



City of La Habra Heights
1245 No. Hacienda Blvd.
La Habra Heights, CA 90631
(562) 694-6302

July 11, 2017

Ms. Erum Razzak
Stormwater Section
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Ste 200
Los Angeles, CA 90013

RE: Monitoring Reporting Permit Year 2016-2017 (July thru December)
City of La Habra Heights
Permit No. CAS004001 (Order No. R4-2012-0175)

Dear Ms. Razzak:

The City of La Habra Heights is submitting in this letter an explanation and presentation of the monitoring for July 1 through December, 31 2016. As is presented in a previously submitted letter, City of La Habra Heights "Draft Monitoring Summary Permit Year 2015-2016", in the fall of 2016 there were significant changes in city staff. The new staff obtained sampling equipment, two laboratories were contracted and a consultant has been hired to obtain and correctly document the storm events.

Required Monitoring

The City was required to perform the following monitoring:

- Daily photographs of key discharge points
- Four sets of dry weather monitoring
- Three sets of wet weather monitoring
- Participation in two regional monitoring programs.

Each monitoring requirement is discussed in the following paragraphs.

Daily Photographs

The City designated a staff member to obtain daily photographs at five key locations throughout the City. The purpose of the photos was to compare in-situ conditions as compared to the measured rain events. Using the County of Los Angeles rain gauge station located within the City jurisdiction it is noted that there were four recorded rain events in the July through December 2016 permit year. All four events were over 0.2 inches, however the possibility of discharge would be only from three events. A summary of the rain events and the sizing for La Habra Heights is included in Attachment A.

It appears that from the photo sets, and the locally known understanding of the discharge points, the small rain events documented during this permit year unlikely discharged for dry weather and the first rain event in November 2016. The



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rain events in December may have triggered discharges from the two primary discharge points. Moving forward, the increased number of photos and the simultaneously monitoring of rain events should provide ongoing verification of the rain event sizing which actually discharges from the jurisdiction. It is noted that starting in December 2016, storms were sampled as required and corresponding photo sets have been obtained. The City is in process of cataloging and documenting the photographs so that the rain event sizing, discharge photos and monitoring data are all correlated. The analysis is planned to be reported in the 2017 Annual Report.

Dry and Wet Weather Monitoring

The City did not obtain any dry event samples and one wet weather sample was obtained.

City staff assumed that dry event samples were not required as they did not observe dry weather flows at the discharge points. One wet weather event monitoring event was obtained. The small rain event (November 2016) was not sampled due to no discharges noted. Monitoring was completed for the December 16, 2016 rain event. City Hall was closed from December 26 to January 3, 2017; no samples were taken during the holiday schedule.

As previously stated, in the fall of 2016, with the change in City staff, sampling equipment was acquired, two laboratories were contracted and an outside sampling consultant was hired to obtain and correctly document required outfall discharge samples. The laboratory data is presented in Attachment B in the required Standardized Data Transfer Formats (SDTFs) for submittal. The original laboratory results are included in Attachment C

City Outfall Monitoring Summary

Date	Location	Constituent	Results	Regional Threshold
12/19/16	Coyote Creek (La Mirada Creek)	Copper	18.0 ug/L	24.71 ug/L
		Lead	12.6 ug/L	96.99 ug/L
		Zinc	72.9 ug/L	144.57 ug/L
		EColi	25600 MPN/100 ML	235/100ML
12/19/16	San Jose Creek	Lead	36.6 ug/L	81.34 ug/L
		Selenium	.389 ug/L	5 ug/L
		EColi	24300 MPN/100 ML	235/100ML



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Using the thresholds presented in the Watershed Management Plan (WMP) and the Integrated Monitoring Plan (IMP), outfalls discharges are in compliance except for the bacteria samples. Compliance for bacteria will be difficult in these drainages as both discharge points are located within natural drainages. The San Jose Creek location is located just outside a wildlife conservation area. The Coyote Creek location is located within a heavily vegetated drainage with many types of animals (coyotes, raccoons, rodents, birds, bats) living in the drainage.

Regional Sampling

The City of La Habra Heights did participate in two regional group monitoring programs.

- 1) Upper San Gabriel River EWMP Group: Participation includes: USGR_SJC_C-1 which is S14.
- 2) Harbor Toxics TMDL Program: Participation to include: Meeting objectives of the Harbor Toxic Pollutants TMDL by installing one monitoring station in the Los Angeles River at Wardlow Road, one monitoring station in the San Gabriel River near Spring Street, and one monitoring station in the Coyote Creek, also near Spring Street and conducting monitoring at said monitoring stations (collectively "Monitoring Stations") to ensure consistency with other regional monitoring programs and usability with other TMDL related studies. Station S13 applies to the City.

A summary of regional lab results, as applicable to the City, are as follows:

Location	Date	Dry/Wet	Constituent	Results
Coyote Creek (S13)	8/24/16	Dry	Total Copper	10.6 ug/L
	11/20/16	Wet	Total Copper	43.2 and 45.4 ug/L
	11/20/16	Wet	Total Lead	20.7 and 19.2 ug/L
	11/20/16	Wet	Total Zinc	231.0 and 78.0 ug/L
San Jose Creek (S14)	No flows recorded	Dry		NA
	12/16/16	Wet	Total Lead	29.2 and 28.9 ug/L

Based on this regional data, which is a snapshot in time, the wet weather lead and the dry weather copper values are within TMDL parameters. The other parameters are above current TMDL thresholds. It is expected that as the WMPs and EWMPs progress, the metals values should reduce over time. Two toxicity tests were also completed and are included in Attachment D. We did not include copies of all of the regional data as it is expected this has been submitted to the Water Board through the regional monitoring program. If a submittal is necessary, the City will submit as an addendum to this letter.



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The City appreciates the Water Board staff's time and effort concerning this matter. If there are additional questions or if the Water Board would like to discuss the tasks that have been presented, please do contact us so a conference call or meeting can be scheduled. Please contact Cynthia Gabaldon at 909-455-8520 or Cynthia.gabaldon@cgmre.com

Sincerely,

A handwritten signature in blue ink, appearing to read "Jared Hildenbrand", is written over the printed name.

Mr. Jared Hildenbrand
City Manager
City of La Habra Heights

ATTACHMENT A – RAIN EVENT SUMMARY

Rain Event Summary

City of La Habra Heights

Los Angeles County Station 327 (Reference ID 1088B) - La Habra Heights

DATE	RAIN EVENT TOTAL	Notes
6 2016	0.0	No discharge
7 2016	0.0	No discharge
8 2016	0.0	No discharge
9 2016	0.0	No discharge
10 2016	0.0	No discharge
11/28/16	0.24	Likely no discharge
12/19/16	2.24	Sample taken
12/22/16	.98	Likely no discharge
12/27/16	1.06	City Hall closed for holiday - entire week

ATTACHMENT B – LA HABRA HEIGHTS 6.2016 TO 12.2016 DATA (SDTF)

