Harding Lawson Associates

Transmittal/Memorandum

To: Alameda County Department of Environmental Health
470 27th Street
Oakland, California 94612

Attention: Mr. Storm Goranson

From: David Leland
Date: October 18, 1988
Subject: September 1988 Treatment System Monitoring Report
Job No.: 9382,018.02

Remarks: Please find attached a copy of the "Report of System Monitoring: September 1988, Dewatering Effluent Treatment System, Chinatown Redevelopment Project Area, Oakland, California", describing the operations and monitoring of the treatment system located at 10th and Webster Streets in Oakland.

DL/cv/M1/069

cc:

Engineers and Geoscientists | 7655 Redwood Blvd. P.O. Box 578 Novato, CA 94948 | Telephone 415/892-0821 Telex 340523 | Arizona Alaska California | Colorado Hawaii Nevada | Texas Telecopy 415/892-0831

P

Harding Lawson Associates

November 9, 1988

9382,018.02

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

Attention: Ms. Lisa McCann

Dear Lisa:

Self-Monitoring Program
NPDES Permit No. 88-119
Dewatering Effluent Treatment System
Chinatown Redevelopment Project Area
Oakland, California

This letter concerns the Part B self-monitoring program established for the dewatering effluent treatment system located at Tenth and Webster streets in Oakland, California. The system is operated and monitored by Harding Lawson Associates (HLA) on behalf of the City of Oakland Redevelopment Agency (Agency) under authority of NPDES Permit No. 88-119.

The influent and effluent to the treatment system are currently sampled and analyzed on a weekly basis for constituents identified by EPA Test Methods 8015, 601, 602, and 504. Samples have been collected and analyzed on a weekly basis from May to the present time. Results of sample analysis, as presented in monthly reports submitted to the RWQCB and prepared by HLA, indicate that:

- The operation of the system has been consistent and predictable, as evidenced by analytical results of effluent samples
- The system has generally removed target organic compounds to non-detectable levels
- There were no confirmed exceedences of effluent limitations for organic compounds in July, August, or September. (Toluene was detected at 2.1 and 0.9 lg/l in effluent samples collected on July 22 and August 5, respectively, but was not identified in duplicate effluent samples collected on those dates.)

Engineers and Geoscientists | 7655 Redwood Blvd. P.O. Box 578 Novato, CA 94948 | Telephone 415/892-0821 Telex 340523 | Arizona Alaska California | Colorado Hawaii Nevada | Texas Telecopy 415/892-0831

Based on the proven reliability and performance of the system, a modification of sampling frequency to once per month is requested. We would like to make this modification as soon as possible and respectfully request a response from you at your earliest convenience.

Please call if you have any questions.

Yours very truly,

HARDING LAWSON ASSOCIATES

David F. Leland
Associate Hydrologist

Peter A. Mote
Principal Geologist

cc: P. Chen, Agency
S. Goranson, Alameda County Department of Environmental Health

DFL/ljc/B6182-CT

A Report Prepared for

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

REPORT OF SYSTEM MONITORING: SEPTEMBER 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

Charles E. Myrick
Project Engineer

David F. Leland
Associate Hydrologist

Harding Lawson Associates
7655 Redwood Boulevard
P.O. Box 578
Novato, California 94948
415/892-0821

October 17, 1988

TABLE OF CONTENTS

LIST OF TABLES

I INTRODUCTION

This report discusses the operation and monitoring of the dewatering effluent treatment system at 10th and Webster streets, Oakland, California, from September 1 to September 30, 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 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 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 September 1 to October 1, total discharge of the system was 675,600 gallons, based on readings of the flow totalizing meter located in the discharge line. Average flow for this period was 15.6 gallons per minute (gpm), with weekly average flows ranging from 15.4 to 17.2 gpm.

The system was backwashed on September 1, September 15 and September 28.

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

On the morning of September 8, 1988, an estimated 250 gallons of water were released as a result of a pipe failure in a section of pipe which serves as a sampling port.

The treatment system was turned off and influent ground water was held until repairs were completed on the evening of September 8. Upon installation of a new section of pipe, the system was turned back on and all piping in the system was checked for leaks. The release was described in detail in a letter to the California RWQCB dated September 14.

Neither the release nor the mechanism of release in any way affected the operational integrity of the carbon adsorption vessels or the ability of the system to remove organic compounds from the dewatering influent prior to discharge to the storm drain.

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 influent, effluent and blank samples were analyzed for TPH as gasoline by EPA Test Method 8015, for purgeable volatile organic compounds by EPA Test Method 602, for halogenated hydrocarbons by EPA Test Method 601, for ethylene dibromide by EPA Test Method 504, and for total residual chlorine by Standard Method 408E. Intermediate samples collected September 1 and 9 were analyzed by Methods 8015, 601, 602 and 408E. Intermediate samples collected September 16, 23, and 29 were analyzed by Method 601 only. Effluent samples collected September 1 were analyzed for dissolved oxygen.

Results of analyses of samples collected August 5 through September 29 are summarized in Tables 1 through 4. Only analytical results for samples collected in September are discussed in this report. Laboratory reports for treatment system samples collected in September are presented in Appendix A.

B. Discharge Limit Exceedences

There were five possible exceedences of a permitted effluent discharge limit during this reporting period. The reported concentrations of residual chlorine in all effluent samples collected during September were greater than 0.0 µg/l (micrograms per liter, equivalent to ppb). Concentrations of total residual chlorine ranged from 0.01 to 0.02 mg/l (milligrams per liter, equivalent to ppm).

There were no exceedences of permitted effluent discharge limits for Test Method 601 or 602 compounds, for TPH as measured by Method 8015 or for EDB as measured by Method 504 during this reporting period.

IV RESULTS

Results of influent, intermediate, and effluent sample analyses for TPH and for EPA Test Method 601, 602 and 504 compounds, indicate that on most days sampled the treatment system removed all individual constituents to below detection levels. On September 16, 23, and 29, 1,2-dichloroethane was detected at concentrations of 0.8, 1.4, and 0.6 μg/l, respectively. Trichloroethene was detected at a concentration of 0.6 μg/l on September 23. Tetrachloroethene was detected at a concentration of 0.5 μg/l on September 29. Residual chlorine was detected in each effluent sample collected during September at concentrations ranging from 0.01 to 0.02 mg/l.

Dissolved oxygen in the effluent was measured on September 1 at a concentration of 6.3 mg/l.

Methylene chloride was detected in trip blanks on September 16 and September 29 at concentrations of 0.9 μg/l and 0.6 μg/l, respectively. 1,2-dichloroethane was detected in trip blanks on the same two days at concentrations of 0.5 μg/l on both days.

