County of Los Angeles
Department of Public Works

November 2012 Water Quality Monitoring Report

for the

Big Tujunga Wash Mitigation Area

March 2013

MWH

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Water Quality Monitoring
November 2012

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. This report presents the results of the water quality sampling for November 2012.

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

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**). Pesticide use reports were supplied by the Golf Club in December 2004, February 2005 and April 2007.

Water quality reports for sampling conducted from 2001 to 2004, and in 2006, were also received from the Golf Club. Concentrations of pesticides (including fungicides, herbicides and insecticides) were not detected in any groundwater monitoring wells or surface water samples during any of the sampling events from 2001 to 2004. Except for nitrate, general chemical parameters did not exceed state drinking water standards. Nitrate concentrations above drinking water limits were detected in two of the groundwater monitoring wells (MW-1 [downgradient] and MW-3 [upgradient]) located on the south side of the golf course site during most sampling events from October 2001 (prior to start of golf course construction) to 2004. In addition, low levels of two volatile organic compounds (VOCs) (chloroform and tetrachloroethylene [PCE]) were detected at MW-1 and MW-3 from 2001 to 2004. In both the groundwater and surface water samples collected for the Golf Club during the first and second quarters of 2006, concentrations of pesticides (including fungicides, herbicides and insecticides) were not detected, and general chemical parameters did not exceed state drinking water standards (Angeles National Golf Club, May 2006 and July 2006). No other reports have been received.

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, and organophosphorous 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

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 26, 2012.

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 2012

Date	November 26, 2012		
Air Temperature	Approximately 75-77 degrees Fahrenheit during sample collection period		
Skies	Clear, sunny		
Observations	Water clear at all locations, relatively low turbidity		
Sampling Locations	**Latitude**	**Longitude**	**Time of sample**
Haines Canyon Creek	34 16' 0.092'' N	118 21' 25.716' 'W	1210
Haines Canyon Creek, inflow to Tujunga Ponds	34 16' 6.040'' N	118 20' 22.616'' W	1130
Haines Canyon Creek, outflow from Tujunga Ponds	34 16' 8.263'' N	118 20' 30.824'' W	1100
Big Tujunga Wash	34 16' 11.615'' N	118 21' 4.519'' W	0930

Sampling Parameters

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

- Dissolved oxygen – YSI 550A Field DO meter and thermometer
- pH and temperature – Orion 230A pH meter with HACH 51935 electrode

Pesticides were analyzed by Emax Laboratories, Inc., Torrance, California. All other analyses were performed at Eurofin 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[2]	laboratory	EPA 8141A
Organophosphorous Pesticides[3]	laboratory	EPA 8081A
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 8081A tests for aldrin, BHC, Chlordane, DDD, DDE, DDT, dieldrin, endrin, endosulfan, heptaclor, methoxychlor, and toxaphene.

Discharge Measurements. In addition to the water quality monitoring, flows in the outlet from Big Tujunga Ponds, in Haines Canyon Creek leaving the site, and in Big Tujunga Wash 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 2012 Results

Water Quality

Results of analyses conducted by Eurofin Eaton and Emax Laboratories are appended to this report (**Appendix A**) and summarized in **Table 6**. Note that the yields (percent recoveries) of QC samples were within acceptable limits (percentages) for all samples.

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 26, 2012

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	19.3	18.1	13.8	18.2
Dissolved Oxygen	mg/L	5.0	5.2	9.9	10.3
pH	std units	7.41	7.52	9.14	8.50
Total residual chlorine	mg/L	ND	ND	ND	ND
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND
Kjeldahl Nitrogen	mg/L	ND	ND	ND	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND
Nitrate-Nitrogen	mg/L	8.4	4.9	ND	4.6
Orthophosphate-P	mg/L	0.034	0.023	0.013	0.026
Total phosphorus-P	mg/L	0.042	0.024	<0.02	0.026
Glyphosate	µg/L	ND	ND	ND	ND
Chloropyrifos*	ng/L	ND	ND	ND	ND
Pesticides (EPA 8081A)**	µg/L	ND	ND	ND	ND
Turbidity	NTU	1.1	0.64	0.37	0.48
Fecal Coliform Bacteria	(MPN/100 ml)	230	330	11	130
Total Coliform Bacteria	(MPN/100 ml)	1100	790	79	230

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 8081A 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 Big Tujunga Ponds, in Haines Canyon Creek (leaving the site), and in Big Tujunga Wash were approximated. Estimated flows for November 2012 are summarized in **Table 7**.

Table 7
Estimated Flows for November 2012

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
11/26/2012	3	3	4

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 2012 sampling are described by parameter in **Table 14**.

Table 14
Discussion of November 2012 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 5.0 mg/L in the inflow to the Tujunga Ponds to 10.3 in Haines Canyon Creek leaving the site. DO levels at all stations were at or above the recommended minimum (5.0 mg/L) for warmwater fish species. DO levels in the Tujunga Ponds were below the recommended mean (7.0 mg/L) for warmwater fish species.
pH	• Lowest pH was observed in the inflow to Tujunga Ponds (7.41), with highest pH observed in Big Tujunga Wash (9.14). 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. The pH of Big Tujunga Wash was above the high end of the range.
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 levels at all sites were below EPA's recommended range for streams to prevent excess algae growth (observed range at these four stations was <0.02 to 0.042 mg/L; recommended range is <0.05 – 0.1 mg/L).
Glyphosate	• Glyphosate was not detected at any station.
Chloropyrifos	• Chloropyrifos and the other pesticides tested using EPA's analytical method 8141A were not detected at any station.
Pesticides	• Pesticides analyzed by EPA Method 8081A were not detected at any station.
Turbidity	• Turbidity levels were very low (1.1 NTU or less) 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 level in Big Tujunga Wash was well below the standards. Fecal coliform levels in Haines Canyon Creek and the Big Tujunga Ponds ranged from 130 to 330 MPN/100 ml. Previously, the water contact standard was 200 MPN/100 ml fecal coliform. Sampling specifically for *E. coli* was not conducted. • Total coliform levels ranged from 79 MPN/100 ml in Big Tujunga Wash to 1,100 MPN/100 ml in Haines Canyon Creek inflow to Tujunga Ponds. [Note that recreation standards are for *E. coli*. Total coliform standards apply to 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 2012

eurofins | Eaton Analytical
formerly MWH Laboratories

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 Report

for

MWH Americas - Arcadia
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007
Attention: Sarah Garber

Date of Issue
12/17/2012

EUROFINS EATON ANALYTICAL

DST: David S Tripp

Project Manager

NELAP ACCREDITED TNI LABORATORY
01114CA

Report: 416443
Project: BIG-TUJUNGA
Group: Water Quality Monitoring
PO#: PO#: 10501610.011601

Laboratory certifies that the test results meet all **TNI NELAP** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

STATE CERTIFICATION LIST

State	Certification Number	State	Certification Number
Alabama	41060	**Mississippi**	Certified
Alaska	CA00006	**Montana**	Cert 0035
Arizona	AZ0778	**Nevada**	CA00006-2012-1
Arkansas	Certified	**New Hampshire**	2959-11
California – NELAP	01114CA	**New Jersey**	CA 008
California – ELAP	1422	**New Mexico**	Certified
Colorado	Certified	**New York**	11320
Connecticut	PH-0107	**North Carolina**	06701
Delaware	CA 006	**North Dakota**	R-009
Florida	E871024	**Oregon**	CA 200003-010
Georgia	947	**Pennsylvania**	68-565
Guam	11-004r	**Rhode Island**	01114CA
Hawaii	Certified	**South Carolina**	87016001
Idaho	Certified	**South Dakota**	Certified
Illinois	200033	**Tennessee**	TN02839
Indiana	C-CA-01	**Texas**	T104704230-11-2
Kansas	E-10268	**Utah**	Mont-1
Kentucky	90107	**Vermont**	VT0114
Louisiana	LA110022	**Virginia**	00210
Maine	CA0006	**Washington**	C383
Maryland	224	**West Virginia**	9943 C
Commonwealth of Northern Marianas Is.	MP0004	**Wisconsin**	998316660
Massachusetts	M-CA006	**Wyoming**	8TMS-L
Michigan	9906	**EPA Region 5**	Certified

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formerly MWH Laboratories

Acknowledgement of Samples Received

Addr: **MWH Americas - Arcadia**
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Attn: Sarah Garber
Phone: 626-568-6910

Client ID: MWH-ECORP
Folder #: 416443
Project: BIG-TUJUNGA
Sample Group: Water Quality Monitoring

Project Manager: David S Tripp
Phone: (626) 386-1158
PO #: 1012733.5620.011601

The following samples were received from you on **November 26, 2012**. 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
201211260029	BTW112612	11/26/2012 0930

@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
201211260035	TJPOUT112612	11/26/2012 1100

@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
201211260036	TJPIN112612	11/26/2012 1130

@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
201211260037	HCC112612	11/26/2012 1210

@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_PEST -- Organochlorine Pesticides

@8141EDD -- Organophosphorous Pesticides (Sub)

eurofins | Eaton Analytical

CHAIN OF CUSTODY RECORD

416443

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: [initials]
SAMPLES LOGGED IN BY: [initials]
SAMPLES REC'D DAY OF COLLECTION? ☑ (check for yes)

SAMPLE TEMP RECEIVED AT:
☐ Colton / No. California / Arizona ____ °C (Compliance: 4 ± 2 °C)
☑ Monrovia 15.2 °C (Compliance: 4 ± 2 °C)

CONDITION OF BLUE ICE: Frozen ✓ Partially Frozen ____ Thawed ____ Wet Ice ____ No Ice ____

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

TO BE COMPLETED BY SAMPLER:

COMPANY/AGENCY NAME: MWH Americas-Arcadia
PROJECT CODE: 1012733.5620.011601

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, Phase V, NPDES, FDA,...)

