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**County of Los Angeles  
Department of Public Works**

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**December 2008 Water Quality Monitoring Report**

**for the**

**Master Mitigation Plan  
for the Big Tujunga Wash Mitigation Bank**

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**March 2009**





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# **December 2008 Water Quality Monitoring Report**

**for**

## **Master Mitigation Plan for the Big Tujunga Wash Mitigation Bank**

**March 2009**

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# Water Quality Monitoring

## December 2008

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### BACKGROUND

The County of Los Angeles Department of Public Works (LADPW) purchased a 207-acre parcel in Big Tujunga Wash as a mitigation bank for County flood control projects throughout Los Angeles County. In coordination with local agencies, the County defined a number of measures to improve habitat quality at the site. A Master Mitigation Plan (MMP) was prepared to guide the implementation of these enhancements. The MMP also includes a monitoring program to gather data on conditions at the site during implementation of the improvements. The MMP was prepared and is currently being implemented by ECORP Consulting, Inc. MWH, a subconsultant to ECORP, is responsible for the water quality monitoring program described in the MMP. 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, monitoring was conducted annually, in December. This report presents the results of the water quality sampling for 2008, which was also conducted in December.

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 at the far eastern portion of the site.

### Project Site Activities

A timeline of project-related activities that could influence water quality is presented in **Table 1**.

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

Month/Year	Activity
4/00	Baseline water quality sampling
11/00 to 11/01	Arundo, tamarisk, and pepper tree removal Chemical (Rodeo®) application
12/00 to 11/02	Water hyacinth removal
12/00	Fish Sampling at Haines Canyon Creek
12/14/00	Water quality sampling
1/01 to present	Exotic aquatic wildlife (non-native fish, crayfish, bullfrog, and turtle) removal – conducted quarterly
2/01	Partial riparian planting
3/01	Selective clearing at Canyon Trails Golf Club
3/12/01	Water quality sampling
6/19/01	Water quality sampling
7/01	Fish Sampling at Haines Canyon Creek
9/11/01	Water quality sampling

**Table 1 (Continued)  
Major Activities to Date at the Big Tujunga Wash Mitigation Bank**

<b>Month/Year</b>	<b>Activity</b>
10/01 to 11/01	Fish Sampling at Haines Canyon Creek
12/12/01	Water quality sampling
1/02	Final riparian planting
2/02	Upland replacement planting
3/26/02	Water quality sampling
6/25/02	Water quality sampling
7/02	Fish Sampling at Haines Canyon Creek
9/12/02	Water quality sampling
10/02	Grading at Canyon Trails Golf Club begins
11/02	Fish Sampling at Haines Canyon Creek
12/19/02	Water quality sampling
3/20/03	Water quality sampling
4/1/03	Meeting with Canyon Trails Golf Club to discuss future use of herbicides and fertilizers
6/23/03	Water quality sampling
8/03	Fish Sampling at Haines Canyon Creek
9/30/03	Water quality sampling
Fall 2003	Completion of the golf course construction
12/17/03	Water quality sampling
1/04	Fish Sampling at Haines Canyon Creek
4/2/04	Water quality sampling
4/3/04	Rock Dam Removal Day
6/04	Angeles National Golf Club (previously named Canyon Trails) opens to the public
7/2/04	Water quality sampling
10/5/04	Water quality sampling
12/9/04	Water quality sampling
4/7/05	Water quality sampling
6/30/05	Water quality sampling
10/25/05	Water quality sampling
12/22/05	Water quality sampling
7/11/06	Water quality sampling
12/29/06	Water quality sampling
12/17/07	Water quality sampling
12/29/08	Water quality sampling

**Angeles National Golf Club Activities**

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). Potential impacts to aquatic species from run-on to the site that contains excessive nutrients or pesticides are of primary concern.

The golf course has been operating since June 2004. Additional construction at the club house building is in progress (Angeles National Golf Club website, accessed at <http://www.angelesnational.com/futureclubhouse.html> March 26, 2009).

In March 2004, the golf course maintenance staff indicated that the following chemicals may be used on an as needed basis: Primo™ (a grass growth inhibitor used for turf management; active ingredient – trinexapac-ethyl) and Rodeo® (an herbicide used to control aquatic weeds; active ingredient – glyphosate) (J. Reidinger, pers. comm. to M. Chimienti, LADPW, March 18, 2004). Based on this information, glyphosate was added to the list of sampling parameters starting in the first quarter of 2004.

In December 2004 and February 2005, the Golf Club provided MWH with the golf course’s monthly pesticide use reports. The reports indicate that 10 types of chemical products (seven herbicides, one insecticide, one fungicide, and one grass growth inhibitor) were applied. Pesticide use reports were again provided by the Golf Club in April 2007 for the period from November 2006 to March 2007. During this period, pesticides were applied only in November 2006 as summarized in **Table 2**.

**Table 2**  
**Pesticide Applications at the Angeles National Golf Course**  
**(November 2006)**

Active Ingredient	Manufacturer and Product Name	Applications
Flutolanil	Bayer Prostar 70 WP (fungicide)	One application of 37 pounds on 130,000 sq. ft. of turfgrass
Glyphosate	Verdicon Kleenup Pro (herbicide)	One application of 5 gallons (2% volume) as a spot treatment on turfgrass
Gibberellic Acid	Valent ProGibb T&O (plant growth regulator)	One application of 1 quart on 16 acres of turfgrass
Pyraclostrobin	BASF Insignia 20 WG (fungicide)	One application of 7.2 pounds on 130,000 sq. ft. of turfgrass

Source: Angeles National Golf Course Monthly Summary Pesticide Use Reports for November 2006 through March 2007

In December 2004, the Golf Club also provided MWH with the golf course’s water quality monitoring reports to date. The results were summarized and presented in the 2004 Annual Report for the Big Tujunga Wash Mitigation Bank Water Quality Monitoring Program (distributed in February 2005).

In August 2006, the Golf Club provided MWH with additional water quality monitoring reports from the first and second quarters of 2006. The Golf Club’s monitoring activities for the first and second quarters of 2006 included:

- Groundwater samples were collected on February 24 and May 17 from two groundwater monitoring wells downgradient from the golf course (MW-1 and MW-2R, located near Foothill Boulevard).

## Water Quality Monitoring Report – December 2008

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- Surface water samples were collected from Big Tujunga Wash approximately 200 feet east of Foothill Boulevard (sampling site SW-2) on February 24 and May 17.
- For the first and second quarters of 2006, surface water samples were not collected from Haines Canyon Creek (sampling site SW-1, approximately 500 feet east of Foothill Boulevard) since water was not flowing at this site on the sampling dates.

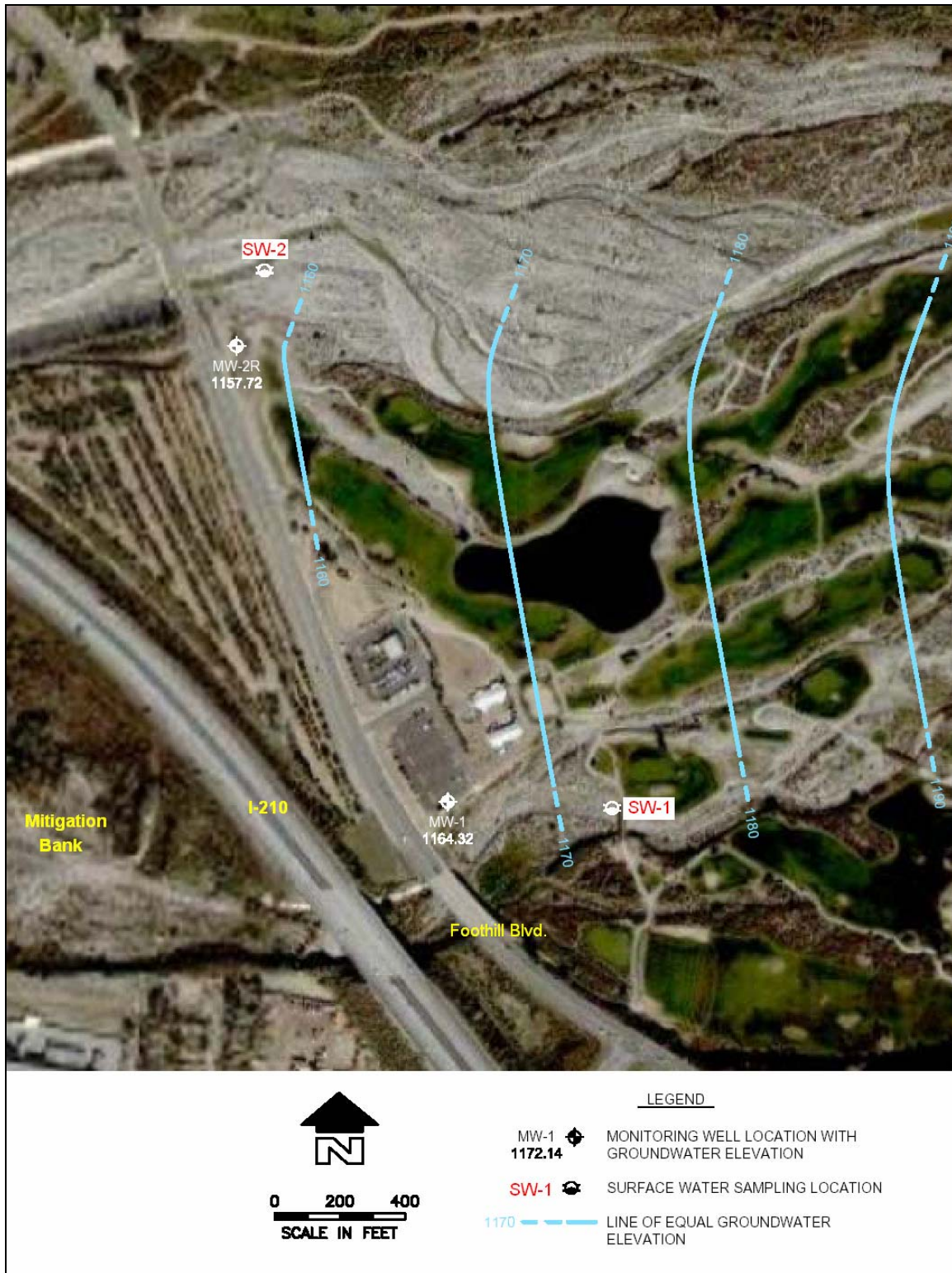
[Source: Angeles National Golf Club First Quarter 2006 Monitoring Report (dated May 3, 2006) and Second Quarter 2006 Monitoring Report (dated July 6, 2006), prepared by Brown and Caldwell for the Los Angeles International Golf Club.]