StationCode	SampleDate	FieldReplicate	SampleTypeCode	FieldSampleID	LabSampleID	LabBatch	AnalysisDate	LabReplicate	MatrixName	MethodName	AnalyteName	FractionName	Unit	DilFactor	Result	ResQualCode	MDL	RL	QACode	ExpectedValue	LabAgencyCode	LabResultComments
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-B	G1219HARB1	12/19/2016		1 samplewater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	420 =		0.99	2 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-B	G1219HARB1	12/19/2016		1 samplewater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	40 =		0.99	2 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		2 DUP1	20161216LHH-DUP	16-12-1507-3-B	G1219HARB1	12/19/2016		1 samplewater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	440 =		0.99	2 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	12/16/2016		1 FieldBlank	20161216LHH-BLK	16-12-1507-4-B	G1219HARB1	12/19/2016		1 blankwater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	-88 ND		0.99	2 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-14-457-679	G1219HARB1	12/19/2016		1 blankwater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	-88 ND		0.99	2 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-E	G1221TDSL1	12/21/2016		1 samplewater	SM 2540 C	Dissolved Solids	Total	mg/L	1	825 =		0.87	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-E	G1221TDSL1	12/21/2016		1 samplewater	SM 2540 C	Dissolved Solids	Total	mg/L	1	70 =		0.87	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-12-180-5375	G1221TDSL1	12/21/2016		1 blankwater	SM 2540 C	Dissolved Solids	Total	mg/L	1	-88 ND		0.87	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-D	G1222TSSL5	12/22/2016		1 samplewater	SM 2540 D	Suspended Solids	Total	mg/L	1	262 =		0.829	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-D	G1222TSSL5	12/22/2016		1 samplewater	SM 2540 D	Suspended Solids	Total	mg/L	1	306 =		0.829	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-09-010-8019	G1222TSSL5	12/22/2016		1 blankwater	SM 2540 D	Suspended Solids	Total	mg/L	1	-88 ND		0.83	1 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Copper	Total	mg/L	1	0.018 =		0.0001	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Lead	Total	mg/L	1	0.0126 =		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Zinc	Total	mg/L	1	0.0729 =		0.000479	0.005 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Lead	Total	mg/L	1	0.0366 =		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Selenium	Total	mg/L	1	0.000389 =		0.000168	0.001 J	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-DUP	16-12-1507-3-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Copper	Total	mg/L	1	0.0208 =		0.00014	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-DUP	16-12-1507-3-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Lead	Total	mg/L	1	0.0159 =		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-DUP	16-12-1507-3-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Selenium	Total	mg/L	1	0.00365 =		0.000168	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-DUP	16-12-1507-3-B	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Zinc	Total	mg/L	1	0.0797 =		0.000479	0.005 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	12/16/2016		1 FieldBlank	20161216LHH-BLK	16-12-1507-4-B	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Copper	Total	mg/L	1	-88 ND		0.00014	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	12/16/2016		1 FieldBlank	20161216LHH-BLK	16-12-1507-4-B	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Lead	Total	mg/L	1	-88 ND		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	12/16/2016		1 FieldBlank	20161216LHH-BLK	16-12-1507-4-B	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Selenium	Total	mg/L	1	-88 ND		0.000168	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	12/16/2016		1 FieldBlank	20161216LHH-BLK	16-12-1507-4-B	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Zinc	Total	mg/L	1	-88 ND		0.000479	0.005 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1603	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Copper	Total	mg/L	1	-88 ND		0.00014	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1603	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Lead	Total	mg/L	1	-88 ND		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1603	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Selenium	Total	mg/L	1	-88 ND		0.000168	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1603	161216LA3	12/19/2016		1 blankwater	EPA 200.8	Zinc	Total	mg/L	1	-88 ND		0.000479	0.005 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-C	161216LA1F	12/19/2016		1 samplewater	SM 2340 C	Copper	Dissolved	mg/L	1	0.00558 =		0.00014	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-C	161216LA1F	12/19/2016		1 samplewater	SM 2540 C	Lead	Dissolved	mg/L	1	0.000647 =		0.0000898	0.001 J	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1-C	161216LA1F	12/19/2016		1 samplewater	SM 2540 D	Zinc	Dissolved	mg/L	1	0.0355 =		0.000479	0.005 IP	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-C	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Lead	Dissolved	mg/L	1	0.000884 =		0.0000898	0.001 J	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHSJC	12/16/2016		1 Grab	20161216LHH-SJC	16-12-1507-2-C	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Selenium	Dissolved	mg/L	1	0.000302 =		0.000168	0.001 J	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1604	161216LA1F	12/19/2016		1 blankwater	EPA 200.8	Copper	Total	mg/L	1	-88 ND		0.00014	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1604	161216LA1F	12/19/2016		1 blankwater	EPA 200.8	Lead	Total	mg/L	1	-88 ND		0.0000898	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1604	161216LA1F	12/19/2016		1 blankwater	EPA 200.8	Selenium	Total	mg/L	1	-88 ND		0.000168	0.001 None	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
LABQA	1/1/1950		1 LabBlank	Method Blank	099-16-094-1604	161216LA1F	12/19/2016		1 blankwater	EPA 200.8	Zinc	Total	mg/L	1	0.000912 =		0.000479	0.005 J	-88 CalScience		Results were evaluated to the MDL (DL), concentrations >	
288LHHCC	12/16/2016		1 Grab	20161216LHH-CC	16-12-1507-1	G1219HARB1	12/19/2016		1 samplewater	SM 2340 C	Hardness as CaCO3	Total	mg/L	1	422 =		0.9892	2 None	-88 CalScience		None	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-CC	16-12-1507-1	G1221TDSL1	12/21/2016		1 samplewater	SM 2540 C	Dissolved Solids	Total	mg/L	1	850 =		0.8703	1 None	-88 CalScience		None	
288LHHCC	12/16/2016		2 DUP1	20161216LHH-CC	16-12-1507-1	G1222TSSL5	12/22/2016		1 samplewater	SM 2540 D	Suspended Solids	Total	mg/L	1	263.2 =		0.8287	1 None	-88 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Copper	Total	% recovery	1	106 PR		0.0001397	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Lead	Total	% recovery	1	109 PR		0.00008976	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Selenium	Total	% recovery	1	110 PR		0.0001682	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Zinc	Total	% recovery	1	98 PR		0.0004789	0.005 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Copper	Total	% recovery	1	108 PR		0.0001397	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Lead	Total	% recovery	1	111 PR		0.00008976	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Selenium	Total	% recovery	1	112 PR		0.0001682	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1508-1	16-12-1508-1	161216LA3	12/19/2016		1 samplewater	EPA 200.8	Zinc	Total	% recovery	1	104 PR		0.0004789	0.005 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Copper	Dissolved	% recovery	1	104 PR		0.0001397	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Lead	Dissolved	% recovery	1	102 PR		0.00008976	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Selenium	Dissolved	% recovery	1	109 PR		0.0001682	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		1 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Zinc	Dissolved	% recovery	1	111 PR		0.0004789	0.005 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Copper	Dissolved	% recovery	1	103 PR		0.0001397	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Lead	Dissolved	% recovery	1	101 PR		0.00008976	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Selenium	Dissolved	% recovery	1	108 PR		0.0001682	0.001 None	0.1 CalScience		None	
LABQA	12/15/2016		2 MS1	16-12-1511-1	16-12-1511-1	161216LA1F	12/19/2016		1 samplewater	EPA 200.8	Zinc	Dissolved	% recovery	1	107 PR		0.0004789	0.005 None	0.1 CalScience		None	
LABQA	1/1/1950		1 LCS	Laboratory Control Sample	099-12-180-5375	G1221TDSL1	12/21/2016		1 blankwater	SM 2540 C	Dissolved Solids	Total	% recovery	1	90 PR		0.8703	1 None	100 CalScience		None	
LABQA	1/1/1950		2 LCS	Laboratory Control Sample Duplicate	099-12-180-5375	G1221TDSL1	12/21/2016		2 blankwater													

[illegible]

ATTACHMENT C- LA HABRA HEIGHTS OUTFALL LABORATORY REPORTS

GENERAL INFORMATIONSite Name: LHH - CCTime Start: 04:30aDate: 12/16/16Site ID: 16220Time End: 04:45aSampling Team: G² 99GPS Coordinates: (lat) 33.947(lon) -117.966Picture/Video #: 02**OBSERVATIONS & MEASUREMENTS**Weather: rainy, windy, darkWater Color: brownishIn-Stream Activity: None

Water Characteristics (flow type, odor, turbidity, floatables):

very low flow, no notable odor, turbid**Environmental Observations:**Trash: ☐Wildlife: ☐Recreational Uses: ☐Homeless activity: ☐Other: None**In situ Water Quality Measurements**Time: 04:45aTemp (°C): 14.2pH: 7.32D.O. (mg/L): 11.23Turbidity (NTU): 246*specific* Elec. Cond. (µS/cm): 11.68**COLLECTED WATER QUALITY SAMPLES**

Sample ID	Analysis	Time	Volume
20161216 LHH - CC	various, CoC	04:45a	3L
" " - Dup	various, CoC	04:55a	0.5 L
" " - BLK	various, CoC	05:00a	0.5 L

Field Blank ☒Duplicate ☒**ADDITIONAL WATER QUALITY SAMPLING NOTES**Flow infiltrated at planned sampling location, so
moved ~ 20' up stream

FLOW MEASUREMENTS

Total Section Width (W): _____

Cross-Section:	Depth (D)	Velocity (V)	Comments/Notes
10% across	_____	_____	_____
50% across	_____	_____	_____
90% across	_____	_____	_____

Estimated Flowrate (Q) _____

$$Q = (0.2 * W * D_{10} * V_{10}) + (0.6 * W * D_{50} * V_{50}) + (0.2 * W * D_{90} * V_{90})$$

Graduated Cylinder Method

Container Volume: _____

Percent Capture: _____

Time to fill Container: _____

	Minutes	Seconds
Time 1		
Time 2		
Time 3		

ADDITIONAL FLOW MEASUREMENT NOTES

visually estimated at approximately 5 GPM, but rapidly
infiltrating

GENERAL INFORMATION

Site Name: LHH - SJC² Date: 12/16/16
Site ID: 16220 Time Start: 05:00a
GPS Coordinates: (lat) 33.970 Time End: 05:15a Sampling Team: G² gg
(lon) -117.963 Picture/Video #: 03

OBSERVATIONS & MEASUREMENTS

Weather: rainy, windy, dark
Water Color: brownish In-Stream Activity: None
Water Characteristics (flow type, odor, turbidity, floatables):
moderate flow, turbid, sediment (sandy silt)

Environmental Observations:

Trash: ☐
Wildlife: ☐
Recreational Uses: ☐
Homeless activity: ☐

Other: None

In situ Water Quality Measurements

Time: 05:15a
Temp (°C): 13.3
pH: 6.95
D.O. (mg/L): 10.72
Turbidity (NTU): 301
specific Elec. Cond. (µS/cm): 71.0

COLLECTED WATER QUALITY SAMPLES

Sample ID	Analysis	Time	Volume
<u>20161216 LHH - SJC</u>	<u>various, CoC</u>	<u>05:15a</u>	<u>3L</u>

Field Blank ☐

Duplicate ☐

ADDITIONAL WATER QUALITY SAMPLING NOTES

Sampled above driveway culvert.

