

A Report Prepared for

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

**A-AQUIFER MONITORING REPORT
AUGUST 1988 THROUGH FEBRUARY 1989
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA**

HLA Job No. 09382,019.02

by



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1.0 INTRODUCTION

This report presents the results of ground-water monitoring in the Chinatown Redevelopment Project Area of Oakland, California (Plate 1) from August 1988 through February 1989 (the reporting period). The ground-water monitoring is being conducted by Harding Lawson Associates (HLA) for the City of Oakland Redevelopment Agency (Agency). Earlier phases of HLA investigation activities at this site are summarized in Table 1.

The East Bay Municipal Utility District (EBMUD) administration building is under construction in the area bounded by 11th, Franklin, and Webster streets and a line approximately 100 feet north of the center line of 10th Street. Dewatering of the site for construction began in March 1988 and continued throughout the period addressed by this report.

During construction, soils at the site were excavated to approximately 2 foot below mean sea level (MSL). Excavation removed all known chemical source areas located within EBMUD site boundaries.

Because of the presence of petroleum hydrocarbons in ground water at the site, water produced by the dewatering system is treated by carbon adsorption prior to discharge to the storm drain system, under NPDES Permit CA 0029394 granted by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). The dewatering effluent treatment system is described in *HLA, 1988a*. Treatment system monitoring data for the reporting period are presented in *HLA, 1988b, 1988c, 1988e, 1988f, 1988g, 1988h, 1988i, 1988j, 1988k, 1988l, 1988m, 1989b, 1989c, and 1989d*. Results of ground-water monitoring in the Chinatown Redevelopment Project Area from March 1988 through July 1988 are presented in HLA's report titled *A-Aquifer Monitoring Report, Chinatown Redevelopment Project Area, Oakland, California (1989a)*.

2.0 FIELD INVESTIGATION

In August 1988, the A-aquifer ground-water monitoring well network at the site comprised seven wells designated MW-2, MW-3, MW-5, MW-6, MW-7, MW-8, and MW-9. Two wells, MW-10 and MW-11, were installed in August 1988 at the proposed Pacific Renaissance Plaza (PRP) project site in the area bounded by 9th, Franklin, and Webster streets and the EBMUD property line north of 10th Street. The two wells were added to the network in September. Details of the installation of these wells are presented in HLA's site characterization report for the PRP site (*HLA, 1988n*). The locations of these wells are shown on Plate 2. Seven additional monitoring wells, MW-12 through MW-18, were installed in January and February 1989 in conjunction with soil treatment activities at the PRP site. Locations of these wells and well installation details are discussed in *HLA, 1989a*. Monitoring of these wells began in late February 1989 and is not reported here.

Wells MW-2, MW-5, and MW-6 were sampled semimonthly in August and September 1988, and monthly thereafter. Wells MW-3, MW-7, MW-8, MW-9, MW-10, and MW-11 were sampled monthly throughout the reporting period. Sampling followed standard HLA protocol. A trip blank was included with each round of samples.

Depth to water prior to the purging of each well was measured using a graduated steel tape and chalk until two measurements with a difference of no more than 0.02 feet were obtained. Water elevations were calculated using depth-to-water data and surveyed well measuring point elevations.

After water levels were measured, each well was purged using a submersible pump placed near the bottom of the well or by bailing with a stainless steel bailer. During purging, a volume of water equal to at least three times the static-water volume

in the casing was removed. Indicator parameters (pH, conductivity, and temperature) were monitored during purging. The stability of these readings following the removal of three casing volumes provided additional evidence that purging had been completed.

Discharge water produced during well purging was collected and stored on site in Baker tanks. All water collected in Baker tanks was treated using carbon adsorption prior to being discharged to the storm sewer system in accordance with NPDES Permit CA 0029394.

Ground-water samples were collected using a clean stainless steel bailer. The samples were then transferred to clean 1-liter amber glass bottles for total petroleum hydrocarbon (TPH) analyses and 40-milliliter glass volatile organic analysis (VOA) vials for purgeable aromatics including benzene, toluene, ethylbenzene, and xylenes (BTEX) and purgeable halocarbon analyses. All ground-water samples were stored on blue ice and submitted under chain of custody to Pace Laboratories, Inc., Novato, California. Ground-water samples and blank samples were analyzed for TPH using EPA Test Method 8015 and volatile organic compounds using EPA Test Methods 8010 and 8020.

3.0 RESULTS

3.1 Aquifer Conditions

The borings drilled by HLA during this and previous investigations indicate that the uppermost unconfined aquifer (A-aquifer) at this site consists of approximately 35 to 45 feet of sand with a small percentage of silt and clay. The borings for Monitoring Wells MW-10 and MW-11 (HLA, 1988n) confirm the presence of a locally continuous clay unit identified in previous investigations (HLA, 1988d) that forms the aquitard below the A-aquifer. Estimates of hydraulic conductivity calculated from aquifer tests in the A-aquifer wells at the site range from 2.2 to 6.3 ft/day (HLA, 1988d).

Ground-water elevations measured from March 1988 through February 1989 are presented in Table 2. Plate 3 presents ground-water elevations for September 9, 1988. Plate 4 shows ground-water elevations for December 1, 1988. Based on the March 9 and 10, 1988 data (Table 2), the hydraulic gradient in the A-aquifer prior to activation of the EBMUD dewatering wells was approximately 2.1×10^{-3} toward the west (HLA, 1989a). Since activation of dewatering wells, water levels in monitoring wells generally decreased (Table 2). Ground-water gradients indicate that ground water in the vicinity of the site moved toward the excavation, as demonstrated graphically on Plates 3 and 4.

3.2 Results of Chemical Analyses of Ground-Water Samples

The results of chemical analyses of ground-water samples collected from Monitoring Wells MW-2, MW-3, and MW-5 through MW-11 between March 9, 1988 and February 3, 1989 and the associated trip blanks are presented in Tables 3 and 4. Applicable California Department of Health Services (DHS) drinking water action levels (Marshack, 1988) are also included in Tables 3 and 4.

The highest TPH values and concentrations of volatile organic compounds were found in samples from Wells MW-2 and MW-6, upgradient of the EBMUD site. TPH

values at these wells were variable but generally lower than observed values during the preceding five months. TPH values and concentrations of volatile organic compounds were also high in samples from MW-9, MW-10, and MW-11, located on the PRP site.

During the period August 1988 through February 1989, DHS drinking water action levels were exceeded for seven volatile organic compounds at one or more of the nine monitoring wells (Tables 3 and 4). The seven compounds are benzene, toluene, xylenes, 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), trichloroethene (TCE), and tetrachloroethene (PCE).

A detailed discussion of the occurrence of volatile organic compounds at each well from August 1988 through February 1989 is presented in the following paragraphs.

At MW-2, ground-water samples contained the aromatic hydrocarbons benzene, toluene, ethylbenzene, and xylenes. Of these four compounds, benzene was detected at concentrations consistently exceeding DHS action levels. Purgeable halocarbon compounds detected at MW-2 include 1,1-DCE, methylene chloride, trans-1,2-dichloroethene (trans-1,2-DCE), chloroform, 1,1,1-trichloroethane (1,1,1-TCA), 1,2-DCA, TCE, and PCE. Of the halogenated volatile organics detected at MW-2, trans-1,2-DCE, chloroform, 1,2-DCA, TCE, and PCE have been detected in most samples. Methylene chloride and 1,1,1-TCA were detected on one occasion (February 3, 1989). These compounds were also detected in a blank sample from that date. DHS action levels for 1,2-DCA, TCE, and PCE were exceeded in samples collected on five or more occasions from August 1988 through February 1989.

