A Report Prepared for

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

REPORT OF SYSTEM MONITORING:
MARCH 16 THROUGH 31, 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 March 16 and 31, 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, 1988. 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; the two pairs are arranged in series. The system is configured so that water from the dewatering wells may be pumped through either pair of contactors 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 pairs of contactors, so the effectiveness of the first pair of contactors in reducing influent concentrations can be monitored. Depending on the configuration of the contactor pairs, only one of these ports is intermediate in the system at any one time.

From March 14 to March 31, total discharge of the system was 427,400 gallons, based on readings of the flow totalizing meter located in the discharge line. Average flow for this period was 17.5 gpm, with daily average flows ranging from 10.9 to 42.4 gpm.

The following improvements to the operation and monitoring of the treatment system were completed during this reporting period.

- Reconfiguration of the effluent flow meter. The previous configuration did not permit reliable measurement of total flow because the meter sensors were not completely immersed in the effluent stream. This problem was corrected by incorporating a U-tube configuration in the discharge pipe to keep the meter submerged under all flow conditions. Modifications were completed March 17, 1988.

- Modification to sampling port spigots. Modifications to reduce potential aeration of samples during collection were completed March 17, 1988.

The system was backwashed March 30, 1988, in response to the analytical results reported in Tables 1 through 4 which suggest that channeling, a condition in which water flows through only a portion of a carbon contactor, may have been occurring in the carbon beds. See Section III for additional discussion of channeling and analytical results.

Each carbon vessel was backwashed in succession. For each tank, backflow was initiated at 80-90 gpm. Backflow was continued for approximately 10-12 minutes. The flow rates for Tank 1 dropped to 30 gpm after 12 minutes of backwash. The flow rate in Tank 2 dropped to 45 gpm after 10 minutes. Flows in Tanks 3 and 4 were maintained at 90 gpm for 12 minutes. Backwash of Tank 2 was repeated for a period of 6 minutes, with flow rate dropping from 60 gpm to 30 gpm.

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.

III TREATMENT SYSTEM MONITORING

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 samples collected March 12 through 31 are summarized in Tables 1 through 4. Tabulated values for March 20 through 31 are based on verbal reports from WESCO, and are subject to revision pending receipt of written reports, which will be included in an appendix to a subsequent treatment system monitoring report.

Laboratory reports for treatment system samples collected March 12 through 19, 1988, 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 benzene, toluene, ethylbenzene, and xylenes (BTEX) indicate that on most days the treatment system removed these constituents to detection levels. Detectable values for BTEX occurred sporadically, particularly March 25 through 28, 1988. Possible explanations for the presence of these chemicals are 1) breakthrough as a result of exhaustion of the carbon, 2) channeling in the carbon beds, and 3) anomalies introduced as a result of laboratory analytical procedures. A comparison of treatment system design parameters with actual contaminant loads and water flow rates indicates that breakthrough is highly unlikely at this stage of system operation. The possibility of channeling was addressed by backwashing the system on March 30, 1988 (see Section II for discussion of backwashing procedures). Channeling of the carbon would allow water to move preferentially through the system, thereby decreasing both the chemical contact time and volume. This effect could account for sporadic detection of chemicals in the intermediate and effluent samples. This potential problem was addressed by backwashing the system to redistribute the carbon in the tanks.

Laboratory analytical procedures may result in the apparent detection of BTEX in intermediate, effluent, and blank samples. High BTEX levels in the influent samples may have carried over to the later samples; it is possible that the analytical equipment retains a memory of contaminants detected in the influent sample, resulting in detectable BTEX levels in subsequent analyses. Additionally, the presence of detectable chemicals in the blank samples analyzed suggests that cross-contamination may be present. These potential problems have been addressed by modifying the laboratory protocol to analyze intermediate, effluent, and blank samples prior to analyzing the influent samples.

V HAZARDOUS WASTE SHIPMENTS

Hazardous wastes associated with two vaults unearthed at the site were shipped from the site March 16 and 17, 1988. Further discussion and analytical data for these wastes are included in HLA's *Report of System Monitoring: March 12-15, 1988.* No other hazardous wastes have been removed from the site.

During this reporting period, large volumes of soil exhibiting evidence of the presence of petroleum hydrocarbons were unearthed in the northeastern corner of the site. The presence of petroleum hydrocarbons in soils was determined using an organic vapor analyzer and observations of color and odor. Soils exhibiting high levels of organic vapors, visual evidence of discoloration, or odors characteristic of petroleum hydrocarbons or other organic compounds have been immediately segregated and stockpiled. Samples of these soils have been collected and submitted to WESCO for analysis to confirm field evaluations. At the present time, approximately 2,000 yd^3 have been segregated and stockpiled on site.

Activities associated with these soils 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: APRIL 1-15, 1988

Normal operations, maintenance, and monitoring are planned for April 1 through 15, 1988.

TABLES

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES

DATE	12-Mar-88	13-Mar-88	14-Mar-88	15-Mar-88	16-Mar-88	17-Mar-88	18-Mar-88	19-Mar-88	20-Mar-88	21-Mar-88
HLA SAMPLE ID #	88101101	88111301	88111401	88111501	88111601	88111701	88111801	88121901	88122001	88122101
TEST METHOD/ COMPOUNDS										
EPA 602										
Benzene	385	136	320	340	270	180	310	170	270	380
Toluene	172	93	240	230	470	160	70	230	330	390
Ethylbenzene	53	37	46	6	19	3	19	12	15	19
Xylenes	379	110	330	160	210	110	240	140	180	220
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	3750	2760	4000	1400	2200	1100	2400	1100	1600	1900
Diesel	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)
EPA 624		NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2 Dichloroethane	30									
Benzene	510									
Trichloroethene	33									
Toluene	320									
Chlorobenzene	14									
Ethylbenzene	21									
All other 624 compounds	ND									
EPA 625		NT	NT	NT	NT	NT	NT	NT	NT	NT
Naphthalene	11.7									
2-Methylphenol	3.2									
All other 625 compounds	ND									

ND - Not detected (detection limit in parenthesis).

NT - Not tested.

All analyses reported in parts per billion (ppb).

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES (CONTINUED)

DATE	22-Mar-88	23-Mar-88	24-Mar-88	25-Mar-88	26-Mar-88	27-Mar-88	28-Mar-88	29-Mar-88	30-Mar-88	31-Mar-88
HLA SAMPLE ID #	88122201	88122301	88122401	88122501	88122601	88132701	88132801	88132901	88133001	88133101
TEST METHOD/ COMPOUNDS										
EPA 602										
Benzene	360	78	101	106	290	120	290	190	260	250
Toluene	380	99	107	102	170	110	270	190	220	190
Ethylbenzene	22	16	8	4	18	3.2	11	17	19	6.2
Xylenes	280	122	122	85	81	60	150	150	160	54
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	2300	2163	1500	722	1600	1100	1600	2000	1700	1100
Diesel	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	NT	NT	NT	NT
EPA 624	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2 Dichloroethane										
Benzene										
Trichloroethene										
Toluene										
Chlorobenzene										
Ethylbenzene										
All other 624 compounds										
EPA 625	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
Naphthalene										
2-Methylphenol										
All other 625 compounds										

ND - Not detected (detection limit in parenthesis).

NT - Not tested.

All analyses reported in parts per billion (ppb).

TABLE 2. TREATMENT SYSTEM WATER ANALYSIS: INTERMEDIATE SAMPLES

DATE	12-Mar-88	13-Mar-88	14-Mar-88	15-Mar-88	16-Mar-88	17-Mar-88	18-Mar-88	19-Mar-88	20-Mar-88	21-Mar-88
HLA SAMPLE ID #	88101102	88101302	88101402	88101502	88111602	88111702	88111802	88121902	88122002	88122102
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)	0.9	ND(0.2)	0.8	0.5
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)
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)	0.4
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	ND(10,000)	ND(10,000)	ND(1000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)

ND - Not detected (detection limit in parenthesis).

NT - Not tested.

All analyses reported in parts per billion (ppb).

TABLE 2. TREATMENT SYSTEM WATER ANALYSIS: INTERMEDIATE SAMPLES (CONTINUED)

DATE	22-Mar-88	23-Mar-88	24-Mar-88	25-Mar-88	26-Mar-88	27-Mar-88	28-Mar-88	29-Mar-88	30-Mar-88	31-Mar-88
HLA SAMPLE ID #	88122202	88122302	88122402	88122502	88122602	88132702	88132802	88132902	88133002	88133102
TEST METHOD/COMPOUNDS										
EPA 602										
Benzene	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.0	0.4	1.3	ND(0.2)	ND(0.2)	ND(0.2)
Toluene	1.2	ND(0.2)	ND(0.2)	2.2	4.6	1.9	2.3	6.0	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)	ND(0.2)
Xylenes	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	1.3	0.8	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	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	NT	NT	NT	NT

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ND - Not detected (detection limit in parenthesis).

NT - Not tested.

All analyses reported in parts per billion (ppb).

