A Report Prepared for

California Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson Street, Room 6000
Oakland, California 94607

9/16/88

REPORT OF SYSTEM MONITORING: AUGUST 1988
DEWATERING EFFLUENT TREATMENT SYSTEM
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA

HLA Job No. 9382,018.02

Submitted on behalf of:

City of Oakland Redevelopment Agency
One City Hall Plaza
Oakland, California 94612

by

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September 16, 1988

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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, from August 1 to August 31, 1988. The system is treating water produced during ground-water dewatering of the block bounded by 10th, 11th, Webster, and Franklin streets, in conjunction with excavation and construction in progress at the site. The system is designed to remove petroleum hydrocarbons from dewatering effluent before the effluent is discharged to the storm drain.

This report has been prepared by Harding Lawson Associates (HLA) and is submitted in compliance with NPDES Permit CA 0029394, adopted on July 20, 1988, by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). Under the NPDES permit, treatment system discharge limits are not to exceed 50 parts per billion (ppb) for total petroleum hydrocarbons (TPH) identified as gasoline; 5.6 ppb for lead; 5.0 ppb each for chlorobenzene, 1,2-dichloroethane, 1,2-dichloropropane, trichloroethylene, 1,1,2-trichloroethane, benzene, xylenes, and ethylbenzene; 0.5 ppb for toluene; 0.01 ppb for ethylene dibromide; and 0.0 ppb for total residual chlorine.

II TREATMENT SYSTEM OPERATION

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

Treated effluent is discharged to the storm drain. From August 1 to September 1, total discharge of the system was 828,800 gallons, based on readings of the flow totalizing meter located in the discharge line. Average flow for this period was 18.6 gallons per minute (gpm), with weekly average flows ranging from 20.4 to 17.0 gpm.

The system was backwashed on August 23 and August 26.

Throughout the month, a floating residential swimming pool type chlorinator was deployed in the holding tank to retard algal growth in the treatment system.

III TREATMENT SYSTEM MONITORING

A. Sample Collection and Analysis

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

All treatment system samples collected during this period were analyzed by Pace Laboratories, Novato, California, a California-certified laboratory. All samples were analyzed for TPH as gasoline by EPA Test Method 8015, for purgeable volatile organic compounds by EPA Test Method 602, and for halogenated hydrocarbons by EPA Test Method 601. Effluent samples collected August 5 were analyzed for dissolved oxygen. Beginning on August 12, influent and effluent samples were analyzed for ethylene dibromide by EPA Test Method 504, and influent, intermediate, and effluent samples were analyzed for total residual chlorine by Standard Method 408E.

Results of analyses of samples collected June 30 through August 26 are summarized in Tables 1 through 4. Only analytical results for samples collected in August are discussed in this report. Laboratory reports for treatment system samples collected in August are presented in Appendix A.

B. Discharge Limit Exceedences

There was one possible exceedence of a permitted effluent discharge limit during this reporting period. The reported concentration of toluene in an effluent sample collected on August 5 was 0.9 μg/l (micrograms per liter, equivalent to ppb) as measured by EPA Test Method 602. Toluene was not detected in a duplicate effluent sample collected on the same date. Possible explanations for an exceedence include

breakthrough as a result of carbon exhaustion, "channeling" in the carbon beds, sample contamination during field operations, and/or laboratory analytical procedures. Breakthrough is highly unlikely at this time, on the basis of a comparison of system design with flow rates and contaminant levels. Channelling is routinely addressed by backwashing the system. Because toluene was not detected in the influent, intermediate or duplicate effluent samples collected on August 5, sample contamination in the field or laboratory is the most likely source of the toluene detected in the effluent samples.

There were no other exceedences of permitted effluent discharge limits for Test Method 601 or 602 compounds or for TPH as measured by Method 8015 during this reporting period.

Discussions with field personnel indicate that the incorrect intermediate port was sampled on August 19. As noted in Section II of this report, only one of two intermediate sample ports is actually intermediate at a time. Therefore, it is probable that the "intermediate" sample taken on that date was actually an influent sample. Laboratory analytical results support this conclusion, in that analytical results reported for influent and intermediate samples for this date are similar.

IV RESULTS

Results of influent, intermediate, and effluent sample analyses for TPH and for EPA Test Method 601 and 602 compounds, indicate that on most days the treatment system removed all individual constituents to below detection levels. Toluene was detected in one of two effluent samples on August 5 at a concentration of 0.9 μg/l. Toluene was not detected in the other effluent sample from August 5.

The three compounds identified in the influent sample from August 5, PCE, 1,2-dichloropropane, and 1,1,2,2-tetrachloroethane, have not been identified in any previous or subsequent influent samples. Because of the anomalous nature of these results, it appears that the sample or sample results were confused with another sample at some point. In any case, the influent results for this date are not considered representative of actual influent water chemistry.

Dissolved oxygen in the effluent was measured on August 5 at a concentration of 3.9 mg/l (milligrams per liter).

Methylene chloride was detected in a trip blank on August 12 at a concentration of 0.8 μg/l.

V HAZARDOUS WASTE SHIPMENTS AND AERATION OF STOCKPILED SOILS

During this reporting period, hydrocarbon-bearing soils unearthed in the northeastern and southwestern corners of the site were aerated, restockpiled, and disposed off site. Samples of these soils were collected and submitted to Crown Environmental, Inc. (a mobile lab located at the site), and to Pace for analysis to confirm aeration of hydrocarbons. After aeration, soil sample TPH concentrations were less than 100 parts per million (ppm), the RWQCB guideline for designated wastes. The soils were transported by Charles Campanella, Inc., to the West Contra Costa Sanitary Landfill in Richmond, California for disposal. Transportation of soil from the site was completed August 3.