HLA SAMPLE ID #	88080501	88322101	88331901	88342623	88350121	88360913	88371601	88382311	88392914
DATE	08/05	08/12	08/19	08/26	09/01	09/09	09/16	09/23	09/29
TEST METHOD/ COMPOUNDS									
EPA 602									
Benzene	0.7	2.7	ND < 0.2	ND < 0.2	1.2	ND < 0.2	1.4	8.9	0.8
Toluene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	1.5	ND < 0.2
Chlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	3.0	ND < 0.2
1,2-Dichlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	79	120	60	80	190	210	140	54
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
1,1-dichloroethene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	2.3	ND < 0.5
Methylene chloride	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.8	1.7	ND < 0.5	ND < 0.5
1,1-dichloroethane	ND < 0.5	0.9	1.1	ND < 0.5	0.7	ND < 0.5	0.6	2.7	ND < 0.5
Chloroform	ND < 0.5	1.2	1.3	0.9	1.2	0.8	0.8	2.5	0.6
1,2-dichloroethane	ND < 0.5	13	15	9.3	10	7.5	6.7	2.5	1.2
Trichloroethene	ND < 0.5	260	460	260	390	240	270	300	215
1,2-dichloropropane	7.7	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Tetrachloroethene	810	ND < 0.5	0.6	ND < 0.5	0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Chlorobenzene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Bromoform	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,1,2,2-tetrachloroethane	7.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Dibromochloromethane	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
All other 601 compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
Chloroform	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichloroethane	NT	NT	NT	NT	NT	NT	NT	NT	NT
Benzene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,1,2-trichloroethane	NT	NT	NT	NT	NT	NT	NT	NT	NT
Tetrachloroethene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Chlorobenzene	NT	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	0.05	0.06	0.03	0.15	0.12	0.35	ND < 0.05	ND < 0.05
Residual chlorine	NT	0.35	ND < 0.2	ND < 0.2	0.03	0.02	0.02	0.02	0.03
Residual chlorine (mg/l)									

ND - Not detected at stated detection limit.

NT - Not tested.

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

HLA SAMPLE ID #	88080502	88322102	88331902	88342622	88350122	88360912	88371604	88382312	88392911
DATE	08/05	08/12	08/19	08/26	09/01	09/09	09/16	09/23	09/29
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	NT	ND < 0.2	ND < 0.2
Toluene	ND < 0.2	1.6	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	NT	0.7	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	NT	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	NT	ND < 0.2	ND < 0.2
Chlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	NT	ND < 0.2	ND < 0.2
1,3-Dichlorobenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	NT	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	NT	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	120	ND < 50	ND < 50	ND < 50	NT	NT	NT
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	0.9	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	1.7	ND < 0.5	ND < 0.5	ND < 0.5
1,1-dichloroethane	ND < 0.5	ND < 0.5	1.1	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.9	ND < 0.5
Chloroform	ND < 0.5	ND < 0.5	1.2	0.9	0.9	0.9	0.7	1.1	ND < 0.5
1,2-dichloroethane	3.4	3.3	15	9.4	6.8	8.9	1.1	9.9	4.2
Trichloroethene	1.3	1.1	430	12	8.4	13	9.8	19	ND < 0.5
Tetrachloroethene	ND < 0.5	ND < 0.5	0.6	ND < 0.5	ND < 0.5	ND < 0.5	23	ND < 0.5	1.2
Chlorobenzene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
Bromoform	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,3-dichlorobenzene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
All other 601 compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
1,2-dichloroethane	NT	NT	NT	NT	NT	NT	NT	NT	NT
Chloroform	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Toluene	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-dichlorobenzene	NT	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	ND < 0.03	NT	NT	NT	NT	NT	NT	NT
Residual chlorine	NT	ND < 0.2	ND < 0.2	ND < 0.2	0.03	0.02	NT	NT	NT
Residual chlorine (mg/l)									

ND - Not detected at stated detection limit.

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 #	88080503	88322103	88331903	88342625	88350123	88360911	88371605	88382313	88392913
DATE	08/05	08/12	08/19	08/26	09/01	09/09	09/16	09/23	09/29
TOTAL FLOW (THOUSAND GALLONS	4190.0	4378.6	4559.0	4730.6	4879.3	5060.9	5221.3	5376.2	5508.8
AVERAGE FLOW (GPM)	20.4	18.7	17.9	17.0	17.2	15.8	15.9	15.4	15.4
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	0.9	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Diphenylhydrazine	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	1.6	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5
1,2 dichloroethane	ND < 0.5	ND < 0.5	ND < 0.5	0.8	ND < 0.5	ND < 0.5	0.8	1.4	0.6
Trichloroethene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.6	ND < 0.5
Tetrachloroethene	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.5
All other 601 compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
Toluene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methylene Chloride	NT	NT	NT	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	NT	NT	NT	NT	NT	NT	NT	NT	NT
Trichloroethene	NT	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 360.2									
Dissolved oxygen (mg/l)	3.9	NT	NT	NT	6.3	NT	NT	NT	NT
EPA 625									
All compounds	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 504									
Ethylene dibromide	NT	ND < 0.03	ND < 0.03	ND < 0.03	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05
Residual chlorine									
Residual chlorine (mg/l)	NT	ND < 0.2	ND < 0.2	ND < 0.2	0.02	0.01	0.01	0.01	0.01
Lead 7421									
Lead (mg/l)	NT	ND < 0.002	NT	NT	NT	NT	NT	NT	NT

ND - Not detected at stated detection limit.

NT - Not Tested.

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

TABLE 4. TREATMENT SYSTEM WATER ANALYSIS: BLANK SAMPLES

HLA SAMPLE ID #	88080505	88322104	88331905	88342621	88350124	88360915	88371602	88382314	88392912
DATE	08/05	08/12	08/19	08/26	09/01	09/09	09/16	09/23	09/29
TEST METHOD/COMPOUNDS									
EPA 602									
Benzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Toluene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Ethylbenzene	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
Xylenes	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
All other 602 compounds	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2	ND < 0.2
TPH									
Gasoline	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50	ND < 50
Diesel	NT	NT	NT	NT	NT	NT	NT	NT	NT
EPA 601									
Methylene chloride	ND < 0.5	0.8	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.9	ND < 0.5	0.6
1,2-dichloroethane	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	ND < 0.5	0.5	ND < 0.5	0.5
All other 601 compounds	ND	ND	ND	ND	ND	ND	ND	ND	ND
EPA 624									
Toluene	NT	NT	NT	NT	NT	NT	NT	NT	NT
Methylene Chloride	NT	NT	NT	NT	NT	NT	NT	NT	NT
Chloroform	NT	NT	NT	NT	NT	NT	NT	NT	NT
Diphenylhydrazine	NT	NT	NT	NT	NT	NT	NT	NT	NT
All other 624 compounds	NT	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	ND < 0.03	NT	ND < 0.03	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05	ND < 0.05

