APPENDIX G

2015 Water Quality Monitoring Report

County of Los Angeles
Department of Public Works

November 2015 Water Quality Monitoring Report

for the

Big Tujunga Wash Mitigation Area

January 2016

MWH

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for the

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Water Quality Monitoring
November 2015

BACKGROUND

The County of Los Angeles Department of Public Works (LACDPW) purchased an approximately 210-acre parcel in Big Tujunga Wash as a mitigation area for Los Angeles County Flood Control District (LACFCD) projects throughout Los Angeles County. In coordination with local agencies, the LACDPW defined a number of measures to improve habitat quality at the site. A Final Master Mitigation Plan (FMMP) was prepared to guide the implementation of these enhancements. The FMMP also includes a monitoring program to gather data on conditions at the site during implementation of the improvements. The FMMP was prepared and is currently being implemented by ECORP Consulting, Inc. (ECORP). MWH, a subconsultant to ECORP, is responsible for the water quality monitoring program described in the FMMP. Water quality monitoring was conducted on a quarterly basis from the fourth quarter of 2000 through the fourth quarter of 2005. In 2006, monitoring was conducted on a semi-annual basis. In 2007 through 2009 monitoring was conducted annually, in December. In 2010, monitoring was conducted in November; pesticide sampling was conducted in early December. In 2012, monitoring was conducted in February and November, and in 2013 and 2014, monitoring was conducted in October. This report presents the results of the water quality sampling for November 2015.

The project site is located just east of Hansen Dam in the Shadow Hills area of the City of Los Angeles. Both Big Tujunga Wash, an intermittent stream, and Haines Canyon Creek, a perennial stream, traverse the project site in an east-to-west direction. The two Tujunga Ponds are located outside of the site boundary, at the far eastern side of the site.

Project Site Activities

A timeline of project-related activities including water quality sampling events is presented in **Table 1**.

Table 1
Major Activities to Date at the Big Tujunga Wash Mitigation Area

Date	Activity
4/2000	Baseline water quality sampling
11/2000 to 11/2001	Arundo, tamarisk, and pepper tree removal Chemical (Rodeo®) application
12/2000 to 11/2002	Water hyacinth removal
12/2000	Fish Sampling at Haines Canyon Creek
12/2000	Water quality sampling
1/2001 to present	Exotic aquatic wildlife (non-native fish, crayfish, bullfrog, and turtle) removal – conducted quarterly
2/2001	Partial riparian planting
3/2001	Selective clearing at Canyon Trails Golf Club
3/2001	Water quality sampling
6/2001	Water quality sampling
7/2001	Fish Sampling at Haines Canyon Creek
9/2001	Water quality sampling

Date	Activity
10/2001 to 11/2001	Fish Sampling at Haines Canyon Creek
12/2001	Water quality sampling
1/2002	Final riparian planting
2/2002	Upland replacement planting
3/2002	Water quality sampling
6/2002	Water quality sampling
7/2002	Fish Sampling at Haines Canyon Creek
9/2002	Water quality sampling
10/2002	Grading at Canyon Trails Golf Club begins
11/2002	Fish Sampling at Haines Canyon Creek
12/2002	Water quality sampling
3/2003	Water quality sampling
4/2003	Meeting with Canyon Trails Golf Club to discuss future use of herbicides and fertilizers
6/2003	Water quality sampling
8/2003	Fish Sampling at Haines Canyon Creek
9/2003	Water quality sampling
Fall 2003	Completion of the golf course construction
12/2003	Water quality sampling
1/2004	Fish Sampling at Haines Canyon Creek
4/2004	Water quality sampling
4/2004	Rock Dam Removal Day
6/2004	Angeles National Golf Club (previously named Canyon Trails) opens to the public
7/2004	Water quality sampling
10/2004	Water quality sampling
12/2004	Water quality sampling
4/2005	Water quality sampling
6/2005	Water quality sampling
10/2005	Water quality sampling
12/2005	Water quality sampling
7/2006	Water quality sampling
12/2006	Water quality sampling
12/2007	Water quality sampling
12/2008	Water quality sampling
8/2009 to 10/2009	The Station Fire was the largest fire in the recorded history of Angeles National Forest and the 10th largest fire in California since 1933. The fire burned a total of 160,577 acres. The fire was fully contained on October 16, 2009. (Source: Angeles National Forest Incident Update available - http://www.inciweb.org/incident/1856/)
12/2009	Water quality sampling
11/2010	Water quality sampling
12/2010	Water quality sampling for pesticides
9/2011 to 1/2012	Water lettuce removal
2/2012	Water quality sampling
11/2012	Water quality sampling
10/2013	Water quality sampling
10/2014	Water quality sampling
11/2015	Water quality sampling

Upstream Land Uses

The monitoring program has been designed to specifically address inputs to the site from upstream land uses such as the Angeles National Golf Club (previously named Canyon Trails Golf Club). The golf course has been operating since June 2004. Potential impacts to aquatic species from run-on to the site that contains excessive nutrients or pesticides are of primary concern. Pesticides potentially used at the Angeles National Golf Course include herbicides, insecticides, fungicides, and grass growth inhibitors (**Table 2**).

Actual use of pesticides is based on golf course maintenance needs. Based on the pesticide use information from the Golf Club, analysis of water samples for glyphosate, chlorpyrifos, other organophosphorous pesticides, and organochlorine pesticides is included in the sampling program for the Big Tujunga Wash Mitigation Area.

Table 2
Pesticides Potentially Used at the Angeles National Golf Club

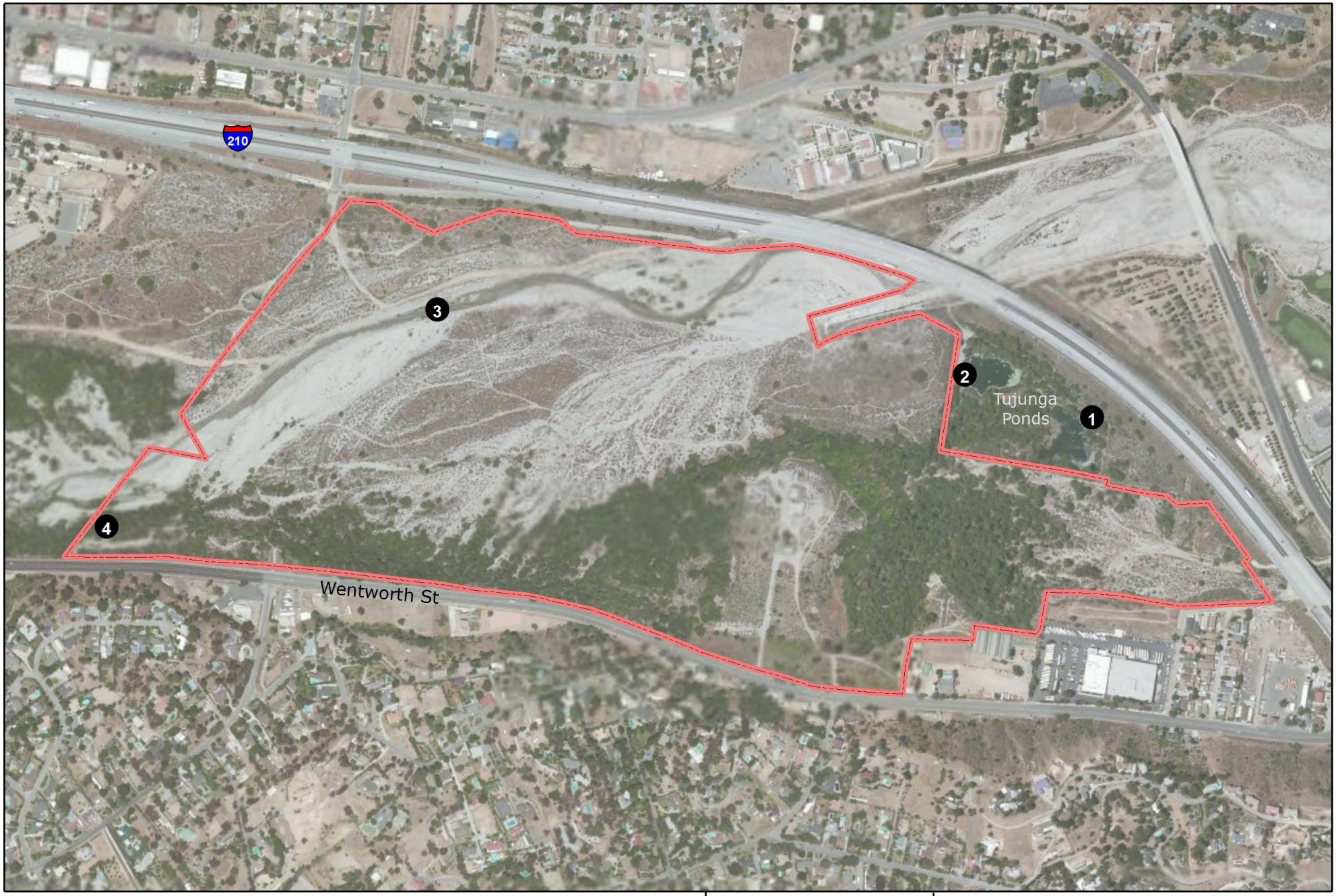
Manufacturer and Product Name	Active Ingredient	Use
Syngenta Primo Maxx	trinexapac-ethyl	grass growth inhibitor used for turf management
Syngenta Reward	diquat dibromide	landscape and aquatic herbicide
Syngenta Barricade	prodiamine	pre-emergent herbicide
Bayer Prostar 70 WP	flutolanil	fungicide
Monsanto QuikPRO	ammonium salt of glyphosphate and diquat dibromide	herbicide
Monsanto Rodeo® Verdicon Kleenup® Pro Lesco Prosecutor	glyphosate	emerged aquatic weed and brush herbicide
Valent ProGibb T&O	gibberellic acid	plant growth regulator
BASF Insignia 20 WG	pyraclostrobin	fungicide
BASF Stalker	Isopropylamine salt of Imazapyr	herbicide
Dow Agrosciences Surflan A.S.	oryzalin	herbicide
Dow Agrosciences Dursban Pro	chlorpyrifos	insecticide
Mycogen Scythe	pelargonic acid	herbicide

Source: J. Reidinger, Angeles National Golf Club, pers. comm. to M. Chimienti, LACDPW, March 18, 2004 and Angeles National Golf Club Monthly Summary Pesticide Use Reports (December 2004, February 2005 and April 2007).

MATERIALS AND METHODS

Sampling Stations

Four sampling locations have been identified for the monitoring program for the Big Tujunga Wash Mitigation Area (**Figure 1**). **Table 3** summarizes sampling locations and the conditions observed on November 2, 2015.



Key to Features

Mitigation Area

Station Number	Name
1	Inflow to Tujunga Ponds
2	Outflow from Tujunga Ponds
3	Big Tujunga Wash
4	Haines Canyon Creek, just before exit from site

N

0 450 900 Feet

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Date: April 19, 2012

Big Tujunga Wash Mitigation Area Water Quality Sampling Stations

MWH.

Figure 1

Table 3
Water Quality Sampling Locations and Conditions for November 2015

Date	November 2, 2015		
Air Temperature	Approximately 65-67 degrees Fahrenheit during sample collection period		
Skies	Partly cloudy		
Observations	Water clear at all locations; relatively low turbidity; horse sign at outflow from Tujunga Ponds and Haines Canyon Creek; recently used fire pit at Haines Canyon Creek leaving the site		
Sampling Locations	**Latitude**	**Longitude**	**Time of sample**
Haines Canyon Creek	34 16' 0.092'' N	118 21' 25.716' 'W	1140
Haines Canyon Creek, inflow to Tujunga Ponds	34 16' 6.040'' N	118 20' 22.616'' W	1100
Haines Canyon Creek, outflow from Tujunga Ponds	34 16' 8.263'' N	118 20' 30.824'' W	1020
Big Tujunga Wash	34 16' 11.615'' N	118 21' 4.519'' W	station dry

Sampling Parameters

Water Quality. **Table 4** summarizes the sampling parameters included in the water quality monitoring program. The following meter was used in the field:

- Dissolved oxygen, pH and temperature – YSI 556-01 Multi Probe System

Analytical results for organochlorine pesticides via EPA method 608 were analyzed by Eurofins Calscience in Garden Grove, California. Analytical results for chlorpyrifos and organophosphorous pesticides via EPA method 8141A were analyzed by Emax Laboratories, Torrance, California. All other analyses were performed at Eurofins Eaton Laboratories, Monrovia, California. Samples were taken at mid-depth, along a transect perpendicular to the stream channel alignment. Quality assurance/quality control (QA/QC) procedures in each laboratory followed the methods described in their respective Quality Assurance Manuals.

Table 4
Water Quality Sampling Parameters

Parameter	Analysis Location	Analytical Method
total Kjeldahl nitrogen (TKN)	laboratory	EPA 351.2
nitrite - nitrogen (NO_2-N)	laboratory	EPA 300.0 by IC
nitrate-nitrogen (NO_3-N)	laboratory	EPA 300.0 by IC
ammonia (NH_4)	laboratory	EPA 350.1
orthophosphate - P	laboratory	Standard Methods 4500PE/EPA 365.1
total phosphorus - P	laboratory	Standard Methods 4500PE/EPA 365.1
total coliform	laboratory	Standard Methods 9221B
fecal coliform	laboratory	Standard Methods 9221C
turbidity	laboratory	EPA 180.1
glyphosate (Roundup/Rodeo)[1]	laboratory	EPA 547
chlorpyrifos and organophosphorous pesticides[2]	laboratory	EPA 8141A
organochlorine pesticides[3]	laboratory	EPA 608
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	laboratory	Standard Methods 4500-Cl
temperature	field	Standard Methods 2550
pH	field	Standard Methods 4500-H+

Sources for analytical methods:
EPA. Method and Guidance for Analysis of Water.
American Public Health Association, American Waterworks Association, and Water Environment Federation. 1998. Standard Methods for the Examination of Water and Wastewater, 20th Edition. Washington D.C.

1 First analysis completed in the first quarter of 2004

2 First analysis completed in the fourth quarter of 2004. This analytical method tests for the following chemicals: azinphos-methyl, bolster, coumaphos, diazinon, chlorpyrifos, demeton, dichlorvos, disulfoton, ethoprop, fensulfothion, fenthion, mevinphos, naled, phorate, runnel, stirophos, parathion-methyl, tokuthion, and trichloronate.

3 First analysis completed in December 2007. EPA method 608 tests for aldrin, BHC, Chlordane, DDD, DDE, DDT, dieldrin, endrin, endosulfan, heptaclor, methoxychlor, toxaphene and PCB.