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

TABLES

TABLE 1. TREATMENT SYSTEM WATER ANALYSIS: INFLUENT SAMPLES

HLA SAMPLE ID #	88263023	88280802	88281403	88292203	88302905	88080501	88322101	88331901	88342623
DATE	06/30	07/08	07/14	07/22	07/29	08/05	08/12	08/19	08/26
TEST METHOD/ COMPOUNDS									
EPA 602									
Benzene	NT	7.0	ND < 0.2	ND < 0.2	ND < 0.2	0.7	2.7	ND < 0.2	ND < 0.2
Toluene	NT	13.0	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Chlorobenzene	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	NT	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	NT	4.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
1,2-Dichlorobenzene	NT	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	NT	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	140	58	ND < 50	ND < 50	130	ND < 50	79	120	60
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
1,1-dichloroethene	NT	ND < 0.5	ND < 0.5	ND < 0.5	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,1-dichloroethane	NT	ND < 0.5	ND < 0.5	0.8	ND < 0.5	ND < 0.5	0.9	1.1	ND < 0.5
Chloroform	NT	0.6	0.8	0.7	1.7	ND < 0.5	1.2	1.3	0.9
1,2-dichloroethane	NT	7.3	14.0	13.6	19	ND < 0.5	13	15	9.3
Trichloroethene	NT	117	190	150	600	ND < 0.5	260	460	260
1,2-dichloropropane	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	7.7	ND < 0.5	ND < 0.5	ND < 0.5
Tetrachloroethene	NT	ND < 0.5	ND < 0.5	ND < 0.5	1.0	810	ND < 0.5	0.6	ND < 0.5
Chlorobenzene	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Bromoform	NT	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,1,2,2-tetrachloroethane	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	7.6	ND < 0.5	ND < 0.5	ND < 0.5
Dibromochloromethane	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
All other 601 compounds	NT	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
Chloroform	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichloroethane	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Benzene	8	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	330	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
1,1,2-trichloroethane	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethene	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Chlorobenzene	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	NT	NT	NT	NT	NT	0.05	0.06	0.03
Residual chlorine	NT	NT	NT	NT	NT	NT	0.35	ND < 0.2	ND < 0.2
Residual chlorine (mg/l)									

ND - Not detected at stated detection level.

NT - Not Tested.

All results reported in parts per billion (ppb) except where indicated.

TABLE 2. TREATMENT SYSTEM WATER ANALYSIS: INTERMEDIATE SAMPLES

HLA SAMPLE ID #	88263022	88280801	88281401	88292205	88302904	88080502	88322102	88331902	88342622
DATE	06/30	07/08	07/14	07/22	07/29	08/05	08/12	08/19	08/26
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	NT	5.0	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	NT	13.0	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	1.6	ND < 0.2	ND < 0.2
Ethylbenzene	NT	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	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Chlorobenzene	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
1,3-Dichlorobenzene	NT	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	NT	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	140	51	ND < 50	ND < 50	130	ND < 50	ND < 50	120	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.9	ND < 0.5	ND < 0.5	ND < 0.5
1,1-dichloroethane	NT	ND < 0.5	ND < 0.5	0.5	0.9	ND < 0.5	ND < 0.5	1.1	ND < 0.5
Chloroform	NT	0.7	ND < 0.5	0.6	1.4	ND < 0.5	ND < 0.5	1.2	0.9
1,2-dichloroethane	NT	9.7	3.3	6.3	18	3.4	3.3	15	9.4
Trichloroethene	NT	130	3.1	3.5	530	1.3	1.1	430	12
Tetrachloroethene	NT	ND < 0.5	ND < 0.5	ND < 0.5	0.8	ND < 0.5	ND < 0.5	0.6	ND < 0.5
Chlorobenzene	NT	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Bromoform	NT	0.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,3-dichlorobenzene	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
All other 601 compounds	NT	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
1,2-dichloroethane	1.9	NT	NT	NT	NT	NT	NT	NT	NT
Chloroform	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	350	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	9.6	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichlorobenzene	6.7	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	NT	NT	NT	NT	NT	ND < 0.03	NT	NT
Residual chlorine	NT	NT	NT	NT	NT	NT	ND < 0.2	ND < 0.2	ND < 0.2
Residual chlorine (mg/l)									

ND - Not detected at stated detection level.

NT - Not Tested.

All results reported in parts per billion (ppb) except where indicated.

TABLE 3. TREATMENT SYSTEM WATER ANALYSIS: EFFLUENT SAMPLES

HLA SAMPLE ID #	88263021	88280804	88281402	88292202	88302902	88080503	88322103	88331903	88342625
DATE	06/30	07/08	07/14	07/22	07/29	08/05	08/12	08/19	08/26
TOTAL FLOW (THOUSAND GALLONS	3112.0	3337.5	3514.8	3337.3	3984.0	4190.0	4378.6	4559.0	4730.6
AVERAGE FLOW (GPM)	14.1	19.6	20.5	22.8	20.5	20.4	18.7	17.9	17.0
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	NT	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	NT	ND < 0.2	ND < 0.2	2.1	ND < 0.2	0.9	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	NT	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	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Diphenylhydrazine	NT	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	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	1.6	ND < 0.5	ND < 0.5	ND < 0.5
1,2 dichloroethane	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.8
Trichloroethene	NT	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
All other 601 compounds	NT	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
Toluene	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Methylene Chloride	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	11	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
EPA 360.2									
Dissolved oxygen (mg/l)	NT	2.9	NT	NT	NT	3.9	NT	NT	NT
EPA 625									
All compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	NT	NT	NT	NT	NT	ND < 0.03	ND < 0.03	ND < 0.03
Residual chlorine									
Residual chlorine (mg/l)	NT	NT	NT	NT	NT	NT	ND < 0.2	ND < 0.2	ND < 0.2
Lead 7421									
Lead (mg/l)	NT	NT	NT	NT	NT	NT	ND < 0.002	NT	NT

ND - Not detected at stated detection level.