At MW-3, Method 8010 compounds detected from August 1988 through February 1989 included 1,1-DCE, methylene chloride, 1,1-DCA, 1,1,1-TCA, 1,2-DCA and TCE. Of these, 1,1-DCE, 1,1-DCA, and 1,2-DCA were reported consistently at this location. Methylene chloride was detected in a sample collected

TCE, and PCE. Concentrations of each of these five compounds show a declining trend with time. The DHS action levels for 1,2-DCA, TCE, and PCE have been exceeded in most samples collected at MW-6 from August 1988 through February 1989.

At MW-7, no Method 8015 compounds were detected during the reporting period. One Method 8020 compound (toluene) was detected in one sample during the reporting period, on February 3 at 0.87 $\mu\text{g}/\text{l}$. Toluene was also detected in the trip blank for that date at 0.89 $\mu\text{g}/\text{l}$. Five Method 8010 compounds have been detected in at least one sample from MW-7: methylene chloride, chloroform, 1,2-DCA, TCE, and PCE. Of these, 1,2-DCA was detected in 3 samples at concentrations exceeding the DHS action level, and TCE was detected one occasion at a concentration exceeding the DHS action level. Methylene chloride was detected on one occasion (February 3, 1989), but was also detected in the blank sample from that date.

At MW-8, toluene was detected at 0.95 $\mu\text{g}/\text{l}$ on February 3, 1989, but was also detected in the blank sample at 0.89 $\mu\text{g}/\text{l}$ for that date. No other Method 8020 compounds or TPH were detected at this location. Five Method 8010 compounds were detected at MW-8: 1,1-DCE, methylene chloride, chloroform, 1,2-DCA, and TCE. TCE and chloroform were reported throughout the reporting period. The other three compounds, 1,1-DCE, methylene chloride, and 1,2-DCA, were detected only once; 1,2-DCA exceeded the DHS action level. Methylene chloride was detected in a sample collected February 3, 1989, but was also detected in the blank sample from that date. TCE was reported twice at concentrations exceeding the DHS action level.

At MW-9, TPH, benzene, toluene and xylenes were detected in all samples collected from August 1988 through February 1989; benzene and toluene were present above their DHS action levels. Eight Method 8010 compounds were detected at least once during the reporting period at MW-9: dichlorofluoromethane, 1,1-DCE,

methylene chloride, 1,1-DCA, chloroform, 1,1,1-TCA, 1,2-DCA, and TCE. The compounds occurring at a concentration equal to or greater than the DHS action level were 1,1-DCE and 1,2-DCA.

At MW-10, benzene, toluene, xylenes, and TPH were detected in each sample collected from September 1988 through February 1989. Ethylbenzene was detected in two samples. Concentrations of benzene exceeded the DHS action levels consistently during this reporting period. Toluene concentrations exceeded the action levels on two occasions. Method 8010 compounds 1,1-DCE, 1,1-DCA, 1,2-DCA, and TCE were consistently detected at MW-10. Other halocarbon compounds detected at least once were dichlorodifluoromethane and methylene chloride. DHS action levels were exceeded for 1,1-DCE, 1,2-DCA, and TCE consistently during the reporting period.

At MW-11, benzene, toluene, xylenes, and TPH were detected in each sample collected from September 1988 through February 1989. Ethylbenzene was detected in three samples. Concentrations of benzene consistently exceeded the DHS action level. The DHS action levels for toluene and xylenes were exceeded three times and twice, respectively. Method 8010 compounds detected in most samples at MW-11 were 1,1-DCE, 1,1-DCA, 1,2-DCA and TCE. Other compounds detected during the reporting period include methylene chloride, chloroform, 1,1,1-TCA and PCE. Only 1,2-DCA and TCE concentrations exceeded DHS action levels.

Field blank samples showed only one Method 8020 compound, toluene at 0.89 $\mu\text{g}/\text{l}$, occurring in one sample, collected February 3. TPH was not detected in any field blank samples collected from August 1988 through February 1989. Method 8010 compounds detected in one or two blank samples included methylene chloride, trans-1,2-DCE, 1,1,1-TCA, and TCE.

4.0 DISCUSSION AND CONCLUSIONS

4.1 Ground-Water Elevations and Flow

Observed water-level elevations indicate that ground-water flow within the study area was toward the site throughout the reporting period as a result of ongoing dewatering activities at the site. Interpretation of flow directions suggests that, with the possible exception of MW-7, ground water monitored at each well throughout this period originated off site and did not pass through the site at any time. Ground water is estimated to have moved in a generally westerly direction prior to dewatering activities at the EBMUD site. Therefore, at MW-7, because ground-water flow directions at this location have been reversed from approximately westerly to easterly, ground water that passed through site soils prior to the start of dewatering may have migrated toward the site as a result of dewatering.

4.2 Ground-Water Chemistry

Off-site sources are believed to be responsible for the elevated volatile organic concentrations and TPH values observed in ground-water samples from MW-2, MW-3, MW-6, MW-9, MW-10, and MW-11. Field observations during the installation of Well MW-6, located upgradient of the site, (HLA, 1989a) and observations made during excavation for the EBMUD building indicate the presence of volatile organics in soils in contact with ground water at or near this location. The nature and extent of the source in the vicinity of the well, located hydraulically upgradient and east of the site, is not known. Soils associated with a source or sources in this area may have extended into the site, but were removed to the site boundary in conjunction with EBMUD excavation.

At MW-2, the continued presence of elevated TCE concentrations and petroleum hydrocarbons is similar to conditions observed at MW-6, suggesting the same or similar sources at these two locations.

At Wells MW-9, MW-10, and MW-11, elevated TPH values and concentrations of aromatic volatile organics are likely associated with the known presence of petroleum hydrocarbons in soils in the vicinity of these wells. No 1,1-DCE or TCE was found at the source areas identified during investigation of the PRP site (HLA, 1988n). The presence of these compounds in Wells MW-9 and MW-10 may be related to the former service station located just west of Webster Street between 9th and 10th streets, or an unidentified off-site source.

Elevated concentrations of 1,1-DCE at MW-3 and MW-5 do not appear to correlate with known or suspected source areas, and may indicate the presence of an unidentified source.

Concentrations of 1,2-DCA are elevated at all network wells except MW-8, and do not show patterns that correlate with known source areas within EBMUD or PRP site boundaries.

4.3 Conclusions

The following conclusions with respect to hydrogeologic conditions and ground-water chemistry have been developed from the results presented in Sections 3.0, 4.1, and 4.2.

- o Water-level measurements indicate that during the reporting period, ground-water gradients within the study area were toward the EBMUD excavation.
- o Seven compounds were measured in ground-water samples at concentrations in excess of DHS drinking water action levels: benzene, toluene, xylenes, 1,1-DCE, 1,2-DCA, TCE and PCE.
- o Elevated concentrations of volatile organics at Monitoring Wells MW-2, MW-6, MW-9, MW-10 and MW-11 can be correlated with known or suspected off-site sources.
- o Highest concentrations of petroleum hydrocarbons and volatile organics occurred in Wells MW-2 and MW-6. At both these locations, DHS action levels were exceeded for benzene, 1,2-DCA, TCE and PCE. Both of

these wells are situated in areas upgradient of the site, based on water levels measured prior to the activation of dewatering wells. As a result, the source of the high levels of these compounds is in all likelihood upgradient of and not related to the EBMUD site.