FLOW MEASUREMENTS

Total Section Width (W): _____

Cross-Section:	Depth (D)	Velocity (V)	Comments/Notes
10% across	_____	_____	_____
50% across	_____	_____	_____
90% across	_____	_____	_____

Estimated Flowrate (Q) _____

$$Q = (0.2 * W * D_{10} * V_{10}) + (0.6 * W * D_{50} * V_{50}) \\ + (0.2 * W * D_{90} * V_{90})$$

Graduated Cylinder Method

Container Volume: _____

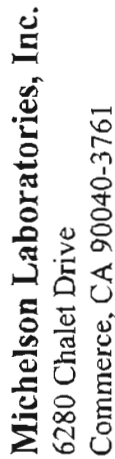
Percent Capture: _____

Time to fill Container:

	Minutes	Seconds
Time 1		
Time 2		
Time 3		

ADDITIONAL FLOW MEASUREMENT NOTES

Visually estimated at 20 GPM



Phone: (562) 928-0553
(888) 941-5050
Fax: (562) 927-6625
www.michelsonlab.com

CHAIN OF CUSTODY

Lab Copy

CLIENT INFORMATION						BILLING INFORMATION							COURIER SERVICE
Client: CWE Corporation Address: 1561 E. Orangelhorpe Avenue Suite 240 Fullerton, CA 92831 Phone: 1-(714)-526-7500 x207 Contact: Gerald Greene, Stormwater Director E-mail: gggreen@cwecorp.com P.O.: 						Date Ordered: Time: Initial:							
						Sched P/U Date: Waiting Time:							
<input type="checkbox"/> Prepaid:						<input type="checkbox"/> Courier Charge:							
<input type="checkbox"/>						<input type="checkbox"/> Rush <input type="checkbox"/> After Hours <input type="checkbox"/> Back Track <input type="checkbox"/> NC							
Special Instructions: See Notes						Please pick one of the following:							
						<input type="checkbox"/> Sampling <input type="checkbox"/> Pick-Up <input type="checkbox"/> Delivery <input type="checkbox"/> Special Project							
Notes: Second Quantitray with 1:1000 dilution for, six (6) analytical level dilutions, range from two (2) to two million (2,000,000) MPN.						Pick-Up Address:							
						WALKER WA							
						ANALYSIS REQUESTED							
LAB USE ONLY				DESIGNATION OR PRODUCT DESCRIPTION					CONTAINER(S)				
JOB NUMBER	MTRX	SAMPLE DATE	SAMPLE TIME	SAMPLE DESCRIPTION			#	PRESERVATION					
	SW	12/16/16	4:45	20161216LHH-CC			1	A6_503	SM 9221 F (E. coli) See Notes				
	SW	12/16/16	5:15	20161216LHH-SJC			1	"	SM 9221 F (E. coli) See Notes				
	SW	12/16/16	4:55	20161216LHH-DUP			1	"	SM 9221 F (E. coli) See Notes				
	Ldb	12/16/16	5:00	20161216LHH-BLK			1	"	SM 9221 F (E. coli) 1 Quantitray needed, no dilution				
Relinquished By: Signature _____	Date: 12/16/16	Time: 2:25 PM	Received By: Signature _____			Date: 12/16/16	Time: 4:25 PM	Condition of Sample: Ambient [] Cold [] Frozen [] Other [] In Ice Chest [] Ambient [] On Ice [] In Ice Chest []					
Relinquished By: Signature _____	Date: 12/16/16	Time: _____	Received By: Signature _____			Date: 12/16/16	Time: _____	Temp: _____ pH: _____					

Extra charges may apply for rush analysis, special sample preparation, non-typical report format, or other non-typical customer request or needs.



Michelson Laboratories, Inc

ANALYSIS REQUEST FORM

SOP No.: ML-WI-QC-30.03
Control# G1 - 171
Authorized by: G. Michelson
Revised on: 12/22/09
Page 1 of 1

Please Fill Out and Return with Sample(s)

Company Name: CWE Corporation
Address: 1561 E. Orangethorpe Avenue Suite 240
Fullerton, CA 92831

Date: December 16, 2016
Contact: Gerald Greene, Stormwater Director
Phone No.: 1-(714)-528-7500 x207
Fax No.: 714-526-70043
E-Mail: ggreene@cwecorp.com

Identification of Sample(s):

Sample 1: 20161216LHH-CC Sample 5: _____
Sample 2: 20161216LHH-SJC Sample 6: _____
Sample 3: 20161216LHH-DUP Sample 7: _____
Sample 4: 20161216LHH-BLK Sample 8: _____

- ☐ Yes, I am a new account to Michelson Laboratories, prepayment required.
☐ Call w/ Results ☐ Prepaid ☐ Rush (Double Charge) ☐ Fax Results ☒ E-mail Results

CHECK ANALYSIS DESIRED:

For different methods or sample sizes offered in parentheses, please circle desired method or sample size.

MICROBIOLOGICAL ANALYSES:

- ☐ Aerobic Plate Count / Standard Plate Count
☐ Bacillus cereus
☐ Bacterial Identification
☐ Campylobacter Elisa by VIDAS (25g / 375g)
☐ Clostridium perfringens
☐ Coliform (MPN / Petrifilm / Rinse / VRB)
☐ E. coli (MPN / Petrifilm / USP)
☐ E. coli O157:H7 Elisa by VIDAS (25g / 375g)
☐ E. coli O157:H7 PCR by GDS (25g / 375g)
☐ E. coli O157:H7 8 hour
☐ E. coli O157:H7 12 hour (375g)
☐ E. coli O157:H7 20 hour (25g / 375g)
☐ Lactic Acid Bacteria
☐ Listeria spp. Elisa by VIDAS (25g / 375g)
☐ Listeria spp. PCR by GDS (25g / 375g)
☐ Listeria monocytogenes Elisa by VIDAS (25g / 375g)
☐ Listeria monocytogenes PCR by GDS (25g / 375g)
☐ Pseudomonas (FDA / USP)
☐ Salmonella Elisa by VIDAS (25g / 375g)
☐ Salmonella PCR by GDS (25g / 375g)
☐ Salmonella 24 hour
☐ Salmonella 24 hour
☐ Salmonella USP
☐ Shigella
☐ Staph aureus Coagulase+ (AOAC / USP)
☐ Staphylococcus Enterotoxin
☐ Vibrio
☐ Yeast & Mold (FDA / Isognd / USP / Rinse)
☐ Yersinia

MICROBIOLOGICAL WATER ANALYSES:

- ☐ Coliform (Collett / Colisure)
☒ Coliform, Collett Quantitray
☐ Enterococcus (Enteroleit / MPN)
☐ Heterotrophic Bacteria
☐ Water Potability

FILTH / DECOMPOSITION:

- ☐ Decomposition
☐ Filth

*A \$75.00 Minimum charge per submission applies.
*Michelson Laboratories, Inc. performs over 400 tests.
If you do not see your test here please contact us.

PROXIMATE ANALYSES:

- ☐ Moisture
☐ Protein
☐ Fat
☐ Ash
☐ Calories (Includes: M, P, F, A)
☐ Carbohydrates (Includes: M, P, F, A)
☐ Fiber, crude
☐ Fiber, total dietary
☐ Solids, total

DAIRY ANALYSES:

- ☐ Butterfat (Mojonnier)
☐ Milk Component Analysis
☐ Somatic Cell Count
☐ Total Solids

ENVIRONMENTAL ANALYSES:

- ☐ EPA 524.2 ☐ EPA 8015B
☐ EPA 552.2 ☐ EPA 8021B
☐ EPA 808 ☐ EPA 8280
☐ EPA 824 ☐ EPA 8270C
☐ EPA 825 ☐ EPA 8081 / 8082

WASTEWATER / STORMWATER:

- ☐ Ammonia
☐ BOD - Biological Oxygen Demand
☐ COD - Chemical
☐ Chloride
☐ Chlorine Residual
☐ Conductivity
☐ Cyanide
☐ Fluoride
☐ MBAS
☐ Oil & Grease
☐ pH
☐ Phenol
☐ Sulfide
☐ Setttable Solids
☐ Total Dissolved Solids
☐ Total Solids
☐ Total Suspended Solids
☐ Turbidity

GENERAL CHEMISTRY ANALYSES:

- ☐ Benzoic Acid ☐ pH
☐ Ch'cra-phenicol ☐ Phosphorus
☐ Cholesterol ☐ Propionic Acid
☐ Fatty Acid Profile ☐ Salt
☐ Fluoroquinolones ☐ Sorbic Acid
☐ Gentian Violet LC/MS/MS ☐ Sugar Profile
☐ Histamine ☐ TBA (Rancidity)
☐ Lycopene
☐ Malachite Green LC/MS/MS
☐ Melamine LC/MS/MS
☐ Nitrofurans LC/MS/MS
☐ Methyl Mercury
☐ Pesticides (Carbamate)
☐ Pesticides (Organo Halide)
☐ Pesticide (Organo Phosphate)

NUTRITIONAL LABELING:

- ☐ Nutritional Label (Includes Trans Fat)
(100g serving size will be used unless otherwise specified)
List Serving Size: _____

MINERALS & METALS:

- ☐ Aluminum
☐ Arsenic
☐ Cadmium
☐ Chromium
☐ Copper
☐ Fluoride
☐ Iron
☐ Magnesium
☐ Manganese
☐ Nickel
☐ Potassium
☐ Sodium
☐ Zinc
☐ Low Detection Limit for requested Mineral Sample

