

Harding Lawson Associates

A Report Prepared for

East Bay Municipal Utility District  
Special District No. 1  
P.O. Box 24055  
Oakland, California 94623

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HAZARDOUS MATERIALS/  
WASTE PROGRAM

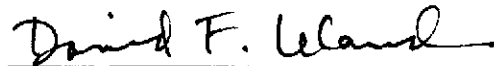
**REPORT OF SYSTEM MONITORING:  
APRIL 16 THROUGH MAY 1, 1988  
DEWATERING EFFLUENT TREATMENT SYSTEM  
CHINATOWN REDEVELOPMENT PROJECT AREA  
OAKLAND, CALIFORNIA**

HLA Job No. 9382,018.02

Submitted on behalf of:

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## I INTRODUCTION

This report discusses the operation and monitoring of the dewatering effluent treatment system at 10th and Webster streets, Oakland, California, between April 16 and May 1, 1988. The system is treating water produced during ground-water dewatering of the block bounded by 10th, 11th, and Webster, and Franklin streets in conjunction with excavation and construction in progress at the site. It is designed to remove petroleum hydrocarbons from dewatering effluent before the effluent is discharged to the sanitary sewer.

This report has been prepared by Harding Lawson Associates (HLA) and is submitted in compliance with the Temporary Wastewater Discharge Permit issued by the East Bay Municipal Utility District (EBMUD) to the City of Oakland Redevelopment Agency (Agency) in response to the Agency's Wastewater Discharge Permit Application dated February 1, 1988.

## II TREATMENT SYSTEM OPERATION

The dewatering effluent treatment system was installed March 8, 1988, and has been in continuous operation since March 14. Water is treated by pumping it through four carbon contactors arranged in pairs. Organic compounds in the influent are adsorbed on the carbon. Each pair of contactors is arranged in parallel, and together constitute a module; the two modules are arranged in series. The system is configured so that water from the dewatering wells may be pumped through either module first. The system also comprises a holding tank, pumps, filters, piping, and instrumentation. Four water sampling ports - one influent, two intermediate, and one effluent - enable water samples to be collected at significant stages of the treatment process. The intermediate ports are located between the two modules so the effectiveness of the first pair of contactors in reducing influent concentrations can be monitored. Depending on the configuration of modules, only one of these ports is intermediate in the system at any one time.

From April 15 to May 1, total discharge of the system was 395,400 gallons, based on readings of the flow totalizing meter located in the discharge line. Average flow for this period was 17.2 gallons per minute (gpm), with daily average flows ranging from 7.7 to 37.1 gpm.

On April 18, overflow of one of the 21,000-gallon influent storage tanks was observed. Total volume of the overflow is estimated at 100-3000 gallons. The overflow was caused by malfunctioning of a valve controlling flow into Tank T-1 which lead to reduced flow through the system and accumulation of influent water in the storage tanks. Malfunctioning of the valve was apparently caused by deposition of fine particles in the valve. Influent water exhibited increased levels of fine particles during the period

prior to the overflow as a result of introduction into the influent of rainfall runoff exhibiting high suspended solids levels. The overflow was reported to the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) on April 20.

To prevent channeling of water through the carbon, and resulting potential for insufficient carbon contact times and contact volumes, the first module of the system, comprising Vessels 1 and 2, was backwashed April 20. On April 20, backflow was initiated in Vessel 1 at 62 gpm and was continued for 10 minutes. In Vessel 2, backflow was initiated at 60 gpm and was maintained for 10 minutes.

During the backwash process, all effluent valves were closed. Backwash water was collected in Tank T1, and then was treated by passing it through the system prior to discharge to the sanitary sewer.

High pressure differentials across Vessels 1 and 2 were observed after these vessels were backwashed on April 20. These differentials were attributed to passage of fine soil particles through the filters and their subsequent buildup in the carbon. To alleviate this problem, carbon in Vessels 1 and 2 was changed on April 22 by Northwestern Carbon of Anderson, California.

After the carbon changeout, system configuration was changed to direct influent to Vessel 4. This vessel was operated in series with Vessel 2 from April 22 to April 24. Vessels 1 and 3 were not operated during this period.

Leakage at Vessel 3 was observed on April 24. The leakage is attributed to buildup of fine particles in the influent valve to Vessel 3 which did not permit complete shut off of the valve. This in turn lead to accumulation of water and increases in pressure to levels that exceeded vessel gasket seal thresholds and resulted in leakage. Because of the leakage and high pressure differentials across Vessels 2 and 4, the system

configuration was modified on April 25 to operate Vessels 3 and 4 in parallel, connected in series with Vessels 1 and 2 in parallel.

The second module, comprising Vessels 3 and 4, was backwashed April 25. Both vessels were backwashed at 60 gpm for 10 minutes.

As of May 2, treated effluent is being discharged to the storm drain, and is no longer being discharged to EBMUD via the sanitary sewer.

### III TREATMENT SYSTEM MONITORING

Harding Lawson Associates

#### A. Sample Collection and Analysis

Samples of treatment system water were collected daily during this reporting period from the influent, intermediate, and effluent sampling ports. Quality Assurance/Quality Control samples consisting of daily trip blanks and weekly duplicates of effluent samples were also collected.

All treatment system samples collected during this period were analyzed by WESCO Laboratories, Novato, California, for total petroleum hydrocarbons (TPH) as gasoline by EPA Test Method 8015 and for volatile organic compounds by EPA Test Method 602. Effluent samples and trip blanks were also analyzed for organic priority pollutants by EPA Test Methods 624 and 625.

Results of analyses of influent water samples collected April 5 through May 1 are summarized in Table 1. Results of analyses of intermediate, effluent and blank samples collected April 14 through May 1 are summarized in Tables 2 through 4. Tabulated values for April 18 through May 1 are based on verbal reports from WESCO, and are subject to revision pending receipt of written reports, which will be presented in a subsequent treatment system monitoring report.

Laboratory reports for treatment system samples collected April 3 through 17 are presented in the Appendix.

#### B. Discharge Limit Exceedences

There were no exceedences of permitted effluent discharge limits during this reporting period.



#### IV RESULTS

Results of influent, intermediate, and effluent sample analyses for TPH, and EPA Test Method 602, 624 and 625 compounds indicate that on all days the treatment system removed these constituents to detection levels. No detectable levels of any Method 602, 624 or 625 compounds have been found in effluent samples during this reporting period.

Several compounds have been detected sporadically in the trip blank. Methylene chloride was detected on April 15 and 21 at 1.7 and 1.5 ppb, respectively. Ethylbenzene and xylenes were detected by EPA Test Method 602 analysis on April 6 at 1.4 and 1.3 ppb, respectively.

## V HAZARDOUS WASTE SHIPMENTS AND AERATION OF STOCKPILED SOILS

Approximately 6,000 pounds of spent carbon were removed by Northwestern Carbon of Anderson, California from Vessels 1 and 2 on April 22. The carbon was transported to Northwestern facilities in Anderson for regeneration.

During this reporting period, soils exhibiting evidence of the presence of petroleum hydrocarbons unearthed in the northeastern corner of the site have been aerated and restockpiled. Samples of these soils have been collected and submitted to WESCO for analysis to confirm aeration of hydrocarbons. At the present time, approximately 1,800 yd<sup>3</sup> are stockpiled on site. Approximately 200 yd<sup>3</sup> of soils aerated to remove hydrocarbons have been transported from the site. After aeration, these soils exhibited TPH concentrations of less than 100 parts per million (ppm), which is the RWQCB guideline for designated wastes. The soils were transported by Charles Campanella, Inc. to the West Contra Costa Sanitary Landfill in Richmond, California for disposal.

Activities associated with soils handling and aeration are being conducted with the permission of the Bay Area Air Quality Management District (BAAQMD) and in accordance with BAAQMD regulations, in particular Regulation 8-40.

**VI ACTIVITIES PLANNED: MAY 1988**

Normal operations, maintenance, and monitoring are planned for May 1988.

TABLES

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES

HLA SAMPLE ID #	88140502	88140402	88140701	88140801	88140901	88141001	88151102	88151202	88151302
DATE	04/05	04/06	04/07	04/08	04/09	04/10	04/11	04/12	04/13

TEST METHOD/ COMPOUNDS

EPA 602									
Benzene	34	3.7	50	23	25	44	37	19	25
Toluene	39	1.2	53	15	30	18	13	10	10
Chlorobenzene	22.5	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	14	11.5	3	7.5
Ethylbenzene	MD < 0.2	MD < 0.2	1.2	MD < 0.2	0.5	1.6	MD < 0.2	MD < 0.2	1
Xylenes	16	1.2	16	4.2	13	4	MD < 0.2	6.5	4
1,2-Dichlorobenzene	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
All other 602 compounds	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2

TPH									
Gasoline	489	54	1087	370	350	390	377	180	200
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT

MD - Not detected at stated detection limit.

NT - Not tested.

All results reported in parts per billion (ppb).

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES

HLA SAMPLE ID #	DATE	88151404	88152101	88161601	88161701	88161801	88161902	88162002	88162101	88162201
	04/14		04/15	04/16	04/17	04/18	04/19	04/20	04/21	04/22
TEST METHOD/ COMPOUNDS										
EPA 602										
Benzene	3.4	16.9	6.7	3.0	22	15	20	17	7.9	
Toluene	1.4	8.5	1.6	ND < 0.2	1.3	4.4	5.5	6.6	ND < 0.2	
Chlorobenzene	1.0	5.0	3.0	ND < 0.2	5.2	4.3	5.6	6.0	ND < 0.2	
Ethylbenzene	ND < 0.2	0.4	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	0.8	ND < 0.2	
Xylenes	ND < 0.2	3.6	ND < 0.2	ND < 0.2	ND < 0.2	2.2	2.0	5.5	ND < 0.2	
1,2-Dichlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	0.26	ND < 0.2	ND < 0.2	ND < 0.2	
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	0.26	ND < 0.2	ND < 0.2	ND < 0.2	
TPH										
Gasoline	120	137	86	39	153	110	140	145	ND < 50	
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT	

-----  
 ND - Not detected at stated detection limit.

NT - Not tested.

All results reported in parts per billion (ppb).

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES

HLA SAMPLE ID #	DATE	88162302	88162402	88172501	88172602	88172701	88172802	88172902	88173002	88180102
	04/23	04/24	04/25	04/26	04/27	04/28	04/29	04/30	05/01	
TEST METHOD/ COMPOUNDS										
EPA 602										
Benzene	20	31	64	24	18	17	45	47	33	
Toluene	3.3	13	26	2.6	1.9	2.9	18	22	1.9	
Chlorobenzene	2.8	6.5	7.9	3.7	2.0	2.3	3.2	6.0	3.5	
Ethylbenzene	MD < 0.2	0.7	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	
Xylenes	0.6	6.6	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	8.6	17	MD < 0.2	
1,2-Dichlorobenzene	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	1.2	MD < 0.2	MD < 0.2	
All other 602 compounds	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	
TPH										
Gasoline	85	190	350	140	70	84	260	330	180	
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT	

MD - Not detected at stated detection limit.

NT - Not tested.

All results reported in parts per billion (ppb).

TABLE 2. TREATMENT SYSTEM WATER ANALYSIS: INTERMEDIATE SAMPLES

HLA SAMPLE ID #	88151403	88152102	88151602	88151702	88161802	88161901	88162001	88162102	88162202
DATE	04/14	04/15	04/16	04/17	04/18	04/19	04/20	04/21	04/22

TEST METHOD/COMPOUNDS

EPA 602									
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	2.3	2.5	2.9	ND < 0.2	ND < 0.2	3.6	ND < 0.2	3.0	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Chlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2

TPH

Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT

ND - Not detected at stated detection limit.

NT - Not tested.

All results reported in parts per billion (ppb).



TABLE 2. TREATMENT SYSTEM WATER ANALYSIS: INTERMEDIATE SAMPLES

HLA SAMPLE ID #	DATE	88162301	88162401	88172502	88172601	88172702	88172801	88172901	88173001	88173001	88173001
	04/23	0.2	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/24	0.2	1.4	0.2	0.84	0.2	0.2	0.2	0.2	0.2	0.2
	04/25	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/26	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/27	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/28	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/29	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	04/30	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	05/01	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

TEST METHOD/COMPOUNDS

EPA 602											
Benzene	ND < 0.2	0.8	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	3.4	1.4	ND < 0.2	0.84	0.2	0.2	0.2	0.2	0.2	0.2	3.9
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Chlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2

TPH

Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT

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 ND - Not detected at stated detection limit.

NT - Not tested.

All results reported in parts per billion (ppb).