Discharge Measurements. In addition to the water quality monitoring, flows in the outlet from the Tujunga Ponds and in Haines Canyon Creek leaving the site were estimated using a simple field procedure. The technique uses a float to measure stream velocity.

Calculating flow then involves solving the following equation:

$$Flow = ALC / T$$

Where:

A = Average cross-sectional area of the stream (stream width multiplied by average water depth)

L = Length of the stream reach measured (usually 20 feet)

C = A coefficient or correction factor (0.8 for rocky-bottom streams or 0.9 for muddy-bottom streams). This allows you to correct for the fact that water at the surface travels faster than near the stream bottom due to resistance from gravel, cobble, etc. Multiplying the surface velocity by a correction coefficient decreases the value and gives a better measure of the stream's overall velocity.

T = Time, in seconds, for the float to travel the length of L

RESULTS

Baseline Water Quality

Sampling and analysis conducted by LACDPW prior to implementation of the FMMP is considered the baseline for water quality conditions at the site. The results of baseline analyses conducted in April 2000 are presented in **Table 5**. Higher bacteria and turbidity observed in the 4/18/2000 samples are attributable to a rain event. Phosphorus levels were also high in the 4/18/2000 samples, due to release from sediments.

November 2015 Results

Water Quality

Results of analyses conducted by Eurofins and Emax Laboratories are appended to this report (**Appendix A**) and summarized in **Table 6**.

Table 5
Baseline Water Quality (2000)

Parameter	Units	Date	Haines Canyon Creek, Inflow to Tujunga Ponds	Haines Canyon Creek, Outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, just before exit from site
Total coliform	MPN/ 100 ml	4/12/00	3,000	5,000	170	1,700
		4/18/00	2,200	170,000	2,400	70,000
Fecal coliform	MPN/ 100 ml	4/12/00	500	300	40	80
		4/18/00	500	30,000	2,400	50,000
Ammonia-N	mg/L	4/12/00	0	0	0	0
		4/18/00	0	0	0	0
Nitrate-N	mg/L	4/12/00	8.38	5.19	0	3.73
		4/18/00	8.2	3.91	0.253	0.438
Nitrite-N	mg/L	4/12/00	0.061	0	0	0
		4/18/00	0.055	0	0	0
Kjeldahl-N	mg/L	4/12/00	0	0.1062	0.163	0
		4/18/00	0	0.848	0.42	0.428
Dissolved phosphorus	mg/L	4/12/00	0.078	0.056	0	0.063
		4/18/00	0.089	0.148	0.111	0.163
Total phosphorus	mg/L	4/12/00	0.086	0.062	0	0.066
		4/18/00	0.113	0.153	0.134	0.211
pH	std units	4/12/00	7.78	7.68	7.96	7.91
		4/18/00	7.18	7.47	7.45	7.06
Turbidity	NTU	4/12/00	1.83	0.38	1.75	0.6
		4/18/00	4.24	323	4070	737

Table 6
Summary of Water Quality Results – November 2, 2015

Parameter	Units	Haines Canyon Creek, Inflow to Tujunga Ponds	Haines Canyon Creek, Outflow from Tujunga Ponds	Big Tujunga Wash	Haines Canyon Creek, just before exit from site
Temperature	°C	19.6	18.1	NA	17.4
Dissolved Oxygen	mg/L	9.3	7.4	NA	10.4
pH	std units	7.26	7.18	NA	8.11
Total residual chlorine	mg/L	ND	ND	NA	ND
Ammonia-Nitrogen	mg/L	ND	ND	NA	ND
Kjeldahl Nitrogen	mg/L	0.22	0.88	NA	ND
Nitrite-Nitrogen	mg/L	ND	ND	NA	ND
Nitrate-Nitrogen	mg/L	7.9	6.0	NA	5.1
Orthophosphate-P	mg/L	0.017	ND	NA	0.017
Total phosphorus-P	mg/L	0.075	0.058	NA	0.044
Glyphosate	µg/L	ND	ND	NA	ND
Chloropyrifos*	µg/L	ND	ND	NA	ND
Pesticides (EPA 608)**	µg/L	ND	ND	NA	ND
Turbidity	NTU	1.2	2.3	NA	0.3
Fecal Coliform Bacteria	(MPN/100 ml)	79	49	NA	49
Total Coliform Bacteria	(MPN/100 ml)	330	490	NA	1700

NA – data not available; station dry on the sample date

NTU – nephelometric turbidity units MPN – most probable number ND – non-detect

* The analytical method used for chloropyrifos (EPA 8141A) also tests for the following chemicals: azinphos-methyl, bolster, coumaphos, diazinon, demeton, dichlorvos, disulfoton, ethoprop, fensulfothion, fenthion, mevinphos, naled, phorate, runnel, stirophos, parathion-methyl, tokuthion, and trichloronate.

** EPA method 608 tests for aldrin, BHC, Chlordane, DDD, DDE, DDT, dieldrin, endrin, endosulfan, heptaclor, methoxychlor, and toxaphene.

Discharge Measurements

Using the field technique described above, flows in the outlet from the Tujunga Ponds and in Haines Canyon Creek (leaving the site) were approximated. Estimated flows for November 2015 are summarized in **Table 7**.

Table 7
Estimated Flows for November 2015

Sampling Date	Approximate Flow (cubic feet per second)		
	Haines Canyon Creek, Outflow from Tujunga Ponds	Haines Canyon Creek, just before exit from site	Big Tujunga Wash
11/2/15	0.6	1	station dry on sample date

Comparison of Results with Aquatic Life Criteria

Tables 8 through **13** present objectives established by the United States Environmental Protection Agency (USEPA) and the Los Angeles Regional Water Quality Control Board (Regional Board) for protection of beneficial uses including freshwater aquatic life.

Table 8
National and Local Recommended Water Quality Criteria - Freshwaters

Parameter	Basin Plan Objectives[a]	EPA Criteria		
		CMC	CCC	Human Health
Temperature (^{o}C)	b	See Table 13	See Table 13	--
Dissolved oxygen (mg/L)	>7.0 mean >5.0 min	5.0[c] (warmwater, early life stages, 1-day minimum)	6.0[c] (warmwater, early life stages, 7-day mean)	--
pH	6.5 - 8.5	--	6.5-9.0[d,e]	5.0-9.0[d,e]
Total residual chlorine (mg/L)	0.1	0.019[d,e]	0.011[d,e]	4.0 (maximum residual disinfectant level goal)
Fecal coliform (MPN/100 ml)	126[f] (geometric mean for *E. coli*) (water contact recreation)	--	--	Swimming stds: 33[g] (geometric mean for enterococci) 126[g] (geometric mean for *E. coli*)
Ammonia-nitrogen (mg/L)	See Tables 11 and 12	See Table 9	See Table 10	--
Nitrite-nitrogen (mg/L)	1	--	--	1 (primary drinking water std.)
Nitrate-nitrogen (mg/L)	10	--	--	10 (primary drinking water std.)
Total phosphorus (mg/L)	--	<0.05 – 0.1[e] (recommendation for streams, no criterion)		--
Turbidity (NTU)	h	i	i	5 (secondary drinking water standard) 0.5 – 1.0 (std. for systems that filter)

Notes:

-- No criterion

CMC Criteria Maximum Concentration or acute criterion

CCC Criteria Continuous Concentration or chronic criterion

a Source: California Regional Water Quality Control Board, Los Angeles Region. 1994. Water Quality Control Plan (Basin Plan). As amended.

b Narrative criterion: "The natural receiving water temperature of all regional waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses."

c Source: USEPA. 1986. Ambient Water Quality Criteria for Dissolved Oxygen. EPA 440-5-86-003. Washington, D.C.

d Source: USEPA. 1999. National Recommended Water Quality Criteria – Correction. EPA 822-Z-99-001. Washington, D.C.

e Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.

f Single sample limits – *E. coli* density shall not exceed 235/100 ml.

g Source: USEPA. 1986. Ambient Water Quality Criteria for Bacteria – 1986. EPA 440-5-84-002. Washington, D.C.

h Narrative criterion: "Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses."

i Narrative criterion for freshwater fish and other aquatic life: "Settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonally established norm for aquatic life."

Table 9
Temperature and pH-Dependent Values of the CMC (Acute Criterion)
Mussels Absent

CMC: Mussels Absent, mg N/L										
pH	Temperature, C									
	0	14	16	18	20	22	24	26	28	30
6.5	58.0	58.0	58.0	58.0	43.7	37.0	31.4	26.6	22.5	19.1
6.6	55.7	55.7	55.7	55.7	41.9	35.5	30.1	25.5	21.6	18.3
6.7	53.0	53.0	53.0	53.0	39.9	33.8	28.6	24.3	20.6	17.4
6.8	49.9	49.9	49.9	49.9	37.6	31.9	27.0	22.9	19.4	16.4
6.9	46.5	46.5	46.5	46.5	35.1	29.7	25.2	21.3	18.1	15.3
7.0	42.9	42.9	42.9	42.9	32.3	27.4	23.2	19.7	16.7	14.1
7.1	39.1	39.1	39.1	39.1	29.4	24.9	21.1	17.9	15.2	12.8
7.2	35.1	35.1	35.1	35.1	26.4	22.4	19.0	16.1	13.6	11.5
7.3	31.2	31.2	31.2	31.2	23.5	19.9	16.8	14.3	12.1	10.2
7.4	27.3	27.3	27.3	27.3	20.6	17.4	14.8	12.5	10.6	8.98
7.5	23.6	23.6	23.6	23.6	17.8	15.1	12.8	10.8	9.18	7.77
7.6	20.2	20.2	20.2	20.2	15.3	12.9	10.9	9.27	7.86	6.66
7.7	17.2	17.2	17.2	17.2	12.9	11.0	9.28	7.86	6.66	5.64
7.8	14.4	14.4	14.4	14.4	10.9	9.21	7.80	6.61	5.60	4.74
7.9	12.0	12.0	12.0	12.0	9.07	7.69	6.51	5.52	4.67	3.96
8.0	9.99	9.99	9.99	9.99	7.53	6.38	5.40	4.58	3.88	3.29
8.1	8.26	8.26	8.26	8.26	6.22	5.27	4.47	3.78	3.21	2.72
8.2	6.81	6.81	6.81	6.81	5.13	4.34	3.68	3.12	2.64	2.24
8.3	5.60	5.60	5.60	5.60	4.22	3.58	3.03	2.57	2.18	1.84
8.4	4.61	4.61	4.61	4.61	3.48	2.95	2.50	2.11	1.79	1.52
8.5	3.81	3.81	3.81	3.81	2.87	2.43	2.06	1.74	1.48	1.25
8.6	3.15	3.15	3.15	3.15	2.37	2.01	1.70	1.44	1.22	1.04
8.7	2.62	2.62	2.62	2.62	1.97	1.67	1.42	1.20	1.02	0.862
8.8	2.19	2.19	2.19	2.19	1.65	1.40	1.19	1.00	0.851	0.721
8.9	1.85	1.85	1.85	1.85	1.39	1.18	1.00	0.847	0.718	0.608
9.0	1.57	1.57	1.57	1.57	1.19	1.00	0.851	0.721	0.611	0.517

Note: Native species of freshwater mussels are not known for Big Tujunga Wash or Haines Canyon Creek.
CMC – Criteria Maximum Concentration (ammonia)
Source: USEPA. 2009. Draft 2009 Update Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater. EPA 822-D-09-001. Washington, D.C.

Table 10
Temperature and pH-Dependent Values of the CCC (Chronic Criterion)
Mussels Absent and Early Fish Life Stages Present

CCC: Mussels Absent and Early Fish Life Stages Present, mg N/L										
pH	Temperature (° Celsius)									
	0	14	16	18	20	22	24	26	28	30
6.5	6.36	6.36	6.36	6.36	6.36	6.11	5.37	4.72	4.15	3.65
6.6	6.26	6.26	6.26	6.26	6.26	6.02	5.29	4.65	4.09	3.60
6.7	6.15	6.15	6.15	6.15	6.15	5.91	5.19	4.57	4.01	3.53
6.8	6.00	6.00	6.00	6.00	6.00	5.77	5.08	4.46	3.92	3.45
6.9	5.84	5.84	5.84	5.84	5.84	5.61	4.93	4.34	3.81	3.35
7.0	5.64	5.64	5.64	5.64	5.64	5.42	4.76	4.19	3.68	3.24
7.1	5.41	5.41	5.41	5.41	5.41	5.20	4.57	4.02	3.53	3.10
7.2	5.14	5.14	5.14	5.14	5.14	4.94	4.35	3.82	3.36	2.95
7.3	4.84	4.84	4.84	4.84	4.84	4.66	4.09	3.60	3.16	2.78
7.4	4.52	4.52	4.52	4.52	4.52	4.34	3.82	3.36	2.95	2.59
7.5	4.16	4.16	4.16	4.16	4.16	4.00	3.52	3.09	2.72	2.39
7.6	3.79	3.79	3.79	3.79	3.79	3.65	3.21	2.82	2.48	2.18
7.7	3.41	3.41	3.41	3.41	3.41	3.28	2.89	2.54	2.23	1.96
7.8	3.04	3.04	3.04	3.04	3.04	2.92	2.57	2.26	1.98	1.74
7.9	2.67	2.67	2.67	2.67	2.67	2.57	2.26	1.98	1.74	1.53
8.0	2.32	2.32	2.32	2.32	2.32	2.23	1.96	1.72	1.52	1.33
8.1	2.00	2.00	2.00	2.00	2.00	1.92	1.69	1.49	1.31	1.15
8.2	1.71	1.71	1.71	1.71	1.71	1.64	1.45	1.27	1.12	0.982
8.3	1.45	1.45	1.45	1.45	1.45	1.40	1.23	1.08	0.949	0.835
8.4	1.23	1.23	1.23	1.23	1.23	1.18	1.04	0.914	0.804	0.706
8.5	1.04	1.04	1.04	1.04	1.04	0.999	0.878	0.772	0.679	0.597
8.6	0.878	0.878	0.878	0.878	0.878	0.844	0.742	0.652	0.573	0.504
8.7	0.742	0.742	0.742	0.742	0.742	0.714	0.628	0.552	0.485	0.426
8.8	0.631	0.631	0.631	0.631	0.631	0.606	0.533	0.469	0.412	0.362
8.9	0.539	0.539	0.539	0.539	0.539	0.518	0.455	0.400	0.352	0.309
9.0	0.464	0.464	0.464	0.464	0.464	0.446	0.392	0.345	0.303	0.266

Note: Native species of freshwater mussels are not known for Big Tujunga Wash or Haines Canyon Creek.
CCC – Criteria Continuous Concentration (ammonia)
Source: USEPA. 2009. Draft 2009 Update Aquatic Life Ambient Water Quality Criteria for Ammonia - Freshwater. EPA 822-D-09-001. Washington, D.C.