NT - Not Tested.

All results reported in parts per billion (ppb) except where indicated.

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES

HLA SAMPLE ID #	88263024	88280803	---	88292201	88302903	88080505	88322104	88331905	88342621
DATE	06/30	07/08	07/14	07/22	07/29	08/05	08/12	08/19	08/26
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	NT	ND < 0.2	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	NT	ND < 0.2	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	NT	ND < 0.2	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	NT	ND < 0.2	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	NT	ND < 0.2	NT	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	NT	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	NT	ND < 0.5	NT	ND < 0.5	1.0	ND < 0.5	0.8	ND < 0.5	ND < 0.5
All other 601 compounds	NT	ND	NT	ND	ND	ND	ND	ND	ND
EPA 624									
Toluene	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Methylene Chloride	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Chloroform	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
Diphenylhydrazine	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	ND < 0.5	NT	NT	NT	NT	NT	NT	NT	NT
EPA 625									
All compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	NT	NT	NT	NT	NT	ND < 0.03	NT	ND < 0.03

ND - Not detected at stated detection level.

NT - Not Tested.

All results reported in parts per billion (ppb) except where indicated.

Appendix A

LABORATORY ANALYTICAL RESULTS FOR TREATMENT SYSTEM SAMPLES

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: August 31, 1988 Pace job #: HLA 0831.85-L
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Date sampled: August 5, 1988 Site: City of Oakland
Sampled by: R. Erdman

Date received: August 5, 1988 P.O.: 9382,026.02
Submitted by: R. Erdman

Lab #	Client ID		Matrix	Analysis
8- 7419	88080501	INFLUENT	water	TPH (light) only 5030/8015
8- 7419	88080501		water	Vol Org. Cpds.8010 + 8020
8- 7420	88080502	INTERMED	water	TPH (light) only 5030/8015
8- 7420	88080502		water	Vol Org. Cpds.8010 + 8020
8- 7421	88080503	EFFLUENT	water	TPH (light) only 5030/8015
8- 7421	88080503		water	Vol Org. Cpds.8010 + 8020
8- 7422	88080503		water	Dissol. Ox. 360.2
8- 7423	88080504	EFFLUENT	water	TPH (light) only 5030/8015
8- 7423	88080504		water	Vol Org. Cpds.8010 + 8020
8- 7424	88080504		water	Dissol. Ox. 360.2
8- 7425	88080505	BLANK	water	TPH (light) only 5030/8015
8- 7425	88080505		water	Vol Org. Cpds.8010 + 8020

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. The samples will be returned to the client after the 30-day period, unless other arrangements are made.
If you have any questions, please feel free to call, (415)883-6100.

C. Santag
Sample Controller

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: 04-Jan-80 Extract/Purge Date: 08-Aug-88
PACE JOB #: HLA 0831.85-L Completion Date: 08-Aug-88
Analytical Method: EPA 5030/8015 Analyst: ATTIA
MATRIX: WATER

LAB #: 8-7419 INFLUENT CLIENT'S ID: 080501

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA Surrogate Spike % Recovery
Fluorobenzene 89 %

LAB #: 8-7420 INTERMEDIATE CLIENT'S ID: 080502

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA Surrogate Spike % Recovery
Fluorobenzene 89 %

LAB #: 8-7421 EFFLUENT CLIENT'S ID: 080503

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA Surrogate Spike % Recovery
Fluorobenzene 88 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date:	04-Jan-80	Extract/Purge Date:	08-AUG-88
PACE JOB #:	HLA 0831.85-L	Completion Date:	08-AUG-88
Analytical Method:	EPA 5030/8015	Analyst:	LEWIS
MATRIX:	WATER		

LAB #: 8-7423 EFFLUENT CLIENT'S ID: 080504

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA	Surrogate Spike % Recovery
Fluorobenzene	84 %

LAB #: 8-7425 BLANK CLIENT'S ID: 080505

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA	Surrogate Spike % Recovery
Fluorobenzene	84 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.85-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	10	94

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	88 %	97 %	97 %

N.D.: Not detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

REPORT OF LABORATORY ANALYSIS

Report Date: 04-Jan-80
PACE JOB #: HLA 0831.85-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 12-Aug-88
Completion Date: 12-Aug-88
Analyst: LEWIS

	INF	INTER	EFF	EFF	BLANK	
LAB #:	8-7419	8-7420	8-7421	8-7423	8-7425	
CLIENT'S ID:	080501	080502	080503	080504	080505	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Methylene Chloride	N.D.	0.9	1.6	1.2	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	3.4	N.D.	N.D.	N.D.	0.5
Trichloroethene (TCE)	N.D.	1.3	N.D.	N.D.	N.D.	0.5
1,2-Dichloropropane	7.7	N.D.	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	810	N.D.	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	7.6	N.D.	N.D.	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery				
Bromochloromethane	71 %	95 %	95 %	98 %	75 % M.I.
1,4-Dichlorobutane	31 %	100 %	97 %	103 %	20 % M.I.