TABLE 3. TREATMENT SYSTEM WATER ANALYSIS: EFFLUENT SAMPLES

HLA SAMPLE ID #	88151401	88152103	88151604	88151703	88161803	88161904	88162003	88162103	88162203
DATE	04/14	04/15	04/16	04/17	04/18	04/19	04/20	04/21	04/22
TOTAL FLOW (THOUSAND GALLONS)	896.6	920.0	942.5	956.3	980.4	1033.8	1068	1087.5	1110
AVERAGE FLOW (GPM)	18.3	16.2	15.6	9.6	16.7	37.1	23.8	13.5	16

TEST METHOD/COMPOUNDS

EPA 602	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
Benzene	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
Toluene	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
Ethylbenzene	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
Xylenes	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
Diphenylhydrazine	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
All other 602 compounds	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2	MD < 0.2
TPH	MD < 50	MD < 50	MD < 50	MD < 50	MD < 50	MD < 50	MD < 50	MD < 50	MD < 50
Gasoline	NT	NT	NT	NT	NT	NT	NT	NT	NT
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 624	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5
Toluene	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5
Methylene Chloride	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5
All other compounds	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5	MD < 0.5
EPA 625	MD	MD	MD	MD	MD	MD	MD	MD	MD
All compounds	MD	MD	MD	MD	MD	MD	MD	MD	MD

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 ND - Not detected at stated detection limit.

NT - Not Tested.

NA - Analytic results not yet available.

All results reported in parts per billion (ppb).

TABLE 3. TREATMENT SYSTEM WATER ANALYSIS: EFFLUENT SAMPLES

HLA SAMPLE ID #	88162304	8162404	88172503	88172603	88172703	88172804	88172904	88173004	88170103
DATE	04/23	04/24	04/25	04/26	04/27	04/28	04/29	04/30	05/01
TOTAL FLOW (THOUSAND GALLONS)	1140.7	1157.2	1168.3	1197.3	1227.8	1251.8	1270.0	1290.2	1315.4
AVERAGE FLOW (GPM)	22	11.6	7.7	20	21.2	16.7	12.6	14.0	17.5

TEST METHOD/COMPOUNDS

EPA 602	88162304	8162404	88172503	88172603	88172703	88172804	88172904	88173004	88170103
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Diphenylhydrazine	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2

TPH

Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT

EPA 624

Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
All other compounds	NA	NA	NA	NA	NA	NA	NA	NA	NA

EPA 625

All compounds	NA	NA	NA	NA	NA	NA	NA	NA	NA
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ND - Not detected at stated detection limit.

NT - Not Tested.

NA - Analytic results not yet available.

All results reported in parts per billion (ppb).

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES

HLA SAMPLE ID #	DATE	88151402	88152104	88151605	88151704	88161804	88161903	88162004	88162104	88162204
	04/14	04/15	04/16	04/17	04/18	04/19	04/20	04/21	04/22	
TEST METHOD/COMPOUNDS										
EPA 602										
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	1.4	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	1.3	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH										
Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 624										
Toluene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	NA
Methylene Chloride	ND < 0.5	0.5	1.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	NA
Diphenylhydrazine	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	NA
All other compounds	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	NA
EPA 625										
All compounds	ND	NA	ND	ND	ND	ND	ND	ND	NA	NA

-----  
 ND - Not detected at stated detection level.

NT - Not Tested.

NA - Analytic results not yet available.

All results reported in parts per billion (ppb).

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES

HLA SAMPLE ID #	DATE	88162403	88172504	88172604	88172704	88172803	88172903	88173003	88180104
		04/23	04/25	04/26	04/27	04/28	04/29	04/30	05/01
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 624									
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diphenylhydrazine	NA	NA	NA	NA	NA	NA	NA	NA	NA
All other compounds	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA 625									
All compounds	NA	NA	NA	NA	NA	NA	NA	NA	NA

ND - Not detected at stated detection level.

NT - Not Tested.

NA - Analytic results not yet available.

All results reported in parts per billion (ppb).

Appendix

LABORATORY ANALYTICAL RESULTS  
FOR TREATMENT SYSTEM SAMPLES



Report Date: 18-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: Tim Walker  
 Preservatives: none  
 Analyst: Farah  
 WESCO JOB #: HLA 0831.31-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
 Date Sampled: 03-Apr-88  
 Site: City of Oakland  
 Date Received: 03-Apr-88  
 Extract/Digest/Purge  
 Date: 03-Apr-88  
 Analysis Completion  
 Date: 03-Apr-88  
 Hold Time: 0 days

LAB #: 8-3736

MATRIX: WATER

CLIENT'S ID: 140301

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	348	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 120 %

LAB #: 8-3737

MATRIX: WATER

CLIENT'S ID: 140302

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 101 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: Tim Walker  
Preservatives: none  
Analyst: Farah  
WESCO JOB #: HLA 0831.31-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
Date Sampled: 03-Apr-88  
Site: City of Oakland  
Date Received: 03-Apr-88  
Extract/Digest/Purge  
Date: 03-Apr-88  
Analysis Completion  
Date: 03-Apr-88  
Hold Time: 0 days

=====  
LAB #: 8-3738  
CLIENT'S ID: 140303  
=====

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene

103 %

=====  
LAB #: 8-3739  
CLIENT'S ID: 140304  
=====


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene

79 %

N.D.: Not Detected

  
-----  
Analytical Supervisor



Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: Tim Walker  
Preservatives: none  
Analyst: Farah  
WESCO JOB #: HLA 0831.31-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 03-Apr-88  
Site: City of Oakland  
Date Received: 03-Apr-88  
Extract/Digest/Purge  
Date: 03-Apr-88  
Analysis Completion  
Date: 03-Apr-88  
Hold Time: 0 days

LAB #: 8-3736  
CLIENT'S ID: 140301

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	50	0.2
Toluene-----	44	0.2
Chlorobenzene-----	2.5	0.2
Ethylbenzene-----	33	0.2
Xylene-----	348	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      120 %

LAB #: 8-3737  
CLIENT'S ID: 140302


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	0.3	0.2
Toluene-----	3	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      101 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: Tim Walker  
Preservatives: none  
Analyst: Farah  
WESCO JOB #: HLA 0831.31-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 03-Apr-88  
Site: City of Oakland  
Date Received: 03-Apr-88  
Extract/Digest/Purge  
Date: 03-Apr-88  
Analysis Completion  
Date: 03-Apr-88  
Hold Time: 0 days

LAB #: 8-3738

MATRIX: WATER

CLIENT'S ID: 140303

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      103 %

LAB #: 8-3739

MATRIX: WATER


CLIENT'S ID: 140304

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      79 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 03-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 03-Apr-88  
 Submitted by: Tim Walker Extract/Digest/Purge  
 Preservatives: none Date: 06-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.31-L Date: 06-Apr-88  
 Analytical Method: EPA 624 Hold Time 3 days

=====

LAB # 8-3740 MATRIX: WATER  
 CLIENT'S ID 140303

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

-----

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	99 %
Toluene-d8	102 %
4-Bromofluorobenzene	87 %

N. D.: Not Detected

-----  
 Analytical Supervisor

Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 03-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 03-Apr-88  
 Submitted by: Tim Walker Extract/Digest/Purge  
 Preservatives: none Date: 06-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.31-L Date: 06-Apr-88  
 Analytical Method: EPA 624 Hold Time 3 days

LAB # 8-3741  
 CLIENT'S ID 140304

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	16	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	0.8	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	107 %
Toluene-d8	107 %
4-Bromofluorobenzene	93 %

N. D.: Not Detected

*AH*  
 Analytical Supervisor

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB # 8-3742

MATRIX: WATER

CLIENT ID: 140303

=====

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	8-3742	MATRIX:	WATER
CLIENT ID:	140303		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	40 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	49 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB # 8-3742

MATRIX: WATER

CLIENT ID: 140303

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery

2-Fluorophenol	22 %
Phenol-d5	11 %
2,4,6-Tribromophenol	26 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	B-3742	MATRIX:	WATER
CLIENT ID:	140303		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	40 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	49 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor



Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB # B-3743

MATRIX: WATER

CLIENT ID: 140304

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Fyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	8-3743	MATRIX:	WATER
CLIENT ID:	140304		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	39 %
2-Fluorobiphenyl	39 %
Terphenyl-d14	49 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	03-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	03-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	06-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.31-L	Date:	08-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

```
=====
LAB #      8-3743                MATRIX:  WATER
CLIENT ID: 140304
=====
```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	27 %
Phenol-d5	15 %
2,4,6-Tribromophenol	29 %

-----

Report Date: 15-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: Tim Walker  
Preservatives: none  
Analyst: Moezzi  
WESCO JOB #: HLA 0831.31-L  
Analytical Method: EPA 625

Client Contract/PO: 09382,026.02  
Date Sampled: 03-Apr-88  
Site: City of Oakland  
Date Received: 03-Apr-88  
Extract/Digest/Purge  
Date: 06-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Holding Time, Days 3

=====  
LAB # 8-3743 MATRIX: WATER  
CLIENT ID: 140304  
=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


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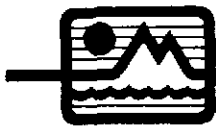
QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	39 %
2-Fluorobiphenyl	39 %
Terphenyl-d14	49 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor



# WESCO Laboratories

Report Date: 18-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Lewis  
 WESCO JOB #: HLA 0831.32-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
 Date Sampled: 04-Apr-88  
 Site: City of Oakland  
 Date Received: 04-Apr-88  
 Extract/Digest/Purge  
 Date: 04-Apr-88  
 Analysis Completion  
 Date: 04-Apr-88  
 Hold Time: 0 days

LAB #: 8-3761  
 CLIENT'S ID: 140401

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	320	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 100 %

LAB #: 8-3762  
 CLIENT'S ID: 140402

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 116 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Lewis  
WESCO JOB #: HLA 0831.32-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
Date Sampled: 04-Apr-88  
Site: City of Oakland  
Date Received: 04-Apr-88  
Extract/Digest/Purge  
Date: 04-Apr-88  
Analysis Completion  
Date: 04-Apr-88  
Hold Time: 0 days

=====  
LAB #: 8-3763  
CLIENT'S ID: 140403  
=====

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike % Recovery  
Fluorobenzene 123 %


=====  
LAB #: 8-3765  
CLIENT'S ID: 140404  
=====

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike % Recovery  
Fluorobenzene 120 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Lewis  
WESCO JOB #: HLA 0831.32-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 04-Apr-88  
Site: City of Oakland  
Date Received: 04-Apr-88  
Extract/Digest/Purge  
Date: 04-Apr-88  
Analysis Completion  
Date: 04-Apr-88  
Hold Time: 0 days

LAB #: 8-3761

MATRIX: WATER

CLIENT'S ID: 140401

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	34	0.2
Toluene-----	32	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1.2	0.2
Xylene-----	4.3	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      100 %

LAB #: 8-3762

MATRIX: WATER


CLIENT'S ID: 140402

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	1.1	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      116 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Lewis  
WESCO JOB #: HLA 0831.32-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 04-Apr-88  
Site: City of Oakland  
Date Received: 04-Apr-88  
Extract/Digest/Purge  
Date: 04-Apr-88  
Analysis Completion  
Date: 04-Apr-88  
Hold Time: 0 days

LAB #: 8-3763

MATRIX: WATER

CLIENT'S ID: 140403

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      123 %

LAB #: 8-3765

MATRIX: WATER

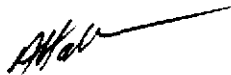
CLIENT'S ID: 140404

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      120 %

N.D.: Not Detected

  
-----  
Analytical Supervisor



Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 04-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 04-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 06-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.32-L Date: 06-Apr-88  
 Analytical Method: EPA 624 Hold Time 2 days

LAB # 8-3764 MATRIX: WATER  
 CLIENT'S ID 140403

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	115 %
Toluene-d8	107 %
4-Bromofluorobenzene	88 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 04-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 04-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 06-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.32-L Date: 06-Apr-88  
 Analytical Method: EPA 624 Hold Time 2 days


LAB # 8-3766 MATRIX: WATER  
 CLIENT'S ID 140404

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	111 %
Toluene-d8	109 %
4-Bromofluorobenzene	81 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

=====

LAB #	8-3767	MATRIX:	WATER
CLIENT ID:	140403		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

=====

LAB # 8-3767

MATRIX: WATER

CLIENT ID: 140403

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	40 %
2-Fluorobiphenyl	44 %
Terphenyl-d14	60 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Furge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

=====

LAB # 8-3767

MATRIX: WATER

CLIENT ID: 140403

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery

2-Fluorophenol	21 %
Phenol-d5	13 %
2,4,6-Tribromophenol	10 %

-----

Report Date: 15-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Moezzi  
 WESCO JOB #: HLA 0831.32-L  
 Analytical Method: EPA 625

Client Contract/PO: 09382,026.02  
 Date Sampled: 04-Apr-88  
 Site: City of Oakland  
 Date Received: 04-Apr-88  
 Extract/Digest/Furge  
 Date: 08-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Holding Time, Days 4

LAB # 8-3767

MATRIX: WATER


CLIENT ID: 140403

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	40 %
2-Fluorobiphenyl	44 %
Terphenyl-d14	60 %

N.D.: Not Detected  
 n.d.: not determined  
 N.A.: Not Applicable

  
 Analytical Supervisor

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Furge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

=====

LAB # 8-3768

MATRIX: WATER

CLIENT ID: 140404

=====

Report Date:	15-Apr-88	Client Contract/PD:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

=====

LAB #      8-3768

MATRIX: WATER

CLIENT ID:            140404

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	36 %
2-Fluorobiphenyl	36 %
Terphenyl-d14	59 %

