	J
	MS	1603065-01	0.060000	0.45700	0.40000	mg/L		99.2	80 - 120	
	MSD	1603065-01	0.060000	0.46560	0.40000	mg/L	1.9	101	20	80 - 120
QC Batch ID: BZB0797		Used client sample: Y - Description: EFF-02-02, 02/02/2016 13:45								
Ammonia as NH3	DUP	1603263-01	ND	ND		mg/L			10	
	MS	1603263-01	ND	1.3288	1.3511	mg/L		98.4	90 - 110	
	MSD	1603263-01	ND	1.2976	1.3511	mg/L	2.4	96.0	10	90 - 110
QC Batch ID: BZB1051		Used client sample: Y - Description: EFF-02-02, 02/02/2016 13:45								
Total Phenolics	DUP	1603263-01	ND	ND		ug/L			20	
	MS	1603263-01	ND	484.92	500.00	ug/L		97.0	80 - 120	
	MSD	1603263-01	ND	502.38	500.00	ug/L	3.5	100	20	80 - 120

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

Reported: 02/12/2016 9:54
Project: Cerritos
Project Number: SFPP-Norwalk Site
Project Manager: Molky Brar

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit

April 08, 2016

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

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

TEL:
FAX:

Workorder No.: N019260

RE: SFPP - Norwalk Site

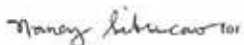
Attention: Dan Jablonski

Enclosed are the results for sample(s) received on March 30, 2016 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,



Glen Gesmundo
QA Manager

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.



ASSET LABORATORIES
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11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N019260

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.

Subcontracted Analyses:

Phenols was subcontracted to BC Labs- Bakersfield,CA.

Analytical Comments for EPA 200.8:

Matrix Spike (MS) is outside recovery criteria for Copper on QC sample N019260-001H-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.



CLIENT: CH2MHill
Project: SFPP - Norwalk Site
Lab Order: N019260
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N019260-001A	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001B	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001C	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001D	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001E	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001F	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001H	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001I	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016
N019260-001J	EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	3/30/2016	4/8/2016



ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 08-Apr-16

CLIENT: CH2MHill
Lab Order: N019260
Project: SFPP - Norwalk Site
Lab ID: N019260-001

Client Sample ID: EFF-03-29
Collection Date: 3/29/2016 1:10:00 PM
Matrix: WASTEWATER

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

TOTAL NON-FILTERABLE RESIDUE

SM2540D

RunID: WETCHEM_160331B	QC Batch: 56819				PrepDate: 3/31/2016		Analyst: LR
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	3/31/2016 08:45 AM

SETTLABLE MATTER

SM2540F

RunID: WETCHEM_160330D	QC Batch: 56813				PrepDate: 3/30/2016		Analyst: QBM
Settleable Matter	ND	0.088	0.088		ml/L	1	3/30/2016

HEXANE EXTRACTABLE MATERIAL (HEM)

EPA 1664 _HEM REV B

RunID: WETCHEM_160401A	QC Batch: 56836				PrepDate: 4/1/2016		Analyst: LR
Oil & Grease	ND	0.71	4.1		mg/L	1	4/1/2016 08:48 AM

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS5_160330A	QC Batch: P16VW067				PrepDate:		Analyst: QBM
1,1-Dichloroethane	ND	0.022	0.50		ug/L	1	3/30/2016 12:19 PM
1,2-Dichloroethane	ND	0.064	0.50		ug/L	1	3/30/2016 12:19 PM
Benzene	ND	0.036	1.0		ug/L	1	3/30/2016 12:19 PM
Ethylbenzene	ND	0.036	1.0		ug/L	1	3/30/2016 12:19 PM
m,p-Xylene	ND	0.024	1.0		ug/L	1	3/30/2016 12:19 PM
MTBE	ND	0.062	1.0		ug/L	1	3/30/2016 12:19 PM
o-Xylene	ND	0.042	1.0		ug/L	1	3/30/2016 12:19 PM
Tert-Butanol	ND	0.30	5.0		ug/L	1	3/30/2016 12:19 PM
Toluene	ND	0.042	2.0		ug/L	1	3/30/2016 12:19 PM
Xylenes, Total	ND	1.5	2.0		ug/L	1	3/30/2016 12:19 PM
Surr: 1,2-Dichloroethane-d4	103	0	72-119		%REC	1	3/30/2016 12:19 PM
Surr: 4-Bromofluorobenzene	103	0	76-119		%REC	1	3/30/2016 12:19 PM
Surr: Dibromofluoromethane	104	0	85-115		%REC	1	3/30/2016 12:19 PM
Surr: Toluene-d8	103	0	81-120		%REC	1	3/30/2016 12:19 PM

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: GC1_160404B	QC Batch: 56848				PrepDate: 4/4/2016		Analyst: MDM
TPH-Diesel (C13-C22)	ND	15	25		ug/L	1	4/4/2016 06:40 PM
TPH-Oil (C23-C36)	ND	14	25		ug/L	1	4/4/2016 06:40 PM
Surr: Octacosane	141	0	26-152		%REC	1	4/4/2016 06:40 PM

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



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P: 702.307.2659 F: 702.307.2691

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ASSET Laboratories

ANALYTICAL RESULTS

Print Date: 08-Apr-16

CLIENT: CH2MHill
Lab Order: N019260
Project: SFPP - Norwalk Site
Lab ID: N019260-001

Client Sample ID: EFF-03-29
Collection Date: 3/29/2016 1:10:00 PM
Matrix: WASTEWATER

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

TPH EXTRACTABLE BY GC/FID

EPA 3510C

EPA 8015B

RunID: GC1_160404B	QC Batch: 56848			PrepDate	4/4/2016		Analyst: MDM
Surr: p-Terphenyl	127	0	57-132	%REC	1		4/4/2016 06:40 PM

GASOLINE RANGE ORGANICS BY GC/FID

EPA 8015B

RunID: GC4_160330A	QC Batch: E16VW023			PrepDate			Analyst: QBM
TPH-Gasoline (C4-C12)	42	16	50	J ug/L	1		3/30/2016 10:45 AM
Surr: Chlorobenzene - d5	101	0	74-138	%REC	1		3/30/2016 10:45 AM

HEXAVALENT CHROMIUM BY IC

EPA 7199

RunID: IC7_160330A	QC Batch: R106675			PrepDate			Analyst: JJS
Hexavalent Chromium	ND	0.015	0.20	µg/L	1		3/30/2016 11:39 AM

MERCURY BY COLD VAPOR TECHNIQUE

EPA 245.1

RunID: AA1_160330A	QC Batch: 56808			PrepDate	3/30/2016		Analyst: AM
Mercury	ND	0.018	0.050	µg/L	1		3/30/2016 01:30 PM

TOTAL METALS BY COLLISION/REACTION CELL ICPMS

EPA 200.8

RunID: ICP7_160330A	QC Batch: 56811			PrepDate	3/30/2016		Analyst: CEI
Selenium	ND	0.070	0.50	µg/L	1		3/30/2016 02:15 PM

TOTAL METALS BY ICPMS

EPA 200.8

RunID: ICP7_160330A	QC Batch: 56811			PrepDate	3/30/2016		Analyst: CEI
Copper	ND	0.26	0.50	µg/L	1		3/30/2016 02:15 PM
Lead	ND	0.053	0.50	µg/L	1		3/30/2016 02:15 PM
Thallium	0.20	0.034	0.50	J µg/L	1		3/30/2016 02:15 PM
Zinc	ND	0.039	10	µg/L	1		3/30/2016 02:15 PM

TOTAL TPH

EPA 8015B

RunID: GC1_160404B	QC Batch: R106750			PrepDate			Analyst: MDM
Total TPH	42	16	50	J ug/L	1		4/4/2016

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



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CLIENT: CH2MHill
Work Order: N019260
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo	Client ID	Batch ID	TestNo	Analysis Date	SeqNo	Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
MB-56819	MBLK	160.2_2540D	mg/L	3/31/2016	106699	PBW	56819	SM2540D	3/31/2016	2283740	Suspended Solids (Residue, Non-Filter	ND	10										
LCS-56819	LCS	160.2_2540D	mg/L	3/31/2016	106699	LCSW	56819	SM2540D	3/31/2016	2283741	Suspended Solids (Residue, Non-Filter	947.000	10	1000	0	94.7	80	120					
N019260-001IDUP	DUP	160.2_2540D	mg/L	3/31/2016	106699	ZZZZZ	56819	SM2540D	3/31/2016	2283743	Suspended Solids (Residue, Non-Filter	ND	10						0	0		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
 - E Value above quantitation range
 - ND Not Detected at the Reporting Limit
 - DO Surrogate Diluted Out
 - H Holding times for preparation or analysis exceeded
 - R RPD outside accepted recovery limits
- Calculations are based on raw values



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Work Order: N019260
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.5_2540F_W

Sample ID MB-56813	SampType: MBLK	TestCode: 160.5_2540F_ Units: ml/L	Prep Date: 3/30/2016	RunNo: 106719							
Client ID: PBW	Batch ID: 56813	TestNo: SM2540F	Analysis Date: 3/30/2016	SeqNo: 2283053							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Settleable Matter	ND	0.10									

Qualifiers:

- | | | |
|--|--|--|
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



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Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID MB-56836	SampType: MBLK	TestCode: 1664_HEM_	Units: mg/L	Prep Date: 4/1/2016	RunNo: 106717						
Client ID: PBW	Batch ID: 56836	TestNo: EPA 1664_H		Analysis Date: 4/1/2016	SeqNo: 2282989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease	ND	4.0									
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Sample ID LCS-56836	SampType: LCS	TestCode: 1664_HEM_	Units: mg/L	Prep Date: 4/1/2016	RunNo: 106717						
Client ID: LCSW	Batch ID: 56836	TestNo: EPA 1664_H		Analysis Date: 4/1/2016	SeqNo: 2282990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease	33.300	4.0	40.00	0	83.3	78	114				
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Sample ID N019260-001AMS	SampType: MS	TestCode: 1664_HEM_	Units: mg/L	Prep Date: 4/1/2016	RunNo: 106717						
Client ID: ZZZZZ	Batch ID: 56836	TestNo: EPA 1664_H		Analysis Date: 4/1/2016	SeqNo: 2282992						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease	33.571	4.1	40.82	0	82.3	78	114				
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Sample ID N019260-001AMSD	SampType: MSD	TestCode: 1664_HEM_	Units: mg/L	Prep Date: 4/1/2016	RunNo: 106717						
Client ID: ZZZZZ	Batch ID: 56836	TestNo: EPA 1664_H		Analysis Date: 4/1/2016	SeqNo: 2282993						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Oil & Grease	33.367	4.1	40.82	0	81.8	78	114	33.57	0.610	18	
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Qualifiers:

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



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ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_DRC

Sample ID MB-56811	SampType: MBLK	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: PBW	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2281003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium ND 0.50

Sample ID LCS-56811	SampType: LCS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: LCSW	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2281004						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium 9.768 0.50 10.00 0 97.7 85 115

Sample ID N019260-001H-MS	SampType: MS	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: ZZZZZZ	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2281008						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium 8.434 0.50 10.00 0 84.3 75 125

Sample ID N019260-001H-MSD	SampType: MSD	TestCode: 200.8_W_DR	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: ZZZZZZ	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2281009						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Selenium 8.420 0.50 10.00 0 84.2 75 125 8.434 0.165 20

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID: MB-56811	SampType: MBLK	TestCode: 200.8_W_SF	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: PBW	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2280954						
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									
Thallium	ND	0.50									
Zinc	ND	10									

Sample ID: LCS-56811	SampType: LCS	TestCode: 200.8_W_SF	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: LCSW	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2280955						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	10.162	0.50	10.00	0	102	85	115				
Lead	9.664	0.50	10.00	0	96.6	85	115				
Thallium	10.421	0.50	10.00	0	104	85	115				
Zinc	99.749	10	100.0	0	99.7	85	115				

Sample ID: N019260-001H-MS	SampType: MS	TestCode: 200.8_W_SF	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: ZZZZZZ	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2280959						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.487	0.50	10.00	0	74.9	75	125				S
Lead	10.011	0.50	10.00	0	100	75	125				
Thallium	9.635	0.50	10.00	0.1980	94.4	75	125				
Zinc	80.143	10	100.0	0	80.1	75	125				

Sample ID: N019260-001H-MSD	SampType: MSD	TestCode: 200.8_W_SF	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106689						
Client ID: ZZZZZZ	Batch ID: 56811	TestNo: EPA 200.8		Analysis Date: 3/30/2016	SeqNo: 2280960						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	7.523	0.50	10.00	0	75.2	75	125	7.487	0.485	20	
Lead	9.981	0.50	10.00	0	99.8	75	125	10.01	0.301	20	

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_W_SFPP

Sample ID	N019260-001H-MSD	SampType:	MSD	TestCode:	200.8_W_SF	Units:	µg/L	Prep Date:	3/30/2016	RunNo:	106689		
Client ID:	ZZZZZZ	Batch ID:	56811	TestNo:	EPA 200.8			Analysis Date:	3/30/2016	SeqNo:	2280960		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium		9.598		0.50	10.00	0.1980	94.0	75	125	9.635	0.389	20	
Zinc		80.563		10	100.0	0	80.6	75	125	80.14	0.522	20	

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 245.1_W_LL

Sample ID MB-56808	SampType: MBLK	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106681						
Client ID: PBW	Batch ID: 56808	TestNo: EPA 245.1		Analysis Date: 3/30/2016	SeqNo: 2280047						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury ND 0.050

Sample ID LCS-56808	SampType: LCS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106681						
Client ID: LCSW	Batch ID: 56808	TestNo: EPA 245.1		Analysis Date: 3/30/2016	SeqNo: 2280048						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.664 0.050 2.500 0 107 85 115

Sample ID N019260-001H-MS	SampType: MS	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106681						
Client ID: ZZZZZZ	Batch ID: 56808	TestNo: EPA 245.1		Analysis Date: 3/30/2016	SeqNo: 2280049						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.351 0.050 2.500 0 94.0 75 125

Sample ID N019260-001H-MSD	SampType: MSD	TestCode: 245.1_W_LL	Units: µg/L	Prep Date: 3/30/2016	RunNo: 106681						
Client ID: ZZZZZZ	Batch ID: 56808	TestNo: EPA 245.1		Analysis Date: 3/30/2016	SeqNo: 2280050						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 2.344 0.050 2.500 0 93.7 75 125 2.351 0.311 20

Qualifiers:

- | | | |
|--|--|--|
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ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID MB-R106675	SampType: MBLK	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: PBW	Batch ID: R106675	TestNo: EPA 7199		Analysis Date: 3/30/2016	SeqNo: 2279856						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.047	0.20									J

Sample ID LCS-R106675	SampType: LCS	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: LCSW	Batch ID: R106675	TestNo: EPA 7199		Analysis Date: 3/30/2016	SeqNo: 2279857						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.770	0.20	5.000	0	95.4	90	110				

Sample ID N019260-001REP	SampType: DUP	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: ZZZZZ	Batch ID: R106675	TestNo: EPA 7199		Analysis Date: 3/30/2016	SeqNo: 2279859						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID N019254-001ADUP	SampType: DUP	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: ZZZZZ	Batch ID: R106675	TestNo: EPA 7199		Analysis Date: 3/30/2016	SeqNo: 2279861						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.707	0.20						1.708	0.0820	20	

Sample ID N019254-001AMS	SampType: MS	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: ZZZZZ	Batch ID: R106675	TestNo: EPA 7199		Analysis Date: 3/30/2016	SeqNo: 2279862						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.663	0.20	5.000	1.708	99.1	85	115				

Qualifiers:

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

ANALYTICAL QC SUMMARY REPORT

TestCode: 7199_WPGE

Sample ID N019254-001AMSD	SampType: MSD	TestCode: 7199_WPGE	Units: µg/L	Prep Date:	RunNo: 106675						
Client ID: ZZZZZZ	Batch ID: R106675	TestNo: EPA 7199	Analysis Date: 3/30/2016	SeqNo: 2279863							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.569	0.20	5.000	1.708	97.2	85	115	6.663	1.42	20	

Qualifiers:

- | | | |
|--|--|--|
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_FP_SFPP

Sample ID MB-56848	SampType: MBLK	TestCode: 8015_W_FP_	Units: ug/L	Prep Date: 4/4/2016	RunNo: 106750						
Client ID: PBW	Batch ID: 56848	TestNo: EPA 8015B EPA 3510C		Analysis Date: 4/4/2016	SeqNo: 2285357						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Diesel (C13-C22)	88.749	25									
TPH-Oil (C23-C36)	26.348	25									
Surr: Octacosane	109.397		80.00		137	26	152				
Surr: p-Terphenyl	96.872		80.00		121	57	132				

Qualifiers:

- | | | |
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ANALYTICAL QC SUMMARY REPORT

TestCode: 8015_W_SFPPTOT

Sample ID MB-R106750	SampType: MBLK	TestCode: 8015_W_SFP Units: ug/L	Prep Date:	RunNo: 106750							
Client ID: PBW	Batch ID: R106750	TestNo: EPA 8015B	Analysis Date: 4/4/2016	SeqNo: 2289173							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total TPH	ND	50									

Qualifiers:

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



CALIFORNIA
 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
 P: 562.219.7435 F: 562.219.7436

NEVADA
 3151 W. Post Rd., Las Vegas, NV 89118
 P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N019260
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GAS_WSFPP

Sample ID E160330LCS	SampType: LCS	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 106687						
Client ID: LCSW	Batch ID: E16VW023	TestNo: EPA 8015B		Analysis Date: 3/30/2016	SeqNo: 2280653						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	885.000	50	1000	0	88.5	67	136				
Surr: Chlorobenzene - d5	48182.000		50000		96.4	74	138				

Sample ID E160330MB1	SampType: MBLK	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 106687						
Client ID: PBW	Batch ID: E16VW023	TestNo: EPA 8015B		Analysis Date: 3/30/2016	SeqNo: 2280654						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	37.000	50									J
Surr: Chlorobenzene - d5	47898.000		50000		95.8	74	138				

Sample ID N019260-001JMS	SampType: MS	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 106687						
Client ID: ZZZZZ	Batch ID: E16VW023	TestNo: EPA 8015B		Analysis Date: 3/30/2016	SeqNo: 2280656						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	900.000	50	1000	42.00	85.8	67	136				
Surr: Chlorobenzene - d5	48598.000		50000		97.2	74	138				

Sample ID N019260-001JMSD	SampType: MSD	TestCode: 8015GAS_W	Units: ug/L	Prep Date:	RunNo: 106687						
Client ID: ZZZZZ	Batch ID: E16VW023	TestNo: EPA 8015B		Analysis Date: 3/30/2016	SeqNo: 2280657						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH-Gasoline (C4-C12)	859.000	50	1000	42.00	81.7	67	136	900.0	4.66	30	
Surr: Chlorobenzene - d5	48459.000		50000		96.9	74	138		0	0	

Qualifiers:

- | | | |
|--|--|--|
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| S Spike/Surrogate outside of limits due to matrix interference | DO Surrogate Diluted Out | Calculations are based on raw values |



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"Serving Clients with Passion and Professionalism"