The following parameters were sampled by the Golf Club in the first and second quarters of 2006:

- General parameters – pH, electrical conductivity, total dissolved solids (TDS), sodium, potassium, calcium, magnesium, carbonate, bicarbonate, sulfate, chloride, nitrate as nitrogen, nitrite as nitrogen, total Kjeldahl nitrogen (TKN), ammonia as nitrogen, oil and grease, and surfactants (MBAS)
- Pesticides – aldrin, chlordane, 4,4-DDD, 4,4-DDE, 4,4-DDT, dieldrin, endosulfan I, endosulfan II, endosulfan sulfate, endrin, endrin aldehyde, heptachlor epoxide, and methoxychlor
- Fungicides – metalaxyl, chlorothalonil, iprodione, propiconazole, vinclozolin, and quinterozone
- Herbicides – prodiamine, pronamide, P-butylfluzifop, fenoxaprop, pendimethalin, triclopyr, chlorypyralid, 2,4-D amine, dicamba, and MCPP
- Insecticides – chlorpyrifos, trichlorfon, and malathion

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).

**Figure 1**  
**Angeles National Golf Club Groundwater and Surface Water Sampling Sites**  
**(February and May 2006)**



Source: Angeles National Golf Club First Quarter 2006 Monitoring Report (dated May 3, 2006), prepared by Brown and Caldwell for the Los Angeles International Golf Club.

## MATERIALS AND METHODS

### Sampling Stations

Four sampling locations have been identified for the monitoring program for the Big Tujunga Wash Mitigation Bank (**Figure 2**). **Table 3** summarizes sampling locations and the conditions observed on December 29, 2008. The coordinates of the sampling stations were determined by a hand-held Global Positioning System.

**Table 3**  
**Water Quality Sampling Locations and Conditions for December 2008**

<b>Date</b>	December 29, 2008		
<b>Air Temperature</b>	Approximately 70 degrees Fahrenheit		
<b>Skies</b>	Sunny		
<b>Observations</b>	People, dogs and horses in Haines Canyon Creek. Algae levels low in Tujunga ponds.		
<b>Sampling Locations</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Time of sample</b>
Haines Canyon Creek	N 34° 16' 2.9"	W 118° 21' 22.2"	1500
Haines Canyon Creek, inflow to Tujunga Ponds	N 34° 16' 6.9"	W 118° 20' 18.7"	1310
Haines Canyon Creek, outflow from Tujunga Ponds	N 34° 16' 7.1"	W 118° 20' 28.3"	1400
Big Tujunga Wash	N 34° 16' 11.7"	W 118° 21' 4.0"	1200

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

All other analyses were performed at MWH 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 the laboratory followed the methods described in the MWH Laboratories *Quality Assurance Manual*.

**Table 4  
Water Quality Sampling Parameters**

<b>Parameter</b>	<b>Analysis Location</b>	<b>Analytical Method</b>
total Kjeldahl nitrogen (TKN)	laboratory	EPA 351.2
nitrite (NO <sub>2</sub> )	laboratory	EPA 300.0 by IC
nitrate (NO <sub>3</sub> )	laboratory	EPA 300.0 by IC
ammonia (NH <sub>4</sub> )	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) <sup>1</sup>	laboratory	EPA 547
chlorpyrifos <sup>2</sup>	laboratory	EPA 625
Pesticides/PCBs <sup>3</sup>	laboratory	EPA 608
dissolved oxygen	field	Standard Methods 4500-O G
total residual chlorine	laboratory	Standard Methods 4500-Cl G
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, 20<sup>th</sup> 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 (diazinon/chlorpyrifos by GCMS, EPA 625) tests for the following chemicals: diazinon, sulprofos, chlorpyrifos, demeton, dichlorvos, disulfoton, dimethoate, ethoprop, fenchlorophos, fensulfothion, fenthion, merphos, mevinphos, malathion, parathion-methyl, phorate, tokuthion, tetrachlorovinphos, and trichloronate.

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



**Figure 2**  
 Mitigation Bank Water Quality Sampling Stations

WQ Station No.	Name
1	Inflow to Tujunga Ponds
2	Outflow from Tujunga Ponds
3	Big Tujunga Wash
4	Haines Canyon Creek, just before exit from site


**BIG TUJUNGA WASH  
 MITIGATION BANK**


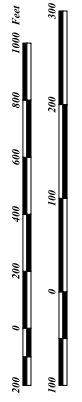
Prepared For:  
 Arapahoe County  
 Department of Public Works

Date: December 3, 1999

Prepared By:  
 Leslie Beckus  
 Chambers Group, Inc.

This map was produced using  
 ESRI's ArcView software.



*This map is not intended  
 for site-specific purposes.*



**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:

$$\text{Flow} = \text{ALC} / \text{T}$$

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 LADPW prior to implementation of the MMP 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 4/18/00 samples are attributable to a rain event. Phosphorus levels were also high in the 4/18/00 samples, perhaps due to release from sediments.

### **December 2008 Results**

#### **Water Quality**

Results of analyses conducted by MWH 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 – December 29, 2008**

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	18.2	16.4	14.4	15.9
Dissolved Oxygen	mg/L	5.53	7.05	10.90	9.25
pH	std units	6.98	7.01	8.56	6.88
Total residual chlorine	mg/L	ND	ND	ND	ND
Ammonia-Nitrogen	mg/L	ND	ND	ND	ND
Kjeldahl Nitrogen	mg/L	0.21	ND	0.20	ND
Nitrite-Nitrogen	mg/L	ND	ND	ND	ND
Nitrate-Nitrogen	mg/L	8.4	6.3	ND	5.2
Orthophosphate-P	mg/L	0.028	0.019	ND	0.019
Total phosphorus-P	mg/L	0.04	0.03	ND	0.03
Glyphosate	µg/L	ND	ND	ND	ND
Chloropyrifos*	ng/L	ND	ND	ND	ND
Pesticides/PCBs (EPA 608)**	µg/L	ND	ND	ND	ND
Turbidity	NTU	1.00	0.40	0.90	0.30
Fecal Coliform Bacteria	(MPN/100 ml)	7	36	4	90
Total Coliform Bacteria	(MPN/100 ml)	500	50	50	280

NTU – nephelometric turbidity units

MPN – most probable number

ND – non-detect

\* The analytical method used for chloropyrifos (diazinon/chlorpyrifos by GCMS, EPA 625) also tests for the following chemicals: diazinon, sulprofos, demeton, dichlorvos, disulfoton, dimethoate, ethoprop, fenchlorophos, fensulfothion, fenthion, merphos, mevinphos, malathion, parathion-methyl, phorate, tokuthion, tetrachlorovinphos, and trichloronate.

\*\* EPA method 608 tests for aroclor, BHC, aldrin, Chlordane, DDD, DDE, DDT, dieldrin, endrin, endosulfan, heptaclor, methoxychlor, mirex, 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 December 2008 are summarized in **Table 7**.

**Table 7**  
**Estimated Flows for December 2008**

Sampling Date	Approximate Flow (cubic feet per second)		
	Outlet of Big Tujunga Ponds	Haines Canyon Creek leaving the site	Big Tujunga Wash
12/29/2008	5.5	6.1	2.7

**Comparison of Results with Baseline Data**

Water quality in December 2008 was generally similar to baseline conditions for parameters such as pH, nitrate, ammonia, and Kjeldahl nitrogen. Substantially higher bacteria and turbidity levels were observed in the 4/18/00 baseline samples due to a rain event. Phosphorus levels were also higher in the April 2000 samples than in December 2008, perhaps due to release from sediments.

**Comparison of Results with Aquatic Life Criteria**

**Tables 8** and **12** present objectives established by the Los Angeles Regional Water Quality Control Board (Regional Board) for protection of beneficial uses in Big Tujunga Wash including wildlife habitat. EPA's criteria for freshwater aquatic life are also presented in **Tables 8, 9, 10, 11** and **13**.