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

HARDING LAWSON ASSOC
SEP 27 1988

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

Report date: September 23, 1988 Pace job #: HLA 0831.91-L

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

Attn.: D. Leland

TREATMENT SYSTEM
9-1-88

Date sampled: September 1, 1988 Site: City of Oakland

Sampled by: C. Larkin

Date received: September 1, 1988 P.O.: 9382,026.02

Submitted by: C. Larkin

Lab #	Client ID		Matrix	Analysis
8- 8081	88350121	INFLUENT	water	
8- 8080	88350121		water	TPH (light) only 5030/8015
8- 8077	88350121		water	Total Residual Chlorine
8- 8080	88350121		water	Vol Org. Cpds. 8010+8020
8- 8080	88350121		water	EDB EPA 504
8- 8083	88350122	INTER-MEDIATE	water	
8- 8082	88350122		water	TPH (light) only 5030/8015
8- 8078	88350122		water	Total Residual Chlorine
8- 8082	88350122		water	Vol Org. Cpds. 8010+8020
8- 8085	88350123	EFFLUENT	water	
8- 8084	88350123		water	TPH (light) only 5030/8015
8- 8079	88350123		water	Total Residual Chlorine
8- 8076	88350123		water	Dissol. Ox. 360.2
8- 8084	88350123		water	Vol Org. Cpds. 8010+8020
8- 8084	88350123		water	EDB EPA 504
8- 8086	88350124	BLANK	water	TPH (light) only 5030/8015
8- 8086	88350124		water	Vol Org. Cpds. 8010+8020
8- 8086	88350124		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: September 23, 1988 Pace job #: HLA 0831.91-L

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

Attn.: D. Leland

Date sampled: September 1, 1988 Site: City of Oakland

Sampled by: C. Larkin

Date received: September 1, 1988 P.O.: 9382,026.02

Submitted by: C. Larkin

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 Lisa Petersen, our Client Services Coordinator at (415)883-6100.

C. Santiago

Sample Controller

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

REPORT OF LABORATORY ANALYSIS

aboratories, inc.
ORMERLY WESCO LABORATORIES

eport Date:	22-Sep-88	Extract/Purge Date:	07-Sep-88
ACE JOB #:	HLA 0831.91-L	Completion Date:	07-Sep-88
nalytical Method:	5030/8015	Analyst:	ATTIA
ATRIX:	WATER		

AB #: 8-8080 INFLUENT CLIENT'S ID: 350121

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
otal Petroleum Hydrocarbons (light)--	80*	50.0

UALITY CONTROL DATA
urrogate Spike % Recovery
romobenzene 103 %

AB #: 8-8082 INTERMEDIATE CLIENT'S ID 350122

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

UALITY CONTROL DATA
urrogate Spike % Recovery
romobenzene 93 %

.D.: Not Detected

H Hatte

Analytical Supervisor

Laboratories, Inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 22-Sep-88
PACE JOB #: HLA 0831.91-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 08-Sep-88
Completion Date: 08-Sep-88
Analyst: ATTIA

LAB #: 8-8084 EFFLUENT CLIENT'S ID: 350123

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 93 %

LAB #: 8-8086 BLANK CLIENT'S ID: 350124

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 97 %

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: 5030/8015 PACE JOB #:HLA 0831.91-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	2%	94%

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Chlorobenzene	95 %	92 %	89 %

N.D.: Not Detected

NOTES: *Probably tetrachloroethene quantified as gasoline.

Analytical Supervisor

Pace Laboratories, Inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 22-Sep-88 Extract/Purge Date: 08-Sep-88
PACE JOB #: HLA 0831.91-L Completion Date: 08-Sep-88
Analytical Method: EPA 8010 Analyst: ARNTZEN
Matrix: WATER

	INFLUENT	INTERMEDIATE	
LAB #:	8-8080	8-8082	
CLIENT ID	350121	350122	
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	0.7	N.D.	0.5
Chloroform	1.2	0.9	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)	10	6.8	0.5
Trichloroethene (TCE)	390*	8.4	2.5
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	0.5	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	92%	99 %	
1,4-Dichlorobutane	95%	104 %	

N.D.: Not Detected
*8080 - TCE at 5x dilution run.

P. Hall

Analytical Supervisor

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

REPORT OF LABORATORY ANALYSIS

FORMERLY WESCO LABORATORIES

Report Date: 22-Sep-88 Extract/Purge Date: 08-Sep-88
PACE JOB #: HLA 0831.91-L Completion Date: 08-Sep-88
Analytical Method: EPA 8010 Analyst: ARNTZEN
Matrix: WATER

	EFFLUENT	BLANK	
LAB #:	8-8084	8-8086	
CLIENT ID	350123	350124	
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)	N.D.	N.D.	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	97%	102 %	
1,4-Dichlorobutane	97%	104 %	

N.D.: Not Detected

Space laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.91-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	N.D.	9	81
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)	N.D.	2	98
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	96
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	4	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	91 %	92 %	98 %
1,4-Dichlorobutane	111 %	100 %	102 %

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

eport Date: 15-Sep-88 | Extract/Purge Date: 08-Sep-88
ACE JOB #: HLA 0831.91-L | Completion Date: 08-Sep-88
nalytical Method: EPA 8020 | Analyst: ARNTZEN
ATRIX: WATER

	INF	INTER	EFF	BLANK
AB #:	8-8080	8-8082	8-8084	8-8086
CLIENT'S ID:	350121	350122	350123	350124

OMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
enzene	1.2	N.D.	N.D.	N.D.	0.2
oluene	N.D.	N.D.	N.D.	N.D.	0.2
hlorobenzene	N.D.	N.D.	N.D.	N.D.	0.2
thylbenzene	N.D.	N.D.	N.D.	N.D.	0.2
ylene	N.D.	N.D.	N.D.	N.D.	0.2
,3-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.2
,4-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.2
,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery			
Fluorobenzene	106 %	104 %	102 %	100 %

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.91-L

OMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
enzene	N.D.	4	100
oluene	N.D.	2	99
-Xylene	N.D.	4	102

QUALITY CONTROL DATA

Surrogate Spike	% Recovery		
Fluorobenzene	104 %	95 %	99%

N.D.: Not Detected

Analytical Supervisor

ace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 22-Sep-88
ACE JOB #: HLA 0831.91-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 06-Sep-88
Analysis Completion : 08-Sep-88
Analyst: CLARK

ACE #	CLIENT ID:	ETHYLENE DIBROMIDE (ug/l)	Detection Limit (ug/l)
-8080 INFLUENT	350121	0.15	0.05
-8084 EFFLUENT	350123	N.D.	0.05
-8086 BLANK	350124	N.D.	0.05

CONTROL QUALITY DATA

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
DCB	N.D.	4 %	83%

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

Analytical Supervisor

ace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

eport Date: 22-Sep-88
ACE JOB #: HLA 0831.91-L
nalytical Method: SEE BELOW
ATRIX: WATER

Extract/Purge Date: 06-Sep-88
Analysis Completion : 08-Sep-88
Analyst: ETS

AB #	CLIENT ID		CHLORINE (Cl 2) (total residual) (mg/l)	DISSOLVED OXYGEN (DO) (mg/l)
-8076	350123	EFFLUENT	-	6.3
-8077	350121	INFLUENT	0.03	-
-8078	350122	INTER	0.03	-
-8079	350123	EFFLUENT	0.02	-

ETHOD: SMEWW = Standards Methods for the Examination of Water and Wastewater, 16th ed., 1985. (421 B = azide modified Winkler method, & 408 E = DPD method).