Other: _____

VITAMIN:

- ☐ Folic Acid
☐ Niacin
☐ Riboflavin
☐ Thiamin
☐ Vitamin A, Carotene
☐ Vitamin A, Retinol
☐ Vitamin A, Total
☐ Vitamin B₆
☐ Vitamin B₁₂
☐ Vitamin C

Authorizing Signature _____

Additional Instructions: Report E coli: Two Quantitray with 1 1000 dilution on second tray, see CoC

Date: December 16, 2016



Calscience



WORK ORDER NUMBER: 16-12-1507

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: CWE Corporation

Client Project Name: City of La Habra Heights

Attention: Gerald Greene

1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Approved for release on 01/03/2017 by:
Lori Thompson
Project Manager

ResultLink ▶

Email your PM ▶

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: City of La Habra Heights
 Work Order Number: 16-12-1507

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Client Sample Data.	5
	3.1 SM 2340 C Total Hardness (Aqueous).	5
	3.2 SM 2540 C Total Dissolved Solids (Aqueous).	6
	3.3 SM 2540 D Total Suspended Solids (Aqueous).	7
	3.4 EPA 200.8 ICP/MS Metals (Aqueous).	8
	3.5 EPA 200.8 ICP/MS Metals (Aqueous).	10
4	Quality Control Sample Data.	11
	4.1 MS/MSD.	11
	4.2 Sample Duplicate.	13
	4.3 LCS/LCSD.	16
5	Sample Analysis Summary.	20
6	Glossary of Terms and Qualifiers.	21
7	Chain-of-Custody/Sample Receipt Form.	22
8	Subcontract Narrative.	24

Work Order Narrative

Work Order: 16-12-1507Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 12/16/16. They were assigned to Work Order 16-12-1507.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Sample Summary

Client: CWE Corporation	Work Order: 16-12-1507
1561 E. Orangethorpe Avenue, Suite 240	Project Name: City of La Habra Heights
Fullerton, CA 92831-5202	PO Number:
	Date/Time Received: 12/16/16 08:15
	Number of Containers: 14

Attn: Gerald Greene

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
20161216LHH-CC	16-12-1507-1	12/16/16 04:45	5	Aqueous
20161216LHH-SJC	16-12-1507-2	12/16/16 05:15	5	Aqueous
20161216LHH-DUP	16-12-1507-3	12/16/16 04:55	2	Aqueous
20161216LHH-BLK	16-12-1507-4	12/16/16 05:00	2	Aqueous

Analytical Report

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2340C
Units: mg/L

Project: City of La Habra Heights

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
20161216LHH-CC	16-12-1507-1-B	12/16/16 04:45	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARB1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Hardness, Total (as CaCO ₃)	420	2.0	0.99	1.00	

20161216LHH-SJC	16-12-1507-2-B	12/16/16 05:15	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARB1
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Hardness, Total (as CaCO ₃)	40	2.0	0.99	1.00	

20161216LHH-DUP	16-12-1507-3-B	12/16/16 04:55	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARB1
-----------------	----------------	----------------	---------	-------	-----	----------------	------------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Hardness, Total (as CaCO ₃)	440	2.0	0.99	1.00	

20161216LHH-BLK	16-12-1507-4-B	12/16/16 05:00	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARB1
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Hardness, Total (as CaCO ₃)	ND	2.0	0.99	1.00	

Method Blank	099-14-457-679	N/A	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARB1
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Hardness, Total (as CaCO ₃)	ND	2.0	0.99	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: N/A
 Method: SM 2540 C
 Units: mg/L

Project: City of La Habra Heights

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
20161216LHH-CC	16-12-1507-1-E	12/16/16 04:45	Aqueous	N/A	12/21/16	12/21/16 16:00	G1221TDSL1

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Dissolved	825	1.00	0.870	1.00	

20161216LHH-SJC	16-12-1507-2-E	12/16/16 05:15	Aqueous	N/A	12/21/16	12/21/16 16:00	G1221TDSL1
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Dissolved	70	1.0	0.87	1.00	

Method Blank	099-12-180-5375	N/A	Aqueous	N/A	12/21/16	12/21/16 16:00	G1221TDSL1
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Dissolved	ND	1.0	0.87	1.00	



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: N/A
 Method: SM 2540 D
 Units: mg/L

Project: City of La Habra Heights

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
20161216LHH-CC	16-12-1507-1-D	12/16/16 04:45	Aqueous	N/A	12/22/16	12/22/16 22:00	G1222TSSL5

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	262	1.00	0.829	1.00	

20161216LHH-SJC	16-12-1507-2-D	12/16/16 05:15	Aqueous	N/A	12/22/16	12/22/16 22:00	G1222TSSL5
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	306	1.00	0.829	1.00	

Method Blank	099-09-010-8019	N/A	Aqueous	N/A	12/22/16	12/22/16 22:00	G1222TSSL5
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total Suspended	ND	1.0	0.83	1.00	



 Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: N/A
 Method: EPA 200.8
 Units: mg/L

Project: City of La Habra Heights

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
20161216LHH-CC	16-12-1507-1-B	12/16/16 04:45	Aqueous	ICP/MS 03	12/16/16	12/19/16 21:02	161216LA3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.0180	0.00100	0.000140	1.00	
Lead	0.0126	0.00100	0.0000898	1.00	
Zinc	0.0729	0.00500	0.000479	1.00	

20161216LHH-SJC	16-12-1507-2-B	12/16/16 05:15	Aqueous	ICP/MS 03	12/16/16	12/19/16 21:04	161216LA3
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Lead	0.0366	0.00100	0.0000898	1.00	
Selenium	0.000389	0.00100	0.000168	1.00	J

20161216LHH-DUP	16-12-1507-3-B	12/16/16 04:55	Aqueous	ICP/MS 03	12/16/16	12/19/16 21:07	161216LA3
-----------------	----------------	-------------------	---------	-----------	----------	-------------------	-----------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.0208	0.00100	0.000140	1.00	
Lead	0.0159	0.00100	0.0000898	1.00	
Selenium	0.00365	0.00100	0.000168	1.00	
Zinc	0.0797	0.00500	0.000479	1.00	

20161216LHH-BLK	16-12-1507-4-B	12/16/16 05:00	Aqueous	ICP/MS 03	12/16/16	12/19/16 21:09	161216LA3
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.00100	0.000140	1.00	
Lead	ND	0.00100	0.0000898	1.00	
Selenium	ND	0.00100	0.000168	1.00	
Zinc	ND	0.00500	0.000479	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: N/A
 Method: EPA 200.8
 Units: mg/L

Project: City of La Habra Heights

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-094-1603	N/A	Aqueous	ICP/MS 03	12/16/16	12/19/16 20:22	161216LA3

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>MDL</u>	<u>DF</u>	<u>Qualifiers</u>
Copper	ND	0.00100	0.000140	1.00	
Lead	ND	0.00100	0.0000898	1.00	
Selenium	ND	0.00100	0.000168	1.00	
Zinc	ND	0.00500	0.000479	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: Filtered
 Method: EPA 200.8
 Units: mg/L

Project: City of La Habra Heights

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
20161216LHH-CC	16-12-1507-1-C	12/16/16 04:45	Aqueous	ICP/MS 03	12/16/16	12/19/16 19:05	161216LA1F

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	0.00558	0.00100	0.000140	1.00	
Lead	0.000647	0.00100	0.0000898	1.00	J
Zinc	0.0355	0.00500	0.000479	1.00	B

20161216LHH-SJC	16-12-1507-2-C	12/16/16 05:15	Aqueous	ICP/MS 03	12/16/16	12/19/16 19:15	161216LA1F
-----------------	----------------	-------------------	---------	-----------	----------	-------------------	------------

Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Lead	0.000884	0.00100	0.0000898	1.00	J
Selenium	0.000302	0.00100	0.000168	1.00	J

Method Blank	099-16-094-1604	N/A	Aqueous	ICP/MS 03	12/16/16	12/19/16 18:46	161216LA1F
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Comment(s): - Results were evaluated to the MDL (DL), concentrations \geq to the MDL (DL) but $<$ RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Copper	ND	0.00100	0.000140	1.00	
Lead	ND	0.00100	0.0000898	1.00	
Selenium	ND	0.00100	0.000168	1.00	
Zinc	0.000912	0.00500	0.000479	1.00	J

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: EPA 200.8

Project: City of La Habra Heights

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-12-1508-1	Sample	Aqueous	ICP/MS 03	12/16/16	12/19/16 20:59	161216SA3
16-12-1508-1	Matrix Spike	Aqueous	ICP/MS 03	12/16/16	12/19/16 20:54	161216SA3
16-12-1508-1	Matrix Spike Duplicate	Aqueous	ICP/MS 03	12/16/16	12/19/16 20:57	161216SA3

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.03912	0.1000	0.1454	106	0.1476	108	80-120	1	0-20	
Lead	0.01588	0.1000	0.1246	109	0.1270	111	80-120	2	0-20	
Selenium	ND	0.1000	0.1097	110	0.1116	112	80-120	2	0-20	
Zinc	0.1789	0.1000	0.2765	98	0.2833	104	80-120	2	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: Filtered
Method: EPA 200.8