**Table 8  
National and Local Recommended Water Quality Criteria - Freshwaters**

Parameter	Basin Plan Objectives <sup>a</sup>	EPA Criteria		
		CMC	CCC	Human Health
Temperature (°C)	b	See Table 11	See Table 11	--
Dissolved oxygen (mg/L)	>7.0 mean >5.0 min	5.0 <sup>c</sup> (warmwater, early life stages, 1-day minimum)	6.0 <sup>c</sup> (warmwater, early life stages, 7-day mean)	--
pH	6.5 - 8.5	--	6.5-9.0 <sup>d,e</sup>	5.0-9.0 <sup>d,e</sup>
Total residual chlorine (mg/L)	0.1	0.019 <sup>d,e</sup>	0.011 <sup>d,e</sup>	4.0 (maximum residual disinfectant level goal)
Fecal coliform (MPN/100 ml)	200 <sup>f</sup> (water contact recreation)	--	--	Swimming stds: 33 <sup>g</sup> (geometric mean for enterococci) 126 <sup>g</sup> (geometric mean for <i>E. coli</i> )
Ammonia-nitrogen (mg/L)	See Table 12	See Tables 9, 10, and 11	See Tables 9, 10, and 11	--
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 <sup>e</sup> (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).
- 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 Standard based on a minimum of not less than four samples for any 30-day period, 10% of total samples during any 30-day period shall not exceed 400/100ml.
- 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**  
**Numeric Values of the Criterion Maximum Concentration (CMC) with Salmonids Present and Absent and the Criterion Continuous Concentration (CCC) for Ammonia Nitrogen (mg/L)**

<b>pH</b>	<b>CMC with Salmonids Present</b>	<b>CMC with Salmonids Absent</b>	<b>CCC</b>
6.5	32.6	48.8	3.48
6.6	31.3	46.8	3.42
6.7	29.8	44.6	3.36
6.8	28.1	42.0	3.28
6.9	26.2	39.1	3.19
7.0	24.1	36.1	3.08
7.1	22.0	32.8	2.96
7.2	19.7	29.5	2.81
7.3	17.5	26.2	2.65
7.4	15.4	23.0	2.47
7.5	13.3	19.9	2.28
7.6	11.4	17.0	2.07
7.7	9.65	14.4	1.87
7.8	8.11	12.1	1.66
7.9	6.77	10.1	1.46
8.0	5.62	8.4	1.27
8.1	4.64	6.95	1.09
8.2	3.83	5.72	0.935
8.3	3.15	4.71	0.795
8.4	2.59	3.88	0.673
8.5	2.14	3.2	0.568
8.6	1.77	2.65	0.480
8.7	1.47	2.2	0.406
8.8	1.23	1.84	0.345
8.9	1.04	1.56	0.295
9.0	0.885	1.32	0.254

Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

**Table 10**  
**Temperature and pH-Dependent Values of the Ammonia-Nitrogen CCC (Chronic Criterion) for Fish Early Life Stages Absent**

CCC for Fish Early Life Stages Absent, mg N/L										
pH	Temperature (°Celsius)									
	0-7	8	9	10	11	12	13	14	15*	16*
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

\* At 15° C and above, the criterion for fish ELS absent is the same as the criterion for fish ELS present.  
 Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.

**Table 11**  
**Temperature and pH-Dependent Values of the Ammonia-Nitrogen CCC (Chronic Criterion) for Fish Early Life Stages Present**

CCC for Fish Early Life Stages Present, mg N/L										
pH	Temperature (° Celsius)									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

Source: USEPA. 1999. 1999 Update of Ambient Water Quality Criteria for Ammonia. EPA 822-R-99-014. Washington, D.C.



**Table 12**  
**Maximum One-Hour Average Concentration for Total Ammonia**  
**(mg/L NH<sub>3</sub>)**

pH	Temperature (°Celsius)						
	0	5	10	15	20	25	30
6.50	35	33	31	30	29	20	14.3
6.75	32	30	28	27	27	18.6	13.2
7.00	28	26	25	24	23	16.4	11.6
7.25	23	22	20	19.7	19.2	13.4	9.5
7.50	17.4	16.3	15.5	14.9	14.6	10.2	7.3
7.75	12.2	11.4	10.9	10.5	10.3	7.2	5.2
8.00	8.0	7.5	7.1	6.9	6.8	4.8	3.5
8.25	4.5	4.2	4.1	4.0	3.9	2.8	2.1
8.50	2.6	2.4	2.3	2.3	2.3	1.71	1.28
8.75	1.47	1.40	1.37	1.38	1.42	1.07	0.83
9.00	0.86	0.83	0.83	0.86	0.91	0.72	0.58

Source: California Regional Water Quality Control Board, Los Angeles Region. 1994. Water Quality Control Plan (Basin Plan). Taken from USEPA. 1986. Quality Criteria for Water. EPA 440/5-86-001. 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 December 2008 sampling program are described by parameter in **Table 14**.

**Table 14  
Discussion of December 2008 Big Tujunga Wash Sampling Results**

<b>Parameter</b>	<b>Discussion</b>
Temperature	<ul style="list-style-type: none"> <li>Observed temperatures were below levels of concern for growth and survival of warmwater fish species at all stations.</li> </ul>
Dissolved oxygen	<ul style="list-style-type: none"> <li>Dissolved oxygen levels ranged from 5.53 mg/L in the inflow to the ponds to 10.90 in Big Tujunga Wash. DO levels at all stations were above the recommended minimum for warmwater fish species (5.0 mg/L).</li> </ul>
pH	<ul style="list-style-type: none"> <li>Lowest pH was observed in Haines Canyon Creek exiting the site (6.88), with highest pH observed in Big Tujunga Wash (8.56). On this date, pH measurements at all stations except Big Tujunga Wash were within the 6.5 to 8.5 range identified in the Basin Plan.</li> </ul>
Total residual chlorine	<ul style="list-style-type: none"> <li>No residual chlorine was detected at any station.</li> </ul>
Nitrogen	<ul style="list-style-type: none"> <li>Nitrate-nitrogen measurements at all stations were below the drinking water standard of 10 mg/L and nitrate levels were below the method reporting limit (0.20 mg/L) at the Big Tujunga Wash station.</li> <li>Ammonia and nitrite were not detected at any station.</li> </ul>
Phosphorus	<ul style="list-style-type: none"> <li>Total phosphorus levels at all sites were below EPA’s recommended range for streams to prevent excess algae growth (observed range was ND to 0.04 mg/L; recommended range is &lt;0.05 – 0.1 mg/L).</li> </ul>
Glyphosate	<ul style="list-style-type: none"> <li>No glyphosate was detected at any station.</li> </ul>
Chloropyrifos	<ul style="list-style-type: none"> <li>Chloropyrifos and the other pesticides tested using EPA’s analytical method 625 were not detected at any station.</li> </ul>
Pesticides/ PCBs (EPA 608 compounds)	<ul style="list-style-type: none"> <li>Pesticides and PCBs analyzed by EPA Method 608 were not detected at any station.</li> </ul>
Turbidity	<ul style="list-style-type: none"> <li>Turbidity levels were low (<math>\leq 1</math> NTU) at all stations.</li> </ul>
Bacteria	<ul style="list-style-type: none"> <li>Fecal coliform levels at all stations were below the water contact recreation standard of 200 MPN. Total coliform levels were generally low at all stations.</li> </ul>

## GLOSSARY

**Ammonia-Nitrogen** –  $\text{NH}_3\text{-N}$  is a gaseous alkaline compound of nitrogen and hydrogen that is highly soluble in water. Un-ionized ammonia ( $\text{NH}_3$ ) is toxic to aquatic organisms. The proportions of  $\text{NH}_3$  and ammonium ( $\text{NH}_4^+$ ) and hydroxide ( $\text{OH}^-$ ) 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** –  $\text{NO}_3^-\text{-N}$  is an essential nutrient for many photosynthetic autotrophs.

**Nitrite-Nitrogen** –  $\text{NO}_2^-\text{-N}$  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 BANK  
WATER QUALITY MONITORING PROGRAM**

**LABORATORY RESULTS**  
**December 2008**





# MWH Laboratories

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## Laboratory Report

for

MWH/ECORP  
618 Michillinda Ave, Suite 200

Arcadia , CA 91007

Attention: Sarah Garber  
Fax: 626-568-6101

DATE OF ISSUE  
Jan 27 2009  
MWH LABORATORIES

DST David S. Tripp  
Project Manager



Report#: 262260  
Project: BIG TUJUNGA  
PO#: 1342951.0101

This report shall not be reproduced except in full, without the written approval of the laboratory.  
Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments, QC Report, QC Summary, Data Report, Hits Report, totaling 15 page[s].





**MWH Laboratories**  
 750 Royal Oaks Drive, Monrovia, CA 91016  
 PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

MWH/ECORP

618 Michillinda Ave, Suite 200 Customer Code: MWH-ECORP  
 Arcadia, CA 91007 PO#: 1342951.010102  
 Attn: Sarah Garber Group#: 262260  
 Phone: 626-568-6910 Project#: BIG TUJUNGA  
 Proj Mgr: David Tripp  
 Phone: 626-386-1158

The following samples were received from you on **12/29/08**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample Id	Tests Scheduled	Matrix	Sample Date
2812300119	HAINES CYN CRK	HCC122908 @DIAZEDD CHLTOT NO2-N NO3 TOTCOL TURB	Water CUSTSUB FECCOL NO3A OPO4	29-dec-2008 15:00:00 GLYPHOS NH3 T-P TKN
2812300120	TJ PONDS IN	TJPIN122908 @DIAZEDD CHLTOT NO2-N NO3 TOTCOL TURB	Water CUSTSUB FECCOL NO3A OPO4	29-dec-2008 13:10:00 GLYPHOS NH3 T-P TKN
2812300121	TJ PONDS OUT	THPOUT122908 @DIAZEDD CHLTOT NO2-N NO3 TOTCOL TURB	Water CUSTSUB FECCOL NO3A OPO4	29-dec-2008 14:00:00 GLYPHOS NH3 T-P TKN
2812300122	BIG T WASH	BTW122908 @DIAZEDD CHLTOT NO2-N NO3 TOTCOL TURB	Water CUSTSUB FECCOL NO3A OPO4	29-dec-2008 12:00:00 GLYPHOS NH3 T-P TKN

Test Acronym Description

Test Acronym	Description
@DIAZEDD	Diazinon/Chlorpyrifos by GCMS
CHLTOT	Total Chlorine Residual
CUSTSUB	Subcontract Test-See Attached
FECCOL	Fecal Coliform Bacteria
GLYPHOS	Glyphosate
NH3	Ammonia Nitrogen
NO2-N	Nitrite, Nitrogen by IC
NO3	Nitrate as Nitrogen by IC
NO3A	Nitrate as NO3 (calc)
OPO4	Orthophosphate as P
T-P	Total phosphorus as P
TKN	Kjeldahl Nitrogen
TOTCOL	Total Coliform Bacteria

---

MWH/ECORP

618 Michillinda Ave, Suite 200 Customer Code: MWH-ECORP

Arcadia, CA 91007

PO#: 1342951.010102

Attn: Sarah Garber

Group#: 262260

Phone: 626-568-6910

Project#: BIG TUJUNGA

Proj Mgr: David Tripp

Phone: 626-386-1158

---

Test Acronym Description

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Test Acronym	Description
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TURB	Turbidity
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---

Report  
Comments  
#262260

**Group Comments**

Analytical results for Diazinon/Chlorpyrifos by GCMS are submitted by CRG Marine Laboratories, Torrance, CA.