Analytical Supervisor

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

CHAIN OF CUSTODY FORM

Lab: DACE HLA 08

Job Number: 9382,026.02
Name/Location: City of Oak. Treatment
Project Manager: Dave Leland

Samplers: C. Larkin

Recorder: Chtopher [signature] (Signature Required)

Source Code		Matrix: Water	Sediment	Soil	Oil	#Containers & Preserv.: Unpres.	H_2SO_4	HNO_3	HCl	pickling	Sample Number or Lab Number: Yr	Wk	Seq	Date: Yr	Mo	Dy	Time	Station Description/Notes
2	3	X				4			1	#?	88	35	01211	88	09	01	1350	
2	3	X				3			1		88	35	01222	88	09	01	1420	
2	3	X				4			1	1	88	35	01233	88	09	01	1505	
2	3	X				4					88	35	01248	88	09	01	1515	

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	8015 Modified	Total Residual Chlor.	504 for EDB D.L. ≤ 0.01 ppb		Dissolved Oxygen	
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
						504 for EDB
						D.L. ≤ 0.01 ppb

CHAIN OF CUSTODY RECORD

Relinquished by: (Signature)	Received by: (Signature)	Date
Chtoph L [signature]		
	[signature]	

Dispatched by: (Signature)	Date/Time	Received for lab by: (Signature)	Date
		K. Heuter [signature]	9/1/…

Method of Shipment

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report date: September 27, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831.92-L

TREATMENT SYSTEM
9-9-88

Date sampled: September 9, 1988
Sampled by: D. Evans

Site: City of Oakland

Date received: September 9, 1988
Submitted by: D. Evans

P.O.: 9382,026.02

Lab #	Client ID	Matrix	Analysis
8- 8273	88360911	water	TPH (light) only 5030/8015
8- 8269	88360911 EFFLUENT	water	Total Residual Chlorine
8- 8273	88360911	water	Vol Org. Cpds. 8010+8020
8- 8273	88360911	water	EDB EPA 504
8- 8274	88360912	water	TPH (light) only 5030/8015
8- 8270	88360912 INTERMED	water	Total Residual Chlorine
8- 8274	88360912	water	Vol Org. Cpds. 8010+8020
8- 8275	88360913	water	TPH (light) only 5030/8015
8- 8271	88360913 INFLUENT	water	Total Residual Chlorine
8- 8275	88360913	water	Vol Org. Cpds. 8010+8020
8- 8275	88360913	water	EDB EPA 504
8- 8276	88360914	water	TPH (light) only 5030/8015
8- 8272	88360914 EFFLUENT	water	Total Residual Chlorine
8- 8276	88360914	water	Vol Org. Cpds. 8010+8020
8- 8276	88360914	water	EDB EPA 504
8- 8277	88360915	water	TPH (light) only 5030/8015
8- 8277	88360915 BLANK	water	Vol Org. Cpds. 8010+8020
8- 8277	88360915	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 27, 1988 Pace job #: HLA 0831.92-L

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

Attn.: D. Leland

Date sampled: September 9, 1988 Site: City of Oakland

Sampled by: D. Evans

Date received: September 9, 1988 P.O.: 9382,026.02

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 Lisa Petersen, our Client Services Coordinator at (415)883-6100.

C. Santos

Sample Controller

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 22-Sep-88 Extract/Purge Date: 15-Sep-88
PACE JOB #: HLA 0831.92-L Completion Date: 15-Sep-88
Analytical Method: 5030/8015 Analyst: POWELL/ATTIA
MATRIX: WATER

	EFF	INT
LAB #:	8-8273	8-8274
CLIENT'S ID:	360911	360912

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	104%	103%

	INF	EFF
LAB #:	8-8275	8-8276
CLIENT'S ID:	360913	360914

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	190*	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	100%	104%

	BLANK
LAB #:	8-8277
CLIENT'S ID:	360915

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	104%

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: 5030/8015 PACE JOB #:HLA 0831.92-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	3	103
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	106 %	103 %	103 %

N.D.: Not Detected
*: TCE only for #8-8275.

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 26-Sep-88
PACE JOB #: HLA 0831.92-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 16-Sep-88
Analysis Completion : 16-Sep-88
Reported by: D. Gill
Analyst: Clark

	EFF	INF	
LAB #	8-8273	8-8275	
CLIENT ID:	360911	360913	
COMPOUND	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	0.12	0.05

	EFF	BLANK	
LAB #	8-8276	8-8277	
CLIENT ID:	360914	360915	
COMPOUND	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	N.D.	0.05

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD : EPA 504

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Ethylene Dibromide	N.D.	7 %	97% %

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: 26-Sep-88
PACE JOB #: HLA 0831.92-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: SEE BELOW 01-May-88
Reported by: D. GILL 01-May-88
Analyst: ATTIA/LEWIS

	EFF	INT	EFF	BLANK	INF
LAB #:	8-8273	8-8274	8-8276	8-8277	8-8275
CLIENT'S ID:	360911	360912	360914	360915	360913
COMPLETION DATE:	09-SEP-88	09-SEP-88	15-SEP-88	15-SEP-88	09-SEP-88

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
Chloromethane	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
Vinyl Chloride	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
Bromomethane	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
Chloroethane	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
Trichlorofluoromethane	N.D.	N.D.	N.D.	N.D.	2.0	N.D.	20
1,1-Dichloroethene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Methylene Chloride	N.D.	1.7	N.D.	N.D.	0.5	0.8	5.0
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,1-Dichloroethane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Chloroform	N.D.	0.9	N.D.	N.D.	0.5	0.8	5.0
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,2-Dichloroethane (EDC)	N.D.	8.9	N.D.	N.D.	0.5	7.5	5.0
Trichloroethene (TCE)	N.D.	13.0	N.D.	N.D.	0.5	240*	5.0
1,2-Dichloropropane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Bromodichloromethane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Tetrachloroethene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Dibromochloromethane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Chlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
Bromoform	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5	N.D.	5.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery				
Bromochloromethane	99 %	98 %	94 %	85 %	97 %
1,4-Dichlorobutane	102 %	97 %	103 %	97 %	100 %

N.D.: Not Detected
*: #8-8275 TCE quantified at 10 times dilution.