TABLE 3. TREATMENT SYSTEM WATER ANALYSIS: EFFLUENT SAMPLES

DATE	12-Mar-88	12-Mar-88	13-Mar-88	14-Mar-88	15-Mar-88	16-Mar-88	17-Mar-88	18-Mar-88	19-Mar-88	20-Mar-88	21-Mar-88
HLA SAMPLE ID #	88101103	88101104	88111303	88111403	88111503	88111603	88111703	88111803	88112907	88122003	88122103
TOTAL FLOW(THOUSAND GALLONS)	-	13.8	31.2	39.5	-	71.0	-	131.2	-	-	-
AVERAGE FLOW (GPM)	-	2.4	12.1	5.8	10.9	10.9	20.9	20.9	15.1	15.1	15.1
TEST METHOD/COMPOUNDS											
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)	ND(0.2)
Toluene	2.1	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.5	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)	ND(0.2)	ND(0.2)
Xylenes	2.5	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	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)
EPA 624											
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	1.7	ND	ND	ND	2.0	ND
All other compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 625											
All compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND - Not detected (detection limit in parenthesis).

NT - Not Tested

NA - Analytic results not yet available.

All analyses reported in parts per billion (ppb).

TABLE 3. TREATMENT SYSTEM WATER ANALYSIS: EFFLUENT SAMPLES (CONTINUED)

DATE	22-Mar-88	23-Mar-88	24-Mar-88	25-Mar-88	26-Mar-88	27-Mar-88	28-Mar-88	29-Mar-88	30-Mar-88	31-Mar-88
HLA SAMPLE ID #	88122203	88122303	88122403	88122503	88122603	88122703	88122803	88122903	88123003	88123103
TOTAL FLOW(THOUSAND GALLONS)	-	239.8	268.6	294.9	-	-	-	-	405.9	466.9
AVERAGE FLOW (GPM)	15.1	15.1	20	18.3	15.4	15.4	15.4	15.4	15.4	42.4
TEST METHOD/COMPOUNDS										
Benzene	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.7	ND(0.2)	ND(0.2)	ND(0.2)
Toluene	0.4	ND(0.2)	ND(0.2)	ND(0.2)	2.8	2.8	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)	ND(0.2)
Xylenes	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.34	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	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	NT	NT	NT	NT
EPA 624										
Toluene	ND	ND	ND	ND	0.5	ND	ND	ND	NA	NA
Methylene Chloride	ND	ND	ND	ND	ND	ND	3.5	1.0	NA	NA
All other compounds	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
EPA 625										
All compounds	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

ND - Not detected (detection limit in parenthesis).

NT - Not Tested

NA - Analytic results not yet available.

All analyses reported in parts per billion (ppb).

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES

DATE	12-Mar-88	13-Mar-88	14-Mar-88	15-Mar-88	16-Mar-88	17-Mar-88	18-Mar-88	19-Mar-88	20-Mar-88	21-Mar-88
HLA SAMPLE ID #	88101104	88111304	88111404	88111504	88111604	88111704	88111805	88121913	88122004	88122104
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)	0.4	0.4	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)	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)
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	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)
EPA 624										
Toluene	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Methylene Choride	NA	NA	NA	ND	1.9	ND	ND	ND	ND	ND
All other 624 compounds	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
EPA 625										
Naphthalene	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
All other 625 compounds	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND

ND - Not detected (detection limit in parenthesis).

NT - Not tested.

NA - Analytic results not yet available.

All analyses reported in parts per billion (ppb).

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES (CONTINUED)

DATE	22-Mar-88	23-Mar-88	24-Mar-88	25-Mar-88	26-Mar-88	27-Mar-88	28-Mar-88	29-Mar-88	30-Mar-88	31-Mar-88
HLA SAMPLE ID #	88122204	88122304	88122404	88122504	88122604	88132704	88132804	88132904	88133004	88133104
TEST METHOD/ COMPOUNDS										
EPA 602										
Benzene	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.9	ND(0.2)	ND(0.2)	ND(0.2)
Toluene	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.36	0.4	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)	ND(0.2)
Xylenes	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	0.66	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	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)	ND(10,000)
EPA 624										
Toluene	ND	ND	ND	ND	ND	0.6	ND	ND	NA	NA
Methylene Choride	ND	ND	1.4	ND	ND	ND	0.9	1.2	NA	NA
All other 624 compounds	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
EPA 625										
Naphthalene	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
All other 625 compounds	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

ND - Not detected (detection limit in parenthesis).

NT - Not tested.

NA - Analytic results not yet available.

All analyses reported in parts per billion (ppb).

Appendix

LABORATORY ANALYTICAL RESULTS FOR TREATMENT SYSTEM SAMPLES

TREATMENT SYSTEM

3-12-88

WESCO Laboratories

Report Date:	17-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	13-Mar-88
Analyst:	Attalla	Hold Time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2238	101101	Influent	N.D.	10
8-2246	101103	Effluent	N.D.	10
8-2254	101104	Effluent	N.D.	10
8-2262	101105	Trip Blank	N.D.	10
8-2270	101102	Middle	N.D.	10

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.4-L	HLA 0831.4-L
Diesel	N.D.	0	98

N.D.: Not Detected

Analytical Supervisor

Report Date:	17-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Attalla/Arntzen	Analysis Completion Date:	13-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 5030/8015/8020	Hold Time:	1 day

LAB #: 8-2244 MATRIX: WATER
CLIENT'S ID: 101101

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	385	0.2
Toluene	172	0.2
Ethylbenzene	53	0.2
Xylene	379	0.2
Gasoline	3750	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 133 %

LAB #: 8-2252 MATRIX: WATER
CLIENT'S ID: 101103

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	2.1	0.2
Ethylbenzene	N.D.	0.2
Xylene	2.5	0.2
Gasoline	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 110 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	17-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	13-Mar-88
Analyst:	Attalla/Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 5030/8015/8020		

LAB #: 8-2260 MATRIX: WATER
CLIENT'S ID: 101104

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
Gasoline	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 118 %

LAB #: 8-2268 MATRIX: WATER
CLIENT'S ID: 101105

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
Gasoline	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 100 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	17-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	13-Mar-88
Analyst:	Attalla/Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 5030/8015/8020		

LAB #: 8-2272 MATRIX: WATER

CLIENT'S ID: 101105

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	N.D.	0.2
Gasoline	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 101 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.4-L
METHOD: EPA 5030/8015/8020

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Sample #		HLA 0831.5-L	HLA 0831.5-L
Benzene	N.D.	1	97
Toluene	N.D.	2	99
p-Xylene	N.D.	5	100
Gasoline	N.D.	7	112
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	22-Mar-88	Client Contract/PO	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Mar-88
Analyst:	Libby/Staggs	Analysis Completion	
WESCO JOB #:	HLA 0831.4-L	Date:	13-Mar-88
Analytical Method:	METALS	Hold Time	1 day

MATRIX: WATER

LAB #	CLIENT ID	Arsenic (As) (mg/l)	Cadmium (Ca) (mg/l)	Chromium (Cr) (mg/l)	Chrom 6+ (Cr6+) (mg/l)	Copper (Cu) (mg/l)
8-2241	101101	N.D.	N.D.	N.D.	N.D.	N.D.
8-2249	101103	0.036	N.D.	N.D.	N.D.	N.D.
8-2257	101104	0.032	N.D.	N.D.	N.D.	N.D.
8-2265	101102	N.D.	N.D.	N.D.	N.D.	N.D.
Detection limit		0.002	0.10	0.10	0.04	0.10
Method number		EPA 7061	EPA 7130	EPA 7190	APHA 312.B	EPA 7210

LAB #	CLIENT ID	Iron (Fe) (mg/l)	Lead (Pb) (mg/l)	Mercury (Hg) (mg/l)	Nickel (Ni) (mg/l)	Silver (Ag) (mg/l)	Zinc (Zn) (mg/l)
8-2241	101101	0.32	N.D.	N.D.	N.D.	N.D.	0.38
8-2249	101103	0.42	N.D.	0.0002	N.D.	N.D.	0.25
8-2257	101104	0.60	N.D.	0.0159	N.D.	N.D.	0.19
8-2265	101102	0.32	N.D.	N.D.	N.D.	N.D.	0.41
Detection limit		0.20	0.10	0.0002	0.10	0.10	0.10
Method number		EPA 7380	EPA 7420	EPA 7470	EPA 7520	EPA 7760	EPA 7950

N.D.:Not Detected

Susan Libby

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: METALS

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
Sample #		8-2241	8-2241
Arsenic	N.D.	7	108
Cadmium	N.D.	5	96
Chromium	N.D.	3	104
Chromium 6+	N.D.	0	93
Copper	N.D.	9	89
Iron	N.D.	19	109
Lead	N.D.	6	100
Mercury	N.D.	12	121
Nickel	N.D.	4	75
Silver	N.D.	6	98
Zinc	N.D.	3	114

N.D.: Not Detected

Susan Gibbs
Analytical Supervisor

Report Date:	23-Mar-88	Client Contract/PO	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Costigan	Hold Time	2 days
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	Wet chemistry		

MATRIX: WATER

LAB #	CLIENT ID	COD (mg/l)	TSS (mg/l)
8-2240	101101	20	48
8-2248	101103	8	N.D.
8-2256	101104	4	N.D.
8-2264	101102	N.D.	2
Detection limit		4 mg/l	1 mg/l
Method number		Note 1	Note 2

LAB #	CLIENT ID	Cyanide (CN-) (mg/l)
8-2242	101101	N.D.
8-2250	101103	N.D.
8-2258	101104	N.D.
8-2266	101102	N.D.
Detection limit		0.04 mg/l
Method number		Note 3

Note 1: APHA 1985, 508 A
Note 2: APHA 1985, 209 C
Note 3: APHA 1985, 412 A, B, D (Colorimetric method)

N.D.: Not Detected

Susan Libby
Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: Wet chemistry

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
Sample #		8-2242	8-2242
COD	N.D.	0.8	102
TSS	N.D.	4.2	-
Cyanide	N.D.	0	90

N.D.: Not Detected

Note: Wesco Laboratories will store samples for 30 days after date of report unless otherwise notified.