EEA CLIENT CODE: | **COC ID:** | **SAMPLE GROUP:**

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ☒ (check for yes), ***OR***
list 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	9221 B,C														SAMPLER COMMENTS
11/26	0930	BTW112612	1	RSW																	[initials] 11/26/12 1325
11/26	1100	TJPOUT112612	2	RSW																	
11/26	1130	TJPIN112612	3	RSW																	
11/26	1210	HCC112612	4	RSW																	

* **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:	[signature]	SARAH GARBER	MWH	11/26/12	1210
RELINQUISHED BY:	[signature]	SARAH GARBER	MWH	11/26/12	1301
RECEIVED BY:	[signature]	[signature]	EEA	11/26/12	1302
RELINQUISHED BY:					
RECEIVED BY:					

PAGE 1 OF 1

2012

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

Kit Order for MWH Americas - Arcadia

David S Tripp is your Eurofins Eaton Analytical Project Manager

Note: Sampler Please return this paper with your samples

Kit #: 59126
Created By: DST
Order Date: 11/26/2012
Ship By: 11/16/2012
STG: Bottle Orders

Client ID: MWH-ECORP
Project Code: BIG-TUJUNGA Bottle Orders
Group Name: Water Quality Monitoring
PO#/JOB#: 1012733.5620.011601

Ship Sample Kits to
MWH Americas - Arcadia
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Attn: Sarah Garber
Phone: 626-568-6910

Send Report to
MWH Americas - Arcadia
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Attn: Sarah Garber
Phone: 626-568-6910

Billing Address
MWH Americas Inc
PO Box 6610
Broomfield, CO 80021

Attn: Accounts Payable

# of Samples	Tests	Bottles - Qty for each sample, type & preservative if a	UN DOT #
4	@8081A	2 1L amber glass no preservative	
4	@8141EDD	2 1L amber glass 8141WRD_NO_PRESERVATIVE	
4	Ammonia Nitrogen, Total Kjeldahl Nitrogen, Total phosphorus as P	1 250ml poly 0.5ml H2SO4 (50%)	UN1830
4	Fecal Coliform Bacteria, Total Coliform Bacteria	1 250ml poly sterilized 0.25ml thio (8%)	
4	Glyphosate	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 OPO4_no preservative	
4	Total Chlorine Residual	1 125ml amber glass CHL_no preservative	

Comments

SHIPPING: Please label "BIG T WASH"
Client will pickup the sample kits on Friday 11/23 in the AM.

SAMPLER: Please place ice packs in a freezer over night and return samples on ice packs or wet ice to the lab same day collected.

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

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

Laboratory Comments
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Folder Comments

Analytical results for 8141 and 608 are submitted by Emax Laboratories, Inc. Torrance, CA, CA Certification No. 02116CA

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

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formerly MWH Laboratories

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: (626) 386-1100
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Laboratory Hits
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Samples Received on:
11/26/2012

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
	201211260029	**BTW112612**				
11/26/2012 14:04	Fecal Coliform Bacteria		11		MPN/100 mL	2
11/27/2012 15:53	Orthophosphate as P		0.013		mg/L	0.01
11/28/2012 09:53	Orthophosphate as PO4		0.040		mg/L	0.031
11/26/2012 14:04	Total Coliform Bacteria		79		MPN/100 mL	2
11/27/2012 10:04	Turbidity		0.37	5	NTU	0.05
	201211260035	**TJPOUT112612**				
11/26/2012 14:04	Fecal Coliform Bacteria		330		MPN/100 mL	2
11/26/2012 22:59	Nitrate as Nitrogen by IC		4.9	10	mg/L	0.2
11/26/2012 22:59	Nitrate as NO3 (calc)		22	45	mg/L	0.88
11/27/2012 15:54	Orthophosphate as P		0.023		mg/L	0.01
11/28/2012 09:53	Orthophosphate as PO4		0.070		mg/L	0.031
11/26/2012 14:04	Total Coliform Bacteria		790		MPN/100 mL	2
12/03/2012 14:05	Total phosphorus as P		0.024		mg/L	0.02
12/05/2012 11:22	Total phosphorus as PO4- Calc.		0.072		mg/L	0.031
11/27/2012 10:03	Turbidity		0.64	5	NTU	0.05
	201211260036	**TJPIN112612**				
11/26/2012 14:04	Fecal Coliform Bacteria		230		MPN/100 mL	2
11/26/2012 23:12	Nitrate as Nitrogen by IC		8.4	10	mg/L	0.2
11/26/2012 23:12	Nitrate as NO3 (calc)		37	45	mg/L	0.88
11/27/2012 15:55	Orthophosphate as P		0.034		mg/L	0.01
11/28/2012 09:53	Orthophosphate as PO4		0.10		mg/L	0.031
11/26/2012 14:04	Total Coliform Bacteria		1100		MPN/100 mL	2
12/03/2012 14:06	Total phosphorus as P		0.042		mg/L	0.02
12/05/2012 11:22	Total phosphorus as PO4- Calc.		0.13		mg/L	0.031
11/27/2012 10:01	Turbidity		1.1	5	NTU	0.05
	201211260037	**HCC112612**				
11/26/2012 14:04	Fecal Coliform Bacteria		130		MPN/100 mL	2
11/26/2012 23:25	Nitrate as Nitrogen by IC		4.6	10	mg/L	0.2
11/26/2012 23:25	Nitrate as NO3 (calc)		20	45	mg/L	0.88
11/27/2012 15:56	Orthophosphate as P		0.026		mg/L	0.01
11/28/2012 09:53	Orthophosphate as PO4		0.080		mg/L	0.031
11/26/2012 14:04	Total Coliform Bacteria		230		MPN/100 mL	2
12/03/2012 14:08	Total phosphorus as P		0.026		mg/L	0.02
12/05/2012 11:22	Total phosphorus as PO4- Calc.		0.080		mg/L	0.031

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Hits
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Samples Received on:
11/26/2012

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
11/27/2012 10:02	Turbidity		0.48	5	NTU	0.05

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Data
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Samples Received on:
11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
BTW112612 (201211260029)						**Sampled on 11/26/2012 0930**		
			EPA 8141A - Organophosphorous Pesticides (Sub)					
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Azinphos methyl	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Bolstar	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Chlorpyrifos	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Coumaphos	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Demeton	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Diazinon	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Dichlorvos	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Disulfoton	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Ethoprop	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Fensulfothion	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Fenthion	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Methyl Parathion	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Mevinphos	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Naled	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Phorate	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Ronnel	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Stirophos	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Tokuthion	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Trichloronate	ND	ug/L	1.1	1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Tributylphosphate	93	%		1
11/29/2012	12/03/2012	17:15	(EPA 8141A)	Triphenyl Phosphate	99	%		1
			EPA 608 - Organochlorine Pesticides					
11/29/2012	11/30/2012	16:02	(EPA 608)	4,4-DDD	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	4,4-DDE	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	4,4-DDT	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	Aldrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	alpha-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	alpha-Chlordane	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	beta-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	delta-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	Dieldrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:02	(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.1	1

Rounding on totals after summation.
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Laboratory Data
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
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Samples Received on:
11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/29/2012	11/30/2012 16:02		(EPA 608)	Endrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Endrin Ketone	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Gamma-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	gamma-Chlordane	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Heptachlor	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Methoxychlor	ND	ug/L	1	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Toxaphene	ND	ug/L	2	1
11/29/2012	11/30/2012 16:02		(EPA 608)	Decachlorobiphenyl	105	%		1
11/29/2012	11/30/2012 16:02		(EPA 608)	Tetrachlorometaxylene	95	%		1
	SM 9221C - Fecal Coliform Bacteria							
	11/26/2012 14:04	683117	(SM 9221C)	Fecal Coliform Bacteria	11	MPN/100 mL	2	1
	SM 9221B - Total Coliform Bacteria							
	11/26/2012 14:04	683119	(SM 9221B)	Total Coliform Bacteria	79	MPN/100 mL	2	1
	S4500PE/ 365.1 - Total phosphorus as PO4- Calc.							
	12/05/2012 11:22		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	ND	mg/L	0.031	1
	4500P-E/365.1 - Orthophosphate as PO4 (CAL)							
	11/28/2012 09:53		(4500P-E/365.1)	Orthophosphate as PO4	0.040	mg/L	0.031	1
	SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/26/2012 00:00	683231	(SM 4500-CL G)	Total Chlorine Residual	ND	mg/L	0.1	1
	EPA 547 - Glyphosate							
	11/27/2012 16:46	682166	(EPA 547)	Glyphosate	ND	ug/L	6	1
	EPA 300.0 - Nitrate, Nitrite by EPA 300.0							
	11/26/2012 22:20	682587	(EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/L	0.2	2
	11/26/2012 22:20	682587	(EPA 300.0)	Nitrate as NO3 (calc)	ND	mg/L	0.88	2
	11/26/2012 22:20	682587	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)							
	12/03/2012 14:03	682756	(SM4500-PE/EPA 365.1)	Total phosphorus as P	ND	mg/L	0.02	1
	EPA 351.2 - Total Kjeldahl Nitrogen							
	12/04/2012 12:09	683470	(EPA 351.2)	Kjeldahl Nitrogen	ND	mg/L	0.2	1
	EPA 350.1 - Ammonia Nitrogen							
	11/29/2012 18:38	683187	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 180.1 - Turbidity							
	11/27/2012 10:04	682272	(EPA 180.1)	Turbidity	0.37	NTU	0.05	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/27/2012 15:53	682348	(4500P-E/365.1)	Orthophosphate as P	0.013	mg/L	0.01	1