-----



Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

```
=====
LAB #      8-3768                MATRIX:  WATER
CLIENT ID: 140404
=====
```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	28 %
Phenol-d5	19 %
2,4,6-Tribromophenol	24 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	04-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	04-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.32-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	4

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LAB #	B-3768	MATRIX:	WATER
CLIENT ID:	140404		

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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	36 %
2-Fluorobiphenyl	36 %
Terphenyl-d14	59 %

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N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
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Analytical Supervisor



TREATMENT SYSTEM

**WESCO Laboratories**

4-5-88

Report Date: 14-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: Tim Walker  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.33-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
 Date Sampled: 05-Apr-88  
 Site: City of Oakland  
 Date Received: 05-Apr-88  
 Extract/Digest/Purge Date: 06-Apr-88  
 Analysis Completion Date: 06-Apr-88  
 Hold Time: 1 day

LAB #: 8-3777

MATRIX: WATER

CLIENT'S ID: 140501

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	489	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 99 %

LAB #: 8-3778

MATRIX: WATER

CLIENT'S ID: 140502

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 94 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 14-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: Tim Walker  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.33-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
Date Sampled: 05-Apr-88  
Site: City of Oakland  
Date Received: 05-Apr-88  
Extract/Digest/Purge  
Date: 06-Apr-88  
Analysis Completion  
Date: 06-Apr-88  
Hold Time: 1 day

LAB #: 8-3779

MATRIX: WATER

CLIENT'S ID: 140503

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
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Gasoline-----	N.D.	50.0
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QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 100 %

LAB #: 8-3781

MATRIX: WATER

CLIENT'S ID: 140504


COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
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Gasoline-----	N.D.	50.0
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QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 98 %

N.D.: Not Detected

  
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Analytical Supervisor

Report Date: 14-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: Tim Walker  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.33-L  
 Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
 Date Sampled: 05-Apr-88  
 Site: City of Oakland  
 Date Received: 05-Apr-88  
 Extract/Digest/Purge Date: 06-Apr-88  
 Analysis Completion Date: 06-Apr-88  
 Hold Time: 1 day

LAB #: 8-3777

MATRIX: WATER

CLIENT'S ID: 140501

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	0.9	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 94 %

LAB #: 8-3778

MATRIX: WATER

CLIENT'S ID: 140502

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	34	0.2
Toluene	39	0.2
Chlorobenzene	16	0.2
Ethylbenzene	N.D.	0.2
Xylene	16	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 99 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 14-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: Tim Walker  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.33-L  
 Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
 Date Sampled: 05-Apr-88  
 Site: City of Oakland  
 Date Received: 05-Apr-88  
 Extract/Digest/Purge  
 Date: 06-Apr-88  
 Analysis Completion  
 Date: 06-Apr-88  
 Hold Time: 1 day

LAB #: 8-3779

MATRIX: WATER

CLIENT'S ID: 140503

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 100 %

LAB #: 8-3781

MATRIX: WATER

CLIENT'S ID: 140504

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 98 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor

Report Date: 14-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 05-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 05-Apr-88  
 Submitted by: Tim Walker Extract/Digest/Purge  
 Preservatives: none Date: 10-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.33-L Date: 10-Apr-88  
 Analytical Method: EPA 624 Hold Time 5 days

LAB # 8-3780 MATRIX: WATER  
 CLIENT'S ID 140503

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 1,2-Dichloroethane-d4 103 %  
 Toluene-d8 103 %  
 4-Bromofluorobenzene 82 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 14-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 05-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 05-Apr-88  
 Submitted by: Tim Walker Extract/Digest/Purge  
 Preservatives: none Date: 10-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.33-L Date: 10-Apr-88  
 Analytical Method: EPA 624 Hold Time 5 days

LAB # 8-3782  
 CLIENT'S ID 140504

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	103 %
Toluene-d8	103 %
4-Bromofluorobenzene	100 %

N. D.: Not Detected

  
 Analytical Supervisor



Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB # 8-3783

MATRIX: WATER

CLIENT ID: 140503

=====

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	8-3783	MATRIX:	WATER
CLIENT ID:	140503		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	36 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	54 %

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Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	8-3783	MATRIX:	WATER
CLIENT ID:	140503		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	24 %
Phenol-d5	15 %
2,4,6-Tribromophenol	M. I.

-----

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	B-3783	MATRIX:	WATER
CLIENT ID:	140503		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	36 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	54 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable  
M.I.: Matrix Interference

  
-----  
Analytical Supervisor

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB # 8-3784

MATRIX: WATER

CLIENT ID: 140504

=====

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	8-3784	MATRIX:	WATER
CLIENT ID:	140504		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	44 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	57 %

-----

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	B-3784	MATRIX:	WATER
CLIENT ID:	140504		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA	
Acid Surrogate Spike % Recovery	
2-Fluorophenol	15 %
Phenol-d5	8 %
2,4,6-Tribromophenol	20 %

-----

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	05-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	05-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.33-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	3

=====

LAB #	B-3784	MATRIX:	WATER
CLIENT ID:	140504		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	44 %
2-Fluorobiphenyl	40 %
Terphenyl-d14	57 %

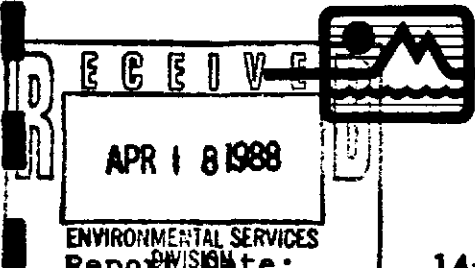
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N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable



-----  
Analytical Supervisor





**WESCO Laboratories**

ENVIRONMENTAL SERVICES  
Report DIVISION

Date: 14-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.34-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
 Date Sampled: 06-Apr-88  
 Site: City of Oakland  
 Date Received: 06-Apr-88  
 Extract/Digest/Purge Date: 06-Apr-88  
 Analysis Completion Date: 06-Apr-88  
 Hold Time: 0 days

LAB #: 8-3840  
 CLIENT'S ID: 140602

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	54	50.0

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 109 %

LAB #: 8-3841  
 CLIENT'S ID: 140603

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 120 %

N.D.: Not Detected

-----  
 Analytical Supervisor

Report Date: 14-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.34-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
Date Sampled: 06-Apr-88  
Site: City of Oakland  
Date Received: 06-Apr-88  
Extract/Digest/Purge  
Date: 06-Apr-88  
Analysis Completion  
Date: 06-Apr-88  
Hold Time: 0 days

LAB #: 8-3842  
CLIENT'S ID: 140604

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 111 %


LAB #: 8-3847  
CLIENT'S ID: 140601

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 119 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 14-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.34-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 06-Apr-88  
Site: City of Oakland  
Date Received: 06-Apr-88  
Extract/Digest/Purge  
Date: 06-Apr-88  
Analysis Completion  
Date: 06-Apr-88  
Hold Time: 0 days

LAB #: 8-3840

MATRIX: WATER

CLIENT'S ID: 140602

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	3.7	0.2
Toluene-----	1.2	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	1.2	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 109 %

LAB #: 8-3841

MATRIX: WATER

CLIENT'S ID: 140603

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 120 %

N.D.: Not Detected

  
Analytical Supervisor

Report Date: 14-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.34-L  
 Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
 Date Sampled: 06-Apr-88  
 Site: City of Oakland  
 Date Received: 06-Apr-88  
 Extract/Digest/Purge  
 Date: 06-Apr-88  
 Analysis Completion  
 Date: 06-Apr-88  
 Hold Time: 0 days

=====

LAB #: 8-3842 MATRIX: WATER  
 CLIENT'S ID: 140604

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 111 %

=====

LAB #: 8-3847 MATRIX: WATER  
 CLIENT'S ID: 140601

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 119 %

N.D.: Not Detected

-----  
 Analytical Supervisor

Report Date: 14-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 06-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 06-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 07-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.34-L Date: 07-Apr-88  
 Analytical Method: BPA 624 Hold Time 1 day

LAB # 8-3843 MATRIX: WATER  
 CLIENT'S ID 140603

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	109 %
Toluene-d8	104 %
4-Bromofluorobenzene	103 %

N. D.: Not Detected

-----  
 Analytical Supervisor

Report Date:	14-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	07-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.34-L	Date:	07-Apr-88
Analytical Method:	EPA 624	Hold Time	1 day

=====

LAB #	8-3844	MATRIX:	WATER
CLIENT'S ID	140604		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

-----

QUALITY CONTROL DATA	Percent Recovery
Surrogate Spike	
1,2-Dichloroethane-d4	109 %
Toluene-d8	99 %
4-Bromofluorobenzene	103 %

N. D.: Not Detected

-----  
Analytical Supervisor

Report Date: 13-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund/Moezzi  
 WESCO JOB #: HLA 0831.34-L  
 Analytical Method: EPA 625

Client Contract/PO: 09382,026.02  
 Date Sampled: 06-Apr-88  
 Site: City of Oakland  
 Date Received: 06-Apr-88  
 Extract/Digest/Purge  
 Date: 08-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Holding Time, Days: 2

=====

LAB # B-3845

MATRIX: WATER

CLIENT ID: 140603

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy) methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	13-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.34-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	8-3845	MATRIX:	WATER
CLIENT ID:	140603		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	35 %
2-Fluorobiphenyl	91 %
Terphenyl-d14	51 %

-----



Report Date:	13-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0631.34-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	8-3845	MATRIX:	WATER
CLIENT ID:	140603		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA	
Acid Surrogate Spike % Recovery	
2-Fluorophenol	27 %
Phenol-d5	15 %
2,4,6-Tribromophenol	21 %

-----

Report Date: 13-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund/Moezzi  
 WESCO JOB #: HLA 0831.34-L  
 Analytical Method: EPA 625

Client Contract/PO: 09382, 026.02  
 Date Sampled: 06-Apr-88  
 Site: City of Oakland  
 Date Received: 06-Apr-88  
 Extract/Digest/Purge  
 Date: 08-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Holding Time, Days: 2

=====

LAB # 8-3845

MATRIX: WATER

CLIENT ID: 140603

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	35 %
2-Fluorobiphenyl	91 %
Terphenyl-d14	51 %

-----

N.D.: Not Detected  
 n.d.: not determined  
 N.A.: Not Applicable

  
 -----  
 Analytical Supervisor

Report Date: 13-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund/Moezzi  
 WESCO JOB #: HLA 0831.34-L  
 Analytical Method: EPA 625

Client Contract/PO: 09382,026.02  
 Date Sampled: 06-Apr-88  
 Site: City of Oakland  
 Date Received: 06-Apr-88  
 Extract/Digest/Purge  
 Date: 08-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Holding Time, Days: 2

=====

LAB # 8-3846

MATRIX: WATER

CLIENT ID: 140604

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	13-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.34-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	8-3846	MATRIX:	WATER
CLIENT ID:	140604		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	41 %
2-Fluorobiphenyl	100 %
Terphenyl-d14	55 %

-----

Report Date:	13-Apr-88	Client Contract/PD:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.34-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

```
=====
LAB #      8-3846                MATRIX:  WATER
CLIENT ID: 140604
=====
```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----  
**QUALITY CONTROL DATA**

Acid Surrogate Spike % Recovery	
2-Fluorophenol	28 %
Phenol-d5	16 %
2,4,6-Tribromophenol	23 %

-----

Report Date:	13-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	06-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	06-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.34-L	Date:	11-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	B-3846	MATRIX:	WATER
CLIENT ID:	140604		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	41 %
2-Fluorobiphenyl	100 %
Terphenyl-d14	55 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor

RECEIVED



TREATMENT SYSTEM

WESCO Laboratories

4-7-88

APR 21 1988

ENVIRONMENTAL SERVICES DIVISION

**Report Date:** 18-Apr-88 **Client Contract/PO:** 09382,026.02  
**Client:** Harding Lawson Associates **Date Sampled:** 07-Apr-88  
**Attn:** David Leland **Site:** City of Oakland  
**Sampled by:** Tim Walker **Date Received:** 07-Apr-88  
**Submitted by:** D. Tokarski **Extract/Digest/Purge**  
**Preservatives:** none **Date:** 08-Apr-88  
**Analyst:** Arntzen **Analysis Completion**  
**WESCO JOB #:** HLA 0831.35-L **Date:** 08-Apr-88  
**Analytical Method:** EPA 5030/8015 **Hold Time:** 1 day

LAB #:	8-3856	MATRIX:	WATER
CLIENT'S ID:	140701		
COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	
Gasoline-----	1087	50.0	
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	179 %*		

LAB #:	8-3857	MATRIX:	WATER
CLIENT'S ID:	140702		
COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	
Gasoline-----	N.D.	50.0	
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	98 %		

N.D.: Not Detected  
 \* : Matrix Interference

Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.35-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02  
Date Sampled: 07-Apr-88  
Site: City of Oakland  
Date Received: 07-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 1 day

LAB #: 8-3858

MATRIX: WATER

CLIENT'S ID: 140703

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 101 %

LAB #: 8-3859

MATRIX: WATER

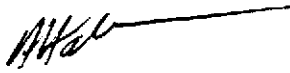
CLIENT'S ID: 140704

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 101 %

N.D.: Not Detected

  
-----  
Analytical Supervisor



Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Attia/Lewis  
WESCO JOB #: HLA 0831.35-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 07-Apr-88  
Site: City of Oakland  
Date Received: 07-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 1 day