N.D.: Not Detected
M.I.: Matrix Interference

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.85-L
METHOD : EPA 8010

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	3	105
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	1	99
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	0	100
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	6	99
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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

Bromochloromethane	90 %	99 %	105 %
1,4-Dichlorobutane	93 %	96 %	99 %

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 04-Jan-80
PACE JOB #: HLA 0831.85-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 12-Aug-88
Completion Date: 12-Aug-88
Analyst: LEWIS

	INF	INTER	EFF	
LAB #:	8-7419	8-7420	8-7421	
CLIENT'S ID:	080501	080802	080503	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	0.7	N.D.	N.D.	0.2
Toluene	N.D.	N.D.	0.9	0.2
Chlorobenzene	N.D.	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	N.D.	0.2
Xylene	N.D.	N.D.	N.D.	0.2
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	0.2
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	0.2
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Fluorobenzene	105 %	102 %	105 %

	EFF	BLANK	
LAB #:	8-7423	8-7425	
CLIENT'S ID:	080504	080505	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	N.D.	0.2
Toluene	N.D.	N.D.	0.2
Chlorobenzene	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	0.2
Xylene	N.D.	N.D.	0.2
1,3-Dichlorobenzene	N.D.	N.D.	0.2
1,4-Dichlorobenzene	N.D.	N.D.	0.2
1,2-Dichlorobenzene	N.D.	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Fluorobenzene	102 %	102 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.85-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	3	91
Toluene	N.D.	2	98
p-Xylene	N.D.	4	98

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	96 %	101 %	107%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

REPORT OF LABORATORY ANALYSIS

Report Date: 30-Aug-88
PACE JOB #: HLA 0831.85-L
Analytical Method: DISSOLVED OXYGEN
MATRIX: WATER

Extract/Purge Date: 05-Aug-88
Analysis Completion : 05-Aug-88
Analyst: NET

LAB #	CLIENT ID		DISSOLVED OXYGEN (mg/l)
8-7422	080503	EFFLUENT	3.9
8-7424	080504	EFFLUENT	4.3

Analytical Supervisor

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

CHAIN OF CUSTODY FORM

HLA 0831.85-L

Samplers: RICK ERDMAN

Job Number: 9382, 026.02

Name/Location: CITY OF OAKLAND

Project Manager: D. LELAND

Recorder: Rick Erdman
(Signature Required)

SOURCE CODE	MATRIX: Water	MATRIX: Sediment	MATRIX: Soil	MATRIX: Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	Reagent #1	Reagent #2	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. - Light	DISSOLVED OXYGEN
23	X				3					88	08	0501	88	08	05	1300		X	X					X	
↓	↓				3							0502				1315		X	X					X	
					3			1				0503				1330		X	X					X	X
					3			1				0504				1345		X	X					X	X
					3							0505				1400		X	X					X	

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						STAT
						5 day as
						per contract
						CEJ

PACE

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) Rick Erdman	DATE/TIME 8/5/88 1623	RECEIVED FOR LAB BY: (Signature) Michelle Casey — DATE/TIME 8/5 1623

METHOD OF SHIPMENT: HAND DELIVERED

6513

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

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

HARDING LAWSON ASSOC.
SEP 12 1988

Report date: September 8, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831.86-L

Date sampled: August 12, 1988 Site: City of Oakland
Sampled by: D. Evans

Date received: August 12, 1988 P.O.: 09382,026.02
Submitted by: D. Evans

Lab #	Client ID		Matrix	Analysis
8- 7538	88322101	INFLUENT	water	TPH (light) only 5030/8015
8- 7538	88322101		water	Vol Org. Cpds. 8010 + 8020
8- 7537	88322101		water	Total Residual Chlorine
8- 7538	88322101		water	EDB EPA 504
8- 7540	88322102	INTER-MEDIATE	water	TPH (light) only 5030/8015
8- 7540	88322102		water	Vol Org. Cpds. 8010 + 8020
8- 7539	88322102		water	Total Residual Chlorine
8- 7541	88322103	EFFLUENT	water	Lead 7421
8- 7542	88322103		water	TPH (light) only 5030/8015
8- 7542	88322103		water	Vol Org. Cpds. 8010 + 8020
8- 7541	88322103		water	Total Residual Chlorine
8- 7543	88322104	BLANK	water	TPH (light) only 5030/8015
8- 7543	88322104		water	Vol Org. Cpds. 8010 + 8020
8- 7543	88322104		water	EDB EPA 504
8- 7544	88322105	EFFLUENT	water	Lead 7421
8- 7545	88322105		water	TPH (light) only 5030/8015
8- 7545	88322105		water	Vol Org. Cpds. 8010 + 8020
8- 7544	88322105		water	Total Residual Chlorine
8- 7545	88322105		water	EDB EPA 504

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: September 8, 1988
Pace job #: HLA 0831.86-L

Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Date sampled: August 12, 1988
Site: City of Oakland
Sampled by: D. Evans

Date received: August 12, 1988
P.O.: 09382,026.02
Submitted by: D. Evans

Lab #	Client ID	Matrix	Analysis

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. The samples will be returned to the client after the 30-day period, unless other arrangements are made.
If you have any questions, please feel free to call, (415)883-6100.

Please note sample number 88322104 was not analyzed for lead or total residual chlorine because not enough sample was provided for these analyses.