- o The presence of 1,1-DCE in ground-water samples from MW-3, MW-5, MW-9, and MW-10 cannot be explained on the basis of known or suspected sources.
- o The volatile halocarbon 1,2-DCA occurred ubiquitously in ground water in the vicinity of the site.

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**Table 1. Summary of Phased Activity
Chinatown Redevelopment Project Area
April 1987 through February 1989**

Phase	Activity	Results	Recommendation
I	Removal of 4 under-ground tanks (4/87)	Petroleum hydrocarbons found in soil and water.	Install well to evaluate impact on ground water quality; drill test boring to evaluate vertical distribution
II	Drill 2 borings; convert one to Well MW-1 (5/87)	Petroleum hydrocarbons in water and soil samples indicate tank has leaked.	Further ground-water investigation. File leak report with RWQCB.
III	Resample MW-1; soil gas survey for plume identification; drill 6 borings (8/87)	Confirm petroleum hydrocarbons; soil gas survey-inconclusive.	Interim soil remediation; install and hydraulically test additional wells.
IV	Install 4 wells and perform aquifer tests (12/87)	Aquifer hydraulic conductivities in range of 2.2-6.3 ft/day	Interim ground water remediation program in conjunction with proposed construction dewatering.
V	Install dewatering treatment system (3/88)	Removal of petroleum hydrocarbons from effluent prior to discharge.	Install additional wells to evaluate lateral extent and source(s).
VI	Install 4 monitoring wells (3/88). Collect and analyze ground water samples (3/88 - 7/88)	Sampling confirms high TPH, BTEX and other organics in upgradient wells.	
VII	Install 2 monitoring wells (8/88). Collect and analyze ground-water samples (8/88 - 2/89).	Sampling indicates high TPH, BTEX and other organics in wells.	
VIII	Install 7 monitoring wells in conjunction with Pacific Renaissance Plaza site (1/88 - 2/88)		

Table 2. Water-Level Elevations: March 1988 through February 1989

Well No.	MW-2		MW-3		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10		MW-11	
	GROUND SURFACE 40.05	TOP OF CASING 39.55	GROUND SURFACE 39.02	TOP OF CASING 38.35	GROUND SURFACE 38.45	TOP OF CASING 37.86	GROUND SURFACE 39.95	TOP OF CASING 39.59	GROUND SURFACE 39.35	TOP OF CASING 39.10	GROUND SURFACE 40.63	TOP OF CASING 40.47	GROUND SURFACE 38.65	TOP OF CASING 38.50	GROUND SURFACE 36.74	TOP OF CASING 36.35	GROUND SURFACE 37.98	TOP OF CASING 37.55
DATE	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation	Depth to Water	Elevation
03/09/88	23.85	15.70	22.67	15.68	-	-	23.62	15.97	24.23	14.87	25.44	15.03	23.25	15.25	-	-	-	-
03/10/88	-	-	22.58	15.77	22.42	15.44	-	-	-	-	25.43	15.04	23.13	15.37	-	-	-	-
03/18/88	27.18	12.37	27.17	11.18	26.43	11.43	25.11	14.48	25.44	13.66	26.41	14.06	24.86	13.64	-	-	-	-
03/21/88	27.64	11.91	-	-	-	-	25.51	14.08	-	-	-	-	25.33	13.17	-	-	-	-
03/25/88	28.36	11.19	28.19	10.16	27.28	10.58	25.91	13.68	26.25	12.85	27.29	13.18	-	-	-	-	-	-
03/31/88	-	-	28.33	10.02	27.44	10.42	26.58	13.01	26.61	12.49	27.73	12.74	-	-	-	-	-	-
04/01/88	29.76	9.79	-	-	27.51	10.35	26.69	12.90	-	-	-	-	-	-	-	-	-	-
04/08/88	30.23	9.32	27.50	10.85	27.66	10.20	27.13	12.46	27.05	12.05	28.43	12.04	-	-	-	-	-	-
04/15/88	30.61	8.94	27.64	10.71	27.80	10.06	27.53	12.06	27.32	11.78	28.75	11.72	-	-	-	-	-	-
04/22/88	30.66	8.89	27.55	10.80	27.45	10.41	27.72	11.87	27.48	11.62	29.00	11.47	-	-	-	-	-	-
04/28/88	30.75	8.80	27.65	10.70	27.50	10.36	27.85	11.74	27.61	11.49	29.17	11.30	-	-	-	-	-	-
05/05/88	30.43	9.12	-	-	27.68	10.18	27.90	11.69	-	-	-	-	-	-	-	-	-	-
05/11/88	30.43	9.12	27.97	10.38	27.94	9.92	27.97	11.62	27.80	11.30	29.36	11.11	-	-	-	-	-	-
05/18/88	30.15	9.40	29.12	9.23	28.14	9.72	27.99	11.60	27.79	11.31	29.45	11.02	-	-	-	-	-	-
05/27/88	31.53	8.02	29.85	8.50	28.61	9.25	28.35	11.24	28.04	11.06	29.68	10.79	-	-	-	-	-	-
06/03/88	32.13	7.42	30.14	8.21	29.26	8.60	28.78	10.81	28.44	10.66	30.32	10.15	-	-	-	-	-	-
06/16/88	32.52	7.03	30.80	7.55	30.46	7.40	29.14	10.45	29.00	10.10	30.81	9.66	-	-	-	-	-	-
06/30/88	33.84	5.71	31.70	6.65	31.06	6.80	29.56	10.03	28.49	10.61	31.16	9.31	28.83	9.67	-	-	-	-
07/15/88	33.60	5.95	31.92	6.43	31.39	6.47	29.96	9.63	29.88	9.22	31.69	8.78	29.28	9.22	-	-	-	-
07/27/88	33.73	5.82	32.02	6.33	31.60	6.26	30.16	9.43	30.15	8.95	31.94	8.53	29.54	8.96	-	-	-	-
08/12/88	33.77	5.78	-	-	31.78	6.08	30.36	9.23	-	-	-	-	-	-	-	-	-	-
08/26/88	33.76	5.79	32.22	6.13	31.93	5.93	30.53	9.06	32.32	6.78	30.65	9.82	30.02	8.48	-	-	-	-
09/09/88	33.89	5.66	32.21	6.14	31.99	5.87	30.63	8.96	32.45	6.65	30.81	9.66	30.15	8.35	27.02	9.33	28.97	8.58
09/23/88	33.92	5.63	32.18	6.17	32.03	5.83	30.74	8.85	30.98	8.12	32.58	7.89	30.31	8.19	27.20	9.15	29.11	8.44
09/30/88	33.96	5.59	32.22	6.13	32.05	5.81	30.77	8.82	31.04	8.06	32.65	7.82	30.39	8.11	27.25	9.10	29.15	8.40
11/02/88	34.05	5.50	32.18	6.17	32.09	5.77	30.98	8.61	31.28	7.82	32.84	7.63	30.53	7.97	27.47	8.88	29.39	8.16
11/12/88	-	-	30.32	8.03	32.09	5.77	30.14	9.45	30.16	8.94	32.21	8.26	29.22	9.28	26.15	10.20	28.62	8.93
11/19/88	-	-	30.13	8.22	32.92	4.94	30.19	9.40	30.31	8.79	32.62	7.85	29.51	8.99	25.97	10.38	28.16	9.39
11/25/88	28.51	11.04	32.82	5.53	31.30	6.56	31.96	7.63	30.61	8.49	32.95	7.52	30.35	8.15	27.36	8.99	28.33	9.22
12/01/88	34.19	5.36	32.22	6.13	32.12	5.74	31.12	8.47	31.42	7.68	33.20	7.27	30.68	7.82	27.69	8.66	29.49	8.06
12/10/88	26.15	13.40	32.24	6.11	32.15	5.71	30.92	8.67	31.43	7.67	32.61	7.86	30.32	8.18	27.32	9.03	29.40	8.15
12/17/88	28.39	11.16	32.39	5.96	31.42	6.44	31.67	7.92	30.29	8.81	32.82	7.65	29.95	8.55	27.28	9.07	28.38	9.17
12/21/88	31.50	8.05	31.82	6.53	32.08	5.78	28.79	10.80	29.51	9.59	30.02	10.45	29.95	8.55	26.21	10.14	29.36	8.19
01/03/89	33.10	6.45	32.35	6.00	33.00	4.86	30.22	9.37	31.15	7.95	32.78	7.69	30.58	7.92	27.34	9.01	30.30	7.25
01/05/89	-	-	32.35	6.00	33.00	4.86	30.22	9.37	31.15	7.95	32.78	7.69	30.58	7.92	27.34	9.01	30.30	7.25
02/02/89	33.05	6.50	33.01	5.34	31.82	6.04	30.23	9.36	30.51	8.59	32.62	7.85	31.67	6.83	28.11	8.24	30.03	7.52
02/08/89	33.83	5.72	32.21	6.14	32.02	5.84	31.05	8.54	31.44	7.66	33.03	7.44	30.65	7.85	27.65	8.70	29.52	8.03
02/18/89	30.59	8.96	29.26	9.09	31.90	5.96	30.05	9.54	30.21	8.89	31.96	8.51	30.16	8.34	27.65	8.70	28.02	9.53
02/25/89	29.85	9.70	28.68	9.67	30.32	7.54	30.57	9.02	31.10	8.00	31.90	8.57	30.80	7.70	27.12	9.23	29.05	8.50