CLIENT: CH2MHill
Work Order: N019260
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P160330LCS	LCS	8260_WP_SF	ug/L		106693						
Client ID: LCSW	Batch ID: P16VW067	TestNo: EPA 8260B		Analysis Date: 3/30/2016	SeqNo: 2280914						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	17.050	0.50	20.00	0	85.2	69	133				
1,2-Dichloroethane	19.250	0.50	20.00	0	96.2	69	132				
Benzene	18.710	1.0	20.00	0	93.6	81	122				
Ethylbenzene	19.040	1.0	20.00	0	95.2	73	127				
m,p-Xylene	38.900	1.0	40.00	0	97.3	76	128				
MTBE	17.890	1.0	20.00	0	89.4	65	123				
o-Xylene	19.400	1.0	20.00	0	97.0	80	121				
Tert-Butanol	97.030	5.0	100.0	0	97.0	70	130				
Toluene	19.530	2.0	20.00	0	97.6	77	122				
Xylenes, Total	58.300	2.0	60.00	0	97.2	75	125				
Surr: 1,2-Dichloroethane-d4	24.660		25.00		98.6	72	119				
Surr: 4-Bromofluorobenzene	25.510		25.00		102	76	119				
Surr: Dibromofluoromethane	24.750		25.00		99.0	85	115				
Surr: Toluene-d8	25.470		25.00		102	81	120				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo						
P160330LCSD	LCSD	8260_WP_SF	ug/L		106693						
Client ID: LCSS02	Batch ID: P16VW067	TestNo: EPA 8260B		Analysis Date: 3/30/2016	SeqNo: 2280915						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	16.580	0.50	20.00	0	82.9	69	133	17.05	2.80	20	
1,2-Dichloroethane	19.520	0.50	20.00	0	97.6	69	132	19.25	1.39	20	
Benzene	19.040	1.0	20.00	0	95.2	81	122	18.71	1.75	20	
Ethylbenzene	19.010	1.0	20.00	0	95.1	73	127	19.04	0.158	20	
m,p-Xylene	39.100	1.0	40.00	0	97.8	76	128	38.90	0.513	20	
MTBE	18.140	1.0	20.00	0	90.7	65	123	17.89	1.39	20	
o-Xylene	19.530	1.0	20.00	0	97.6	80	121	19.40	0.668	20	
Tert-Butanol	95.920	5.0	100.0	0	95.9	70	130	97.03	1.15	20	
Toluene	19.550	2.0	20.00	0	97.8	77	122	19.53	0.102	20	
Xylenes, Total	58.630	2.0	60.00	0	97.7	75	125	58.30	0.564	20	
Surr: 1,2-Dichloroethane-d4	24.770		25.00		99.1	72	119		0		

Qualifiers:

- | | | |
|--|--|--|
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NEVADA
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 P: 702.307.2659 F: 702.307.2691

Serving Clients with Passion and Professionalism

CLIENT: CH2MHill
Work Order: N019260
Project: SFPP - Norwalk Site

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP_SFPP

Sample ID: P160330LCSD	SampType: LCSD	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 106693						
Client ID: LCSS02	Batch ID: P16VW067	TestNo: EPA 8260B		Analysis Date: 3/30/2016	SeqNo: 2280915						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	26.290		25.00		105	76	119		0		
Surr: Dibromofluoromethane	24.980		25.00		99.9	85	115		0		
Surr: Toluene-d8	25.840		25.00		103	81	120		0		

Sample ID: P160330MB3	SampType: MBLK	TestCode: 8260_WP_SF	Units: ug/L	Prep Date:	RunNo: 106693						
Client ID: PBW	Batch ID: P16VW067	TestNo: EPA 8260B		Analysis Date: 3/30/2016	SeqNo: 2280918						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethane	ND	0.50									
1,2-Dichloroethane	ND	0.50									
Benzene	ND	1.0									
Ethylbenzene	ND	1.0									
m,p-Xylene	ND	1.0									
MTBE	ND	1.0									
o-Xylene	ND	1.0									
Tert-Butanol	ND	5.0									
Toluene	ND	2.0									
Xylenes, Total	ND	2.0									
Surr: 1,2-Dichloroethane-d4	24.600		25.00		98.4	72	119				
Surr: 4-Bromofluorobenzene	25.090		25.00		100	76	119				
Surr: Dibromofluoromethane	25.570		25.00		102	85	115				
Surr: Toluene-d8	26.140		25.00		105	81	120				

Qualifiers:

- | | | |
|--|--|--|
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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: 3/30/2016 Workorder: N019260
 Rep sample Temp (Deg C): 3.2/3.3 IR Gun ID: 2
 Temp Blank: Yes No
 Carrier name: Golden State Overnight
 Last 4 digits of Tracking No.: 3785/3786 Packing Material Used: Bubble Wrap
 Cooling process: Ice Ice Pack Dry Ice Other None

Sample Receipt Checklist

- | | | | |
|---|--|--|--|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact, signed, dated on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Sampler's name present in COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 7. Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 9. Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Temperature of rep sample or Temp Blank within acceptable limit? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 13. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 14. Water - pH acceptable upon receipt?
Example: pH > 12 for (CN,S); pH<2 for Metals | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 15. Did the bottle labels indicate correct preservatives used? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| 16. Were there Non-Conformance issues at login?
Was Client notified? | Yes <input type="checkbox"/>
Yes <input type="checkbox"/> | No <input type="checkbox"/>
No <input type="checkbox"/> | NA <input checked="" type="checkbox"/>
NA <input checked="" type="checkbox"/> |

Comments:

Checklist Completed By: YR  3/30/2016

Reviewed By:  4/4/16

ASSET Laboratories

WORK ORDER Summary

30-Mar-16

WorkOrder: N019260

Client ID: CH2HI03

Project: SFPP - Norwalk Site

QC Level: RTNE

Date Received: 3/30/2016

Comments: Report to D. Jablonski/CH2M HILL, cc:KMEP

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N019260-001A	EFF-03-29	3/29/2016 1:10:00 PM	4/6/2016	Wastewater		Oil and Grease Sample Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/6/2016		EPA 1664_HEM	Hexane Extractable Material (HEM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N019260-001B			4/1/2016		EPA 8260B	VOLATILE ORGANIC COMPOUNDS BY GC/MS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N019260-001C			4/6/2016		EPA 3510C	SEPARATORY FUNNEL EXTRACTION: EXTRACTABLE FUELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/6/2016		EPA 8015B	TPH EXTRACTABLE BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/6/2016		EPA 8015B	Total TPH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N019260-001D			4/6/2016		SM2540F	SETTLEABLE MATTER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
			4/6/2016			Setteable Matter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consume
N019260-001E			4/6/2016		EPA 7199	Hexavalent Chromium by IC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N019260-001F			4/6/2016		EPA 420.1	PHENOLICS	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	SUB
N019260-001H			4/1/2016			AQPREP TOTAL METALS: ICP, FLAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2016		EPA 200.8	TOTAL METALS BY COLLISION/REACTION CELL ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2016		EPA 200.8	TOTAL METALS BY ICPMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2016		EPA 245.1	MERCURY BY COLD VAPOR TECHNIQUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/1/2016			MERCURY PREP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N019260-001I			4/6/2016		SM2540D	TOTAL NON-FILTERABLE RESIDUE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
			4/6/2016			Total Suspended Solids Prep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	WW
N019260-001J			4/6/2016		EPA 8015B	GASOLINE RANGE ORGANICS BY GC/FID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	VW
N019260-002A	FOLDER		4/1/2016		Folder	Folder	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LAB



ASSET Laboratories

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

www.atl-labs.com

TEL: 7023072659

FAX: 7023072691

CHAIN-OF-CUSTODY RECORD

QC Level: RTNE

Subcontractor:

BC Labs
4100 Atlas Court
Bakersfield, CA 93308

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

Field Sampler:

30-Mar-16

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests	
				EPA 420.1	
N019260-001F / EFF-03-29	Wastewater	3/29/2016 1:10:00 PM	32OZA	1	

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

Please use PO#: N19260A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Molky at (552)-219-7435. Please e-mail results to reports@assetlaboratories.com by: Normal TAT.

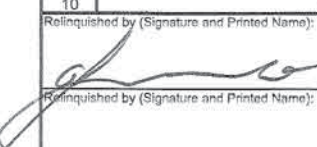
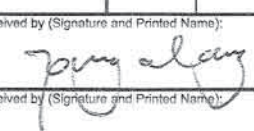
Please analyze for Phenol by 420.1.

	Date/Time	6250 # : 531413572	Date/Time
Relinquished by: <u>Yoandra Rodriguez</u>	<u>3/30/16 17:00</u>	Received by: _____	
Relinquished by: _____		Received by: _____	

CHAIN OF CUSTODY RECORD

Contact us:
 Nevada: 3151 W. Post Road, Las Vegas, NV 89118
 P: 702.307.2659 F: 702.3072691
 California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
 P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Asset Labs		Report to:		Bill to:		EDD Requirement		QA/QC		Sample Receipt Condition	
Address:		Company:		Address:		Excel EDD	<input type="checkbox"/>	RTNE	<input type="checkbox"/>	Y N	
Address:		Email:				Geotracker	<input type="checkbox"/>	RWQCB	<input type="checkbox"/>	1. Chilled	<input checked="" type="checkbox"/> <input type="checkbox"/>
Address:						Labspec	<input type="checkbox"/>	CalTrans	<input type="checkbox"/>	2. Headspace	<input type="checkbox"/> <input type="checkbox"/>
Phone:		Fax:		Address:		Others	<input type="checkbox"/>	Level III	<input type="checkbox"/>	3. Container Intact	<input type="checkbox"/> <input type="checkbox"/>
Submitted By: Molky Brar				Email to:		PO#		Specify:		LEVEL IV	<input type="checkbox"/> <input type="checkbox"/>
Title:		Phone:		Fax:		Global ID:		Specify State:		Regulatory	<input type="checkbox"/> <input type="checkbox"/>
Signature:		Date:		Sampled By:		Matrix		Analyses Requested		Sample Temp: 22°C	
I hereby authorize ASSET Labs to perform the tests indicated below:		Signature:		Date:		Ground					
						<input type="checkbox"/>					
Project Name: SFP - Norwalk site		Signature:		Date:		Potable					
						<input type="checkbox"/>					
Project Number:		Signature:		Date:		NPDES					
						<input type="checkbox"/>					
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		Signature:		Date:		Surface					
						<input type="checkbox"/>					
										Turn Around Time	
										No. of container	
										Container Type	
										PRESERVATION	
										Courier:	
										Tracking No.	
										Remarks	
Item No.	Laboratory Work Order No.	Sample ID/Location		Date	Time	Water	Solid	Others			
1		EFF-03-29		3/29/16	1310	<input checked="" type="checkbox"/>			X Phenol (420.1)		
2											
3											
4											
5											
6											
7											
8											
9											
10											
Relinquished by (Signature and Printed Name):		Date / Time		Received by (Signature and Printed Name):		Date / Time		Turn Around Time (TAT)		Special Instruction:	
		3/29/16 15:05				3/30/16 04:00		<input type="checkbox"/> A < 24 Hrs or Same Day TAT <input type="checkbox"/> B = Next Workday <input type="checkbox"/> C = 2 Workdays <input type="checkbox"/> D = 3 Workdays <input type="checkbox"/> E = Routine 5-7 Workdays TAT Starts at 8 AM the following day if samples received after 3:00 PM.			
Relinquished by (Signature and Printed Name):		Date / Time		Received by (Signature and Printed Name):		Date / Time					
Relinquished by (Signature and Printed Name):		Date / Time		Received by (Signature and Printed Name):		Date / Time					
Terms								Preservatives:		Container Type:	
1. All samples will be disposed in 45 days upon receipt and records will be destroyed in 5 years upon submission of final report.								H = HCl		T = Tube	
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.								N = HNO ₃		V = VOA	
Less than 24 Hrs = 200% Next Day = 100% 2 Workdays = 50% 3 Workdays = 85% 4 Workdays = 20%								S = H ₂ SO ₄		P = Pint	
3. Custom EDD formats will be an additional 3% of the total project price.								C = 4°C		B = Tedlar	
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.								Z = Zn(AC) ₂		G = Glass	
								O = NaOH		M = Metal	
								T = Na ₂ S ₂ O ₃		P = Plastic	
								Others/Specify:		C = Can	



800-322-5555 www.gso.com

Ship From
ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Tracking #: 531403785

CPS



Ship To
ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

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

C89102A

Delivery Instructions:
HOLD FOR PICK UP
Signature Type: REQUIRED



49987901

Print Date: 3/29/2016 4:10 PM

Package 1 of 2

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.

*J. S. C.
11e#2*



800-322-5555 www.gso.com

Ship From

ASSET LABORATORIES
MOLKY BRAR
11060 ARTESIA BLVD., STE. C
CERRITOS, CA 90703

Tracking #: 531403786

CPS



Ship To

ATL INC
MARLON CARTIN
3151 W. POST RD.,
LAS VEGAS, NV 89118

LVS
LAS VEGAS

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

C89102A

Delivery Instructions:

HOLD FOR PICK UP

Signature Type: REQUIRED



49987902

Print Date: 3/29/2016 4:10 PM

Package 2 of 2

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.

3.2^u
1R42



Date of Report: 04/08/2016

Molky Brar

ASSET Laboratories

3151-3153 W. Post Rd

Las Vegas, NV 89118

Client Project: N019260

BCL Project: Cerritos

BCL Work Order: 1609229

Invoice ID: B231997

Enclosed are the results of analyses for samples received by the laboratory on 3/31/2016. 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

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Page 1 of 1

CHAIN-OF-CUSTODY RECORD

16-09229

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

3.4

QC Level: RTNE

Subcontractor:

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

Field Sampler:

30-Mar-16

Table with columns: Sample ID, Matrix, Date Collected, Bottle Type, Requested Tests. Row 1: N019260-001F / EFF-03-29, Wastewater, 3/29/2016 1:10:00 PM, 320ZA, EPA 420.1

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

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

Please use PO#: N19260A. Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Molly at (562)-219-7435. Please e-mail results to reports@assetlaboratories.com by: Normal TAT.

Please analyze for Phenol by 420.1.

Relinquished by: [Signature] Date/Time: 3/30/16 17:00
Received by: [Signature] Date/Time: 3.31.16 10:30



BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 1

Submission #: 16-09229

SHIPPING INFORMATION: Fed Ex, UPS, Ontrac, Hand Delivery, BC Lab Field Service, Other (Specify) GSD. SHIPPING CONTAINER: Ice Chest, None, Box, Other (Specify). FREE LIQUID: YES, NO.

Refrigerant: Ice, Blue Ice, None, Other. Comments:

Custody Seals: Ice Chest, Containers, None. Intact? Yes, No.

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

COC Received: YES, NO. Emissivity: 0.95. Container: Amber. Thermometer ID: 208. Date/Time: 3/31/16. Analyst Init: [Signature]

Table with columns: SAMPLE CONTAINERS, SAMPLE NUMBERS (1-10). Rows include: QT PE UNPRES, INORGANIC CHEMICAL METALS, PT CYANIDE, PT NITROGEN FORMS, PT TOTAL SULFIDE, PT TOTAL ORGANIC CARBON, PT CHEMICAL OXYGEN DEMAND, PIA PHENOLICS, QT EPA 1664, PT ODOR, RADIOLOGICAL, BACTERIOLOGICAL, QT EPA 8270 (Phenol w/ H2SO4), SOIL SLEEVE, PCB VIAL, PLASTIC BAG, TEDLAR BAG, FERROUS IRON, ENCORE, SMART KIT, SUMMA CANISTER.

Comments: Sample Numbering Completed By: [Signature] Date/Time: 3/31/16 r235 Rev 20 07/24/2015 A = Actual / C = Corrected



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

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1609229-01	COC Number:	---	Receive Date:	03/31/2016 10:36
	Project Number:	---	Sampling Date:	03/29/2016 13:10
	Sampling Location:	---	Sample Depth:	---
	Sampling Point:	N019260-001F/ EFF-03-29	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Wastewater

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

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Water Analysis (General Chemistry)

BCL Sample ID: 1609229-01	Client Sample Name: N019260-001F/ EFF-03-29, 3/29/2016 1:10:00PM, Client
----------------------------------	---

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Phenolics	11	ug/L	50	10	EPA-420.4	ND	J	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-420.4	04/05/16	04/07/16 11:08	JMH	KONE-1	1	BZD0315

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

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZD0315						
Total Phenolics	BZD0315-BLK1	ND	ug/L	50	10	

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Las Vegas, NV 89118

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: BZD0315										
Total Phenolics	BZD0315-BS1	LCS	541.20	500.00	ug/L	108		85 - 115		

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

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Water Analysis (General Chemistry)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: BZD0315		Used client sample: N									
Total Phenolics	DUP	1609273-02	ND	ND		ug/L			20		
	MS	1609273-02	ND	536.88	500.00	ug/L		107		80 - 120	
	MSD	1609273-02	ND	523.17	500.00	ug/L	2.6	105	20	80 - 120	

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

Reported: 04/08/2016 17:23
Project: Cerritos
Project Number: N019260
Project Manager: Molky Brar

Notes And Definitions

- J Estimated Value (CLP Flag)
- MDL Method Detection Limit
- ND Analyte Not Detected
- PQL Practical Quantitation Limit

SFPP NORWALK PUMP STATION

BIOASSAY REPORT CHRONIC AND ACUTE BIOASSAYS CONDUCTED January 21 through 28, 2016

Prepared for

KINDER MORGAN, INC.

ORANGE, CALIFORNIA

Prepared by



1100 NE Circle Boulevard, Suite 300
Corvallis, Oregon 97330
541-768-3160

State of Washington Department of Ecology (WDOE), Lab ID C1233
NELAC #OR100022

Report Date: May 10, 2016
Lab I.D. No. B3470

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INTRODUCTION

CH2M HILL Applied Sciences Laboratory (ASL) conducted acute dual-endpoint and chronic bioassays from January 21 through 28, 2016, on effluent samples collected from Kinder Morgan's groundwater treatment system located at the SFPP Norwalk Pump Station, Norwalk, California. The testing was conducted using the topsmelt (*Atherinops affinis*).

Testing was performed as part of Accelerated Monitoring and TRE Initial Investigation triggered as a result of the September 2015 testing. The testing was conducted according to the Toxicity Reduction Evaluation (TRE) work plan (Kinder Morgan/CH2M HILL communication to the California Regional Water Quality Control Board, dated September 30, 2011).

Using this approach, the laboratory control was used both for the assessment of test acceptability criteria and as the basis of comparison for the field samples collected.

SUMMARY OF TEST RESULTS

Exhibits 1 and 2 provide a summary of the final test results.

EXHIBIT 1

Summary of Acute (96-hr) Dual-Endpoint Test Results (Effluent compared to Receiving Water).

Sample ID	Species	NOEC (%)	LOEC (%)	Survival in 100% Sample
Upstream (RSW-001) - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	100	> 100	100%
Effluent - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	100	> 100	100%
Downstream (RSW-002) - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	100	> 100	100%

Note: acronyms are as defined below Exhibit 2.

From the TRE Workplan: Survival rates in the Downstream Sample (RSW-002) of greater than or equal to 90% indicates that the Effluent does not cause or contribute to downstream acute toxicity.