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 JOBHLA 0831.92-L
METHOD : EPA 8010

SAMPLE #:	8-8273, 8-8274, 8-8275			8-8276, 8-8277		
COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoromethane	N.D.	-	N.S.	N.D.	-	N.S.
Chloromethane	N.D.	-	N.S.	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.	N.D.	-	N.S.
Bromomethane	N.D.	-	N.S.	N.D.	-	N.S.
Chloroethane	N.D.	-	N.S.	N.D.	-	N.S.
Trichlorofluoromethane	N.D.	-	N.S.	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.	N.D.	-	N.S.
Methylene Chloride	N.D.	-	N.S.	N.D.	1.2	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.	N.D.	-	N.S.
1,1-Dichloroethane (M.S.)	N.D.	1	85	N.D.	14	94
Chloroform	N.D.	-	N.S.	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.	N.D.	-	N.S.
Trichloroethene (TCE) (M.S.)	N.D.	1	104	N.D.	7	91
1,2-Dichloropropane	N.D.	-	N.S.	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	4	99	N.D.	1	99
cis-1,3-Dichloropropene	N.D.	-	N.S.	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	98	N.D.	5	102
Dibromochloromethane	N.D.	-	N.S.	N.D.	-	N.S.
Chlorobenzene	N.D.	-	N.S.	N.D.	-	N.S.
Bromoform	N.D.	-	N.S.	N.D.	-	N.S.
1,1,2,2-Tetrachloroethane	N.D.	-	N.S.	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.	N.D.	-	N.S.

QUALITY CONTROL DATA

Surrogate Spike % Recovery						
Bromochloromethane	95 %	104 %	102 %	99 %	103 %	99%
1,4-Dichlorobutane	122 %	96 %	96 %	111 %	101 %	97%

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 26-Sep-88
PACE JOB #: HLA 0831.92-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 09-Sep-88
Completion Date: 09-Sep-88
Analyst: ATTIA/LEWIS

	EFF	INT	INF
LAB #:	8-8273	8-8274	8-8275
CLIENT'S ID:	360911	360912	360913
COMPLETION DATE:	09-SEP-88	09-SEP-88	09-SEP-88

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	83 %	95 %	100 %

	EFF	BLANK
LAB #:	8-8276	8-8277
CLIENT'S ID:	360914	360915
COMPLETION DATE:	15-SEP-88	15-SEP-88

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	98 %	99 %

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

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.92-L
SAMPLE #: 8-8273, 8-8274, 8-8275

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	3	99
Toluene	N.D.	4	100
p-Xylene	N.D.	4	101
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	102 %	101 %	100%

SAMPLE #: 8-826, 8-8277

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	4	95
Toluene	N.D.	7	94
p-Xylene	N.D.	6	94
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	99 %	99 %	99%

N.D.: Not Detected

Analytical Supervisor

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

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 26-Sep-88
PACE JOB #: HLA 0831.92-L
Analytical Method: SEE BELOW
MATRIX: WATER

Extract/Purge Date: 12-Sep-88
Analysis Completion : 12-Sep-88
Reported by: D.Gill
Analyst: E.T.S.

LAB #	CLIENT ID		CHLORINE (Cl) (mg/l)
8-8269	360911	EFF	0.01
8-8270	360912	INT	0.02
8-8271	360913	INF	0.02
8-8272	360914	EFF	0.01

METHOD: SMEWW 408E

SMEWW: Standards Methods for the Examination of Water and Wastewater, 16th ed., 1985. (408 E = DPD colorimetric method).

Analytical Supervisor

HLA 0831.92-L

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: 9362 026 02

Name/Location: CITY OF OAKLAND

Project Manager: D. 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. (EDB by 504 TOT DISS CHLORINE)
23	X				X			88	36	091	88	09	09	1600		X	X					X X X
23	X				X			88	36	092	88	09	09	1610		X	X					X X X
23	X				X			88	36	093	88	09	09	1620		X	X					X X X
23	X				X			88	36	094	88	09	09	1625		X	X					X X X
23	X				X			88	36	095	88	09	09	1630		X	X					X X X

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 9/8/85 7:10
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) 9-7-85	DATE/TIME	RECEIVED FOR LAB BY: (Signature) C. Sontag 9/8/85 4:25 PM

METHOD OF SHIPMENT: Hand delivered in cooler w/ice

Laboratory Copy Project Office Copy Field or Office Copy

6533

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report date: October 4, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Pace job #: HLA 0831.94-L

TREATMENT SYSTEM
9-16-88

Date sampled: September 16, 1988
Sampled by: D. Harms

Site: City of Oakland

Date received: September 16, 1988
Submitted by: D. Harms

P.O.: 09382,026.02

Lab #	Client ID		Matrix	Analysis
8- 8589	37-1601		water	TPH (light) only 5030/8015
8- 8589	37-1601	Influent	water	Vol Org. Cpds.8010 + 8020
8- 8586	37-1601		water	Total Residual Chlorine
8- 8589	37-1601		water	EDB EPA 504
8- 8590	37-1602		water	TPH (light) only 5030/8015
8- 8590	37-1602	Blank	water	Vol Org. Cpds.8010 + 8020
8- 8590	37-1602		water	EDB EPA 504
8- 8591	37-1603		water	TPH (light) only 5030/8015
8- 8591	37-1603	Effluent	water	Vol Org. Cpds.8010 + 8020
8- 8587	37-1603		water	Total Residual Chlorine
8- 8591	37-1603		water	EDB EPA 504
8- 8592	37-1604	Intermediate	water	Purg. Halocarbons 601/8010
8- 8593	37-1605		water	TPH (light) only 5030/8015
8- 8593	37-1605	Effluent	water	Vol Org. Cpds.8010 + 8020
8- 8588	37-1605		water	Total Residual Chlorine
8- 8593	37-1605		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: October 4, 1988 Pace job #: HLA 0831.94-L
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Date sampled: September 16, 1988 Site: City of Oakland
Sampled by: D. Harms

Date received: September 16, 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 Lisa Petersen, our Client Services Coordinator at (415)883-6100.

C. Sontag
Sample Controller

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 29-Sep-88
PACE JOB #: HLA 0831.94-L
Analytical Method: SMEWW 408 E
MATRIX: WATER

Analysis Completion : 19-Sep-88
Analyst: E.T.S.
Reported By: J.HARWOOD

LAB #	CLIENT ID		CHLORINE Total Residual (Cl) (mg/l) RESULT (mg/l)
8-8586	37-1601	Influent	0.02
8-8587	37-1603	Effluent	N.D.
8-8588	37-1605	Effluent	0.01

DETECTION LIMIT: 0.01

METHOD: SMEWW= Standard Methods for the Examination of Water and Wastewater, 16th ed., 1985. (408 E= DPD colorimetric method).