Table 11
30-Day Average Objective for Ammonia-N for Freshwaters Applicable to Waters Subject to the "Early Life Stage Present" Condition (mg N/L)

pH	Temperature (° Celsius)								
	14	16	18	20	22	24	26	28	30
6.5	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Source: California Regional Water Quality Control Board, Los Angeles Region. 2005. Amendments to the Water Quality Control Plan – Los Angeles Region with Respect to Early Life Stage Implementation Provisions of the Inland Surface Water Ammonia Objectives for Freshwaters. Taken from USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 12
One-Hour Average Objective for Ammonia-N for Freshwaters (mg N/L)

pH	Waters Designated COLD and/or MIGR	Waters Not Designated COLD and/or MIGR
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

Cold – Beneficial use designation of Cold Freshwater Habitat
MIGR – Beneficial use designation of Migration of Aquatic Organisms
Source: California Regional Water Quality Control Board, Los Angeles Region. 2002. Amendments to the Water Quality Control Plan – Los Angeles Region with Respect to Inland Surface Water Ammonia Objectives. Taken from USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

Table 13
Example Calculated Values for Maximum Weekly Average Temperature for Growth and Short-Term Maxima for Survival of Juvenile and Adult Fishes During the Summer

Species	Growth (°Celsius)	Maxima (°Celsius)
Black crappie	27	--
Bluegill	32	35
Channel catfish	32	35
Emerald shiner	30	--
Largemouth bass	32	34
Brook trout	19	24

Source: USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. Washington, D.C.

DISCUSSION

Results from the November 2015 sampling are described by parameter in **Table 14**.

Table 14
Discussion of November 2015 Water Quality Sampling Results

Parameter	Discussion
Temperature	• Observed temperatures were below levels of concern for growth and survival of warmwater fish species at all stations.
Dissolved oxygen	• Dissolved oxygen levels ranged from 7.4 mg/L in the outflow from the Tujunga Ponds to 10.4 in Haines Canyon Creek leaving the site. DO levels at all stations were above the recommended minimum (5.0 mg/L) and recommended mean (7.0 mg/L) for warmwater fish species.
pH	• Lowest pH was observed in the outflow from Tujunga Ponds (7.18), with highest pH observed in Haines Canyon Creek leaving the site (8.11). On this date, pH readings in Haines Canyon Creek and the Tujunga Ponds were within the 6.5 to 8.5 range identified in the Basin Plan.
Total residual chlorine	• No residual chlorine was detected at any station.
Nitrogen	• Nitrate-nitrogen measurements at all stations were below the drinking water standard of 10 mg/L. • Ammonia was below the detection limit at all stations.
Phosphorus	• Total phosphorus ranged from 0.044 mg/L-P in Haines Canyon Creek leaving the site to 0.075 mg/L-P in the inflow to the Tujunga Ponds. These levels are below the upper end of EPA's recommended range for streams to prevent excess algae growth (recommended range is <0.05 – 0.1 mg/L).
Glyphosate	• Glyphosate was not detected at any station.
Chloropyrifos and Organophosphorous Pesticides	• Chloropyrifos and the other pesticides tested using EPA's analytical method 8141A were not detected at any station.
Organochlorine Pesticides	• Pesticides analyzed by EPA Method 608 were not detected at any station.
Turbidity	• Turbidity levels were low (<3 NTU) at all stations.
Bacteria	• The fresh water bacteria standard for water contact recreation is for *E. coli* (126 MPN/100 ml geometric mean, 235 MPN/100 ml single sample limits). The observed fecal coliform levels were below the standard at all stations. Sampling specifically for *E. coli* was not conducted. • Total coliform levels ranged from 330 MPN/100 ml in Haines Canyon Creek inflow to Tujunga Ponds to 1,700 MPN/100 ml in the outflow from the ponds. [Note that recreation standards are for *E. coli*. Total coliform standards apply to marine waters and waterbodies where shellfish can be harvested for human consumption.]

GLOSSARY

Ammonia-Nitrogen – NH_3-N is a gaseous alkaline compound of nitrogen and hydrogen that is highly soluble in water. Un-ionized ammonia (NH_3) is toxic to aquatic organisms. The proportions of NH_3 and ammonium (NH_4^+) and hydroxide (OH^-) ions are dependent on temperature, pH, and salinity.

Chlorine, residual – The chlorination of water supplies and wastewaters serves to destroy or deactivate disease-producing organisms. Residual chlorine in natural waters is an aquatic toxicant.

Chloropyrifos - white crystal-like solid insecticide widely used in homes and on farms. Used to control cockroaches, fleas, termites, ticks crop pests.

Coliform Bacteria – several genera of bacteria belonging to the family Enterobacteriaceae. Based on the method of detection, the coliform group is historically defined as facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria that ferment lactose with gas and acid formation within 48 hours at 35°C.

Fecal Coliform Bacteria – part of the intestinal flora of warm-blooded animals. Presence in surface waters is considered an indication of pollution.

Glyphosate - white compound broad-spectrum herbicide used to kill weeds.

Kjeldahl Nitrogen – Named for the laboratory technique used for detection, Kjeldahl nitrogen includes organic nitrogen and ammonia nitrogen.

Nitrate-Nitrogen – $NO3^-$-N is an essential nutrient for many photosynthetic autotrophs.

Nitrite-Nitrogen – $NO2^-$-N is an intermediate oxidation state of nitrogen, both in the oxidation of ammonia to nitrate and in the reduction of nitrate.

Orthophosphorus – the reactive form of phosphorus, commonly used as fertilizer.

pH – the hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. The pH of "pure" water at 25°C is 7.0 (neutral). Low pH is acidic; high pH is basic or alkaline.

Total Phosphorus – In natural waters, phosphorus occurs almost solely as orthophosphates, condensed phosphates, and organically bound phosphate. Phosphorus is essential to the growth of organisms.

Turbidity – attributable to the suspended and colloidal matter in water, including clay, silt, finely divided organic and inorganic matter, soluble colored organic compounds, and plankton and other microscopic organisms. The reduction of clearness in turbid waters diminishes the penetration of light and therefore can adversely affect photosynthesis.

APPENDIX A

BIG TUJUNGA WASH MITIGATION AREA
WATER QUALITY MONITORING PROGRAM

LABORATORY RESULTS
November 2015

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750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

ilac-MRA

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
AT-1807

Laboratory Report

for

MWH Americas - Pasadena
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101
Attention: Sarah Garber

Date of Issue
11/24/2015

EUROFINS EATON ANALYTICAL

DST: David S Tripp

Project Manager

NELAP ACCREDITED TNI LABORATORY
ORELAP 4034

Report: 560571
Project: BIG-TUJUNGA
Group: Water Quality Monitoring
PO#: 10508004.011701

* Accredited in accordance with TNI 2009 and ISO/IEC 17025:2005.
* Laboratory certifies that the test results meet all **TNI 2009 and ISO/IEC 17025:2005** requirements unless noted under the individual analysis.
* Following the cover page are State Certification List, ISO 17025 Accredited Method List, Acknowledgement of Samples Received, Comments, Hits Report, Data Report, QC Summary, QC Report and Regulatory Forms, as applicable.
* Test results relate only to the sample(s) tested.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
----------	--------	**Montana**	Cert 0035
Arizona	AZ0778	**Nebraska**	Certified
Arkansas	Certified	**Nevada**	CA00006-2015
California-Monrovia-ELAP	2813	**New Hampshire ***	2959
California-Colton- ELAP	2812	**New Jersey ***	CA 008
California-Folsom- ELAP	2820	**New Mexico**	Certified
California-Fresno- ELAP	2966	**New York ***	11320
Colorado	Certified	**North Carolina**	06701
Connecticut	PH-0107	**North Dakota**	R-009
Delaware	CA 006	**Oregon (Primary AB) ***	**ORELAP 4034**
Florida *	E871024	**Pennsylvania ***	68-565
Georgia	947	**Rhode Island**	LAO00326
Guam	15-003r	**South Carolina**	87016
Hawaii	Certified	**South Dakota**	Certified
Idaho	Certified	**Tennessee**	TN02839
Illinois *	200033	**Texas ***	T104704230-14-7
Indiana	C-CA-01	**Utah ***	CA000062015-8
Kansas *	E-10268	**Vermont**	VT0114
Kentucky	90107	**Virginia ***	460260
Louisiana *	LA150018	**Washington**	C838
Maine	CA0006	**West Virginia**	9943 C
Maryland	224	**Wisconsin**	998316660
Commonwealth of Northern Marianas Is.	MP0004	**Wyoming**	8TMS-L
Massachusetts	M-CA006	**EPA Region 5**	Certified
Michigan	9906	**Los Angeles County Sanitation Districts**	10264

* NELAP/TNI Recognized Accreditation Bodies

ISO 17025 Accredited Method List

The tests listed below are accredited and meet the requirements of ISO 17025 as verified by the ANSI-ASQ National Accreditation Board/ANAB.

Refer to Certificate and scope of accreditation (AT 1807) found at: http://www.eatonanalytical.com

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
1,4-Dioxane	EPA 522	x		x
2,3,7,8-TCDD	Modified EPA 1613B	x		x
Acrylamide	In House Method (2440)	x		x
Alkalinity	SM 2320B	x	x	x
Ammonia	EPA 350.1		x	x
Ammonia	SM 4500-NH3 H		x	x
Anions and DBPs by IC	EPA 300.0	x	x	x
Anions and DBPs by IC	EPA 300.1	x		x
Asbestos	EPA 100.2	x	x	
Bicarbonate Alkalinity as HCO3	SM 2320B	x	x	x
BOD / CBOD	SM 5210B		x	x
Bromate	In House Method (2447)	x		x
Carbamates	EPA 531.2	x		x
Carbonate as CO3	SM 2330B	x	x	x
Carbonyls	EPA 556	x		x
COD	EPA 410.4 / SM 5220D		x	
Chloramines	SM 4500-CL G	x	x	x
Chlorinated Acids	EPA 515.4	x		x
Chlorinated Acids	EPA 555	x		x
Chlorine Dioxide	SM 4500-CLO2 D	x		x
Chlorine -Total/Free/ Combined Residua	SM 4500-Cl G	x	x	x
Conductivity	EPA 120.1		x	
Conductivity	SM 2510B	x	x	x
Corrosivity (Langelier Index)	SM 2330B	x		x
Cryptosporidium	EPA 1622, 1623	x		x
Cyanide, Amenable	SM 4500-CN G	x	x	
Cyanide, Free	SM 4500CN F	x	x	x
Cyanide, Total	EPA 335.4	x	x	x
Cyanogen Chloride (screen)	In House Method (2470)	x		x
Diquat and Paraquat	EPA 549.2	x		x
DBP/HAA	SM 6251B	x		x
Dissolved Oxygen	SM 4500-O G		x	x
DOC	SM 5310C	x		x
E. Coli	(MTF/EC+MUG)	x		x
E. Coli	CFR 141.21(f)(6)(i)	x		x
E. Coli	SM 9223		x	
E. Coli (Enumeration)	SM 9221B.1/ SM 9221F	x		x
E. Coli (Enumeration)	SM 9223B	x		x
EDB/DCBP	EPA 504.1	x		
EDB/DBCP and DBP	EPA 551.1	x		x
EDTA and NTA	In House Method (2454)	x		x
Endothall	EPA 548.1	x		x
Endothall	In-house Method (2445)	x		x
Enterococci	SM 9230B	x	x	
Fecal Coliform	SM 9221 E (MTF/EC)	x		
Fecal Coliform	SM 9221C, E (MTF/EC)		x	
Fecal Coliform (Enumeration)	SM 9221E (MTF/EC)	x		x
Fecal Coliform with Chlorine Present	SM 9221E		x	
Fecal Streptococci	SM 9230B	x	x	
Fluoride	SM 4500-F C	x	x	x
Giardia	EPA 1623	x		x
Glyphosate	EPA 547	x		x
Gross Alpha/Beta	EPA 900.0	x	x	x
Gross Alpha Coprecipitation	SM 7110 C	x	x	x
Hardness	SM 2340B	x	x	x
Heterotrophic Bacteria	In House Method (2439)	x		x
Heterotrophic Bacteria	SM 9215 B	x		x
Hexavalent Chromium	EPA 218.6	x	x	x

SPECIFIC TESTS	METHOD OR TECHNIQUE USED	Environ-mental (Drinking Water)	Environ-mental (Waste Water)	Water as a Component of Food and Bev/Bev/ Bottled Water
Hexavalent Chromium	EPA 218.7	x		x
Hexavalent Chromium	SM 3500-Cr B		x	
Hormones	EPA 539	x		x
Hydroxide as OH Calc.	SM 2330B	x		x
Kjeldahl Nitrogen	EPA 351.2		x	
Legionella	CDC Legionella	x		x
Mercury	EPA 245.1	x	x	x
Metals	EPA 200.7 / 200.8	x	x	x
Microcystin LR	ELISA (2360)	x		x
NDMA	EPA 521	x		x
Nitrate/Nitrite Nitrogen	EPA 353.2	x	x	x
OCL, Pesticides/PCB	EPA 505	x		x
Ortho Phosphate	EPA 365.1	x	x	x
Ortho Phosphate	SM 4500P E			x
Ortho Phosphorous	SM 4500P E	x		
Oxyhalides Disinfection Byproducts	EPA 317.0	x		x
Perchlorate	EPA 331.0	x		x
Perchlorate (low and high)	EPA 314.0	x		x
Perfluorinated Alkyl Acids	EPA 537	x		x
pH	EPA 150.1	x		
pH	SM 4500-H+B	x	x	x
Phenylurea Pesticides/ Herbicides	In House Method, based on EPA 532 (2448)	x		x
Pseudomonas	IDEXX Pseudalert (2461)	x		x
Radium-226	GA Institute of Tech	x		x
Radium-228	GA Institute of Tech	x		x
Radon-222	SM 7500RN	x		x
Residue, Filterable	SM 2540C	x	x	x
Residue, Non-filterable	SM 2540D		x	
Residue, Total	SM 2540B		x	x
Residue, Volatile	EPA 160.4		x	
Semi-VOC	EPA 525.2	x		x
Semi-VOC	EPA 625		x	x
Silica	SM 4500-Si D	x	x	
Silica	SM 4500-SiO2 C	x	x	
Sulfide	SM 4500-$S^{=}$ D		x	
Sulfite	SM 4500-SO^{3}B	x	x	x
Surfactants	SM 5540C	x	x	x
Taste and Odor Analytes	SM 6040E	x		x
Total Coliform (P/A)	SM 9221 A, B	x		x
Total Coliform (Enumeration)	SM 9221 A, B, C	x		x
Total Coliform / E. coli	Colisure (2346)	x		x
Total Coliform	SM 9221B		x	
Total Coliform with Chlorine Present	SM 9221B		x	
Total Coliform / E.coli (P/A and Enumeration)	SM 9223	x		x
TOC	SM 5310C	x	x	x
TOX	SM 5320B		x	
Total Phenols	EPA 420.1		x	
Total Phenols	EPA 420.4	x	x	x
Total Phosphorous	SM 4500 P E		x	
Turbidity	EPA 180.1	x	x	x
Turbidity	SM 2130B	x	x	
Uranium by ICP/MS	EPA 200.8	x		x
UV 254	SM 5910B	x		
VOC	EPA 524.2/EPA 524.3	x		x
VOC	EPA 624		x	x
VOC	EPA SW 846 8260	x		x
VOC	In House Method (2411)	x		x
Yeast and Mold	SM 9610	x		x

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Acknowledgement of Samples Received

Addr: **MWH Americas - Pasadena**
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Attn: Sarah Garber
Phone: 626-568-6071

Client ID: MWH-ECORP
Folder #: 560571
Project: BIG-TUJUNGA
Sample Group: Water Quality Monitoring

Project Manager: David S Tripp
Phone: (626) 386-1158
PO #: 10508004.011701

The following samples were received from you on **November 02, 2015** at **1324**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using Eurofins Eaton Analytical.