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Laboratory Data
Report: 416443

MWH Americas - Arcadia
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Samples Received on:
11/26/2012

TJPOUT112612 (201211260035) **Sampled on 11/26/2012 1100**

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
			EPA 8141A - Organophosphorous Pesticides (Sub)					
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Azinphos methyl	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Bolstar	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Chlorpyrifos	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Coumaphos	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Demeton	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Diazinon	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Dichlorvos	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Disulfoton	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Ethoprop	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Fensulfothion	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Fenthion	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Methyl Parathion	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Mevinphos	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Naled	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Phorate	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Ronnel	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Stirophos	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Tokuthion	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Trichloronate	ND	ug/L	1	1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Tributylphosphate	90	%		1
11/29/2012	12/03/2012	17:49	(EPA 8141A)	Triphenyl Phosphate	100	%		1
			EPA 608 - Organochlorine Pesticides					
11/29/2012	11/30/2012	16:24	(EPA 608)	4,4-DDD	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	4,4-DDE	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	4,4-DDT	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	Aldrin	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	alpha-BHC	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	alpha-Chlordane	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	beta-BHC	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	delta-BHC	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	Dieldrin	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.096	1
11/29/2012	11/30/2012	16:24	(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.096	1

Rounding on totals after summation.
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Laboratory Data
Report: 416443

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Samples Received on:
11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/29/2012	11/30/2012 16:24		(EPA 608)	Endrin	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Endrin Ketone	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Gamma-BHC	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	gamma-Chlordane	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Heptachlor	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.096	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Methoxychlor	ND	ug/L	0.96	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Toxaphene	ND	ug/L	1.9	1
11/29/2012	11/30/2012 16:24		(EPA 608)	Decachlorobiphenyl	106	%		1
11/29/2012	11/30/2012 16:24		(EPA 608)	Tetrachlorometaxylene	94	%		1
	SM 9221C - Fecal Coliform Bacteria							
	11/26/2012 14:04	683117	(SM 9221C)	Fecal Coliform Bacteria	330	MPN/100 mL	2	1
	SM 9221B - Total Coliform Bacteria							
	11/26/2012 14:04	683119	(SM 9221B)	Total Coliform Bacteria	790	MPN/100 mL	2	1
	S4500PE/ 365.1 - Total phosphorus as PO4- Calc.							
	12/05/2012 11:22		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.072	mg/L	0.031	1
	4500P-E/365.1 - Orthophosphate as PO4 (CAL)							
	11/28/2012 09:53		(4500P-E/365.1)	Orthophosphate as PO4	0.070	mg/L	0.031	1
	SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/26/2012 00:00	683231	(SM 4500-CL G)	Total Chlorine Residual	ND	mg/L	0.1	1
	EPA 547 - Glyphosate							
	11/27/2012 16:58	682166	(EPA 547)	Glyphosate	ND	ug/L	6	1
	EPA 300.0 - Nitrate, Nitrite by EPA 300.0							
	11/26/2012 22:59	682587	(EPA 300.0)	Nitrate as Nitrogen by IC	4.9	mg/L	0.2	2
	11/26/2012 22:59	682587	(EPA 300.0)	Nitrate as NO3 (calc)	22	mg/L	0.88	2
	11/26/2012 22:59	682587	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)							
	12/03/2012 14:05	682756	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.024	mg/L	0.02	1
	EPA 351.2 - Total Kjeldahl Nitrogen							
	12/04/2012 12:11	683470	(EPA 351.2)	Kjeldahl Nitrogen	ND	mg/L	0.2	1
	EPA 350.1 - Ammonia Nitrogen							
	11/29/2012 18:39	683187	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 180.1 - Turbidity							
	11/27/2012 10:03	682272	(EPA 180.1)	Turbidity	0.64	NTU	0.05	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/27/2012 15:54	682348	(4500P-E/365.1)	Orthophosphate as P	0.023	mg/L	0.01	1

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Laboratory Data
Report: 416443

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Samples Received on:
11/26/2012

TJPIN112612 (201211260036) — **Sampled on 11/26/2012 1130**

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
			EPA 8141A - Organophosphorous Pesticides (Sub)					
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Azinphos methyl	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Bolstar	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Chlorpyrifos	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Coumaphos	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Demeton	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Diazinon	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Dichlorvos	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Disulfoton	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Ethoprop	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Fensulfothion	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Fenthion	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Methyl Parathion	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Mevinphos	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Naled	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Phorate	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Ronnel	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Stirophos	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Tokuthion	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Trichloronate	ND	ug/L	1	1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Tributylphosphate	87	%		1
11/29/2012	12/03/2012	18:23	(EPA 8141A)	Triphenyl Phosphate	99	%		1
			EPA 608 - Organochlorine Pesticides					
11/29/2012	11/30/2012	16:45	(EPA 608)	4,4-DDD	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	4,4-DDE	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	4,4-DDT	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	Aldrin	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	alpha-BHC	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	alpha-Chlordane	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	beta-BHC	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	delta-BHC	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	Dieldrin	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
11/29/2012	11/30/2012	16:45	(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.092	1
11/29/2012	11/30/2012	16:45	(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.092	1

Rounding on totals after summation.
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1 800 566 LABS (1 800 566 5227)

Laboratory Data
Report: 416443

MWH Americas - Arcadia
Sarah Garber
618 Michillinda Ave.
Suite 200
Arcadia, CA 91007

Samples Received on:
11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/29/2012	11/30/2012 16:45		(EPA 608)	Endrin	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Endrin Ketone	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Gamma-BHC	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	gamma-Chlordane	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Heptachlor	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Methoxychlor	ND	ug/L	0.92	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Toxaphene	ND	ug/L	0.092	1
11/29/2012	11/30/2012 16:45		(EPA 608)	Decachlorobiphenyl	108	%		1
11/29/2012	11/30/2012 16:45		(EPA 608)	Tetrachlorometaxylene	95	%		1
	SM 9221C - Fecal Coliform Bacteria							
	11/26/2012 14:04	683117	(SM 9221C)	Fecal Coliform Bacteria	230	MPN/100 mL	2	1
	SM 9221B - Total Coliform Bacteria							
	11/26/2012 14:04	683119	(SM 9221B)	Total Coliform Bacteria	1100	MPN/100 mL	2	1
	S4500PE/ 365.1 - Total phosphorus as PO4- Calc.							
	12/05/2012 11:22		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.13	mg/L	0.031	1
	4500P-E/365.1 - Orthophosphate as PO4 (CAL)							
	11/28/2012 09:53		(4500P-E/365.1)	Orthophosphate as PO4	0.10	mg/L	0.031	1
	SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/26/2012 00:00	683231	(SM 4500-CL G)	Total Chlorine Residual	ND	mg/L	0.1	1
	EPA 547 - Glyphosate							
	11/27/2012 17:09	682166	(EPA 547)	Glyphosate	ND	ug/L	6	1
	EPA 300.0 - Nitrate, Nitrite by EPA 300.0							
	11/26/2012 23:12	682587	(EPA 300.0)	Nitrate as Nitrogen by IC	8.4	mg/L	0.2	2
	11/26/2012 23:12	682587	(EPA 300.0)	Nitrate as NO3 (calc)	37	mg/L	0.88	2
	11/26/2012 23:12	682587	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)							
	12/03/2012 14:06	682756	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.042	mg/L	0.02	1
	EPA 351.2 - Total Kjeldahl Nitrogen							
	12/04/2012 12:12	683470	(EPA 351.2)	Kjeldahl Nitrogen	ND	mg/L	0.2	1
	EPA 350.1 - Ammonia Nitrogen							
	11/29/2012 18:50	683187	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 180.1 - Turbidity							
	11/27/2012 10:01	682272	(EPA 180.1)	Turbidity	1.1	NTU	0.05	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/27/2012 15:55	682348	(4500P-E/365.1)	Orthophosphate as P	0.034	mg/L	0.01	1

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

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Samples Received on:
11/26/2012

HCC112612 (201211260037) — **Sampled on 11/26/2012 1210**

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
			EPA 8141A - Organophosphorous Pesticides (Sub)					
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Azinphos methyl	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Bolstar	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Chlorpyrifos	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Coumaphos	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Demeton	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Diazinon	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Dichlorvos	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Disulfoton	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Ethoprop	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Fensulfothion	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Fenthion	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Methyl Parathion	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Mevinphos	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Naled	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Phorate	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Ronnel	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Stirophos	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Tokuthion	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Trichloronate	ND	ug/L	0.99	1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Tributylphosphate	92	%		1
11/29/2012	12/03/2012	18:57	(EPA 8141A)	Triphenyl Phosphate	102	%		1
			EPA 608 - Organochlorine Pesticides					
11/29/2012	11/30/2012	17:06	(EPA 608)	4,4-DDD	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	4,4-DDE	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	4,4-DDT	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	Aldrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	alpha-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	alpha-Chlordane	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	beta-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	delta-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	Dieldrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	Endosulfan I (Alpha)	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	Endosulfan II (Beta)	ND	ug/L	0.1	1
11/29/2012	11/30/2012	17:06	(EPA 608)	Endosulfan Sulfate	ND	ug/L	0.1	1