LAB #: 8-3856

MATRIX: WATER

CLIENT'S ID: 140701

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	50	0.2
Toluene	53	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	1.2	0.2
Xylene	16	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                        179 %\*

LAB #: 8-3857

MATRIX: WATER

CLIENT'S ID: 140702

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                        98 %

N.D.: Not Detected

\* : Matrix Interference

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Attia/Lewis  
WESCO JOB #: HLA 0831.35-L  
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02  
Date Sampled: 07-Apr-88  
Site: City of Oakland  
Date Received: 07-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 1 day

LAB #: 8-3858

MATRIX: WATER

CLIENT'S ID: 140703

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 101 %

LAB #: 8-3859

MATRIX: WATER

CLIENT'S ID: 140704

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 101 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 07-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 07-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund/Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.35-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 6 days

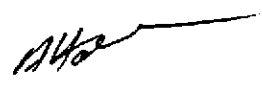
LAB # 8-3860 MATRIX: WATER  
 CLIENT'S ID 140703

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	110 %
Toluene-d8	110 %
4-Bromofluorobenzene	108 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 18-Apr-88 Client Contract/PO: 09382,026.02  
 Client: Harding Lawson Associates Date Sampled: 07-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 07-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund/Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.35-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 6 days

=====

LAB # 8-3861 MATRIX: WATER  
 CLIENT'S ID 140704

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

-----

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	101 %
Toluene-d8	96 %
4-Bromofluorobenzene	104 %

N. D.: Not Detected

-----

Analytical Supervisor

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB # 8-3862

MATRIX: WATER

CLIENT ID: 140703

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB #	8-3862	MATRIX:	WATER
CLIENT ID:	140703		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	48 %
2-Fluorobiphenyl	48 %
Terphenyl-d14	61 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

```

=====
LAB #      8-3862                MATRIX:  WATER
CLIENT ID: 140703
=====

```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----  
QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	38 %
Phenol-d5	26 %
2,4,6-Tribromophenol	34 %

-----

Report Date:	15-Apr-88	Client Contract/PD:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Furge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB #	8-3862	MATRIX:	WATER
CLIENT ID:	140703		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	48 %
2-Fluorobiphenyl	48 %
Terphenyl-d14	61 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable



-----  
Analytical Supervisor



Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB # 8-3863

MATRIX: WATER

CLIENT ID:

140704

=====

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

```
=====
LAB #      8-3863                MATRIX:  WATER
CLIENT ID: 140704
=====
```

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----  
QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	48 %
Terphenyl-d14	59 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB # 8-3863

MATRIX: WATER

CLIENT ID: 140704

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery

2-Fluorophenol	44 %
Phenol-d5	29 %
2,4,6-Tribromophenol	37 %

-----

Report Date:	15-Apr-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	07-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	07-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Furge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.35-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	1

=====

LAB # 8-3863

MATRIX: WATER

CLIENT ID: 140704

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	48 %
Terphenyl-d14	59 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
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Analytical Supervisor



# WESCO Laboratories

Report Date: 19-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.36-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 08-Apr-88  
 Site: City of Oakland  
 Date Received: 08-Apr-88  
 Extract/Digest/Purge  
 Date: 08-Apr-88  
 Analysis Completion  
 Date: 08-Apr-88  
 Hold Time: 0 days

LAB #: 8-3911  
 CLIENT'S ID: 140801

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	370	50.0

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 82 %

LAB #: 8-3912  
 CLIENT'S ID: 140802

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 103 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 19-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.36-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 08-Apr-88  
Site: City of Oakland  
Date Received: 08-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 0 days

LAB #: 8-3913

MATRIX: WATER

CLIENT'S ID: 140803

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

106 %

LAB #: 8-3914

MATRIX: WATER

CLIENT'S ID: 140804

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

105 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 19-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Arntzen/Lewis  
WESCO JOB #: HLA 0831.36-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 08-Apr-88  
Site: City of Oakland  
Date Received: 08-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 0 days

=====  
LAB #: 8-3911 MATRIX: WATER  
CLIENT'S ID: 140801  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	23	0.2
Toluene-----	15	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	4.2	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

=====  
QUALITY CONTROL DATA  
Surrogate Spike Percent Recovery  
Fluorobenzene 82 %  
=====

=====  
LAB #: 8-3912 MATRIX: WATER  
CLIENT'S ID: 140802  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	1.0	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

=====  
QUALITY CONTROL DATA  
Surrogate Spike Percent Recovery  
Fluorobenzene 103 %  
=====

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 19-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Arntzen/Lewis  
WESCO JOB #: HLA 0831.36-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 08-Apr-88  
Site: City of Oakland  
Date Received: 08-Apr-88  
Extract/Digest/Purge  
Date: 08-Apr-88  
Analysis Completion  
Date: 08-Apr-88  
Hold Time: 0 days

=====  
LAB #: 8-3913 MATRIX: WATER  
CLIENT'S ID: 140803  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

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QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 106 %

=====  
LAB #: 8-3914 MATRIX: WATER  
CLIENT'S ID: 140804  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

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QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 105 %

N.D.: Not Detected

  
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Analytical Supervisor



Report Date: 19-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 08-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 08-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund/Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.36-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 5 days

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 LAB # 8-3915 MATRIX: WATER  
 CLIENT'S ID 140803  
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

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 QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	112 %
Toluene-d8	107 %
4-Bromofluorobenzene	94 %

N. D.: Not Detected

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 Analytical Supervisor

Report Date: 19-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 08-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 08-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund/Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.36-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 5 days

=====  
 LAB # 8-3916 MATRIX: WATER  
 CLIENT'S ID 140804  
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	2.4	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

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 QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	100 %
Toluene-d8	103 %
4-Bromofluorobenzene	105 %

N. D.: Not Detected

-----  
 Analytical Supervisor 

Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

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LAB #	8-3917	MATRIX:	WATER
CLIENT ID:	140803		

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BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	8-3917	MATRIX:	WATER
CLIENT ID:	140803		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	50 %
2-Fluorobiphenyl	51 %
Terphenyl-d14	62 %

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Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	8-3917	MATRIX:	WATER
CLIENT ID:	140803		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

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QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	41 %
Phenol-d5	28 %
2,4,6-Tribromophenol	52 %

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Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	8-3917	MATRIX:	WATER
CLIENT ID:	140803		

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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	50 %
2-Fluorobiphenyl	51 %
Terphenyl-d14	62 %

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N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor

Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Furge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	B-3918	MATRIX:	WATER
CLIENT ID:	140804		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	B-3918	MATRIX:	WATER
CLIENT ID:	140804		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	58 %
2-Fluorobiphenyl	53 %
Terphenyl-d14	69 %

-----



Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

```
=====
LAB #      8-3918                MATRIX:  WATER
CLIENT ID: 140804
=====
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ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	42 %
Phenol-d5	29 %
2,4,6-Tribromophenol	53 %

-----

Report Date:	18-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	08-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	08-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	08-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.36-L	Date:	14-Apr-88
Analytical Method:	EPA 625	Holding Time, Days	0

=====

LAB #	8-3918	MATRIX:	WATER
CLIENT ID:	140804		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	58 %
2-Fluorobiphenyl	53 %
Terphenyl-d14	69 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor



**WESCO Laboratories**

**RECEIVED**  
APR 29 1988  
HARDING LAWSON ASSOCIATES  
29  
ENVIRONMENTAL SERVICES  
DIVISION

**TREATMENT SYSTEM**  
4-9-88

Report Date: 27-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Lewis  
WESCO JOB #: HLA 0831.37-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 09-Apr-88  
Site: City of Oakland  
Date Received: 09-Apr-88  
Extract/Digest/Purge  
Date: 09-Apr-88  
Analysis Completion  
Date: 09-Apr-88  
Hold Time: 0 days

LAB #: 8-3939  
CLIENT'S ID: 140901

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	350	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 97 %

LAB #: 8-3940  
CLIENT'S ID: 140902

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 94 %

N.D.: Not Detected

-----  
Analytical Supervisor

Report Date: 27-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Lewis  
WESCO JOB #: HLA 0831.37-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 09-Apr-88  
Site: City of Oakland  
Date Received: 09-Apr-88  
Extract/Digest/Purge  
Date: 09-Apr-88  
Analysis Completion  
Date: 09-Apr-88  
Hold Time: 0 days

LAB #: 8-3941

MATRIX: WATER

CLIENT'S ID: 140903

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

78 %

LAB #: 8-3942

MATRIX: WATER

CLIENT'S ID: 140904

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

82 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Lewis  
 WESCO JOB #: HLA 0831.37-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 09-Apr-88  
 Site: City of Oakland  
 Date Received: 09-Apr-88  
 Extract/Digest/Purge  
 Date: 09-Apr-88  
 Analysis Completion  
 Date: 09-Apr-88  
 Hold Time: 0 days

=====

LAB #: 8-3939 MATRIX: WATER  
 CLIENT'S ID: 140901

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	25	0.2
Toluene-----	30	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	0.5	0.2
Xylene-----	13	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 97 %

=====

LAB #: 8-3940 MATRIX: WATER  
 CLIENT'S ID: 140902

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	2.6	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 94 %

N.D.: Not Detected

*W. L. ...*

-----

Analytical Supervisor

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Lewis  
 WESCO JOB #: HLA 0831.37-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 09-Apr-88  
 Site: City of Oakland  
 Date Received: 09-Apr-88  
 Extract/Digest/Purge  
 Date: 09-Apr-88  
 Analysis Completion  
 Date: 09-Apr-88  
 Hold Time: 0 days

-----  
 LAB #: 8-3941 MATRIX: WATER  
 CLIENT'S ID: 140903  
 -----

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	0.7	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----  
 QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 78 %

-----  
 LAB #: 8-3942 MATRIX: WATER  
 CLIENT'S ID: 140904  
 -----

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----  
 QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 82 %

N.D.: Not Detected

-----  
  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 09-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 09-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.37-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 4 days

LAB # 8-3943 MATRIX: WATER  
 CLIENT'S ID 140903

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	112 %
Toluene-d8	104 %
4-Bromofluorobenzene	99 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 09-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 09-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.37-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 4 days

LAB # 8-3944  
 CLIENT'S ID 140904

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	117 %
Toluene-d8	110 %
4-Bromofluorobenzene	95 %

N. D.: Not Detected

  
 Analytical Supervisor



Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	09-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	09-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.37-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	8-3945	MATRIX:	WATER
CLIENT ID:	140903		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	25-Apr-88	Client Contract/PO: 9382,026.02	
Client:	Harding Lawson Associates	Date Sampled:	09-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	09-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.37-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	B-3945	MATRIX:	WATER
CLIENT ID:	140903		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	6
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	61 %
2-Fluorobiphenyl	74 %
Terphenyl-d14	87 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	09-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	09-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.37-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	B-3945	MATRIX:	WATER
CLIENT ID:	140903		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	35 %
Phenol-d5	24 %
2,4,6-Tribromophenol	53 %

-----

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.37-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382, 026.02  
 Date Sampled: 09-Apr-88  
 Site: City of Oakland  
 Date Received: 09-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Holding Time, Days: 4

=====

LAB # 8-3945 MATRIX: WATER  
 CLIENT ID: 140903

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

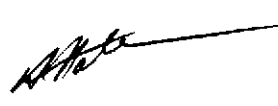
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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	61 %
2-Fluorobiphenyl	74 %
Terphenyl-d14	87 %

-----

N.D.: Not Detected  
 n.d.: not determined  
 N.A.: Not Applicable

  
 -----  
 Analytical Supervisor

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.37-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 09-Apr-88  
 Site: City of Oakland  
 Date Received: 09-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Holding Time, Days: 4

=====

LAB # 8-3946 MATRIX: WATER  
 CLIENT ID: 140904

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	09-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	09-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.37-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	8-3946	MATRIX:	WATER
CLIENT ID:	140904		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	64 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	89 %

-----

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.37-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 09-Apr-88  
 Site: City of Oakland  
 Date Received: 09-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Holding Time, Days: 4

=====

LAB # 8-3946

MATRIX: WATER

CLIENT ID: 140904

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery

2-Fluorophenol	38 %
Phenol-d5	22 %
2,4,6-Tribromophenol	53 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	09-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	09-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Furge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.37-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	8-3946	MATRIX:	WATER
CLIENT ID:	140904		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

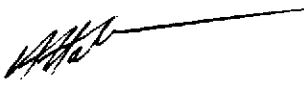
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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	64 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	89 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor





Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.39-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 10-Apr-88  
 Site: City of Oakland  
 Date Received: 10-Apr-88  
 Extract/Digest/Purge  
 Date: 11-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Hold Time: 1 day

=====

LAB #:	8-3948	MATRIX:	WATER
CLIENT'S ID:	141001		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	390	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 118 %

=====


LAB #:	8-3949	MATRIX:	WATER
CLIENT'S ID:	141002		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 105 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor

Report Date: 27-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.39-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 10-Apr-88  
Site: City of Oakland  
Date Received: 10-Apr-88  
Extract/Digest/Purge  
Date: 11-Apr-88  
Analysis Completion  
Date: 11-Apr-88  
Hold Time: 1 day

LAB #: 8-3950

MATRIX: WATER

CLIENT'S ID: 141003

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

101 %

LAB #: 8-3951

MATRIX: WATER

CLIENT'S ID: 141004

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene

90 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 27-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Chris Larkin  
Submitted by: Chris Larkin  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.39-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 10-Apr-88  
Site: City of Oakland  
Date Received: 10-Apr-88  
Extract/Digest/Purge  
Date: 11-Apr-88  
Analysis Completion  
Date: 11-Apr-88  
Hold Time: 1 day

LAB #: 8-3948

MATRIX: WATER

CLIENT'S ID: 141001

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	44	0.2
Toluene-----	18	0.2
Chlorobenzene-----	7	0.2
Ethylbenzene-----	1.6	0.2
Xylene-----	4	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 118 %

LAB #: 8-3949

MATRIX: WATER

CLIENT'S ID: 141002

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	5.6	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	0.5	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
Fluorobenzene 105 %

N.D.: Not Detected

  
Analytical Supervisor

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.39-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 10-Apr-88  
 Site: City of Oakland  
 Date Received: 10-Apr-88  
 Extract/Digest/Purge  
 Date: 11-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Hold Time: 1 day

LAB #: 8-3950

MATRIX: WATER

CLIENT'S ID: 141003

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	2.0	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 101 %

LAB #: 8-3951

MATRIX: WATER


CLIENT'S ID: 141004

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	2.0	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 90 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 10-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 10-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.39-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 3 days

=====  
 LAB # 8-3952 MATRIX: WATER  
 CLIENT'S ID 141003  
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	1.3	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

-----

QUALITY CONTROL DATA	Percent Recovery
Surrogate Spike	
1,2-Dichloroethane-d4	101 %
Toluene-d8	99 %
4-Bromofluorobenzene	91 %

N. D.: Not Detected  
 -----  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 10-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Chris Larkin Date Received: 10-Apr-88  
 Submitted by: Chris Larkin Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.39-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 3 days


LAB # 8-3953 MATRIX: WATER  
 CLIENT'S ID 141004

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	125 %
Toluene-d8	109 %
4-Bromofluorobenzene	101 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Chris Larkin  
 Submitted by: Chris Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.39-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 10-Apr-88  
 Site: City of Oakland  
 Date Received: 10-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Holding Time, Days: 3

=====

LAB # 8-3954

MATRIX: WATER

CLIENT ID: 141003

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	6
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	6

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	B-3954	MATRIX:	WATER
CLIENT ID:	141003		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	6
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	53 %
2-Fluorobiphenyl	68 %
Terphenyl-d14	84 %

-----



Report Date:	25-Apr-88	Client Contract/PD:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