Project: City of La Habra Heights

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-12-1511-1	Sample	Aqueous	ICP/MS 03	12/16/16	12/19/16 18:56	161216SA1
16-12-1511-1	Matrix Spike	Aqueous	ICP/MS 03	12/16/16	12/19/16 18:51	161216SA1
16-12-1511-1	Matrix Spike Duplicate	Aqueous	ICP/MS 03	12/16/16	12/19/16 18:53	161216SA1

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Copper	0.01686	0.1000	0.1208	104	0.1194	103	80-120	1	0-20	
Lead	0.001351	0.1000	0.1030	102	0.1023	101	80-120	1	0-20	
Selenium	0.001009	0.1000	0.1101	109	0.1093	108	80-120	1	0-20	
Zinc	0.2182	0.1000	0.3291	111	0.3256	107	80-120	1	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2340C

Project: City of La Habra Heights

Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
20161216LHH-CC	Sample	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARD1
20161216LHH-CC	Sample Duplicate	Aqueous	BUR21	N/A	12/19/16 15:15	G1219HARD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Hardness, Total (as CaCO ₃)	424.0	422.0	0	0-25	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2540 C

Project: City of La Habra Heights

Page 2 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
20161216LHH-CC	Sample	Aqueous	N/A	12/21/16 00:00	12/21/16 16:00	G1221TDSD1
20161216LHH-CC	Sample Duplicate	Aqueous	N/A	12/21/16 00:00	12/21/16 16:00	G1221TDSD1

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Dissolved	825.0	850.0	3	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Sample Duplicate

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2540 D

Project: City of La Habra Heights

Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
20161216LHH-CC	Sample	Aqueous	N/A	12/22/16 00:00	12/22/16 22:00	G1222TSSD5
20161216LHH-CC	Sample Duplicate	Aqueous	N/A	12/22/16 00:00	12/22/16 22:00	G1222TSSD5

<u>Parameter</u>	<u>Sample Conc.</u>	<u>DUP Conc.</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Suspended	262.4	263.2	0	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2540 C

Project: City of La Habra Heights

Page 1 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-180-5375	LCS	Aqueous	N/A	12/21/16	12/21/16 16:00	G1221TDSL1
099-12-180-5375	LCSD	Aqueous	N/A	12/21/16	12/21/16 16:00	G1221TDSL1

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Solids, Total Dissolved	100.0	90.00	90	95.00	95	80-120	5	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

CWE Corporation
1561 E. Orangethorpe Avenue, Suite 240
Fullerton, CA 92831-5202

Date Received: 12/16/16
Work Order: 16-12-1507
Preparation: N/A
Method: SM 2540 D

Project: City of La Habra Heights

Page 2 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-09-010-8019	LCS	Aqueous	N/A	12/22/16	12/22/16 22:00	G1222TSSL5			
099-09-010-8019	LCSD	Aqueous	N/A	12/22/16	12/22/16 22:00	G1222TSSL5			
<u>Parameter</u>	<u>Spike Added</u>	<u>LCS Conc.</u>	<u>LCS %Rec.</u>	<u>LCSD Conc.</u>	<u>LCSD %Rec.</u>	<u>%Rec. CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Solids, Total Suspended	100.0	100.0	100	106.0	106	80-120	6	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: N/A
 Method: EPA 200.8

Project: City of La Habra Heights

Page 3 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-094-1603	LCS	Aqueous	ICP/MS 03	12/16/16	12/19/16 20:27	161216LA3

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Copper	0.1000	0.1015	101	80-120	
Lead	0.1000	0.1037	104	80-120	
Selenium	0.1000	0.1043	104	80-120	
Zinc	0.1000	0.1044	104	80-120	

Quality Control - LCS

CWE Corporation
 1561 E. Orangethorpe Avenue, Suite 240
 Fullerton, CA 92831-5202

Date Received: 12/16/16
 Work Order: 16-12-1507
 Preparation: Filtered
 Method: EPA 200.8

Project: City of La Habra Heights

Page 4 of 4

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-094-1604	LCS	Aqueous	ICP/MS 03	12/16/16	12/19/16 18:48	161216LA1F

<u>Parameter</u>	<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
Copper	0.1000	0.09978	100	80-120	
Lead	0.1000	0.09495	95	80-120	
Selenium	0.1000	0.09778	98	80-120	
Zinc	0.1000	0.09806	98	80-120	

Sample Analysis Summary Report

Work Order: 16-12-1507

Page 1 of 1

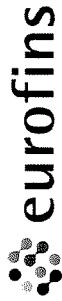
<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 200.8	N/A	598	ICP/MS 03	1
EPA 200.8	Filtered	598	ICP/MS 03	1
SM 2340C	N/A	650	BUR21	1
SM 2540 C	N/A	1009	N/A	1
SM 2540 D	N/A	685	N/A	1

Glossary of Terms and Qualifiers

Work Order: 16-12-1507

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



Calscience

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

LABORATORY CLIENT: CWE Corp.

ADDRESS: 1561 E. Orangethorpe Avenue, Suite 240

CITY: Fullerton STATE: CA ZIP: 92831-5202

TEL: 714-526-7500x207 E-MAIL: gggreen@cwecorp.com

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

- (1) Pb, Se
- (2) Pb, Cu, Zn
- (3) Pb, Cu, Zn, Se

LAB USE ONLY	SAMPLE ID	SAMPLING		MATRIX	NO. OF CONT.
		DATE	TIME		
1	20161216LHH-CC	12/16/2016	4:45	Surface Wt	5
2	20161216LHH-SJC	12/16/2016	5:15	Surface Wt	5
3	20161216LHH-DUP	12/16/2016	4:55	Surface Wt	2
4	20161216LHH-BLK	12/16/2016	5:00	Surface Wt	2

Unpreserved Preserved Field Filtered

SM 2340C Total Hardness
SM 2540 D TSS
SM 2540 C TDS
EPA 200.8 Total Metals
EPA 200.8 Dissolved Metals

REQUESTED ANALYSES

CLIENT PROJECT NAME / NUMBER:

City of La Habra Heights

PROJECT CONTACT:

Gerald Greene

P.O. NO.:

SAMPLER(S): (PRINT)

WO # / LAB USE ONLY

16-12-1507

DATE: 12/16/16

PAGE: 1 OF 1

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Received by: (Signature/Affiliation)

Received by: (Signature/Affiliation)

Received by: (Signature/Affiliation)

Date:

12/16/16

Time:

8:15a

Date:

Time:

Page 22 of 24

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: CWE

DATE: 12/16/2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 2.1 °C (w/ CF): 2.1 °C; ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: IS

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: IS

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: WJ

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna₂ ☐ 100PJ ☐ 100PJna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB
☐ 125PBz₂na ☐ 250AGB ☐ 250CGB ☒ 250CGBs ☒ 250PB ☒ 250PBn ☐ 500AGB ☐ 500AGJ ☐ 500AGJs
☐ 500PB ☐ 1AGB ☐ 1AGBna₂ ☐ 1AGBs ☒ 1PB ☐ 1PBna ☐ _____ ☐ _____ ☐ _____
Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____
Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ Other Matrix (_____) ☐ _____

Container: A = Amber, B = Bottle, C = Clear, E = Envelope, G = Glass, J = Jar, P = Plastic, and Z = Ziploc/Resealable Bag

Preservative: b = buffered, f = filtered, h = HCl, n = HNO₃, na = NaOH, na₂ = Na₂S₂O₃, p = H₃PO₄,
s = H₂SO₄, u = ultra-pure, x = Na₂SO₃+NaHSO₄.H₂O, z₂na = Zn (CH₃CO₂)₂ + NaOH

Labeled/Checked by: WJ

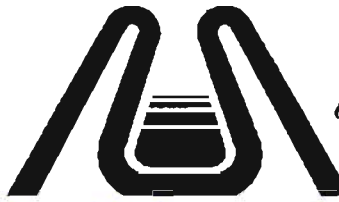
Reviewed by: WJ

Subcontractor Analysis Report

Work Order: 16-12-1507Page 1 of 1

One or more samples in this work order have tests that were subcontracted. The subcontract report(s) follows.

For subcontracted tests, please reference the laboratory information noted below.



Our Experience Is Your Protection

Michelson Laboratories, Inc.

6280 Chalet Drive, Commerce, CA 90040-3704, Telephone (562) 928-0553 / FAX (562) 927-6625

LABORATORY CERTIFICATE

Submitted By: CWE
1561 E ORANGETHORPE AVENUE
SUITE 240
FULLERTON, CA 92831
Attn : GERRY GREENE

Printed : 12/19/2016
Lab No. : 121616-M436455
Report No. : 121616-M436455A
Order No. :
Received : 12/16/2016
Page : 1 of 1

REPORT #	PRODUCT / TEST	METHOD	RESULT	UNITS	START:DT
M436455-01	WATER - 20161216LHH-CC E.COLI (COLILERT MPN)	SMWW 9223	25,600	MPN/100ML	12/16/16
M436455-02	WATER - 20161216LHH-SJC E.COLI (COLILERT MPN)	SMWW 9223	24,300	MPN/100ML	12/16/16
M436455-03	WATER - 20161216LHH-DUP E.COLI (COLILERT MPN)	SMWW 9223	32,300	MPN/100ML	12/16/16

MICHELSON LABORATORIES, INC.