Elevations are in feet above Mean Sea Level (MSL)
Depth to Water measured from Top of Casing

Table 3. Results of Chemical Analyses of Ground-Water Samples Purgeable Halocarbons (EPA Methods 601 and 8010)

WELL	DATE	DICHLORO-DIFLUORO-METHANE	CHLORO-METHANE	1,1 DI-CHLORO-ETHENE	METHYLENE CHLORIDE	TRANS 1,2 DICHLORO-ETHENE	1,1 DI-CHLORO-ETHANE	CHLORO-FORM	1,1,1 TRI-CHLORO-ETHANE	CARBON TETRA-CHLORIDE	1,2 DI-CHLORO-ETHANE	TRICHLORO-ETHENE	1,2 DI-CHLORO-PROPANE	BROMO-DICHLORO-METHANE	CIS-1,3-DI-CHLORO-PROPENE	1,1,2 TRI-CHLORO-ETHANE	TETRA-CHLORO-ETHENE	CHLORO-BENZENE	BROMO-FORM	ALL OTHER 601 COMPOUNDS	
		ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l
DHS Action Level (a)		--	--	6.0	40.0	16.0	20.0	--	200.0	5.0	1.0	5.0	10.0	---	16.0	100.0	4.0	30.0	--	--	
MW-2	09-Mar-88	ND 2.0	ND 2.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 50.0	ND 0.5	ND 0.5	ND 50.0	ND 50.0	ND 50.0	ND 0.5	ND	
	21-Mar-88	ND 2.0	ND 2.0	1.5	1.3	ND 0.5	ND 0.5	1.4	ND 0.5	ND 0.5	166.0	276	ND 0.5	ND 0.5	ND 0.5	ND 0.5	2.3	ND 0.5	ND 0.5	ND	
	25-Mar-88	ND 2.0	ND 2.0	18.6	11.7	ND 0.5	3.9	2.7	ND 0.5	62.0	19.0	5409	5.0	ND 0.5	ND 0.5	ND 0.5	0.9	ND 0.5	ND 0.5	ND	
	01-Apr-88	ND 2.0	ND 2.0	ND 2.5	ND 2.5	ND 2.5	ND 2.5	10.0	ND 2.5	ND 2.5	7.5	2000	ND 2.5	ND 0.5	ND 0.5	ND 2.5	13.0	ND 2.5	ND 0.5	ND	
	08-Apr-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	0.8	ND 0.5	8.8	ND 0.5	ND 0.5	5.3	10900	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	0.5	ND 0.5	ND 0.5	ND
	15-Apr-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	4.5	ND 0.5	ND 0.5	3.0	4100	ND 0.5	ND 0.5	ND 0.5	ND 0.5	12.0	ND 0.5	ND 0.5	ND	
	22-Apr-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	3.5	ND 0.5	ND 0.5	2.7	2400	ND 0.5	ND 0.5	ND 0.5	ND 0.5	7.5	ND 0.5	ND 0.5	ND	
	28-Apr-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	3.8	ND 0.5	ND 0.5	2.4	2300	ND 0.5	ND 0.5	ND 0.5	ND 0.5	6.5	ND 0.5	ND 0.5	ND	
	05-May-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	1.6	ND 0.5	ND 0.5	1.4	1100	ND 0.5	ND 0.5	ND 0.5	ND 0.5	3.2	ND 0.5	ND 0.5	ND	
	11-May-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	0.8	ND 0.5	7.5	ND 0.5	ND 0.5	3.8	5200	ND 0.5	ND 0.5	ND 0.5	ND 0.5	10.6	ND 0.5	ND 0.5	ND	
	18-May-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	2.3	ND 0.5	ND 0.5	1.2	1900	ND 0.5	ND 0.5	ND 0.5	ND 0.5	4.5	ND 0.5	ND 0.5	ND	
	27-May-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	1.1	ND 0.5	7.0	ND 0.5	ND 0.5	2.3	3100	ND 0.5	ND 0.5	ND 0.5	ND 0.5	5.6	ND 0.5	ND 0.5	ND	
	03-Jun-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	2.2	ND 0.5	13.0	22.0	ND 0.5	1.5	1500	ND 0.5	ND 0.5	ND 0.5	ND 0.5	4.7	ND 0.5	ND 0.5	ND	
	16-Jun-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	9.4	ND 0.5	ND 0.5	1.3	1150	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	0.5	ND 0.5	ND 0.5	ND
*	30-Jun-88	ND 2.0	ND 2.0	ND 2.8	ND 2.8	70.0	ND 4.7	6.2	ND 3.8	ND 2.8	ND 2.8	7600	ND 6.0	ND 0.5	ND 0.5	ND 0.5	12.0	ND 6.0	ND 4.7	ND	
	15-Jul-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	1.0	ND 0.5	5.0	ND 0.5	ND 0.5	ND 0.5	4600	ND 0.5	ND 0.5	ND 0.5	ND 0.5	8.5	ND 0.5	ND 0.5	ND	
	27-Jul-88	ND 2.0	ND 2.0	ND 0.5	0.9	1.4	ND 0.5	6.4	ND 0.5	ND 0.5	2.1	4800	ND 0.5	ND 0.5	ND 0.5	ND 0.5	8.6	ND 0.5	ND 0.5	ND	
	12-Aug-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	1.5	ND 0.5	5.3	ND 0.5	ND 0.5	2.1	5000	ND 0.5	ND 0.5	ND 0.5	ND 0.5	8.0	ND 0.5	ND 0.5	ND	
	26-Aug-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	1.1	ND 0.5	ND 0.5	1.6	4700	ND 0.5	ND 0.5	ND 0.5	ND 0.5	7.6	ND 0.5	ND 0.5	ND	
	09-Sep-88	ND 2.0	ND 2.0	ND 0.5	0.6	0.8	ND 0.5	5.5	ND 0.5	ND 0.5	1.0	3800	ND 0.5	ND 0.5	ND 0.5	ND 0.5	5.9	ND 0.5	ND 0.5	ND	
	23-Sep-88	ND 2.0	ND 2.0	ND 0.5	0.6	1.3	ND 0.5	4.6	ND 0.5	ND 0.5	1.5	4100	ND 0.5	ND 0.5	ND 0.5	ND 0.5	6.5	ND 0.5	ND 0.5	ND	
	30-Sep-88	ND 2.0	ND 2.0	ND 0.5	0.6	0.9	ND 0.5	3.5	ND 0.5	ND 0.5	1.3	3600	ND 0.5	ND 0.5	ND 0.5	ND 0.5	5.6	ND 0.5	ND 0.5	ND	
	02-Nov-88	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.3	ND 1.0	ND 1.0	ND 1.0	46.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND	1.0	ND 1.0	ND 1.0	ND
	02-Dec-88	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	286.6	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND	1.0	ND 1.0	ND 1.0	ND
	04-Jan-89	ND 2.0	ND 2.0	ND 0.5	ND 0.5	1.0	ND 0.5	7.3	ND 0.5	ND 0.5	1.1	4700	ND 0.5	ND 0.5	ND 0.5	ND 0.5	11.0	ND 0.5	ND 0.5	ND	
	03-Feb-89	ND 2.0	ND 2.0	1.0	1.7	1.4	ND 0.5	3.8	0.8	ND 0.5	1.3	400	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	0.5	ND 0.5	ND 0.5	ND
MW-3	10-Mar-88	ND 2.0	ND 2.0	21.0	ND 0.5	ND 0.5	28.0	ND 0.5	ND 0.5	ND 0.5	2.7	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	19-Mar-88	ND 2.0	ND 2.0	40.0	ND 0.5	ND 0.5	20.0	ND 0.5	ND 0.5	ND 0.5	2.3	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	
	25-Mar-88	ND 2.0	ND 2.0	40.0	ND 0.5	ND 0.5	24.0	ND 0.5	ND 0.5	ND 0.5	2.4	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	
	01-Apr-88	ND 2.0	ND 2.0	57.0	ND 0.5	ND 0.5	28.0	ND 0.5	ND 0.5	ND 0.5	2.6	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	15-Apr-88	ND 2.0	ND 2.0	30.6	ND 0.5	ND 0.5	14.3	ND 0.5	ND 0.5	ND 0.5	1.3	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	
	15-Apr-88	ND 2.0	ND 2.0	37.0	ND 0.5	ND 0.5	14.0	ND 0.5	ND 0.5	ND 0.5	1.1	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	
	28-Apr-88	ND 2.0	ND 2.0	50.0	ND 0.5	ND 0.5	18.0	ND 0.5	0.9	ND 0.5	1.8	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	
	28-Apr-88	ND 2.0	ND 2.0	37.0	ND 0.5	ND 0.5	16.0	ND 0.5	ND 0.5	ND 0.5	1.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	11-May-88	ND 2.0	ND 2.0	48.0	ND 0.5	ND 0.5	17.0	ND 0.5	1.0	ND 0.5	2.1	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	
	27-May-88	ND 2.0	ND 2.0	24.0	ND 0.5	ND 0.5	10.0	0.6	0.6	ND 0.5	0.9	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	
	16-Jun-88	ND 2.0	ND 2.0	22.5	ND 0.5	ND 0.5	7.2	ND 0.5	0.9	ND 0.5	1.0	0.7	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	27-Jul-88	ND 2.0	ND 2.0	22.0	ND 0.5	ND 0.5	8.7	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	1.2	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	26-Aug-88	ND 2.0	ND 2.0	14.0	ND 0.5	ND 0.5	6.6	ND 0.5	0.6	ND 0.5	0.8	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	
	30-Sep-88	ND 2.0	ND 2.0	9.2	ND 0.5	ND 0.5	4.7	ND 0.5	ND 0.5	ND 0.5	0.6	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	
	02-Nov-88	ND 1.0	ND 1.0	8.4	ND 1.0	ND 1.0	7.1	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND	

Table 3. Results of Chemical Analyses of Ground-Water Samples
Purgeable Halocarbons (EPA Methods 601 and 8010)