Sample #	Sample ID	Sample Date
201511020223	TJPOUT110215	11/02/2015 1020

@608_PCBS	@608_PEST	@8141EDD
Ammonia Nitrogen	Fecal Coliform Bacteria	Glyphosate
Nitrate as Nitrogen by IC	Nitrate as NO3 (calc)	Nitrite Nitrogen by IC
Orthophosphate as P (OPO4)	Orthophosphate as PO4	Total Chlorine Residual
Total Coliform Bacteria	Total Kjeldahl Nitrogen	Total phosphorus as P
Total phosphorus as PO4- Calc.	Turbidity	

Sample #	Sample ID	Sample Date
201511020224	TJPIN110215	11/02/2015 1100

@608_PCBS	@608_PEST	@8141EDD
Ammonia Nitrogen	Fecal Coliform Bacteria	Glyphosate
Nitrate as Nitrogen by IC	Nitrate as NO3 (calc)	Nitrite Nitrogen by IC
Orthophosphate as P (OPO4)	Orthophosphate as PO4	Total Chlorine Residual
Total Coliform Bacteria	Total Kjeldahl Nitrogen	Total phosphorus as P
Total phosphorus as PO4- Calc.	Turbidity	

Sample #	Sample ID	Sample Date
201511020225	HCC110215	11/02/2015 1140

@608_PCBS	@608_PEST	@8141EDD
Ammonia Nitrogen	Fecal Coliform Bacteria	Glyphosate
Nitrate as Nitrogen by IC	Nitrate as NO3 (calc)	Nitrite Nitrogen by IC
Orthophosphate as P (OPO4)	Orthophosphate as PO4	Total Chlorine Residual
Total Coliform Bacteria	Total Kjeldahl Nitrogen	Total phosphorus as P
Total phosphorus as PO4- Calc.	Turbidity	

Test Description

@608_PCBS -- Organochlorine PCBs

@608_PEST -- Organochlorine Pesticides

@8141EDD -- Organophosphorous Pesticides (Sub)

CHAIN OF CUSTODY RECORD

560571

eurofins | Eaton Analytical

750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Phone: 626 386 1100
Fax: 626 386 1101

800 566 LABS (800 566 5227)

Website: www.EatonAnalytical.com

EUROFINS EATON ANALYTICAL USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED AGAINST COC BY: PO 14:11

SAMPLES LOGGED IN BY: Wena

SAMPLES REC'D DAY OF COLLECTION? [X] (check for yes)

SAMPLE TEMP RECEIVED AT:

[ ] _____ (Other) IR Gun ID = _____ (Observation= _____ °C) (Corr.Factor _____ °C) (Final = _____ °C)

[X] Monrovia IR Gun ID = 464A (Observation= 14.1 °C) (Corr.Factor 0.2 °C) (Final = 13.9 °C)

Compliance Acceptance Criteria: (Chemistry: 4 ± 2 °C) (Microbiology: < 10°C)

TYPE OF ICE: Real ✓ Synthetic _____ No Ice _____ CONDITION OF ICE: Frozen _____ Partially Frozen ✓ Thawed _____ N/A _____

METHOD OF SHIPMENT: Pick-Up / (Walk-In) / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: MWH-ECORP

PROJECT CODE: 105080004.011701 BIG TUJUNGA

EEA CLIENT CODE: _____ COC ID: _____ SAMPLE GROUP: _____

COMPLIANCE SAMPLES (check for yes) [ ] - Requires state forms [ ]

NON-COMPLIANCE SAMPLES (check for yes) [✓] REGULATION INVOLVED: _____

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION (eg. SDWA, NPDES, etc.)

SEE ATTACHED KIT ORDER FOR ANALYSES [✓] (check for yes), OR

List ALL ANALYSES REQUIRED (enter number of bottles sent for each test for each sample)

TAT requested: rush by adv notice only STD ✓ 1 wk ___ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SAMPLE ID	CLIENT LAB ID	MATRIX *	FIELD DATA	FIELD DATA	SAMPLER COMMENTS
11/2	1020	TJPOUT110215		RSW			4th Station
11/2	1100	TJPIN 110215		RSW			Dry - No Samples
11/2	1140	HCC110215		RSW			
		Pat 11/2	Short Hold Wena 11/2 1500				

2015

* **MATRIX TYPES:** RSW = Raw Surface Water; RGW = Raw Ground Water; CFW = Chlor(am)inated Finished Water; FW = Other Finished Water; SEAW = Sea Water; WW = Waste Water; BW = Bottled Water; SW = Storm Water; SO = Soil; SL = Sludge; O = Other - Please Identify

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
SAMPLED BY:		SARAH GARBER	MWH / PRIN ENV SCI	11/2/15	1140
RELINQUISHED BY:		SARAH GARBER	MWH " " "	11/2/15	1323
RECEIVED BY:		H. Ojeda	FEH	11/2/15	13:24
RELINQUISHED BY:					
RECEIVED BY:					

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Kit Order for MWH Americas - Pasadena

David S Tripp is your Eurofins Eaton Analytical Service Manager

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
(626) 386-1100 FAX (626) 386-1101

Note: Sampler Please return this paper with your samples

Kit #: 123711

Created By: Ayla Anderstrom - [CK2P]
Deliver By: 10/30/2015
STG: Bottle Orders
Ice Type: W

Client ID: MWH-ECORP
Project Code: BIG-TUJUNGA Bottle Orders
Group Name: Water Quality Monitoring
PO#/JOB#: 10508004.011701

Ship Sample Kits to
MWH Americas - Pasadena
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Attn: Sarah Garber
Phone: 626-568-6071

Send Report to
MWH Americas - Pasadena
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Attn: Sarah Garber
Phone: 626-568-6071

Billing Address

,

Attn:

# of Samples	Tests	Bottle Qty - Type [preservative information]	UN DOT #
4	Glyphosate	1 - 125ml amber glass [no preservative]	
4	Total Chlorine Residual	1 - 125ml amber glass [no preservative]	
4	Nitrate as Nitrogen by IC, Nitrate as NO3 (calc), Nitrite Nitrogen by IC, Orthophosphate as P, Turbidity	1 - 125ml poly [no preservative]	
4	Orthophosphate as PO4	1 - 125ml poly [no preservative]	
4	@8081A	2 - 1L amber glass [no preservative]	
4	@8141EDD	2 - 1L amber glass [no preservative]	
4	Ammonia Nitrogen, Total Kjeldahl Nitrogen, Total phosphorus as P	1 - 250ml poly [0.5 ml H2SO4 (50%)]	UN1830
4	Fecal Coliform Bacteria, Total Coliform Bacteria	1 - 250ml poly sterilized [0.25 ml Thio (8%)]	

Comments Pat 11/2

SHIPPING: Please label "BIG T WASH" and include wet ice packing instructions. Client will pickup the sample kits on Friday 10/30/15
SAMPLER: Please return samples on fresh wet ice to the lab same day collected.

Code	Status	Date Shipped	Via	Tracking #	# of Coolers	Prepared By

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INTERNAL CHAIN OF CUSTODY RECORD

COMPANY NAME / EEA CLIENT CODE:	PROJECT CODE:
MWH- ECORP	

SAMPLE TEMP RECEIVED: **SAMPLES REC'D DAY OF COLLECTION?** ☐

IR Gun ID = 464A (Observation= 14.1 °C) (Corr.Factor 0.2 °C) (Final = 13.9 °C)

TYPE OF ICE: Real ✓ Synthetic ____ No Ice ____ **CONDITION OF ICE:** Frozen ____ Partially Frozen ✓ Thawed ____ N/A ____

~~**METHOD OF SHIPMENT:** Pick-Up / Walk-In / FedEx / UPS / DHL / Area Fast / Top Line / Other: _____~~

Compliance Acceptance Criteria:

1) Chemistry: ≤ 6°C, not frozen (NELAP) (if received after 24 hrs of sample collection)

2) Microbiology, Distribution: < 10°C, not frozen (can be ≥10°C if received on ice the same day as sample collection, within 8 hours)

3) Microbiology, Surface Water: < 10°C (if received after 2 hours of sample collection)

If over temp is not confirmed, then record each temperature of each quadrant

1 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	2 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)
3 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)	4 = (Observation= ____ °C) (Corr.Factor ____ °C) (Final = ____ °C)

4) UCMR3 : (non-GLEC) **524.3:** (Observation= _____ °C) (Corr.Factor _____ °C) (Final = _____ °C)

522: (Observation= _____ °C) (Corr.Factor _____ °C) (Final = _____ °C)

≤ 10°C if received within 48 hours of sample collection (not the same business day); ≤ 6°C if received after 48 hours of sample collection. Measure temperature for each method above.

5) LT2: Giardia /Cryptosporidium: <20 °C, not frozen (received after 8 hours of sample collection)

E. Coli: < 10°C, not frozen (if received after 2 hours of sample collection)

Giardia/Crypto: (Observation= _____ °C) (Corr.Factor _____ °C) (Final = _____ °C)

E.Coli: (Observation= _____ °C) (Corr.Factor _____ °C) (Final = _____ °C)

Note: If samples are over temp, let the ASMs know. ASMs will determine whether to proceed with analysis or not.

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RECEIVED BY:			Eurofins Eaton Analytical	11/2/15	13:24

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Laboratory Comments
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Folder Comments

Analytical results for 608 are submitted by Eurofins Calscience in Garden Grove, CA CAELAP 2944 exp 9-30-2016
Analytical results for 8141 are submitted by Emax Laboratories, Inc. Torrance, CA, CAELAP 2672 exp 6-30-17

Flags Legend:

MD - Matrix spike recovery was low; the associated blank spike recovery was acceptable. MS/MSD RPD met acceptance criteria.

The Comments Report may be blank if there are no comments for this report.

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750 Royal Oaks Drive, Suite 100
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1 800 566 LABS (1 800 566 5227)

Laboratory Hits
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201511020223	**TJPOUT110215**				
11/02/2015 16:31	Fecal Coliform Bacteria		49		MPN/100 mL	1.8
11/21/2015 17:51	Kjeldahl Nitrogen		0.88		mg/L	0.2
11/03/2015 02:59	Nitrate as Nitrogen by IC		6.0	10	mg/L	0.2
11/03/2015 02:59	Nitrate as NO3 (calc)		27	45	mg/L	0.88
11/02/2015 16:31	Total Coliform Bacteria		490		MPN/100 mL	1.8
11/04/2015 16:41	Total phosphorus as P		0.058		mg/L	0.02
11/05/2015 13:39	Total phosphorus as PO4- Calc.		0.18		mg/L	0.031
11/03/2015 18:39	Turbidity		2.3	5	NTU	0.05
	201511020224	**TJPIN110215**				
11/02/2015 16:31	Fecal Coliform Bacteria		79		MPN/100 mL	1.8
11/21/2015 17:53	Kjeldahl Nitrogen		0.22		mg/L	0.2
11/03/2015 02:47	Nitrate as Nitrogen by IC		7.9	10	mg/L	0.2
11/03/2015 02:47	Nitrate as NO3 (calc)		35	45	mg/L	0.88
11/03/2015 19:32	Orthophosphate as P		0.017		mg/L	0.01
11/04/2015 13:23	Orthophosphate as PO4		0.052		mg/L	0.031
11/02/2015 16:31	Total Coliform Bacteria		330		MPN/100 mL	1.8
11/04/2015 16:45	Total phosphorus as P		0.075		mg/L	0.02
11/05/2015 13:40	Total phosphorus as PO4- Calc.		0.23		mg/L	0.031
11/03/2015 18:35	Turbidity		1.2	5	NTU	0.05
	201511020225	**HCC110215**				
11/02/2015 16:31	Fecal Coliform Bacteria		49		MPN/100 mL	1.8
11/03/2015 03:12	Nitrate as Nitrogen by IC		5.1	10	mg/L	0.2
11/03/2015 03:12	Nitrate as NO3 (calc)		22	45	mg/L	0.88
11/03/2015 19:33	Orthophosphate as P		0.017		mg/L	0.01
11/04/2015 13:23	Orthophosphate as PO4		0.052		mg/L	0.031
11/02/2015 16:31	Total Coliform Bacteria		1700		MPN/100 mL	1.8
11/04/2015 16:46	Total phosphorus as P		0.044		mg/L	0.02
11/05/2015 13:40	Total phosphorus as PO4- Calc.		0.14		mg/L	0.031
11/03/2015 18:38	Turbidity		0.30	5	NTU	0.05

SUMMARY OF POSITIVE DATA ONLY

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1 800 566 LABS (1 800 566 5227)