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Samples Received on:
11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution
11/29/2012	11/30/2012 17:06		(EPA 608)	Endrin	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Endrin Aldehyde	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Endrin Ketone	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Gamma-BHC	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	gamma-Chlordane	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Heptachlor	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Heptachlor Epoxide	ND	ug/L	0.1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Methoxychlor	ND	ug/L	1	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Toxaphene	ND	ug/L	2	1
11/29/2012	11/30/2012 17:06		(EPA 608)	Decachlorobiphenyl	104	%		1
11/29/2012	11/30/2012 17:06		(EPA 608)	Tetrachlorometaxylene	96	%		1
	SM 9221C - Fecal Coliform Bacteria							
	11/26/2012 14:04	683117	(SM 9221C)	Fecal Coliform Bacteria	130	MPN/100 mL	2	1
	SM 9221B - Total Coliform Bacteria							
	11/26/2012 14:04	683119	(SM 9221B)	Total Coliform Bacteria	230	MPN/100 mL	2	1
	S4500PE/ 365.1 - Total phosphorus as PO4- Calc.							
	12/05/2012 11:22		(S4500PE/ 365.1)	Total phosphorus as PO4- Calc.	0.080	mg/L	0.031	1
	4500P-E/365.1 - Orthophosphate as PO4 (CAL)							
	11/28/2012 09:53		(4500P-E/365.1)	Orthophosphate as PO4	0.080	mg/L	0.031	1
	SM 4500-CL G - Total Chlorine Residual (H3=past HT not compliant)							
	11/26/2012 00:00	683231	(SM 4500-CL G)	Total Chlorine Residual	ND	mg/L	0.1	1
	EPA 547 - Glyphosate							
	11/27/2012 17:21	682166	(EPA 547)	Glyphosate	ND	ug/L	6	1
	EPA 300.0 - Nitrate, Nitrite by EPA 300.0							
	11/26/2012 23:25	682587	(EPA 300.0)	Nitrate as Nitrogen by IC	4.6	mg/L	0.2	2
	11/26/2012 23:25	682587	(EPA 300.0)	Nitrate as NO3 (calc)	20	mg/L	0.88	2
	11/26/2012 23:25	682587	(EPA 300.0)	Nitrite Nitrogen by IC	ND	mg/L	0.1	2
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)							
	12/03/2012 14:08	682756	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.026	mg/L	0.02	1
	EPA 351.2 - Total Kjeldahl Nitrogen							
	12/04/2012 12:13	683470	(EPA 351.2)	Kjeldahl Nitrogen	ND	mg/L	0.2	1
	EPA 350.1 - Ammonia Nitrogen							
	11/29/2012 18:54	683187	(EPA 350.1)	Ammonia Nitrogen	ND	mg/L	0.05	1
	EPA 180.1 - Turbidity							
	11/27/2012 10:02	682272	(EPA 180.1)	Turbidity	0.48	NTU	0.05	1
	4500P-E/365.1 - Orthophosphate as P (OPO4)							
	11/27/2012 15:56	682348	(4500P-E/365.1)	Orthophosphate as P	0.026	mg/L	0.01	1

Rounding on totals after summation.
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11/26/2012

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MRL	Dilution

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QC Ref # 682166 - Glyphosate — **Analysis Date: 11/27/2012**

201211260029	BTW112612	Analyzed by: XWO
201211260035	TJPOUT112612	Analyzed by: XWO
201211260036	TJPIN112612	Analyzed by: XWO
201211260037	HCC112612	Analyzed by: XWO

QC Ref # 682272 - Turbidity — **Analysis Date: 11/27/2012**

201211260029	BTW112612	Analyzed by: LLL
201211260035	TJPOUT112612	Analyzed by: LLL
201211260036	TJPIN112612	Analyzed by: LLL
201211260037	HCC112612	Analyzed by: LLL

QC Ref # 682348 - Orthophosphate as P (OPO4) — **Analysis Date: 11/27/2012**

201211260029	BTW112612	Analyzed by: JMO
201211260035	TJPOUT112612	Analyzed by: JMO
201211260036	TJPIN112612	Analyzed by: JMO
201211260037	HCC112612	Analyzed by: JMO

QC Ref # 682587 - Nitrate, Nitrite by EPA 300.0 — **Analysis Date: 11/26/2012**

201211260029	BTW112612	Analyzed by: CYP
201211260035	TJPOUT112612	Analyzed by: CYP
201211260036	TJPIN112612	Analyzed by: CYP
201211260037	HCC112612	Analyzed by: CYP

QC Ref # 682756 - Total phosphorus as P (T-P) — **Analysis Date: 12/03/2012**

201211260029	BTW112612	Analyzed by: QMK
201211260035	TJPOUT112612	Analyzed by: QMK
201211260036	TJPIN112612	Analyzed by: QMK
201211260037	HCC112612	Analyzed by: QMK

QC Ref # 683117 - Fecal Coliform Bacteria — **Analysis Date: 11/26/2012**

201211260029	BTW112612	Analyzed by: JJN
201211260035	TJPOUT112612	Analyzed by: JJN
201211260036	TJPIN112612	Analyzed by: JJN
201211260037	HCC112612	Analyzed by: JJN

QC Ref # 683119 - Total Coliform Bacteria — **Analysis Date: 11/26/2012**

201211260029	BTW112612	Analyzed by: JJN
201211260035	TJPOUT112612	Analyzed by: JJN
201211260036	TJPIN112612	Analyzed by: JJN
201211260037	HCC112612	Analyzed by: JJN

QC Ref # 683187 - Ammonia Nitrogen — **Analysis Date: 11/29/2012**

201211260029	BTW112612	Analyzed by: QMK
201211260035	TJPOUT112612	Analyzed by: QMK
201211260036	TJPIN112612	Analyzed by: QMK
201211260037	HCC112612	Analyzed by: QMK

QC Ref # 683231 - Total Chlorine Residual (H3=past HT not complian — **Analysis Date: 11/26/2012**

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201211260029	BTW112612	Analyzed by: CCQ
201211260035	TJPOUT112612	Analyzed by: CCQ
201211260036	TJPIN112612	Analyzed by: CCQ
201211260037	HCC112612	Analyzed by: CCQ

QC Ref # 683470 - Total Kjeldahl Nitrogen **Analysis Date: 12/04/2012**

201211260029	BTW112612	Analyzed by: KXS
201211260035	TJPOUT112612	Analyzed by: KXS
201211260036	TJPIN112612	Analyzed by: KXS
201211260037	HCC112612	Analyzed by: KXS

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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 682166 - Glyphosate by EPA 547						**Analysis Date: 11/27/2012**			
CCCH	Glyphosate		25	20.8	ug/L	83	(80-120)		
CCCM	Glyphosate		10	9.34	ug/L	93	(80-120)		
LCS1	Glyphosate		10	11.5	ug/L	115	(70-130)		
MBLK	Glyphosate			<6	ug/L				
MRL_CHK	Glyphosate		6.0	4.34	ug/L	72	(50-150)		
MS_201211210166	Glyphosate	ND	10	9.19	ug/L	92	(70-130)		
MS2_201211190286	Glyphosate	ND	10	9.32	ug/L	93	(70-130)		
MSD_201211210166	Glyphosate	ND	10	9.43	ug/L	94	(70-130)	20	2.6
QC Ref# 682272 - Turbidity by EPA 180.1						**Analysis Date: 11/27/2012**			
DUP1_201211260305	Turbidity	0.12		0.112	NTU		(0-20)	20	8.5
DUP2_201211260186	Turbidity	0.11		0.114	NTU		(0-10)	10	2.7
LCS1	Turbidity		20	21.8	NTU	109	(90-110)		
LCS2	Turbidity		20	21.9	NTU	110	(90-110)	20	0.46
MBLK	Turbidity			<0.05	NTU				
MRL_CHK	Turbidity		0.05	0.0570	NTU	114	(50-150)		
QC Ref# 682348 - Orthophosphate as P (OPO4) by 4500P-E/365.1						**Analysis Date: 11/27/2012**			
LCS1	Orthophosphate as P		0.25	0.267	mg/L	107	(90-110)		
LCS2	Orthophosphate as P		0.25	0.263	mg/L	105	(90-110)	20	1.5
MBLK	Orthophosphate as P			<0.01	mg/L				
MRL_CHK	Orthophosphate as P		0.01	0.00900	mg/L	90	(50-150)		
MS_201211210166	Orthophosphate as P	0.092	0.5	0.602	mg/L	102	(90-110)		
MSD_201211210166	Orthophosphate as P	0.092	0.5	0.603	mg/L	102	(90-110)	20	0.17
QC Ref# 682587 - Nitrate, Nitrite by EPA 300.0 by EPA 300.0						**Analysis Date: 11/26/2012**			
LCS1	Nitrate as Nitrogen by IC		2.5	2.49	mg/L	100	(90-110)		
LCS2	Nitrate as Nitrogen by IC		2.5	2.55	mg/L	102	(90-110)	20	2.4
MBLK	Nitrate as Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrate as Nitrogen by IC		0.05	0.0520	mg/L	104	(50-150)		
MS_201211260121	Nitrate as Nitrogen by IC	3.5	1.3	6.18	mg/L	106	(80-120)		
MS_201211260029	Nitrate as Nitrogen by IC	ND	1.3	2.55	mg/L	102	(80-120)		
MSD_201211260029	Nitrate as Nitrogen by IC	ND	1.3	2.55	mg/L	102	(80-120)	20	0.0
MSD_201211260121	Nitrate as Nitrogen by IC	3.5	1.3	6.21	mg/L	107	(80-120)	20	0.32
LCS1	Nitrite Nitrogen by IC		1.0	0.970	mg/L	97	(90-110)		
LCS2	Nitrite Nitrogen by IC		1.0	0.976	mg/L	98	(90-110)	20	0.62
MBLK	Nitrite Nitrogen by IC			<0.10	mg/L				
MRL_CHK	Nitrite Nitrogen by IC		0.05	0.0501	mg/L	100	(50-150)		