For this series of bioassay tests, the Downstream Sample (RSW-002) meets the conditions outlined in the TRE Workplan; therefore, the Effluent does not appear to cause or contribute to downstream acute toxicity.

EXHIBIT 2

Summary of Chronic (7-day) Test Results (Effluent compared to Receiving Water).

Sample ID	Species	NOEC (%)	LOEC (%)	TUc in the Sample
Upstream (RSW-001) - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	100*	> 100*	1.0*
Effluent - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	< 100*	100*	>1.0*
Downstream (RSW-002) - Salinity Adjusted to 30 ppt	<i>A. affinis</i>	100*	> 100*	1.0*

Note: acronyms are as defined below Exhibit 2.

* Lab Reference Toxicant test was outside of the Cusum Chart limits for growth and greater than 205 ug/L for survival (does not meet Test Acceptability Criteria).

From the TRE Workplan: A TUc value in the Downstream Sample (RSW-002) equal to 1.0 indicates that the Effluent does not cause or contribute to downstream chronic toxicity.

For this series of bioassay tests, the Downstream Sample (RSW-002) meets the conditions outlined in the TRE Workplan; therefore, the Effluent does not appear to cause or contribute to downstream chronic toxicity.

However, the reference toxicant test showed 7 day LC₅₀ values above 205 ug/L Cu , which violates the Test Acceptability Criteria (TAC listed in EPA/600/R-95/136, section 11.12.1 (3)) making the test “invalid”. These reference toxicity test results also suggests that the test organisms were insensitive which calls into question the sensitivity of the chronic testing.

Note: The NPDES permit (No CA0063509), Section V.C.2. states that “If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manuals ... then the Discharger must re-sample and re-test ...”

More detailed information is provided in the Results and Data Interpretation sections.

ACRONYM DEFINITIONS (from EPA guidance):

NOEC = No Observed Effect Concentration: The highest test concentration that causes no observable adverse effects on the test organisms (i.e. no statistically significant reduction from the control).

LOEC = Low Observed Effect Concentration: The lowest test concentration that does cause an observable adverse effect on the test organisms (i.e. is statistically significant reduction from the control).

TUc = Toxic Unit – chronic: Calculated as 100 / chronic NOEC.

METHODS AND MATERIALS

TEST METHODS

The *A. affinis* chronic test methods were performed according to: *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine Organisms*, First Edition, (EPA 1995), EPA/600/R-95-136.

Additional guidance on EPA method 1006.0 was provided by:

- *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition (2002); EPA 821-R-02-014.

Additional guidance on the interpretation of the acute dual-endpoint was provided by:

- *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012.

Additional guidance was provided by:

- The NPDES permit, Order No. R4-2011-0095, NPDES No. CA0063509.

DEVIATIONS FROM PROTOCOLS

Deviations from required procedures in the test methods:

- None.

Deviations from recommended procedures in the test methods:

- None.

TEST ORGANISMS

The *A. affinis* larvae used in the chronic toxicity tests were obtained from Aquatic Biosystems, Fort Collins, Colorado, and were 11 days old and within a 24-hour span at test initiation. All organisms tested were fed and maintained during culturing, acclimation, and testing as prescribed by the EPA (2002). The test organisms appeared vigorous and in good condition prior to testing.

DILUTION WATER

The laboratory control water used for the *A. affinis* testing was artificial sea water (Tropic Marin® sea salts and ultra pure water) with a salinity of 30 parts per thousand (ppt) plus or minus 2 ppt.

TEST CONCENTRATIONS

The concentrations for the chronic test and acute dual end point test were 100 percent of each of the three samples with laboratory water for the control. For the *A. affinis* chronic test, five organisms per chamber, with five chambers per concentration for a total of 25 organisms per concentration were used.

SAMPLE COLLECTION

The “Receiving Water - Upstream (RSW-001)” (collected 50 feet upstream of the discharge) samples, the “Receiving Water - Downstream (RSW-002)” (collected 50 feet downstream of the discharge) and the “Effluent” samples were collected by CH2M personnel on January 20, 22, and 25, 2016. Upstream and downstream receiving water samples were grab samples; samples collected at the effluent were 24-hour composites. All samples were accepted as scheduled by CH2M's Applied Sciences Laboratory within the EPA recommended 0 to 6 °C range.

All samples were initially used for test initiation or test solution renewal within the EPA recommended maximum holding time of 36 hours from the time of sample collection.

All subsequent uses of samples occurred within the EPA recommended maximum holding time of 72 hours past the time of initial use of that sample.

The samples were stored in the dark at 0 to 6°C until daily test solutions were prepared for all other testing. Chain of custody forms documenting sample collection and handling are provided in Appendix C.

SAMPLE PREPARATION

Samples used during these tests were not filtered upon arrival and temperature was adjusted prior to test initiation and each daily renewal.

The Receiving Water, Downstream, and Effluent samples were salinity adjusted to 30 ppt by the addition of Tropic Marin® sea salts prior to use.

MONITORING OF BIOASSAYS

All samples arriving at ASL were monitored on arrival for salinity, alkalinity, total residual chlorine, ammonia, DO, pH, conductivity, and temperature. Following salinity adjustment to 30 ppt for the *A. affinis* chronic tests these samples were monitored again for salinity.

For the *A. affinis* chronic tests, pre- and post-renewal test solutions were monitored daily for DO, salinity, and pH. Organism mortality was recorded daily, and organism growth was determined by dry weight analysis at test termination. Test temperatures were monitored in test solutions daily and in the incubator or waterbath continuously throughout the testing period.

DATA ANALYSIS

The effects measured during the *A. affinis* dual-endpoint acute test included survival data taken from the chronic test over the initial 96 hour exposure period. The statistical analyses performed were those outlined in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, USEPA Office of Water (2002), EPA-821-R-02-012, using CETIS. The acute NOEC and LOEC values were established by hypothesis testing as follows: Equal Variance T-test, Unequal Variance T-test, or Fisher's Exact Test was used to compare the survival data and Equal Variance T-test, Unequal Variance T-test, or Wilcoxon Two-sample t-test was used to compare the reproduction or growth data between the control and each sample treatment. When the assumptions of normality necessary for a T-test could not be met, Mann-Whitney U-test was used to analyze the data.

The effects measured during the *A. affinis* chronic test included survival and biomass during the 7-day exposure period. The statistical analyses performed were those outlined in EPA-821-R-02-013, and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition (2002); EPA 821-R-02-014, using CETIS. The chronic NOEC and LOEC values were established by hypothesis testing as follows: Equal Variance T-test, Unequal Variance T-test, or Fisher's Exact Test was used to compare the survival data and Equal Variance T-test, Unequal Variance T-test, or Wilcoxon Two-sample t-test was used to compare the reproduction or growth data between the control and each sample treatment. When the assumptions of normality necessary for a T-test could not be met, Mann-Whitney U-test was used to analyze the data.

DATA INTERPRETATION

From EPA Guidance West Coast Chronic manual (EPA/600/R-95/136, "Acceptability of Test Results" section 11.12.1 (3)):

"The LC50 for survival must be within two standard deviations of the control chart mean for the laboratory. The LC50 for survival with copper must be <205 ug/L."

- The observed LC₅₀ calculation for survival was not within control chart range for the laboratory (± 2 standard deviations of the mean).
- The observed LC₅₀ for survival with copper was 293 ug/L.

From the NPDES Permit (No CA0063509) abbreviated:

V.A.1. Definition of Acute Toxicity.

Acute toxicity is a measure of primarily lethal effects that occur over a 96-hour period. Acute toxicity shall be measured in percent survival measured in undiluted (100%) effluent.

- a. The average survival in the undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, and
- b. No single test shall produce less than 70% survival.

[Note: 68% survival was noted on the test initiated Sept 15, 2015, prompting accelerated testing]

V.A.2. Acute Toxicity Effluent Monitoring Program.

d. Acute Toxicity Accelerated Monitoring. If either of the above requirements (sections 1.a and 1.b) is not met, the Discharger shall conduct six additional tests, approximately every two weeks, over a 12-week period. The Discharger shall ensure that they receive results of a failing toxicity test within 24 hours of the close of the test and the additional tests shall begin within 5 business days of the receipt of the result. If the additional tests indicate compliance with the toxicity limitation, the Discharger may resume regular testing.

V.A.2.e. Toxicity Identification Evaluation (TIE).

- i. If the results of any two of the six accelerated tests are less than 90% survival, then the Discharger shall immediately begin a Toxicity Identification Evaluation (TIE) and implement the Initial Investigation Toxicity Reduction Evaluation (TRE) workplan. The TIE shall include all reasonable steps to identify the sources of toxicity. Once the sources are identified, the Discharger shall take all reasonable steps to reduce toxicity to meet the objective.
- ii. If the initial test and any of the additional six acute toxicity bioassay tests results are less than 70% survival, the Discharger shall immediately begin a Toxicity Identification Evaluation (TIE) and implement Initial Investigation Toxicity Reduction Evaluation (TRE) workplan. Once the sources are identified the Discharger shall take all reasonable steps to reduce toxicity to meet the requirements:

V.B.1. Definition of Chronic Toxicity.

This Order includes a chronic toxicity trigger defined as an exceedance of 1.0 TUc in a critical life stage test for 100% effluent. (The monthly median for chronic toxicity of 100% effluent shall not exceed, 1 TUc in a critical life stage test.)

[Note: a TUc of > 1.0 was noted in the test initiated September 15, 2015, prompting accelerated testing]

V.B.2.a. Chronic Toxicity Effluent Monitoring Program.

i. For brackish effluent, the Discharger shall conduct the chronic toxicity test in accordance with USEPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine Organisms*, First Edition, (EPA 1995), EPA/600/R-95-136 ...

V.B.2.b. Chronic Toxicity Accelerated Monitoring.

If the chronic toxicity of the effluent exceeds the monthly trigger median of 1.0 TUc, the Discharger shall conduct six additional tests, approximately every two weeks, over a 12-week period. The Discharger shall ensure that they receive results of a failing chronic toxicity test within 24 hours of the completion of the test and the additional tests shall begin within 5 business days of the receipt of the result.

i. If any three out of the initial test and the six additional tests results exceed 1.0 TUc, the Discharger shall immediately implement the Initial Investigation TRE workplan.

V.C. Quality Assurance.

1. Concurrent testing with a reference toxicant shall be conducted.
2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods ... then the Discharger must re-sample and re-test ...

From the Toxicity Reduction Evaluation (TRE) work plan (Kinder Morgan/CH2M HILL communication to the California Regional Water Quality Control Board, dated September 30, 2011) abbreviated:

Step 2 – Accelerated Effluent Toxicity Monitoring

- **Acute Toxicity:** If the results of any two of the six accelerated tests are less than 90 percent survival, or if the first test and any of the additional six acute toxicity bioassay tests results are less than 70 percent survival
- **Chronic Toxicity:** If the results of two or more of the six accelerated tests exceed 1.0 TUc.

Step 3 – TRE Implementation

Step 3a. Receiving Water Monitoring.

If toxicity, as defined by the accelerated monitoring triggers, is not detected in the sample collected from RSW-002, then the effluent does not cause or contribute to downstream chronic toxicity and the Initial Investigation TRE will be considered to be complete.

Alternatively, if there is toxicity exceeding the TRE triggers in both the upstream and downstream samples, then these samples will be compared in a two-step process to determine if there is a statistically significant increase in toxicity that could be due to the SFPP discharge.

RESULTS AND DISCUSSION

The raw data sheets are presented in Appendix A.

ACUTE BIOASSAYS

Table 1 summarizes the survival data for the *A. affinis* acute dual-endpoint tests that were salinity adjusted with Tropic Marin® sea salts to a salinity of 30 ppt. These toxicity endpoints were measured after 4-day exposures in the chronic test.

Table 1					
Summary of Acute Results					
Percent Survival					
Concentration (%)	0 hr	24 hr	48 hr	72 hr	96 hr
<i>A. affinis</i>					
Laboratory Control	100	100	100	100	100
Receiving Water Upstream 100%	100	100	100	100	100
Effluent 100%	100	100	100	100	100
Receiving Water Downstream 100%	100	100	100	100	100

Receiving Water – Upstream: The *A. affinis* acute dual-endpoint test indicated no statistically significant reduction in survival at the 100 percent Receiving Water – Upstream concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were 100 and greater than 100 percent, respectively.

Effluent: The *A. affinis* acute dual-endpoint test indicated no statistically significant reduction in survival at the 100 percent Effluent concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were 100 and greater than 100 percent, respectively.

Receiving Water – Downstream: The *A. affinis* acute dual-endpoint test indicated no statistically significant reduction in survival at the 100 percent Receiving Water – Downstream concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were 100 and greater than 100 percent, respectively.

From the TRE work plan “If toxicity, as defined by the accelerated monitoring triggers, is not detected in the sample collected from RSW-002 (50 feet downstream of discharge), then the effluent does not cause or contribute to downstream chronic toxicity and the Initial Investigation TRE will be considered complete”.

Dissolved oxygen concentrations remained at 4.0 mg/L or greater throughout the test period. Test temperatures remained in the range of $20\pm 1^{\circ}\text{C}$.

Both the Receiving Water and Laboratory controls met Test Acceptability Criteria (TAC) of a minimum 90 percent control survival for acute tests.

Unless referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. The acute client testing is considered "valid".

CHRONIC BIOASSAYS

Table 2 summarizes the survival and biomass data for the *A. affinis* chronic tests that were salinity adjusted with Tropic Marin® Sea salts to a salinity of 30 ppt. These toxicity endpoints were measured after 7-day exposures.

Table 2 TRE Summary of Chronic Results <i>A. affinis</i>		
Sample Concentration	Percent Survival	Growth (i.e. Biomass) (mg)
Laboratory Control	100	1.039
Receiving Water Upstream 100%	100	0.914
Effluent 100%	96	0.752 ^a
Receiving Water Downstream 100%	100	0.940

^a Indicates a statistically significant reduction from the control at p equal to 0.05.

Receiving Water – Upstream: The *A. affinis* chronic test indicated no statistically significant reduction in survival or growth (biomass) at the 100 percent Receiving Water – Upstream concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were 100 and greater than 100 percent, respectively.

Effluent: The *A. affinis* chronic test indicated no statistically significant reduction in survival at the 100 percent Effluent concentration when compared to the Laboratory Control. The chronic test did indicate a statistically significant reduction in growth (biomass) at the 100 percent Effluent concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were less than 100 and 100 percent, respectively.

Receiving Water – Downstream: The *A. affinis* chronic test indicated no statistically significant reduction in survival or growth (biomass) at the 100 percent Receiving Water – Downstream concentration when compared to the Laboratory Control. By EPA definition, the NOEC and the LOEC were 100 and greater than 100 percent, respectively.

From the TRE work plan “If toxicity, as defined by the accelerated monitoring triggers, is not detected in the sample collected from RSW-002 (50 feet downstream of discharge), then the effluent does not cause or contribute to downstream chronic toxicity and the Initial Investigation TRE will be considered complete”.

(Please note the weight data presented above is based on the weight per organism added at test initiation (biomass) which agrees with the latest version of EPA method 1006.0, EPA 821-R-02-014.

Note: The concurrent reference toxicant test performed by CH2M HILL did not meet the TAC for all 7-day chronic endpoints within control chart range (± 2 SD of mean for the lab) or maximum allowed concentration (< 205 ug/l Cu) for the 7 day chronic LC₅₀ value. See the Reference Toxicant Test section for further details. A reference toxicant test will be conducted again as soon as the sensitivity of the topsmelt are within historical range with this supplier as there are no alternative suppliers at the moment for this test organism.

Other than referenced above, the tests proceeded without any noted deviations or interruptions that could have affected test results. However, due to:

- the control chart limits not being met
 - and the reftox LC50 value for survival above 205 ug/L Cu,
- TAC for the test was not met and the chronic client testing should be considered “invalid”.

REFERENCE TOXICANT TEST

Reference toxicant (reftox) testing is performed to document both initial and ongoing laboratory performance of the test method(s). While the health of the test organisms is primarily evaluated by the performance of the laboratory control, reftox test results also may be used to assess the health and sensitivity of the test organisms. Reftox test results within their respective cumulative summary (Cusum) chart limits are indicative of consistent laboratory performance and normal test organism sensitivity.

Acute Dual-endpoint:

- The concurrent reference toxicant test did meet chronic Test Acceptability Criteria (TAC) for a minimum 90% survival at 4 days the control.
- The LC₅₀ calculation for survival was within control chart range (2 standard deviations of the mean).
- These data indicate that the reftox test should be considered “valid” for the acute dual-endpoint.

Chronic endpoint:

- The concurrent reference toxicant test did meet chronic Test Acceptability Criteria (TAC) for a minimum 80% survival at 7 days the control.
- The LC₅₀ calculation for survival was not within control chart range (2 standard deviations of the mean).
 - This violates the TAC listed in EPA/600/R-95/136, section 11.12.1 (3)
 - This also suggests the test organisms for this endpoint in the associated client testing were insensitive.
- The LC₅₀ calculation for survival was greater than upper limit of 205 ug/L
 - This violates the TAC listed in EPA/600/R-95/136, section 11.12.1 (3)
- The IC₂₅ calculation was not within control chart range indicating suggesting insensitive test organisms for this end point for 7 day survival and growth.
- In accordance with EPA/600/R-95/136, section 11.12.1 (3), LC₅₀ results such as these that do not meet TAC mean the testing should be considered “invalid”.
- In accordance with the NPDES permit (section V.C.2), LC₅₀ results such as these that do not meet TAC prompt the discharger to re-sample and re-test.

The *A. affinis* reftox test was conducted using copper (as copper chloride). The data sheets for the reference toxicant tests are provided in Appendix B.

Tables 3 and 4 summarizes the reference toxicant test results and Cusum chart limits.

Table 3		
Acute Dual-Endpoint Reference Toxicant Test (CH2M Hill – ASL testing)		
Cu (as CuCl₂) ug/L		
Species (test)	Endpoint	Control Chart Limits
<i>A. affinis</i> (96 hour survival)	LC ₅₀ = 254	66 to 263

Table 4		
Chronic Reference Toxicant Test (CH2M Hill – ASL testing)		
Cu (as CuCl₂) ug/L		
Species (test)	Endpoint	Control Chart Limits
<i>A. affinis</i> (7 day survival)	LC ₅₀ = 293*, #	68 to 181
<i>A. affinis</i> (7 day survival)	IC ₂₅ = 190*	46 to 133
<i>A. affinis</i> (7 day growth)	IC ₂₅ = 161*	42 to 128
* Indicates a value out of control chart range and the test result does not meet TAC listed in EPA/600/R-95/136, section 11.12.1 (3).		
# Indicates a value above the TAC limit of 205 ug/L and the test result does not meet TAC listed in EPA/600/R-95/136, section 11.12.1 (3).		

Additional chronic reference toxicant testing information was also obtained from the organism supplier (Aquatic Bio Systems (ABS)).