Wendy Lu, Microbiology Director | 12/19/2016 11:02:36 AM

ATTACHMENT D – REGIONAL TOXICOLOGY RESULTS FOR S13



December 15, 2016

Dr. Thant Zin Win, D.V.M., M.P.H., Chief
County of Los Angeles-ACWMD
Environmental Toxicology Laboratory
11012 Garfield Avenue-Bldg. B
South Gate, CA 90280

Dear Dr. Win:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* EPA-821-R-02-013. Results were as follows:

CLIENT:	County of Los Angeles
SAMPLE I.D.:	ME000000057
DATE RECEIVED:	21 Nov- 2016
ABC LAB. NO.:	CLA1116.234

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

*REPRODUCTION = PASS % EFFECT = - 16.99 %

* Passes permit TIE limitation of $\geq 50\%$ effect

Yours very truly,


Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia, see CETIS report using TST-Welch's t Test

CETIS Summary Report

Report Date: 13 Dec-16 14:17 (p 1 of 1)
Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test				Aquatic Bioassay & Consulting Labs, Inc.	
Batch ID:	06-7307-8249	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	22 Nov-16 14:22	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	29 Nov-16 12:55	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Duration:	6d 23h	Source:	Aquatic Biosystems, CO	Age:	
Sample ID:	02-4996-2401	Code:	CLA1116.234c	Client:	County of Los Angeles
Sample Date:	21 Nov-16 12:15	Material:	Sample Water	Project:	
Receipt Date:	21 Nov-16 13:51	Source:	Bioassay Report		
Sample Age:	26h (7 °C)	Station:	ME000000057		

Single Comparison Summary				
Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result
02-0895-3330	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate
13-6623-1726	Reproduction	TST-Welch's t Test	2.1E-07	100% passed reproduction

Test Acceptability		TAC Limits					
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
02-0895-3330	7d Survival Rate	Control Resp	1	0.8	>>	Yes	Passes Criteria
13-6623-1726	Reproduction	Control Resp	36.5	15	>>	Yes	Passes Criteria

7d Survival Rate Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary											
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	36.5	33.02	39.98	23	44	1.663	7.437	20.38%	0.00%
100		20	42.7	38.41	46.99	20	53	2.051	9.171	21.48%	-16.99%

7d Survival Rate Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	44	25	43	39	38	23	44	27	26	29
		43	43	41	40	42	36	35	41	44	27
100		20	38	51	45	49	40	47	35	39	53
		44	33	28	47	53	50	42	35	53	52

7d Survival Rate Binomials											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 13 Dec-16 14:17 (p 1 of 2)

Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-6623-1726	Endpoint: Reproduction	CETIS Version: CETISv1.9.2
Analyzed: 13 Dec-16 14:17	Analysis: Parametric Bioequivalence-Two Sample	Official Results: Yes
Batch ID: 06-7307-8249	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 22 Nov-16 14:22	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water
Ending Date: 29 Nov-16 12:55	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 23h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 02-4996-2401	Code: CLA1116.234c	Client: County of Los Angeles
Sample Date: 21 Nov-16 12:15	Material: Sample Water	Project:
Receipt Date: 21 Nov-16 13:51	Source: Bioassay Report	
Sample Age: 26h (7 °C)	Station: ME000000057	

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction

TST-Welch's t Test

Control	vs	Control II	Test Stat	Critical	DF	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	6.385	0.8534	31	CDF	2.1E-07	Non-Significant Effect

Test Acceptability Criteria

TAC Limits

Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	36.5	15	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	384.4	384.4	1	5.514	0.0242	Significant Effect
Error	2649.2	69.7158	38			
Total	3033.6		39			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	0.5554	7.353	0.4607	Equal Variances
Variances	Mod Levene Equality of Variance Test	0.5795	7.353	0.4512	Equal Variances
Variances	Variance Ratio F Test	1.521	3.432	0.3690	Equal Variances
Distribution	Anderson-Darling A2 Normality Test	1.227	3.878	0.0032	Non-Normal Distribution
Distribution	D'Agostino Kurtosis Test	0.008618	2.576	0.9931	Normal Distribution
Distribution	D'Agostino Skewness Test	2.048	2.576	0.0406	Normal Distribution
Distribution	D'Agostino-Pearson K2 Omnibus Test	4.194	9.21	0.1228	Normal Distribution
Distribution	Kolmogorov-Smirnov D Test	0.1491	0.1617	0.0254	Normal Distribution
Distribution	Shapiro-Wilk W Normality Test	0.9181	0.9236	0.0067	Non-Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	36.5	33.02	39.98	39.5	23	44	1.663	20.38%	0.00%
100		20	42.7	38.41	46.99	44.5	20	53	2.051	21.48%	-16.99%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	44	25	43	39	38	23	44	27	26	29
		43	43	41	40	42	36	35	41	44	27
100		20	38	51	45	49	40	47	35	39	53
		44	33	28	47	53	50	42	35	53	52

CETIS Analytical Report

Report Date: 13 Dec-16 14:17 (p 2 of 2)
Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test

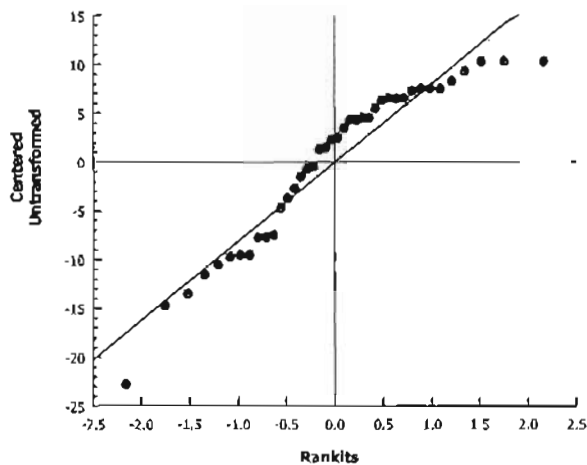
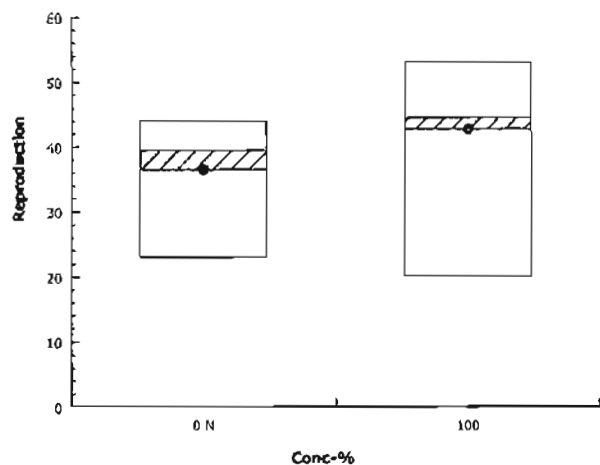
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 13-6623-1726
Analyzed: 13 Dec-16 14:17

Endpoint: Reproduction
Analysis: Parametric Bioequivalence-Two Sample

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Analytical Report

Report Date: 13 Dec-16 14:17 (p 1 of 2)
Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test				Aquatic Bioassay & Consulting Labs, Inc.	
Analysis ID:	02-0895-3330	Endpoint:	7d Survival Rate	CETIS Version:	CETISv1.9.2
Analyzed:	13 Dec-16 14:16	Analysis:	Single 2x2 Contingency Table	Official Results:	Yes
Batch ID:	06-7307-8249	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	22 Nov-16 14:22	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	29 Nov-16 12:55	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Duration:	6d 23h	Source:	Aquatic Biosystems, CO	Age:	
Sample ID:	02-4996-2401	Code:	CLA1116.234c	Client:	County of Los Angeles
Sample Date:	21 Nov-16 12:15	Material:	Sample Water	Project:	
Receipt Date:	21 Nov-16 13:51	Source:	Bioassay Report		
Sample Age:	26h (7 °C)	Station:	ME000000057		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate

Fisher Exact Test					
Control	vs	Group	Test Stat	P-Type	P-Value
Negative Control		100	1.0000	Exact	1.0000
			Decision(α:5%)		
			Non-Significant Effect		

Test Acceptability Criteria		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	>>	Yes	Passes Criteria

Data Summary							
Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1	0	0.0%
100		20	0	20	1	0	0.0%

7d Survival Rate Detail											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials											
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 13 Dec-16 14:17 (p 2 of 2)
Test Code: CLA1116.234cer | 04-8619-7133

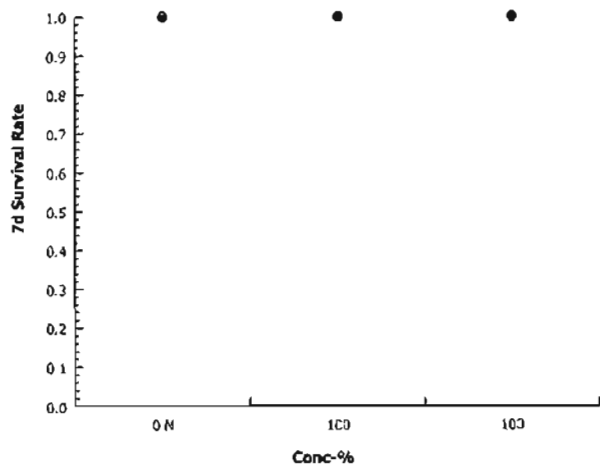
Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 02-0895-3330 Endpoint: 7d Survival Rate
Analyzed: 13 Dec-16 14:16 Analysis: Single 2x2 Contingency Table