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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QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MS_201211260029	Nitrite Nitrogen by IC	ND	0.5	0.984	mg/L	98	(80-120)		
MS_201211260121	Nitrite Nitrogen by IC	ND	0.5	0.892	mg/L	89	(80-120)		
MSD_201211260029	Nitrite Nitrogen by IC	ND	0.5	0.990	mg/L	99	(80-120)	20	0.61
MSD_201211260121	Nitrite Nitrogen by IC	ND	0.5	0.896	mg/L	90	(80-120)	20	0.45
QC Ref# 682756 - Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1						**Analysis Date: 12/03/2012**			
LCS1	Total phosphorus as P		0.4	0.402	mg/L	100	(90-110)		
LCS2	Total phosphorus as P		0.4	0.403	mg/L	101	(90-110)	20	0.25
MBLK	Total phosphorus as P			<0.02	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0193	mg/L	97	(50-150)		
MS_201211150155	Total phosphorus as P	0.19	0.4	0.626	mg/L	109	(90-110)		
MS_201211150316	Total phosphorus as P	0.030	0.4	0.389	mg/L	90	(90-110)		
MSD_201211150316	Total phosphorus as P	0.030	0.4	0.373	mg/L	**86**	(90-110)	20	4.2
MSD_201211150155	Total phosphorus as P	0.19	0.4	0.597	mg/L	102	(90-110)	20	4.7
QC Ref# 683187 - Ammonia Nitrogen by EPA 350.1						**Analysis Date: 11/29/2012**			
LCS1	Ammonia Nitrogen		1.0	1.00	mg/L	100	(90-110)		
LCS2	Ammonia Nitrogen		1.0	0.995	mg/L	100	(90-110)	20	0.50
MBLK	Ammonia Nitrogen			<0.05	mg/L				
MRL_CHK	Ammonia Nitrogen		0.05	0.0469	mg/L	94	(50-112)		
MS_201211190044	Ammonia Nitrogen	0.41	1.0	1.34	mg/L	93	(90-110)		
MS_201211260036	Ammonia Nitrogen	ND	1.0	0.993	mg/L	97	(90-110)		
MSD_201211190044	Ammonia Nitrogen	0.41	1.0	1.35	mg/L	94	(90-110)	20	0.74
MSD_201211260036	Ammonia Nitrogen	ND	1.0	1.01	mg/L	99	(90-110)	20	1.7
QC Ref# 683470 - Total Kjeldahl Nitrogen by EPA 351.2						**Analysis Date: 12/04/2012**			
LCS1	Kjeldahl Nitrogen		4.0	4.03	mg/L	101	(90-110)		
LCS2	Kjeldahl Nitrogen		4.0	3.82	mg/L	96	(90-110)	20	5.3
MBLK	Kjeldahl Nitrogen			<0.1	mg/L				
MRL_CHK	Kjeldahl Nitrogen		0.2	0.193	mg/L	97	(50-150)		
MS_201211200455	Kjeldahl Nitrogen	0.46	4.0	4.44	mg/L	100	(90-110)		
MS_201211240020	Kjeldahl Nitrogen	ND	4.0	2.57	mg/L	**64**	(90-110)		
MSD_201211200455	Kjeldahl Nitrogen	0.46	4.0	4.28	mg/L	96	(90-110)	20	3.7
MSD_201211240020	Kjeldahl Nitrogen	ND	4.0	2.71	mg/L	**68**	(90-110)	20	5.3

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.

TABLE OF CONTENTS

CLIENT: **EUROFINS EATON ANALYTICAL**

PROJECT: **416443**

SDG: **12K232**

** - Not Requested

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

Date: 12-07-2012
EMAX Batch No.: 12K232

Attn: Jackie Contreras

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

Subject: Laboratory Report
Project: 416443

Enclosed is the Laboratory report for samples received on 11/28/12.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
201211260029	K232-01	11/26/12	WATER	PESTICIDES ORGANOPHOSPHORUS PESTICIDES
201211260035	K232-02	11/26/12	WATER	PESTICIDES ORGANOPHOSPHORUS PESTICIDES
201211260036	K232-03	11/26/12	WATER	PESTICIDES ORGANOPHOSPHORUS PESTICIDES
201211260037	K232-04	11/26/12	WATER	PESTICIDES ORGANOPHOSPHORUS PESTICIDES

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.

NELAC Accredited Certificate Number 02116CA
L-A-B Accredited DoD ELAP and ISO/IEC 17025 Certificate Number L2278 Testing

eurofins | Eaton Analytical
formerly MWH Laboratories

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

Torrance, CA 90501 12K232

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

Submittal Form & Purchase Order 99-19823

Date: 11/27/2012

REPORTING REQUIRMENTS:** ***Do Not Combine Reports with any other samples submitted under different Folder Numbers!
Report & Invoice must have the Folder # **416443** Sub PO# **99-19823** 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 PO Box 12425, 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 #:
416443	12/11/2012	99-19823

JLS	Use Lab Order # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
	(1) 201211260029	BTW112612		11/26/12 0930	DW		
EPA 608	@608_PEST		Organochlorine Pesticides				
EPA 8141A	@8141EDD		Organophosphorous Pesticides (Sub)				
	(2) 201211260035	TJPOUT112612		11/26/12 1000	DW		
EPA 608	@608_PEST		Organochlorine Pesticides				
EPA 8141A	@8141EDD		Organophosphorous Pesticides (Sub)				
	(3) 201211260036	TJPIN112612		11/26/12 1130	DW		
EPA 608	@608_PEST		Organochlorine Pesticides				
EPA 8141A	@8141EDD		Organophosphorous Pesticides (Sub)				
	(4) 201211260037	HCC112612		11/26/12 1210	DW		
EPA 608	@608_PEST		Organochlorine Pesticides				
EPA 8141A	@8141EDD		Organophosphorous Pesticides (Sub)				

T= 2.2° C

Relinquished by: M. DE MESA Sample Control FEDEX Date 11-27-12 Time 1155

Received by: [signature] Date 11/27/12 Time 0930

NOTIFICATION REQUIRED IF RECEIVED OUTSIDE OF 0-6 CELSIUS

An Acknowledgement of Receipt is requested to attn: Jackie Contreras

EMAX LABORATORIES, INC.

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 12K232
☑ Fedex ☐ UPS ☐ GSO ☐ Others	4294 2884 9897	Recipient I LATER
☐ EMAX Courier ☐ Client Delivery		Date 11/28/12 Time 0930

COC Inspection

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

Comments:

Packaging Inspection

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☐ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐
Temperatures (Cool, =6 °C but not frozen)	D ☑ Cooler 2.2 °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 101541371*	*B - S/N 101541382*	*C - S/N 122091701*	*D - S/N 122091758*

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

Note: **pH holding time requirement for water samples is 15 mins. Water samples for pH analysis are received beyond 15 minutes from sampling time.**

DISCREPANCIES

LSID	LSCID	Description Code	Sample Label ID / Information	Corrective Action Code
2	3-4	D3	Time on label - 11:00	R2

☐ **Continue to next page.**

REVIEWS

Sample Labeling [signature] Date 11/28/12 11/28/12

SRF [signature] Date 11/28/12

PM NB Date 11/28/12

LEGEND:

Code	Description- Sample Management
A1	Analysis is not indicated in COC.
A2	Analysis is not indicated in label.
A3	Analysis is inconsistent in COC vis-à-vis label.
B1	Sample ID is not indicated in COC.
B2	Sample ID is not indicated in label.
B3	Sample ID is inconsistent in COC vis-à-vis label.
C1	Improper container
C2	Broken container
C3	Leaking container
D1	Date and/or time is not indicated in COC.
D2	Date and/or time is not indicated in label.
D3	Date and/or time is inconsistent in COC vis-à-vis label.
F1	Improper preservation
F2	Insufficient Sample
F3	Bubble is > 6mm. Use vial with smallest bubble first.
F4	Bubble is > 6mm in all vials.
F5	>20 % solid particle
F6	Out of Holding Time