Susan Lebo
Analytical Supervisor

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2239 MATRIX: WATER

CLIENT'S ID 101101

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	11.7	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:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L	Hold time:	1 day
Analytical Method:	EPA 625		

LAB # 8-2239 MATRIX: WATER
CLIENT'S ID 101101

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	70 %
2-Fluorobiphenyl	82 %
Terphenyl-d14	74 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2239 MATRIX: WATER
CLIENT'S ID 101101

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
2-Methylphenol**	3.2	n.d.

QUALITY CONTROL DATA Acid Surrogate Spike % Recovery	
2-Fluorophenol	50 %
Phenol-d5	30 %
2,4,6-Tribromophenol	92 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund		
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2239 MATRIX: WATER
CLIENT'S ID 101101

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	70 %
2-Fluorobiphenyl	82 %
Terphenyl-d14	74 %

N.D.: Not Detected
n.d.: not determined
N.A.: Not Applicable
** : Not a 625 compound.

Analytical Supervisor

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2247 MATRIX: WATER

CLIENT'S ID 101103

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:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2247 MATRIX: WATER
CLIENT'S ID 101103

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	85 %
Terphenyl-d14	91 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Hold time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625		

LAB # B-2247 MATRIX: WATER
CLIENT'S ID 101103

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	34 %
2,4,6-Tribromophenol	104 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Hold time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625		

LAB # 8-2247 MATRIX: WATER
CLIENT'S ID 101103

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	64 %
2-Fluorobiphenyl	85 %
Terphenyl-d14	91 %

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

Analytical Supervisor

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2255 MATRIX: WATER

CLIENT'S ID 101104

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:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2255 MATRIX: WATER
CLIENT'S ID 101104

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	43 %
2-Fluorobiphenyl	72 %
Terphenyl-d14	78 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2255 MATRIX: WATER
CLIENT'S ID 101104

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	29 %
2,4,6-Tribromophenol	82 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2255 MATRIX: WATER
CLIENT'S ID 101104

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	43 %
2-Fluorobiphenyl	72 %
Terphenyl-d14	78 %

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

Analytical Supervisor

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2263 MATRIX: WATER

CLIENT'S ID 101105

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:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge	
Preservatives:	none	Date:	13-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.4-L	Date:	14-Mar-88
Analytical Method:	EPA 625	Hold time:	1 day

LAB # 8-2263 MATRIX: WATER
CLIENT'S ID 101105

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	59 %
2-Fluorobiphenyl	83 %
Terphenyl-d14	86 %

Report Date:	16-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	12-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Hold time:	1 day
WESCO JOB #:	HLA 0831.4-L		
Analytical Method:	EPA 625		

LAB # 8-2263 MATRIX: WATER
CLIENT'S ID 101105

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	52 %
Phenol-d5	31 %
2,4,6-Tribromophenol	79 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Sample #		DI water	DI water
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	6	69
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	4	76
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	12	97
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	9	69
2,4-Dinitrotoluene (MS)	N.D.	6	70
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	n.s.	n.s.
Terphenyl-d12 (SS)	N.D.	5	84
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
	Sample #	DI water	DI water
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			69 %
2-Fluorobiphenyl			94 %
Terphenyl-d14			88 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	17	64
Phenol-d5 (SS)	N.D.	11	40
Phenol (MS)	N.D.	13	41
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	2	90
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	0	41
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	10	86
Pentachlorophenol (M.S.)	N.D.	1	96
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			65 %
Phenol-d5			38 %
2,4,6-Tribromophenol			66 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.4-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Sample #		DI water	DI water
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	5	84
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable

(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

Harding Lawson Associates
7655 Redwood Blvd.
P.O. Box 578
Novato, CA 94948
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831.4-2

Samplers: Rick Huttola

Job Number: 07382,025.02

Name/Location: City of Oakland

Project Manager: Dave Leland

Recorder: Rick Hutton (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
2 3	X				13		2	88	10	101	88	03	12		
2 3	X				6			88	10	102	88	03	12		
2 3	X				13		2	88	10	103	88	03	12		
2 3	X				13		2	88	10	104	88	03	12		
2 3	X				13		2	88	10	105	88	03	12		

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. 418.1	COD	TSS	Cyanide
	X	X	X	X		X	X	X	X
	X					X			
	X	X	X	X		X	X	X	X
	X	X	X	X		X	X	X	X
	X	X	X	X		X	X	X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Verbal Results as Follows:
						602, TPH = 24 hrs
						624, 625, PPlnt,
						COD, TSS, and
						Cyanide = by
						Tues 3/15/88,
						call Dave Leland.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Rick Hutton	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

METHOD OF SHIPMENT: By Courier or Courier's Courier

6533

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

TREATMENT SYSTEM
3-13-88

HARDING LAWSON ASSOC.
MAR 23 1988

WESCO Laboratories

RECEIVED
MAR 23 1988
ENVIRONMENTAL SERVICES DIVISION

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	13-Mar-88
Preservatives:	none	Analysis Completion Date:	13-Mar-88
Analyst:	Attalla	Hold Time:	0 days
WESCO JOB #:	HLA 0831.5		
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2274	111303	Effluent	N.D.	10
8-2278	111304	Trip Blank	N.D.	10
8-2283	111301	Influent	N.D.	10
8-2286	111302	Middle	N.D.	10

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.5
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.5-L	HLA 0831.5-L
Diesel	N.D.	0	98

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.5		
Analytical Method:	EPA 5030/8015	Hold Time:	1 day

LAB #: 8-2276 MATRIX: WATER
CLIENT'S ID: 111303

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 100 %

LAB #: 8-2281 MATRIX: WATER
CLIENT'S ID: 111304

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 95 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.5		
Analytical Method:	EPA 5030/8015	Hold Time:	1 day

LAB #: 8-2285 MATRIX: WATER
CLIENT'S ID: 111301

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	2760	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 75 %

LAB #: 8-2288 MATRIX: WATER
CLIENT'S ID: 111302

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 96 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.5
METHOD: EPA 5030/8015

COMPOUND Job #	Blank ug/l	Spike Duplicate % deviation HLA 0831.4-L	Spike % recovery HLA 0831.4-L
Gasoline----------	N.D.	7	112
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.5		
Analytical Method:	EPA 602	Hold Time:	1 day

LAB #: 8-2276 MATRIX: WATER
CLIENT'S ID: 111303

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 #: 8-2281 MATRIX: WATER
CLIENT'S ID: 111304

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	95 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Arntzen/Lewis	Hold Time:	1 day
WESCO JOB #:	HLA 0831.5		
Analytical Method:	EPA 5030/8015		

LAB #: 8-2285 MATRIX: WATER
CLIENT'S ID: 111301

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	2760	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 75 %

LAB #: 8-2288 MATRIX: WATER
CLIENT'S ID: 111302

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 96 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	13-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	13-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.5		
Analytical Method:	EPA 602	Hold Time:	1 day

LAB #: 8-2289 MATRIX: WATER
CLIENT'S ID: 111305

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	0.4	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	95 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.5
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.6-L	HLA 0831.6-L
Benzene	N.D.	1	97
Toluene	N.D.	2	99
p-Xylene	N.D.	5	100
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Harding Lawson Associates
7655 Redwood Blvd.
P.O. Box 578
Novato, CA 94948
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0231.5-L

Samplers: Rick Hutton

Job Number: 09832.02502

Name/Location: City of Oakland

Project Manager: Dave Leland

Recorder: _____ (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. L+H
23	X				5			881	11	1301	881	03	13	0730			X	X				X
23	X				6			881	11	1302	881	03	13	0930			X					X
23	X				10			881	11	1305	881	03	13	0730			X	X	X			X
23	X				10			881	11	1304	881	03	13	0930			X	X	X			X
23	X				2			881	11	1305	881	03	13	0930		X						

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						24hr. Turnaround on all EPA Method 602 and TPH(L+H). Call Verbals to Dave Leland 624 Hit + 625 Verbals to Leland by Tues

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Rick Hutton	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

Laboratory Copy (White) Project Office Copy (Yellow) Field or Office Copy (Pink)

6533

TREATMENT SYSTEM

3-14-88

WESCO Laboratories

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Attalla	Hold Time:	0 days
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2290	111401	Influent	N.D.	10
8-2293	111402	Middle	N.D.	10
8-2296	111403	Effluent	N.D.	10
8-2301	111404	Trip Blank	N.D.	10