ELAP#2261

Analytical results for Pesticides by 8081 are submitted by Emax Lab, Inc. Torrance, CA.



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Laboratory  
 Hits Report  
 #262260

MWH/ECORP  
 Sarah Garber  
 618 Michillinda Ave, Suite 200  
 Arcadia, CA 91007

Samples Received  
 29-dec-2008 16:33:00

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
<b>2812300119 HAINES CYN CRK HCC122908</b>						
12/29/08		Fecal Coliform Bacteria	90		MPN/100 mL	2.0
12/30/08		Nitrate as NO3 (calc)	23	45	mg/l	0.88
12/30/08		Nitrate as Nitrogen by IC	5.2	10	mg/l	0.20
12/30/08		Orthophosphate as P	0.019		mg/l	0.010
12/29/08		Total Coliform Bacteria	280		MPN/100 mL	2.0
12/30/08		Total phosphorus as P	0.03		mg/l	0.020
12/29/08		Turbidity	0.30	5	NTU	0.050
<b>2812300120 TJ PONDS IN TJPIN122908</b>						
12/29/08		Fecal Coliform Bacteria	7		MPN/100 mL	2.0
01/07/09		Kjeldahl Nitrogen	0.21		mg/l	0.20
12/30/08		Nitrate as NO3 (calc)	37	45	mg/l	0.88
12/30/08		Nitrate as Nitrogen by IC	8.4	10	mg/l	0.20
12/30/08		Orthophosphate as P	0.028		mg/l	0.010
12/29/08		Total Coliform Bacteria	500		MPN/100 mL	2.0
12/30/08		Total phosphorus as P	0.04		mg/l	0.020
12/29/08		Turbidity	1.0	5	NTU	0.050
<b>2812300121 TJ PONDS OUT THPOUT122908</b>						
12/29/08		Fecal Coliform Bacteria	36		MPN/100 mL	2.0
12/30/08		Nitrate as NO3 (calc)	28	45	mg/l	0.88
12/30/08		Nitrate as Nitrogen by IC	6.3	10	mg/l	0.20
12/30/08		Orthophosphate as P	0.019		mg/l	0.010
12/29/08		Total Coliform Bacteria	50		MPN/100 mL	2.0
12/30/08		Total phosphorus as P	0.03		mg/l	0.020
12/29/08		Turbidity	0.40	5	NTU	0.050
<b>2812300122 BIG T WASH BTW122908</b>						

SUMMARY OF POSITIVE DATA ONLY.



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Laboratory  
Hits Report  
#262260

MWH/ECORP  
Sarah Garber  
618 Michillinda Ave, Suite 200  
Arcadia , CA 91007

Samples Received  
29-dec-2008 16:33:00

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2812300122	BIG T WASH BTW122908				
12/29/08		Fecal Coliform Bacteria	4		MPN/100 mL	2.0
01/07/09		Kjeldahl Nitrogen	0.20		mg/l	0.20
12/29/08		Total Coliform Bacteria	50		MPN/100 mL	2.0
12/29/08		Turbidity	0.90	5	NTU	0.050

SUMMARY OF POSITIVE DATA ONLY.



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Laboratory  
Data Report  
#262260

MWH/ECORP  
Sarah Garber  
618 Michillinda Ave, Suite 200  
Arcadia, CA 91007

Samples Received  
12/29/08

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
<b>HAINES CYN CRK HCC122908 (2812300119)</b>					<b>Sampled on 12/29/08 15:00</b>			
	12/30/08 00:00	466215	( 4500CL-G/HACH )	Total Chlorine Residual	ND	mg/l	0.1	1
	01/16/09 00:00		( NONE )	Subcontract Test-See Attached	SUB_EMAX	None	0	1
	12/29/08 17:40		( SM 9221C )	Fecal Coliform Bacteria	90	MPNM	2.0	1
	01/07/09 00:00	467234	( EPA 547 )	Glyphosate	ND	ug/l	6.0	1
	01/05/09 12:48	466822	( EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/30/08 03:10	466012	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/30/08 03:10	466015	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	5.2	mg/l	0.20	2
	12/30/08 03:10	466006	( ML/EPA 300.0 )	Nitrate as NO3 (calc)	23	mg/l	0.88	2
	12/30/08 17:45	466373	( 4500PE/HACH )	Orthophosphate as P	0.019	mg/l	0.010	1
	12/30/08 21:09	466219	( S4500PF/ 365.1 )	Total phosphorus as P	0.03	mg/l	0.020	1
	01/07/09 14:18	467021	( EPA 351.2 )	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/29/08 17:40		( SM 9221B )	Total Coliform Bacteria	280	MPNM	2.0	1
	12/29/08 18:02	466055	( EPA 180.1 )	Turbidity	0.30	NTU	0.050	1
<b>Diazinon/Chlorpyrifos by GCMS</b>								
	01/10/09 00:00		( EPA 625 MOD )	Diazinon	ND	ng/l	4.0	1
	01/10/09 00:00		( EPA 625 MOD )	Bolstar (Sulprofos)	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Chlorpyrifos	ND	ng/l	2.0	1
	01/10/09 00:00		( EPA 625 MOD )	Demeton	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Dichlorvos	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Disulfoton	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Dimethoate	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Ethoprop (Ethoprophos)	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Fenchlorophos (Ronnell)	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Fensulfothion	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Fenthion	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Merphos	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Mevinphos (Phosdrin)	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Malathion	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Parathion-methyl	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Phorate	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Tokuthion	NA	ng/l	0	1



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MWH/ECORP  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	01/10/09 00:00		( EPA 625 MOD )	Tetrachlorovinphos (Stirophos)	NA	ng/l	0	1
	01/10/09 00:00		( EPA 625 MOD )	Trichloronate	NA	ng/l	0	1
<b>TJ PONDS IN TJPIN122908 (2812300120)</b>					<b>Sampled on 12/29/08 13:10</b>			
	12/30/08 00:00	466215	( 4500CL-G/HACH )	Total Chlorine Residual	ND	mg/l	0.1	1
	01/16/09 00:00		( NONE )	Subcontract Test-See Attached	SUB_EMAX	None	0	1
	12/29/08 17:40		( SM 9221C )	Fecal Coliform Bacteria	7	MPNM	2.0	1
	12/30/08 00:00	466292	( EPA 547 )	Glyphosate	ND	ug/l	6.0	1
	01/05/09 12:48	466822	( EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/30/08 03:24	466012	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/30/08 03:24	466015	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	8.4	mg/l	0.20	2
	12/30/08 03:24	466006	( ML/EPA 300.0 )	Nitrate as NO3 (calc)	37	mg/l	0.88	2
	12/30/08 17:45	466373	( 4500PE/HACH )	Orthophosphate as P	0.028	mg/l	0.010	1
	12/30/08 21:09	466219	( S4500PF/ 365.1 )	Total phosphorus as P	0.04	mg/l	0.020	1
	01/07/09 14:18	467021	( EPA 351.2 )	Kjeldahl Nitrogen	0.21	mg/l	0.20	1
	12/29/08 17:40		( SM 9221B )	Total Coliform Bacteria	500	MPNM	2.0	1
	12/29/08 18:02	466055	( EPA 180.1 )	Turbidity	1.0	NTU	0.050	1
<b>Diazinon/Chlorpyrifos by GCMS</b>								
	01/25/09 21:48		( EPA 625 MOD )	Diazinon	ND	ng/l	4.0	1
	01/25/09 21:48		( EPA 625 MOD )	Bolstar (Sulprofos)	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Chlorpyrifos	ND	ng/l	2.0	1
	01/25/09 21:48		( EPA 625 MOD )	Demeton	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Dichlorvos	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Disulfoton	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Dimethoate	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Ethoprop (Ethoprofos)	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Fenchlorophos (Ronnell)	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Fensulfothion	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Fenthion	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Merphos	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Mevinphos (Phosdrin)	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Malathion	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Parathion-methyl	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Phorate	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Tokuthion	NA	ng/l	0	1