Code	Description-Sample Management
G1	Sample indicated in COC is not received.
G2	MS/MSD is not indicated in COC.
G3	No identified trip blank, proceed as indicated in COC.
G4	Trip Blank is designated in SDG _____
G5	Trip Blank has no sampling date & time. Log-in with earliest sampling date and 0:00 time.
H1	_____

Code	Description-Project Management
R1	Hold sample(s); wait for further instructions
R2	Proceed as indicated in COC and inform client.
R3	Refer to attached instruction
R4	Cancel the analysis
R5	Inform client.
R6	Proceed as indicated in COC

ORIGIN ID: WHPA (626) 386-1116
JEREMY HANSEN
EUROFINS EATON ANALYTICAL
750 ROYAL OAKS DR

MONROVIA, CA 91016
UNITED STATES US

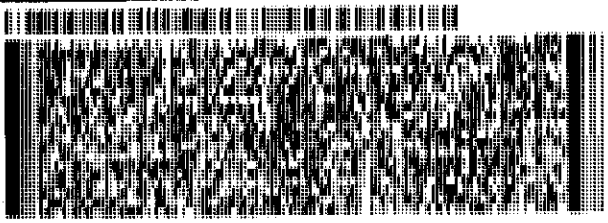
SHIP DATE: 27NOV12
ACTWGT: 82.7 LB
CAD: 0031999/CAFE2605
DIMS: 28x15x16 IN

BILL SENDER

TO **SAMPLE RECEIVING**
EMAX LABORATORIES, INC.
1835 205TH STREET

12K229 TO
12K232
11/28/12
0930

TORRANCE CA 90501
(310) 618-8889 X 118 PO: MLD
DEPT: BAMPLE PREP. / SHIPPING



FedEx
Express

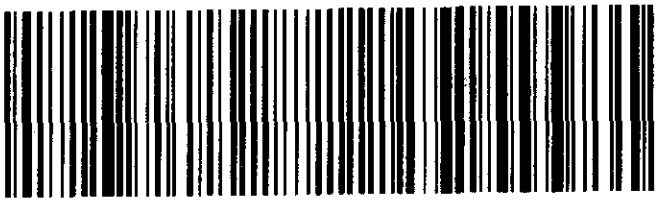
T=2.2°C

WED - 28 NOV A
STANDARD OVERNIGHT

TRK# 0201 **4294 2884 9897**

92 HHRA

90501
CA-US **LAX**



Part # 156627-434 REV 8/12

REPORTING CONVENTIONS

DATA QUALIFIERS:

Lab Qualifier	AFCEE Qualifier	Description
J	F	Indicates that the analyte is positively identified and the result is less than RL but greater than MDL.
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.
*	*	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
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
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

416443

METHOD 608
PESTICIDES

SDG#: 12K232

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project : 416443

SDG : 12K232

METHOD 608
PESTICIDES

A total of four (4) water samples were received on 11/28/12 for Pesticides analysis, Method 608 in accordance with USEPA Wastewater Test Methods at 40 CFR Part 136.

Holding Time
Samples were analyzed within the prescribed holding time.

Instrument Performance and Calibration
Instrument performance was checked prior to calibration. DDT and Endrin breakdown were within specification. Multi-calibration points were generated to establish initial calibration (ICAL). ICAL was verified using secondary source (ICV). Continuing calibration (CCV) was carried on at a frequency required by the project. All project calibration requirements were satisfied. Refer to calibration summary forms of ICAL, ICV and CCV for details.

Method Blank
Method blank was analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for CPK028WL/C were all within QC limits.

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

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

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter. Positive sample results were confirmed by a second column. Relative percentage difference (RPD) between the two results was evaluated. If RPD is less than 40% and peaks are well defined the higher result is reported. Where RPD is greater than 40% the chromatogram is checked for anomalies and results are selected based on processed knowledge. If there is no evidence of any chromatographic ambiguity, the higher result is reported.

LAB CHRONICLE
PESTICIDES

Client : EUROFINS EATON ANALYTICAL
Project : 416443

SDG NO. : 12K232
Instrument ID : GCE8

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	CPK028WB	1	NA	11/30/1214:58	11/29/1211:15	MK28087A	MK28083A	CPK028W	Method Blank
LCS1W	CPK028WL	1	NA	11/30/1215:20	11/29/1211:15	MK28088A	MK28083A	CPK028W	Lab Control Sample (LCS)
LCD1W	CPK028WC	1	NA	11/30/1215:41	11/29/1211:15	MK28089A	MK28083A	CPK028W	LCS Duplicate
201211260029	K232-01	1.01	NA	11/30/1216:02	11/29/1211:15	MK28090A	MK28083A	CPK028W	Field Sample
201211260035	K232-02	0.96	NA	11/30/1216:24	11/29/1211:15	MK28091A	MK28083A	CPK028W	Field Sample
201211260036	K232-03	0.92	NA	11/30/1216:45	11/29/1211:15	MK28092A	MK28083A	CPK028W	Field Sample
201211260037	K232-04	1	NA	11/30/1217:06	11/29/1211:15	MK28093A	MK28083A	CPK028W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 608
PESTICIDES

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260029	Date Analyzed: 11/30/12 16:02
Lab Samp ID: K232-01	Dilution Factor: 1.01
Lab File ID: MK28090A	Matrix : WATER
Ext Btch ID: CPK028W	% Moisture : NA
Calib. Ref.: MK28083A	Instrument ID : GCE8

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) | 0.016J	0.10	0.010 | 0.010
GAMMA-BHC (LINDANE)	0.015J | (ND)	0.10	0.010 | 0.010
BETA-BHC	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR	(ND) | ND	0.10	0.010 | 0.010
DELTA-BHC	0.011J | (ND)	0.10	0.010 | 0.010
ALDRIN	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR EPOXIDE	(ND) | ND	0.10	0.010 | 0.010
GAMMA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ALPHA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN I	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDE	(ND) | ND	0.10	0.010 | 0.010
DIELDRIN	(ND) | ND	0.10	0.010 | 0.010
ENDRIN	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDD	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN II	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDT	(ND) | ND	0.10	0.010 | 0.010
ENDRIN ALDEHYDE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN SULFATE	(ND) | ND	0.10	0.010 | 0.010
ENDRIN KETONE	(ND) | ND	0.10	0.010 | 0.010
METHOXYCHLOR	(ND) | ND	1.0	0.10 | 0.10
TOXAPHENE	(ND) | ND	2.0	0.51 | 0.51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	0.3540 | (0.3818)	0.4040	87.6 | (94.5)	30-140
DECACHLOROBIPHENYL	0.3989 | (0.4238)	0.4040	98.7 | (105)	60-130

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD 608
PESTICIDES

Client	: EUROFINS EATON ANALYTICAL	Date Collected:	11/26/12
Project	: 416443	Date Received:	11/28/12
Batch No.	: 12K232	Date Extracted:	11/29/12 11:15
Sample ID:	201211260035	Date Analyzed:	11/30/12 16:24
Lab Samp ID:	K232-02	Dilution Factor:	0.96
Lab File ID:	MK28091A	Matrix :	WATER
Ext Btch ID:	CPK028W	% Moisture :	NA
Calib. Ref.:	MK28083A	Instrument ID :	GCE8

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) | ND	0.096	0.0096 | 0.0096
GAMMA-BHC (LINDANE)	(ND) | ND	0.096	0.0096 | 0.0096
BETA-BHC	(ND) | ND	0.096	0.0096 | 0.0096
HEPTACHLOR	(ND) | ND	0.096	0.0096 | 0.0096
DELTA-BHC	(ND) | ND	0.096	0.0096 | 0.0096
ALDRIN	(ND) | ND	0.096	0.0096 | 0.0096
HEPTACHLOR EPOXIDE	(ND) | ND	0.096	0.0096 | 0.0096
GAMMA-CHLORDANE	(ND) | ND	0.096	0.0096 | 0.0096
ALPHA-CHLORDANE	(ND) | ND	0.096	0.0096 | 0.0096
ENDOSULFAN I	0.011J | (ND)	0.096	0.0096 | 0.0096
4,4'-DDE	(ND) | ND	0.096	0.0096 | 0.0096
DIELDRIN	(ND) | ND	0.096	0.0096 | 0.0096
ENDRIN	(ND) | ND	0.096	0.0096 | 0.0096
4,4'-DDD	(ND) | ND	0.096	0.0096 | 0.0096
ENDOSULFAN II	(ND) | ND	0.096	0.0096 | 0.0096
4,4'-DDT	(ND) | ND	0.096	0.0096 | 0.0096
ENDRIN ALDEHYDE	(ND) | ND	0.096	0.0096 | 0.0096
ENDOSULFAN SULFATE	(ND) | ND	0.096	0.0096 | 0.0096
ENDRIN KETONE	(ND) | ND	0.096	0.0096 | 0.0096
METHOXYCHLOR	(ND) | ND	0.96	0.096 | 0.096
TOXAPHENE	(ND) | ND	1.9	0.48 | 0.48

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	0.3478 | (0.3610)	0.3840	90.6 | (94.0)	30-140
DECACHLOROBIPHENYL	0.3773 | (0.4055)	0.3840	98.3 | (106)	60-130

RL: Reporting limit
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD 608
PESTICIDES

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260036	Date Analyzed: 11/30/12 16:45
Lab Samp ID: K232-03	Dilution Factor: 0.92
Lab File ID: MK28092A	Matrix : WATER
Ext Btch ID: CPK028W	% Moisture : NA
Calib. Ref.: MK28083A	Instrument ID : GCE8