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.6-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.5-L	HLA 0831.5-L
Diesel	N.D.	0	98

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Attalla	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #: 8-2291 MATRIX: WATER
CLIENT'S ID: 111401

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	4000	250

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 50 %

LAB #: 8-2294 MATRIX: WATER
CLIENT'S ID: 111402

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 91 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Attalla	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #: 8-2299 MATRIX: WATER
CLIENT'S ID: 111403

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 76 %

LAB #: 8-2304 MATRIX: WATER
CLIENT'S ID: 111404

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.6-L
METHOD: EPA 5030/8015

COMPOUND Job #	Blank ug/l	Spike Duplicate % deviation HLA 0831.4-L	Spike % recovery HLA 0831.4-L
Gasoline----------	N.D.	7	112
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	21-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2291 MATRIX: WATER
CLIENT'S ID: 111401

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	320	1.0
Toluene	240	1.0
Chlorobenzene	N.D.	1.0
Ethylbenzene	46	1.0
Xylene	330	1.0
1,3-Dichlorobenzene	N.D.	1.0
1,4-Dichlorobenzene	N.D.	1.0
1,2-Dichlorobenzene	N.D.	1.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	50 %

LAB #: 8-2294 MATRIX: WATER
CLIENT'S ID: 111402

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 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	18-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2299 MATRIX: WATER
CLIENT'S ID: 111403

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	76 %

LAB #: 8-2304 MATRIX: WATER
CLIENT'S ID: 111404

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	90 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.10-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
Benzene	N.D.	0	102
Toluene	N.D.	7	104
p-Xylene	N.D.	4	103
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	105 %	107 %	120 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	24-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.10-L	Date:	24-Mar-88
Analytical Method:	EPA 624	Hold Time	6 days

LAB # 8-2659 MATRIX: WATER
CLIENT'S ID 111803

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	89 %
Toluene-d8	101 %
4-Bromofluorobenzene	92 %

N. D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	24-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.10-L	Date:	24-Mar-88
Analytical Method:	EPA 624	Hold Time	6 days

LAB # 8-2660 MATRIX: WATER
CLIENT'S ID 111804

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	90 %
Toluene-d8	96 %
4-Bromofluorobenzene	98 %

N. D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	24-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.10-L	Date:	24-Mar-88
Analytical Method:	EPA 624	Hold Time	6 days

LAB #	8-2661	MATRIX:	WATER
CLIENT'S ID	111805		

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	100 %
Toluene-d8	100 %
4-Bromofluorobenzene	96 %

N. D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.10-L
METHOD: EPA 624

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.10-L	HLA 0831.10-L
Dichlorodifluoromethane	N.D.	-	N.S.
Methyl Chloride	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Methyl Bromide	N.D.	-	N.S.
Ethyl Chloride	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.
trans-1,2-dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane	N.D.	-	N.S.
Chloroform	N.D.	-	N.S.
1,1,1-trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane (M.S.)	N.D.	12	108
Carbon Tetrachloride	N.D.	-	N.S.
Benzene(M.S.)	N.D.	9	97
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene(M.S.)	N.D.	14	112
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
Toluene(M.S.)	N.D.	14	98
cis-1,3-dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene(M.S.)	N.D.	10	93
Ethylbenzene	N.D.	-	N.S.
Xylene	N.D.		N.S.
Bromoform	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	87 %	102 %	104 %
Toluene-d8	98 %	102 %	94 %
4-Bromofluorobenzene	101 %	95 %	101 %

N.D.: Not Detected
N.S.: Not Spiked

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 6
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2662 MATRIX: WATER
CLIENT ID: 111803

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:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 6
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2662 MATRIX: WATER
CLIENT ID: 111803

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	48 %
2-Fluorobiphenyl	57 %
Terphenyl-d14	95 %

Report Date:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2662 MATRIX: WATER
CLIENT ID: 111803

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	22 %
2,4,6-Tribromophenol	114 %

Report Date:	28-Mar-88	Client Contract/PO:	09302.020.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.10-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2662 MATRIX: WATER
CLIENT ID: 111803

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	57 %
Terphenyl-d14	95 %

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

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2663 MATRIX: WATER

CLIENT ID: 111804

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:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.10-L	Date:	22-Mar-88
Analytical Method:	EPA 625	Holding Time, Days	0

LAB # 8-2663 MATRIX: WATER
CLIENT ID: 111804

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	72 %
2-Fluorobiphenyl	79 %
Terphenyl-d14	77 %

Report Date:	28-Mar-88	Client Contract/PO:	09382.020.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2663 MATRIX: WATER
CLIENT ID: 111804

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	43 %
Phenol-d5	24 %
2,4,6-Tribromophenol	77 %

Report Date:	28-Mar-88	Client Contract/PO:	09382.020.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2663 MATRIX: WATER
CLIENT ID: 111804

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	72 %
2-Fluorobiphenyl	79 %
Terphenyl-d14	77 %

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

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09382.026.07
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund		
WESCO JOB #:	HLA 0831.10-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2664 MATRIX: WATER
CLIENT ID: 111805

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:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 5
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.10-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2664 MATRIX: WATER
CLIENT ID: 111805

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	77 %
2-Fluorobiphenyl	81 %
Terphenyl-d14	76 %

Report Date:	28-Mar-88	Client Contract/PO:	09302.022.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.10-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2664 MATRIX: WATER
CLIENT ID: 111805

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	39 %
Phenol-d5	27 %
2,4,6-Tribromophenol	66 %

Report Date:	28-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund	Holding Time, Days	0
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 625		

LAB # 8-2664 MATRIX: WATER
CLIENT ID: 111805

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	77 %
2-Fluorobiphenyl	81 %
Terphenyl-d14	76 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.10-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.10-L	HLA 0831.10-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	10	72
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	2	66
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	1	85
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	2	60
2,4-Dinitrotoluene (MS)	N.D.	28	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	14	59
Terphenyl-d12 (SS)	N.D.	49	60
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.10-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.10-L	HLA 0831.10-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			75 %
2-Fluorobiphenyl			72 %
Terphenyl-d14			69 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	29	53
Phenol-d5 (SS)	N.D.	24	37
Phenol (MS)	N.D.	44	36
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	5	63
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	19	19
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	24	85
Pentachlorophenol (M.S.)	N.D.	22	70
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			55 %
Phenol-d5			36 %
2,4,6-Tribromophenol			73 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.10-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.10-L	HLA 0831.10-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	49	60
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable
(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

HLA 0831.10

Harding Lawson Associates
Environmental Services Division
200 Rush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

Samplers: WALKER TJ

Job Number: 09382 026 02

Name/Location: CITY OF OAKLAND

Project Manager: DAVE LELAND

Recorder: T J Walker (Signature Required)

SOURCE CODE	MATRIX: Water	MATRIX: Sediment	MATRIX: Soil	MATRIX: Oil	#CONTAINERS & PRESERV.: Unpres.	#CONTAINERS & PRESERV.: H_2SO_4	#CONTAINERS & PRESERV.: HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (LUFT)
23	X				X			88	11	180	88	03	18	1730		X					X	
23	X				X			88	11	190	88	03	18	1730		X					X	
23	X				X			88	11	190	88	03	18	1730		X	X	X			X	
23	X				X			88	11	190	88	03	18	1730		X	X				X	
23	X				X			88	11	180	88	03	18	1730		X	X				X	

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						602 & TPH 24 HR
						624 & 625
						5 DAY

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) T J Walker — DATE/TIME	RECEIVED FOR LAB BY: (Signature) Dwyane — DATE/TIME 3/18/88 7:05 pm	
METHOD OF SHIPMENT		

[redacted] Lab [redacted] Copy [redacted] Project [redacted] Copy [redacted] Field [redacted] Copy [redacted]

TREATMENT SYSTEM

3-19-88

WESCO Laboratories

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	20-Mar-88
Preservatives:	none	Analysis Completion Date:	20-Mar-88
Analyst:	Attalla	Hold Time:	1 day
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID	Diesel (mg/l)	Detection limit(mg/l)
8-2683	121903	N.D.	1.0
8-2686	121906	N.D.	1.0
8-2689	121909	N.D.	1.0
8-2694	121914	N.D.	1.0

N.D.: Not Detected

01-04 Influent
05-08
09-12
13-16

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company Inc

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.12-L
METHOD: EPA 3510/8015

COMPOUND	Blank	Spike Duplicate	Spike
	mg/l	% deviation	% recovery
Job #		PEI 0806-L	PEI 0806-L
Diesel	N.D.	1	72

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	20-Mar-88
Preservatives:	none	Analysis Completion Date:	20-Mar-88
Analyst:	Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 5030/8015		

LAB #: 8-2681 MATRIX: WATER
CLIENT'S ID: 121901

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	1100	250

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 119 %

LAB #: 8-2684 MATRIX: WATER
CLIENT'S ID: 121904

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:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	20-Mar-88
Preservatives:	none	Analysis Completion Date:	20-Mar-88
Analyst:	Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 5030/8015		