WELL	DATE	DICHLORO-	CHLORO-	1,1 DI-	METHYLENE	TRANS 1,2	1,1 DI-	CHLORO-	1,1,1 TRI-	CARBON	1,2 DI-	TRICHLORO-	1,2 DI-	BROMO-	CIS-1,3-DI-	1,1,2 TRI-	TETRA-	CHLORO-	BROMO-	ALL					
		DIFLUORO-	METHANE	CHLORO-	ETHENE	DICHLORO-	CHLORO-	ETHANE	FORM	CHLORO-	TETRA-	CHLORO-	ETHENE	CHLORO-	DICHLORO-	CHLORO-	ETHANE	CHLORO-	BENZENE	FORM	OTHER 601				
		ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l				
DNS Action Level (a)		--	--	6.0	40.0	16.0	20.0	--	200.0	5.0	1.0	5.0	10.0	---	16.0	100.0	4.0	30.0	--	--					
	02-Dec-88	ND	1.0	ND	1.0	12.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND		
	04-Jan-89	ND	2.0	ND	2.0	23.0	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		
	03-Feb-89	ND	2.0	ND	2.0	22.0	ND	1.6	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND		
MW-5	10-Mar-88	ND	2.0	ND	2.0	8.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	2.6	ND	0.5	ND	
	18-Mar-88	ND	2.0	ND	2.0	18.0	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	
	25-Mar-88	ND	2.0	ND	2.0	17.0	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	
	01-Apr-88	ND	2.0	ND	2.0	20.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
	08-Apr-88	ND	2.0	ND	2.0	24.0	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	
	15-Apr-88	ND	2.0	ND	2.0	18.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
	22-Apr-88	ND	2.0	ND	2.0	20.0	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	
	28-Apr-88	ND	2.0	ND	2.0	18.0	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	
	05-May-88	ND	2.0	ND	2.0	22.8	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	
	11-May-88	ND	2.0	ND	2.0	19.0	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	
	11-May-88	ND	2.0	ND	2.0	18.0	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	
	18-May-88	ND	2.0	ND	2.0	41.0	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	
	27-May-88	ND	2.0	ND	2.0	20.0	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	
	03-Jun-88	ND	2.0	ND	2.0	20.0	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	
	16-Jun-88	ND	2.0	ND	2.0	ND	0.5	110.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
	30-Jun-88	ND	2.0	ND	2.0	ND	2.8	ND	2.8	ND	1.6	ND	4.7	ND	1.6	ND	2.8	ND	2.8	ND	3.8	ND	1.9	ND	6.0
	15-Jul-88	ND	2.0	ND	2.0	14.0	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	
	27-Jul-88	ND	2.0	ND	2.0	24.0	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	
	12-Aug-88	1.5	ND	2.0	25.0	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	ND	
	26-Aug-88	2.6	ND	2.0	7.7	ND	2.1	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	
	09-Sep-88	ND	2.0	ND	2.0	16.0	ND	0.7	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
	23-Sep-88	1.7	ND	2.0	16.0	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	ND	
	30-Sep-88	ND	2.0	ND	2.0	16.0	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	
	02-Nov-88	ND	1.0	ND	1.0	7.4	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	
	01-Dec-88	4.5	ND	1.0	12.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	
	04-Jan-89	ND	2.0	ND	2.0	27.0	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	
	03-Feb-89	ND	2.0	ND	2.0	27.0	ND	1.8	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
MW-6	09-Mar-88	ND	2.0	ND	2.0	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	ND	
	09-Mar-88	ND	2.0	ND	2.0	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	ND	
	21-Mar-88	ND	2.0	ND	2.0	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	ND	
	21-Mar-88	ND	2.0	ND	2.0	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	ND	
	25-Mar-88	ND	2.0	ND	2.0	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	ND	
	25-Mar-88	ND	2.0	ND	2.0	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	ND	
	01-Apr-88	ND	2.0	ND	2.0	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	ND	
	01-Apr-88	ND	2.0	ND	2.0	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	ND	
	08-Apr-88	ND	2.0	ND	2.0	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	ND	
	08-Apr-88	ND	2.0	ND	2.0	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	ND	
	15-Apr-88	ND	2.0	ND	2.0	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	ND	

Table 3. Results of Chemical Analyses of Ground-Water Samples
Purgeable Halocarbons (EPA Methods 601 and 8010)

WELL	DATE	DICHLORO-DIFLUORO-METHANE	CHLORO-METHANE	1,1 DI-CHLORO-ETHENE	METHYLENE CHLORIDE	TRANS 1,2 DICHLORO-ETHENE	1,1 DI-CHLORO-ETHANE	CHLORO-FORM	1,1,1 TRI-CHLORO-ETHANE	CARBON TETRA-CHLORIDE	1,2 DI-CHLORO-ETHANE	TRICHLORO-ETHENE	1,2 DI-CHLORO-PROPANE	BROMO-DICHLORO-METHANE	CIS-1,3-DI-CHLORO-PROPENE	1,1,2 TRI-CHLORO-ETHANE	TETRA-CHLORO-ETHENE	CHLORO-BENZENE	BROMO-FORM	ALL OTHER 601 COMPOUNDS							
		ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l							