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) | ND	0.092	0.0092 | 0.0092
GAMMA-BHC (LINDANE)	(ND) | ND	0.092	0.0092 | 0.0092
BETA-BHC	(ND) | ND	0.092	0.0092 | 0.0092
HEPTACHLOR	(ND) | ND	0.092	0.0092 | 0.0092
DELTA-BHC	(ND) | ND	0.092	0.0092 | 0.0092
ALDRIN	(ND) | ND	0.092	0.0092 | 0.0092
HEPTACHLOR EPOXIDE	(ND) | ND	0.092	0.0092 | 0.0092
GAMMA-CHLORDANE	(ND) | ND	0.092	0.0092 | 0.0092
ALPHA-CHLORDANE	(ND) | ND	0.092	0.0092 | 0.0092
ENDOSULFAN I	(ND) | ND	0.092	0.0092 | 0.0092
4,4'-DDE	(ND) | ND	0.092	0.0092 | 0.0092
DIELDRIN	(ND) | ND	0.092	0.0092 | 0.0092
ENDRIN	(ND) | ND	0.092	0.0092 | 0.0092
4,4'-DDD	(ND) | ND	0.092	0.0092 | 0.0092
ENDOSULFAN II	(ND) | ND	0.092	0.0092 | 0.0092
4,4'-DDT	(ND) | ND	0.092	0.0092 | 0.0092
ENDRIN ALDEHYDE	(ND) | ND	0.092	0.0092 | 0.0092
ENDOSULFAN SULFATE	(ND) | ND	0.092	0.0092 | 0.0092
ENDRIN KETONE	(ND) | ND	0.092	0.0092 | 0.0092
METHOXYCHLOR	(ND) | ND	0.92	0.092 | 0.092
TOXAPHENE	(ND) | ND	1.8	0.46 | 0.46

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.3503) | 0.3503	0.3680	(95.2) | 95.2	30-140
DECACHLOROBIPHENYL	0.3706 | (0.3971)	0.3680	101 | (108)	60-130

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

METHOD 608
PESTICIDES

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260037	Date Analyzed: 11/30/12 17:06
Lab Samp ID: K232-04	Dilution Factor: 1
Lab File ID: MK28093A	Matrix : WATER
Ext Btch ID: CPK028W	% Moisture : NA
Calib. Ref.: MK28083A	Instrument ID : GCE8

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) | ND	0.10	0.010 | 0.010
GAMMA-BHC (LINDANE)	(ND) | ND	0.10	0.010 | 0.010
BETA-BHC	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR	(ND) | ND	0.10	0.010 | 0.010
DELTA-BHC	(ND) | ND	0.10	0.010 | 0.010
ALDRIN	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR EPOXIDE	(ND) | ND	0.10	0.010 | 0.010
GAMMA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ALPHA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN I	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDE	(ND) | ND	0.10	0.010 | 0.010
DIELDRIN	(ND) | ND	0.10	0.010 | 0.010
ENDRIN	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDD	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN II	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDT	(ND) | ND	0.10	0.010 | 0.010
ENDRIN ALDEHYDE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN SULFATE	(ND) | ND	0.10	0.010 | 0.010
ENDRIN KETONE	(ND) | ND	0.10	0.010 | 0.010
METHOXYCHLOR	(ND) | ND	1.0	0.10 | 0.10
TOXAPHENE	(ND) | ND	2.0	0.50 | 0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	0.3723 | (0.3844)	0.4000	93.1 | (96.1)	30-140
DECACHLOROBIPHENYL	0.4015 | (0.4150)	0.4000	100 | (104)	60-130

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

QC SUMMARIES

METHOD 608
PESTICIDES

Client : EUROFINS EATON ANALYTICAL	Date Collected: NA
Project : 416443	Date Received: 11/29/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: MBLK1W	Date Analyzed: 11/30/12 14:58
Lab Samp ID: CPK028WB	Dilution Factor: 1
Lab File ID: MK28087A	Matrix : WATER
Ext Btch ID: CPK028W	% Moisture : NA
Calib. Ref.: MK28083A	Instrument ID : GCE8

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) | ND	0.10	0.010 | 0.010
GAMMA-BHC (LINDANE)	(ND) | ND	0.10	0.010 | 0.010
BETA-BHC	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR	(ND) | ND	0.10	0.010 | 0.010
DELTA-BHC	(ND) | ND	0.10	0.010 | 0.010
ALDRIN	(ND) | ND	0.10	0.010 | 0.010
HEPTACHLOR EPOXIDE	(ND) | ND	0.10	0.010 | 0.010
GAMMA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ALPHA-CHLORDANE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN I	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDE	(ND) | ND	0.10	0.010 | 0.010
DIELDRIN	(ND) | ND	0.10	0.010 | 0.010
ENDRIN	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDD	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN II	(ND) | ND	0.10	0.010 | 0.010
4,4'-DDT	(ND) | ND	0.10	0.010 | 0.010
ENDRIN ALDEHYDE	(ND) | ND	0.10	0.010 | 0.010
ENDOSULFAN SULFATE	(ND) | ND	0.10	0.010 | 0.010
ENDRIN KETONE	(ND) | ND	0.10	0.010 | 0.010
METHOXYCHLOR	(ND) | ND	1.0	0.10 | 0.10
TOXAPHENE	(ND) | ND	2.0	0.50 | 0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(0.4102) | 0.4024	0.4000	(103) | 101	30-130
DECACHLOROBIPHENYL	(0.4183) | 0.3829	0.4000	(105) | 95.7	60-130

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
Final result indicated by ( )

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 416443
BATCH NO.: 12K232
METHOD: METHOD 608

MATRIX: WATER % MOISTURE: NA
DILUTION FACTOR: 1 1 1
SAMPLE ID: MBLK1W
LAB SAMP ID: CPK028WB CPK028WL CPK028WC
LAB FILE ID: MK28087A MK28088A MK28089A
DATE EXTRACTED: 11/29/1211:15 11/29/1211:15 11/29/1211:15 DATE COLLECTED: NA
DATE ANALYZED: 11/30/1214:58 11/30/1215:20 11/30/1215:41 DATE RECEIVED: 11/29/12
PREP. BATCH: CPK028W CPK028W CPK028W
CALIB. REF: MK28083A MK28083A MK28083A

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 (%)
gamma-BHC (Lindane)	(ND)|ND	0.200	0.217|(0.232)	108|(116)	0.200	0.202|(0.226)	101|(113)	7|(3)	70-130	30
Heptachlor	(ND)|ND	0.200	0.211|(0.221)	105|(110)	0.200	0.199|(0.213)	100|(106)	6|(4)	60-130	30
Aldrin	(ND)|ND	0.200	0.214|(0.222)	107|(111)	0.200	0.201|(0.213)	100|(106)	6|(4)	70-130	30
Dieldrin	(ND)|ND	0.200	0.206|(0.225)	103|(112)	0.200	0.193|(0.211)	96|(105)	7|(6)	70-140	30
Endrin	(ND)|ND	0.200	0.209|(0.233)	104|(116)	0.200	0.204|(0.224)	102|(112)	2|(4)	70-140	30
4,4'-DDT	(ND)|ND	0.200	0.230|(0.241)	115|(120)	0.200	0.217|(0.226)	108|(113)	6|(6)	70-140	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 (%)
Tetrachloro-m-xylene	0.4000	0.3645|(0.3728)	91.1|(93.2)	0.4000	0.3507|(0.3604)	87.7|(90.1)	30-130
Decachlorobiphenyl	0.4000	0.3996|(0.4247)	99.9|(106)	0.4000	0.4013|(0.4279)	100|(107)	60-130

LABORATORY REPORT FOR

EUROFINS EATON ANALYTICAL

416443

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

SDG#: 12K232

CASE NARRATIVE

Client : EUROFINS EATON ANALYTICAL

Project : 416443

SDG : 12K232

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

A total of four (4) water samples were received on 11/28/12 for Pesticides Organophosphorus analysis, Method 3520C/8141A in accordance with USEPA SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.

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 analyzed at the frequency required by the project. For this SDG, one method blank was analyzed with the samples. Results were compliant to project requirement.

Lab Control Sample
A set of LCS/LCD was analyzed with the samples in this SDG.
Percent recoveries for NPK001WL/C were all within QC limits.

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

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

Sample Analysis
Samples were analyzed according to prescribed analytical procedures. All project requirements were met; otherwise, anomalies were discussed within the associated QC parameter.