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date:	28-Sep-88	Extract/Purge Date:	21-Sep-88
PACE JOB #:	HLA 0831.94-L	Completion Date:	21-Sep-88
Analytical Method:	5030/8015	Analyst:	ATTIA
MATRIX:	WATER	Reported By:	J.HARWOOD

LAB #: 8-8589 Influent CLIENT'S ID: 37-1601

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Trichloroethene	210	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	97 %

QUALITY CONTROL DATA
METHOD: 5030/8015 PACE JOB #:HLA 0831.94-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
TCE----------	N.D.	0%	113%

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	98 %	101 %	101 %

N.D.: Not Detected

NOTES: Tetrachloroethene= 210 ppb

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date:	28-Sep-88	Extract/Purge Date:	16-Sep-88
PACE JOB #:	HLA 0831.94-L	Completion Date:	16-Sep-88
Analytical Method:	5030/8015	Analyst:	ATTIA
MATRIX:	WATER	Reported By:	J.HARWOOD

LAB #: 8-8590 Blank CLIENT'S ID: 37-1602

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 106 %

LAB #: 8-8591 Effluent CLIENT'S ID: 37-1603

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 106 %

LAB #: 8-8593 Effluent CLIENT'S ID 37-1605

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 104 %

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: 5030/8015 PACE JOB #:HLA 0831.94-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	10%	101%
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	95 %	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

Report Date: 28-Sep-88
PACE JOB #: NLA 0831.94-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 22-Sep-88
Reported by: J.HARWOOD
Analyst: ATTIA

	Influent	Blank	Effluent	Inter	Effluent	
LAB #:	8-8589	8-8590	8-8591	8-8592	8-8593	
CLIENT'S ID:	37-1601	37-1602	37-1603	37-1604	37-1605	
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	1.7	0.9	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	0.6	N.D.	N.D.	0.7	N.D.	0.5
Chloroform	0.8	N.D.	N.D.	1.1	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)	6.7	0.5	0.7	9.8	0.8	0.5
Trichloroethene (TCE)	270*	N.D.	N.D.	23	N.D.	0.5
1,2-Dichloropropane	N.D.	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	N.D.	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	N.D.	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	82 %	89%	82%	84%	87%
1,4-Dichlorobutane	92 %	85%	81%	83%	88%

N.D.: Not Detected
*: 8-8589-Trichloroethene (TCE) quantified at 2 1/2 x dilution.

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 0831.94-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.	2	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.	4	98
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	101
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	102
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	102 %	99 %	97 %
1,4-Dichlorobutane	111 %	103 %	98 %

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 28-Sep-88
PACE JOB #: HLA 0831.94-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 22-Sep-88
Completion Date: 22-Sep-88
Analyst: ATTIA
Reported By: HARWOOD

	Influent	Blank
LAB #:	8-8589	8-8590
CLIENT'S ID:	37-1601	37-1602

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	1.4	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	103%	103%

	Effluent	Effluent
LAB #:	8-8591	8-8593
CLIENT'S ID:	37-1603	37-1605

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	104%	104%

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 0831.94-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	1	94
Toluene	N.D.	3	97
p-Xylene	N.D.	4	97

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	110 %	98 %	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: 28-Sep-88
PACE JOB #: HLA 0813.94-L
Analytical Method: EPA 504
MATRIX: WATER

Extract/Purge Date: 26-Sep-88
Completion Date: 26-Sep-88
Analyst: CLARK
Reported By: J.HARWOOD

	Influent	Blank	
LAB #:	8-8589	8-8590	
CLIENT'S ID:	37-1601	37-1602	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	.35	N.D.	0.05

	Effluent	Effluent	
LAB #:	8-8591	8-8593	
CLIENT'S ID:	37-1603	37-1605	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	N.D.	0.05

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD: EPA 504
PACE JOB #:HLA 0813.94-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Ethylene Dibromide	N.D. %	23 %	85%

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

Analytical Supervisor

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

CHAIN OF CUSTODY FORM

Lab: HLA 0831.94

Samplers: DL HARMS

Job Number: 09382,026.02

Name/Location: CITY OF OAKLAND

Project Manager: D. 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
23	X				4			88	37	1601	88	09	16	1307	86
〃	〃				3			〃	〃	1602	〃	〃	〃	1250	〃
〃	〃				4			〃	〃	1603	〃	〃	〃	1320	87
〃	〃				2			〃	〃	1604	〃	〃	〃	1408	〃
↓	↓				4			〃	〃	1605	〃	〃	〃	1325	88

ANALYSIS REQUESTED	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllmt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. – 8015
	X	X					X
	X	X					X
	X	X					X
	X						
	X	X					X

TOTAL LEG. CHLORINE 504

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						5 DAY TURN AROUND

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Daniel Harms	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) C. Sontag	DATE/TIME 9/16/88 335 PM
METHOD OF SHIPMENT		

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: October 12, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Pace job #: HLA 0831.95-L

TREATMENT SYSTEM
9-23-88

Date sampled: September 23, 1988
Sampled by: T. Walker

Site: City of Oakland

Date received: September 23, 1988
Submitted by: T. Walker

P.O.: 09382,026.02

Lab #	Client ID		Matrix	Analysis
8- 9141	382311	INFLUENT	water	TPH (light) only 5030/8015
8- 9139	382311		water	Total Residual Chlorine
8- 9141	382311		water	Vol Org. Cpds. 8010+8020
8- 9141	382311		water	EDB EPA 504
8- 9142	382312	INTERMEDIATE	water	Purg. Org. Hal. 8010
8- 9143	382313	EFFLUENT	water	TPH (light) only 5030/8015
8- 9140	382313		water	Total Residual Chlorine
8- 9143	382313		water	Vol Org. Cpds. 8010+8020
8- 9143	382313		water	EDB EPA 504
8- 9144	382314	BLANK	water	TPH (light) only 5030/8015
8- 9144	382314		water	Vol Org. Cpds. 8010+8020
8- 9144	382314		water	EDB EPA 504
8- 9145	382315		water	TPH (light) only 5030/8015
8- 9145	382315		water	Vol Org. Cpds. 8010+8020
8- 9145	382315		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: October 12, 1988
Pace job #: HLA 0831.95-L

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

Date sampled: September 23, 1988
Site: City of Oakland
Sampled by: T. Walker

Date received: September 23, 1988
P.O.: 09382,026.02
Submitted by: T. Walker

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 Lisa Petersen, our Client Services Coordinator at (415) 883-6100.

C. Sontag
Sample Controller

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 04-Oct-88
PACE JOB #: HLA 0831.95-L
MATRIX: Water

Analysis Completion : 26-Sep-88
Reported by: D.Gill
Analyst: E.T.S.

LAB #	CLIENT ID		Chlorine Total Residual (mg/l)	Method
8-9139	382311	INFLUENT	0.02	SMEWW 408 E
8-9140	382313	EFFLUENT	0.01	SMEWW 408 E

NOTES:

SMEWW = Standards Methods for the Examination of Water and Wastewater, 16th ed., 1985. (408 E = DPD colorimetric method).