LAB #: 8-2687 MATRIX: WATER
CLIENT'S ID: 121907

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	99 %

LAB #: 8-2692 MATRIX: WATER
CLIENT'S ID: 121912

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	117 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.12-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
Gasoline----------	N.D.	10	87
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	81 %	93 %	86 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	20-Mar-88
Preservatives:	none	Analysis Completion Date:	20-Mar-88
Analyst:	Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 602		

LAB #: 8-2681 MATRIX: WATER
CLIENT'S ID: 121901

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	170	1.0
Toluene	230	1.0
Chlorobenzene	N.D.	1.0
Ethylbenzene	12	1.0
Xylene	140	1.0
1,3-Dichlorobenzene	N.D.	1.0
1,4-Dichlorobenzene	N.D.	1.0
1,2-Dichlorobenzene	N.D.	1.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	119 %

LAB #: 8-2684 MATRIX: WATER
CLIENT'S ID: 121904

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:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	20-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	20-Mar-88
WESCO JOB #:	HLA 0831.12-L	Hold Time:	1 day
Analytical Method:	EPA 602		

LAB #: 8-2687 MATRIX: WATER
CLIENT'S ID: 121907

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	0.5	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	Percent Recovery
Fluorobenzene	99 %

LAB #: 8-2692 MATRIX: WATER
CLIENT'S ID: 121912

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	0.2
Toluene	0.4	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	117 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.12-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
Benzene	N.D.	23	106
Toluene	N.D.	4	91
p-Xylene	N.D.	6	89
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	81 %	93 %	86 %

N.D.: Not Detected

Note: Wesco Laboratories will store samples for 30 days after date of report unless otherwise notified.

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	24-Mar-88
Preservatives:	none	Analysis Completion Date:	24-Mar-88
Analyst:	Siegmund/Moezzi	Hold Time	5 days
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 624		

LAB # 8-2688 MATRIX: WATER
CLIENT'S ID 121908

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	92 %
Toluene-d8	97 %
4-Bromofluorobenzene	94 %

N. D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	24-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	24-Mar-88
WESCO JOB #:	HLA 0831.12-L	Hold Time	5 days
Analytical Method:	EPA 624		

LAB # 8-2693 MATRIX: WATER
CLIENT'S ID 121913

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	98 %
4-Bromofluorobenzene	100 %

N. D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.12-L
METHOD: EPA 624

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.12-L	HLA 0831.12-
Dichlorodifluoromethane	N.D.	-	N.S.
Methyl Chloride	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Methyl Bromide	N.D.	-	N.S.
Ethyl Chloride	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.
trans-1,2-dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane	N.D.	-	N.S.
Chloroform	N.D.	-	N.S.
1,1,1-trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane (M.S.)	N.D.	12	108
Carbon Tetrachloride	N.D.	-	N.S.
Benzene(M.S.)	N.D.	9	97
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene(M.S.)	N.D.	14	112
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
Toluene(M.S.)	N.D.	14	98
cis-1,3-dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene(M.S.)	N.D.	10	93
Ethylbenzene	N.D.	-	N.S.
Xylene	N.D.		N.S.
Bromoform	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	87 %	102 %	104 %
Toluene-d8	98 %	102 %	94 %
4-Bromofluorobenzene	101 %	95 %	101 %

N.D.: Not Detected
N.S.: Not Spiked

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09833,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.12-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2691 MATRIX: WATER

CLIENT ID: 121911

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.	2
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:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 2
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 625	Holding Time, Days	0

LAB # 8-2691 MATRIX: WATER
CLIENT ID: 121911

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	68 %
2-Fluorobiphenyl	75 %
Terphenyl-d14	78 %

Report Date:	28-Mar-88	Client Contract/PO:	09032,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 3
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days	0
WESCO JOB #:	HLA 083i.12-L		
Analytical Method:	EPA 625		

LAB # 8-2691 MATRIX: WATER
CLIENT ID: 121911

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	37 %
Phenol-d5	22 %
2,4,6-Tribromophenol	68 %

Report Date:	28-Mar-88	Client Contract/PO:	03032,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge	
Preservatives:	none	Date:	19-Mar-88
Analyst:	Siegmund/Moezzi	Analysis Completion	
WESCO JOB #:	HLA 0831.12-L	Date:	22-Mar-88
Analytical Method:	EPA 625	Holding Time, Days	0

LAB # 8-2091 MATRIX: WATER
CLIENT ID: 121911

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	68 %
2-Fluorobiphenyl	75 %
Terphenyl-d14	78 %

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

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09932,020.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 625	Holding Time, Days	0

LAB # 8-2695 MATRIX: WATER
CLIENT ID: 121915

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.	3
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.	3
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:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days	0
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 625		

LAB # 8-2695 MATRIX: WATER
CLIENT ID: 121915

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.	8
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	74 %
2-Fluorobiphenyl	74 %
Terphenyl-d14	71 %

Report Date:	28-Mar-88	Client Contract/PO:	00832,026.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 3
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none	Analysis Completion Date:	22-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days	0
WESCO JOB #:	HLA 0831.12-L		
Analytical Method:	EPA 625		

LAB # 8-2695 MATRIX: WATER
CLIENT ID: 12191S

ACID COMPOUNDS	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	3
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	55 %
Phenol-d5	36 %
2,4,6-Tribromophenol	65 %

Report Date:	28-Mar-88	Client Contract/PO:	09802,020.02
Client:	Harding Lawson Associates	Date Sampled:	19-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 9
Sampled by:	P. Llewellyn	Date Received:	19-Mar-88
Submitted by:	P. Llewellyn	Extract/Digest/Purge Date:	19-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	22-Mar-88
WESCO JOB #:	HLA 0831.12-L	Holding Time, Days	0
Analytical Method:	EPA 625		

LAB # 8-2695 MATRIX: WATER
CLIENT ID: 121915

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	74 %
2-Fluorobiphenyl	74 %
Terphenyl-d14	71 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.12-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	10	72
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	2	66
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	1	85
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	2	60
2,4-Dinitrotoluene (MS)	N.D.	28	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylpheryl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	14	59
Terphenyl-d12 (SS)	N.D.	49	60
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.12-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			75 %
2-Fluorobiphenyl			72 %
Terphenyl-d14			69 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	23	53
Phenol-d5 (SS)	N.D.	24	37
Phenol (MS)	N.D.	44	36
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	5	63
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	19	23
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	24	85
Pentachlorophenol (M.S.)	N.D.	22	70
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			55 %
Phenol-d5			36 %
2,4,6-Tribromophenol			73 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.12-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	49	60
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable
(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

Harding Lawson Associates
Environmental Services Division
200 Rush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831.12
WESCO LAB

Samplers: Peggy Llewellyn

Job Number: 1025.0

Name/Location: City of Oak...

Project Manager: Pete Mote

Recorder: Peggy Llewellyn (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
25	X							X	88	12	1901	88	12		1130	
									88	12	1902					
									88	12	1903					
									88	12	1904				1140	
									88	12	1905					
									88	12	1906					
									88	12	1907				1150	(2 VOA) (OKay by PPL)
									88	12	1908					
									88	12	1909					
V	V							V	88	12	1910		V			

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. 418.1	TPH Heavy
	X	X					
						X	
							X
	X	X					
						X	
							X
X	X					X	
		X					
							X
				X			

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Peggy Llewellyn	RECEIVED BY: (Signature)	DATE/TIME 1330
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) Michelle Casey	DATE/TIME 3/19 1330
METHOD OF SHIPMENT		

[redacted] laboratory copy [redacted] client copy [redacted] project copy [redacted]

Harding Lawson Associates
Environmental Services Division
200 Rush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

WESCO #: HLA 0831.12
WESCO LAB

Samplers: Peggy Llewellyn

Job Number: 09382.025.02

Name/Location: City of Oakland

Project Manager: Pete Mol

Recorder: Peggy Llewellyn
(Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	Ice	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/3020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. Lg	TPH Heavy
35	X								88	12	1911	88	03	19	1156				X	X				
									88	12	1912				1200	(2 VOA) ~~EDF~~	X	X				X		
									88	12	1913											X		
									88	12	1914												X	
									88	12	1915								X					

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Peggy Llewellyn	RECEIVED BY: (Signature)	DATE/TIME 1330
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) Michelle Casey	DATE/TIME 3/19 1330
METHOD OF SHIPMENT		

Laboratory Copy [redacted] Copy [redacted]

DISTRIBUTION

REPORT OF SYSTEM MONITORING: MARCH 16 - 31, 1988
DEWATERING EFFLUENT TREATMENT SYSTEM
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA
April 5, 1988

COPY NO. _____

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DFL/PAM/ljc/B3637-R

Quality Control Reviewer

Christopher R. Smith
Associate Hydrogeologist

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625		

LAB # 8-2375 MATRIX: WATER
CLIENT ID: 111603

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	23 %
2,4,6-Tribromophenol	27 %

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625		

LAB # 8-2375 MATRIX: WATER
CLIENT ID: 111603

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	76 %
Terphenyl-d14	74 %

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

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625		

LAB # 8-2379 MATRIX: WATER
CLIENT ID: 111604

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:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	21-Mar-88
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625	Holding Time, Days:	0

LAB # 8-2379 MATRIX: WATER
CLIENT ID: 111604

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	62 %
Terphenyl-d14	67 %

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625		

LAB # 8-2379 MATRIX: WATER
CLIENT ID: 111604

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	44 %

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	21-Mar-88
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625	Holding Time, Days:	0