Chronic endpoint:

- The NOEC calculation was consistent with the previous 5 months of calculations presented indicating typical chronic test sensitivity for survival.
- The 7 day LC₅₀ datum point was not provided.
- The IC₂₅ calculation was within control chart range for the January 2016 datum point.
- Note, however, there appears to be a recent trend in the ABS reftox testing (that matches the one seen by CH2M Hill – ASL). The growth control chart entries for Nov. and Dec. 2015 were above limits, suggesting insensitive test organisms for the growth endpoint for that time period, and that these points effectively widened the limits for the Jan 2016 datum point. While in range, the Jan 2016 IC₂₅ value is similar to the Nov and Dec 2015 data (both @ 380 ug/L), is well above the mean for the lab (227 ug/L), and is not within historical norms. (see chart included in Appendix B)

Table 5 summarizes the reference toxicant test results and Cusum chart limits for the testing performed in January 2016 by Aquatic Biosystems.

Table 5 Chronic Reference Toxicant Test Performed by ABS Cu (as CuCl₂) ug/L		
Species (test)	Endpoint	Control Chart Limits
<i>A. affinis</i> (7 day survival)	NOEC = 180	not provided
<i>A. affinis</i> (7 day growth)	IC ₂₅ = 356	162 to 391
Note: Values converted to ug/L Cu from the CuCl ₂ values provided by the ABS report included in Appendix C. (0.473 ug/l Cu = 1.00 ug/L CuCl ₂) This was done to allow for easier comparisons to the values presented in Table 4.		

APPENDIX A
RAW DATA SHEETS



FRESHWATER TOXICITY TEST: SAMPLE AND DILUTION WATER DATA

Client Kinder Morgan EP - Norwalk
Contact Cam Irvine/ Daniel Jablonski 916.335.2369/ 213-228-8271

SDG # B 3470

Test Initiation: Date 1-21-16

Test Termination: Date 1-23-16

Table with 14 columns: Sample ID Number, Field ID, Collected Date, Time, Date Received/Treated, Temp (C), Total Residual Chlorine (mg/l), Ammonia NH3-N (mg/l), Salinity (ppt), Alkalinity (mg/l as CaCO3), DO (mg/L), pH, Cond. (uS), 60 um filtered prior to use? Rows include Effluent and Receiving Water samples with various adjustments and reporting limits.

Note: "-" Indicates data collection or dechlorination not needed. Any other adjustments to samples prior to use are documented in Comments below or on Dilutions page.

Table with 5 columns: Dilution Water, ID#, Hardness (mg/l as CaCO3), Alkalinity (mg/l as CaCO3), Salinity (ppt). Includes comments about action taken and required notification within 24 hours.

Water Quality Meters Used/ID#: Dissolved Oxygen # 3 pH # 11 Conductivity # 2



FRESHWATER TOXICITY TEST: SAMPLE AND DILUTION WATER DATA

Client: Kinder Morgan EP - Norwalk
Contact: Cam Irvine/ Daniel Jablonski 916.335.2369/ 213-228-8271

SDG # B 3470

Test Initiation: Date 1-21-16
Test Termination: Date 1-28-16

Table with columns: Sample ID Number, Field ID, Collected Date/Time, Date Received/Treated, Temp (C), Total Residual Chlorine (mg/l), Ammonia NH3-N (mg/l), Salinity (ppt), Alkalinity (mg/l as CaCO3), DO (mg/L), pH, Cond. (uS), 60 um filtered prior to use? Includes rows for samples -13 to -18 and reporting limits.

Note: "-" Indicates data collection or dechlorination not needed. Any other adjustments to samples prior to use are documented in Comments below or on Dilutions page.

Table for Dilution Water and Art. Sea (30 ppt) with columns: ID#, Hardness, Alkalinity, Salinity, and Comments. Includes a required notification note for the client.

Water Quality Meters Used/ID#: Dissolved Oxygen # 3 pH # 11 Conductivity # 2

Client Kinder Morgan EP - Norwalk

Sample Designation (SDG): B 3470

Test Species Information	AA # <u>074</u> <i>Atherinops affinis</i> Chronic				
Organism Age at Initiation	<u>11</u> days				
Test Container Size	400 ml				
Test Volume	200 ml				
Feeding: Type and Amount	<i>Artemia</i> , 2 x Daily				
Aeration: In Test Chambers via Slow Bubble :	<input type="checkbox"/> None <input type="checkbox"/> Prior to use <input type="checkbox"/> @ _____ hrs				
Acclimation Period	<u>2</u> Days				
Organism Source	<u>ABS</u>				
Size	-				
Loading Rate	-				

Dissolved Oxygen aeration justifications (in test chambers):

Test(s): All _____
Date:

Comments:

Client: Kinder Morgan EP - Norwalk

Note: Indicates task 1 Note: Indicates task not done, Indicates task was done. Temp ac Ditto marks (') indic Ditto marks (') indic Ditto marks (') indicate that the same SDG, batch of dilution water,

Atherinops affinis - Chronic

Test Concentration (%)	Sample Volume (mls)	Final Volume (mls)
All screens - no dilutions needed. Use 1000 ml of each of the listed waters.		

Sample ID:	30 ppt	30 ppt	30 ppt	30 ppt	30 ppt	Date	Time	Initials
Test Day	Lab Control - 30 ppt Water ID Used	"Receiving Water" Sample ID Used	"Effluent" Sample ID Used	"Downstream" Sample ID Used				
0 (Initiation)	ID# 4312	B 3460 08	B 3460 02	B 3460 14		1/21/16	13:15	DW
1	ID# 4312	B 3460 08	B 3460 02	B 3460 14		1/22/16	08:20	MC
2	ID# 4318	B - 10	B - 04	B - 16		1/23/16	12:00	MC
3	ID# 4318	B - 10	B - 04	B - 16		1/24/16	09:05	DW
4	ID# 4318	B - 10	B - 04	B - 16		1/25/16	08:55	MC
5	ID# 4318	B - 12	B - 06	B - 18		1/26/16	12:30	MC
6	ID# 4318	B - 12	B - 06	B - 18		1/27/16	07:30	DW

MC
1-23-16

ATHERINOPS AFFINIS 7-DAY SURVIVAL AND WATER QUALITY DATA

Random Template Used: See randomization sheet Waterbath/incubator Used: _____ Date Initiated 01/21/2016 Time 15:55
 Initial sample ID B 3470 - # 10 Date Terminated 1/28/2016 Time 10:10
 Client Kinder Morgan Sample Description _____
 Tech: Day 0 JW Day 1 E Day 2 MC Day 3 MC Day 4 MC Day 5 D Day 6 D Day 7 MC
 Time Day 0 1555 Day 1 1110 Day 2 1230 Day 3 1520 Day 4 1105 Day 5 1400 Day 6 0930 Day 7 1010

Conc. or Percent	Day	Number of Live Organisms					Dissolved O ₂ (mg/l)		pH		Salinity		Temp. (°C)	Therm. ID #
		A	B	C	D	E	Pre	Post	Pre	Post	Pre	Post	Pre	
Lab Control - 30 ppt	0	5	5	5	5	5		6.6		8.2		30	Post: 19.7	186
	1	5	5	5	5	5	6.3	7.1	8.2	8.4	31	30	19.9	186
	2	5	5	5	5	5	5.8	7.0	8.0	8.4	31	31	19.7	159
	3	5	5	5	5	5	6.0	6.7	8.0	8.3	30	30	19.6	159
	4	5	5	5	5	5	6.7	6.9	8.2	8.4	30	30	19.7	159
	5	5	5	5	5	5	5.8	6.7	7.9	8.4	31	31	20.0	172
	6	5	5	5	5	5	5.6	6.7	8.0	8.4	31	31	19.8	177
	7	5	5	5	5	5	5.9		7.8		31		19.8	177
Receiving Water - 30 ppt	0	5	5	5	5	5		6.6		8.0		29	Post: 19.6	
	1	5	5	5	5	5	6.2	7.6	8.2	8.2	30	30	19.8	
	2	5	5	5	5	5	6.0	8.0	8.1	8.4	30	30	19.7	
	3	5	5	5	5	5	5.9	8.9	8.2	8.3	30	30	19.6	
	4	5	5	5	5	5	6.7	8.6	8.4	8.4	30	30	19.6	
	5	5	5	5	5	5	5.8	6.8	8.2	8.3	30	31	20.0	
	6	5	5	5	5	5	5.7	7.0	8.2	8.3	31	30	19.8	
	7	5	5	5	5	5	5.9		8.3		32		19.7	
Effluent - 30 ppt	0	5	5	5	5	5		6.6		7.4		29	Post: 19.6	
	1	5	5	5	5	5	6.4	7.6	8.0	7.5	30	30	19.8	
	2	5	5	5	5	5	6.2	7.9	8.1	7.3	30	30	19.7	
	3	5	5	5	5	5	5.9	8.3	8.0	7.4	30	30	19.6	
	4	5	5	5	5	5	6.7	8.5	8.1	7.5	30	30	19.6	
	5	5	5	5	5	5	5.7	6.5	8.1	7.4	30	31	19.9	
	6	5	5	5	4	5	5.8	7.9	7.9	7.3	31	31	19.8	
	7	5	5	5	4	5	6.5		8.1		31		19.6	
Down Stream - 30 pptw	0	5	5	5	5	5		6.7		8.0		29	Post: 19.7	
	1	5	5	5	5	5	6.4	7.7	8.2	8.1	31	30	19.8	
	2	5	5	5	5	5	6.0	8.9	8.2	8.3	30	30	19.7	
	3	5	5	5	5	5	5.9	8.8	8.2	8.3	30	30	19.6	
	4	5	5	5	5	5	6.7	8.7	8.3	8.3	30	30	19.6	
	5	5	5	5	5	5	5.8	6.6	8.2	8.3	30	31	19.9	
	6	5	5	5	5	5	5.7	7.6	8.2	8.4	31	31	19.8	
	7	5	5	5	5	5	5.4		8.3		31		19.6	
													Post:	
													Post:	
													Post:	
													Post:	

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container. Pre = Pre-renewal solutions. Post = Post-renewal solutions.
 "M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats. Day 0 Temperatures = Post-renewals
 "F" = fungus noted on dead organisms. Therm ID# = Thermometer ID used for all measurements that day.
 Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet) 23.8 = Temp. out of recommended range

ATHERINOPS AFFINIS 7-DAY GROWTH DATA

Client Kinder Morgan EP - Norwalk Tins Labeled As: Kinder
 B3470 Start Date 1/21/2016

Sample Description: _____
 Technician: KJ MJO
 Date: 1/29/2016 1/9/2016
 Balance Serial #: B328543647 B328543647

Percent	Replicate	Total Weight (mg)	Tare Weight (mg)	No. of Fish
Control	A	1204.02	1198.45	5
	B	1171.60	1167.64	5
	C	1127.75	1121.69	5
	D	1091.77	1087.20	5
	E	1130.55	1124.74	5
RW %	A	1150.25	1145.96	5
	B	1147.17	1142.03	5
	C	1187.81	1184.58	5
	D	1143.91	1138.88	5
	E	1119.91	1114.74	5
100 %	A	1117.90	1113.84	5
	B	1170.08	1165.91	5
	C	1118.46	1114.90	5
	D	1121.54	1117.62	4
	E	1116.24	1113.14	5
Downstream %	A	1121.43	1116.09	5
	B	1129.75	1125.88	5
	C	1128.60	1124.07	5
	D	1148.96	1144.49	5
	E	1178.75	1173.47	5

weigh to 0.01 mg

As per EPA-600-R-95-136, Section 11.12.1 Acceptability of Test Results: "The mean weight per larvae must exceed 0.85 mg ... in the control"

For this test, the average dry weight per surviving control larvae = 1.04

CETIS Summary Report

Report Date: 29 Jan-16 09:46 (p 1 of 1)
 Test Code: B347008aac | 12-6860-6870

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Batch ID: 16-6031-1911 Test Type: Growth-Survival (7d) Analyst: Brett Muckey
 Start Date: 21 Jan-16 15:55 Protocol: EPA/600/R-95/136 (1995) Diluent: Laboratory Seawater
 Ending Date: 28 Jan-16 10:10 Species: Atherinops affinis Brine:
 Duration: 6d 18h Source: Aquatic Biosystems, CO Age:

Sample ID: 15-2314-7706 Code: B3470-08 Client:
 Sample Date: 20 Jan-16 08:00 Material: Industrial Effluent Project:
 Receive Date: 21 Jan-16 Source: Kinder Morgan - Norwalk
 Sample Age: 32h Station: Upstream Receiving Water (RSW-001)

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity adjusted with Tropic Marin artificail sea salts

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
11-2573-0953	7d Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test
11-4140-0886	Mean Dry Biomass-mg	100	>100	NA	19.5%	1	Equal Variance t Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
11-2573-0953	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	1	1	1	1	1	0	0	0.0%	0.0%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	0.792	1.212	0.07979	0.1784	17.17%	0.0%
100		5	0.9144	0.7077	1.121	0.646	1.034	0.07443	0.1664	18.2%	11.98%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		0.858	1.028	0.646	1.006	1.034

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

CETIS Analytical Report

Report Date: 29 Jan-16 09:46 (p 1 of 4)
 Test Code: B347008aac | 12-6860-6870

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 11-2573-0953	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:45	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 15-2314-7706	Code: B3470-08	Client:
Sample Date: 20 Jan-16 08:00	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder-Morgan-Norwalk	
Sample Age: 32h	Station: Upstream Receiving Water (RSW-001)	

Batch Note: Dilution water is Lab Control (Mill-q water + Tropic Marin sea salts)

Sample Note: Salinity adjusted with Tropic Marin artificail sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 7d survival rate

Wilcoxon-Rank Sum Two-Sample Test

Control	vs C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water	100	27.5	NA	1	8	1.0000	Exact	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	8			
Total	0		9			

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.345	1.345	1.345	1.345	1.345
100		1.345	1.345	1.345	1.345	1.345

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

CETIS Analytical Report

Report Date: 29 Jan-16 09:46 (p 2 of 4)
Test Code: B347008aac | 12-6860-6870

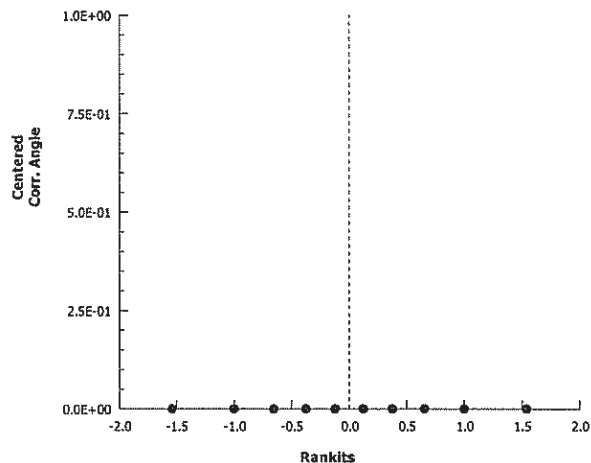
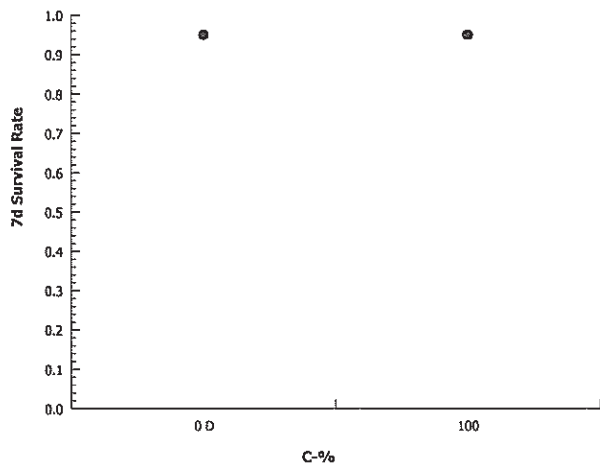
Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 11-2573-0953 Endpoint: 7d Survival Rate
Analyzed: 29 Jan-16 9:45 Analysis: Nonparametric-Two Sample

CETIS Version: CETISv1.8.8
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 29 Jan-16 09:46 (p 3 of 4)
 Test Code: B347008aac | 12-6860-6870

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 11-4140-0886	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:46	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 15-2314-7706	Code: B3470-08	Client:
Sample Date: 20 Jan-16 08:00	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Nonwalk	
Sample Age: 32h	Station: Upstream Receiving Water (RSW-001)	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic-Marin-sea-salts)
Sample Note: Salinity adjusted with Tropic Marin artificial sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	19.5%	Passes mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	1.14	1.86	0.203	8	0.1436	CDF	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.8151	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.03868803	0.03868803	1	1.3	0.2873	Non-Significant Effect
Error	0.2381374	0.02976717	8			
Total	0.2768254		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	1.149	23.15	0.8961	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.8465	0.7411	0.0528	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	1.114	0.792	1.212	0.07979	17.17%	0.0%
100		5	0.9144	0.7077	1.121	1.006	0.646	1.034	0.07443	18.2%	11.98%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		0.858	1.028	0.646	1.006	1.034

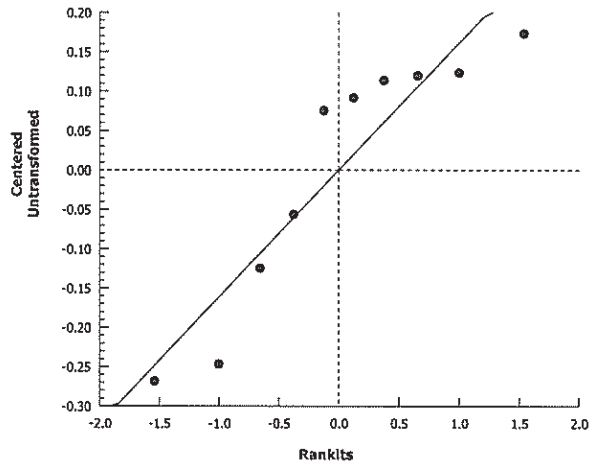
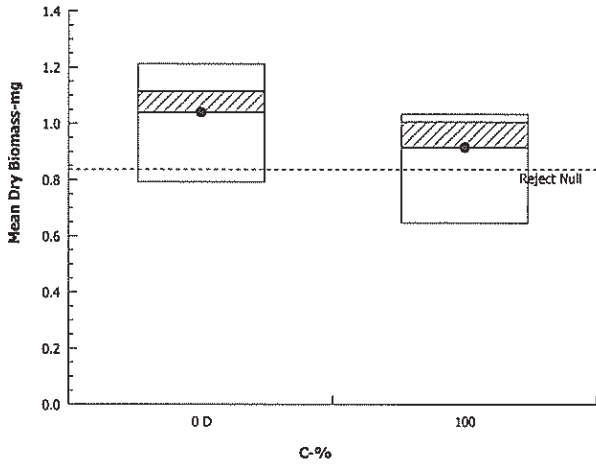
Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 11-4140-0886 Endpoint: Mean Dry Biomass-mg
Analyzed: 29 Jan-16 9:46 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.8.8
Official Results: Yes

Graphics



CETIS Summary Report

Report Date: 29 Jan-16 09:54 (p 1 of 1)

Test Code: B347002aac | 00-0812-7645

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:

Sample ID: 09-6301-5631	Code: B3470-02	Client:
Sample Date: 20 Jan-16 09:00	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 31h	Station: Effluent	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity Adjusted with Rtropic Marin sea salts