DHS Action Level (a)		--	--	6.0	40.0	16.0	20.0	--	200.0	5.0	1.0	5.0	10.0	---	16.0	100.0	4.0	30.0	--	--							
22-Apr-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	23.0	ND	0.5	11.8	9300	ND	0.5	ND	0.5	ND	0.5	0.6	22.0	ND	0.5	ND	0.5	ND	
22-Apr-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	25.0	ND	0.5	14.0	11100	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	
28-Apr-88	ND	2.0	ND	2.0	ND	50.0	ND	50.0	ND	50.0	ND	50.0	11600	ND	50.0	ND	0.5	ND	0.5	ND	50.0	ND	50.0	ND	50.0	ND	
05-May-88	ND	2.0	ND	2.0	ND	25.0	ND	25.0	ND	25.0	ND	25.0	14100	ND	25.0	ND	0.5	ND	0.5	ND	25.0	ND	25.0	ND	25.0	ND	
05-May-88	ND	2.0	ND	2.0	ND	25.0	ND	25.0	ND	25.0	ND	25.0	11900	ND	25.0	ND	0.5	ND	0.5	ND	25.0	ND	25.0	ND	25.0	ND	
11-May-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	11000	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	
18-May-88	ND	2.0	ND	2.0	ND	50.0	ND	50.0	22.8	ND	50.0	14.0	8900	ND	50.0	ND	0.5	ND	0.5	1.7	82.0	ND	50.0	ND	50.0	ND	
18-May-88	ND	2.0	ND	2.0	ND	0.8	ND	50.0	21.8	ND	50.0	17.0	6900	ND	50.0	ND	0.5	ND	0.5	ND	50.0	ND	50.0	ND	50.0	ND	
27-May-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	18.0	ND	0.5	5.4	6700	ND	0.5	ND	0.5	ND	0.5	0.6	18.0	ND	0.5	ND	0.5	ND	
03-Jun-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	20.0	ND	0.5	3.3	4500	ND	0.5	ND	0.5	ND	0.5	0.5	12.0	ND	0.5	ND	0.5	ND	
03-Jun-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	20.0	ND	0.5	3.3	6600	ND	0.5	ND	0.5	ND	2.5	ND	0.5	11.0	ND	0.5	ND	0.5	
16-Jun-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	49.0	ND	0.5	2.8	3900	ND	0.5	ND	0.5	ND	2.4	1.6	27.0	2.2	ND	0.5	ND	0.5	
16-Jun-88	ND	2.0	ND	2.0	ND	2.1	ND	0.5	28.0	ND	0.5	3.2	5300	ND	0.5	ND	0.5	ND	0.5	2.0	31.0	5.0	ND	0.5	ND	0.5	
* 30-Jun-88	ND	2.0	ND	2.0	ND	2.8	ND	2.8	160.0	ND	4.7	ND	1.6	ND	3.8	ND	2.8	ND	2.8	ND	2.8	160.0	ND	4.7	ND	4.7	ND
* 30-Jun-88	ND	2.0	ND	2.0	ND	2.8	ND	2.8	160.0	ND	4.7	ND	1.6	ND	3.8	ND	2.8	ND	2.8	ND	2.8	160.0	ND	4.7	ND	4.7	ND
15-Jul-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	8.4	ND	0.5	30.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	42.0	ND	0.5	ND	0.5	ND	
27-Jul-88	ND	2.0	ND	2.0	ND	1.0	ND	0.7	11.0	ND	0.5	3.7	9700	ND	0.5	ND	0.5	ND	0.5	ND	0.5	22.0	ND	0.5	ND	0.5	
27-Jul-88	ND	2.0	ND	2.0	ND	0.8	ND	0.5	9.9	ND	0.5	26.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	24.0	ND	0.5	ND	0.5	ND	
12-Aug-88	ND	2.0	ND	2.0	ND	0.8	ND	0.5	5.6	ND	0.5	16.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	20.0	ND	0.5	ND	0.5	ND	
12-Aug-88	ND	2.0	ND	2.0	ND	0.9	ND	0.5	5.8	ND	0.5	20.0	ND	0.5	ND	0.5	ND	0.5	ND	0.9	20.0	ND	0.5	ND	0.5	ND	
26-Aug-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	3.4	ND	0.5	20.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	16.0	ND	0.5	ND	0.5	ND	
26-Aug-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	3.2	ND	0.5	17.0	ND	0.5	ND	0.5	ND	0.5	ND	0.6	17.0	ND	0.5	ND	0.5	ND	
09-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	1.7	ND	0.5	19.0	ND	0.5	ND	0.5	ND	0.5	ND	0.6	13.0	ND	0.5	ND	0.5	ND	
23-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	2.1	ND	0.5	19.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	13.0	ND	0.5	ND	0.5	ND	
30-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	1.3	ND	0.5	15.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
30-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	1.1	ND	0.5	14.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	
02-Nov-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	2.6	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	
02-Dec-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	7.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	
02-Dec-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	
04-Jan-89	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
03-Feb-89	ND	2.0	ND	2.0	ND	0.7	ND	0.7	4.7	ND	0.5	7.7	ND	0.5	ND	0.5	ND	0.5	ND	0.5	5.6	ND	0.5	ND	0.5	ND	
03-Feb-89	ND	2.0	ND	2.0	ND	0.7	ND	0.7	4.7	ND	0.5	7.7	ND	0.5	ND	0.5	ND	0.5	ND	0.5	5.6	ND	0.5	ND	0.5	ND	
MW-7									0.6	ND	0.5	6.9	ND	0.5	ND	0.5	ND	0.5	ND	0.5	4.2	ND	0.5	ND	0.5	ND	
09-Mar-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
18-Mar-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
25-Mar-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
01-Apr-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
15-Apr-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
28-Apr-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
11-May-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
27-May-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
16-Jun-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	
27-Jul-88	ND	2.0	ND	2.0	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	ND	0.5	ND	0.5	