LAB # 8-2379 MATRIX: WATER
CLIENT ID: 111604

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	62 %
Terphenyl-d14	67 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.8-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	10	72
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	2	66
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	1	85
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	2	63
2,4-Dinitrotoluene (MS)	N.D.	28	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	14	59
Terphenyl-d12 (SS)	N.D.	49	60
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.8-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			75 %
2-Fluorobiphenyl			72 %
Terphenyl-d14			69 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	23	53
Phenol-d5 (SS)	N.D.	24	37
Phenol (MS)	N.D.	44	36
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	5	63
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	19	23
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	24	85
Pentachlorophenol (M.S.)	N.D.	22	70
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			55 %
Phenol-d5			36 %
2,4,6-Tribromophenol			73 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.8-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	49	60
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable

(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

Harding Lawson Associates
Environmental Services Division
200 Rush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831.8

Samplers: WALKER TJ

Job Number: 09382 025 02

Name/Location: CITY OF OAKLAND

Project Manager: DAVE LELAND

Recorder: T J Walker (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (418.1)
23	X				X			88	11	1601	88	03	16	1640		X						X
23	X				X			88	11	1602	88	03	16	1640		X						X
23	X				X			88	11	1603	88	03	16	1640		X	X	X				X
23	X				X			88	11	1604	88	03	16	1640		X	X	X				X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						24 HR TURNAROUND
						5 days TAT on 62-1625

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) T J Walker — DATE/TIME 3/16 6:25PM	RECEIVED FOR LAB BY: (Signature) Michelle Casey — DATE/TIME 3/16 6:25PM	
METHOD OF SHIPMENT		

Laboratory Copy (White) Project Office Copy (Yellow) Field or Office Copy (Pink)

6533

TREATMENT SYSTEM 3-17-88

WESCO Laboratories

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Attalla	Analysis Completion Date:	18-Mar-88
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	3510/8015	Hold Time:	1 day

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2571	111701	Influent	N.D.	1.0
8-2572	111702	Middle	N.D.	1.0
8-2573	111703	Effluent	N.D.	1.0
8-2574	111704	Trip Blank	N.D.	1.0

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.9-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
Diesel	N.D.	0	90

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Lewis/Arntzen	Analysis Completion Date:	18-Mar-88
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 5030/8015	Hold Time:	1 day

LAB #: 8-2567 MATRIX: WATER
CLIENT'S ID: 111701

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	1100	100.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 145 %*

LAB #: 8-2568 MATRIX: WATER
CLIENT'S ID: 111702

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
* : Matrix interference

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	18-Mar-88
Analyst:	Lewis/Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 5030/8015		

LAB #: 8-2569 MATRIX: WATER
CLIENT'S ID: 111703

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 106 %

LAB #: 8-2570 MATRIX: WATER
CLIENT'S ID: 111704

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.9-L
METHOD: EPA 5030/8015

COMPOUND Job #	Blank ug/l	Spike Duplicate % deviation HLA 0831.9-L	Spike % recovery HLA 0831.9-L
Gasoline----------	N.D.	9	87
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	105 %	107 %	120 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Lewis/Arntzen	Analysis Completion Date:	18-Mar-88
WESCO JOB #:	HLA 0831.9-L	Hold Time:	1 day
Analytical Method:	EPA 602		

LAB #: 8-2567 MATRIX: WATER
CLIENT'S ID: 111701

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	180	0.4
Toluene	160	0.4
Chlorobenzene	N.D.	0.4
Ethylbenzene	3	0.4
Xylene	110	0.4
1,3-Dichlorobenzene	N.D.	0.4
1,4-Dichlorobenzene	N.D.	0.4
1,2-Dichlorobenzene	N.D.	0.4

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	145 %

LAB #: 8-2568 MATRIX: WATER
CLIENT'S ID: 111702

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:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	18-Mar-88
Analyst:	Lewis/Arntzen	Hold Time:	1 day
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 602		

LAB #: 8-2569 MATRIX: WATER
CLIENT'S ID: 111703

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	106 %

LAB #: 8-2570 MATRIX: WATER
CLIENT'S ID: 111704

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.9-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
Benzene	N.D.	0	102
Toluene	N.D.	7	104
p-Xylene	N.D.	4	103
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	105 %	107 %	120 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.9-L	Date:	18-Mar-88
Analytical Method:	EPA 624	Hold Time	1 day

LAB # 8-2575 MATRIX: WATER
CLIENT'S ID 88111703

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	106 %
4-Bromofluorobenzene	93 %

N. D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.9-L	Date:	18-Mar-88
Analytical Method:	EPA 624	Hold Time	1 day

LAB # 8-2576 MATRIX: WATER
CLIENT'S ID 88111704

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	114 %
Toluene-d8	97 %
4-Bromofluorobenzene	103 %

N. D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.9-L
METHOD: EPA 624

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
Dichlorodifluoromethane	N.D.	-	N.S.
Methyl Chloride	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Methyl Bromide	N.D.	-	N.S.
Ethyl Chloride	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.
trans-1,2-dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane(M.S.)	N.D.	16	103
Chloroform	N.D.	-	N.S.
1,1,1-trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
Benzene(M.S.)	N.D.	9	102
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene(M.S.)	N.D.	1	103
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
Toluene(M.S.)	N.D.	4	98
cis-1,3-dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene(M.S.)	N.D.	3	89
Ethylbenzene	N.D.	-	N.S.
Xylene	N.D.		N.S.
Bromoform	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	120 %	123 %	125 %
Toluene-d8	115 %	108 %	112 %
4-Bromofluorobenzene	91 %	106 %	100 %

N.D.: Not Detected
N.S.: Not Spiked

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	18-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2577 MATRIX: WATER
CLIENT ID 88111703

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:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	18-Mar-88
Analyst:	Siegmund	Analysis Completion	
WESCO JOB #:	HLA 0831.9-L	Date:	18-Mar-88
Analytical Method:	EPA 625	Holding Time, Days:	1

LAB # 8-2577 MATRIX: WATER
CLIENT ID 88111703

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	82 %
2-Fluorobiphenyl	79 %
Terphenyl-d14	85 %

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	18-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2577 MATRIX: WATER
CLIENT ID 88111703

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	39 %
Phenol-d5	23 %
2,4,6-Tribromophenol	25 %

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	18-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2577 MATRIX: WATER
CLIENT ID 88111703

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	82 %
2-Fluorobiphenyl	79 %
Terphenyl-d14	85 %

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

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2578 MATRIX: WATER
CLIENT ID 88111704

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:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	21-Mar-88
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625	Holding Time, Days:	1

LAB # 8-2578 MATRIX: WATER
CLIENT ID 88111704

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	71 %
2-Fluorobiphenyl	79 %
Terphenyl-d14	95 %

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2578 MATRIX: WATER
CLIENT ID 88111704

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	49 %
Phenol-d5	27 %
2,4,6-Tribromophenol	20 %

Report Date:	28-Mar-88	Client Contract/PO:	09832,026.02
Client:	Harding Lawson Associates	Date Sampled:	17-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 7
Sampled by:	T. J. Walker	Date Received:	17-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund	Holding Time, Days:	1
WESCO JOB #:	HLA 0831.9-L		
Analytical Method:	EPA 625		

LAB # 8-2578 MATRIX: WATER
CLIENT ID 88111704

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	79 %
Terphenyl-d14	95 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.9-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	10	72
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	2	66
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	1	65
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	2	63
2,4-Dinitrotoluene (MS)	N.D.	28	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	14	59
Terphenyl-d12 (SS)	N.D.	49	60
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.9-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			75 %
2-Fluorobiphenyl			72 %
Terphenyl-d14			69 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	23	53
Phenol-d5 (SS)	N.D.	24	37
Phenol (MS)	N.D.	44	36
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	5	63
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	19	23
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	24	85
Pentachlorophenol (M.S.)	N.D.	22	70
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			55 %
Phenol-d5			30 %
2,4,6-Tribromophenol			73 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.9-L

METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	49	60
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable

(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

Harding Lawson Associates
7655 Redwood Blvd
P.O. Box 578
Novato, CA 94948
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831.9-L

Samplers: WALKER TJ

Job Number: 09382 025 02

Name/Location: CITY OF OAKLAND

Project Manager: D. LELAND

Recorder: T J Walker
(Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
23	X				X			88	11	1701	88	03	17	1130	
23	X				X			88	11	1702	88	03	17	1130	
23	X				X			88	11	1703	88	03	17	1130	
23	X				X			88	11	1704	88	03	17	1130	

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (GH)
	X					X
	X					X
	X	X	X			X
	X	X	X			X

32 reqd

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						24HR 602 & TPH
						5 DAY 624 & 625

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
T J Walker		3/17/88 1026
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

6533

TREATMENT SYSTEM

WESCO Laboratories

3-18-88

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none	Analysis Completion Date:	20-Mar-88
Analyst:	Arntzen		
WESCO JOB #:	HLA 0831.10-L	Hold Time:	0 days
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2649	111801	Influent	N.D.	1.0
8-2650	111802	Middle	N.D.	1.0
8-2651	111803	Effluent	N.D.	1.0
8-2652	111804	Effluent	N.D.	1.0
8-2653	111805	Trip Blank	N.D.	1.0