CETIS Version: CETISv1.9.2
Official Results: Yes

Graphics



CETIS Measurement Report

Report Date: 13 Dec-16 14:17 (p 1 of 2)
Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 06-7307-8249	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 22 Nov-16 14:22	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water
Ending Date: 29 Nov-16 12:55	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 23h	Source: Aquatic Biosystems, CO	Age:
Sample ID: 02-4996-2401	Code: CLA1116.234c	Client: County of Los Angeles
Sample Date: 21 Nov-16 12:15	Material: Sample Water	Project:
Receipt Date: 21 Nov-16 13:51	Source: Bioassay Report	
Sample Age: 26h (7 °C)	Station: ME000000057	

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	61.38	60.94	61.81	61	62	0.183	0.5175	0.84%	0
100		8	163	163	163	163	163	0	0	0.0%	0
Overall		16	112.2	84.22	140.2	61	163	13.12	52.48	46.78%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	333.4	329.1	337.6	327	343	1.802	5.097	1.53%	0
100		8	1393	1379	1408	1369	1420	6.047	17.1	1.23%	0
Overall		16	863.4	571.6	1155	327	1420	136.9	547.5	63.42%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.925	7.554	8.296	7.6	9	0.1567	0.4432	5.59%	0
100		8	8.213	7.732	8.693	7.5	9	0.203	0.5743	6.99%	0
Overall		16	8.069	7.793	8.344	7.5	9	0.1293	0.5173	6.41%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	89.88	87.71	92.04	88	93	0.9149	2.588	2.88%	0
100		8	296	296	296	296	296	0	0	0.0%	0
Overall		16	192.9	136.2	249.7	88	296	26.61	106.5	55.18%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.925	7.654	8.196	7.3	8.3	0.1146	0.324	4.09%	0
100		8	7.3	7.127	7.473	7	7.5	0.07319	0.207	2.84%	0
Overall		16	7.613	7.391	7.834	7	8.3	0.104	0.4161	5.47%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.0%	0
100		8	24.09	23.91	24.26	24	24.6	0.07425	0.21	0.87%	0
Overall		16	24.04	23.96	24.12	24	24.6	0.0376	0.1504	0.63%	0 (0%)

CETIS Measurement Report

Report Date: 13 Dec-16 14:17 (p 2 of 2)
Test Code: CLA1116.234cer | 04-8619-7133

Ceriodaphnia 7-d Survival and Reproduction Test						Aquatic Bioassay & Consulting Labs, Inc.			
Alkalinity (CaCO3)-mg/L									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	62	62	62	61	61	61	61	61
100		163	163	163	163	163	163	163	163
Conductivity-µmhos									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	329	335	334	334	336	343	329	327
100		1407	1420	1376	1380	1397	1369	1398	1400
Dissolved Oxygen-mg/L									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	7.6	7.8	7.8	7.8	7.9	7.7	7.8	9
100		8.6	7.7	7.6	7.5	9	8.4	8.8	8.1
Hardness (CaCO3)-mg/L									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	93	93	93	88	88	88	88	88
100		296	296	296	296	296	296	296	296
pH-Units									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	7.3	7.8	8.1	8.1	7.9	8.2	7.7	8.3
100		7.1	7.5	7.4	7.5	7	7.1	7.3	7.5
Temperature-°C									
Conc-%	Code	1	2	3	4	5	6	7	8
0	N	24	24	24	24	24	24	24	24
100		24	24	24	24.6	24.1	24	24	24

August 17, 2016

Dr. Thant Zin Win, D.V.M., M.P.H., Chief
County of Los Angeles-ACWMD
Environmental Toxicology Laboratory
11012 Garfield Avenue-Bldg. B
South Gate, CA 90280

Dear Dr. Win:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*" EPA-821-R-02-013. Results were as follows:

CLIENT:	County of Los Angeles
SAMPLE I.D.:	ME00005930 Coyote Creek MES (S13)
DATE RECEIVED:	29 July- 2016
ABC LAB. NO.:	CLA0716.297

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

*REPRODUCTION = PASS % EFFECT = -4.98 %

* Passes permit TIE limitation of $\geq 50\%$ effect

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia, see CETIS report using TST-Welch's t Test

TST Summary Sheet

Lab Name	Aquatic Bioassay and Consulting Labs	Client Name	County of Los Angeles
Test ID	ME00005930	Test Species	<i>C. dubia</i> (water flea)
Test Date	7/29/2016	Test Type	Chronic
Test Duration	7 days	Endpoint	Reproduction
Critical Conc.	100%		

Statistic	Control	Critical Concentration
Mean of Raw Data	25.10	26.35
Mean used in Calculation (non-transformed)	25.10	26.35
Variance used in Calculation (non-transformed)	6.200	19.292
Standard Deviation of Raw Data	2.490	4.392
CV of Raw Data	0.099	0.167
n	20	20

Mean % Effect at Critical Conc.

-4.98

Calculated t-value	Degrees of Freedom	Table t-value	Percent Difference
7.0510	25	0.8562	

Results

Pass Sample is Non-toxic

Raw Data

Control Data		Critical Concentration Data	
No. of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)	No. of Organisms Exposed or Counted	Response (Final Count, Weight, Length, etc.)
1	22	1	26
1	23	1	21
1	27	1	27
1	25	1	27
1	28	1	28
1	25	1	31
1	22	1	28
1	30	1	32
1	26	1	27
1	28	1	26
1	24	1	32
1	25	1	23
1	26	1	32
1	26	1	26
1	25	1	27
1	22	1	28
1	21	1	17
1	25	1	16
1	29	1	25
1	23	1	28

CETIS Summary Report

Report Date: 16 Aug-16 15:35 (p 1 of 2)

Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	18-1298-8655	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	29 Jul-16 15:52	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	05 Aug-16 14:00	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Duration:	6d 22h	Source:	Aquatic Biosystems, CO	Age:	
Sample ID:	18-2096-7344	Code:	CLA0716.297	Client:	County of Los Angeles
Sample Date:	28 Jul-16 13:30	Material:	Sample Water	Project:	
Receive Date:	29 Jul-16 13:20	Source:	Bioassay Report		
Sample Age:	26h (6.3 °C)	Station:	ME00005930		

Comparison Summary

Analysis ID	Endpoint	NOEL	LOEL	TOEL	PMSD	TU	Method
19-4651-8056	7d Survival Rate	100	>100	NA	25.0%	1	TST-Welch's t Test
15-1740-7505	Reproduction	100	>100	NA	3.64%	1	TST-Welch's t Test

Point Estimate Summary

Analysis ID	Endpoint	Level	%	95% LCL	95% UCL	TU	Method
18-7515-3393	7d Survival Rate	EC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		EC10	>100	N/A	N/A	<1	
		EC15	>100	N/A	N/A	<1	
		EC20	>100	N/A	N/A	<1	
		EC25	>100	N/A	N/A	<1	
		EC40	>100	N/A	N/A	<1	
		EC50	>100	N/A	N/A	<1	
05-9050-2978	Reproduction	IC5	>100	N/A	N/A	<1	Linear Interpolation (ICPIN)
		IC10	>100	N/A	N/A	<1	
		IC15	>100	N/A	N/A	<1	
		IC20	>100	N/A	N/A	<1	
		IC25	>100	N/A	N/A	<1	
		IC40	>100	N/A	N/A	<1	
		IC50	>100	N/A	N/A	<1	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits	Overlap	Decision
18-7515-3393	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
19-4651-8056	7d Survival Rate	Control Resp	1	0.8 - NL	Yes	Passes Acceptability Criteria
05-9050-2978	Reproduction	Control Resp	25.1	15 - NL	Yes	Passes Acceptability Criteria
15-1740-7505	Reproduction	Control Resp	25.1	15 - NL	Yes	Passes Acceptability Criteria
15-1740-7505	Reproduction	PMSD	0.03641	0.13 - 0.47	Yes	Below Acceptability Criteria

7d Survival Rate Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	20	1	1	1	1	1	0	0	0.0%	0.0%
100		20	1	1	1	1	1	0	0	0.0%	0.0%

Reproduction Summary

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Negative Control	20	25.1	23.93	26.27	21	30	0.5568	2.49	9.92%	0.0%
100		20	26.35	24.29	28.41	16	32	0.9821	4.392	16.67%	-4.98%

CETIS Summary Report

Report Date: 16 Aug-16 15:35 (p 2 of 2)
 Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1

Reproduction Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	22	23	27	25	28	25	22	30	26	28
		24	25	26	26	25	22	21	25	29	23
100		26	21	27	27	28	31	28	32	27	26
		32	23	32	26	27	28	17	16	25	28