```

=====
LAB #      8-3954                MATRIX:  WATER
CLIENT ID:      141003
=====

```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	38 %
Phenol-d5	26 %
2,4,6-Tribromophenol	59 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	B-3954	MATRIX:	WATER
CLIENT ID:	141003		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	53 %
2-Fluorobiphenyl	68 %
Terphenyl-d14	84 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor

Report Date:	25-Apr-88	Client Contract/PO:9382,026.02	
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	8-3955	MATRIX:	WATER
CLIENT ID:	141004		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB # 6-3955

MATRIX: WATER

CLIENT ID: 141004

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	91 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	8-3955	MATRIX:	WATER
CLIENT ID:	141004		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	41 %
Phenol-d5	25 %
2,4,6-Tribromophenol	58 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382, 026.02
Client:	Harding Lawson Associates	Date Sampled:	10-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Chris Larkin	Date Received:	10-Apr-88
Submitted by:	Chris Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.39-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	8-3955	MATRIX:	WATER
CLIENT ID:	141004		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	91 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor



# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.40-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 11-Apr-88  
 Site: City of Oakland  
 Date Received: 11-Apr-88  
 Extract/Digest/Purge  
 Date: 11-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Hold Time: 0 days

LAB #: 8-3972

MATRIX: WATER

CLIENT'S ID: 151101

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 98 %

LAB #: 8-3973

MATRIX: WATER

CLIENT'S ID: 151102

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	377	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 99 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.40-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 11-Apr-88  
Site: City of Oakland  
Date Received: 11-Apr-88  
Extract/Digest/Purge  
Date: 11-Apr-88  
Analysis Completion  
Date: 11-Apr-88  
Hold Time: 0 days

=====  
LAB #: 8-3974

MATRIX: WATER

CLIENT'S ID: 151103  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike % Recovery  
Fluorobenzene

99 %

=====  
LAB #: 8-3976

MATRIX: WATER

CLIENT'S ID: 151104  
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
Surrogate Spike % Recovery  
Fluorobenzene

99 %

N.D.: Not Detected



-----  
Analytical Supervisor



Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.40-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 11-Apr-88  
 Site: City of Oakland  
 Date Received: 11-Apr-88  
 Extract/Digest/Purge  
 Date: 11-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Hold Time: 0 days

LAB #: 8-3972

MATRIX: WATER

CLIENT'S ID: 151101

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	4.0	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 98 %

LAB #: 8-3973

MATRIX: WATER

CLIENT'S ID: 151102

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	37.0	0.2
Toluene-----	13.0	0.2
Chlorobenzene-----	10.4	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 99 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.40-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 11-Apr-88  
 Site: City of Oakland  
 Date Received: 11-Apr-88  
 Extract/Digest/Purge  
 Date: 11-Apr-88  
 Analysis Completion  
 Date: 11-Apr-88  
 Hold Time: 0 days

=====

LAB #: 8-3974 MATRIX: WATER  
 CLIENT'S ID: 151103

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	1.0	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 99 %

=====

LAB #: 8-3976 MATRIX: WATER  
 CLIENT'S ID: 151104

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 99 %

N.D.: Not Detected



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 Analytical Supervisor

Report Date:	01-May-88	Client Contract/PO: 9382,026.02
Client:	Harding Lawson Associates	Date Sampled: 11-Apr-88
Attn:	David Leland	Site: City of Oakland
Sampled by:	Tim Walker	Date Received: 11-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge
Preservatives:	none	Date: 13-Apr-88
Analyst:	Moezzi	Analysis Completion
WESCO JOB #:	HLA 0831.40-L	Date: 13-Apr-88
Analytical Method:	EPA 624	Hold Time 2 days

=====

LAB #	8-3975	MATRIX: WATER
CLIENT'S ID	151103	

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	0.7	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

-----

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	122 %
Toluene-d8	101 %
4-Bromofluorobenzene	98 %

N. D.: Not Detected

-----  
  
Analytical Supervisor

Report Date: 01-May-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 11-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 11-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 13-Apr-88  
 Analyst: Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.40-L Date: 13-Apr-88  
 Analytical Method: EPA 624 Hold Time 2 days

LAB # 8-3977  
 CLIENT'S ID 151104


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	119 %
Toluene-d8	105 %
4-Bromofluorobenzene	97 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 21-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.40-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 11-Apr-88  
 Site: City of Oakland  
 Date Received: 11-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Holding Time, Days: 2

=====  
 LAB # 8-3978

MATRIX: WATER

CLIENT ID: 151103  
 =====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	21-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	11-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	11-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.40-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	8-3978	MATRIX:	WATER
CLIENT ID:	151103		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	75 %
Terphenyl-d14	89 %

-----

Report Date:	21-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	11-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	11-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.40-L	Date:	15-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	2

=====

LAB #	8-3978	MATRIX:	WATER
CLIENT ID:	151103		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	40 %
Phenol-d5	24 %
2,4,6-Tribromophenol	55 %

-----

Report Date: 21-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.40-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 11-Apr-88  
 Site: City of Oakland  
 Date Received: 11-Apr-88  
 Extract/Digest/Purge Date: 13-Apr-88  
 Analysis Completion Date: 15-Apr-88  
 Holding Time, Days: 2

=====

LAB # 8-3978 MATRIX: WATER  
 CLIENT ID: 151103

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

-----

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	75 %
Terphenyl-d14	89 %

-----

N.D.: Not Detected  
 n.d.: not determined  
 N.A.: Not Applicable

  
 -----  
 Analytical Supervisor





# WESCO Laboratories

TREATMENT SYSTEM

4-12-88

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge  
 Date: 12-Apr-88  
 Analysis Completion  
 Date: 12-Apr-88  
 Hold Time: 0 days

LAB #: 8-3986

MATRIX: WATER

CLIENT'S ID: 151201

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 102 %

LAB #: 8-3987

MATRIX: WATER

CLIENT'S ID: 151202

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	180	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 146 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 27-Apr-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.41-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 12-Apr-88  
Site: City of Oakland  
Date Received: 12-Apr-88  
Extract/Digest/Purge  
Date: 12-Apr-88  
Analysis Completion  
Date: 12-Apr-88  
Hold Time: 0 days

LAB #: 8-3988

MATRIX: WATER

CLIENT'S ID: 151203

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 91 %

LAB #: 8-3989

MATRIX: WATER

CLIENT'S ID: 151204

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 102 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge  
 Date: 12-Apr-88  
 Analysis Completion  
 Date: 12-Apr-88  
 Hold Time: 0 days

LAB #: 8-3986  
 CLIENT'S ID: 151201

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	10	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 102 %

LAB #: 8-3987  
 CLIENT'S ID: 151202


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	19	0.2
Toluene	10	0.2
Chlorobenzene	3	0.2
Ethylbenzene	N.D.	0.2
Xylene	6.5	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 146 %

N.D.: Not Detected

  
 Analytical Supervisor

Report Date: 27-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge Date: 12-Apr-88  
 Analysis Completion Date: 12-Apr-88  
 Hold Time: 0 days

LAB #: 8-3988 MATRIX: WATER  
 CLIENT'S ID: 151203

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2


QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 91 %

LAB #: 8-3989 MATRIX: WATER  
 CLIENT'S ID: 151204

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 102 %

N.D.: Not Detected

  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 12-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 12-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 19-Apr-88  
 Analyst: Moezzi/Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.41-L Date: 19-Apr-88  
 Analytical Method: EPA 624 Hold Time 7 days


LAB # 8-3990 MATRIX: WATER  
 CLIENT'S ID 151203

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	2.0	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	0.9	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	102 %
Toluene-d8	100 %
4-Bromofluorobenzene	86 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 27-Apr-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 12-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 12-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 19-Apr-88  
 Analyst: Moezzi/Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.41-L Date: 19-Apr-88  
 Analytical Method: EPA 624 Hold Time 7 days

LAB # 8-3991  
 CLIENT'S ID 151204

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	97 %
Toluene-d8	105 %
4-Bromofluorobenzene	82 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date: 22-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge  
 Date: 18-Apr-88  
 Analysis Completion  
 Date: 20-Apr-88  
 Holding Time, Days: 6

=====

LAB # 8-3992

MATRIX: WATER

CLIENT ID: 151203

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	22-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	12-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	12-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.41-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	6

=====

LAB #	8-3992	MATRIX:	WATER
CLIENT ID:	151203		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	63 %
Terphenyl-d14	81 %

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Report Date:	22-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	12-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	12-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.41-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	6

=====

LAB #	8-3992	MATRIX:	WATER
CLIENT ID:	151203		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	45 %
Phenol-d5	24 %
2,4,6-Tribromophenol	44 %

-----

Report Date:	22-Apr-88	Client Contract/PD:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	12-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	12-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.41-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	6

=====

LAB #	8-3992	MATRIX:	WATER
CLIENT ID:	151203		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	63 %
Terphenyl-d14	81 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

*[Signature]*

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Analytical Supervisor

Report Date: 22-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge  
 Date: 18-Apr-88  
 Analysis Completion  
 Date: 20-Apr-88  
 Holding Time, Days: 6

=====  
 LAB # 8-3993

MATRIX: WATER

CLIENT ID: 151204  
 =====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	22-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	12-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	12-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCD JOB #:	HLA 0831.41-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	6

=====

LAB #	8-3993	MATRIX:	WATER
CLIENT ID:	151204		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	6
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	71 %
2-Fluorobiphenyl	76 %
Terphenyl-d14	85 %

-----

Report Date:	22-Apr-88	Client Contract/PO:	9362,026.02
Client:	Harding Lawson Associates	Date Sampled:	12-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	12-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.41-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	6

=====

LAB #	8-3993	MATRIX:	WATER
CLIENT ID:	151204		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA		
Acid Surrogate Spike % Recovery		
2-Fluorophenol		33 %
Phenol-d5		20 %
2,4,6-Tribromophenol		36 %

-----

Report Date: 22-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.41-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 12-Apr-88  
 Site: City of Oakland  
 Date Received: 12-Apr-88  
 Extract/Digest/Purge Date: 18-Apr-88  
 Analysis Completion Date: 20-Apr-88  
 Holding Time, Days: 6

LAB # 8-3993

MATRIX: WATER


CLIENT ID: 151204

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	71 %
2-Fluorobiphenyl	76 %
Terphenyl-d14	85 %

N.D.: Not Detected  
 n.d.: not determined  
 N.A.: Not Applicable

  
 Analytical Supervisor



# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.42-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 13-Apr-88  
 Site: City of Oakland  
 Date Received: 13-Apr-88  
 Extract/Digest/Purge Date: 13-Apr-88  
 Analysis Completion Date: 13-Apr-88  
 Hold Time: 0 days

LAB #: 8-4054  
 CLIENT'S ID: 151301

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene

105 %

LAB #: 8-4055  
 CLIENT'S ID: 151302

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	200	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene

100 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.42-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 13-Apr-88  
Site: City of Oakland  
Date Received: 13-Apr-88  
Extract/Digest/Purge  
Date: 13-Apr-88  
Analysis Completion  
Date: 13-Apr-88  
Hold Time: 0 days

LAB #: 8-4056  
CLIENT'S ID: 151303

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 102 %

LAB #: 8-4058  
CLIENT'S ID: 151304

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 107 %

N.D.: Not Detected



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Analytical Supervisor



Report Date: 04-Jan-80  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.42-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 13-Apr-88  
 Site: City of Oakland  
 Date Received: 13-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 13-Apr-88  
 Hold Time: 0 days

LAB #: 8-4054 3  
 CLIENT'S ID: 151A01

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike  
 Fluorobenzene Percent Recovery 105 %

LAB #: 8-4055 3  
 CLIENT'S ID: 151A02

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	25.0	0.2
Toluene	10.0	0.2
Chlorobenzene	7.5	0.2
Ethylbenzene	1.0	0.2
Xylene	4.0	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike  
 Fluorobenzene Percent Recovery 100 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 04-Jan-80  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.42-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 13-Apr-88  
 Site: City of Oakland  
 Date Received: 13-Apr-88  
 Extract/Digest/Purge  
 Date: 13-Apr-88  
 Analysis Completion  
 Date: 13-Apr-88  
 Hold Time: 0 days

LAB #: 8-4056 3 MATRIX: WATER  
 CLIENT'S ID: 151A03

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 102 %

LAB #: 8-4058 3 MATRIX: WATER  
 CLIENT'S ID: 151A04

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	1.0	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA  
 Surrogate Spike Percent Recovery  
 Fluorobenzene 107 %

N.D.: Not Detected

  
 Analytical Supervisor

Report Date: 04-Jan-80 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 13-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 13-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 19-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.42-L Date: 19-Apr-88  
 Analytical Method: EPA 624 Hold Time 6 days

LAB # 8-4057 MATRIX: WATER  
 CLIENT'S ID 151303

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	2.3	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	106 %
Toluene-d8	114 %
4-Bromofluorobenzene	88 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB # 8-4060

MATRIX: WATER

CLIENT ID: 151303

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 825	Holding Time, Days:	7

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LAB #	B-4060	MATRIX:	WATER
CLIENT ID:	151303		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	64 %
Terphenyl-d14	90 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB #	8-4060	MATRIX:	WATER
CLIENT ID:	151303		

=====

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

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QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	26 %
Phenol-d5	13 %
2,4,6-Tribromophenol	29 %

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Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB # 8-4060 MATRIX: WATER

CLIENT ID: 151303

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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.


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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	55 %
2-Fluorobiphenyl	64 %
Terphenyl-d14	90 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB #	8-4061	MATRIX:	WATER
CLIENT ID:	151304		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3



Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB #	8-4061	MATRIX:	WATER
CLIENT ID:	151304		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	72 %
Terphenyl-d14	79 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

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=====
LAB #      B-4061
CLIENT ID: 151304
MATRIX:   WATER
=====
```