Sample Controller

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 06-Sep-88
PACE JOB #: HLA 0831.86-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 15-Aug-88
Completion Date: 15-Aug-88
Analyst: ARNTZEN

	INF	INTER	
LAB #:	8-7538	8-7540	
CLIENT'S ID:	322101	322102	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	79	N.D.	50.0
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	92%	117%	

	EFF	BLANK	
LAB #:	8-7542	8-7543	
CLIENT'S ID:	322103	322104	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	N.D.	50.0
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	98%	100%	

	EFF		
LAB #:	8-7545		
CLIENT'S ID:	322105		
COMPOUND	RESULT (ug/l)		Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.		50.0
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	99%		

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.86-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	10	104

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	100 %	94 %	92 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 07-Sep-88
PACE JOB #: HLA 0831.86-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 26-Aug-88
Completion Date: 31-Aug-88
Analyst: CLARK

	INF	EFF	EFF	
LAB #:	8-7538	8-7543	8-7545	
CLIENT'S ID:	322101	322104	322105	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	0.05	N.D.	N.D.	0.03

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.86-L
METHOD : EPA 8010

COMPOUND	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA		
Surrogate Spike % Recovery		
Ethylene Dibromide	30 %	91 %

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 06-Sep-88
PACE JOB #: HLA 0831.86-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 18-Aug-88
Completion Date: 18-Aug-88
Analyst: ATTIA

	INTER	EFF	BLANK	
LAB #:	8-7540	8-7542	8-7543	
CLIENT'S ID:	322102	322103	322104	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.8	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	3.3	N.D.	N.D.	0.5
Trichloroethene (TCE)	1.1	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Bromochloromethane	97%	94%	96%
1,4-Dichlorobutane	93%	89%	93%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.

Report Date: 06-Sep-88 Extract/Purge Date: SEE BELOW
PACE JOB #: HLA 0831.86-L Completion Date: SEE BELOW
Analytical Method: EPA 8010 Analyst: ATTIA
MATRIX: WATER

	EFF	INF
LAB #:	8-7545	8-7538
CLIENT'S ID:	322105	322101
Completion Date:	18-AUG-88	19-AUG-88

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	0.9	0.5
Chloroform	N.D.	1.2	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	13	0.5
Trichloroethene (TCE)	N.D.	260	0.5
1,2-Dichloropropane	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Bromochloromethane	99	93%
1,4-Dichlorobutane	91	93%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.86-L
METHOD : EPA 8010
SAMPLE #:8-7538

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	1	99
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	1	101
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	1	95
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	1	101
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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			
Bromochloromethane	91 %	96 %	94 %
1,4-Dichlorobutane	99 %	96 %	94 %

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

Analytical Supervisor

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BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.86-L
METHOD : EPA 8010
SAMPLE #:8-7540, 8-7542, 8-7543, 8-7545

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	2	93
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	7	97
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	5	98
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	7	95
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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			
Bromochloromethane	93 %	99 %	93 %
1,4-Dichlorobutane	115 %	101 %	95 %

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

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
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Novato, California

Report Date: 07-Sep-88
PACE JOB #: HLA 0831.86-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 15-Aug-88
Completion Date: 15-Aug-88
Analyst: LEWIS/ATTIA

	INF	INTER	EFF	
LAB #:	8-7538	8-7540	8-7542	
CLIENT'S ID:	322101	322102	322103	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	2.7	N.D.	N.D.	0.2
Toluene	N.D.	1.6	N.D.	0.2
Chlorobenzene	N.D.	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	N.D.	0.2
Xylene	N.D.	N.D.	N.D.	0.2
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	0.2
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	0.2
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	0.2
QUALITY CONTROL DATA				
Surrogate Spike	Percent Recovery			
Fluorobenzene	92 %	117 %	98 %	

	BLANK	EFF	
LAB #:	8-7543	8-7545	
CLIENT'S ID:	322104	322105	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	N.D.	0.2
Toluene	N.D.	N.D.	0.2
Chlorobenzene	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	0.2
Xylene	N.D.	N.D.	0.2
1,3-Dichlorobenzene	N.D.	N.D.	0.2
1,4-Dichlorobenzene	N.D.	N.D.	0.2
1,2-Dichlorobenzene	N.D.	N.D.	0.2
QUALITY CONTROL DATA			
Surrogate Spike	Percent Recovery		
Fluorobenzene	100 %	99 %	

N.D.: Not Detected

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.86-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	8	107
Toluene	N.D.	2	107
p-Xylene	N.D.	9	109

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	100 %	94 %	92%

N.D.: Not Detected

Analytical Supervisor

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 06-Sep-88
PACE JOB #: HLA 0831.86-L
Analytical Method: SEE BELOW
MATRIX: WATER

Extract/Purge Date: 16-Aug-88
Analysis Completion : 16-Aug-88
Analyst: LEWIS/NET

LAB #	CLIENT ID		LEAD Pb (mg/l)	CHLORINE, residual Cl (mg/l)
8-7537	322101	INFLUENT	_	0.35
8-7539	322102	INTERMEDIATE	_	N.D.
8-7541	322103	EFFLUENT	N.D.	N.D.
8-7544	322105	EFFLUENT	N.D.	N.D.
DETECTION LIMIT:			0.002	0.20
METHOD:			EPA 7421	_