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

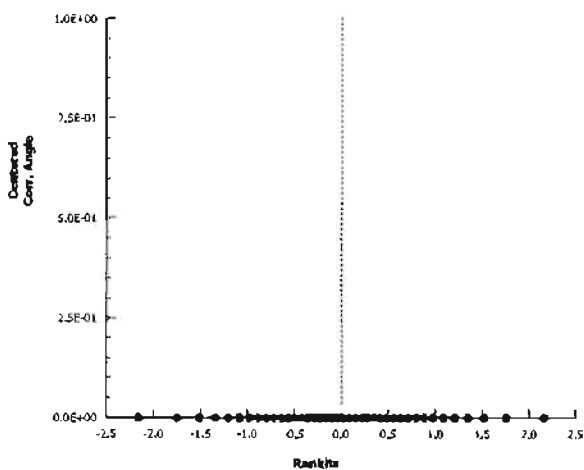
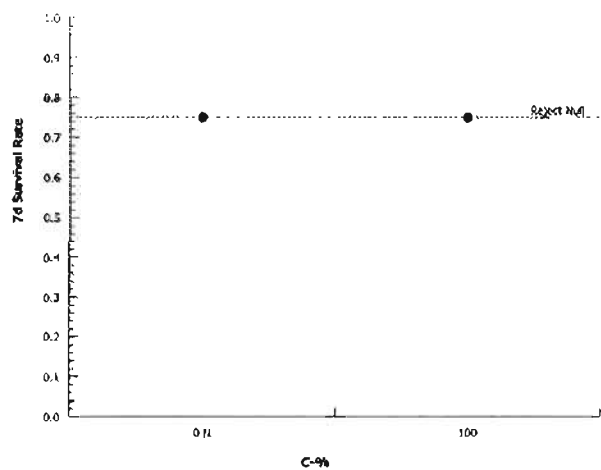
Report Date: 16 Aug-16 15:35 (p 1 of 3)

Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test							Aquatic Bioassay & Consulting Labs, Inc.				
Analysis ID: 19-4651-8056		Endpoint: 7d Survival Rate					CETIS Version: CETISv1.8.7				
Analyzed: 16 Aug-16 15:35		Analysis: Parametric Bioequivalence-Two Sample					Official Results: Yes				
Data Transform		Zeta	Alt Hyp	Trials	Seed	TST b	PMSD	Test Result			
Angular (Corrected)		NA	C*b < T	NA	NA	0.75	25.0%	Passes 7d survival rate			
TST-Welch's t Test											
Control	vs	C-%	Test Stat	Critical	MSD	DF	P-Value	P-Type	Decision(α:20%)		
Negative Control		100*	153100000	0.852	1E-09	35	<0.0001	CDF	Non-Significant Effect		
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		38						
Total	0				39						
Distributional Tests											
Attribute	Test			Test Stat	Critical	P-Value		Decision(α:1%)			
Variances	Variance Ratio F			1	3.432	1.0000		Equal Variances			
7d Survival Rate Summary											
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Negative Control	20	1	1	1	1	1	1	0	0.0%	0.0%
100		20	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	Negative Contr	20	1.047	1.047	1.047	1.047	1.047	1.047	0	0.0%	0.0%
100		20	1.047	1.047	1.047	1.047	1.047	1.047	0	0.0%	0.0%
7d Survival Rate Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1
Angular (Corrected) Transformed Detail											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047
100		1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047	1.047
7d Survival Rate Binomials											
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test		Aquatic Bioassay & Consulting Labs, Inc.	
Analysis ID: 19-4651-8056	Endpoint: 7d Survival Rate	CETIS Version: CETISv1.8.7	
Analyzed: 16 Aug-16 15:35	Analysis: Parametric Bioequivalence-Two Sample	Official Results: Yes	

Graphics



Report Date: 16 Aug-16 15:35 (p 3 of 3)
Test Code: CLA0716.297 | 04-1410-8692

000-055-186-3 CETIS™ v1.8.7.11 Analyst: _____ QA: _____

CETIS Analytical Report

Report Date: 16 Aug-16 15:35 (p 1 of 2)

Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID: 18-7515-3393

Endpoint: 7d Survival Rate

CETIS Version: CETISv1.8.7

Analyzed: 16 Aug-16 15:35

Analysis: Linear Interpolation (ICPIN)

Official Results: Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	N/A	N/A	<1	NA	NA
EC10	>100	N/A	N/A	<1	NA	NA
EC15	>100	N/A	N/A	<1	NA	NA
EC20	>100	N/A	N/A	<1	NA	NA
EC25	>100	N/A	N/A	<1	NA	NA
EC40	>100	N/A	N/A	<1	NA	NA
EC50	>100	N/A	N/A	<1	NA	NA

7d Survival Rate Summary

Calculated Variate(A/B)

C-%	Control Type	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	Negative Control	20	1	1	1	0	0	0.0%	0.0%	20	20
100		20	1	1	1	0	0	0.0%	0.0%	20	20

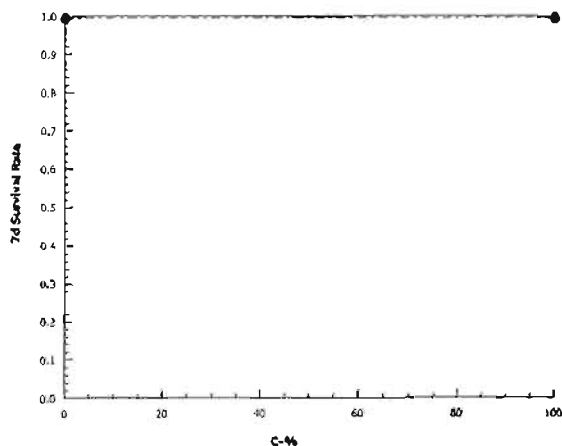
7d Survival Rate Detail

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1
100		1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1

7d Survival Rate Binomials

C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	Negative Control	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Graphics



Report Date: 16 Aug-16 15:35 (p 2 of 2)
Test Code: CLA0716.297 | 04-1410-8692

Graphics

C-96	Reproduction
100	26

CETIS Measurement Report

Report Date: 16 Aug-16 15:35 (p 1 of 2)

Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID: 18-1298-8655	Test Type: Reproduction-Survival (7d)	Analyst:
Start Date: 29 Jul-16 15:52	Protocol: EPA/821/R-02-013 (2002)	Diluent: Laboratory Water
Ending Date: 05 Aug-16 14:00	Species: Ceriodaphnia dubia	Brine: Not Applicable
Duration: 6d 22h	Source: Aquatic Biosystems, CO	Age:

Sample ID: 18-2096-7344	Code: CLA0716.297	Client: County of Los Angeles
Sample Date: 28 Jul-16 13:30	Material: Sample Water	Project:
Receive Date: 29 Jul-16 13:20	Source: Bioassay Report	
Sample Age: 26h (6.3 °C)	Station: ME00005930	

Alkalinity (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	67.88	66.58	69.17	66	69	0.5489	1.553	2.28%	0
100		8	181	181	181	181	181	0	0	0.0%	0
Overall		16	124.4			66	181				0 (0%)

Conductivity-µmhos

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	336.8	331.1	342.4	330	348	2.396	6.777	2.01%	0
100		8	1925	1911	1939	1888	1940	5.886	16.65	0.87%	0
Overall		16	1131			330	1940				0 (0%)

Dissolved Oxygen-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	7.375	7.038	7.712	6.9	8.1	0.1424	0.4027	5.46%	0
100		8	7.038	5.426	8.649	4.7	10	0.6816	1.928	27.4%	0
Overall		16	7.206			4.7	10				0 (0%)

Hardness (CaCO3)-mg/L

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	91.13	88.96	93.29	88	93	0.9149	2.588	2.84%	0
100		8	250	250	250	250	250	0	0	0.0%	0
Overall		16	170.6			88	250				0 (0%)

pH-Units

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	8.088	7.974	8.201	7.8	8.2	0.04795	0.1356	1.68%	0
100		8	7.725	7.423	8.027	7.3	8.4	0.1278	0.3615	4.68%	0
Overall		16	7.906			7.3	8.4				0 (0%)

Temperature-°C

C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	Negative Contr	8	24.01	23.98	24.04	24	24.1	0.01249	0.03531	0.15%	0
100		8	24.16	23.96	24.37	24	24.7	0.08647	0.2446	1.01%	0
Overall		16	24.09			24	24.7				0 (0%)

CETIS Measurement Report

Report Date: 16 Aug-16 15:35 (p 2 of 2)
Test Code: CLA0716.297 | 04-1410-8692

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Alkalinity (CaCO₃)-mg/L

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	69	69	69	69	69	66	66	66
100		181	181	181	181	181	181	181	181

Conductivity-µmhos

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	335	344	330	334	341	348	330	332
100		1888	1920	1924	1921	1935	1931	1938	1940

Dissolved Oxygen-mg/L

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	8.1	7.6	7.4	7.1	7.5	6.9	7.5	6.9
100		10	9.7	7.5	6.5	4.7	5.3	6.1	6.5

Hardness (CaCO₃)-mg/L

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	93	93	93	93	93	88	88	88
100		250	250	250	250	250	250	250	250

pH-Units

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	8.2	8	7.8	8.1	8.2	8.1	8.2	8.1
100		8.4	8.1	7.6	7.6	7.3	7.4	7.7	7.7

Temperature-°C

C-%	Control Type	1	2	3	4	5	6	7	8
0	Negative Contr	24	24.1	24	24	24	24	24	24
100		24	24.7	24.2	24.3	24	24.1	24	24