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	34 %
Phenol-d5	15 %
2,4,6-Tribromophenol	31 %

-----

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	13-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	13-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	20-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.42-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	7

=====

LAB #	B-4061	MATRIX:	WATER
CLIENT ID:	151304		

=====

PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

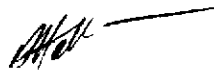
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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	62 %
2-Fluorobiphenyl	72 %
Terphenyl-d14	79 %

-----

N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

  
-----  
Analytical Supervisor



# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.43-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 14-Apr-88  
 Site: City of Oakland  
 Date Received: 14-Apr-88  
 Extract/Digest/Purge Date: 15-Apr-88  
 Analysis Completion Date: 15-Apr-88  
 Hold Time: 1 day

LAB #: 8-4075  
 CLIENT'S ID: 151401

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 107 %

LAB #: 8-4077  
 CLIENT'S ID: 151402

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene 107 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.43-L  
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
Date Sampled: 14-Apr-88  
Site: City of Oakland  
Date Received: 14-Apr-88  
Extract/Digest/Purge  
Date: 15-Apr-88  
Analysis Completion  
Date: 15-Apr-88  
Hold Time: 1 day

LAB #: 8-4079

MATRIX: WATER

CLIENT'S ID: 151403

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 108 %

LAB #: 8-4080

MATRIX: WATER

CLIENT'S ID: 151404

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	120	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
Fluorobenzene 113 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: Tim Walker  
Submitted by: D. Tokarski  
Preservatives: none  
Analyst: Arntzen  
WESCO JOB #: HLA 0831.43-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 14-Apr-88  
Site: City of Oakland  
Date Received: 14-Apr-88  
Extract/Digest/Purge  
Date: 15-Apr-88  
Analysis Completion  
Date: 15-Apr-88  
Hold Time: 1 day

LAB #: 8-4075

MATRIX: WATER

CLIENT'S ID: 151401

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      107 %

LAB #: 8-4077

MATRIX: WATER

CLIENT'S ID: 151402

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      107 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Arntzen  
 WESCO JOB #: HLA 0831.43-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 14-Apr-88  
 Site: City of Oakland  
 Date Received: 14-Apr-88  
 Extract/Digest/Purge  
 Date: 15-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Hold Time: 1 day

LAB #: 8-4079

MATRIX: WATER

CLIENT'S ID: 151403

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	2.3	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 108 %

LAB #: 8-4080

MATRIX: WATER

CLIENT'S ID: 151404

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	3.4	0.2
Toluene-----	1.4	0.2
Chlorobenzene-----	1.0	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 113 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor

Report Date: 01-May-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 14-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 14-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 21-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.43-L Date: 21-Apr-88  
 Analytical Method: EPA 624 Hold Time: 7 days

LAB # 8-4076  
 CLIENT'S ID 151401

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	94 %
Toluene-d8	109 %
4-Bromofluorobenzene	115 %

N. D.: Not Detected

*Attala*  
 Analytical Supervisor



Report Date: 01-May-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 14-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: Tim Walker Date Received: 14-Apr-88  
 Submitted by: D. Tokarski Extract/Digest/Purge  
 Preservatives: none Date: 21-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.43-L Date: 21-Apr-88  
 Analytical Method: EPA 624 Hold Time 7 days

LAB # 8-4078  
 CLIENT'S ID 151402


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	94 %
Toluene-d8	113 %
4-Bromofluorobenzene	125 %

N. D.: Not Detected

  
 Analytical Supervisor

Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	14-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	14-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.43-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	B-4081	MATRIX:	WATER
CLIENT ID:	151401		

=====

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date:	25-Apr-88	Client Contract/PO:9382,026.02
Client:	Harding Lawson Associates	Date Sampled: 14-Apr-88
Attn:	David Leland	Site: City of Oakland
Sampled by:	Tim Walker	Date Received: 14-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge
Preservatives:	none	Date: 18-Apr-88
Analyst:	Siegmund	Analysis Completion
WESCO JOB #:	HLA 0831.43-L	Date: 20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days: 4

=====

LAB #	B-4081	MATRIX:	WATER
CLIENT ID:	151401		

=====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

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QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	56 %
2-Fluorobiphenyl	66 %
Terphenyl-d14	76 %

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Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	14-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	14-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Furge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.43-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

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LAB #	8-4081	MATRIX:	WATER
CLIENT ID:	151401		

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ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

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QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	33 %
Phenol-d5	19 %
2,4,6-Tribromophenol	32 %

-----

Report Date:	25-Apr-88	Client Contract/PO: 9382,026.02		
Client:	Harding Lawson Associates	Date Sampled:	14-Apr-88	
Attn:	David Leland	Site:	City of Oakland	
Sampled by:	Tim Walker	Date Received:	14-Apr-88	
Submitted by:	D. Tokarski	Extract/Digest/Purge	Date:	18-Apr-88
Preservatives:	none	Analysis Completion	Date:	20-Apr-88
Analyst:	Siegmund	Holding Time, Days:	4	
WESCO JOB #:	HLA 0831.43-L			
Analytical Method:	EPA 625			

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=====
LAB #      B-4081                MATRIX:  WATER
CLIENT ID:      151401
=====
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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	56 %
2-Fluorobiphenyl	66 %
Terphenyl-d14	76 %

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N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

*[Signature]*

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Analytical Supervisor

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.43-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 14-Apr-88  
 Site: City of Oakland  
 Date Received: 14-Apr-88  
 Extract/Digest/Purge  
 Date: 18-Apr-88  
 Analysis Completion  
 Date: 20-Apr-88  
 Holding Time, Days: 4

LAB # 6-4082

MATRIX: WATER

CLIENT ID: 151402

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.43-L  
 Analytical Method: EPA 825

Client Contract/PO: 9382,026.02  
 Date Sampled: 14-Apr-88  
 Site: City of Oakland  
 Date Received: 14-Apr-88  
 Extract/Digest/Purge  
 Date: 18-Apr-88  
 Analysis Completion  
 Date: 20-Apr-88  
 Holding Time, Days: 4

=====  
 LAB # 8-4082

MATRIX: WATER

CLIENT ID: 151402  
 =====

BASE/NEUTRALS (cont)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----  
 QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	56 %
2-Fluorobiphenyl	70 %
Terphenyl-d14	66 %

-----

Report Date: 25-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: Tim Walker  
 Submitted by: D. Tokarski  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.43-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 14-Apr-88  
 Site: City of Oakland  
 Date Received: 14-Apr-88  
 Extract/Digest/Purge Date: 18-Apr-88  
 Analysis Completion Date: 20-Apr-88  
 Holding Time, Days: 4

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LAB #	B-4082	MATRIX:	WATER
CLIENT ID:	151402		

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ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA	
Acid Surrogate Spike % Recovery	
2-Fluorophenol	41 %
Phenol-d5	28 %
2,4,6-Tribromophenol	35 %

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Report Date:	25-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	14-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Tim Walker	Date Received:	14-Apr-88
Submitted by:	D. Tokarski	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.43-L	Date:	20-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4

=====

LAB #	B-4082	MATRIX:	WATER
CLIENT ID:	151402		

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PESTICIDE COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

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QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery	
Nitrobenzene-d5	56 %
2-Fluorobiphenyl	70 %
Terphenyl-d14	86 %

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N.D.: Not Detected  
n.d.: not determined  
N.A.: Not Applicable

*Stech*

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Analytical Supervisor



# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge  
 Date: 15-Apr-88  
 Analysis Completion  
 Date: 15-Apr-88  
 Hold Time: 0 days

LAB #: 8-4125

MATRIX: WATER

CLIENT'S ID: 152101

=====

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- 137

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene

93 %

LAB #: 8-4126

MATRIX: WATER

CLIENT'S ID: 152102

=====

COMPOUND

RESULT  
(ug/l)

Detection  
Limit (ug/l)

Gasoline----- N.D.