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 06-Oct-88
PACE JOB #: HLA 0831.95-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 29-Sep-88
Reported by: D.Gill
Analyst: ATTIA

	INFLUENT	EFFLUENT	
LAB #:	8-9141	8-9143	
CLIENT'S ID:	382311	382313	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	140*	N.D.	50.0
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	108%	89%	

LAB #:	8-9144	8-9145	
CLIENT'S ID:	382314	382315	
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	89%	89%	

QUALITY CONTROL DATA
METHOD: EPA 5030/8015 PACE JOB #:HLA 0831.95-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	0	112
QUALITY CONTROL DATA Surrogate Spike % Recovery Fluorobenzene	103 %	93 %	93%

N.D.: Not Detected
*: Approximately 50% T.C.E.

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 04-Oct-88
PACE JOB #: HLA 0831.95-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 30-Sep-88
Reported by: D.Gill
Analyst: ATTIA

	INFLUENT	INTER.	EFFLUENT	BLANK	EFFLUENT
LAB #:	8-9141	8-9142	8-9143	8-9144	8-9145
CLIENT'S ID:	382311	382312	382313	382314	382315

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	2.3	N.D.	N.D.	N.D.	N.D.	0.5
Methylene Chloride	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	2.7	0.9	N.D.	N.D.	N.D.	0.5
Chloroform	2.5	1.1	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)	2.5	9.9	1.4	N.D.	1.1	0.5
Trichloroethene (TCE)	300*	19	0.6	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	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	N.D.	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	N.D.	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	107 %	100 %	104 %	108 %	97 %
1,4-Dichlorobutane	83 %	97 %	91 %	97 %	104 %

N.D.: Not Detected
*: TCE quantified at 20 times dilution.

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 0831.95-L
METHOD : EPA 8010
SAMPLE #:8-9141, 8-9142, 8-9143

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.	11	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.	-	94
Trichloroethene (TCE) (M.S.)	N.D.	8	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.	7	102
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	14	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	97 %	99 %	105%
1,4-Dichlorobutane	105 %	96 %	92%

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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.95-L
METHOD : EPA 8010
SAMPLE #:8-9144, 8-9145

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	104
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.	4	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.	3	101
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	100
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	96 %	107 %	104%
1,4-Dichlorobutane	101 %	93 %	95%

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

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

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

REPORT OF LABORATORY ANALYSIS

Report Date: 04-Oct-88
PACE JOB #: HLA 0831.95-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: SEE BELOW
Reported by: D.Gill
Analyst: ATTIA

	INFLUENT	INTER.	EFFLUENT
LAB #:	8-9141	8-9142	8-9143
CLIENT'S ID:	382311	382312	382313
COMPLETION DATE:	28-SEP-88		

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	8.9	N.D.	N.D.	0.2
Toluene	1.5	0.7	N.D.	0.2
Chlorobenzene	N.D.	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	N.D.	0.2
Xylene	3.0	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	100 %	97 %	96 %

	BLANK	EFFLUENT
LAB #:	8-9144	8-9145
CLIENT'S ID:	382314	382315
COMPLETION DATE:	30-SEP-88	

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 %	103 %

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

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.95-L
SAMPLE #: 8-9141, 8-9142, 8-9143

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	1	105
Toluene	N.D.	1	103
p-Xylene	N.D.	2	104
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	79 %	96 %	96%

QUALITY CONTROL DATA
METHOD: EPA 8020 PACE JOB#: HLA 0831.95-L
SAMPLE #: 8-9144, 8-9145

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	2	98%
Toluene	N.D.	1	102%
p-Xylene	N.D.	1	101%
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Fluorobenzene	99 %	100 %	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: 11-Oct-88 Completion Date: 05-Oct-88
PACE JOB #: HLA 0831.95-L Reported by: D.Gill
Analytical Method: EPA 504 Analyst: ATTIA
MATRIX: WATER

	INFLUENT	EFFLUENT	BLANK	EFFLUENT	
LAB #	8-9141	8-9143*	8-9144	8-9145	
CLIENT ID:	382311	382313	382314	382315	
COMPOUND	Result (ug/l)	Result (ug/l)	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	N.D.	N.D.	<D.L.	0.05

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.95-L
METHOD : EPA 504

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Ethylene Dibromide	N.D.	2 %	95 %

N.D.: Not Detected
N.S.: Not Spiked
<D.L.: Below detection limit.
*:Sample # 8-9143 has Matrix Interference and a Detection Limit of >1 ppb.

Analytical Supervisor

HLA 0831.95

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

CHAIN OF CUSTODY FORM

Job Number: 09382 026 02
Name/Location: CITY OF OAK
Project Manager: D. LELAND

Samplers: WALKER J
Recorder: [signature]
(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	38	2311	88	09	23	1800	
23	X				X			88	38	2312	88	09	23	1815	
23	X				X			88	38	2313	88	09	23	1825	
23	X				X			88	38	2314	88	09	23	1830	
23	X				X			88	38	2315	88	09	23	1835	

ANALYSIS REQUESTED

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (v)	504	TTS Chlorine
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

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)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
[signature]	23 Fd / 1945	C. Sontag	9/23 / 1945

METHOD OF SHIPMENT

Laboratory Copy Project Office Copy Field or Office Copy

6533

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report date: October 13, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831.97-L

TREATMENT SYSTEM
9-29-88

Date sampled: September 29, 1988
Sampled by: T.J. Walker

Site: City of Oakland

Date received: September 29, 1988
Submitted by: T.J. Walker

P.O.: 9382 026 02

Lab #	Client ID		Matrix	Analysis
8- 9429	88392911	INTERMEDIATE	water	Purg. Halocarbons 601/8010
8- 9430	88392912	BLANK	water	TPH (light) only 5030/8015
8- 9430	88392912		water	Vol Org. Cpds. 8010+8020
8- 9430	88392912		water	EDB EPA 504
8- 9431	88392913	EFFLUENT	water	TPH (light) only 5030/8015
8- 9427	88392913		water	Total Residual Chlorine
8- 9431	88392913		water	Vol Org. Cpds. 8010+8020
8- 9431	88392913		water	EDB EPA 504
8- 9432	88392914	INFLUENT	water	TPH (light) only 5030/8015
8- 9428	88392914		water	Total Residual Chlorine
8- 9432	88392914		water	Vol Org. Cpds. 8010+8020
8- 9432	88392914		water	EDB EPA 504
8- 9434	8839291[illegible]			Purg. Halocarbons 601/8010
8- 9433	88392916	Report only		TPH (light) only 5030/8015
8- 9433	88392916			Vol Org. Cpds. 8010+8020
8- 9433	88392916			EDB EPA 504

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report date: October 13, 1988 Pace job #: HLA 0831.97-L

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

Attn.: D. Leland

Date sampled: September 29, 1988 Site: City of Oakland

Sampled by: T.J. Walker

Date received: September 29, 1988 P.O.: 9382 026 02

Submitted by: T.J. Walker

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 Lisa Petersen, our Client Services Coordinator at (415) 883-6100.