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MWH/ECORP  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	01/25/09 21:48		( EPA 625 MOD )	Tetrachlorovinphos (Stirophos)	NA	ng/l	0	1
	01/25/09 21:48		( EPA 625 MOD )	Trichloronate	NA	ng/l	0	1
<b>TJ PONDS OUT THPOUT122908 (2812300121)</b>					<b>Sampled on 12/29/08 14:00</b>			
	12/30/08 00:00	466215	( 4500CL-G/HACH )	Total Chlorine Residual	ND	mg/l	0.1	1
	01/16/09 00:00		( NONE )	Subcontract Test-See Attached	SUB_EMAX	None	0	1
	12/29/08 17:40		( SM 9221C )	Fecal Coliform Bacteria	36	MPNM	2.0	1
	12/30/08 00:00	466292	( EPA 547 )	Glyphosate	ND	ug/l	6.0	1
	01/05/09 12:48	466822	( EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/30/08 03:37	466012	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/30/08 03:37	466015	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	6.3	mg/l	0.20	2
	12/30/08 03:37	466006	( ML/EPA 300.0 )	Nitrate as NO3 (calc)	28	mg/l	0.88	2
	12/30/08 17:45	466373	( 4500PE/HACH )	Orthophosphate as P	0.019	mg/l	0.010	1
	12/30/08 21:53	466220	( S4500PF/ 365.1 )	Total phosphorus as P	0.03	mg/l	0.020	1
	01/07/09 14:18	467021	( EPA 351.2 )	Kjeldahl Nitrogen	ND	mg/l	0.20	1
	12/29/08 17:40		( SM 9221B )	Total Coliform Bacteria	50	MPNM	2.0	1
	12/29/08 18:02	466055	( EPA 180.1 )	Turbidity	0.40	NTU	0.050	1
<b>Diazinon/Chlorpyrifos by GCMS</b>								
	01/25/09 21:50		( EPA 625 MOD )	Diazinon	ND	ng/l	4.0	1
	01/25/09 21:50		( EPA 625 MOD )	Bolstar (Sulprofos)	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Chlorpyrifos	ND	ng/l	2.0	1
	01/25/09 21:50		( EPA 625 MOD )	Demeton	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Dichlorvos	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Disulfoton	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Dimethoate	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Ethoprop (Ethoprophos)	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Fenchlorophos (Ronnec)	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Fensulfothion	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Fenthion	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Merphos	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Mevinphos (Phosdrin)	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Malathion	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Parathion-methyl	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Phorate	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Tokuthion	NA	ng/l	0	1





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MWH/ECORP  
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	01/25/09 21:50		( EPA 625 MOD )	Tetrachlorovinphos (Stirophos)	NA	ng/l	0	1
	01/25/09 21:50		( EPA 625 MOD )	Trichloronate	NA	ng/l	0	1
<b>BIG T WASH BTW122908 (2812300122)      Sampled on 12/29/08 12:00</b>								
	12/30/08 00:00	466215	( 4500CL-G/HACH )	Total Chlorine Residual	ND	mg/l	0.1	1
	01/16/09 00:00		( NONE )	Subcontract Test-See Attached	SUB_EMAX	None	0	1
	12/29/08 17:40		( SM 9221C )	Fecal Coliform Bacteria	4	MPNM	2.0	1
	01/07/09 00:00	467234	( EPA 547 )	Glyphosate	ND	ug/l	6.0	1
	01/05/09 12:48	466822	( EPA 350.1 )	Ammonia Nitrogen	ND	mg/l	0.050	1
	12/30/08 06:35	466012	( ML/EPA 300.0 )	Nitrite, Nitrogen by IC	ND	mg/l	0.20	2
	12/30/08 06:35	466015	( ML/EPA 300.0 )	Nitrate as Nitrogen by IC	ND	mg/l	0.20	2
	12/30/08 06:35	466006	( ML/EPA 300.0 )	Nitrate as NO3 (calc)	ND	mg/l	0.88	2
	12/30/08 17:45	466373	( 4500PE/HACH )	Orthophosphate as P	ND	mg/l	0.010	1
	12/30/08 21:53	466220	( S4500PF/ 365.1 )	Total phosphorus as P	ND	mg/l	0.020	1
	01/07/09 14:18	467021	( EPA 351.2 )	Kjeldahl Nitrogen	0.20	mg/l	0.20	1
	12/29/08 17:40		( SM 9221B )	Total Coliform Bacteria	50	MPNM	2.0	1
	12/29/08 18:02	466055	( EPA 180.1 )	Turbidity	0.90	NTU	0.050	1
<b>Diazinon/Chlorpyrifos by GCMS</b>								
	01/25/09 21:51		( EPA 625 MOD )	Diazinon	ND	ng/l	4.0	1
	01/25/09 21:51		( EPA 625 MOD )	Bolstar (Sulprofos)	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Chlorpyrifos	ND	ng/l	2.0	1
	01/25/09 21:51		( EPA 625 MOD )	Demeton	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Dichlorvos	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Disulfoton	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Dimethoate	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Ethoprop (Ethoprophos)	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Fenchlorophos (Ronnell)	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Fensulfothion	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Fenthion	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Merphos	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Mevinphos (Phosdrin)	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Malathion	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Parathion-methyl	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Phorate	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Tokuthion	NA	ng/l	0	1



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MWH/ECORP  
(continued)

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Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	01/25/09 21:51		( EPA 625 MOD )	Tetrachlorovinphos (Stirophos)	NA	ng/l	0	1
	01/25/09 21:51		( EPA 625 MOD )	Trichloronate	NA	ng/l	0	1

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MWH/ECORP

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**QC Ref #466006 - Nitrate as NO3 (calc) Analysis Date: 12/30/2008**

2812300119 HAINES CYN CRK HCC122908 Analyzed by: sxk  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: sxk  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: sxk  
2812300122 BIG T WASH BTW122908 Analyzed by: sxk

**QC Ref #466012 - Nitrite, Nitrogen by IC Analysis Date: 12/30/2008**

2812300119 HAINES CYN CRK HCC122908 Analyzed by: sxk  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: sxk  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: sxk  
2812300122 BIG T WASH BTW122908 Analyzed by: sxk

**QC Ref #466015 - Nitrate as Nitrogen by IC Analysis Date: 12/30/2008**

2812300119 HAINES CYN CRK HCC122908 Analyzed by: sxk  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: sxk  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: sxk  
2812300122 BIG T WASH BTW122908 Analyzed by: sxk

**QC Ref #466055 - Turbidity Analysis Date: 12/29/2008**

2812300119 HAINES CYN CRK HCC122908 Analyzed by: sar  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: sar  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: sar  
2812300122 BIG T WASH BTW122908 Analyzed by: sar

**QC Ref #466215 - Total Chlorine Residual Analysis Date: 12/30/2008**

2812300119 HAINES CYN CRK HCC122908 Analyzed by: mav  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: mav  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: mav  
2812300122 BIG T WASH BTW122908 Analyzed by: mav



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MWH/ECORP  
(continued)

QC Ref #466219 - Total phosphorus as P Analysis Date: 12/30/2008

2812300119 HAINES CYN CRK HCC122908 Analyzed by: njr  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: njr

QC Ref #466220 - Total phosphorus as P Analysis Date: 12/30/2008

2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: njr  
2812300122 BIG T WASH BTW122908 Analyzed by: njr

QC Ref #466292 - Glyphosate Analysis Date: 12/30/2008

2812300120 TJ PONDS IN TJPIN122908 Analyzed by: szz  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: szz

QC Ref #466373 - Orthophosphate as P Analysis Date: 12/30/2008

2812300119 HAINES CYN CRK HCC122908 Analyzed by: vxt  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: vxt  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: vxt  
2812300122 BIG T WASH BTW122908 Analyzed by: vxt

QC Ref #466822 - Ammonia Nitrogen Analysis Date: 01/05/2009

2812300119 HAINES CYN CRK HCC122908 Analyzed by: njr  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: njr  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: njr  
2812300122 BIG T WASH BTW122908 Analyzed by: njr

QC Ref #467021 - Kjeldahl Nitrogen Analysis Date: 01/07/2009

2812300119 HAINES CYN CRK HCC122908 Analyzed by: njr  
2812300120 TJ PONDS IN TJPIN122908 Analyzed by: njr  
2812300121 TJ PONDS OUT THPOUT122908 Analyzed by: njr  
2812300122 BIG T WASH BTW122908 Analyzed by: njr



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MWH/ECORP  
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QC Ref #467234 - Glyphosate

Analysis Date: 01/07/2009

2812300119  
2812300122

HAINES CYN CRK HCC122908 Analyzed by: szz  
BIG T WASH BTW122908 Analyzed by: szz



MWH/ECORP

**QC Ref #466012**

**Nitrite, Nitrogen by IC**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 28	12300121	MGL		( 0-0 )	
LCS1	Nitrite, Nitrogen by IC	1.0	0.960	MGL	96.0	( 90-110 )	
LCS2	Nitrite, Nitrogen by IC	1.0	0.958	MGL	95.8	( 90-110 )	
MBLK	Nitrite, Nitrogen by IC	ND	<0.10	MGL			
MRL_CHK	Nitrite, Nitrogen by IC	0.050	0.0498	MGL	99.6	( 50-150 )	
MS	Nitrite, Nitrogen by IC	0.500	0.494	MGL	98.8	( 69-123 )	
MSD	Nitrite, Nitrogen by IC	0.500	0.492	MGL	98.4	( 69-123 )	
RPD_LCS	Nitrite, Nitrogen by IC	96.000	95.800	MGL	0.2	( 0-20 )	
RPD_MS	Nitrite, Nitrogen by IC	98.800	98.400	MGL	0.4	( 0-20 )	

**QC Ref #466015**

**Nitrate as Nitrogen by IC**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 28	12300121	MGL		( 0-0 )	
LCS1	Nitrate as Nitrogen by IC	2.5	2.43	MGL	97.2	( 90-110 )	
LCS2	Nitrate as Nitrogen by IC	2.5	2.42	MGL	96.8	( 90-110 )	
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL			
MRL_CHK	Nitrate as Nitrogen by IC	0.050	0.0496	MGL	99.2	( 50-150 )	
MS	Nitrate as Nitrogen by IC	1.25	1.30	MGL	104.0	( 87-121 )	
MSD	Nitrate as Nitrogen by IC	1.25	1.29	MGL	103.2	( 87-121 )	
RPD_LCS	Nitrate as Nitrogen by IC	97.200	96.800	MGL	0.4	( 0-20 )	
RPD_MS	Nitrate as Nitrogen by IC	104.000	103.200	MGL	0.8	( 0-20 )	

**QC Ref #466055**

**Turbidity**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Turbidity	0.10	0.10	NTU		( 0-20 )	0.0
DUP2	Turbidity	0.10	0.10	NTU		( 0-20 )	0.0
LCS1	Turbidity	20	19.7	NTU	98.5	( 50-150 )	
MBLK	Turbidity	ND	<0.050	NTU			
MRL_CHK	Turbidity	0.0500	0.062	NTU	124.0	( 50-150 )	

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.