LAB CHRONICLE
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL
Project : 416443

SDG NO. : 12K232
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	NPK001WB	1	NA	12/03/1215:33	11/29/1211:15	ZL03003A	ZL03002A	NPK001W	Method Blank
LCS1W	NPK001WL	1	NA	12/03/1216:07	11/29/1211:15	ZL03004A	ZL03002A	NPK001W	Lab Control Sample (LCS)
LCD1W	NPK001WC	1	NA	12/03/1216:41	11/29/1211:15	ZL03005A	ZL03002A	NPK001W	LCS Duplicate
201211260029	K232-01	1.09	NA	12/03/1217:15	11/29/1211:15	ZL03006A	ZL03002A	NPK001W	Field Sample
201211260035	K232-02	1	NA	12/03/1217:49	11/29/1211:15	ZL03007A	ZL03002A	NPK001W	Field Sample
201211260036	K232-03	1.01	NA	12/03/1218:23	11/29/1211:15	ZL03008A	ZL03002A	NPK001W	Field Sample
201211260037	K232-04	0.99	NA	12/03/1218:57	11/29/1211:15	ZL03009A	ZL03002A	NPK001W	Field Sample

FN - Filename
% Moist - Percent Moisture

SAMPLE RESULTS

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260029	Date Analyzed: 12/03/12 17:15
Lab Samp ID: K232-01	Dilution Factor: 1.09
Lab File ID: ZL03006A	Matrix : WATER
Ext Btch ID: NPK001W	% Moisture : NA
Calib. Ref.: ZL03002A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	1.1	0.55 | 0.55
MEVINPHOS	(ND) | ND	1.1	0.55 | 0.55
DEMETON	(ND) | ND	1.1	0.55 | 0.55
ETHOPROP	(ND) | ND	1.1	0.55 | 0.55
PHORATE	(ND) | ND	1.1	0.55 | 0.55
NALED	(ND) | ND	1.1	0.55 | 0.55
DIAZINON	(ND) | ND	1.1	0.55 | 0.55
DISULFOTON	(ND) | ND	1.1	0.55 | 0.55
RONNEL	(ND) | ND	1.1	0.55 | 0.55
CHLORPYRIFOS	(ND) | ND	1.1	0.55 | 0.55
FENTHION	(ND) | ND	1.1	0.55 | 0.55
TRICHLORONATE	(ND) | ND	1.1	0.55 | 0.55
METHYL PARATHION	(ND) | ND	1.1	0.55 | 0.55
TOKUTHION	(ND) | ND	1.1	0.55 | 0.55
STIROPHOS	(ND) | ND	1.1	0.55 | 0.55
BOLSTAR	(ND) | ND	1.1	0.55 | 0.55
FENSULFOTHION	(ND) | ND	1.1	0.55 | 0.55
AZINPHOS-METHYL	(ND) | ND	1.1	0.55 | 0.55
COUMAPHOS	(ND) | ND	1.1	0.55 | 0.55

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	1.351 | (1.521)	1.635	82.6 | (93.0)	30-130
TRIPHENYL PHOSPHATE	1.434 | (1.610)	1.635	87.7 | (98.5)	50-130

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260035	Date Analyzed: 12/03/12 17:49
Lab Samp ID: K232-02	Dilution Factor: 1
Lab File ID: ZL03007A	Matrix : WATER
Ext Btch ID: NPK001W	% Moisture : NA
Calib. Ref.: ZL03002A	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	1.291 | (1.346)	1.500	86.1 | (89.7)	30-130
TRIPHENYL PHOSPHATE	1.305 | (1.495)	1.500	87.0 | (99.7)	50-130

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260036	Date Analyzed: 12/03/12 18:23
Lab Samp ID: K232-03	Dilution Factor: 1.01
Lab File ID: ZL03008A	Matrix : WATER
Ext Btch ID: NPK001W	% Moisture : NA
Calib. Ref.: ZL03002A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	1.0	0.51 | 0.51
MEVINPHOS	(ND) | ND	1.0	0.51 | 0.51
DEMETON	(ND) | ND	1.0	0.51 | 0.51
ETHOPROP	(ND) | ND	1.0	0.51 | 0.51
PHORATE	(ND) | ND	1.0	0.51 | 0.51
NALED	(ND) | ND	1.0	0.51 | 0.51
DIAZINON	(ND) | ND	1.0	0.51 | 0.51
DISULFOTON	(ND) | ND	1.0	0.51 | 0.51
RONNEL	(ND) | ND	1.0	0.51 | 0.51
CHLORPYRIFOS	(ND) | ND	1.0	0.51 | 0.51
FENTHION	(ND) | ND	1.0	0.51 | 0.51
TRICHLORONATE	(ND) | ND	1.0	0.51 | 0.51
METHYL PARATHION	(ND) | ND	1.0	0.51 | 0.51
TOKUTHION	(ND) | ND	1.0	0.51 | 0.51
STIROPHOS	(ND) | ND	1.0	0.51 | 0.51
BOLSTAR	(ND) | ND	1.0	0.51 | 0.51
FENSULFOTHION	(ND) | ND	1.0	0.51 | 0.51
AZINPHOS-METHYL	(ND) | ND	1.0	0.51 | 0.51
COUMAPHOS	(ND) | ND	1.0	0.51 | 0.51

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	1.310 | (1.312)	1.515	86.5 | (86.6)	30-130
TRIPHENYL PHOSPHATE	1.356 | (1.503)	1.515	89.5 | (99.2)	50-130

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: 11/26/12
Project : 416443	Date Received: 11/28/12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: 201211260037	Date Analyzed: 12/03/12 18:57
Lab Samp ID: K232-04	Dilution Factor: 0.99
Lab File ID: ZL03009A	Matrix : WATER
Ext Btch ID: NPK001W	% Moisture : NA
Calib. Ref.: ZL03002A	Instrument ID : GCT012

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
DICHLORVOS	(ND) | ND	0.99	0.50 | 0.50
MEVINPHOS	(ND) | ND	0.99	0.50 | 0.50
DEMETON	(ND) | ND	0.99	0.50 | 0.50
ETHOPROP	(ND) | ND	0.99	0.50 | 0.50
PHORATE	(NO) | ND	0.99	0.50 | 0.50
NALED	(ND) | ND	0.99	0.50 | 0.50
DIAZINON	(ND) | ND	0.99	0.50 | 0.50
DISULFOTON	(ND) | ND	0.99	0.50 | 0.50
RONNEL	(ND) | ND	0.99	0.50 | 0.50
CHLORPYRIFOS	(ND) | ND	0.99	0.50 | 0.50
FENTHION	(ND) | ND	0.99	0.50 | 0.50
TRICHLORONATE	(ND) | ND	0.99	0.50 | 0.50
METHYL PARATHION	(ND) | ND	0.99	0.50 | 0.50
TOKUTHION	(ND) | ND	0.99	0.50 | 0.50
STIROPHOS	(ND) | ND	0.99	0.50 | 0.50
BOLSTAR	(ND) | ND	0.99	0.50 | 0.50
FENSULFOTHION	(ND) | ND	0.99	0.50 | 0.50
AZINPHOS-METHYL	(ND) | ND	0.99	0.50 | 0.50
COUMAPHOS	(ND) | ND	0.99	0.50 | 0.50

SURROGATE PARAMETERS	RESULTS	SPK_AMT	% RECOVERY	QC LIMIT
TRIBUTYL PHOSPHATE	1.363 | (1.368)	1.485	91.8 | (92.1)	30-130
TRIPHENYL PHOSPHATE	1.320 | (1.515)	1.485	88.9 | (102)	50-130

QC SUMMARIES

METHOD 3520C/8141A
ORGANOPHOSPHOROUS COMPOUNDS BY GC

Client : EUROFINS EATON ANALYTICAL	Date Collected: NA
Project : 416443	Date Received: 11.29.12
Batch No. : 12K232	Date Extracted: 11/29/12 11:15
Sample ID: MBLK1W	Date Analyzed: 12/03/12 15:33
Lab Samp ID: NPK001WB	Dilution Factor: 1
Lab File ID: ZL03003A	Matrix : WATER
Ext Btch ID: NPK001W	% Moisture : NA
Calib. Ref.: ZL03002A	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	1.186 | (1.290)	1.500	79.1 | (86.0)	30-130
TRIPHENYL PHOSPHATE	1.346 | (1.605)	1.500	89.7 | (107)	50-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: EUROFINS EATON ANALYTICAL
PROJECT: 416443
BATCH NO.: 12K232
METHOD: METHOD 3520C/8141A

MATRIX: WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	NPK001WB	NPK001WL	NPK001WC		
LAB FILE ID:	ZL03003A	ZL03004A	ZL03005A		
DATE EXTRACTED:	11/29/1211:15	11/29/1211:15	11/29/1211:15	DATE COLLECTED:	NA
DATE ANALYZED:	12/03/1215:33	12/03/1216:07	12/03/1216:41	DATE RECEIVED:	11.29.12
PREP. BATCH:	NPK001W	NPK001W	NPK001W		
CALIB. REF:	ZL03002A	ZL03002A	ZL03002A		

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	(1.37) | 1.35	(91) | 90	1.50	1.28 | (1.36)	85 | (91)	7 | (1)	10-130	30
Ronnel	(ND) | ND	1.50	1.32 | (1.47)	88 | (98)	1.50	1.23 | (1.41)	82 | (94)	7 | (4)	30-140	30
Chlorpyrifos	(ND) | ND	1.50	1.33 | (1.45)	89 | (97)	1.50	1.37 | (1.46)	91 | (97)	3 | (1)	40-140	30
Tokuthion	(ND) | ND	1.50	1.43 | (1.47)	95 | (98)	1.50	1.43 | (1.46)	95 | (97)	0 | (1)	40-130	30
Bolstar	(ND) | ND	1.50	1.39 | (1.48)	93 | (99)	1.50	1.35 | (1.36)	90 | (91)	3 | (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	(1.413) | 1.393	(94.2) | 92.9	1.500	1.261 | (1.377)	84.1 | (91.8)	30-130
Triphenyl Phosphate	1.500	1.469 | (1.525)	97.9 | (102)	1.500	1.364 | (1.483)	90.9 | (98.9)	50-130