QUALITY CONTROL DATA PACE JOB #:HLA 0831.86-L

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
LEAD	N.D.	9	100

N.D.: Not Detected

Analytical Supervisor

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

CHAIN OF CUSTODY FORM

HLA 0131.006.L

Samplers: David M Evans

Job Number: 09332,026,02

Name/Location: City of Oakland

Project Manager: Dave Leland

Recorder: David M Evans (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				4			88	32	101	88	08	12	1440	
23	X				4			88	32	102	88	08	12	1440	
23	X				4			88	32	103	88	08	12	1440	
23	X				2			88	32	104	88	08	12	1440	
23	X				4			88	32	105	88	08	12	1440	

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015	EPA 5040 for Leaks only	Total Res. Chlorine (pb CDL ≤ 5 ppb)
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
						5 day Turnaround Time

Pace lab

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
David M Evans		
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) David M Evans — DATE/TIME 8-12-88 1600	RECEIVED FOR LAB BY: (Signature) C Santag — DATE/TIME 8/12 5:30 pm	

METHOD OF SHIPMENT: Hand delivered in cooler w/ice

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

6533

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: September 14, 1988
Pace job #: HLA 0831.88-L

Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947

Attn.: David Leland

Date sampled: August 19, 1988
Site: City of Oakland

Sampled by: P. Crispell

Date received: August 19, 1988
P.O.: 09382,026.02

Submitted by: P. Crispell

Lab #	Client ID		Matrix	Analysis
8- 7682	33-1901	INFLUENT	water	TPH (light) only 5030/8015
8- 7682	33-1901		water	Vol Org. Cpds.8010 + 8020
8- 7678	33-1901		water	Total Residual Chlorine
8- 7682	33-1901		water	EDB EPA 504
8- 7683	33-1902	INTER-MEDIATE	water	TPH (light) only 5030/8015
8- 7683	33-1902		water	Vol Org. Cpds.8010 + 8020
8- 7679	33-1902		water	Total Residual Chlorine
8- 7683	33-1902		water	EDB EPA 504
8- 7684	33-1903	EFFLUENT	water	TPH (light) only 5030/8015
8- 7684	33-1903		water	Vol Org. Cpds.8010 + 8020
8- 7680	33-1903		water	Total Residual Chlorine
8- 7684	33-1903		water	EDB EPA 504
8- 7685	33-1904	EFFLUENT	water	TPH (light) only 5030/8015
8- 7685	33-1904		water	Vol Org. Cpds.8010 + 8020
8- 7681	33-1904		water	Total Residual Chlorine
8- 7685	33-1904		water	EDB EPA 504
8- 7686	33-1905	BLANK	water	Vol Org. Cpds.8010 + 8020

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: September 14, 1988 Pace job #: HLA 0831.88-L
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Date sampled: August 19, 1988 Site: City of Oakland
Sampled by: P. Crispell

Date received: August 19, 1988 P.O.: 09382,026.02
Submitted by: P. Crispell

Lab #	Client ID	Matrix	Analysis

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. The samples will be returned to the client after the 30-day period, unless other arrangements are made.
If you have any questions, please feel free to call, (415)883-6100.

C Montag
Sample Controller

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.88-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 22-Aug-88
Completion Date: 22-Aug-88
Analyst: ATTIA

	INF	INTER
LAB #:	8-7682	8-7683
CLIENT'S ID:	33-1901	33-1902

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	1.1	1.1	0.5
Chloroform	1.3	1.2	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	15	15	0.5
Trichloroethene (TCE)	460*	430	0.5
1,2-Dichloropropane	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
Tetrachloroethene	0.6	0.6	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Bromochloromethane	112%	107%
1,4-Dichlorobutane	101%	101%

N.D.: Not Detected
*: quantified at 10 times dilution.

Analytical Supervisor

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BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.88-L
METHOD : EPA 8010
SAMPLE #: 8-7684, 8-7685, 8-7686

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	2	105
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	3	101
Trichloroethene (TCE) (M.S.)	N.D.	-	N.S.
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	4	102
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	3	105
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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			
Bromochloromethane	100 %	104 %	101 %
1,4-Dichlorobutane	115 %	101 %	101 %

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

Analytical Supervisor

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.88-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 26-Aug-88
Analysis Completion : 31-Aug-88
Analyst: CLARK

LAB #	CLIENT ID		ETHYLENE DIBROMIDE RESULT (ug/l)	DETECTION LIMIT: (ug/l)
8-7682	33-1901	INFLUENT	0.06	0.03
8-7683	33-1902	INTER	N.D.	0.03
8-7684	33-1903	EFFLUENT	N.D.	0.03
8-7685	33-1904	EFFLUENT	N.D.	0.03

QUALITY CONTROL DATA PACE JOB #:HLA 0831.88-L

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
Ethylene Dibromide	N.D.	30	91

N.D.: Not Detected
EDB*: Ethylene Dibromide

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.88-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 23-Aug-88
Completion Date: 23-Aug-88
Analyst: ARNTZEN

	INF	INTER	EFF
LAB #:	8-7682	8-7683	8-7684
CLIENT'S ID:	33-1901	33-1902	33-1903

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Fluorobenzene	98 %	92 %	88 %

	EFF	BLANK
LAB #:	8-7685	8-7686
CLIENT'S ID:	33-1904	33-1905

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Fluorobenzene	84 %	87 %

N.D.: Not Detected

Analytical Supervisor

11 Digital Drive □ Novato, CA 94949 □ Phone (415) 883-6100

pace laboratories, inc.