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MWH/ECORP  
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## QC Ref #466215 Total Chlorine Residual

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Total Chlorine Residual	1.0	0.99	MGL	99.0	( 85-115 )	
MRL_CHK	Total Chlorine Residual	0.1	0.11	MGL	110.0	( 50-150 )	

## QC Ref #466219 Total phosphorus as P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12260013	MGL		( 0-0 )	
LCS1	Total phosphorus as P	0.4	0.407	MGL	101.7	( 90-110 )	
LCS2	Total phosphorus as P	0.4	0.396	MGL	99.0	( 90-110 )	
MBLK	Total phosphorus as P	ND	<0.020	MGL			
MRL_CHK	Total phosphorus as P	0.02	0.019	MGL	95.0	( 50-150 )	
MS	Total phosphorus as P	0.4	0.400	MGL	100.0	( 90-110 )	
MS2	Total phosphorus as P	0.4	0.403	MGL	100.8	( 90-110 )	
MSD	Total phosphorus as P	0.4	0.394	MGL	98.5	( 90-110 )	
RPD_LCS	Total phosphorus as P	101.750	99.000	MGL	2.7	( 0-10 )	
RPD_MS	Total phosphorus as P	100.000	98.500	MGL	1.5	( 0-20 )	

## QC Ref #466220 Total phosphorus as P

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12300121	MGL		( 0-0 )	
LCS1	Total phosphorus as P	0.4	0.393	MGL	98.2	( 90-110 )	
LCS2	Total phosphorus as P	0.4	0.410	MGL	102.5	( 90-110 )	
MBLK	Total phosphorus as P	ND	<0.020	MGL			
MRL_CHK	Total phosphorus as P	0.02	0.019	MGL	95.0	( 50-150 )	
MS	Total phosphorus as P	0.4	0.396	MGL	99.0	( 90-110 )	
MSD	Total phosphorus as P	0.4	0.397	MGL	99.2	( 90-110 )	
RPD_LCS	Total phosphorus as P	98.250	102.500	MGL	4.2	( 0-10 )	
RPD_MS	Total phosphorus as P	99.000	99.250	MGL	0.3	( 0-20 )	

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.

MWH/ECORP  
 (continued)

**QC Ref #466292**
**Glyphosate**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12220202	UGL		( 0-0 )	
LCS1	Glyphosate	10	10.0	UGL	100.0	( 77-119 )	
MBLK	Glyphosate	ND	<6.0	UGL			
MRL_CHK	Glyphosate	6.00	6.09	UGL	101.5	( 50-150 )	
MS	Glyphosate	10	10.1	UGL	101.0	( 74-126 )	
MSD	Glyphosate	10	10.1	UGL	101.0	( 74-126 )	
RPD_MS	Glyphosate	101.000	101.000	UGL	0.0	( 0-20 )	

**QC Ref #466373**
**Orthophosphate as P**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	200812300030	MGL		( 0-0 )	
LCS1	Orthophosphate as P	0.5	0.487	MGL	97.4	( 90-110 )	
LCS2	Orthophosphate as P	0.5	0.482	MGL	96.4	( 90-110 )	
MBLK	Orthophosphate as P	ND	<0.010	MGL			
MRL_CHK	Orthophosphate as P	0.010	0.013	MGL	130.0	( 50-150 )	
MS	Orthophosphate as P	0.5	0.507	MGL	101.4	( 80-120 )	
MSD	Orthophosphate as P	0.5	0.506	MGL	101.2	( 80-120 )	

**QC Ref #466822**
**Ammonia Nitrogen**

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12300268	MGL		( 0-0 )	
LCS1	Ammonia Nitrogen	1.00	1.05	MGL	105.0	( 90-110 )	
LCS2	Ammonia Nitrogen	1.00	1.05	MGL	105.0	( 90-110 )	
MBLK	Ammonia Nitrogen	ND	<0.050	MGL			
MRL_CHK	Ammonia Nitrogen	0.05	0.049	MGL	98.0	( 50-150 )	
MS	Ammonia Nitrogen	1.00	1.00	MGL	100.0	( 90-110 )	
MSD	Ammonia Nitrogen	1.00	1.00	MGL	100.0	( 90-110 )	

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.





MWH/ECORP  
(continued)

MS_2ND	Ammonia Nitrogen	1	1.03	MGL	103.0	( 90-110 )
RPD_LCS	Ammonia Nitrogen	105.000	105.000	MGL	0.0	( 0-20 )
RPD_MS	Ammonia Nitrogen	100.000	100.000	MGL	0.0	( 0-20 )

QC Ref #467021 Kjeldahl Nitrogen

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12300119	MGL		( 0-0 )	
LCS1	Kjeldahl Nitrogen	4	4.09	MGL	102.2	( 90-110 )	
LCS2	Kjeldahl Nitrogen	4	4.01	MGL	100.2	( 90-110 )	
MBLK	Kjeldahl Nitrogen	ND	<0.20	MGL			
MRL_CHK	Kjeldahl Nitrogen	0.1	0.114	MGL	114.0	( 50-150 )	
MS	Kjeldahl Nitrogen	4	3.93	MGL	98.2	( 90-110 )	
MSD	Kjeldahl Nitrogen	4	4.10	MGL	102.5	( 90-110 )	
MS_2ND	Kjeldahl Nitrogen	4	4.20	MGL	105.0	( 90-110 )	
RPD_LCS	Kjeldahl Nitrogen	102.250	100.250	MGL	2.0	( 0-20 )	
RPD_MS	Kjeldahl Nitrogen	98.250	102.500	MGL	4.2	( 0-20 )	

QC Ref #467234 Glyphosate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 28	12310140	UGL		( 0-0 )	
LCS1	Glyphosate	10	10.0	UGL	100.0	( 77-119 )	
MBLK	Glyphosate	ND	<6.0	UGL			
MRL_CHK	Glyphosate	6.00	6.08	UGL	101.3	( 50-150 )	
MS	Glyphosate	10	10.2	UGL	102.0	( 74-126 )	
MSD	Glyphosate	10	10.0	UGL	100.0	( 74-126 )	
RPD_MS	Glyphosate	102.000	100.000	UGL	2.0	( 0-20 )	

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.

262260  
MWH-CORP

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CLIENT: MWH LABORATORIES  
PROJECT: 262260 ✓  
SDG: 08L333

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GC-SVOA	METHOD 3520C/8081A	5000 – 5010
HPLC	**	6000 –
METALS	**	7000 –
WET	**	8000 –
OTHERS	**	9000 –

\*\* - Not Requested



**LABORATORIES, INC.**

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

Date: 01-22-2009  
EMAX Batch No.: 08L333

Attn: Joseph Ureno

MWH Laboratories  
750 Royal Oaks Dr., Suite 100  
Monrovia CA 91016-3629

Subject: Laboratory Report  
Project: 262260

-----  
Enclosed is the Laboratory report for samples received on 12/31/08.  
The data reported include :

Sample ID	Control #	Col Date	Matrix	Analysis
HAINES CYN CRK HCC1122908L333-01		12/29/08	WATER	PESTICIDES ORGANOCHLORINE
TJ PONDS IN TJPINI122908 L333-02		12/29/08	WATER	PESTICIDES ORGANOCHLORINE
TJ PONDS OUT THPOUT122908L333-03		12/29/08	WATER	PESTICIDES ORGANOCHLORINE
BIG T WASH BTW122908 L333-04		12/29/08	WATER	PESTICIDES ORGANOCHLORINE

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  
Acting Laboratory Director

This report is confidential and intended solely for the use of the individual or entity to whom it is addressed. This report shall not be reproduced except in full or without the written approval of EMAX.

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



MWH Laboratories  
 A Division of MWH Americas, Inc.  
 750 Royal Oaks Drive Suite 100  
 Monrovia, CA 91016-3629  
 Ph (626) 386-1100 Fax (626) 386-1095

Ship To **Richard Beauvil**  
**Emax Laboratories, Inc.**

**1835 205th Street**  
**Torrance, CA 90501**

(310) 618-8889 ext 118 Fax

MWH Project # Report Due: Sub PO#  
 262260 01/14/09 99-36362

Use MWH  
 Lab # for ID

Client Sample ID for reference only

	Sample	Analysis Requested	Date & Time	Matrix	Container
1	CUSTSUB 2812300119	HAINES CYN CRK HCC1122908 8081	12/29/08 15:00	dw	
2	CUSTSUB 2812300120	TJ PONDS IN TJPIN1122908 8081	12/29/08 13:10	dw	
3	CUSTSUB 2812300121	TJ PONDS OUT THPOUT1229008 8081	12/29/08 14:00	dw	
4	CUSTSUB 2812300122	BIG T WASH BTW122908 8081	12/29/08 12:00	dw	

Date 12/30/08 Submittal Form & Purchase Order 99-36362

\*REPORTING REQUIREMENTS: Do Not Combine Report with any other samples submitted under different MWH project numbers/ Report & Invoice must have the MWH Project Number 262260 and Job # 99-36362 Find Out

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. See reverse side for List of Terms and Conditions

082333

Reports: Elena Montanez / Christian Lewis Sub-contracting Administrator  
 EMAIL TO: mwhlabs-subcontractreports@mwhglobal.com  
 MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016  
 Phone (626) 386-1118 / 1137 Fax (626) 386-1122  
 Invoices to: MWH LABORATORIES  
 Accounts Payable PO BOX 6610, Broomfield, CO 80021

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

California DW

COMMENT: SENT TO EMAX, SAMPLE BOTTLES LISTED EMAX AS SUB LAB.