Laboratory Data
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
TJPOUT110215 (201511020223)						**Sampled on 11/02/2015 1020**		
			SM 9221C - Fecal Coliform Bacteria					
	11/02/2015 16:31	870697	(SM 9221C)	Fecal Coliform Bacteria	49	MPN/100 mL	1.8	1
			SM 9221B - Total Coliform Bacteria					
	11/02/2015 16:31	870696	(SM 9221B)	Total Coliform Bacteria	490	MPN/100 mL	1.8	1
			S4500PE/ 365.1 - Total phosphorus as PO4- Calc.					
	11/05/2015 13:39		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.18	mg/L	0.031	1
			4500P-E/365.1 - Orthophosphate as PO4 (CAL)					
	11/04/2015 13:23		(4500P-E/365.1)	Orthophosphate as PO4	ND	mg/L	0.031	1
			EPA 547 - Glyphosate					
	11/09/2015 14:32	872252	(EPA 547)	Glyphosate	ND	ug/L	6	1
			EPA 300.0 - Nitrate, Nitrite by EPA 300.0					
	11/03/2015 02:59	870894	(EPA 300.0)	Nitrate as Nitrogen by IC	6.0	mg/L	0.2	2
	11/03/2015 02:59	870894	(EPA 300.0)	Nitrate as NO3 (calc)	27	mg/L	0.88	2
	11/03/2015 02:59	870894	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
			SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)					
	11/04/2015 16:41	871333	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.058 (MD)	mg/L	0.02	1
			EPA 351.2 - Total Kjeldahl Nitrogen					
	11/21/2015 17:51	875074	(EPA 351.2)	Kjeldahl Nitrogen	0.88	mg/L	0.2	1
			EPA 350.1 - Ammonia Nitrogen					
	11/16/2015 18:02	873689	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
			EPA 8141A - Organophosphorous Pesticides (Sub)					
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Azinphos methyl	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Bolstar	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Chlorpyrifos	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Coumaphos	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Demeton	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Diazinon	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Dichlorvos	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Disulfoton	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Ethoprop	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Fensulfothion	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Fenthion	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Methyl Parathion	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Mevinphos	ND	ug/L	11	11
11/5/2015	11/10/2015 01:52		(EPA 8141A)	Naled	ND	ug/L	11	11

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Phorate	ND	ug/L	11	11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Ronnel	ND	ug/L	11	11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Stirophos	ND	ug/L	11	11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Tokuthion	ND	ug/L	11	11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Trichloronate	ND	ug/L	11	11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Tributylphosphate	92	%		11
11/5/2015	11/10/2015	01:52	(EPA 8141A)	Triphenyl Phosphate	93	%		11
			EPA 608 - Organochlorine Pesticides					
11/3/2015	11/04/2015	14:11	(EPA 608)	4,4-DDD	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	4,4-DDE	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	4,4-DDT	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Aldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	alpha-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	alpha-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	beta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	delta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Dieldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endrin Aldehyde	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Endrin Ketone	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Gamma-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	gamma-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Heptachlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Methoxychlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Toxaphene	ND	ug/L	1.9	1
11/3/2015	11/04/2015	14:11	(EPA 608)	Decachlorobiphenyl	106	%		1
11/3/2015	11/04/2015	14:11	(EPA 608)	Tetrachlorometaxylene	101	%		1
			EPA 608 - Organochlorine PCBs					
11/3/2015	11/04/2015	14:11	(EPA 608)	PCB 1016 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:11	(EPA 608)	PCB 1221 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:11	(EPA 608)	PCB 1232 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:11	(EPA 608)	PCB 1242 Aroclor	ND	ug/L	0.95	1

Rounding on totals after summation.
(c) - indicates calculated results

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Laboratory Data
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/3/2015	11/04/2015 14:11		(EPA 608)	PCB 1248 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015 14:11		(EPA 608)	PCB 1254 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015 14:11		(EPA 608)	PCB 1260 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015 14:11		(EPA 608)	Decachlorobiphenyl	106	%		1
11/3/2015	11/04/2015 14:11		(EPA 608)	Tetrachlorometaxylene	101	%		1
	EPA 180.1 - Turbidity							
	11/03/2015 18:39	871153	(EPA 180.1)	Turbidity	2.3	NTU	0.05	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/03/2015 19:31	871026	(4500P-E/365.1)	Orthophosphate as P	ND	mg/L	0.01	1
	SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/02/2015 18:00	871081	(SM 4500-CL G)	Total Chlorine Residual (H3=past HT not compliant)	ND	mg/L	0.1	1
TJPIN110215 (201511020224)						**Sampled on 11/02/2015 1100**		
	SM 9221C - Fecal Coliform Bacteria							
	11/02/2015 16:31	870697	(SM 9221C)	Fecal Coliform Bacteria	79	MPN/100 mL	1.8	1
	SM 9221B - Total Coliform Bacteria							
	11/02/2015 16:31	870696	(SM 9221B)	Total Coliform Bacteria	330	MPN/100 mL	1.8	1
	S4500PE/ 365.1 - Total phosphorus as PO4- Calc.							
	11/05/2015 13:40		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.23	mg/L	0.031	1
	4500P-E/365.1 - Orthophosphate as PO4 (CAL)							
	11/04/2015 13:23		(4500P-E/365.1)	Orthophosphate as PO4	0.052	mg/L	0.031	1
	EPA 547 - Glyphosate							
	11/09/2015 14:43	872252	(EPA 547)	Glyphosate	ND	ug/L	6	1
	EPA 300.0 - Nitrate, Nitrite by EPA 300.0							
	11/03/2015 02:47	870894	(EPA 300.0)	Nitrate as Nitrogen by IC	7.9	mg/L	0.2	2
	11/03/2015 02:47	870894	(EPA 300.0)	Nitrate as NO3 (calc)	35	mg/L	0.88	2
	11/03/2015 02:47	870894	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)							
	11/04/2015 16:45	871333	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.075	mg/L	0.02	1
	EPA 351.2 - Total Kjeldahl Nitrogen							
	11/21/2015 17:53	875074	(EPA 351.2)	Kjeldahl Nitrogen	0.22	mg/L	0.2	1
	EPA 350.1 - Ammonia Nitrogen							
	11/16/2015 18:04	873689	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 8141A - Organophosphorous Pesticides (Sub)							
11/5/2015	11/09/2015 18:29		(EPA 8141A)	Azinphos methyl	ND	ug/L	1.1	1
11/5/2015	11/09/2015 18:29		(EPA 8141A)	Bolstar	ND	ug/L	1.1	1

Rounding on totals after summation.
(c) - indicates calculated results

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Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Chlorpyrifos	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Coumaphos	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Demeton	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Diazinon	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Dichlorvos	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Disulfoton	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Ethoprop	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Fensulfothion	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Fenthion	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Methyl Parathion	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Mevinphos	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Naled	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Phorate	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Ronnel	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Stirophos	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Tokuthion	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Trichloronate	ND	ug/L	1.1	1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Tributylphosphate	79	%		1
11/5/2015	11/09/2015	18:29		(EPA 8141A)	Triphenyl Phosphate	102	%		1
		EPA 608 - Organochlorine Pesticides							
11/3/2015	11/04/2015	14:25		(EPA 608)	4,4-DDD	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	4,4-DDE	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	4,4-DDT	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Aldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	alpha-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	alpha-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	beta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	delta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Dieldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Endrin Ketone	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Gamma-BHC	ND	ug/L	0.095	1

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Laboratory Data
Report: 560571

MWH Americas - Pasadena
Sarah Garber
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Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/3/2015	11/04/2015	14:25		(EPA 608)	gamma-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Heptachlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Methoxychlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Toxaphene	ND	ug/L	1.9	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Decachlorobiphenyl	103	%		1
11/3/2015	11/04/2015	14:25		(EPA 608)	Tetrachlorometaxylene	97	%		1
				EPA 608 - Organochlorine PCBs					
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1016 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1221 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1232 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1242 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1248 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1254 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	PCB 1260 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:25		(EPA 608)	Decachlorobiphenyl	103	%		1
11/3/2015	11/04/2015	14:25		(EPA 608)	Tetrachlorometaxylene	97	%		1
				EPA 180.1 - Turbidity					
	11/03/2015	18:35	871153	(EPA 180.1)	Turbidity	1.2	NTU	0.05	1
				4500P-E/365.1 - Orthophosphate as P (OPO4)					
	11/03/2015	19:32	871026	(4500P-E/365.1)	Orthophosphate as P	0.017	mg/L	0.01	1
				SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)					
	11/02/2015	18:00	871081	(SM 4500-CL G)	Total Chlorine Residual (H3=past HT not compliant)	ND	mg/L	0.1	1
HCC110215 (201511020225)							**Sampled on 11/02/2015 1140**		
				SM 9221C - Fecal Coliform Bacteria					
	11/02/2015	16:31	870697	(SM 9221C)	Fecal Coliform Bacteria	49	MPN/100 mL	1.8	1
				SM 9221B - Total Coliform Bacteria					
	11/02/2015	16:31	870696	(SM 9221B)	Total Coliform Bacteria	1700	MPN/100 mL	1.8	1
				S4500PE/ 365.1 - Total phosphorus as PO4- Calc.					
	11/05/2015	13:40		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.14	mg/L	0.031	1
				4500P-E/365.1 - Orthophosphate as PO4 (CAL)					
	11/04/2015	13:23		(4500P-E/365.1)	Orthophosphate as PO4	0.052	mg/L	0.031	1
				EPA 547 - Glyphosate					
	11/09/2015	14:55	872252	(EPA 547)	Glyphosate	ND	ug/L	6	1
				EPA 300.0 - Nitrate, Nitrite by EPA 300.0					
	11/03/2015	03:12	870894	(EPA 300.0)	Nitrate as Nitrogen by IC	5.1	mg/L	0.2	2

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Laboratory Data
Report: 560571

MWH Americas - Pasadena
Sarah Garber
300 N. Lake Avenue
Suite 400
Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
	11/03/2015	03:12	870894	(EPA 300.0)	Nitrate as NO3 (calc)	22	mg/L	0.88	2
	11/03/2015	03:12	870894	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
				SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)					
	11/04/2015	16:46	871333	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.044	mg/L	0.02	1
				EPA 351.2 - Total Kjeldahl Nitrogen					
	11/21/2015	17:54	875074	(EPA 351.2)	Kjeldahl Nitrogen	ND	mg/L	0.2	1
				EPA 350.1 - Ammonia Nitrogen					
	11/16/2015	18:05	873689	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
				EPA 8141A - Organophosphorous Pesticides (Sub)					
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Azinphos methyl	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Bolstar	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Chlorpyrifos	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Coumaphos	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Demeton	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Diazinon	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Dichlorvos	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Disulfoton	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Ethoprop	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Fensulfothion	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Fenthion	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Methyl Parathion	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Mevinphos	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Naled	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Phorate	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Ronnel	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Stirophos	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Tokuthion	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Trichloronate	ND	ug/L	0.93	1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Tributylphosphate	80	%		1
11/5/2015	11/09/2015	19:38		(EPA 8141A)	Triphenyl Phosphate	100	%		1
				EPA 608 - Organochlorine Pesticides					
11/3/2015	11/04/2015	14:39		(EPA 608)	4,4-DDD	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	4,4-DDE	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	4,4-DDT	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Aldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	alpha-BHC	ND	ug/L	0.095	1

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Report: 560571

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Pasadena, CA 91101

Samples Received on:
11/02/2015 1324

Prepared	Analyzed		QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/3/2015	11/04/2015	14:39		(EPA 608)	alpha-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	beta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	delta-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Dieldrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endrin	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Endrin Ketone	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Gamma-BHC	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	gamma-Chlordane	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Heptachlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Methoxychlor	ND	ug/L	0.095	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Toxaphene	ND	ug/L	1.9	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Decachlorobiphenyl	109	%		1
11/3/2015	11/04/2015	14:39		(EPA 608)	Tetrachlorometaxylene	103	%		1
		EPA 608 - Organochlorine PCBs							
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1016 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1221 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1232 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1242 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1248 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1254 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	PCB 1260 Aroclor	ND	ug/L	0.95	1
11/3/2015	11/04/2015	14:39		(EPA 608)	Decachlorobiphenyl	109	%		1
11/3/2015	11/04/2015	14:39		(EPA 608)	Tetrachlorometaxylene	103	%		1
		EPA 180.1 - Turbidity							
	11/03/2015	18:38	871153	(EPA 180.1)	Turbidity	0.30	NTU	0.05	1
		4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/03/2015	19:33	871026	(4500P-E/365.1)	Orthophosphate as P	0.017	mg/L	0.01	1
		SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/02/2015	18:00	871081	(SM 4500-CL G)	Total Chlorine Residual (H3=past HT not compliant)	ND	mg/L	0.1	1

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QC Ref # 870696 - Total Coliform Bacteria — **Analysis Date: 11/02/2015**

201511020223	TJPOUT110215	Analyzed by: DGA8
201511020224	TJPIN110215	Analyzed by: DGA8
201511020225	HCC110215	Analyzed by: DGA8

QC Ref # 870697 - Fecal Coliform Bacteria — **Analysis Date: 11/02/2015**

201511020223	TJPOUT110215	Analyzed by: DGA8
201511020224	TJPIN110215	Analyzed by: DGA8
201511020225	HCC110215	Analyzed by: DGA8

QC Ref # 870894 - Nitrate, Nitrite by EPA 300.0 — **Analysis Date: 11/03/2015**

201511020223	TJPOUT110215	Analyzed by: 6Q4
201511020224	TJPIN110215	Analyzed by: 6Q4
201511020225	HCC110215	Analyzed by: 6Q4

QC Ref # 871026 - Orthophosphate as P (OPO4) — **Analysis Date: 11/03/2015**

201511020223	TJPOUT110215	Analyzed by: AY1V
201511020224	TJPIN110215	Analyzed by: AY1V
201511020225	HCC110215	Analyzed by: AY1V

QC Ref # 871081 - Total Chlorine Residual (H3=past HT not complian — **Analysis Date: 11/02/2015**

201511020223	TJPOUT110215	Analyzed by: NJR
201511020224	TJPIN110215	Analyzed by: NJR
201511020225	HCC110215	Analyzed by: NJR

QC Ref # 871153 - Turbidity — **Analysis Date: 11/03/2015**

201511020223	TJPOUT110215	Analyzed by: MIA8
201511020224	TJPIN110215	Analyzed by: MIA8
201511020225	HCC110215	Analyzed by: MIA8

QC Ref # 871333 - Total phosphorus as P (T-P) — **Analysis Date: 11/04/2015**

201511020223	TJPOUT110215	Analyzed by: AZS
201511020224	TJPIN110215	Analyzed by: AZS
201511020225	HCC110215	Analyzed by: AZS

QC Ref # 872252 - Glyphosate — **Analysis Date: 11/09/2015**

201511020223	TJPOUT110215	Analyzed by: SZZ
201511020224	TJPIN110215	Analyzed by: SZZ
201511020225	HCC110215	Analyzed by: SZZ

QC Ref # 873689 - Ammonia Nitrogen — **Analysis Date: 11/16/2015**

201511020223	TJPOUT110215	Analyzed by: LUPE
201511020224	TJPIN110215	Analyzed by: LUPE
201511020225	HCC110215	Analyzed by: LUPE