QUALITY CONTROL DATA
METHOD: EPA 8020

PACE JOB#: HLA 0831.88-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene----------	N.D.	2	92
Toluene----------	N.D.	10	96
p-Xylene----------	N.D.	7	99
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	88 %	99 %	99%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date:	13-Sep-88	Extract/Purge Date:	26-Aug-88
PACE JOB #:	HLA 0831.88-L	Analysis Completion :	26-Aug-88
MATRIX:	WATER	Analyst:	NET

LAB #	CLIENT ID		CHLORINE (residual) (mg/l)	DETECTION LIMIT (mg/l)
8-7678	33-1901	INF	N.D.	0.2
8-7679	33-1902	INTER	N.D.	0.2
8-7680	33-1903	EFF	N.D.	0.2
8-7681	33-1904	EFF	N.D.	0.2

N.D.: Not Detected

Analytical Supervisor

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pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.88-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 23-Aug-88
Completion Date: 23-Aug-88
Analyst: ATTIA

	INF	INTER	
LAB #:	8-7682	8-7683	
CLIENT'S ID:	33-1901	33-1902	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	120*	120*	50.0
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	98%	92%	

	EFF	EFF	
LAB #:	8-7684	8-7685	
CLIENT'S ID:	33-1903	33-1904	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	N.D.	50.0
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	88%	84%	

N.D.: Not Detected
*: Probably TCE quantified as Gasoline.

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.88-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	4	97

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	88 %	99 %	99 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.88-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 23-Aug-88
Completion Date: 23-Aug-88
Analyst: ATTIA

	EFF	EFF	BLANK
LAB #:	8-7684	8-7685	8-7686
CLIENT'S ID:	33-1903	33-1904	33-1905

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Bromochloromethane	96%	95%	99%
1,4-Dichlorobutane	100%	93%	96%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.88-L
METHOD : EPA 8010

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	0	107
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	1	103
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	4	103
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	4	104
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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

Bromochloromethane	94 %	105 %	102 %
1,4-Dichlorobutane	93 %	109 %	108 %

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

Analytical Supervisor

[redacted]

200 Rush Landing Road
P.O. Box 6107
Novato, California 94948
415/892-0821
Telecopy: 415/892-1586

CHAIN OF CUSTODY FORM

Lab: PACE

Samplers: PACrispell

Job Number: 9382.026.02

Name/Location: City of Oakland

Project Manager: P. Mote

Recorder: Pete Engvall
(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	X				5			88	33	1901	85	05	19	1534	
2	X				5			88	33	1902				1542	
2	X				5			88	33	1903				1550	
2	X				5			88	33	1904				1556	
2	X				5			88	33	1905				1603	

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH 8015 Total Recoverable Cuttings	504 - EDB
	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
						Add Total Residual Chlorine to all Samples per P. Mote
						EPA.

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Pete Engvall	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) Pete Engvall — DATE/TIME 8/19/88 17:16	RECEIVED FOR LAB BY: (Signature) C Borsky — DATE/TIME 8/19 5:15 PM	
METHOD OF SHIPMENT: Drop off		

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

6533

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: September 13, 1988 Pace job #: HLA 0831.89-L

Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947

Attn.: D. Leland

Date sampled: August 26, 1988 Site: City of Oakland

Sampled by: D. Harms

Date received: August 26, 1988 P.O.: 09382,026.02

Submitted by: D. Harms

Lab #	Client ID	Matrix	Analysis

Dear Client,

No problems were encountered with the analysis of your samples. We will store samples for 30 days after the report date. The samples will be returned to the client after the 30-day period, unless other arrangements are made.
If you have any questions, please feel free to call, (415)883-6100.

Sample Controller

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report date: September 13, 1988
Pace job #: HLA 0831.89-L

Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Date sampled: August 26, 1988
Site: City of Oakland
Sampled by: D. Harms

Date received: August 26, 1988
P.O.: 09382,026.02
Submitted by: D. Harms

Lab #	Client ID		Matrix	Analysis
8- 7933	88342621	BLANK	water	TPH (light) only 5030/8015
8- 7933	88342621		water	Vol Org. Cpds. 8010+8020
8- 7933	88342621		water	EDB EPA 504
8- 7934	88342622	INTER-	water	TPH (light) only 5030/8015
8- 7929	88342622		water	Total Residual Chlorine
8- 7934	88342622	MEDIATE	water	Vol Org. Cpds. 8010+8020
8- 7935	88342623	INFLUENT	water	TPH (light) only 5030/8015
8- 7930	88342623		water	Total Residual Chlorine
8- 7935	88342623		water	Vol Org. Cpds. 8010+8020
8- 7935	88342623		water	EDB EPA 504
8- 7936	88342624	EFFLUENT	water	TPH (light) only 5030/8015
8- 7931	88342624		water	Total Residual Chlorine
8- 7936	88342624		water	Vol Org. Cpds. 8010+8020
8- 7936	88342624		water	EDB EPA 504
8- 7937	88342625	EFFLUENT	water	TPH (light) only 5030/8015
8- 7932	88342625		water	Total Residual Chlorine
8- 7937	88342625		water	Vol Org. Cpds. 8010+8020
8- 7937	88342625		water	EDB EPA 504

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

REPORT OF LABORATORY ANALYSIS

Report Date: 12-Sep-88
PACE JOB #: HLA 0831.89-L
MATRIX: WATER

Extract/Purge Date: 29-Aug-88
Analysis Completion : 29-Aug-88
Analyst: NET

LAB #	CLIENT ID	TOTAL CHLORINE (mg/l)
8-7929	INF	N.D.
8-7930	INTER	N.D.
8-7931	EFF	N.D.
8-7932	EFF	N.D.