Table 3. Results of Chemical Analyses of Ground-Water Samples Purgeable Halocarbons (EPA Methods 601 and 8010)

WELL	DATE	DICHLORO-DIFLUORO-METHANE	CHLORO-METHANE	1,1 DI-CHLORO-ETHENE	METHYLENE CHLORIDE	TRANS 1,2 DICHLORO-ETHENE	1,1 DI-CHLORO-ETHANE	CHLORO-FORM	1,1,1 TRI-CHLORO-ETHANE	CARBON TETRA-CHLORIDE	1,2 DI-CHLORO-ETHANE	TRICHLORO-ETHENE	1,2 DI-CHLORO-PROPANE	BROMO-DICHLORO-METHANE	CIS-1,3-DI-CHLORO-PROPENE	1,1,2 TRI-CHLORO-ETHANE	TETRA-CHLORO-ETHENE	CHLORO-BENZENE	BROMO-FORM	ALL OTHER 601 COMPOUNDS				
		ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l				
DHS Action Level (a) --		--	--	6.0	40.0	16.0	20.0	--	200.0	5.0	1.0	5.0	10.0	---	16.0	100.0	4.0	30.0	--	--				
26-Aug-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	1.7	ND	0.5	ND	0.5	ND	0.5	0.6	ND	0.5	ND	0.5	ND	
30-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	4.4	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
02-Nov-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	2.7	ND	1.0	ND	1.0	ND	0.5	ND	1.0	ND
01-Dec-88	ND	1.0	ND	1.0	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	ND	0.5
04-Jan-89	ND	2.0	ND	2.0	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	ND	0.5
03-Feb-89	ND	2.0	ND	2.0	ND	0.5	ND	1.3	ND	0.5	ND	0.5	ND	0.5	2.2	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
MW-8																								
10-Mar-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	130.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
18-Mar-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	12.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
25-Mar-88	ND	2.0	ND	2.0	ND	1.3	ND	0.5	ND	0.5	ND	0.5	ND	0.5	0.7	ND	0.5	ND	0.5	ND	0.5	ND	0.8	ND
01-Apr-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	6.6	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
15-Apr-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	9.8	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
28-Apr-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	0.9	ND	0.5	ND	20.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
11-May-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	10.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
27-May-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	1.7	ND	0.5	ND	13.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
27-May-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	1.8	ND	0.5	ND	11.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
16-Jun-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	1.8	ND	0.5	ND	22.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
27-Jul-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	2.4	ND	0.5	ND	18.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
26-Aug-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	7.2	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5
30-Sep-88	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	0.5	ND	0.5	ND	8.5	ND	0.5	ND	1.0	ND	0.5	ND	0.5	ND
02-Nov-88	ND	1.0	ND	1.0	ND	3.1	ND	1.0	ND	1.0	ND	1.0	ND	1.0	3.4	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
02-Dec-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	2.8	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
04-Jan-89	ND	2.0	ND	2.0	ND	0.5	ND	0.5	ND	0.5	0.7	ND	0.5	ND	5.4	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
03-Feb-89	ND	2.0	ND	2.0	ND	0.5	ND	1.2	ND	0.5	1.2	ND	0.5	ND	4.4	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
MW-9																								
10-Mar-88	ND	2.0	ND	2.0	ND	9.0	ND	0.5	ND	0.5	2.6	ND	0.5	ND	3.5	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
21-Mar-88	ND	2.0	ND	2.0	ND	12.6	ND	0.5	ND	0.5	3.0	ND	0.5	ND	5.0	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
* 30-Jun-88	ND	2.0	ND	2.0	ND	2.8	ND	2.8	ND	1.6	4.7	ND	1.6	ND	2.8	ND	1.9	ND	6.0	ND	0.5	ND	0.5	ND
15-Jul-88	ND	2.0	ND	17.0	ND	5.8	ND	0.5	ND	0.5	1.1	ND	6.0	ND	1.3	ND	1.2	ND	0.5	ND	0.5	ND	0.5	ND
15-Jul-88	ND	2.0	ND	31.0	ND	4.7	ND	0.5	ND	0.5	1.0	ND	5.4	ND	1.0	ND	0.7	ND	0.5	ND	0.5	ND	0.5	ND
26-Aug-88	ND	2.0	ND	2.0	ND	1.5	ND	0.5	ND	0.5	0.7	ND	5.7	ND	2.1	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
29-Sep-88	ND	42.0	ND	2.0	ND	1.6	ND	0.5	ND	0.5	0.8	ND	4.8	ND	1.8	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
01-Nov-88	ND	1.0	ND	1.0	ND	1.0	ND	16.0	ND	1.0	1.0	ND	5.1	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
01-Dec-88	ND	1.0	ND	1.0	ND	4.0	ND	0.5	ND	0.5	3.6	ND	5.7	ND	1.6	ND	0.5	ND	0.5	ND	0.5	ND	0.5	ND
03-Feb-89	ND	2.0	ND	2.0	ND	9.7	ND	1.0	ND	0.5	5.1	ND	3.0	ND	1.8	ND	0.8	ND	0.5	ND	0.5	ND	0.5	ND
MW-10																								
09-Sep-88	1.7	ND	2.0	16.0	ND	0.5	ND	0.5	4.1	ND	0.5	ND	0.5	ND	17.0	ND	0.5	ND	0.5	ND	1.0	ND	0.5	ND
29-Sep-88	1.1	ND	2.0	9.1	ND	0.5	ND	0.5	2.5	ND	0.5	ND	0.5	ND	40.0	ND	0.5	ND	0.5	ND	1.0	ND	0.5	ND
01-Nov-88	ND	1.0	ND	1.0	10.7	ND	13.7	ND	1.0	3.0	ND	1.0	ND	1.0	7.5	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
02-Dec-88	ND	1.0	ND	1.0	5.8	ND	1.0	ND	1.0	2.0	ND	1.0	ND	1.0	42.2	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND
03-Feb-89	ND	2.0	ND	2.0	20.0	ND	1.5	ND	0.5	3.7	ND	0.5	ND	0.5	12.0	ND	120.0	ND	0.5	ND	0.5	ND	0.5	ND
MW-11																								
09-Sep-88	ND	2.0	ND	2.0	2.6	ND	0.5	ND	0.5	2.7	ND	0.5	1.4	ND	28.0	ND	0.5	ND	0.5	ND	1.0	ND	0.5	ND