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
17-9048-8528	7d Survival Rate	100	>100	NA	9.54%	1	Wilcoxon Rank Sum Two-Sample Test
08-5571-4412	Mean Dry Biomass-mg	<100	100	NA	15.9%	>1	Equal Variance t Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
17-9048-8528	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	0.96	0.8489	1	0.8	1	0.04	0.08944	9.32%	4.0%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	0.792	1.212	0.07979	0.1784	17.17%	0.0%
100		5	0.7524	0.6442	0.8606	0.62	0.834	0.03897	0.08714	11.58%	27.57%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	0.8	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		0.812	0.834	0.712	0.784	0.62

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	4/5	5/5

CETIS Analytical Report

Report Date: 29 Jan-16 09:54 (p 1 of 4)
 Test Code: B347002aac | 00-0812-7645

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 17-9048-8528	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:52	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 09-6301-5631	Code: B3470-02	Client:
Sample Date: 20 Jan-16 09:00	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 31h	Station: Effluent	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity Adjusted with Rtropic Marin sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Angular (Corrected)	NA	C > T	NA	NA	9.54%	Passes 7d survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	25	NA	1	8	0.5000	Exact	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.00567079	0.00567079	1	1	0.3466	Non-Significant Effect
Error	0.04536632	0.00567079	8			
Total	0.05103711		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Mod Levene Equality of Variance	1	13.75	0.3559	Equal Variances
Variances	Levene Equality of Variance	7.111	11.26	0.0285	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.6247	0.7411	0.0001	Non-normal Distribution

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	0.96	0.8489	1	1	0.8	1	0.04	9.32%	4.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		5	1.298	1.165	1.43	1.345	1.107	1.345	0.04763	8.21%	3.54%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	0.8	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.345	1.345	1.345	1.345	1.345
100		1.345	1.345	1.345	1.107	1.345

CETIS Analytical Report

Report Date: 29 Jan-16 09:54 (p 3 of 4)
 Test Code: B347002aac | 00-0812-7645

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 08-5571-4412	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:52	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:

Sample ID: 09-6301-5631	Code: B3470-02	Client:
Sample Date: 20 Jan-16 09:00	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 31h	Station: Effluent	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity Adjusted with Rtropic Marin sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	15.9%	Fails mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100*	3.225	1.86	0.165	8	0.0061	CDF	Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.8151	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.2050783	0.2050783	1	10.4	0.0121	Significant Effect
Error	0.1576992	0.0197124	8			
Total	0.3627775		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	4.192	23.15	0.1940	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.938	0.7411	0.5314	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	1.114	0.792	1.212	0.07979	17.17%	0.0%
100		5	0.7524	0.6442	0.8606	0.784	0.62	0.834	0.03897	11.58%	27.57%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		0.812	0.834	0.712	0.784	0.62

CETIS Analytical Report

Report Date: 29 Jan-16 09:54 (p 4 of 4)
Test Code: B347002aac | 00-0812-7645

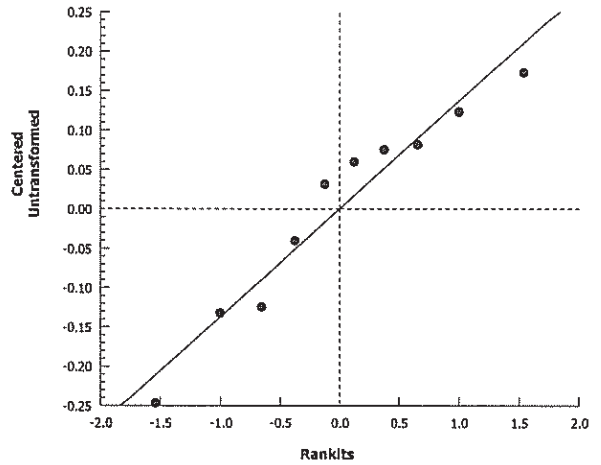
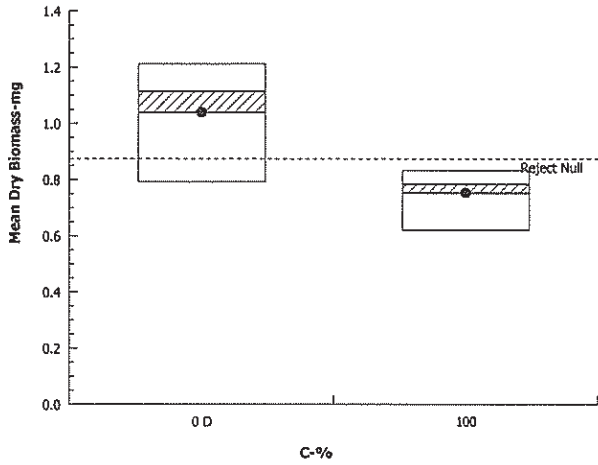
Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 08-5571-4412 Endpoint: Mean Dry Biomass-mg
Analyzed: 29 Jan-16 9:52 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.8.8
Official Results: Yes

Graphics



CETIS Summary Report

Report Date: 29 Jan-16 09:49 (p 1 of 1)
 Test Code: B347014aac | 03-7116-7735

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:

Sample ID: 04-3089-7319	Code: B3470-14	Client:
Sample Date: 20 Jan-16 08:15	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 32h	Station: Down Stream (RSW-002)	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity Adjusted with Tropic Marin artificial sea salts

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
03-7022-0767	7d Survival Rate	100	>100	NA	NA	1	Wilcoxon Rank Sum Two-Sample Test
15-4792-4547	Mean Dry Biomass-mg	100	>100	NA	17.4%	1	Equal Variance t Two-Sample Test

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
03-7022-0767	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	0	0	0.0%	0.0%
100		5	1	1	1	1	1	0	0	0.0%	0.0%

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	0.792	1.212	0.07979	0.1784	17.17%	0.0%
100		5	0.9396	0.7867	1.093	0.774	1.068	0.05508	0.1232	13.11%	9.55%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		1.068	0.774	0.906	0.894	1.056

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

CETIS Analytical Report

Report Date: 29 Jan-16 09:49 (p 1 of 4)
 Test Code: B347014aac | 03-7116-7735

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 03-7022-0767	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:48	Analysis: Nonparametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 04-3089-7319	Code: B3470-14	Client:
Sample Date: 20 Jan-16 08:15	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 32h	Station: Down Stream (RSW-002)	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)
Sample Note: Salinity Adjusted with Tropic Marin artificial sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	Test Result
Angular (Corrected)	NA	C > T	NA	NA	Passes 7d survival rate

Wilcoxon Rank Sum Two-Sample Test

Control	vs	C-%	Test Stat	Critical	Ties	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	27.5	NA	1	8	1.0000	Exact	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			1.0000	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	1	65540	<0.0001	Significant Effect
Error	0	0	8			
Total	0		9			

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1	1	1	1	1	1	0	0.0%	0.0%
100		5	1	1	1	1	1	1	0	0.0%	0.0%

Angular (Corrected) Transformed Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		5	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1	1	1	1	1
100		1	1	1	1	1

Angular (Corrected) Transformed Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.345	1.345	1.345	1.345	1.345
100		1.345	1.345	1.345	1.345	1.345

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	5/5	5/5	5/5	5/5	5/5
100		5/5	5/5	5/5	5/5	5/5

CETIS Analytical Report

Report Date: 29 Jan-16 09:49 (p 3 of 4)
 Test Code: B347014aac | 03-7116-7735

Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 15-4792-4547	Endpoint: Mean Dry Biomass-mg	CETIS Version: CETISv1.8.8
Analyzed: 29 Jan-16 9:49	Analysis: Parametric-Two Sample	Official Results: Yes
Batch ID: 16-6031-1911	Test Type: Growth-Survival (7d)	Analyst: Brett Muckey
Start Date: 21 Jan-16 15:55	Protocol: EPA/600/R-95/136 (1995)	Diluent: Laboratory Seawater
Ending Date: 28 Jan-16 10:10	Species: Atherinops affinis	Brine:
Duration: 6d 18h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 04-3089-7319	Code: B3470-14	Client:
Sample Date: 20 Jan-16 08:15	Material: Industrial Effluent	Project:
Receive Date: 21 Jan-16	Source: Kinder Morgan - Norwalk	
Sample Age: 32h	Station: Down Stream (RSW-002)	

Batch Note: Dilution water is Lab Control (Milli-q water + Tropic Marin sea salts)

Sample Note: Salinity Adjusted with Tropic Marin artificial sea salts

Data Transform	Zeta	Alt Hyp	Trials	Seed	PMSD	Test Result
Untransformed	NA	C > T	NA	NA	17.4%	Passes mean dry biomass-mg

Equal Variance t Two-Sample Test

Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:5%)
Dilution Water		100	1.023	1.86	0.180	8	0.1681	CDF	Non-Significant Effect

Auxiliary Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:5%)
Control Trend	Mann-Kendall Trend			0.8151	Non-significant Trend in Controls

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.02460363	0.02460363	1	1.047	0.3361	Non-Significant Effect
Error	0.1879998	0.02349997	8			
Total	0.2126034		9			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Variance Ratio F Test	2.099	23.15	0.4905	Equal Variances
Distribution	Shapiro-Wilk W Normality	0.9166	0.7411	0.3292	Normal Distribution

Mean Dry Biomass-mg Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Dilution Water	5	1.039	0.8173	1.26	1.114	0.792	1.212	0.07979	17.17%	0.0%
100		5	0.9396	0.7867	1.093	0.906	0.774	1.068	0.05508	13.11%	9.55%

Mean Dry Biomass-mg Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5
0	Dilution Water	1.114	0.792	1.212	0.914	1.162
100		1.068	0.774	0.906	0.894	1.056

CETIS Analytical Report

Report Date: 29 Jan-16 09:49 (p 4 of 4)
Test Code: B347014aac | 03-7116-7735

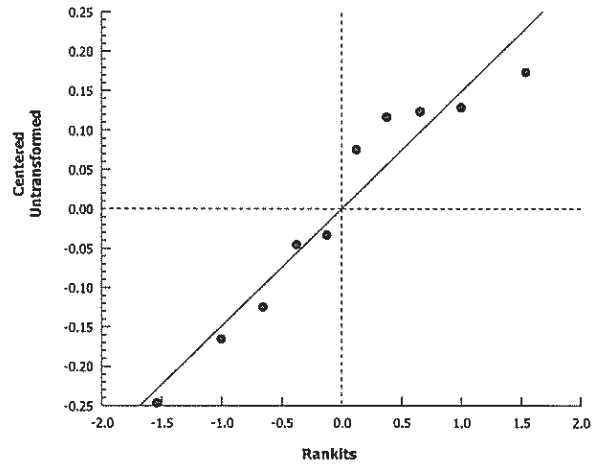
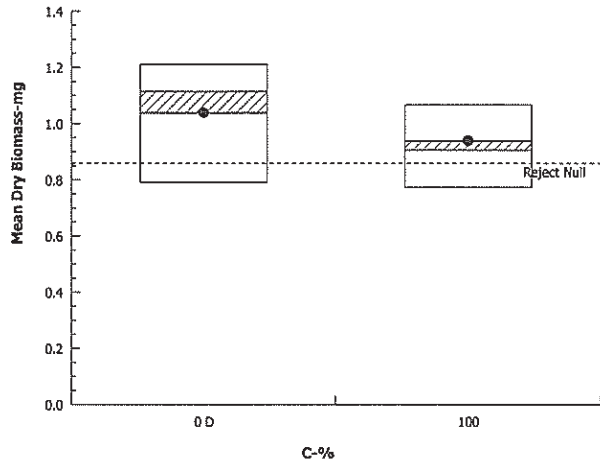
Pacific Topsmelt 7-d Survival and Growth Test

CH2M HILL - ASL

Analysis ID: 15-4792-4547 Endpoint: Mean Dry Biomass-mg
Analyzed: 29 Jan-16 9:49 Analysis: Parametric-Two Sample

CETIS Version: CETISv1.8.8
Official Results: Yes

Graphics



Client: Kinder Morgan EP - Norwalk

Topsmelt Chronic

Topsmelt Chronic

SDG: B 3470

WaterBath # 10

A : (3) (2) (1) (4)
REPLICATE

B : (4) (1) (3) (2)
REPLICATE

C : (3) (2) (4) (1)
REPLICATE

D : (3) (2) (4) (1)
REPLICATE

E : (3) (4) (1) (2)
REPLICATE

Number = Test Concentration (1= control, 2= Lowest conc., etc.)

APPENDIX B
REFERENCE TOXICANT DATA SHEETS

Random Template Used: See randomization sheet

Waterbath/incubator Used:

Date Initiated 1/21/20 16 Time 15:20

Stock Sol. ID 2B056 - 02

10

Date Terminated 1/28/20 16 Time 10:35

Organism ID: AA 74

Test Container Size: 400 ml

Solution Volume / rep: 200 ml

Client QA/QC Sample Description Cu (as CuCl2)

Tech: Day 0 ELW Day 1 EL Day 2 MC Day 3 MC Day 4 MC Day 5 JW Day 6 EL Day 7 MC

Time Day 0 1520 Day 1 1040 Day 2 1125 Day 3 1030 Day 4 1115 Day 5 9:00 Day 6 1015 Day 7 1035

Conc. or Percent	Day	Number of Live Organisms					Dissolved O ₂ (mg/l)		pH		Salinity		Temp. (°C)	Temp. Range
		A	B	C	D	E	Pre	Post	Pre	Post	Pre	Post	Pre	
Control	0	5	5	5	5	5		7.0		8.3		30	19.8	186
	1	5	5	5	5	5	6.3	7.0	8.0	8.4	30	31	19.8	186
	2	5	5	5	5	5	6.0	7.1	8.0	8.3	31	30	19.6	159
	3	5	5	5	5	5	6.1	6.9	8.1	8.3	30	30	19.7	159
	4	5	5	5	5	5	6.1	6.9	8.0	8.4	31	31	19.6	159
	5	5	5	5	5	5	6.4	6.9	8.0	8.4	31	30	19.3	212
	6	5	5	5	5	5	6.3	6.8	7.9	8.4	30	31	20.0	177
	7	5	5	5	5	5	5.2		7.9		31		19.4	177
32	0	5	5	5	5	5		7.0					19.9	
	1	5	5	5	5	5	6.3	7.0	8.1		31		19.8	
	2	5	5	5	5	5	5.9	7.2	8.0		31		19.6	
	3	5	5	5	5	5	5.9	6.9	8.1		30		19.8	
	4	5	5	5	5	5	6.1	7.0	8.0		31		19.7	
	5	5	5	5	5	5	6.4	6.9	8.0		31		19.4	
	6	5	5	5	5	5	6.3	6.9	7.9		31		19.9	
	7	5	5	5	5	5	5.4		7.9		31		19.6	
56	0	5	5	5	5	5		7.0					19.9	
	1	5	5	5	5	5	6.4	7.0	8.2		31		19.8	
	2	5	5	5	5	5	5.8	7.0	8.1		31		19.6	
	3	5	5	5	5	5	5.8	7.0	8.1		30		19.8	
	4	5	5	5	5	5	6.3	7.0	8.1		31		19.7	
	5	5	5	5	5	5	6.4	7.0	8.1		31		19.4	
	6	5	5	5	5	5	5.9	7.0	7.9		31		19.8	
	7	5	5	5	5	5	5.5		7.9		31		19.6	
100	0	5	5	5	5	5		7.1					19.8	
	1	5	5	5	5	5	6.3	7.0	8.2		31		19.8	
	2	5	5	5	5	5	6.0	7.0	8.1		31		19.6	
	3	5	5	5	5	5	5.9	6.9	8.1		30		19.8	
	4	5	5	5	5	5	6.3	7.1	8.0		31		19.8	
	5	5	5	5	5	5	6.5	7.0	8.0		31		19.2	
	6	5	5	5	5	5	5.5	7.1	7.9		31		19.7	
	7	5	5	5	5	5	5.5		7.9		31		19.6	
180	0	5	5	5	5	5		7.0					19.8	
	1	5	5	5	5	5	6.6	7.1	8.2		30		19.8	
	2	5	5	5	5	5	6.2	7.1	8.2		30		19.6	
	3	5	5	5	5	5	6.3	6.9	8.2		30		19.7	
	4	5	5	5	5	5	6.2	7.1	8.2		30		19.6	
	5	5	5	5	5	5	6.4	7.0	8.1		31		19.4	
	6	5	5	5	5	5	6.5	7.1	8.0		31		19.7	
	7	5	5	5	5	5	6.5		8.0		31		19.6	
320	0	5	5	5	5	5		7.1		8.4		30	19.8	
	1	4	3	3	4	2	6.5	7.2	8.2	8.4	31	30	19.8	
	2	2	2	1	3	2	6.3	7.1	8.2	8.4	30	30	19.6	
	3	1	2	1	2	2	6.4	7.0	8.2	8.4	30	30	19.6	
	4	1	2	1	1	2	6.3	7.1	8.2	8.4	30	30	19.7	
	5	1	2	1	1	2	6.0	7.0	8.1	8.4	30	30	19.5	
	6	1	2	1	1	2	6.6	7.1	8.1	8.4	30	30	19.7	
	7	1	2	1	0	2	5.6		8.0		31		19.6	

✓ Indicates one organism inadvertently poured off during solution renewal, replaced into container.
 "M" = organism missing, start count reduced. "Inj" = organism injured, remove from stats.
 "F" = fungus noted on dead organisms.
 Aeration in test chambers begun @ _____ (Note observations on Test Organism Info sheet)

Pre = Pre-renewal solutions. Post = Post-renewal solutions.
 Day 0 Temperatures = Post-renewals
 Therm ID# = Thermometer ID used for all measurements that day
 = Temp. out of recommended range

Endpoint	IC25	Cusum Chart Limits
Survival	<u>190 *</u>	<u>32 to 162</u>
Growth	<u>161 *</u>	<u>31 to 155</u>

Task Manager _____
 Project Manager [Signature]
 QA Officer [Signature]

BIOASSAY REFTOX AND CUSUM CHART EVALUATION FORM

Test Type: <u>Tissue smth</u>	<input type="checkbox"/> Acute -OR- <input checked="" type="checkbox"/> Chronic	Analyst doing review: <u>[Signature]</u>	Date: <u>1/29/16</u>
Test Endpoint: <u>LC50 survival, LC25 survival</u>	<input type="checkbox"/> Survival -OR- <input type="checkbox"/>	Peer Reviewer: <u>[Signature]</u>	Date: <u>2-3-16</u>
REFTOX test start date: <u>1/21/16</u> <u>LC25 smth</u>		Bioassay Section Lead: <u>[Signature]</u>	Date: <u>1/29/16</u>
		QA Officer:	Date:

No USEPA Quartiles apply	ASL limits <u>within</u> USEPA 25th Quartile	ASL limits <u>between</u> USEPA 25th Quartile and USEPA 75th Quartile	ASL limits <u>outside</u> of the USEPA 75th Quartile
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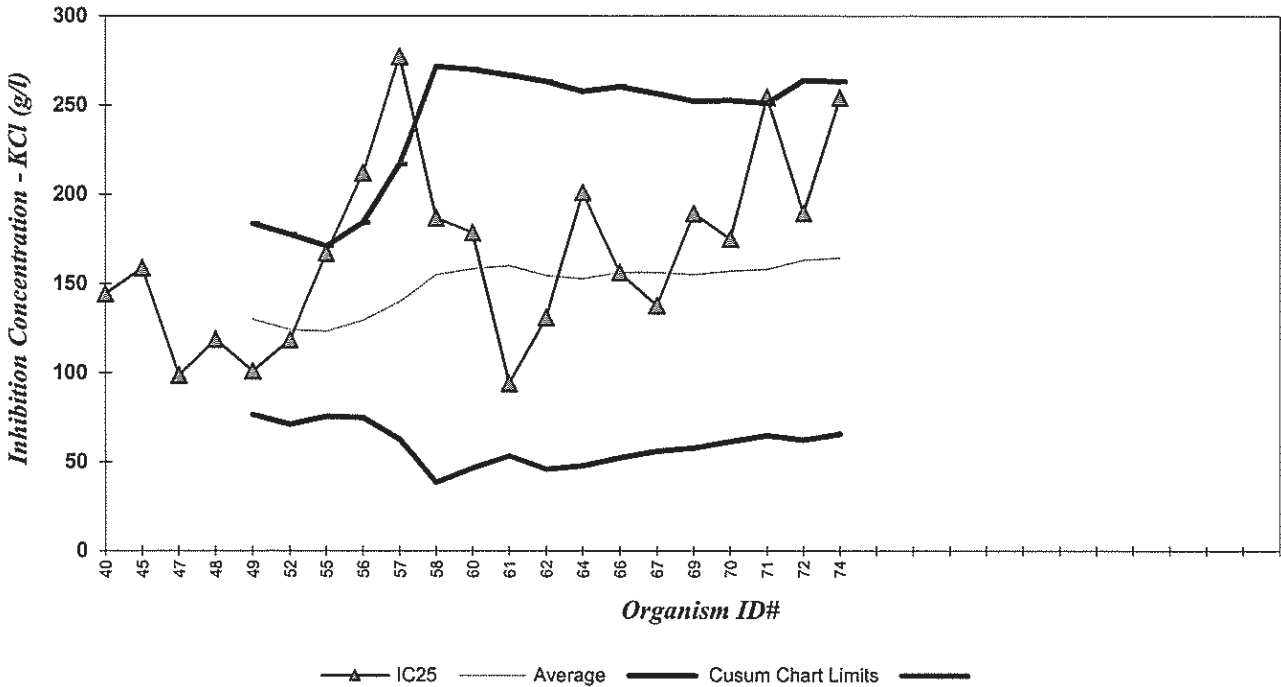
Analyst	<p><input type="checkbox"/> Cultured inhouse -OR- <input type="checkbox"/> Reftox results from supplier available</p> <p>A1</p> <p><input type="checkbox"/> Test is Routine (10+ per year)</p> <p>A2</p> <p><input type="checkbox"/> Previous 19+ reftox tests in limits</p> <p>A3</p> <p><input type="checkbox"/> NOT subject to WDOE regulation</p> <p>A4</p> <p style="text-align: center;">↑ <u>none</u></p> <p>IF ALL APPLY, reftox test need NOT be immediately repeated</p> <p>Otherwise, REPEAT as soon as Practicable (preferably within same calendar month)</p> <p>Does the reftox test need to be repeated? (check one)</p> <p><input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p><input type="checkbox"/> Cultured inhouse -OR- <input type="checkbox"/> Reftox results from supplier available</p> <p>B1</p> <p><input type="checkbox"/> Test is Routine (10+ per year)</p> <p>B2</p> <p><input type="checkbox"/> Previous 9+ reftox tests in limits</p> <p>B3</p> <p><input type="checkbox"/> Cumsum chart shows long term 95%+ of reftox tests being in range</p> <p>B4</p> <p><input type="checkbox"/> NOT subject to WDOE regulation</p> <p>B5</p> <p>IF ALL APPLY, reftox test need NOT be immediately repeated</p> <p>Otherwise, REPEAT as soon as Practicable (preferably within same calendar month)</p> <p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p><input type="checkbox"/> Cultured inhouse -OR- <input type="checkbox"/> Reftox results from supplier available</p> <p>C1</p> <p><input type="checkbox"/> Test is Routine (10+ per year)</p> <p>C2</p> <p><input type="checkbox"/> Previous 19+ reftox tests in limits</p> <p>C3</p> <p><input type="checkbox"/> NOT subject to WDOE regulation</p> <p>C4</p> <p>IF ALL APPLY, reftox test need NOT be immediately repeated</p> <p>Otherwise, REPEAT as soon as Practicable (preferably within same calendar month)</p> <p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p>REPEAT as soon as Practicable (preferably within same calendar month)</p> <p>Does the reftox test need to be repeated?</p> <p><input checked="" type="checkbox"/> Yes</p>
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<p>Root Cause Analysis:</p> <p>Correct Toxicant used?: <input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>Correct Water used?: <input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>Correct Temperature used?: <input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>DO, pH, Cond./Salinity OK?: <input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p>Other Comments / Observations:</p> <p><u>3rd test post "feeding training" → 1/2/16 Test = in range 2.1 mg/l ong</u></p> <p><u>1/12/16 Test = above range 0.87 mg/l fish (TAC min 0.25 mg)</u></p> <p><u>1/21/16 Test = above range 0.86 mg/l fish</u></p> <p><u>Supplier reftox also shows above range results. 3rd 2/13/16 Repeat when supplier is in range.</u></p>
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Peer Reviewer	<p>Does the reftox test need to be repeated? (check one)</p> <p><input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>If in disagreement with Analyst assessment, forward to Section Leader QA officer</p>	<p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>If in disagreement with Analyst assessment, forward to Section Leader QA officer</p>	<p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p> <p>If in disagreement with Analyst assessment, forward to Section Leader QA officer</p>	
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Sect. Lead / QA	<p>Does the reftox test need to be repeated? (check one)</p> <p><input checked="" type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	<p>Does the reftox test need to be repeated? (check one)</p> <p><input type="checkbox"/> Yes -OR- <input type="checkbox"/> No</p>	
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REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART
Atherinops affinis Acute Dual-Endpoint 96 hr Survival - LC50 Values



***Atherinops affinis* - Acute Dual Endpoint (EPA Test Method 1006.0)**

Copper (as CuCl₂)

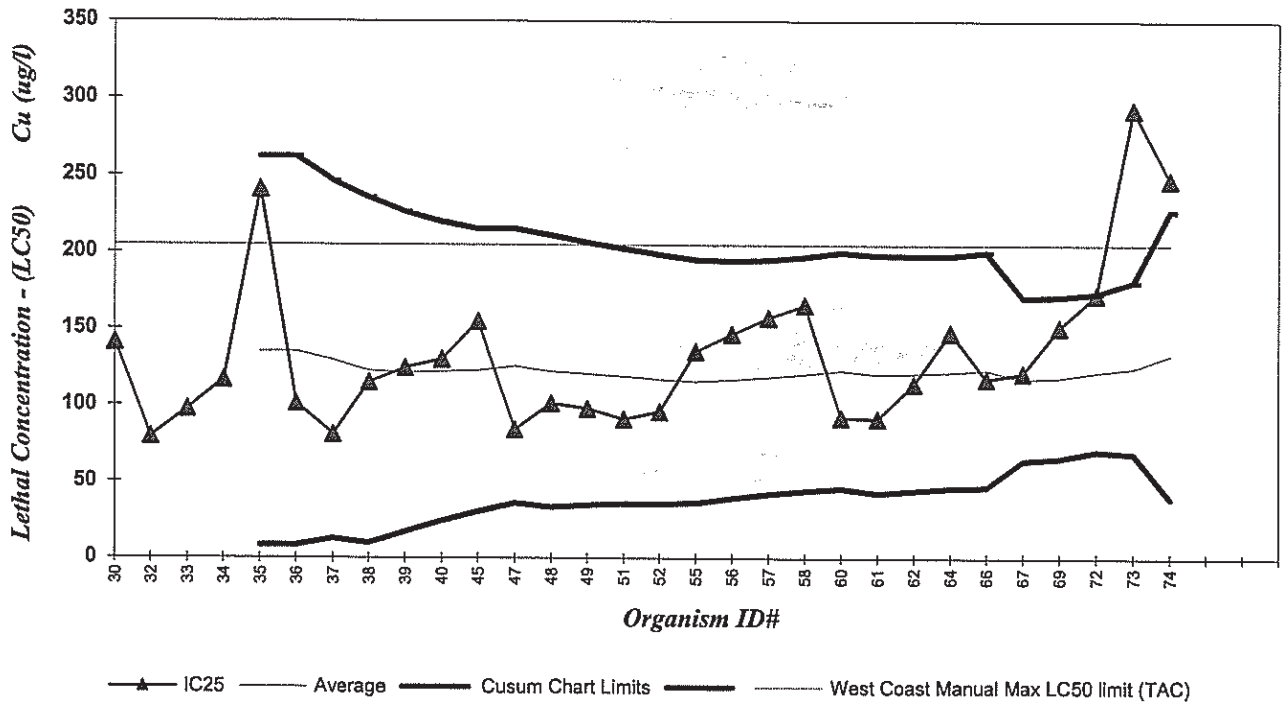
From EPA 833-R-00-003:

Organism age:	10th Quartile CV (control limit) =	na
Endpoint: 96 hour Survival	25th Quartile CV (warning limit) =	na
Stats Method: Probit, Spearman-Karber, Linear Interpolation	75th Quartile CV (warning limit) =	na
Test Conditions: Artificial Sea water, 20 oC	90th Quartile CV (control limit) =	na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

Event #	MB ID #	Test Start Date	LC50	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
9	57	3/17/2015	277	140	39	63	217	0.38
10	58	5/5/2015	187	155	58	38	272	0.35
11	60	7/28/2015	178	158	56	46	270	0.33
12	61	9/15/2015	94	160	53	53	267	0.35
13	62	10/8/2015	131	155	54	46	263	0.34
14	64	10/15/2015	201	153	52	48	258	0.33
15	66	10/29/2015	156	156	52	52	260	0.32
16	67	11/5/2015	138	156	50	56	256	0.31
17	69	11/25/2015	189	155	49	58	252	0.30
18	70	12/3/2015	175	157	48	61	253	0.29
19	71	12/10/2015	254	158	47	65	251	0.31
20	72	12/30/2015	189	163	50	62	264	0.30
21	74	1/21/2016	254	164	49	66	263	0.31
22								

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART
Atherinops affinis Chronic Survival - LC50 Values



***Atherinops affinis* - Chronic (EPA Test Method 1006.0)**

COPPER (ug/L) (as CuCl₂)

Endpoint: Chronic Survival

Stats Method: Linear Interpolation

Test Conditions: 30 ppt Artificial Sea water, 20 oC

From EPA 833-R-00-003:

10th Quartile CV (*control limit*) = na

25th Quartile CV (*warning limit*) = na

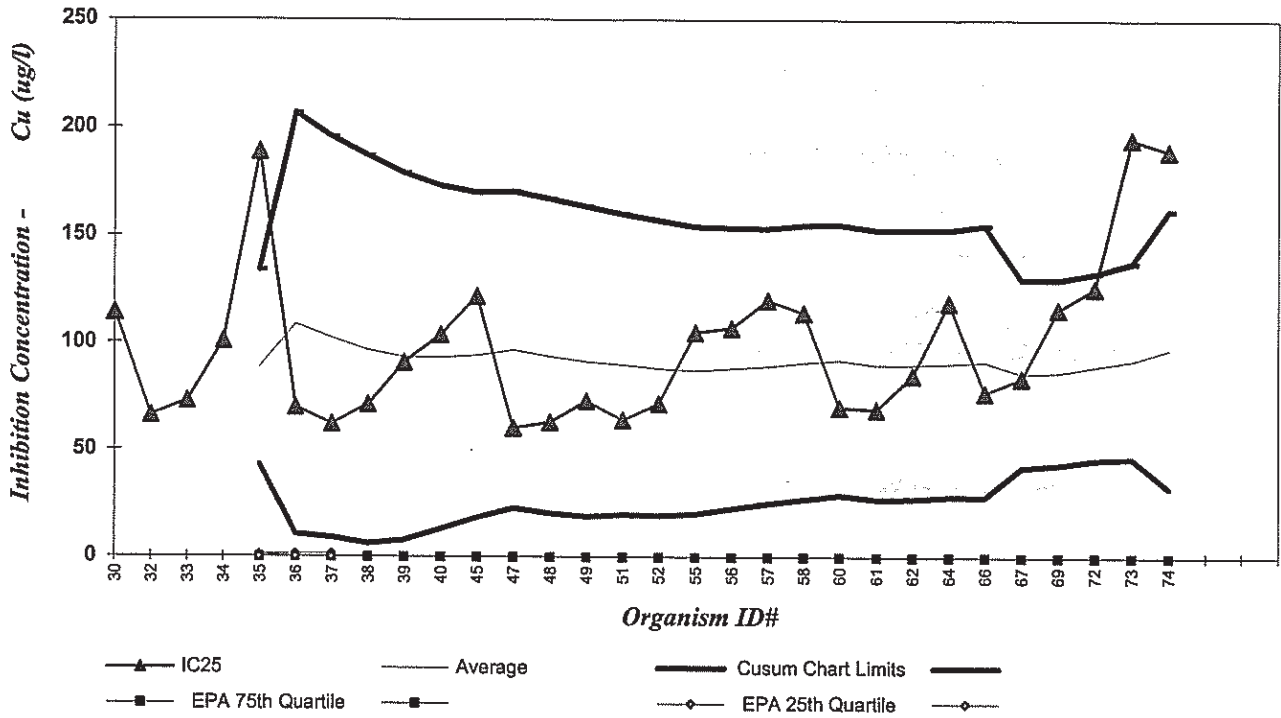
75th Quartile CV (*warning limit*) = na

90th Quartile CV (*control limit*) = na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

Event #	AA ID #	Test Start Date	LC50	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
20	58	5/5/2015	166	121	38	44	197	0.32
21	60	7/28/2015	92	123	39	46	200	0.31
22	61	9/15/2015	92	120	39	43	198	0.31
23	62	10/8/2015	114	121	38	44	198	0.31
24	64	10/15/2015	148	122	38	46	198	0.31
25	66	10/29/2015	118	123	38	47	200	0.30
26	67	11/5/2015	121	117	27	64	171	0.30
27	69	11/25/2015	151	118	26	66	171	0.29
28	72	12/30/2015	172.6	122	26	70	173.4	0.29
29	73	1/12/2016	293	125	28	68	181	0.29
30	74	1/21/2016	247	133	47	39	227	0.36
31	61							
32	62							

REFERENCE TOXICANT CUMLATIVE SUMMARY (CUSUM) CHART
Atherinops affinis Chronic Survival - IC25 Values



***Atherinops affinis* - Chronic (EPA Test Method 1006.0)**

COPPER (ug/L) (as CuCl₂)

Endpoint: Chronic Survival

Stats Method: Linear Interpolation

Test Conditions: 30 ppt Artificial Sea water, 20 oC

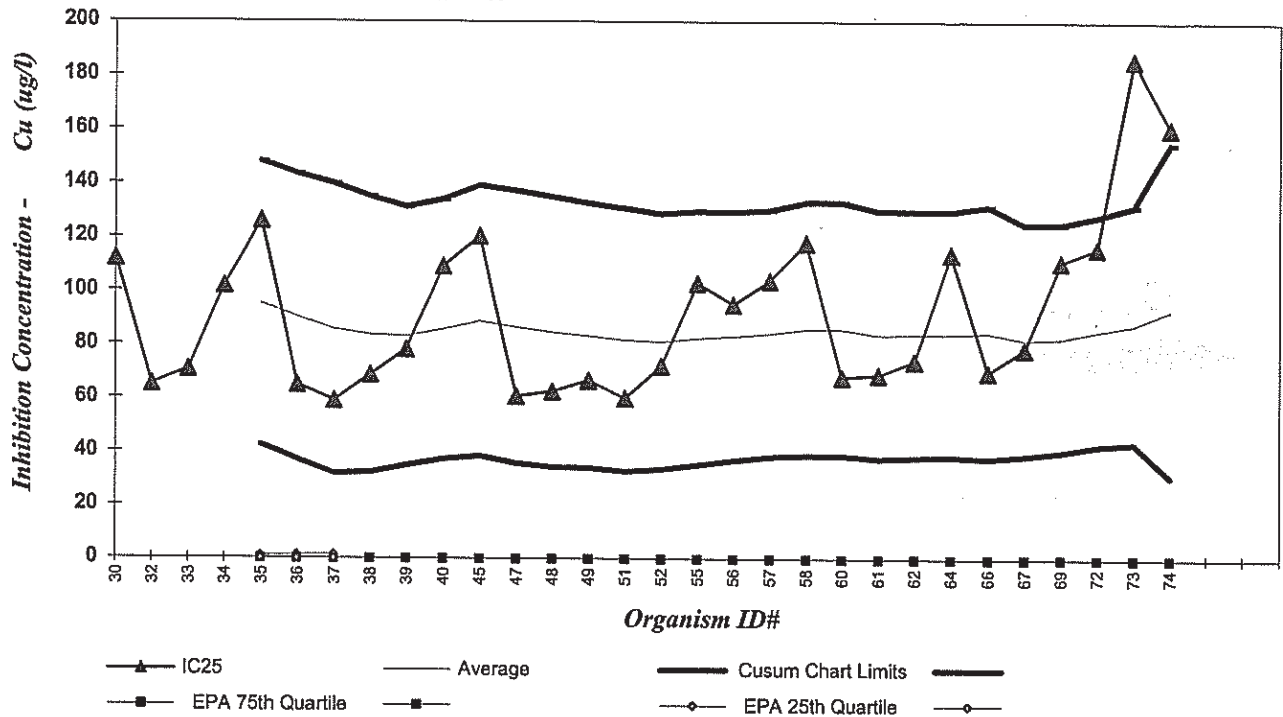
From EPA 833-R-00-003:

- 10th Quartile CV (*control limit*) = na
- 25th Quartile CV (*warning limit*) = na
- 75th Quartile CV (*warning limit*) = na
- 90th Quartile CV (*control limit*) = na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

Event #	AA ID #	Test Start Date	IC25	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
21	60	7/28/2015	70	92	32	29	155	0.34
22	61	9/15/2015	69	90	31	27	153	0.34
23	62	10/8/2015	85	90	31	27	153	0.34
24	64	10/15/2015	119	91	31	28	153	0.33
25	66	10/29/2015	77	91	32	28	155	0.33
26	67	11/5/2015	84	86	22	42	130	0.33
27	69	11/25/2015	116	87	22	43	130	0.32
28	72	12/30/2015	126	89	22	46	133	0.32
29	73	1/12/2016	195	92	23	46	138	0.31
30	74	1/21/2016	190	97	32	32	162	0.36
31								
32								
33								

REFERENCE TOXICANT CUMULATIVE SUMMARY (CUSUM) CHART
Atherinops affinis Chronic Biomass - IC25 Values



***Atherinops affinis* - Chronic (EPA Test Method 1006.0)**

COPPER (ug/L) (as CuCl₂)

Endpoint: Chronic Biomass

Stats Method: Linear Interpolation

Test Conditions: 30 ppt Artificial Sea water, 20 °C

(*Weight should be used, but often uncalculable for RT data)

From EPA 833-R-00-003:

10th Quartile CV (control limit) = na

25th Quartile CV (warning limit) = na

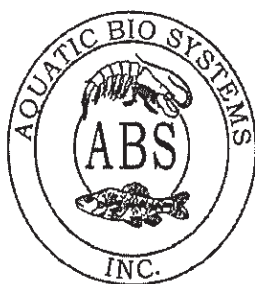
75th Quartile CV (warning limit) = na

90th Quartile CV (control limit) = na

As per EPA 833-R-00-003, section B.2.1, the quartiles listed above are from just a few labs (0) and therefore not to be considered typical or representative. Cusum limits are based on ASL data only.