QC Ref # 875074 - Total Kjeldahl Nitrogen — **Analysis Date: 11/21/2015**

201511020223	TJPOUT110215	Analyzed by: MYH
201511020224	TJPIN110215	Analyzed by: MYH
201511020225	HCC110215	Analyzed by: MYH

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Report: 560571

MWH Americas - Pasadena

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 870894 - Nitrate, Nitrite by EPA 300.0 by EPA 300.0						**Analysis Date: 11/02/2015**			
LCS1	Nitrate as Nitrogen by IC		2.5	2.55	mg/L	102	(90-110)		
LCS2	Nitrate as Nitrogen by IC		2.5	2.56	mg/L	102	(90-110)	20	0.39
MBLK	Nitrate as Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrate as Nitrogen by IC		0.05	0.0498	mg/L	100	(50-150)		
MRLLW	Nitrate as Nitrogen by IC		0.013	0.0138	mg/L	110	(50-150)		
MS_201510020005	Nitrate as Nitrogen by IC	5.6	2.6	8.20	mg/L	102	(80-120)		
MS_201511020226	Nitrate as Nitrogen by IC	1.3	1.3	2.64	mg/L	104	(80-120)		
MSD_201510020005	Nitrate as Nitrogen by IC	5.6	2.6	8.17	mg/L	101	(80-120)	20	0.37
MSD_201511020226	Nitrate as Nitrogen by IC	1.3	1.3	2.66	mg/L	105	(80-120)	20	0.76
LCS1	Nitrite Nitrogen by IC		1	0.965	mg/L	97	(90-110)		
LCS2	Nitrite Nitrogen by IC		1	0.966	mg/L	97	(90-110)	20	0.10
MBLK	Nitrite Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrite Nitrogen by IC		0.05	0.0479	mg/L	96	(50-150)		
MRLLW	Nitrite Nitrogen by IC		0.013	0.0124	mg/L	99	(50-150)		
MS_201510020005	Nitrite Nitrogen by IC	ND	1	0.963	mg/L	96	(80-120)		
MS_201511020226	Nitrite Nitrogen by IC	ND	0.5	0.480	mg/L	96	(80-120)		
MSD_201510020005	Nitrite Nitrogen by IC	ND	1	0.964	mg/L	96	(80-120)	20	0.10
MSD_201511020226	Nitrite Nitrogen by IC	ND	0.5	0.485	mg/L	97	(80-120)	20	1.0
QC Ref# 871026 - Orthophosphate as P (OPO4) by 4500P-E/365.1						**Analysis Date: 11/03/2015**			
LCS1	Orthophosphate as P		0.25	0.261	mg/L	104	(90-110)		
LCS2	Orthophosphate as P		0.25	0.257	mg/L	103	(90-110)	20	1.5
MBLK	Orthophosphate as P			<0.01	mg/L				
MRL_CHK	Orthophosphate as P		0.01	0.0130	mg/L	130	(50-150)		
MS_201511030464	Orthophosphate as P	0.20	0.5	0.690	mg/L	99	(90-110)		
MS_201511030428	Orthophosphate as P	0.46	0.5	0.957	mg/L	100	(90-110)		
MSD_201511030428	Orthophosphate as P	0.46	0.5	0.962	mg/L	101	(90-110)	20	0.52
MSD_201511030464	Orthophosphate as P	0.20	0.5	0.705	mg/L	102	(90-110)	20	2.1
QC Ref# 871081 - Total Chlorine Residual (H3=past HT not compliant) by SM 4500-CL G						**Analysis Date: 11/02/2015**			
LCS1	Total Chlorine Residual		1	1.02	mg/L	102	(85-115)		
LCS2	Total Chlorine Residual		1	1.05	mg/L	105	(85-115)	20	2.9
MBLK	Total Chlorine Residual			<0.1	mg/L				
MRL_CHK	Total Chlorine Residual		0.1	0.110	mg/L	110	(50-150)		
QC Ref# 871153 - Turbidity by EPA 180.1						**Analysis Date: 11/03/2015**			
DUP1_201511020224	Turbidity	1.2	0.05	1.17	NTU		(0-20)	20	1.7
LCS1	Turbidity		20	21.2	NTU	106	(90-110)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
Fax: (626) 386-1101
1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 560571

MWH Americas - Pasadena

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
LCS2	Turbidity		20	21.1	NTU	106	(90-110)	20	0.47
MBLK	Turbidity			<0.05	NTU				
MRL_CHK	Turbidity		0.05	0.0610	NTU	122	(50-150)		
QC Ref# 871333 - Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1						**Analysis Date: 11/04/2015**			
LCS1	Total phosphorus as P		0.4	0.382	mg/L	96	(90-110)		
LCS2	Total phosphorus as P		0.4	0.390	mg/L	97	(90-110)	20	2.1
MBLK	Total phosphorus as P			<0.01	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0130	mg/L	65	(50-150)		
MS_201510280168	Total phosphorus as P	0.054	0.4	0.467	mg/L	103	(90-110)		
MS2_201511020223	Total phosphorus as P	0.058	0.4	0.396	mg/L	**85**	(90-110)		
MSD_201510280168	Total phosphorus as P	0.054	0.4	0.483	mg/L	107	(90-110)	20	3.4
MSD2_201511020223	Total phosphorus as P	0.058	0.4	0.427	mg/L	92	(90-110)	20	7.5
QC Ref# 872252 - Glyphosate by EPA 547						**Analysis Date: 11/09/2015**			
CCCH	Glyphosate		25	23.4	ug/L	94	(80-120)		
CCCM	Glyphosate		10	8.83	ug/L	88	(80-120)		
LCS1	Glyphosate		10	9.52	ug/L	95	(70-130)		
MBLK	Glyphosate			<6	ug/L				
MRL_CHK	Glyphosate		6	4.51	ug/L	75	(50-150)		
MS_201510020365	Glyphosate	ND	10	8.45	ug/L	85	(70-130)		
MS2_201510300216	Glyphosate	ND	10	9.62	ug/L	96	(70-130)		
MSD_201510020365	Glyphosate	ND	10	9.62	ug/L	96	(70-130)	20	13
QC Ref# 873689 - Ammonia Nitrogen by EPA 350.1						**Analysis Date: 11/16/2015**			
LCS1	Ammonia Nitrogen		0.5	0.517	mg/L	103	(90-110)		
LCS2	Ammonia Nitrogen		0.5	0.517	mg/L	103	(90-110)	20	0.0
MBLK	Ammonia Nitrogen			<0.025	mg/L				
MRL_CHK	Ammonia Nitrogen		0.05	0.0527	mg/L	105	(79-126)		
MS_201510130104	Ammonia Nitrogen	ND	0.5	0.490	mg/L	98	(90-110)		
MS_201510080028	Ammonia Nitrogen	ND	0.5	0.0213	mg/L	**-0.919**	(90-110)		
MSD_201510080028	Ammonia Nitrogen	ND	0.5	0.0206	mg/L	**-1.05**	(90-110)	20	3.3
MSD_201510130104	Ammonia Nitrogen	ND	0.5	0.481	mg/L	96	(90-110)	20	1.9
QC Ref# 875074 - Total Kjeldahl Nitrogen by EPA 351.2						**Analysis Date: 11/21/2015**			
LCS1	Kjeldahl Nitrogen		4	3.62	mg/L	91	(90-110)		
LCS2	Kjeldahl Nitrogen		4	3.62	mg/L	91	(90-110)	20	0.0
MBLK	Kjeldahl Nitrogen			<0.1	mg/L				
MRL_CHK	Kjeldahl Nitrogen		0.2	0.247	mg/L	123	(50-150)		
MS_201511050526	Kjeldahl Nitrogen	0.90	4	4.81	mg/L	98	(90-110)		

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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1 800 566 LABS (1 800 566 5227)

Laboratory QC
Report: 560571

MWH Americas - Pasadena

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201511050532	Kjeldahl Nitrogen	1.5	4	5.20	mg/L	92	(90-110)		
MSD_201511050532	Kjeldahl Nitrogen	1.5	4	5.04	mg/L	**88**	(90-110)	10	3.1
MSD_201511050526	Kjeldahl Nitrogen	0.90	4	4.79	mg/L	97	(90-110)	10	0.42

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
RPD not calculated for LCS2 when different a concentration than LCS1 is used.
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level).
(S) - Indicates surrogate compound.
(I) - Indicates internal standard compound.

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WORK ORDER NUMBER: 15-11-0089

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Eurofins Eaton Analytical, Inc

Client Project Name: 560571

Attention: Jaclyn Contreras
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Approved for release on 11/10/2015 by:
Cecile deGuia
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: 560571
Work Order Number: 15-11-0089

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Work Order Narrative

Work Order: 15-11-0089 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/03/15. They were assigned to Work Order 15-11-0089.

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.

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Sample Summary

Client:	Eurofins Eaton Analytical, Inc 750 Royal Oaks Drive, Suite 100 Monrovia, CA 91016-3629	Work Order:	15-11-0089
		Project Name:	560571
		PO Number:	99-37534
		Date/Time Received:	11/03/15 10:19
		Number of Containers:	3
Attn:	Jaclyn Contreras		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
201511020223	15-11-0089-1	11/02/15 10:20	1	Aqueous
201511020224	15-11-0089-2	11/02/15 11:00	1	Aqueous
201511020225	15-11-0089-3	11/02/15 11:40	1	Aqueous

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Analytical Report

Eurofins Eaton Analytical, Inc		Date Received:	11/03/15
750 Royal Oaks Drive, Suite 100		Work Order:	15-11-0089
Monrovia, CA 91016-3629		Preparation:	EPA 608
		Method:	EPA 608
		Units:	ug/L
Project: 560571			Page 1 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
201511020223	**15-11-0089-1-A**	**11/02/15 10:20**	**Aqueous**	**GC 44**	**11/03/15**	**11/04/15 14:11**	**151103L10A**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.095	0.025	1.00	
Alpha Chlordane	ND	0.095	0.026	1.00	
Alpha-BHC	ND	0.095	0.027	1.00	
Aroclor-1016	ND	0.95	0.28	1.00	
Aroclor-1221	ND	0.95	0.27	1.00	
Aroclor-1232	ND	0.95	0.24	1.00	
Aroclor-1242	ND	0.95	0.17	1.00	
Aroclor-1248	ND	0.95	0.19	1.00	
Aroclor-1254	ND	0.95	0.21	1.00	
Aroclor-1260	ND	0.95	0.25	1.00	
Beta-BHC	ND	0.095	0.029	1.00	
Chlordane	ND	0.95	0.31	1.00	
4,4'-DDD	ND	0.095	0.026	1.00	
4,4'-DDE	ND	0.095	0.025	1.00	
4,4'-DDT	ND	0.095	0.025	1.00	
Delta-BHC	ND	0.095	0.027	1.00	
Dieldrin	ND	0.095	0.027	1.00	
Endosulfan I	ND	0.095	0.026	1.00	
Endosulfan II	ND	0.095	0.026	1.00	
Endosulfan Sulfate	ND	0.095	0.028	1.00	
Endrin	ND	0.095	0.029	1.00	
Endrin Aldehyde	ND	0.095	0.025	1.00	
Endrin Ketone	ND	0.095	0.023	1.00	
Gamma Chlordane	ND	0.095	0.026	1.00	
Gamma-BHC	ND	0.095	0.029	1.00	
Heptachlor	ND	0.095	0.025	1.00	
Heptachlor Epoxide	ND	0.095	0.024	1.00	
Methoxychlor	ND	0.095	0.024	1.00	
Toxaphene	ND	1.9	0.56	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	106	50-135	
2,4,5,6-Tetrachloro-m-Xylene	101	50-135	

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

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Analytical Report

Eurofins Eaton Analytical, Inc		Date Received:	11/03/15
750 Royal Oaks Drive, Suite 100		Work Order:	15-11-0089
Monrovia, CA 91016-3629		Preparation:	EPA 608
		Method:	EPA 608
		Units:	ug/L
Project: 560571			Page 2 of 4

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
201511020224	**15-11-0089-2-A**	**11/02/15 11:00**	**Aqueous**	**GC 44**	**11/03/15**	**11/04/15 14:25**	**151103L10A**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.095	0.025	1.00	
Alpha Chlordane	ND	0.095	0.026	1.00	
Alpha-BHC	ND	0.095	0.027	1.00	
Aroclor-1016	ND	0.95	0.28	1.00	
Aroclor-1221	ND	0.95	0.27	1.00	
Aroclor-1232	ND	0.95	0.24	1.00	
Aroclor-1242	ND	0.95	0.17	1.00	
Aroclor-1248	ND	0.95	0.19	1.00	
Aroclor-1254	ND	0.95	0.21	1.00	
Aroclor-1260	ND	0.95	0.25	1.00	
Beta-BHC	ND	0.095	0.029	1.00	
Chlordane	ND	0.95	0.31	1.00	
4,4'-DDD	ND	0.095	0.026	1.00	
4,4'-DDE	ND	0.095	0.025	1.00	
4,4'-DDT	ND	0.095	0.025	1.00	
Delta-BHC	ND	0.095	0.027	1.00	
Dieldrin	ND	0.095	0.027	1.00	
Endosulfan I	ND	0.095	0.026	1.00	
Endosulfan II	ND	0.095	0.026	1.00	
Endosulfan Sulfate	ND	0.095	0.028	1.00	
Endrin	ND	0.095	0.029	1.00	
Endrin Aldehyde	ND	0.095	0.025	1.00	
Endrin Ketone	ND	0.095	0.023	1.00	
Gamma Chlordane	ND	0.095	0.026	1.00	
Gamma-BHC	ND	0.095	0.029	1.00	
Heptachlor	ND	0.095	0.025	1.00	
Heptachlor Epoxide	ND	0.095	0.024	1.00	
Methoxychlor	ND	0.095	0.024	1.00	
Toxaphene	ND	1.9	0.56	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	103	50-135	
2,4,5,6-Tetrachloro-m-Xylene	97	50-135	

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

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Analytical Report

Eurofins Eaton Analytical, Inc
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Date Received: 11/03/15
Work Order: 15-11-0089
Preparation: EPA 608
Method: EPA 608
Units: ug/L