1001

*[Signature]*

Relinquished by:

Received by:

Sample Control

Date 12/30/08

Time 12:30

Page 1

MUST HAVE NOTIFICATION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Date 12/30/08 Time 15:05

An Acknowledgement of Receipt is requested to attn: Christine Lewis

T = 3.2°C



SAMPLE RECEIPT FORM 1

Type of Delivery <input type="checkbox"/> BMAX Courier <input checked="" type="checkbox"/> <del>Citizen Delivery</del> <input type="checkbox"/> Third Party	Delivered By/Airbill	ECN <u>08/333</u> Receiver <u>J-LUNA</u> Date <u>12-31-08</u> Time <u>1505</u>
--	----------------------	---

COC Inspection

<input checked="" type="checkbox"/> Client Name <input checked="" type="checkbox"/> Address Safety Issues <input checked="" type="checkbox"/> Noise	<input checked="" type="checkbox"/> Office PM/FC <input checked="" type="checkbox"/> Tel # / Fax # <input type="checkbox"/> High concentrations exposed	<input type="checkbox"/> Sampler Name <input type="checkbox"/> Courier Signature <input type="checkbox"/> Superfined Size samples	<input checked="" type="checkbox"/> Sampling Date/Time/Location <input checked="" type="checkbox"/> Analysis Required <input type="checkbox"/> Rad screening required	<input checked="" type="checkbox"/> Sample ID <input type="checkbox"/> Preservative (if any)	<input checked="" type="checkbox"/> Matrix <input checked="" type="checkbox"/> TAT
--	---	---	---	---	---

Comments: \_\_\_\_\_

Packaging Inspection

Container Condition Packaging Temperatures	<input checked="" type="checkbox"/> Cooler <input type="checkbox"/> Curity Seal <input type="checkbox"/> Bubble Pack <input checked="" type="checkbox"/> Cooler <u>3.2</u> °C <input type="checkbox"/> Cooler 6 _____ °C	<input type="checkbox"/> Box <input type="checkbox"/> Insent <input type="checkbox"/> Styrofoam <input type="checkbox"/> Cooler 2 _____ °C <input type="checkbox"/> Cooler 7 _____ °C	<input type="checkbox"/> Other <input type="checkbox"/> Damaged <input type="checkbox"/> Polyester <input type="checkbox"/> Cooler 3 _____ °C <input type="checkbox"/> Cooler 8 _____ °C	<input type="checkbox"/> Sufficient <input type="checkbox"/> Cooler 4 _____ °C <input type="checkbox"/> Cooler 9 _____ °C	<input type="checkbox"/> _____ °C <input type="checkbox"/> Cooler 5 _____ °C <input type="checkbox"/> Cooler 10 _____ °C
---	--	---	--	---	--

Comments:  PM was informed on non-compliant coolers immediately.

DISCREPANCIES				
LSID	LSCID	Sample Label ID/COC ID	Discrepancy Code	Corrective Action Code

REVIEWS  
 Sample Label/ID: \_\_\_\_\_ Date: 12/31/08  
 SRF: \_\_\_\_\_ Date: 12/31/08  
 PM: AMB Date: 1/5/09

LEGEND:

Code	Description-Sample Management	Code	Description-Sample Management	Code	Description-Project Management
A1	Analysis is not indicated in COC	E1	Preservative needed; sample has no preservative	R1	Hold sample(s); wait for further instructions
A2	Analysis is not indicated in label	E2	Preservative not needed but sample is preserved	R2	Proceed as indicated in COC
A3	Analysis is inconsistent in COC vis-a-vis label	F1	Not enough quantity of sampler	R3	Refer to attached instruction
B1	Sample ID is not indicated in COC	F2	Bubble is > 0.5mm	R4	Cannot do analysis
B2	Sample ID is not indicated in label	G1	Temperature is out of range (4 ± 2°C)	R5	_____
B3	Sample ID is inconsistent in COC vis-a-vis label	G2	Out of Holding Time	R6	_____
C1	Wrong container	G3	>20 % solid particles		
C2	Broken container	H1	_____		
C3	Leaking container	H2	_____		
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-a-vis label				

## 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

MWH LABORATORIES

262260

METHOD 3520C/8081A  
PESTICIDES

SDG#: 08L333





## CASE NARRATIVE

**CLIENT:** MWH LABORATORIES  
**PROJECT:** 262260  
**SDG:** 08L333

### METHOD 3520C/8081A PESTICIDES

Four (4) water samples were received on 12/31/08 for Pesticides analysis by Method 3520C/8081A in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW846, 3<sup>rd</sup> ed.

**1. Holding Time**

Analytical holding time was met.

**2. Instrument Performance and Calibration**

Initial calibration was calibrated for Pesticides, all RSDs were within 20%. All continue calibrations were analyzed at 12 hours interval and mean recoveries were within 85-115%. Endrin and DDT breakdown were within QC limits.

**3. Method Blank**

Method blank was free of contamination at the reporting limit.

**4. Surrogate Recovery**

Recoveries were within QC limit.

**5. Lab Control Sample/Lab Control Sample Duplicate**

All recoveries were within QC limits.

**6. Matrix Spike/Matrix Spike Duplicate**

No MS/MSD sample was designated in this SDG.

**7. Sample Analysis**

Samples were analyzed according to the prescribed QC procedures. All criteria were met.

When sample results are confirmed by a second column, the relative percentage difference (RPD) between the two results is calculated. If RPD is less than 40%, and no evidence of chromatographic problems, the higher result is reported. If RPD is greater than 40%, the chromatogram is checked for anomalies and results are selected based on the best professional judgment. If no evidence of any chromatographic problems, the higher result is reported.

LAB CHRONICLE  
PESTICIDES

Client : MWH LABORATORIES  
Project : 262260

SDG NO. : 08L333  
Instrument ID : GCT016

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis Date/Time	Extraction Date/Time	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLKTW	CPA002WB	1	NA	01/16/0922:36	01/05/0911:30	WA15116A	WA15111A	CPA002W	Method Blank
LCS1W	CPA002WL	1	NA	01/16/0922:53	01/05/0911:30	WA15117A	WA15111A	CPA002W	Lab Control Sample (LCS)
LCD1W	CPA002WC	1	NA	01/16/0923:11	01/05/0911:30	WA15118A	WA15111A	CPA002W	LCS Duplicate
HAINES CYN CRK HCC1122908	L333-01	0.97	NA	01/16/0923:28	01/05/0911:30	WA15119A	WA15111A	CPA002W	Field Sample
TJ POWDS IN TUP1N1122908	L333-02	0.94	NA	01/16/0923:45	01/05/0911:30	WA15120A	WA15111A	CPA002W	Field Sample
TJ POWDS OUT THPOUT122908	L333-03	0.94	NA	01/17/0900:02	01/05/0911:30	WA15121A	WA15111A	CPA002W	Field Sample
BIG T WASH BTW122908	L333-04	0.94	NA	01/17/0900:19	01/05/0911:30	WA15122A	WA15111A	CPA002W	Field Sample

FN - Filename  
% Moist - Percent Moisture

# **SAMPLE RESULTS**



METHOD 3520C/8081A  
PESTICIDES

```

=====
Client      : MWN LABORATORIES           Date Collected: 12/29/08
Project     : 262260                     Date Received: 12/31/08
Batch No.   : 08L333                     Date Extracted: 01/05/09 11:30
Sample ID   : HAINES CYN CRK HCC1122908 Date Analyzed: 01/16/09 23:28 ✓
Lab Smp ID  : L333-01                    Dilution Factor: 0.97
Lab File ID : WA15119A                   Matrix          : WATER
Ext Btch ID : CPA002W                     % Moisture     : NA
Calib. Ref.: WA15111A                     Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	ND (ND)	0.097	0.019 0.019
GAMMA-BHC (LINDANE)	ND (ND)	0.097	0.019 0.019
BETA-BHC	(ND) 0.028J	0.097	0.019 0.019
HEPTACHLOR	ND (ND)	0.097	0.019 0.019
DELTA-BHC	ND (ND)	0.097	0.019 0.019
ALDRIN	ND (ND)	0.097	0.019 0.019
HEPTACHLOR EPOXIDE	ND (ND)	0.097	0.019 0.019
GAMMA-CHLORDANE	ND (ND)	0.097	0.019 0.019
ALPHA-CHLORDANE	ND (ND)	0.097	0.019 0.019
ENDOSULFAM I	ND (ND)	0.097	0.019 0.019
4,4'-DDE	ND (ND)	0.19	0.019 0.019
DIELDRIN	ND (ND)	0.19	0.019 0.019
ENDRIN	ND (ND)	0.19	0.019 0.019
4,4'-DDD	ND (ND)	0.19	0.019 0.019
ENDOSULFAM II	ND (ND)	0.19	0.019 0.019
4,4'-DDT	ND (ND)	0.19	0.019 0.019
ENDRIN ALDEHYDE	ND (ND)	0.19	0.019 0.019
ENDOSULFAM SULFATE	ND (ND)	0.19	0.019 0.019
ENDRIN KETONE	ND (ND)	0.19	0.019 0.019
METHOXYCHLOR	ND (ND)	0.97	0.19 0.19
TOXAPHENE	ND (ND)	1.9	0.97 0.97

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	102 (93)	30-140
DECACHLOROBIPHENYL	110 (110)	40-150

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

METHOD 3520C/8081A  
PESTICIDES