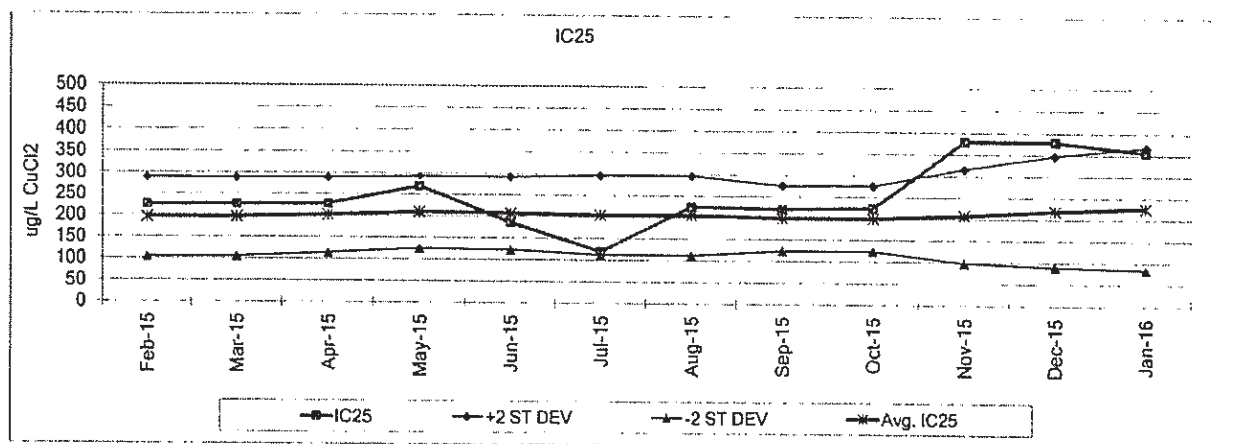
Event #	AA ID #	Test Start Date	IC25	Running Average	Running SD	Cusum Chart Limits		Intralab CV
						AVG-2SD	AVG+2SD	
21	60	7/28/2015	68	86	24	39	133	0.28
22	61	9/15/2015	69	84	23	37	130	0.27
23	62	10/8/2015	74	84	23	38	130	0.27
24	64	10/15/2015	114	84	23	38	130	0.27
25	66	10/29/2015	70	85	24	38	132	0.27
26	67	11/5/2015	78	82	22	39	125	0.27
27	69	11/25/2015	111	83	21	40	125	0.26
28	72	12/30/2015	116	85	21	42	128	0.26
29	73	1/12/2016	186	88	22	43	132	0.26
30	74	1/21/2016	161	93	31	31	155	0.32
31								
32								
33								

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524



Toll Free: 800/331-5916
Tel:970/484-5091 Fax:970/484-2514

Atherinops affinis



Chronic 7-Day Survival Test Data

Date	NOEC (ug/L CuCl ₂)	LOEC (ug/L CuCl ₂)
Aug-15	180	320
Sep-15	180	320
Oct-15	180	320
Nov-15	180	320
Dec-15	180	320
Jan-16	180	320

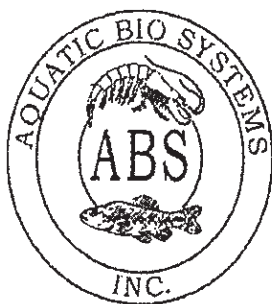
IC 25 for Growth Test

Date	IC25 (ug/L CuCl ₂)	95% Confidence		Avg. IC25±2 ST DEV-2 ST DEV (ug/L CuCl ₂)		
		(upper)	(lower)			
Aug-15	225.67	336.88	209.66	204.70	297.36	112.04
Sep-15	221.13	390.71	124.30	199.67	275.83	123.51
Oct-15	224.17	305.12	210.41	200.22	276.91	123.52
Nov-15	380.00	380.00	380.00	207.62	316.82	98.41
Dec-15	380.00	353.42	380.00	219.11	348.26	89.96
Jan-16	356.52	391.74	161.58	226.52	368.69	84.35

Dates Tested: 01/16-26/2016

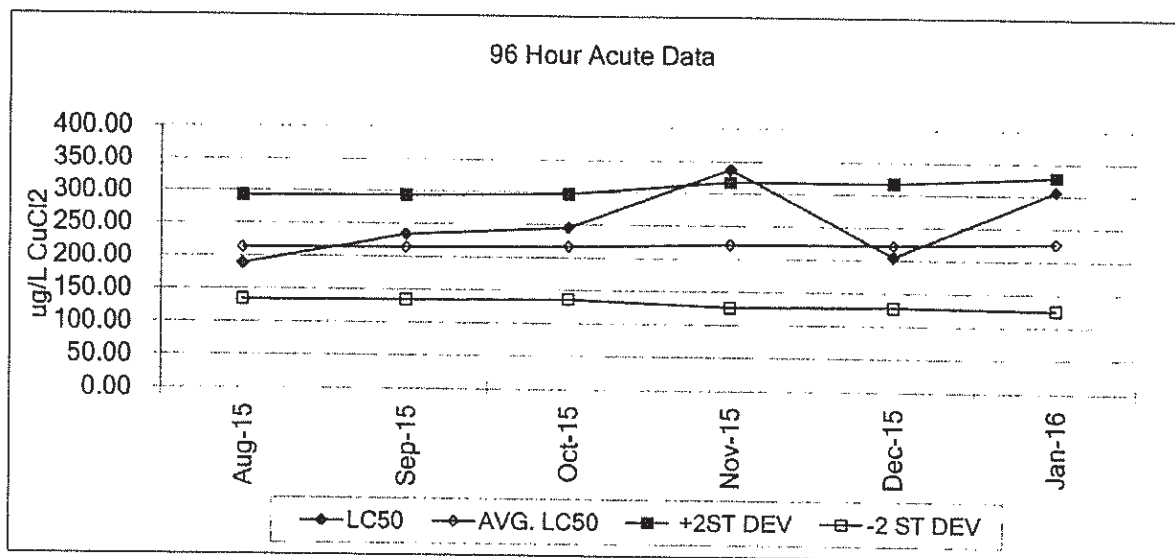
Note: "Not Detected" indicates that all tested concentrations showed no significant difference from the control.

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524



Toll Free: 800/331-5916
Tel: 970/484-5091 Fax: 970/484-2514

Atherinops affinis
Reference Toxicant LC50

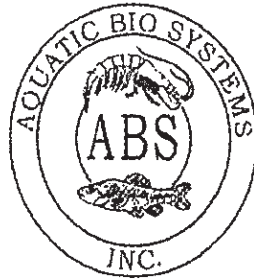


Acute 96 Hour Test Data

TEST DATE	LC50 (ug/L CuCl ₂)	95% Confidence		AVG. LC50 (ug/L CuCl ₂)	METHOD	+2ST DEV	-2 ST DEV
		(upper)	(lower)				
Aug 15	189.02	216.37	164.76	213.36	SPKR	292.60	134.11
Sep 15	233.93	262.46	209.02	214.18	PROBIT	293.92	134.44
Oct 15	245.67	277.34	217.38	216.83	PROBIT	297.06	136.59
Nov 15	337.35	377.90	301.16	221.60	SPKR	317.13	126.07
Dec 15	204.87	228.18	183.93	222.49	SPKR	317.05	127.94
Jan 16	306.38	346.81	270.05	226.75	PROBIT	328.12	125.39

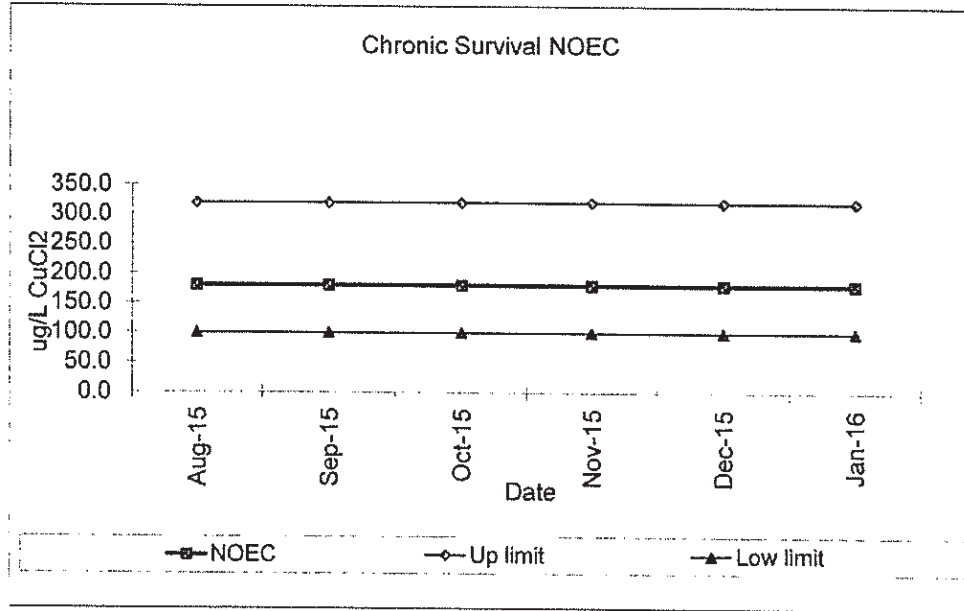
Dates Tested :1/19-23/2016

1300 Blue Spruce Drive, Suite C
Fort Collins, Colorado 80524



Toll Free: 800/331-5916
Tel:970/484-5091 Fax:970/484-251

Atherinops affinis



Chronic 7 Day Survival Test Data

Date	NOEC (ug/L CuCl ₂)	LOEC (ug/L CuCl ₂)
Aug 15	180.0	320.0
Sep 15	180.0	320.0
Oct 15	180.0	320.0
Nov 15	180.0	320.0
Dec 15	180.0	320.0
Jan 16	180.0	320.0

Date Tested: 01/19-26/2016

APPENDIX C
CHAIN OF CUSTODY

CH2MHILL

CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING

Client CH2M NPDES# _____
 Address 6 HUNTON CENTRE # 700
SANTA ANA, CA 92707
 Contact Person: DAN JABLONSKI
 Phone: _____
 E-mail: _____

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Composite Sample Information:
 Initiated: Date 1/14/16 Time 0900
 Ended: Date 1/20/16 Time 0900
 Chilled During Collection? Yes No
 Dechlorinated prior to shipping? Yes No

CH2M HILL Project # / Purchase Order # 066473.H(0)

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	TOP SWEEP ACUTE	TOP SWEEP CHRONIC	Concentration and/or Comments	
			Comp.	Grab																			
EFFLUENT - 01-19	1/14/16	0900	X		1	B3470-01																	ice 0.1°C

Sampled By & Title <u>Viana Castro</u>	(Please sign and print name) <u>[Signature]</u>	Date/Time <u>1/14/16 0900</u>	Relinquished By <u>[Signature]</u>	(Please sign and print name)	Date/Time <u>1/20/16 1200</u>
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>Pierrette Castro</u>	(Please sign and print name) <u>Pierrette Castro</u>	Date/Time <u>1/21/15 11:20</u>	Shipped Via	UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #
Work Authorized By	(Please sign and print name)	Remarks <u>B3470 A</u>			

CH2MHILL

CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING

Client CH2M
 Address 6 HUTTON CENTRE #700
SANTA ANA, CA 92707
 Contact Person: DAN JABLONSKI
 Phone: _____
 E-mail: _____

NPDES# _____

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Composite Sample Information:			
Initiated:	Date _____	Time _____	
Ended:	Date _____	Time _____	
Chilled During Collection ?	Yes _____	No _____	
Dechlorinated prior to shipping ?	Yes _____	No _____	

CH2M HILL Project # / Purchase Order # 668473.A1.01

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Top SWIFT Chronic	Top SWIFT Acute	Concentration and/or Comments		
			Comp.	Grab																				
RSW-001-01-20	1/20/16	0800		X	1	B3470-07																	Ice 2.5°C	
RSW-002-01-20	1/20/16	0815		X	1	B3470-13																		UPSTREAM
																								DOWNSTREAM

Sampled By & Title <u>Vidal Cortes</u>	(Please sign and print name) <u>V. Cortes</u>	Date/Time 1/20/16 0800	Relinquished By <u>V. Cortes</u>	(Please sign and print name)	Date/Time 1/20/16 1200
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>Renee Castro</u>	(Please sign and print name) <u>Renee Castro</u>	Date/Time 1/21/15 11:20	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___		Shipping #
Work Authorized By	(Please sign and print name)	Remarks <u>B3470A</u>	-07 = Rec. Water -13 = Downstream		



Batch Number: B3470A
Client/Project: Kinder Morgan

Date Received: 1/21/15
Received By: PC

- Were custody seals intact? Yes No N/A
- Packing Material: Ice Blue Ice Box
- Temp OK? (<6C) Therm ID: TH173 Exp. 4/16 2.5 °C Yes No N/A
- Was a Chain of Custody (CoC) Provided? Yes No N/A
- Was the CoC correctly filled out (If No, document below) Yes No N/A
- Were the sample containers in good condition (not broken or leaking)? Yes No N/A
- Are all samples within 36 hours of collection? Yes No N/A
- Method of Shipment: Hand Delivered FedEx UPS Greyhound Other: _____ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on: _____ Client contact: _____

Resolution to Exception:

ORIGIN ID:DTHA (949) 400-0608
CH2M HILL

6 HUTTON CENTER DR
STE 700
SANTA ANA, CA 92707
UNITED STATES US

SHIP DATE: 20JAN16
ACTWGT: 39.80 LB
CAD: 6995376/SSF01621
DIMS: 24x13x14 IN

BILL THIRD PARTY

Part # 156297-435 INTZ 12/15/15

TO CH2M
APPLIED SCIENCES LAB
1100 NE CIRCLE BLVD
SUITE 300
CORVALLIS OR 97330

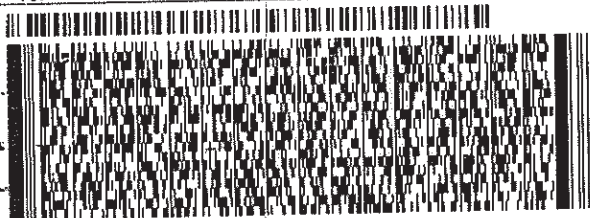
(641) 768-3120

REF:

DEPT:

THU:

PO:



FedEx
Express



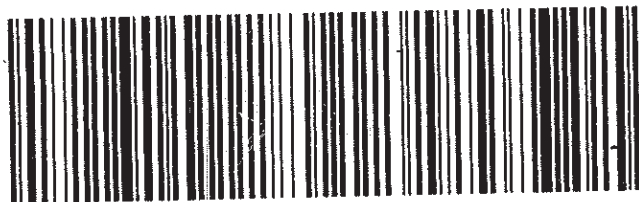
01010010101010

THU - 21 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 7822 0758 3591
0201

WS CVOA

97330
OR-US PDX



ORIGIN ID:DTHA (949) 400-0608
CH2M HILL

6 HUTTON CENTER DR
STE 700
SANTA ANA, CA 92707
UNITED STATES US

SHIP DATE: 20JAN16
ACTWGT: 59.50 LB
CAD: 6995376/SSF01621
DIMS: 24x13x15 IN

BILL THIRD PARTY

Part # 156297-435 INTZ 12/15/15

TO CH2M
APPLIED SCIENCES LAB
1100 NE CIRCLE BLVD
SUITE 300
CORVALLIS OR 97330

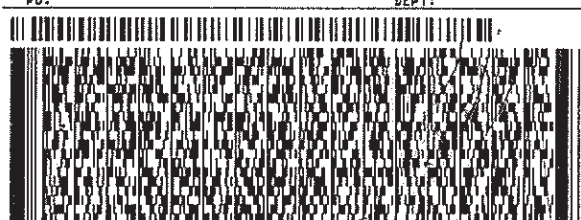
(641) 768-3120

REF:

DEPT:

THU:

PO:



FedEx
Express



01010010101010

THU - 21 JAN 10:30A
PRIORITY OVERNIGHT

TRK# 7822 0759 1681
0201

WS CVOA

97330
OR-US PDX



2.80c

150470

CH2MHILL

CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING

Client CH2M
 Address 1000 Wilshire Blvd Ste 2100
Los Angeles, CA 90017

NPDES# CA0063509

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Contact Person: Dan Jablonski
 Phone: 818-257-3630
 E-mail: djablons1@CH2M.COM

Composite Sample Information:

Initiated: Date 1/21/16 Time 0900
 Ended: Date 1/22/16 Time 0900
 Chilled During Collection? Yes No
 Dechlorinated prior to shipping? Yes No

CH2M HILL Project # / Purchase Order # 671334.PM.01

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	TopSmelt Acute	TopSmelt Chronic	Concentration and/or Comments		
			Comp.	Grab																				
EFF-012216	1/22/16	0900	X		1	3470-08															X	X		
RWUP-012216	1/22/16	1030		X	1	3470-09																X	X	
RWDOWN-012216	1/22/16	1035		X	1	3470-15																X	X	

Sampled By & Title <u>Dan Jablonski PM</u>	(Please sign and print name) <u>Dan Jablonski</u>	Date/Time <u>1/22/16 1500</u>	Relinquished By <u>Dan Jablonski</u>	(Please sign and print name) <u>Dan Jablonski</u>	Date/Time <u>1/22/16 1500</u>
Received By <u>FEDEX</u>	(Please sign and print name) _____	Date/Time <u>1/22/16 1500</u>	Relinquished By _____	(Please sign and print name) _____	Date/Time _____
Received By <u>[Signature]</u>	(Please sign and print name) <u>G. Otter</u>	Date/Time <u>1-23-16 1110</u>	Relinquished By _____	(Please sign and print name) _____	Date/Time _____
Received By _____	(Please sign and print name) _____	Date/Time _____	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping # _____	
Work Authorized By _____	(Please sign and print name) _____	Remarks _____			



Sample Receipt Record

Batch Number: B3470
Client/Project: Kinder Morgan

Date Received: 1-23-16
Received By: [Signature]

Were custody seals intact?

Yes No N/A

Packing Material:

Ice Blue Ice Box

Temp OK? (<6C) Therm ID: TH173 Exp. 4-15-16

2.8 °C Yes No N/A

Was a Chain of Custody (CoC) Provided?

Yes No N/A

Was the CoC correctly filled out (If No, document below)

Yes No N/A

Were the sample containers in good condition (not broken or leaking)?

Yes No N/A

Are all samples within 36 hours of collection?