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.10-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation 8-2631 PEI 0806-L	Spike % recovery 8-2631 PEI 0806-L
Sample #			
Diesel	N.D.	1	72

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	20-Mar-88
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #: 8-2654 MATRIX: WATER
CLIENT'S ID: 111801

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	N.D.	2500

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	100 %

LAB #: 8-2655 MATRIX: WATER
CLIENT'S ID: 111802

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	20-Mar-88
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #: 8-2656 MATRIX: WATER
CLIENT'S ID: 111803

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 107 %

LAB #: 8-2657 MATRIX: WATER
CLIENT'S ID: 111804

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:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	20-Mar-88
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #:	8-2658	MATRIX:	WATER
CLIENT'S ID:	111805		

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.10-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.9-L	HLA 0831.9-L
Gasoline----------	N.D.	9	87
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	105 %	107 %	120 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	18-Mar-88
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2654 MATRIX: WATER
CLIENT'S ID: 111801

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	310	10
Toluene	570	10
Chlorobenzene	N.D.	10
Ethylbenzene	19	10
Xylene	240	10
1,3-Dichlorobenzene	N.D.	10
1,4-Dichlorobenzene	N.D.	10
1,2-Dichlorobenzene	N.D.	10

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	100 %

LAB #: 8-2655 MATRIX: WATER
CLIENT'S ID: 111802

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	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382.026.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Task 8
Sampled by:	T. J. Walker	Date Received:	18-Mar-88
Submitted by:	T. J. Walker	Extract/Digest/Purge Date:	18-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	18-Mar-88
WESCO JOB #:	HLA 0831.10-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2658 MATRIX: WATER

CLIENT'S ID: 111805

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:	22-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Arntzen/Lewis	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2306 MATRIX: WATER

CLIENT'S ID: 111405

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	92 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.6-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0831.4-L	Spike % recovery HLA 0831.4-L
Sample #			
Benzene	N.D.	1	97
Toluene	N.D.	2	99
p-Xylene	N.D.	7	100
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 17-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Rick Hutton
Submitted by: Rick Hutton
Preservatives: none
Analyst: Siegmund
WESCO JOB #: HLA 0831.6-L
Analytical Method: EPA 625

Client Contract/PO: 09832,025.0
Date Sampled: 14-Mar-88
Site: City of Oakland
Date Received: 14-Mar-88
Extract/Digest/Purge Date: 14-Mar-88
Analysis Completion Date: 14-Mar-88
Holding Time, Days: 0

LAB # 8-2297 MATRIX: WATER
CLIENT ID: 111403

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:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	14-Mar-88
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625	Holding Time, Days:	0

LAB # 8-2297 MATRIX: WATER
CLIENT ID: 111403

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	53 %
2-Fluorobiphenyl	75 %
Terphenyl-d14	89 %

Report Date:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625		

LAB # 8-2297 MATRIX: WATER
CLIENT ID: 111403

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	25 %
2,4,6-Tribromophenol	65 %

Report Date:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625		

LAB # 8-2297 MATRIX: WATER
CLIENT ID: 111403

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	75 %
Terphenyl-d14	89 %

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

Analytical Supervisor

Report Date: 17-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Rick Hutton
Submitted by: Rick Hutton
Preservatives: none
Analyst: Siegmund
WESCO JOB #: HLA 0831.6-L
Analytical Method: EPA 625

Client Contract/PO: 09832,025.0
Date Sampled: 14-Mar-88
Site: City of Oakland
Date Received: 14-Mar-88
Extract/Digest/Purge Date: 14-Mar-88
Analysis Completion Date: 14-Mar-88
Holding Time, Days: 0

LAB # 8-2302 MATRIX: WATER
CLIENT ID: 111404

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:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625		

LAB # 8-2302 MATRIX: WATER
CLIENT ID: 111404

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	81 %
2-Fluorobiphenyl	99 %
Terphenyl-d14	92 %

Report Date:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625		

LAB # 8-2302 MATRIX: WATER
CLIENT ID: 111404

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	66 %
Phenol-d5	43 %
2,4,6-Tribromophenol	68 %

Report Date:	17-Mar-88	Client Contract/PO:	09832,025.0
Client:	Harding Lawson Associates	Date Sampled:	14-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	14-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	14-Mar-88
Preservatives:	none	Analysis Completion Date:	14-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.6-L		
Analytical Method:	EPA 625		

LAB # B-2302 MATRIX: WATER
CLIENT ID: 111404

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	81 %
2-Fluorobiphenyl	99 %
Terphenyl-d14	92 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.6-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.6-L	HLA 0831.6-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	6	69
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	4	76
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	12	97
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	9	69
2,4-Dinitrotoluene (MS)	N.D.	6	70
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	6	67
Terphenyl-d12 (SS)	N.D.	5	84
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.6-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.6-L	HLA 0831.6-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			69 %
2-Fluorobiphenyl			94 %
Terphenyl-d14			88 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	17	64
Phenol-d5 (SS)	N.D.	11	40
Phenol (MS)	N.D.	13	41
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	2	90
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	0	41
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	10	86
Pentachlorophenol (M.S.)	N.D.	1	96
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			65 %
Phenol-d5			38 %
2,4,6-Tribromophenol			66 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #HLA 0831.6-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.6-L	HLA 0831.6-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	5	88
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable
(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

HLA
7655 Redwood Blvd.
P.O. Box 578
Novato, CA 94948
(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831.6

Laundry

Job Number: 09382.025.02

Name/Location: City of Oakland

Project Manager: Dave Deland

Samplers: Rick Hutton
Tina Walker

Recorder: Richard Hutton (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES
23	X				10			88	11	1401	88	03	14	1230	
23	X							88	11	1402	88	03	14	1230	
23	X							88	11	1403	88	03	14	1230	
23	X							88	11	1404	88	03	14	1230	
23	X							88	11	1405	88	03	14	1230	

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plitnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. 418.1
		X					X
		X					X
		X	X	X			X
		X	X	X			X
	X						

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Richard Hutton	RECEIVED BY: (Signature) DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature) DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature) DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature) DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) DATE/TIME: Greg Peterson Wed 2:20 p.m. 3/14/88
METHOD OF SHIPMENT	

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

6533

TREATMENT SYSTEM
3-15-88

WESCO Laboratories

Report Date:	28-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none		
Analyst:	Attalla	Analysis Completion Date:	15-Mar-88
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	3510/8015	Hold Time:	0 days

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2324	111501	Influent	N.D.	1.0
8-2327	111502	Middle	N.D.	1.0
8-2330	111503	Effluent	N.D.	1.0
8-2335	111504	Blank	N.D.	1.0

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.7-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.7-L	HLA 0831.7-L
Diesel	N.D.	0	90

N.D.: Not Detected

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Attalla	Hold Time:	0 days
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 5030/8015		

LAB #: 8-2325 MATRIX: WATER
CLIENT'S ID: 111501

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	1400	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 88 %

LAB #: 8-2328 MATRIX: WATER
CLIENT'S ID: 111502

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 85 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none		
Analyst:	Attalla	Analysis Completion Date:	15-Mar-88
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 5030/8015	Hold Time:	0 days

LAB #: 8-2332 MATRIX: WATER
CLIENT'S ID: 111503

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 85 %

LAB #: 8-2337 MATRIX: WATER
CLIENT'S ID: 111504

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 77 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.7-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation HLA 0831.4-L	Spike % recovery HLA 0831.4-L
Job #			
Gasoline----------	N.D.	7	112
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	96 %	106 %	106%

N.D.: Not Detected

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	15-Mar-88
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2325 MATRIX: WATER
CLIENT'S ID: 111501

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	340	10
Toluene	230	10
Chlorobenzene	N.D.	10
Ethylbenzene	6	0.2
Xylene	160	10
1,3-Dichlorobenzene	N.D.	10
1,4-Dichlorobenzene	N.D.	10
1,2-Dichlorobenzene	N.D.	10

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	88 %

LAB #: 8-2328 MATRIX: WATER
CLIENT'S ID: 111502

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	85 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	28-Mar-88	Client Contract/PO:	09832,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	15-Mar-88
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2332 MATRIX: WATER
CLIENT'S ID: 111503

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	85 %

LAB #: 8-2337 MATRIX: WATER
CLIENT'S ID: 111504

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	77 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.7-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0831.4-L	Spike % recovery HLA 0831.4-L
Job #			
Benzene	N.D.	1	97
Toluene	N.D.	2	99
p-Xylene	N.D.	5	100
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	96 %	106 %	106 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 23-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Rick Hutton
Submitted by: Rick Hutton
Preservatives: none
Analyst: Siegmund
WESCO JOB #: HLA 0831.7-L
Analytical Method: EPA 625

Client Contract/PO: 09382,025.02
Date Sampled: 15-Mar-88
Site: City of Oakland
Date Received: 15-Mar-88
Extract/Digest/Purge Date: 15-Mar-88
Analysis Completion Date: 15-Mar-88
Holding Time, Days: 0

LAB # 8-2331
CLIENT ID 111503
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