50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery  
 Fluorobenzene

105 %

N.D.: Not Detected

  
 -----  
 Analytical Supervisor



Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: C. Larkin  
Submitted by: K. Hunter  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.44-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 15-Apr-88  
Site: City of Oakland  
Date Received: 15-Apr-88  
Extract/Digest/Purge  
Date: 15-Apr-88  
Analysis Completion  
Date: 15-Apr-88  
Hold Time: 0 days

LAB #: 8-4125  
CLIENT'S ID: 152101

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	16.9	0.2
Toluene	8.5	0.2
Chlorobenzene	5.0	0.2
Ethylbenzene	0.4	0.2
Xylene	3.6	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike  
Fluorobenzene Percent Recovery  
93 %

LAB #: 8-4126  
CLIENT'S ID: 152102


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	2.5	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike  
Fluorobenzene Percent Recovery  
105 %

N.D.: Not Detected

  
Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: C. Larkin  
Submitted by: K. Hunter  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.44-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 15-Apr-88  
Site: City of Oakland  
Date Received: 15-Apr-88  
Extract/Digest/Purge  
Date: 15-Apr-88  
Analysis Completion  
Date: 15-Apr-88  
Hold Time: 0 days

LAB #: 8-4127

MATRIX: WATER

CLIENT'S ID: 152103

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      112 %

LAB #: 8-4128

MATRIX: WATER

CLIENT'S ID: 152104

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      103 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 601

Client Contract/PO: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge Date: 16-Apr-88  
 Analysis Completion Date: 16-Apr-88  
 Hold time 1 day

LAB #: 8-4124  
 CLIENT'S ID: 152101


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	1.0	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	31.9	0.5
Trichloroethene (TCE)	179	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	3.2	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	63 %
1,4-Dichlorobutane	104 %

N.D.: Not Detected

  
 Analytical Supervisor

Report Date:	01-May-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	15-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	15-Apr-88
Submitted by:	K. Hunter	Extract/Digest/Purge	
Preservatives:	none	Date:	21-Apr-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.44-L	Date:	21-Apr-88
Analytical Method:	EPA 624	Hold Time	6 days

LAB # 8-4129  
 CLIENT'S ID 152103

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	91 %
Toluene-d8	118 %
4-Bromofluorobenzene	115 %

N. D.: Not Detected

*M. H.*  
 Analytical Supervisor

Report Date: 01-May-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 15-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: C. Larkin Date Received: 15-Apr-88  
 Submitted by: K. Hunter Extract/Digest/Purge  
 Preservatives: none Date: 21-Apr-88  
 Analyst: Siegmund/Moezzi Analysis Completion  
 WESCO JOB #: HLA 0831.44-L Date: 21-Apr-88  
 Analytical Method: EPA 624 Hold Time 6 days


LAB # 8-4130 MATRIX: WATER  
 CLIENT'S ID 152104

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	0.5
Methyl Chloride	N.D.	0.5
Vinyl Chloride	N.D.	0.5
Methyl Bromide	N.D.	0.5
Ethyl Chloride	N.D.	0.5
Trichlorofluoromethane	N.D.	0.5
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	1.5	0.5
trans-1,2-dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-trichloroethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
Benzene	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Trichloroethene	N.D.	0.5
Bromodichloromethane	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
Toluene	N.D.	0.5
cis-1,3-dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Chlorobenzene	N.D.	0.5
Ethylbenzene	N.D.	0.5
Xylene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
1,2-Dichloroethane-d4	99 %
Toluene-d8	104 %
4-Bromofluorobenzene	116 %

N. D.: Not Detected

  
 Analytical Supervisor



Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 625

Client Contract/PD: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge  
 Date: 18-Apr-88  
 Analysis Completion  
 Date: 22-Apr-88  
 Holding Time, Days: 3

LAB # 8-4131  
 CLIENT ID: 152103

MATRIX: WATER

BASE NEUTRALS

RESULT  
(ug/l)

Detection Limit  
(ug/l)

N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3



Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge Date: 18-Apr-88  
 Analysis Completion Date: 22-Apr-88  
 Holding Time, Days: 3

LAB # 8-4131  
 CLIENT ID: 152103

MATRIX: WATER

PESTICIDE COMPOUNDS

RESULT  
(ug/l)

Detection Limit  
(ug/l)


alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery  
 Nitrobenzene-d5 57 %  
 2-fluorobiphenyl 72 %  
 Terphenyl-d14 88 %

N.D.: Not Detected  
 N.A.: Not Applicable

n.d.: not determined  
 N.R.: Not Recovered

  
 Analytical Supervisor

Report Page 1

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge Date: 18-Apr-88  
 Analysis Completion Date: 22-Apr-88  
 Holding Time, Days: 3

LAB # 8-4132  
 CLIENT ID: 152104

MATRIX: WATER

BASE NEUTRALS

RESULT Detection Limit  
 (ug/l) (ug/l)

N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3
Benzo(a)anthracene	N.D.	6
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3

Report Date:	26-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	15-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	15-Apr-88
Submitted by:	K. Hunter	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.44-L	Date:	22-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	3

=====

LAB #	B-4132	MATRIX:	WATER
CLIENT ID:	152104		

=====

BASE NEUTRALS (CONT)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

-----

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	61 %
2-Fluorobiphenyl	87 %
Terphenyl-d14	90 %

-----

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

-----

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	35 %
Phenol-d5	20 %
2,4,6-Tribromophenol	41 %

-----

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: K. Hunter  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.44-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 15-Apr-88  
 Site: City of Oakland  
 Date Received: 15-Apr-88  
 Extract/Digest/Purge Date: 18-Apr-88  
 Analysis Completion Date: 22-Apr-88  
 Holding Time, Days: 3

LAB # 8-4132  
 CLIENT ID: 152104

MATRIX: WATER


PESTICIDE COMPOUNDS

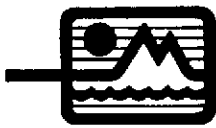
	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate	Spike % Recovery
Nitrobenzene-d5	61 %
2-Fluorobiphenyl	87 %
Terphenyl-d14	90 %

N.D.: Not Detected                      n.d.: not determined  
 N.A.: Not Applicable                  N.R.: Not Recovered

  
 Analytical Supervisor



TREATMENT SYSTEM 4-16-88

# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Attia  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 5030/8015  
 Matrix: WATER

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge  
 Date: 17-Apr-88  
 Analysis Completion  
 Date: 17-Apr-88  
 Hold Time: 1 day

=====

LAB #: 8-4158 CLIENT ID: 151601

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	86	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 97 %

=====

LAB #: 8-4159 CLIENT ID: 151602

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 90 %

=====

LAB #: 8-4160 CLIENT ID: 151603

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

QUALITY CONTROL DATA  
 Surrogate Spike & Recovery  
 Fluorobenzene 103 %

N.D.: Not Detected

-----  
 Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: C. Larkin  
Submitted by: C. Larkin  
Preservatives: none  
Analyst: Attia  
WESCO JOB #: HLA 0831.46-L  
Analytical Method: EPA 5030/8015  
Matrix: WATER

Client Contract/PO: 9382,026.02  
Date Sampled: 16-Apr-88  
Site: City of Oakland  
Date Received: 16-Apr-88  
Extract/Digest/Purge  
Date: 17-Apr-88  
Analysis Completion  
Date: 17-Apr-88  
Hold Time: 1 day

=====  
LAB #: 8-4161 CLIENT ID: 151604  
=====  
COMPOUND RESULT Detection  
(ug/l) Limit (ug/l)  
Gasoline----- N.D. 50.0  
-----

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 100 %

=====  
LAB #: 8-4162 CLIENT ID: 151605  
=====  
COMPOUND RESULT Detection  
(ug/l) Limit (ug/l)  
Gasoline----- N.D. 50.0  
-----

QUALITY CONTROL DATA  
Surrogate Spike & Recovery  
Fluorobenzene 97 %

N.D.: Not Detected

  
-----  
Analytical Supervisor



Report Date:	01-May-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	16-Apr-88
Submitted by:	C. Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	17-Apr-88
Analyst:	Attia/Farah	Analysis Completion	
WESCO JOB #:	HLA 0831.46-L	Date:	17-Apr-88
Analytical Method:	EPA 602	Hold Time:	1 day

=====

LAB #: 8-4158	MATRIX: WATER
CLIENT'S ID: 151601	

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	6.7	0.2
Toluene-----	1.6	0.2
Chlorobenzene-----	3.0	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

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QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	97 %

=====

LAB #: 8-4159	MATRIX: WATER
CLIENT'S ID: 151602	

=====


COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	2.9	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	90 %

N.D.: Not Detected

  
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 Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: C. Larkin  
Submitted by: C. Larkin  
Preservatives: none  
Analyst: Attia/Farah  
WESCO JOB #: HLA 0831.46-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 16-Apr-88  
Site: City of Oakland  
Date Received: 16-Apr-88  
Extract/Digest/Purge  
Date: 17-Apr-88  
Analysis Completion  
Date: 17-Apr-88  
Hold Time: 1 day

LAB #: 8-4160

MATRIX: WATER

CLIENT'S ID: 151603

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      103 %

LAB #: 8-4161

MATRIX: WATER

CLIENT'S ID: 151604

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                      100 %

N.D.: Not Detected

  
Analytical Supervisor

Report Date: 01-May-88  
Client: Harding Lawson Associates  
Attn: David Leland  
Sampled by: C. Larkin  
Submitted by: C. Larkin  
Preservatives: none  
Analyst: Attia/Farah  
WESCO JOB #: HLA 0831.46-L  
Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
Date Sampled: 16-Apr-88  
Site: City of Oakland  
Date Received: 16-Apr-88  
Extract/Digest/Purge  
Date: 17-Apr-88  
Analysis Completion  
Date: 17-Apr-88  
Hold Time: 1 day

LAB #: 8-4162

MATRIX: WATER

CLIENT'S ID: 151605

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1.4	0.2
Xylene-----	1.3	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike                      Percent Recovery  
Fluorobenzene                          97 %

N.D.: Not Detected

  
-----  
Analytical Supervisor

Report Date: 01-May-88 Client Contract/PO: 9382,026.02  
 Client: Harding Lawson Associates Date Sampled: 16-Apr-88  
 Attn: David Leland Site: City of Oakland  
 Sampled by: C. Larkin Date Received: 16-Apr-88  
 Submitted by: C. Larkin Extract/Digest/Purge  
 Preservatives: none Date: 21-Apr-88  
 Analyst: Siegmund Analysis Completion  
 WESCO JOB #: HLA 0831.46-L Date: 22-Apr-88  
 Analytical Method: EPA 624 Hold Time, days: 5  
 MATRIX: WATER

LAB #	8-4163	8-4164	
CLIENT ID	151604	151605	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit(ug/l)
Dichlorodifluoromethane	N.D.	N.D.	0.5
Methyl Chloride	N.D.	N.D.	0.5
Vinyl Chloride	N.D.	N.D.	0.5
Methyl Bromide	N.D.	N.D.	0.5
Ethyl Chloride	N.D.	N.D.	0.5
Trichlorofluoromethane	N.D.	N.D.	0.5
1,1-Dichloroethene	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	0.5
1,1,1-trichloroethane	N.D.	N.D.	0.5
1,2-Dichloroethane	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
Benzene	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	0.5
Trichloroethene	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
Toluene	N.D.	N.D.	0.5
cis-1,3-dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	0.5
Ethylbenzene	N.D.	N.D.	0.5
Xylene	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	0.5

QUALITY CONTROL DATA	Surrogate Spike % Recovery	
1,2-Dichloroethane-d4	86 %	98 %
Toluene-d8	108 %	111 %
4-Bromofluorobenzene	130 %	134 %

N. D.: Not Detected  
 Analytical Supervisor

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegound  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge  
 Date: 21-Apr-88  
 Analysis Completion  
 Date: 22-Apr-88  
 Holding Time, Days: 5

LAB # 0-4165  
 CLIENT ID: 151604

MATRIX: WATER

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)ethane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Bis(2-ethylhexyl)phthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Bi-n-octyl phthalate	N.D.	3

Report Page 2

Report Date:	26-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	16-Apr-88
Submitted by:	C. Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	21-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.46-L	Date:	22-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	5

LAB # 8-4165 MATRIX: WATER  
 CLIENT ID: 151604

BASE NEUTRALS (CONT)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery	
Nitrobenzene-d5	57 %
2-Fluorobiphenyl	69 %
Terphenyl-d14	73 %

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery	
2-Fluorophenol	47 %
Phenol-d5	30 %
2,4,6-Tribromophenol	41 %

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegaund  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge Date: 21-Apr-88  
 Analysis Completion Date: 22-Apr-88  
 Holding Time, Days: 5

LAB # 8-4165  
 CLIENT ID: 151604

MATRIX: WATER

PESTICIDE COMPOUNDS

	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery  
 Nitrobenzene-d5 57 %  
 2-Fluorobiphenyl 69 %  
 Terphenyl-d14 73 %

N.D.: Not Detected                      n.d.: not determined  
 N.A.: Not Applicable                  N.R.: Not Recovered



Analytical Supervisor

Report Page 1

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge  
 Date: 21-Apr-88  
 Analysis Completion  
 Date: 22-Apr-88  
 Holding Time, Days: 5

LAB # 8-4166  
 CLIENT ID: 151605

MATRIX: WATER

BASE NEUTRALS	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	7
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	4
1,2-Dichlorobenzene	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	n.d.
Hexachloroethane	N.D.	2
Nitrobenzene	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	5
1,2,4-Trichlorobenzene	N.D.	2
Naphthalene	N.D.	2
Hexachlorobutadiene	N.D.	1
Hexachlorocyclopentadiene	N.D.	n.d.
2-Chloronaphthalene	N.D.	2
Dimethylphthalate	N.D.	2
Acenaphthylene	N.D.	4
2,6-Dinitrotoluene	N.D.	2
Acenaphthene	N.D.	2
2,4-Dinitrotoluene	N.D.	6
Diethyl phthalate	N.D.	2
Fluorene	N.D.	2
4-Chlorophenylphenyl ether	N.D.	4
N-Nitrosodiphenyl amine	N.D.	2
4-Bromophenylphenyl ether	N.D.	2
Hexachlorobenzene	N.D.	2
Phenanthrene	N.D.	6
Anthracene	N.D.	2
Di-n-butyl phthalate	N.D.	3
Fluoranthene	N.D.	2
Benzidine	N.D.	n.d.
Pyrene	N.D.	2
Butylbenzyl phthalate	N.D.	3
Benzo(a)anthracene	N.D.	8
3,3'-Dichlorobenzidine	N.D.	17
Chrysene	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	3
Di-n-octyl phthalate	N.D.	3



Report Page 2

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegaund  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge Date: 21-Apr-88  
 Analysis Completion Date: 22-Apr-88  
 Holding Time, Days: 5