DETECTION LIMIT: 0.20

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 12-Sep-88 Extract/Purge Date: 30-Aug-88
PACE JOB #: HLA 0831.89-L Completion Date: 30-Aug-88
Analytical Method: EPA 5030/8015 Analyst: ATTIA
MATRIX: WATER

LAB #: 8-7933 BLANK CLIENT'S ID: 342621

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 98 %

LAB #: 8-7934 INTER CLIENT'S ID: 342622

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 93 %

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.89-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	5	98

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	94 %	93 %	98 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 12-Sep-88 Extract/Purge Date: 31-Aug-88
PACE JOB #: HLA 0831.89-L Completion Date: 31-Aug-88
Analytical Method: EPA 5030/8015 Analyst: POWELL
MATRIX: WATER

LAB #: 8-7935 INF CLIENT'S ID: 342623

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	60	50.0
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	84 %	

LAB #: 8-7936 EFF CLIENT'S ID: 342624

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	80 %	

LAB #: 8-7937 EFF CLIENT'S ID: 342625

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	N.D.	50.0
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	86 %	

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.89-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	8	100
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	96 %	93 %	93 %

N.D.: Not Detected

11 Digital Drive □ Novato, CA 94949 □ Phone (415) 883-6100

Analytical Supervisor

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FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 12-Sep-88
PACE JOB #: HLA 0831.89-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 30-Aug-88
Completion Date: 30-Aug-88
Analyst: POWELL

	BLANK	INTER	INF
LAB #:	8-7933	8-7934	8-7935
CLIENT'S ID:	342621	342622	342623

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	N.D.	0.5
Chloroform	N.D.	0.9	0.9	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	9.4	9.3	0.5
Trichloroethene (TCE)	N.D.	12	260	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Bromochloromethane	96%	97%	97%
1,4-Dichlorobutane	95%	95%	93%

N.D.: Not Detected

Analytical Supervisor

11 Digital Drive □ Novato, CA 94949 □ Phone (415) 883-6100

pace laboratories, inc.

Report Date: 12-Sep-88
PACE JOB #: HLA 0831.89-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 30-Aug-88
Completion Date: 30-Aug-88
Analyst: POWELL

	EFF	EFF	
LAB #:	8-7936	8-7937	
CLIENT'S ID:	342624	342625	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	0.7	0.8	0.5
Trichloroethene (TCE)	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Bromochloromethane	109%	102%
1,4-Dichlorobutane	107%	90%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.89-L
METHOD : EPA 8010

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.
Chloroethane	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.	7	98
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	7	92
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	5	96
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	8	92
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	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			
Bromochloromethane	94 %	96 %	99 %
1,4-Dichlorobutane	99 %	103 %	100 %

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 12-Sep-88
PACE JOB #: HLA 0831.89-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 30-Aug-88
Completion Date: 30-Aug-88
Analyst: POWELL

	BLANK	INTER	INF
LAB #:	8-7933	8-7934	8-7935
CLIENT'S ID:	342621	342622	342623

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Fluorobenzene	98 %	101 %	101 %

	EFF	EFF
LAB #:	8-7936	8-7937
CLIENT'S ID:	342624	342625

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Fluorobenzene	101 %	104 %

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc.

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.89-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	5	101
Toluene	N.D.	6	102
p-Xylene	N.D.	3	104

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	99 %	97 %	100%

N.D.: Not Detected

Analytical Supervisor

pace laboratories, inc
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

Report Date: 12-Sep-88
PACE JOB #: HLA 0831.89-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 29-Aug-88
Completion Date: 01-Sep-88
Analyst: CLARK

	BLANK	INF	
LAB #:	8-7933	8-7935	
CLIENT'S ID:	342621	342623	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	0.03	0.03

	EFF	EFF	
LAB #:	8-7936	8-7937	
CLIENT'S ID:	342624	342625	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	N.D.	0.03

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.89-L
METHOD : EPA 8010

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Ethylene Dibromide	N.D. %	35 %	102 %

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

Analytical Supervisor

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

5 as per contract
6

CHAIN OF CUSTODY FORM

HLA 0831.89-C

Job Number: 09382,022.02
Name/Location: CITY OF OAKLAND
Project Manager: D. LELAND

Samplers: DL HARMS
RW ERDMAN
Recorder: Daniel L. Harms (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				4			88	34	2162	88	08	26	1050	
23	X				4					2622				1131	
23	X				5					2623				1225	
23	X				5					2624				1232	
23	X				5					2625				1352	

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015	EPA 504 EDB	TOTAL RESIDUAL CL
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
						5 + day

PACE

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
Daniel L. Harms		
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) C. Dontzy	DATE/TIME 5/26 6:35 PM
METHOD OF SHIPMENT		

Laboratory Copy Project Office Copy Field Office Copy

6570

DISTRIBUTION

REPORT OF SYSTEM MONITORING: AUGUST 1988
DEWATERING EFFLUENT TREATMENT SYSTEM
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA
September 16, 1988

COPY NO. 4

		Copy No.
1 copy:	California Regional Water Quality Control Board San Francisco Bay Region 1111 Jackson Street, Room 6000 Oakland, California 94607 Attention: Mr. Peter Johnson	1
2 copies:	City of Oakland Redevelopment Agency One City Hall Plaza Oakland, California 94612 Attention: Mr. Peter Chen	2-3
1 copy:	Alameda County Department of Environmental Health 470 27th Street Oakland, California 94612 Attention: Mr. Storm Goranson	4

CEM/DFL/CRS/clm/F5717-R

QUALITY CONTROL REVIEWER

Christopher R. Smith
Associate Hydrogeologist