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	15-Mar-88
WESCO JOB #:	HLA 0831.7-L	Holding Time, Days:	0
Analytical Method:	EPA 625		

LAB # 8-2331 MATRIX: WATER
CLIENT ID 111503

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	77 %
2-Fluorobiphenyl	94 %
Terphenyl-d14	78 %

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2331 MATRIX: WATER
CLIENT ID 111503

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	30 %
Phenol-d5	19 %
2,4,6-Tribromophenol	46 %

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2331 MATRIX: WATER
CLIENT ID 111503

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	77 %
2-Fluorobiphenyl	94 %
Terphenyl-d14	78 %

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

Analytical Supervisor

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2336 MATRIX: WATER
CLIENT ID 111504

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:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2336 MATRIX: WATER
CLIENT ID 111504

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	72 %
2-Fluorobiphenyl	96 %
Terphenyl-d14	77 %

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2336 MATRIX: WATER
CLIENT ID 111504

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	18 %
2,4,6-Tribromophenol	44 %

Report Date:	23-Mar-88	Client Contract/PO:	09382,025.02
Client:	Harding Lawson Associates	Date Sampled:	15-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	15-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge Date:	15-Mar-88
Preservatives:	none	Analysis Completion Date:	15-Mar-88
Analyst:	Siegmund	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.7-L		
Analytical Method:	EPA 625		

LAB # 8-2336 MATRIX: WATER
CLIENT ID 111504

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	72 %
2-Fluorobiphenyl	96 %
Terphenyl-d14	77 %

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

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB HLA 0831.7-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.7-L	HLA 0831.7-L
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	10	72
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl)ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.D.	2	66
Nitrobenzene	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.D.	1	85
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	2	63
2,4-Dinitrotoluene (MS)	N.D.	28	43
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	14	59
Terphenyl-d12 (SS)	N.D.	49	60
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.
Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b)fluoranthene	N.D.	n.s.	n.s.
Benzo(k)fluoranthene	N.D.	n.s.	n.s.
Benzo(a)pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd)pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h)anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i)perylene	N.D.	n.s.	n.s.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB HLA 0831.7-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.7-L	HLA 0831.7-L
QUALITY CONTROL DATA			
Base/Neutral Blank Surrogate Spike % Recovery			
Nitrobenzene-d5			75 %
2-Fluorobiphenyl			72 %
Terphenyl-d14			69 %
ACID COMPOUNDS			
2-Fluorophenol (SS)	N.D.	23	53
Phenol-d5 (SS)	N.D.	24	37
Phenol (MS)	N.D.	44	36
2-Chlorophenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	5	63
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol (MS)	N.D.	19	23
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.D.	24	85
Pentachlorophenol (M.S.)	N.D.	22	70
QUALITY CONTROL DATA			
Acid Surrogate Blank Spike % Recovery			
2-Fluorophenol			55 %
Phenol-d5			36 %
2,4,6-Tribromophenol			73 %

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB HLA 0831.7-L
METHOD: EPA 625

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Job #		HLA 0831.7-L	HLA 0831.7-L
PESTICIDES			
alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.D.	49	60
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

N.D.: Not Detected
n.s.: not spiked
N.A.: Not Applicable

(SS): Surrogate Spike
(MS): Matrix Spike
N.R.: Not Recovered

Analytical Supervisor

HLA 0831.7-L

Harding Lawson Associates
Environmental Services Division
200 Rush Landing Road
Novato, California 94947
(415) 892-0821

CHAIN OF CUSTODY FORM

Samplers: TIM WALKER

Job Number: 09382 025 02

Name/Location: CITY of OAKLAND

Project Manager: _____

Recorder: _____ (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. EH
	✓				✓			88	11	1501	88	03	15	1330			X					X
	✓				✓			88	11	1502	88	03	15	1330			X					X
	✓				✓			88	11	1503	88	03	15	1330			X	X	X			X
	✓				✓			88	11	1504	88	03	15	1330			X	X	X			X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						24 HR TURNAROUND

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) J. Walker	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) J. Walker — DATE/TIME 3/15 1240	RECEIVED FOR LAB BY: (Signature) M. Blanchard — DATE/TIME 3/15/89 1240	
METHOD OF SHIPMENT		

TREATMENT SYSTEM
3-16-88

WESCO Laboratories

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	16-Mar-88
Analyst:	Attalla	Hold Time:	0 days
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	3510/8015		

MATRIX: WATER

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2370	111601	Influent	N.D.	1.0
8-2372	111602	Middle	N.D.	1.0
8-2376	111603	Effluent	N.D.	1.0
8-2380	111604	Trip Blank	N.D.	1.0

N.D.: Not Detected

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94949 415 883-6425
A Division of Western Ecological Services Company, Inc

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.8-L
METHOD: EPA 3510/8015

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.7-L	HLA 0831.7-L
Diesel	N.D.	0	90

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	16-Mar-88
WESCO JOB #:	HLA 0831.8-L	Hold Time:	0 days
Analytical Method:	EPA 5030/8015		

LAB #: 8-2369 MATRIX: WATER
CLIENT'S ID: 111601

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline	2200	500

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 86 %

LAB #: 8-2371 MATRIX: WATER
CLIENT'S ID: 111602

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:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	16-Mar-88
WESCO JOB #:	HLA 0831.8-L	Hold Time:	0 days
Analytical Method:	EPA 5030/8015		

LAB #: 8-2373 MATRIX: WATER
CLIENT'S ID: 111603

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 107 %

LAB #: 8-2377 MATRIX: WATER
CLIENT'S ID: 111604

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.8-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
Gasoline----------	N.D.	16	107
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	99 %	109 %	93 %

N.D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	16-Mar-88
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2369 MATRIX: WATER
CLIENT'S ID: 111601

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	270	2
Toluene	470	2
Chlorobenzene	N.D.	2
Ethylbenzene	19	2
Xylene	210	2
1,3-Dichlorobenzene	N.D.	2
1,4-Dichlorobenzene	N.D.	2
1,2-Dichlorobenzene	N.D.	2

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	86 %

LAB #: 8-2371 MATRIX: WATER
CLIENT'S ID: 111602

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:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Arntzen	Analysis Completion Date:	16-Mar-88
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 602	Hold Time:	0 days

LAB #: 8-2373 MATRIX: WATER
CLIENT'S ID: 111603

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 #: 8-2377 MATRIX: WATER
CLIENT'S ID: 111604

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.8-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		8-2373	8-2373
Benzene	N.D.	25	97
Toluene	N.D.	30	98
p-Xylene	N.D.	44	95
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	99 %	109 %	93 %

N.D.: Not Detected

Note: Wesco Laboratories will store samples for 30 days after date of report unless otherwise notified.

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	16-Mar-88
Analyst:	Siegmund	Hold Time	0 days
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 624		

LAB # 8-2374 MATRIX: WATER

CLIENT'S ID 111603

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	1.7	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	104 %
Toluene-d8	102 %
4-Bromofluorobenzene	117 %

N. D.: Not Detected

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.02
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Siegmund	Analysis Completion Date:	16-Mar-88
WESCO JOB #:	HLA 0831.8-L	Hold Time	0 days
Analytical Method:	EPA 624		

LAB # 8-2378 MATRIX: WATER
CLIENT'S ID 111604

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	1.9	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	104 %
4-Bromofluorobenzene	121 %

N. D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.8-L
METHOD: EPA 624

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.8-L	HLA 0831.8-L
Dichlorodifluoromethane	N.D.	-	N.S.
Methyl Chloride	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Methyl Bromide	N.D.	-	N.S.
Ethyl Chloride	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.
trans-1,2-dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane(M.S.)	N.D.	16	103
Chloroform	N.D.	-	N.S.
1,1,1-trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
Benzene(M.S.)	N.D.	9	102
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene(M.S.)	N.D.	1	103
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
Toluene(M.S.)	N.D.	4	98
cis-1,3-dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene(M.S.)	N.D.	3	89
Ethylbenzene	N.D.	-	N.S.
Xylene	N.D.		N.S.
Bromoform	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	120 %	123 %	125 %
Toluene-d8	115 %	108 %	112 %
4-Bromofluorobenzene	91 %	106 %	100 %

N.D.: Not Detected
N.S.: Not Spiked

Analytical Supervisor

Report Date:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none		
Analyst:	Siegmund/Moezzi	Analysis Completion Date:	21-Mar-88
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625	Holding Time, Days:	0

LAB # 8-2375 MATRIX: WATER
CLIENT ID: 111603

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:	30-Mar-88	Client Contract/PO:	09382,026.0
Client:	Harding Lawson Associates	Date Sampled:	16-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	J. Walker	Date Received:	16-Mar-88
Submitted by:	J. Walker	Extract/Digest/Purge Date:	16-Mar-88
Preservatives:	none	Analysis Completion Date:	21-Mar-88
Analyst:	Siegmund/Moezzi	Holding Time, Days:	0
WESCO JOB #:	HLA 0831.8-L		
Analytical Method:	EPA 625		

LAB # 8-2375 MATRIX: WATER
CLIENT ID: 111603

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	58 %
2-Fluorobiphenyl	76 %
Terphenyl-d14	74 %