Please note: included with the requested results are 8020 results for lab numbers 9429 and 9434. You will not be charged for these, as they were not requested.

E. Montag

Sample Controller

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date:	12-Oct-88	Completion date:	05-OCT-88
PACE JOB #:	HLA 0831.97-L	Reported by:	D.Gill
Analytical Method:	SMEWW 408 E	Analyst:	ETS
MATRIX:	WATER		

LAB #	CLIENT ID		CHLORINE (Cl) (mg/l)
8-9427	392913	EFFLUENT	0.01
8-9428	392914	INFLUENT	0.03

NOTE:
SMEWW= Standards Methods for the Examination of Water and Wastewater, 16th ed., 1985. (408E = DPD colorimetric method).

Analytical Supervisor

pace laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 11-Oct-88 Completion Date: 06-Oct-88
PACE JOB #: HLA 0831.97-L Reported by: D.Gill
Analytical Method: 5030/8015 Analyst: ATTIA
MATRIX: WATER

BLANK

LAB #: 8-9430 CLIENT'S ID: 392912

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 99 %

EFFLUENT

LAB #: 8-9431 CLIENT'S ID: 392913

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 99 %

QUALITY CONTROL DATA
METHOD: 5030/8015 PACE JOB #:HLA 0831.97-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	1	107

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	102 %	80 %	91 %

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: 11-Oct-88 Completion Date: 06-Oct-88
PACE JOB #: HLA 0831.97-L Reported by: D.Gill
Analytical Method: 5030/8015 Analyst: ATTIA
MATRIX: WATER

INFLUENT

LAB #: 8-9432 CLIENT'S ID: 392914

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	54	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 97 %

EFFLUENT

LAB #: 8-9433 CLIENT'S ID: 392916

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 95 %

QUALITY CONTROL DATA
METHOD: 5030/8015 PACE JOB #:HLA 0831.97-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline----------	N.D.	3	103

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	96 %	104 %	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: 11-Oct-88
PACE JOB #: HLA 0831.97-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 05-Oct-88
Reported by: D.Gill
Analyst: ATTIA

	INTER	BLANK	EFFLUENT	INF	EFF	BACER
LAB #:	8-9429	8-9430	8-9431	8-9432	8-9433	8-9434
CLIENT'S ID:	392911	392912	392913	392914	392916	392915

COMPOUND	RESULT (ug/l)	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.	N.D.	2.0
Chloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	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.	1.6	0.5
Methylene Chloride	N.D.	0.6	N.D.	N.D.	N.D.	0.8	0.5
trans-1,2-Dichloroethene	N.D.	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.	2.4	0.5
Chloroform	N.D.	N.D.	N.D.	0.6	N.D.	2.3	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	4.2	0.5	0.6	7.2	N.D.	2.4	0.5
Trichloroethene (TCE)	N.D.	N.D.	N.D.	2.5	0.8	270	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	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.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	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.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	1.5	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	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.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery					
Bromochloromethane	84 %	86%	87%	89%	90%	85%
1,4-Dichlorobutane	84 %	86%	94%	88%	90%	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

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.97-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.	9	97
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.	6	100
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.	2	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	105 %	102 %	95%
1,4-Dichlorobutane	103 %	103 %	103%

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: 11-Oct-88
PACE JOB #: HLA 0831.97-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 05-Oct-88
Reported by: D.Gill
Analyst: LEWIS

	INTER	BLANK	EFFLUENT	
LAB #:	8-9429	8-9430	8-9431	
CLIENT'S ID:	392911	392912	392913	
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 %	99 %	95 %	

	INFLUENT	EFFLUENT	BAKER	
LAB #:	8-9432	8-9433	8-9434	
CLIENT'S ID:	392914	392916	392915	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	0.83	N.D.	3.5	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	101 %	100 %	91 %	

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 0831.97-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	3	100
Toluene	N.D.	2	101
p-Xylene	N.D.	2	103

QUALITY CONTROL DATA
Surrogate Spike % Recovery

Fluorobenzene	103 %	101 %	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-Oct-88 Analysis Completion : 08-Oct-88
PACE JOB #: HLA 0831.97-L Reported by: D.Gill
Analytical Method: EPA 504 Analyst: CLARK
MATRIX: WATER

	BLANK	EFFLUENT	INFLUENT	EFFLUENT	
LAB #	8-9430	8-9431	8-9432	8-9433	
CLIENT ID:	392912	392913	392914	392916	
COMPOUND	Result (ug/l)	Result (ug/l)	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	N.D.	0.17	N.D.	0.4

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD : EPA 504

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
QUALITY CONTROL DATA Surrogate Spike % Recovery			
Ethylene Dibromide	N.D.	5	80 %

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

CHAIN OF CUSTODY FORM

HLA 0831.97

Job Number: 09382 026 02
Name/Location: City of Oakland
Project Manager: Dave Leland

Samplers: WALKER TJ
Recorder: [signature] (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	39	2911	88	09	29		
23	X				X			88	39	2912	88	09	29		
23	X				X			88	39	2913	88	09	29		
23	X				X			88	39	2914	88	09	29		
23	X				X			88	39	2916	88	09	29		
23	X				X			88	39	2915	88	09	29		

ANALYSIS REQUESTED

Seq	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	5015 (L)	503	Res Chlorine	NOTHING
2911	X										
2912	X	X						X	X		
2913	X	X						X	X	X	X
2914	X	X						X	X	X	X
2916	X	X						X	X		
2915	X										

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: *(Signature)*	RECEIVED BY: *(Signature)*	DATE/TIME

DISPATCHED BY: *(Signature)*	DATE/TIME	RECEIVED FOR LAB BY: *(Signature)*	DATE/TIME
[signature] 09/29	1915	C. Sontag	9/29 7:15 PM

METHOD OF SHIPMENT

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

6533

DISTRIBUTION

REPORT OF SYSTEM MONITORING: SEPTEMBER 1988
DEWATERING EFFLUENT TREATMENT SYSTEM
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA
October 17, 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 80 Swan Way, Room 200 Oakland, California 94621 Attention: Mr. Storm Goranson	4

CEM/DFL/CRS/rmc/E5842-R

QUALITY CONTROL REVIEWER

Peter Mork for

Christopher R. Smith
Associate Hydrogeologist

Action Plan

10/20/88
pwj

HLA 1. Site characteization report + proposal for site cleanup. GW scans, EDB soils. (EDB)
Within 60 days.

HLA 2. Closure form + $ 45days

ACHD 3. Letter from ACHD re: $ 30 days

RWQCB 4. ∅ WDR re: bio + steam 14 days

RWQCB 5. Provide ~~site~~ aeration/treatment 14 days
regts.