Project: 560571

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
201511020225	**15-11-0089-3-A**	**11/02/15 11:40**	**Aqueous**	**GC 44**	**11/03/15**	**11/04/15 14:39**	**151103L10A**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.095	0.025	1.00	
Alpha Chlordane	ND	0.095	0.026	1.00	
Alpha-BHC	ND	0.095	0.027	1.00	
Aroclor-1016	ND	0.95	0.28	1.00	
Aroclor-1221	ND	0.95	0.27	1.00	
Aroclor-1232	ND	0.95	0.24	1.00	
Aroclor-1242	ND	0.95	0.17	1.00	
Aroclor-1248	ND	0.95	0.19	1.00	
Aroclor-1254	ND	0.95	0.21	1.00	
Aroclor-1260	ND	0.95	0.25	1.00	
Beta-BHC	ND	0.095	0.029	1.00	
Chlordane	ND	0.95	0.31	1.00	
4,4'-DDD	ND	0.095	0.026	1.00	
4,4'-DDE	ND	0.095	0.025	1.00	
4,4'-DDT	ND	0.095	0.025	1.00	
Delta-BHC	ND	0.095	0.027	1.00	
Dieldrin	ND	0.095	0.027	1.00	
Endosulfan I	ND	0.095	0.026	1.00	
Endosulfan II	ND	0.095	0.026	1.00	
Endosulfan Sulfate	ND	0.095	0.028	1.00	
Endrin	ND	0.095	0.029	1.00	
Endrin Aldehyde	ND	0.095	0.025	1.00	
Endrin Ketone	ND	0.095	0.023	1.00	
Gamma Chlordane	ND	0.095	0.026	1.00	
Gamma-BHC	ND	0.095	0.029	1.00	
Heptachlor	ND	0.095	0.025	1.00	
Heptachlor Epoxide	ND	0.095	0.024	1.00	
Methoxychlor	ND	0.095	0.024	1.00	
Toxaphene	ND	1.9	0.56	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	109	50-135	
2,4,5,6-Tetrachloro-m-Xylene	103	50-135	

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

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Analytical Report

Eurofins Eaton Analytical, Inc
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Date Received: 11/03/15
Work Order: 15-11-0089
Preparation: EPA 608
Method: EPA 608
Units: ug/L

Project: 560571

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-731-367**	**N/A**	**Aqueous**	**GC 44**	**11/03/15**	**11/04/15 13:42**	**151103L10A**

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

Parameter	Result	RL	MDL	DF	Qualifiers
Aldrin	ND	0.10	0.027	1.00	
Alpha Chlordane	ND	0.10	0.027	1.00	
Alpha-BHC	ND	0.10	0.028	1.00	
Aroclor-1016	ND	1.0	0.29	1.00	
Aroclor-1221	ND	1.0	0.28	1.00	
Aroclor-1232	ND	1.0	0.25	1.00	
Aroclor-1242	ND	1.0	0.18	1.00	
Aroclor-1248	ND	1.0	0.20	1.00	
Aroclor-1254	ND	1.0	0.23	1.00	
Aroclor-1260	ND	1.0	0.26	1.00	
Beta-BHC	ND	0.10	0.030	1.00	
Chlordane	ND	1.0	0.33	1.00	
4,4'-DDD	ND	0.10	0.027	1.00	
4,4'-DDE	ND	0.10	0.027	1.00	
4,4'-DDT	ND	0.10	0.027	1.00	
Delta-BHC	ND	0.10	0.029	1.00	
Dieldrin	ND	0.10	0.029	1.00	
Endosulfan I	ND	0.10	0.028	1.00	
Endosulfan II	ND	0.10	0.027	1.00	
Endosulfan Sulfate	ND	0.10	0.029	1.00	
Endrin	ND	0.10	0.031	1.00	
Endrin Aldehyde	ND	0.10	0.026	1.00	
Endrin Ketone	ND	0.10	0.024	1.00	
Gamma Chlordane	ND	0.10	0.027	1.00	
Gamma-BHC	ND	0.10	0.030	1.00	
Heptachlor	ND	0.10	0.026	1.00	
Heptachlor Epoxide	ND	0.10	0.025	1.00	
Methoxychlor	ND	0.10	0.025	1.00	
Toxaphene	ND	2.0	0.59	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	107	50-135	
2,4,5,6-Tetrachloro-m-Xylene	112	50-135	

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

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Quality Control - LCS/LCSD

Eurofins Eaton Analytical, Inc
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

Project: 560571

Date Received: 11/03/15
Work Order: 15-11-0089
Preparation: EPA 608
Method: EPA 608

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-731-367	**LCS**	**Aqueous**	**GC 44**	**11/03/15**	**11/05/15 15:19**	**151103L10A**
099-12-731-367	**LCSD**	**Aqueous**	**GC 44**	**11/03/15**	**11/05/15 16:31**	**151103L10A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Aldrin	0.5000	0.4021	80	0.4953	99	50-135	36-149	21	0-25	
Alpha Chlordane	0.5000	0.4052	81	0.4910	98	50-135	36-149	19	0-25	
Alpha-BHC	0.5000	0.3996	80	0.5159	103	50-135	36-149	25	0-25	
Aroclor-1016	2.000	2.665	133	2.498	125	50-135	36-149	6	0-25	
Aroclor-1260	2.000	1.938	97	1.941	97	50-135	36-149	0	0-25	
Beta-BHC	0.5000	0.8168	163	0.8333	167	50-135	36-149	2	0-25	X
4,4'-DDD	0.5000	0.4144	83	0.4998	100	50-135	36-149	19	0-25	
4,4'-DDE	0.5000	0.4064	81	0.4983	100	50-135	36-149	20	0-25	
4,4'-DDT	0.5000	0.4415	88	0.5221	104	50-135	36-149	17	0-25	
Delta-BHC	0.5000	0.4055	81	0.5241	105	50-135	36-149	26	0-25	X
Dieldrin	0.5000	0.4226	85	0.5090	102	50-135	36-149	19	0-25	
Endosulfan I	0.5000	0.4013	80	0.4907	98	50-135	36-149	20	0-25	
Endosulfan II	0.5000	0.4183	84	0.4888	98	50-135	36-149	16	0-25	
Endosulfan Sulfate	0.5000	0.4454	89	0.5037	101	50-135	36-149	12	0-25	
Endrin	0.5000	0.4708	94	0.6020	120	50-135	36-149	24	0-25	
Endrin Aldehyde	0.5000	0.4111	82	0.4584	92	50-135	36-149	11	0-25	
Gamma Chlordane	0.5000	0.3931	79	0.4834	97	50-135	36-149	21	0-25	
Gamma-BHC	0.5000	0.4158	83	0.5402	108	50-135	36-149	26	0-25	X
Heptachlor	0.5000	0.4220	84	0.5283	106	50-135	36-149	22	0-25	
Heptachlor Epoxide	0.5000	0.3984	80	0.4918	98	50-135	36-149	21	0-25	
Methoxychlor	0.5000	0.4512	90	0.5389	108	50-135	36-149	18	0-25	

Total number of LCS compounds: 21
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 15-11-0089 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 608	EPA 608	960	GC 44	1

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Glossary of Terms and Qualifiers

Work Order: 15-11-0089 Page 1 of 1

Qualifiers	Definition
*	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.

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eurofins | Eaton Analytical

Ship To:
Eurofins CalScience
7440 Lincoln Way

Garden Grove, CA 92641-1432

Phone: 714-895-5494 Fax: 714-894-7501

Submittal Form & Purchase Order 99-37534

Date: 11/3/2015

REPORTING REQUIRMENTS:** ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!
Report & Invoice must have the Folder # **560571** Sub PO# **99-37534** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: **CALIFORNIA**

15-11-0089

Folder #:	Report Due:	Sub PO #:
560571	11/23/2015	99-37534

JLS	Use Lab Order # for ID	Client Sample ID for reference only		Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	201511020223	TJPOUT110215	(1)		11/02/15 1020	DW		
EPA 608	@608_PEST			Organochlorine Pesticides				
EPA 608	@608_PCBS			Organochlorine PCBs				
	201511020224	TJPIN110215	(2)		11/02/15 1100	DW		
EPA 608	@608_PEST			Organochlorine Pesticides				
EPA 608	@608_PCBS			Organochlorine PCBs				
	201511020225	HCC110215	(3)		11/02/15 1140	DW		
EPA 608	@608_PEST			Organochlorine Pesticides				
EPA 608	@608_PCBS			Organochlorine PCBs				

Relinquished by: _____ Sample Control Date 11/3/15 Time 10:19

Received by: _____ Date 11/03/15 Time 1019

Relinquished by: Sample Control Date _____ Time _____

Received by: _____ Date _____ Time _____

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

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WORK ORDER NUMBER: 15-11- 0089

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: EEA

DATE: 11 / 03 / 2015

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

Thermometer ID: SC2 (CF:-0.4°C); Temperature (w/o CF): 3.4 °C (w/ CF): 3.0 °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: 836

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 836

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1048

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

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☑ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

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** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **znna** = $Zn(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1048

Reviewed by: 1017

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TABLE OF CONTENTS

CLIENT: **EUROFINS EATON ANALYTICAL**

PROJECT: **560571**

SDG: **15K013**

** - Not Requested

LABORATORIES, INC.
1835 W. 205th Street
Torrance, CA 90501
Tel: (310) 618-8889
Fax: (310) 618-0818

Date: 11-13-2015
EMAX Batch No.: 15K013

Attn: Jackie Contreras

Eurofins Eaton Analytical
750 Royal Oaks Dr., Suite 100
Monrovia, CA 91016-3629

Subject: Laboratory Report
Project: 560571

Enclosed is the Laboratory report for samples received on 11/04/15.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
201511020223	K013-01	11/02/15	WATER	PESTICIDES ORGANOPHOSPHORUS
201511020224	K013-02	11/02/15	WATER	PESTICIDES ORGANOPHOSPHORUS
201511020225	K013-03	11/02/15	WATER	PESTICIDES ORGANOPHOSPHORUS

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning
these results.

Sincerely yours,

Caspar J. Pang
Laboratory Director

EMAX certifies that results included in this report meets all NELAC & DOD requirements unless noted in the Case Narrative.

NELAP Accredited Certificate Number E871112
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing
California ELAP Accredited Certificate Number 2672

eurofins | Eaton Analytical

Ship To:
EMAX Laboratories, Inc.
1835 W. 205th St.

Torrance, CA 90501

Phone: 310-618-8889 Fax: 310-618-0818

Submittal Form & Purchase Order 99-37541

151013

Date: 11/3/2015

*REPORTING REQUIRMENTS: ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!***
Report & Invoice must have the Folder # **560571** Sub PO# **99-37541** and Job # **1000014**

Report all quality control data according to Method, Include dates analyzed. Date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature.

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: us20_subcontract@eurofinsus.com
Eurofins Eaton Analytical 750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: Eurofins Eaton Analytical
Accounts Payable 2425 New Holland Pike, Lancaster, PA 17605

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from: **CALIFORNIA**

Folder #:	Report Due:	Sub PO #:
560571	11/18/2015	99-37541

	JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
1	EPA 8141A	201511020223 @8141EDD	TJPOUT110215	Organophosphorous Pesticides (Sub)	11/02/15 1020	DW		
2	EPA 8141A	201511020224 @8141EDD	TJPIN110215	Organophosphorous Pesticides (Sub)	11/02/15 1100	DW		
3	EPA 8141A	201511020225 @8141EDD	HCC110215	Organophosphorous Pesticides (Sub)	11/02/15 1140	DW		

Relinquished by: Sample Control Date 11/3/15 Time 0920

Received by: _____ Date _____ Time _____

Relinquished by: Sample Control Date _____ Time _____

Received by: _____ Date 11/04/15 Time 9:00

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

180

SAMPLE RECEIPT FORM 1

Reference Number: SM02.7.3

Type of Delivery	Airbill / Tracking Number	ECN 15K013
☑ Fedex ☐ UPS ☐ GSO ☐ Others	6494 5357 4968	Recipient Miguel
☐ EMAX Courier ☐ Client Delivery		Date 11/04/15 Time 9:00

COC INSPECTION

☑ Client Name	☑ Client PM/FC	☐ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT
Safety Issues (if any)	☐ High concentrations expected	☐ From Superfund Site	☐ Rad screening required		

Note: _____

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 1.8 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	*A - S/N* _____	FM 11/20/15 *B - S/N* 140252070	*C - S/N* 140252067	*D - S/N* 150555630	

Comments: ☐ **Temperature is out of range. PM was informed IMMEDIATELY.**

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action

11/4/15

☐ pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time. RB 11/4/15

NOTES/OBSERVATIONS:

LEGEND:

☐ **Continue to next page.**

Code	Description- Sample Management
D1	Analysis is not indicated in _____
D2	Analysis mismatch COC vs label
D3	Sample ID mismatch COC vs label
D4	Sample ID is not indicated in _____
D5	Container -[improper] [leaking] [broken]
D6	Date/Time is not indicated in _____
D7	Date/Time mismatch COC vs label
D8	Sample listed in COC is not received
D9	Sample received is not listed in COC
D10	No initial/date on corrections in COC/label
D11	Container count mismatch COC vs received
D12	Container size mismatch COC vs received

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
D22	_____
D23	_____
D24	_____

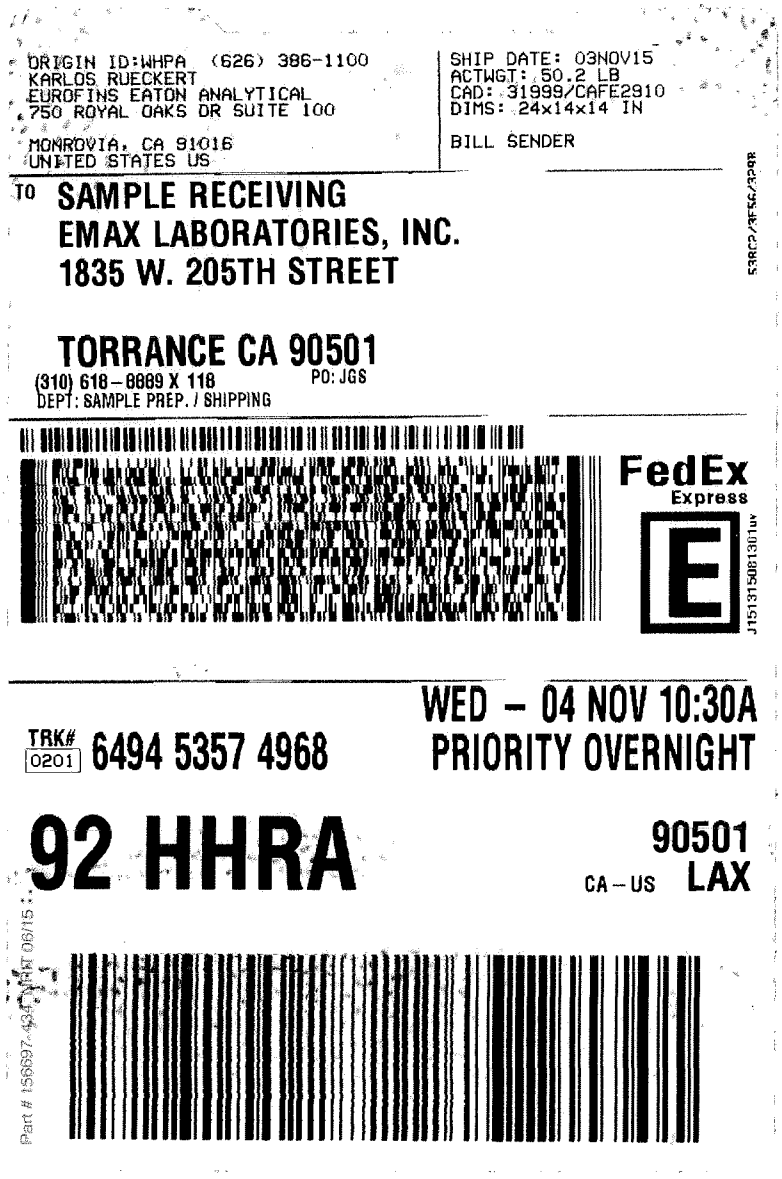
Code	Description-Sample Management
R1	Proceed as indicated in ☐ COC ☐ Label
R2	Refer to attached instruction
R3	Cancel the analysis
R4	Use vial with smallest bubble first
R5	Log-in with latest sampling date and time+1 min
R6	Adjust pH as necessary
R7	Filter and preserved as necessary
R8	_____
R9	_____
R10	_____
R11	_____
R12	_____