Yes No N/A

Method of Shipment:

Hand Delivered FedEx UPS Greyhound Other: _____ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on:

Client contact:

Resolution to Exception:

Client CH2M
 Address 6 HUTTON CENTRE #700
SANTA ANA, CA 92707
 Contact Person: DAN JABLONSKI
 Phone: _____
 E-mail: _____

NPDES# _____

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Composite Sample Information:
 Initiated: Date 1/24/16 Time 0935
 Ended: Date 2/24/16 Time 0935
 Chilled During Collection? Yes No
 Dechlorinated prior to shipping? Yes No

CH2M HILL Project # / Purchase Order # 668743.AC.01

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Acute Top Shelf	Chronic Top Shelf	Concentration and/or Comments	
			Comp.	Grab																			
EFF-01-24	1/24/16	0935	<input checked="" type="checkbox"/>		1	3470-C																	re 0.3°C

Sampled By & Title <u>V. Castro</u>	(Please sign and print name)	Date/Time <u>1/24/16 0935</u>	Relinquished By <u>V. Castro</u>	(Please sign and print name)	Date/Time <u>1/25/16 0200</u>
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>Penelope Castro</u>	(Please sign and print name)	Date/Time <u>1/26/16 10:45</u>	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #	
Work Authorized By	(Please sign and print name)	Remarks <u>B3470 C - 1. today + 7pp - end date of composite should be 1/25/16 by 5/1/16</u>			

CH2MHILL

CHAIN OF CUSTODY RECORD FOR NPDES COMPLIANCE BIOMONITORING

Client CH2M
 Address 6 HUTTON CENTRE # 700
SANTA ANA, CA 92707
 Contact Person: DAN JABLONSKI
 Phone: _____
 E-mail: _____

NPDES# _____

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Composite Sample Information:			
Initiated:	Date _____	Time _____	
Ended:	Date _____	Time _____	
Chilled During Collection ?	Yes _____	No _____	
Dechlorinated prior to shipping ?	Yes _____	No _____	

CH2M HILL Project # / Purchase Order # _____

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Acute Top Swelt	Chronic Top Swelt	Concentration and/or Comments	
			Comp.	Grab																			
RSW-001-01-25	1/25/16	1000		✓	1	B3470-11															X	X	ice 0.9°C
RSW-002-01-25	1/25/16	1010		✓	2	B3470-17															X	X	

Sampled By & Title <u>J. Castro</u>	(Please sign and print name)	Date/Time 1/25/16 1000	Relinquished By <u>J. Castro</u>	(Please sign and print name)	Date/Time 1/25/16 1200
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>Danielle Castro Pienvette Castro</u>	(Please sign and print name)	Date/Time 1/26/16 10:45	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #	
Work Authorized By	(Please sign and print name)	Remarks B3470C			



Batch Number: B3470C

Date Received: 1/26/10

Client/Project: Kinder Morgan

Received By: PC

Were custody seals intact?

Yes No N/A

Packing Material:

Ice Blue Ice Box

Temp OK? (<6C) Therm ID: TH173 Exp. 4/10

0.3 °C Yes No N/A

Was a Chain of Custody (CoC) Provided?

Yes No N/A

Was the CoC correctly filled out (If No, document below)

Yes No N/A

Were the sample containers in good condition (not broken or leaking)?

Yes No N/A

Are all samples within 36 hours of collection?

EFF not within 36 hours

Yes No N/A

Method of Shipment:

Hand Delivered FedEx UPS Greyhound Other: _____ N/A

Sample Exception Report (The following exceptions were noted)

Client was notified on:

Client contact:

Resolution to Exception:

ORIGIN ID: DTHA (541) 752-4271
CH2M HILL

1100 NE CIRCLE BLVD STE 300

CORVALLIS, OR 973304741
UNITED STATES US

SHIP DATE: 25JAN16
ACTWGT: 41.10 LB
CAD: /OFFC1621
DIMS: 24x14x14 IN

BILL SENDER

Part # 156297-4354412310713095 52/10 964881*

TO

CH2M -- ASL
1100 NE CIRCLE BLVD
STE 300
CORVALLIS OR 97330

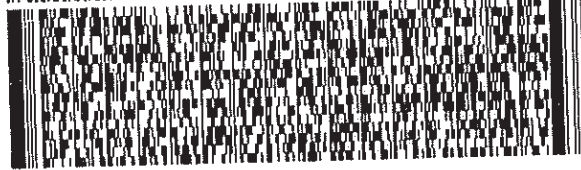
(641) 788-3120

REF:

DEPT:

INU:

PO:



FedEx
Express



AN10410910191F

1 of 2

TRK# 8091 9513 8671
0200

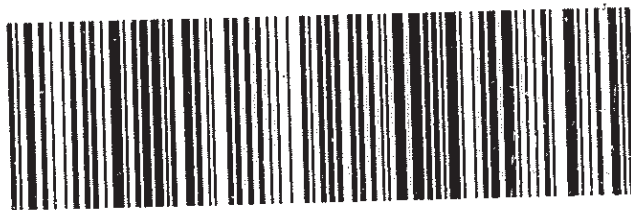
MASTER

WS CVOA

TUE - 26 JAN 10:30A
PRIORITY OVERNIGHT

97330

OR-US PDX



Client CH2M
 Address K HILL CENTER #70
SANTA ALBA, CA 97307
 Contact Person: DAN JABLONSKI
 Phone: _____
 E-mail: _____

NPDES# _____

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

Composite Sample Information:

Initiated: Date 1/14/16 Time 0900
 Ended: Date 1/20/16 Time 0900
 Chilled During Collection? Yes No
 Dechlorinated prior to shipping? Yes No

CH2M HILL Project # / Purchase Order # 068473.H1.01

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	TSS/SS/MT Acute	TSS/SS/MT Chronic	Concentration and/or Comments
			Comp.	Grab																		
EFFLUENT - 01-14	1/14/16	0900	X		1	B3470-A																100 D.1°C

Sampled By & Title <u>V. Castro</u>	(Please sign and print name) <u>[Signature]</u>	Date/Time <u>1/14/16 0900</u>	Relinquished By <u>[Signature]</u>	(Please sign and print name)	Date/Time <u>1/20/16 1200</u>
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>[Signature]</u>	(Please sign and print name) <u>Pierrette Castro</u>	Date/Time <u>1/21/15 11:20</u>	Shipped Via UPS <input type="checkbox"/> Bus <input type="checkbox"/> Fed-Ex <input type="checkbox"/> Hand <input type="checkbox"/> Other <input type="checkbox"/>	Shipping #	
Work Authorized By	(Please sign and print name)	Remarks <u>B3470 A</u>			

Client CH2M NPDES# _____

Address 6 HATTIN CENTRE #700
SANTA ANA, CA 92707

Contact Person: DAN JABLONSKI
Phone: _____
E-mail: _____

Composite Sample Information:

Initiated: Date _____ Time _____
 Ended: Date _____ Time _____
 Chilled During Collection? Yes ___ No ___
 Dechlorinated prior to shipping? Yes ___ No ___

Ship Samples to:
 CH2M HILL - Applied Sciences Laboratory
 Attention: Bioassay Lab
 1100 NE Circle Blvd. Suite 300
 Corvallis, OR 97330
 Lab Phone: (541) 768-3160
 Customer Service: (541) 768-3120

CH2M HILL Project # / Purchase Order # 669473-A101

Analysis Required / Comments

Sample ID	Date	Time	Sample Type		# of Containers	Lab ID#	Fathead Acute	Fathead Chronic	Cerio Acute	Cerio Chronic	Green Algae	Trout Acute	Sheepshead Acute	Sheepshead Chronic	Menidia Acute	Menidia Chronic	Mysid Acute	Mysid Chronic	Haz Waste	Top Sugar Chemical	Top Sugar Heavy	Concentration and/or Comments	
			Comp.	Grab																			
RSW-001-01-20	1/20/16	0900		X	1	B3470-07																	ire 2.5°C
RSW-002-01-20	1/20/16	0915		X	1	B3470-13																	DOWNSTREAM

Sampled By & Title <u>V.C. K</u>	(Please sign and print name)	Date/Time 1/20/16 0900	Relinquished By <u>V.C. K</u>	(Please sign and print name)	Date/Time 1/20/16 1200
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By	(Please sign and print name)	Date/Time	Relinquished By	(Please sign and print name)	Date/Time
Received By <u>Monica Castro</u>	(Please sign and print name) <u>Renette Castro</u>	Date/Time 1/21/15 11:20	Shipped Via UPS ___ Bus ___ Fed-Ex ___ Hand ___ Other ___	Shipping #	
Work Authorized By	(Please sign and print name)	Remarks <u>B3470A</u>			

Appendix B

Waste Manifests

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 001	3. Emergency Response Phone	4. Waste Tracking Number NHZ-010816KMNW
-------------------------------------	------------------------	------------------	-----------------------------	--

5. Generator's Name and Mailing Address SFPP-LP.... 1100 TOWN & COUNTRY RD ORANGE, CA 92868 Generator's Phone: 714-560-4400	Generator's Site Address (if different than mailing address) NORWALK TANK FARM 15306 NORWALK BLVD NORWALK, CA 90860
---	--

6. Transporter 1 Company Name PROMINENT SYSTEMS, INC	U.S. EPA ID Number
---	--------------------

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

8. Designated Facility Name and Site Address CALIFORNIA CARBON CO. 2825 E. GRANT STREET WILMINGTON, CA 90744 Facility's Phone: 562-436-1962	U.S. EPA ID Number
---	--------------------

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit WL/Vol.
	No.	Type		
1. NON HAZARDOUS SPENT CARBON	2	BA	2000	P
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information
APP# 10-097-268-B
LIQ

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/Offoror's Printed/Typed Name Patrick Loya	Signature 	Month Day Year 1 8 16
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.	Port of entry/exit: _____ Date leaving U.S.: _____	

16. Transporter Acknowledgment of Receipt of Materials		
Transporter 1 Printed/Typed Name TROI BUNGA Y	Signature 	Month Day Year 1 8 16
Transporter 2 Printed/Typed Name	Signature	Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

Manifest Reference Number: _____

17b. Alternate Facility (or Generator)	U.S. EPA ID Number
Facility's Phone: _____	
17c. Signature of Alternate Facility (or Generator)	Month Day Year

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

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 001	3. Emergency Response Phone	4. Waste Tracking Number NHZ-012216KMNT
-------------------------------------	------------------------	------------------	-----------------------------	--

5. Generator's Name and Mailing Address SFPP-LP.... 1100 TOWN & COUNTRY RD ORANGE, CA 92868 Generator's Phone: 714-560-4400	Generator's Site Address (if different than mailing address) NORWALK TANK FARM 15306 NORWALK BLVD NORWALK, CA 90850
---	--

6. Transporter 1 Company Name PROMINENT SYSTEMS, INC	U.S. EPA ID Number
---	--------------------

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

8. Designated Facility Name and Site Address CALIFORNIA CARBON CO. 2825 E. GRANT STREET WILMINGTON, CA 90744 Facility's Phone: 562-436-1962	U.S. EPA ID Number
---	--------------------

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. NON HAZARDOUS SPENT CARBON		BA	800	P
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information Acceptance # 15-175190-A VAP.
--

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/Offorer's Printed/Typed Name JAMES DYK	Signature 	Month Day Year 1 22 16
---	---------------	---------------------------

15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.	Port of entry/exit: Date leaving U.S.:
--	---

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name Tanjung Gregar	Signature 	Month Day Year 1 22 16
--	---------------	---------------------------

Transporter 2 Printed/Typed Name	Signature	Month Day Year
----------------------------------	-----------	----------------

17. Discrepancy

17a. Discrepancy Indication Space	<input type="checkbox"/> Quantity	<input type="checkbox"/> Type	<input type="checkbox"/> Residue	<input type="checkbox"/> Partial Rejection	<input type="checkbox"/> Full Rejection
-----------------------------------	-----------------------------------	-------------------------------	----------------------------------	--	---

Manifest Reference Number:

17b. Alternate Facility (or Generator)	U.S. EPA ID Number
--	--------------------

17c. Signature of Alternate Facility (or Generator)	Month Day Year
---	----------------

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

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAT080033962	2. Page 1 of 1	3. Emergency Response Phone 800-624-9136	4. Manifest Tracking Number 015284506 JJK		
5. Generator's Name and Mailing Address SFPP, LP (NORWALK STATION) 1100 TOWN AND COUNTRY RD. ATTN: Karina H. ORANGE CA 92868 Generator's Phone: 714-560-4887				Generator's Site Address (if different than mailing address) 15306 NORWALK BLVD. NORWALK, CA 90651			
6. Transporter 1 Company Name PATRIOT ENVIRONMENTAL SERVICES				U.S. EPA ID Number CAD053866794			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address DEMENNO KERDOON 2000 N. ALAMEDA ST. COMPTON CA 90222 Facility's Phone: 310-537-7100				U.S. EPA ID Number CAT080013352			
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
1.	UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE)	001	TT	2500	G	D001 134	D018
2.							
3.	THIS WASTE STREAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENTS AT THE DeMENNO / KERDOON FACILITY IN COMPTON, CALIFORNIA. THIS FACILITY HAS THE NECESSARY PERMITS TO RECEIVE YOUR WASTE STREAM AS QUALIFIED. OUR EPA NUMBER IS CAT080013352						
4.							
14. Special Handling Instructions and Additional Information WEAR APPROPRIATE PPE WHEN HANDLING 9b1.) PROFILE NUMBER: 393688 (REMEDIATION SYSTEM/RINSATE) PATRIOT JOB NUMBER: BILL TO SFPP, LP ATTN: STEVE DEEBAUGH							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offoror's Printed/Typed Name X JAMES DYE				Signature X		Month Day Year 2 9 16	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name K KRIS DALEY				Signature X		Month Day Year 2 9 16	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Discrepancy quantity: 1992 with mark Manifest Reference Number: Patriot 2-17-14							
18b. Alternate Facility (or Generator) _____ U.S. EPA ID Number _____							
Facility's Phone: _____							
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H1039		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Aletyach				Signature Aletyach		Month Day Year 02 09 16	

Certificate of Treatment/Recycling

ISSUED TO

SFPP - NORWALK STATION

FOR

MANIFEST NUMBER 015284506JJK

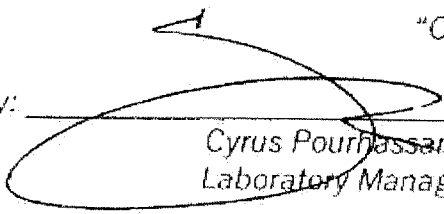
DATE RECEIVED 2/9/2016

The aqueous waste received on the above manifest will be treated to standards mandated by the FEDERAL CLEAN WATER ACT and to effluent requirements established by the Sanitation Districts of Los Angeles County. Waste treatment and recycling is performed under permits granted to DeMENNO/KERDOON, a California Corporation, by the California Department of Toxic Control (DTSC), in coordination with the Environmental Protection Agency, in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) of 1976, together with applicable federal and state regulations including but not limited to waste discharge requirements established by the Sanitation Districts of Los Angeles County.

When the above described waste material is accepted by DeMENNO/KERDOON and treated/recycled and the aqueous phase discharged for further treatment by the Sanitation Districts, the certificate holder's responsibility for the waste material is eliminated under both RCRA and Proposition 65. Upon request, DeMENNO/KERDOON will issue this certificate that all waste material has been handled in accordance with applicable permits and the certificate holder's liability has been terminated.

DeMENNO/KERDOON
"Compliance Through Recycling"

By: _____


Cyrus Pourhassanian
Laboratory Manager

Date: 2/26/2016

2000 North Alameda Street Compton California 90222
Telephone (310) 537-7100 Facsimile (310) 639-2946

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number CAT080033062	2. Page 1 of 1	3. Emergency Response Phone 800-624-9136	4. Manifest Tracking Number 015284514 JJK		
5. Generator's Name and Mailing Address SFPP, LP (NORWALK STATION) 1100 TOWN AND COUNTRY RD. ATTN: Karina H. ORANGE CA 92868 Generator's Phone: 714-560-4887			Generator's Site Address (if different than mailing address) 15306 NORWALK BLVD. NORWALK, CA 90651			
6. Transporter 1 Company Name PATRIOT ENVIRONMENTAL SERVICES			U.S. EPA ID Number CAD053866794			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address DEMENNO KERDOON 2000 N. ALAMEDA ST. COMPTON CA 90222 Facility's Phone: 310-537-7100			U.S. EPA ID Number CAT080013352			
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
1.	UN1993, WASTE FLAMMABLE LIQUID, NOS, 3, PG II (GASOLINE)	001	TT	2100	G	D001 D018 134
2.	THIS WASTE STREAM HAS BEEN QUALIFIED FOR RECYCLING/TREATMENTS AT THE DEMENNO / KERDOON FACILITY IN COMPTON, CALIFORNIA. THIS FACILITY HAS THE NECESSARY PERMITS TO RECEIVE YOUR WASTE STREAM AS QUALIFIED. OUR EPA NUMBER IS CAT080013352					
3.						
4.						
14. Special Handling Instructions and Additional Information WEAR APPROPRIATE PPE WHEN HANDLING 9b1.) PROFILE NUMBER: 393888 (REMEDIATION SYSTEM RINSATE) PATRIOT JOB NUMBER: BILL TO SFPP, LP ATTN: STEVE DEFIBAUGH						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offorer's Printed/Typed Name JAMES DYK			Signature <i>[Signature]</i>		Month Day Year 3 15 16	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name K. Dwyer			Signature <i>[Signature]</i>		Month Day Year 3 15 16	
Transporter 2 Printed/Typed Name			Signature		Month Day Year	
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____						
18b. Alternate Facility (or Generator)			U.S. EPA ID Number			
Facility's Phone:						
18c. Signature of Alternate Facility (or Generator)					Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.	2.	3.	4.			
1.	H039					
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name SOPHAN P. SVAY			Signature <i>[Signature]</i>		Month Day Year 03 15 16	

GENERATOR

TRANSPORTER

DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

Certificate of Treatment/Recycling

ISSUED TO

SFPP - NORWALK STATION

FOR

MANIFEST NUMBER 015284514JJK

DATE RECEIVED 3/15/2016

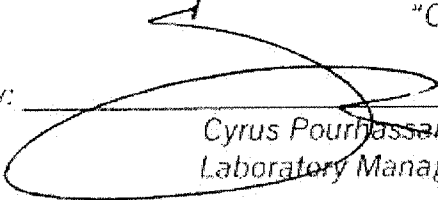
The aqueous waste received on the above manifest will be treated to standards mandated by the FEDERAL CLEAN WATER ACT and to effluent requirements established by the Sanitation Districts of Los Angeles County. Waste treatment and recycling is performed under permits granted to DeMENNO/KERDOON, a California Corporation, by the California Department of Toxic Control (DTSC), in coordination with the Environmental Protection Agency, in accordance with the provisions of the Resource Conservation and Recovery Act (RCRA) of 1976, together with applicable federal and state regulations including but not limited to waste discharge requirements established by the Sanitation Districts of Los Angeles County.

When the above described waste material is accepted by DeMENNO/KERDOON and treated/recycled and the aqueous phase discharged for further treatment by the Sanitation Districts, the certificate holder's responsibility for the waste material is eliminated under both RCRA and Proposition 65. Upon request, DeMENNO/KERDOON will issue this certificate that all waste material has been handled in accordance with applicable permits and the certificate holder's liability has been terminated.

DeMENNO/KERDOON

"Compliance Through Recycling"

By:


Cyrus Pourhassanian
Laboratory Manager

Date: 4/6/2016

2000 North Alameda Street Compton California 90222
Telephone (310) 537-7100 Facsimile (310) 639-2946