```

=====
Client      : MWH LABORATORIES           Date Collected: 12/29/08
Project     : 262260                     Date Received: 12/31/08
Batch No.   : 08L333                     Date Extracted: 01/05/09 11:30
Sample ID   : TJ PONDS IN TJPINI122908   Date Analyzed: 01/16/09 23:45
Lab Samp ID : L333-02                     Dilution Factor: 0.94
Lab File ID : WA15120A                    Matrix          : WATER
Ext Btch ID : CPA002W                     % Moisture     : NA
Calib. Ref. : WA15111A                    Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	ND (ND)	0.094	0.019 0.019
GAMMA-BHC (LINDANE)	ND (ND)	0.094	0.019 0.019
BETA-BHC	(ND) 0.042J	0.094	0.019 0.019
HEPTACHLOR	ND (ND)	0.094	0.019 0.019
DELTA-BHC	ND (ND)	0.094	0.019 0.019
ALDRIN	ND (ND)	0.094	0.019 0.019
HEPTACHLOR EPOXIDE	ND (ND)	0.094	0.019 0.019
GAMMA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ALPHA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ENDOSULFAN I	ND (ND)	0.094	0.019 0.019
4,4'-DDE	ND (ND)	0.19	0.019 0.019
DIELDRIN	ND (ND)	0.19	0.019 0.019
ENDRIN	ND (ND)	0.19	0.019 0.019
4,4'-DDD	ND (ND)	0.19	0.019 0.019
ENDOSULFAN II	ND (ND)	0.19	0.019 0.019
4,4'-DDT	ND (ND)	0.19	0.019 0.019
ENDRIN ALDEHYDE	ND (ND)	0.19	0.019 0.019
ENDOSULFAN SULFATE	ND (ND)	0.19	0.019 0.019
ENDRIN KETONE	ND (ND)	0.19	0.019 0.019
METHOXYCHLOR	ND (ND)	0.94	0.19 0.19
TOXAPHENE	ND (ND)	1.9	0.94 0.94

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	101 (94)	30-140
DECACHLOROBIPHENYL	110 (110)	40-150

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

METHOD 3520C/8081A  
PESTICIDES

```

=====
Client      : MWH LABORATORIES           Date Collected: 12/29/08
Project     : 262260                     Date Received: 12/31/08
Batch No.   : 08L333                     Date Extracted: 01/05/09 11:30
Sample ID   : TJ PONDS OUT THPOUT122908 Date Analyzed: 01/17/09 00:02
Lab Samp ID : L333-03                    Dilution Factor: 0.94
Lab File ID : WA15121A                   Matrix          : WATER
Ext Btch ID : CPA002W                    % Moisture      : NA
Calib. Ref. : WA15111A                   Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	ND (ND)	0.094	0.019 0.019
GAMMA-BHC (LINDANE)	ND (ND)	0.094	0.019 0.019
BETA-BHC	ND (ND)	0.094	0.019 0.019
HEPTACHLOR	ND (ND)	0.094	0.019 0.019
DELTA-BHC	ND (ND)	0.094	0.019 0.019
ALDRIN	ND (ND)	0.094	0.019 0.019
HEPTACHLOR EPOXIDE	ND (ND)	0.094	0.019 0.019
GAMMA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ALPHA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ENDOSULFAN I	ND (ND)	0.094	0.019 0.019
4,4'-DDE	ND (ND)	0.19	0.019 0.019
DIELDRIN	ND (ND)	0.19	0.019 0.019
ENDRIN	ND (ND)	0.19	0.019 0.019
4,4'-DDD	ND (ND)	0.19	0.019 0.019
ENDOSULFAN II	ND (ND)	0.19	0.019 0.019
4,4'-DDT	ND (ND)	0.19	0.019 0.019
ENDRIN ALDEHYDE	ND (ND)	0.19	0.019 0.019
ENDOSULFAN SULFATE	ND (ND)	0.19	0.019 0.019
ENDRIN KETONE	ND (ND)	0.19	0.019 0.019
METHOXYCHLOR	ND (ND)	0.94	0.19 0.19
TOXAPHENE	ND (ND)	1.9	0.94 0.94

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	100 (96)	30-140
DECACHLOROBIPHENYL	111 (111)	40-150

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

METHOD 3520C/8081A  
PESTICIDES

```

=====
Client      : MWH LABORATORIES           Date Collected: 12/29/08
Project    : 262260                     Date Received: 12/31/08
Batch No.  : 08L333                     Date Extracted: 01/05/09 11:30
Sample ID  : BIG T WASH BTW122908       Date Analyzed: 01/17/09 00:19
Lab Samp ID: L333-04                    Dilution Factor: 0.94
Lab File ID: WA15122A                   Matrix          : WATER
Ext Btch ID: CPA002W                     % Moisture     : NA
Calib. Ref.: WA15111A                   Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	ND (ND)	0.094	0.019 0.019
GAMMA-BHC (LINDANE)	ND (ND)	0.094	0.019 0.019
BETA-BHC	ND (ND)	0.094	0.019 0.019
HEPTACHLOR	ND (ND)	0.094	0.019 0.019
DELTA-BHC	ND (ND)	0.094	0.019 0.019
ALDRIN	ND (ND)	0.094	0.019 0.019
HEPTACHLOR EPOXIDE	ND (ND)	0.094	0.019 0.019
GAMMA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ALPHA-CHLORDANE	ND (ND)	0.094	0.019 0.019
ENDOSULFAN I	ND (ND)	0.094	0.019 0.019
4,4'-DDE	ND (ND)	0.19	0.019 0.019
DIELDRIN	ND (ND)	0.19	0.019 0.019
ENDRIN	ND (ND)	0.19	0.019 0.019
4,4'-DDD	ND (ND)	0.19	0.019 0.019
ENDOSULFAN II	ND (ND)	0.19	0.019 0.019
4,4'-DDT	ND (ND)	0.19	0.019 0.019
ENDRIN ALDEHYDE	ND (ND)	0.19	0.019 0.019
ENDOSULFAN SULFATE	ND (ND)	0.19	0.019 0.019
ENDRIN KETONE	ND (ND)	0.19	0.019 0.019
METHOXYCHLOR	ND (ND)	0.94	0.19 0.19
TOXAPHENE	ND (ND)	1.9	0.94 0.94

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	101 (95)	30-140
DECACHLOROBIPHENYL	110 (110)	40-150

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



# **QC SUMMARIES**



METHOD 3520C/8081A  
PESTICIDES

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Client      : MWH LABORATORIES           Date Collected: NA
Project     : 262260                    Date Received: 01/05/09
Batch No.   : 08L333                    Date Extracted: 01/05/09 11:30
Sample ID   : MBLK1W                    Date Analyzed: 01/16/09 22:36
Lab Samp ID: CPA002WB                   Dilution Factor: 1
Lab File ID: WA15116A                   Matrix          : WATER
Ext Btch ID: CPA002W                     % Moisture      : NA
Calib. Ref.: WA15111A                    Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	ND (ND)	0.10	0.020   0.020
GAMMA-BHC (LINDANE)	ND (ND)	0.10	0.020   0.020
BETA-BHC	ND (ND)	0.10	0.020   0.020
HEPTACHLOR	ND (ND)	0.10	0.020   0.020
DELTA-BHC	ND (ND)	0.10	0.020   0.020
ALDRIN	ND (ND)	0.10	0.020   0.020
HEPTACHLOR EPOXIDE	ND (ND)	0.10	0.020   0.020
GAMMA-CHLORDANE	ND (ND)	0.10	0.020   0.020
ALPHA-CHLORDANE	ND (ND)	0.10	0.020   0.020
ENDOSULFAN I	ND (ND)	0.10	0.020   0.020
4,4'-DDE	ND (ND)	0.20	0.020   0.020
DIELDRIN	ND (ND)	0.20	0.020   0.020
ENDRIN	ND (ND)	0.20	0.020   0.020
4,4'-DDD	ND (ND)	0.20	0.020   0.020
ENDOSULFAN II	ND (ND)	0.20	0.020   0.020
4,4'-DDT	ND (ND)	0.20	0.020   0.020
ENDRIN ALDEHYDE	ND (ND)	0.20	0.020   0.020
ENDOSULFAN SULFATE	ND (ND)	0.20	0.020   0.020
ENDRIN KETONE	ND (ND)	0.20	0.020   0.020
METHOXYCHLOR	ND (ND)	1.0	0.20   0.20
TOXAPHENE	ND (ND)	2.0	1.0   1.0

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	95   (96)	30-130
DECACHLOROBIPHENYL	109   (109)	40-150

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: MWH LABORATORIES  
PROJECT: 262260  
BATCH NO.: 08L333  
METHOD: METHOD 3520C/8081A

MATRIX: WATER  
DILUTION FACTOR: 1 1 % MOISTURE: NA  
SAMPLE ID: MBLK1W  
LAB SAMP ID: CPA002W  
LAB FILE ID: WA15116A  
DATE EXTRACTED: 01/05/0911:30 01/05/0911:30  
DATE ANALYZED: 01/16/0922:36 01/16/0923:11  
PREP. BATCH: CPA002W  
CALIB. REF: WA15111A

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)	0.400	0.399 (0.394)	100 (98)	0.400	0.408 (0.408)	102 (102)	2 (3)	40-130	30
Heptachlor	ND (ND)	0.400	0.373 (0.409)	93 (102)	0.400	0.367 (0.407)	92 (102)	2 (0)	30-140	30
Aldrin	ND (ND)	0.400	0.396 (0.386)	99 (96)	0.400	0.393 (0.396)	98 (99)	1 (3)	40-130	30
Dieldrin	ND (ND)	0.400	0.394 (0.401)	98 (100)	0.400	0.397 (0.403)	99 (101)	1 (0)	60-140	30
Endrin	ND (ND)	0.400	0.386 (0.399)	96 (100)	0.400	0.393 (0.400)	98 (100)	2 (0)	50-140	30
4,4'-DDT	ND (ND)	0.400	0.427 (0.405)	107 (101)	0.400	0.427 (0.403)	107 (101)	0 (0)	60-140	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	0.400	0.406 (0.353)	102 (88)	0.400	0.417 (0.404)	104 (101)	30-130
Decachlorobiphenyl	0.400	0.430 (0.433)	108 (108)	0.400	0.436 (0.437)	109 (109)	40-150