REVIEWS:

Sample Labeling Date 11/04/15 / 11/4/15

SRF Date 11/4/15

PM RB Date 11/4/15


ORIGIN ID:WHPA (626) 386-1100
KARLOS RUECKERT
EUROFINS EATON ANALYTICAL
750 ROYAL OAKS DR SUITE 100
MONROVIA, CA 91016
UNITED STATES US
SHIP DATE: 03NOV15
ACTWGT: 50.2 LB
CAD: 31999/CAFE2910
DIMS: 24x14x14 IN
BILL SENDER
TO SAMPLE RECEIVING
EMAX LABORATORIES, INC.
1835 W. 205TH STREET
TORRANCE CA 90501
(310) 618-8889 X 118
PO: JGS
DEPT: SAMPLE PREP. / SHIPPING
FedEx
Express
WED - 04 NOV 10:30A
TRK# 0201 6494 5357 4968
PRIORITY OVERNIGHT
92 HHRA
90501
CA-US LAX

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than LOQ/RL but greater than LOD/MDL/DL.
N		Indicates presumptive evidence of a compound.
B	B	Indicates that the analyte is found in the associated method blank as well as in the sample at above QC level.
E	J	Indicates that the result is above the maximum calibration range or estimated value.
*	*	Out of QC limit.

Note: The above qualifiers are used to flag the results unless the project requires a different set of qualification criteria.

ACRONYMS AND ABBREVIATIONS:

CRDL	Contract Required Detection Limit
RL	Reporting Limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DO	Diluted out

DATES

The date and time information for leaching and preparation reflect the beginning date and time of the procedure unless the method, protocol, or project specifically requires otherwise.

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

560571

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

SDG#: 15K013

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project: 560571

SDG : 15K013

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

A total of three (3) water samples were received on 11/04/15 to be analyzed for Organophosphorous Compounds by GC in accordance with Method 3520C/8141A and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

Calibration
Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using a secondary source (ICV). Continuing calibration (CCV) verifications were carried on a frequency specified by the project. All calibration requirements were within acceptance criteria. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. NPK002WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. All Analytes in NPK002WL/NPK002WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
No matrix QC sample was designated on this SDG.

Surrogate
Surrogates were added on QC and field samples. All surrogate recoveries were within QC limits. Refer to sample result summary forms for details.

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. Results were evaluated in accordance to project requirements. For this SDG, all quality control requirements were met. Sample K013-01 was analyzed with 10X dilution due to sample matrix problem.

LAB CHRONICLE
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL
Project : 560571

SDG NO. : 15K013
Instrument ID : GCT012

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	NPK002WB	1	NA	11/09/1513:52	11/05/1512:00	ZK09003A	ZK09002A	NPK002W	Method Blank
LCS1W	NPK002WL	1	NA	11/09/1515:05	11/05/1512:00	ZK09004A	ZK09002A	NPK002W	Lab Control Sample (LCS)
LCD1W	NPK002WC	1	NA	11/09/1515:39	11/05/1512:00	ZK09005A	ZK09002A	NPK002W	LCS Duplicate
201511020224	K013-02	1.08	NA	11/09/1518:29	11/05/1512:00	ZK09010A	ZK09002A	NPK002W	Field Sample
201511020225	K013-03	0.93	NA	11/09/1519:38	11/05/1512:00	ZK09012A	ZK09011A	NPK002W	Field Sample
201511020223	K013-01	10.6	NA	11/10/1501:52	11/05/1512:00	ZK09023A	ZK09022A	NPK002W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/02/15
Project : 560571	Date Received: 11/04/15
Batch No. : 15K013	Date Extracted: 11/05/15 12:00
Sample ID: 201511020223	Date Analyzed: 11/10/15 01:52
Lab Samp ID: K013-01	Dilution Factor: 10.6
Lab File ID: ZK09023A	Matrix : WATER
Ext Btch ID: NPK002W	% Moisture : NA
Calib. Ref.: ZK09022A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	11	5.3 | 5.3
MEVINPHOS	(ND) | ND	11	5.3 | 5.3
DEMETON	(ND) | ND	11	5.3 | 5.3
ETHOPROP	(ND) | ND	11	5.3 | 5.3
PHORATE	(ND) | ND	11	5.3 | 5.3
NALED	(ND) | ND	11	5.3 | 5.3
DIAZINON	(ND) | ND	11	5.3 | 5.3
DISULFOTON	(ND) | ND	11	5.3 | 5.3
RONNEL	(ND) | ND	11	5.3 | 5.3
CHLORPYRIFOS	(ND) | ND	11	5.3 | 5.3
FENTHION	(ND) | ND	11	5.3 | 5.3
TRICHLORONATE	(ND) | ND	11	5.3 | 5.3
METHYL PARATHION	(ND) | ND	11	5.3 | 5.3
TOKUTHION	(ND) | ND	11	5.3 | 5.3
STIROPHOS	(ND) | ND	11	5.3 | 5.3
BOLSTAR	(ND) | ND	11	5.3 | 5.3
FENSULFOTHION	(ND) | ND	11	5.3 | 5.3
AZINPHOS-METHYL	(ND) | ND	11	5.3 | 5.3
COUMAPHOS	(ND) | ND	11	5.3 | 5.3

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	(1.454) | 1.249	1.590	(91.5) | 78.5	30-130
TRIPHENYL PHOSPHATE	(1.470) | 1.456	1.590	(92.5) | 91.6	50-130

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/02/15
Project : 560571	Date Received: 11/04/15
Batch No. : 15K013	Date Extracted: 11/05/15 12:00
Sample ID: 201511020224	Date Analyzed: 11/09/15 18:29
Lab Samp ID: K013-02	Dilution Factor: 1.08
Lab File ID: ZK09010A	Matrix : WATER
Ext Btch ID: NPK002W	% Moisture : NA
Calib. Ref.: ZK09002A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	1.1	0.54 | 0.54
MEVINPHOS	(ND) | ND	1.1	0.54 | 0.54
DEMETON	(ND) | ND	1.1	0.54 | 0.54
ETHOPROP	(ND) | ND	1.1	0.54 | 0.54
PHORATE	(ND) | ND	1.1	0.54 | 0.54
NALED	(ND) | ND	1.1	0.54 | 0.54
DIAZINON	(ND) | ND	1.1	0.54 | 0.54
DISULFOTON	(ND) | ND	1.1	0.54 | 0.54
RONNEL	(ND) | ND	1.1	0.54 | 0.54
CHLORPYRIFOS	(ND) | ND	1.1	0.54 | 0.54
FENTHION	(ND) | ND	1.1	0.54 | 0.54
TRICHLORONATE	(ND) | ND	1.1	0.54 | 0.54
METHYL PARATHION	(ND) | ND	1.1	0.54 | 0.54
TOKUTHION	(ND) | ND	1.1	0.54 | 0.54
STIROPHOS	(ND) | ND	1.1	0.54 | 0.54
BOLSTAR	(ND) | ND	1.1	0.54 | 0.54
FENSULFOTHION	(ND) | ND	1.1	0.54 | 0.54
AZINPHOS-METHYL	(ND) | ND	1.1	0.54 | 0.54
COUMAPHOS	(ND) | ND	1.1	0.54 | 0.54

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	(1.275) | 1.231	1.620	(78.7) | 76.0	30-130
TRIPHENYL PHOSPHATE	1.274 | (1.645)	1.620	78.7 | (102)	50-130

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/02/15
Project : 560571	Date Received: 11/04/15
Batch No. : 15K013	Date Extracted: 11/05/15 12:00
Sample ID: 201511020225	Date Analyzed: 11/09/15 19:38
Lab Samp ID: K013-03	Dilution Factor: 0.93
Lab File ID: ZK09012A	Matrix : WATER
Ext Btch ID: NPK002W	% Moisture : NA
Calib. Ref.: ZK09011A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	0.93	0.47 | 0.47
MEVINPHOS	(ND) | ND	0.93	0.47 | 0.47
DEMETON	(ND) | ND	0.93	0.47 | 0.47
ETHOPROP	(ND) | ND	0.93	0.47 | 0.47
PHORATE	(ND) | ND	0.93	0.47 | 0.47
NALED	(ND) | ND	0.93	0.47 | 0.47
DIAZINON	(ND) | ND	0.93	0.47 | 0.47
DISULFOTON	(ND) | ND	0.93	0.47 | 0.47
RONNEL	(ND) | ND	0.93	0.47 | 0.47
CHLORPYRIFOS	(ND) | ND	0.93	0.47 | 0.47
FENTHION	(ND) | ND	0.93	0.47 | 0.47
TRICHLORONATE	(ND) | ND	0.93	0.47 | 0.47
METHYL PARATHION	(ND) | ND	0.93	0.47 | 0.47
TOKUTHION	(ND) | ND	0.93	0.47 | 0.47
STIROPHOS	(ND) | ND	0.93	0.47 | 0.47
BOLSTAR	(ND) | ND	0.93	0.47 | 0.47
FENSULFOTHION	(ND) | ND	0.93	0.47 | 0.47
AZINPHOS-METHYL	(ND) | ND	0.93	0.47 | 0.47
COUMAPHOS	(ND) | ND	0.93	0.47 | 0.47

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	(1.120) | 1.071	1.395	(80.3) | 76.8	30-130
TRIPHENYL PHOSPHATE	1.175 | (1.390)	1.395	84.2 | (99.7)	50-130

QC SUMMARIES

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: NA
Project : 560571	Date Received: 11/05/15
Batch No. : 15K013	Date Extracted: 11/05/15 12:00
Sample ID: MBLK1W	Date Analyzed: 11/09/15 13:52
Lab Samp ID: NPK002WB	Dilution Factor: 1
Lab File ID: ZK09003A	Matrix : WATER
Ext Btch ID: NPK002W	% Moisture : NA
Calib. Ref.: ZK09002A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	1.0	0.50 | 0.50
MEVINPHOS	(ND) | ND	1.0	0.50 | 0.50
DEMETON	(ND) | ND	1.0	0.50 | 0.50
ETHOPROP	(ND) | ND	1.0	0.50 | 0.50
PHORATE	(ND) | ND	1.0	0.50 | 0.50
NALED	(ND) | ND	1.0	0.50 | 0.50
DIAZINON	(ND) | ND	1.0	0.50 | 0.50
DISULFOTON	(ND) | ND	1.0	0.50 | 0.50
RONNEL	(ND) | ND	1.0	0.50 | 0.50
CHLORPYRIFOS	(ND) | ND	1.0	0.50 | 0.50
FENTHION	(ND) | ND	1.0	0.50 | 0.50
TRICHLORONATE	(ND) | ND	1.0	0.50 | 0.50
METHYL PARATHION	(ND) | ND	1.0	0.50 | 0.50
TOKUTHION	(ND) | ND	1.0	0.50 | 0.50
STIROPHOS	(ND) | ND	1.0	0.50 | 0.50
BOLSTAR	(ND) | ND	1.0	0.50 | 0.50
FENSULFOTHION	(ND) | ND	1.0	0.50 | 0.50
AZINPHOS-METHYL	(ND) | ND	1.0	0.50 | 0.50
COUMAPHOS	(ND) | ND	1.0	0.50 | 0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	(1.053) | 0.9650	1.500	(70.2) | 64.3	30-130
TRIPHENYL PHOSPHATE	1.157 | (1.355)	1.500	77.1 | (90.3)	50-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 560571
BATCH NO.: 15K013
METHOD: METHOD 3520C/8141A

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	NPK002WB	NPK002WL	NPK002WC		
LAB FILE ID:	ZK09003A	ZK09004A	ZK09005A		
DATE EXTRACTED:	11/05/1512:00	11/05/1512:00	11/05/1512:00	DATE COLLECTED:	NA
DATE ANALYZED:	11/09/1513:52	11/09/1515:05	11/09/1515:39	DATE RECEIVED:	11/05/15
PREP. BATCH:	NPK002W	NPK002W	NPK002W		
CALIB. REF:	ZK09002A	ZK09002A	ZK09002A		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Phorate	(ND) | ND	1.50	1.26 | (1.60)	84 | (107)	1.50	1.22 | (1.44)	81 | (96)	3 | (11)	10-130	30
Ronnel	(ND) | ND	1.50	1.44 | (1.68)	96 | (112)	1.50	1.28 | (1.49)	85 | (99)	12 | (12)	30-140	30
Chlorpyrifos	(ND) | ND	1.50	1.46 | (1.57)	97 | (105)	1.50	1.30 | (1.46)	87 | (97)	12 | (7)	40-140	30
Tokuthion	(ND) | ND	1.50	1.46 | (1.72)	97 | (115)	1.50	1.38 | (1.62)	92 | (108)	6 | (6)	40-130	30
Bolstar	(ND) | ND	1.50	(1.49) | 1.36	(99) | 91	1.50	(1.30) | 1.26	(87) | 84	(14) | 8	20-130	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Tributyl Phosphate	1.500	1.350 | (1.414)	90.0 | (94.3)	1.500	1.204 | (1.341)	80.3 | (89.4)	30-130
Triphenyl Phosphate	1.500	1.383 | (1.436)	92.2 | (95.7)	1.500	1.311 | (1.343)	87.4 | (89.5)	50-130