LAB # 8-4166  
 CLIENT ID: 151605

MATRIX: WATER

BASE NEUTRALS (CONT)

	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(b)fluoranthene	N.D.	5
Benzo(k)fluoranthene	N.D.	3
Benzo(a)pyrene	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	4
Dibenzo(a,h)anthracene	N.D.	3
Benzo(g,h,i)perylene	N.D.	4

QUALITY CONTROL DATA

Base/Neutral Surrogate Spike % Recovery

Nitrobenzene-d5	58 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	87 %

ACID COMPOUNDS

	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	2
2-Chlorophenol	N.D.	3
2-Nitrophenol	N.D.	4
2,4-Dimethylphenol	N.D.	3
2,4-Dichlorophenol	N.D.	3
4-Chloro-3-methylphenol	N.D.	3
2,4,6-Trichlorophenol	N.D.	3
2,4-Dinitrophenol	N.D.	40
4-Nitrophenol	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	40
Pentachlorophenol	N.D.	3

QUALITY CONTROL DATA

Acid Surrogate Spike % Recovery

2-Fluorophenol	54 %
Phenol-d5	31 %
2,4,6-Tribromophenol	33 %

Report Page 3

Report Date: 26-Apr-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegaund  
 WESCO JOB #: HLA 0831.46-L  
 Analytical Method: EPA 625

Client Contract/PO: 9382,026.02  
 Date Sampled: 16-Apr-88  
 Site: City of Oakland  
 Date Received: 16-Apr-88  
 Extract/Digest/Purge  
 Date: 21-Apr-88  
 Analysis Completion  
 Date: 22-Apr-88  
 Holding Time, Days: 5

LAB # 8-4166  
 CLIENT ID: 151605

MATRIX: WATER

PESTICIDE COMPOUNDS


	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	n.d.
beta-BHC	N.D.	n.d.
gamma-BHC	N.D.	n.d.
delta-BHC	N.D.	n.d.
Heptachlor	N.D.	n.d.
Aldrin	N.D.	n.d.
Heptachlor epoxide	N.D.	n.d.
Endosulfan I	N.D.	n.d.
4,4'-DDE	N.D.	n.d.
Dieldrin	N.D.	n.d.
Endrin	N.D.	n.d.
Endosulfan II	N.D.	n.d.
4,4'-DDD	N.D.	n.d.
Endrin Aldehyde	N.D.	n.d.
4,4'-DDT	N.D.	n.d.
Endosulfan Sulfate	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery

Nitrobenzene-d5	58 %
2-Fluorobiphenyl	73 %
Terphenyl-d14	87 %

N.D.: Not Detected                      n.d.: not determined  
 N.A.: Not Applicable                  N.R.: Not Recovered



Analytical Supervisor



# WESCO Laboratories

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Attia/Arntzen  
 WESCO JOB #: HLA 0831.47-L  
 Analytical Method: EPA 5030/8015  
 Matrix: WATER

Client Contract/PO: 9382,026:02  
 Date Sampled: 17-Apr-88  
 Site: City of Oakland  
 Date Received: 17-Apr-88  
 Extract/Digest/Purge Date: 19-Apr-88  
 Analysis Completion Date: 19-Apr-88  
 Hold Time: 2 days

=====

LAB #:	8-4167	CLIENT ID:	151701
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	39	50.0

-----

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 118 %

=====

LAB #:	8-4168	CLIENT ID:	151702
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

-----

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 98 %

=====

LAB #:	8-4169	CLIENT ID:	151703
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

-----

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 96 %

=====

LAB #:	8-4170	CLIENT ID:	151704
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	N.D.	50.0

-----

QUALITY CONTROL DATA  
 Surrogate Spike % Recovery  
 Fluorobenzene 94 %

N.D.: Not Detected

*Attia*  
 -----  
 Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Attia/Arntzen  
 WESCO JOB #: HLA 0831.47-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 17-Apr-88  
 Site: City of Oakland  
 Date Received: 17-Apr-88  
 Extract/Digest/Purge Date: 19-Apr-88  
 Analysis Completion Date: 19-Apr-88  
 Hold Time: 2 days

LAB #: 8-4167  
 CLIENT'S ID: 151701

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	3.0	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 118 %

LAB #: 8-4168  
 CLIENT'S ID: 151702


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 98 %

N.D.: Not Detected

  
 Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Attia/Arntzen  
 WESCO JOB #: HLA 0831.47-L  
 Analytical Method: EPA 602

Client Contract/PO: 9382,026.02  
 Date Sampled: 17-Apr-88  
 Site: City of Oakland  
 Date Received: 17-Apr-88  
 Extract/Digest/Purge  
 Date: 19-Apr-88  
 Analysis Completion  
 Date: 19-Apr-88  
 Hold Time: 2 days

=====

LAB #: 8-4169 MATRIX: WATER  
 CLIENT'S ID: 151703

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

-----

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 96 %

=====

LAB #: 8-4170 MATRIX: WATER  
 CLIENT'S ID: 151704

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2


-----

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery  
 Fluorobenzene 94 %

N.D.: Not Detected

-----

  
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 Analytical Supervisor

Report Date: 01-May-88  
 Client: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.47-L  
 Analytical Method: EPA 624  
 Matrix: WATER

Client Contract/PO: 9382,026.02  
 Date Sampled: 17-Apr-88  
 Site: City of Oakland  
 Date Received: 17-Apr-88  
 Extract/Digest/Purge Date: 21-Apr-88  
 Analysis Completion Date: 21-Apr-88  
 Hold Time, days: 4

=====  
 LAB # 8-4171 8-4172  
 CLIENT ID 151703 151704  
 =====


COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit(ug/l)
Dichlorodifluoromethane	N.D.	N.D.	0.5
Methyl Chloride	N.D.	N.D.	0.5
Vinyl Chloride	N.D.	N.D.	0.5
Methyl Bromide	N.D.	N.D.	0.5
Ethyl Chloride	N.D.	N.D.	0.5
Trichlorofluoromethane	N.D.	N.D.	0.5
1,1-Dichloroethene	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	0.5
1,1,1-trichloroethane	N.D.	N.D.	0.5
1,2-Dichloroethane	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
Benzene	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	0.5
Trichloroethene	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
Toluene	N.D.	N.D.	0.5
cis-1,3-dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	0.5
Ethylbenzene	N.D.	N.D.	0.5
Xylene	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	0.5

-----  
 QUALITY CONTROL DATA

Surrogate Spike & Recovery

1,2-Dichloroethane-d4	94 %	98 %
Toluene-d8	107 %	106 %
4-Bromofluorobenzene	128 %	134 %

N. D.: Not Detected

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 Analytical Supervisor 

Report Page 1

Report Date: 26-Apr-88  
 Clients: Harding Lawson Associates  
 Attn: David Leland  
 Sampled by: C. Larkin  
 Submitted by: C. Larkin  
 Preservatives: none  
 Analyst: Siegmund  
 WESCO JOB #: HLA 0831.47-L  
 Analytical Method: EPA 625  
 Matrix: WATER

Client Contract/PO: 9382,026.02  
 Date Sampled: 17-Apr-88  
 Site: City of Oakland  
 Date Received: 17-Apr-88  
 Extract/Digest/Purge  
 Date: 21-Apr-88  
 Analysis Completion  
 Date: 22-Apr-88  
 Holding Time, Days: 4

LAB #	8-4173	8-4174	
CLIENT ID:	151703	151704	
BASE NEUTRALS	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	N.D.	7
1,3-Dichlorobenzene	N.D.	N.D.	2
1,4-Dichlorobenzene	N.D.	N.D.	4
1,2-Dichlorobenzene	N.D.	N.D.	2
Bis(2-chloroisopropyl)ether	N.D.	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	N.B.	n.d.
Hexachloroethane	N.D.	N.D.	2
Nitrobenzene	N.D.	N.D.	2
Bis(2-chloroethoxy)methane	N.D.	N.D.	5
1,2,4-Trichlorobenzene	N.D.	N.D.	2
Naphthalene	N.D.	N.D.	2
Hexachlorobutadiene	N.D.	N.D.	1
Hexachlorocyclopentadiene	N.D.	N.D.	n.d.
2-Chloronaphthalene	N.D.	N.D.	2
Dimethylphthalate	N.D.	N.D.	2
Acenaphthylene	N.D.	N.D.	4
2,6-Dinitrotoluene	N.D.	N.D.	2
Acenaphthene	N.D.	N.D.	2
2,4-Dinitrotoluene	N.D.	N.D.	6
Diethyl phthalate	N.D.	N.D.	2
Fluorene	N.D.	N.D.	2
4-Chlorophenylphenyl ether	N.D.	N.D.	4
N-Nitrosodiphenyl amine	N.D.	N.D.	2
4-Bromophenylphenyl ether	N.D.	N.D.	2
Hexachlorobenzene	N.D.	N.D.	2
Phenanthrene	N.D.	N.D.	6
Anthracene	N.D.	N.D.	2
Di-n-butyl phthalate	N.D.	N.D.	3
Fluoranthene	N.D.	N.D.	2
Benzidine	N.D.	N.D.	n.d.
Pyrene	N.D.	N.D.	2
Butylbenzyl phthalate	N.D.	N.D.	3
Benzo(a)anthracene	N.D.	N.D.	8
3,3'-Dichlorobenzidine	N.D.	N.D.	17
Chrysene	N.D.	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	N.D.	3
Di-n-octyl phthalate	N.D.	N.D.	3

Report Date:	26-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	17-Apr-88
Submitted by:	C. Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	21-Apr-88
Analyst:	Siegaund	Analysis Completion	
WESCD JOB #:	HLA 0831.47-L	Date:	22-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4
Matrix:	WATER		

LAB #	8-4173	8-4174
CLIENT ID:	151703	151704

BASE NEUTRALS (CONT)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(b)fluoranthene	N.D.	N.D.	5
Benzo(k)fluoranthene	N.D.	N.D.	3
Benzo(a)pyrene	N.D.	N.D.	3
Indeno(1,2,3-c,d)pyrene	N.D.	N.D.	4
Bibenzo(a,h)anthracene	N.D.	N.D.	3
Benzo(g,h,i)perylene	N.D.	N.D.	4

## QUALITY CONTROL DATA

## Base/Neutral Surrogate Spike % Recovery

Nitrobenzene-d5	37 %	45 %
2-Fluorobiphenyl	53 %	72 %
Terphenyl-d14	70 %	95 %

ACID COMPOUNDS	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	N.D.	2
2-Chlorophenol	N.D.	N.D.	3
2-Nitrophenol	N.D.	N.D.	4
2,4-Diethylphenol	N.D.	N.D.	3
2,4-Dichlorophenol	N.D.	N.D.	3
4-Chloro-3-methylphenol	N.D.	N.D.	3
2,4,6-Trichlorophenol	N.D.	N.D.	3
2,4-Dinitrophenol	N.D.	N.D.	40
4-Nitrophenol	N.D.	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	N.D.	40
Pentachlorophenol	N.D.	N.D.	3

## QUALITY CONTROL DATA

## Acid Surrogate Spike % Recovery

2-Fluorophenol	31 %	51 %
Phenol-d5	18 %	32 %
2,4,6-Tribromophenol	33 %	32 %



Report Page 3

Report Date:	26-Apr-88	Client Contract/PO:	9382,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Apr-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	C. Larkin	Date Received:	17-Apr-88
Submitted by:	C. Larkin	Extract/Digest/Purge	
Preservatives:	none	Date:	21-Apr-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.47-L	Date:	22-Apr-88
Analytical Method:	EPA 625	Holding Time, Days:	4
Matrix:	WATER		

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LAB #	8-4173	8-4174
CLIENT ID:	151703	151704

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PESTICIDE COMPOUNDS	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
alpha-BHC	N.D.	N.D.	n.d.
beta-BHC	N.D.	N.D.	n.d.
gamma-BHC	N.D.	N.D.	n.d.
delta-BHC	N.D.	N.D.	n.d.
Heptachlor	N.D.	N.D.	n.d.
Aldrin	N.D.	N.D.	n.d.
Heptachlor epoxide	N.D.	N.D.	n.d.
Endosulfan I	N.D.	N.D.	n.d.
4,4'-DDE	N.D.	N.D.	n.d.
Dieldrin	N.D.	N.D.	n.d.
Endrin	N.D.	N.D.	n.d.
Endosulfan II	N.D.	N.D.	n.d.
4,4'-DDD	N.D.	N.D.	n.d.
Endrin Aldehyde	N.D.	N.D.	n.d.
4,4'-DDT	N.D.	N.D.	n.d.
Endosulfan Sulfate	N.D.	N.D.	n.d.

QUALITY CONTROL DATA

Pesticide Surrogate Spike % Recovery		
Nitrobenzene-d5	37 %	45 %
2-Fluorobiphenyl	53 %	72 %
Terphenyl-d14	70 %	95 %

N.D.: Not Detected                      n.d.: not determined  
 N.A.: Not Applicable                 N.R.: Not Recovered

  
 Analytical Supervisor

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REPORT OF SYSTEM MONITORING: APRIL 16 - MAY 1, 1988  
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QUALITY CONTROL REVIEWER



Christopher R. Smith  
Associate Hydrogeologist