Table 3. Results of Chemical Analyses of Ground-Water Samples
Purgeable Halocarbons (EPA Methods 601 and 8010)

WELL	DATE	DICHLORO-	CHLORO-	1,1 DI-	METHYLENE	TRANS 1,2	1,1 DI-	CHLORO-	1,1,1 TRI-	CARBON	1,2 DI-	TRICHLORO-	1,2 DI-	BROMO-	CIS-1,3-DI-	1,1,2 TRI-	TETRA-	CHLORO-	BROMO-	ALL	
		DIFLUORO-	METHANE	CHLORO-	ETHENE	ETHENE	CHLORO-	CHLORO-	ETHANE	ETHANE	TETRA-	CHLORO-	ETHENE	CHLORO-	DICHLORO-	CHLORO-	ETHANE	CHLORO-	BENZENE	FORM	OTHER 601
		ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l	ST ug/l
DHS Action Level (a) --		--	--	6.0	40.0	16.0	20.0	--	200.0	5.0	1.0	5.0	10.0	---	16.0	100.0	4.0	30.0	--	--	
	29-Sep-88	ND 2.0	ND 2.0	0.6	ND 0.5	ND 0.5	0.6	3.3	ND 0.5	ND 0.5	130.0	4.4	ND 0.5	ND 0.5	ND 1.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	01-Nov-88	ND 1.0	ND 1.0	1.0	ND 15.9	ND 1.0	ND 1.0	ND 1.0	ND 3.5	ND 1.0	27.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND
	02-Dec-88	ND 1.0	ND 1.0	1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	55.4	2.6	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND
	03-Feb-89	ND 2.0	ND 2.0	1.2	ND 1.5	ND 0.5	2.5	ND 0.5	ND 0.5	ND 0.5	42.0	2.3	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 1.0	ND 0.5	ND 0.5	ND 0.5	ND
BLANK																					
	09-Mar-88	ND 2.0	ND 2.0	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	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
	21-Mar-88	ND 2.0	ND 2.0	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	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
	25-Mar-88	ND 2.0	ND 2.0	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	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
	31-Mar-88	ND 2.0	ND 2.0	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	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
	08-Apr-88	ND 2.0	ND 2.0	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	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
	15-Apr-88	ND 2.0	ND 2.0	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	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
	22-Apr-88	ND 2.0	ND 2.0	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	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
	28-Apr-88	ND 2.0	ND 2.0	ND 0.5	1.2	ND 0.5	ND 0.5	7.4	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	ND 0.5	ND 0.5	ND 0.5	ND
	05-May-88	ND 2.0	ND 2.0	ND 0.5	1.7	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	11-May-88	ND 2.0	ND 2.0	ND 0.5	35.0	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	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	18-May-88	ND 2.0	ND 2.0	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	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
	27-May-88	ND 2.0	ND 2.0	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	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
	03-Jun-88	ND 2.0	ND 2.0	ND 0.5	3.6	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	16-Jun-88	ND 2.0	ND 2.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	0.6	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
*	30-Jun-88	ND 2.0	ND 2.0	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	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
	15-Jul-88	ND 2.0	ND 2.0	ND 0.5	0.7	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 1.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	27-Jul-88	ND 2.0	ND 2.0	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	ND 0.5	ND 0.5	ND 1.0	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	02-Nov-88	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	1.1	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND
	01-Dec-88	ND 1.0	ND 1.0	ND 0.5	1.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND
	02-Dec-88	ND 1.0	ND 1.0	ND 1.0	ND 1.0	12.7	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND 1.0	ND
	03-Feb-89	ND 2.0	ND 2.0	ND 0.5	2.6	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND

NOTES:

(a): Marshack, 1988.

ST: Status.

ND: Not detected at level shown.

NT: Not tested.

* : Analysis performed by NET Pacific using EPA Test Method 624

** : Compound detected was 1,1,2,2-Tetrachloroethane

Table 4. Results of Chemical Analyses of Ground-Water Samples Purgeable Aromatics (EPA Method 602 and 8020) and Total Petroleum Hydrocarbons (EPA Method 8015)

Harding Lawson Associates

WELL	DATE	BENZENE		TOLUENE		CHLORO-BENZENE		ETHYL-BENZENE		XYLENES		1,3 DI-CHLORO-BENZENE		1,4 DI-CHLORO-BENZENE		1,2 DI-CHLORO-BENZENE		TPH AS GASOLINE		TPH AS DIESEL	
		ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	mg/l	ST	mg/l
DHS Action Level (a)			0.7		100		30		680		620		130	LOQ	0.2		130	--	--		--
MW-2	09-Mar-88		471.0		514.0	ND	20.0		162.0		157.0	ND	20.0	ND	20.0	ND	20.0		6300	ND	10.0
	21-Mar-88		182.0		9.2		6.0		33.0		33.0	ND	0.2	ND	0.2	ND	0.2		4500	ND	1.0
	25-Mar-88		83.0		10.0	ND	0.2		11.2		15.0	ND	0.2	ND	0.2	ND	0.2		3200	ND	1.0
	01-Apr-88		17.0		7.0	ND	1.0		4.0		9.0	ND	1.0	ND	1.0	ND	1.0		3400	NT	
	08-Apr-88		51.0		3.0	ND	0.2	ND	0.2		1.4	ND	0.2	ND	0.2	ND	0.2		1660	NT	
	15-Apr-88		25.3		2.1	ND	0.2		5.1		3.0	ND	0.2	ND	0.2	ND	0.2		1600	NT	
	22-Apr-88		22.0		3.2	ND	0.2		1.5		4.5	ND	0.2	ND	0.2	ND	0.2		12000	NT	
	28-Apr-88		26.5		3.6	ND	0.4		2.0		5.5	ND	0.4	ND	0.4	ND	0.4		2000	NT	
	05-May-88		32.0		4.3	ND	0.2		1.7		10.0	ND	0.2	ND	0.2	ND	0.2		1400	NT	
	11-May-88		8.7		0.6	ND	0.2	ND	0.2		1.0	ND	0.2	ND	0.2	ND	0.2		1400	NT	
	18-May-88		20.0		2.1	ND	0.4	ND	0.4		4.5	ND	0.4	ND	0.4	ND	0.4		660	NT	
	27-May-88		8.3		1.2	ND	0.2	ND	0.2		2.6	ND	0.2	ND	0.2	ND	0.2		1700	NT	
	03-Jun-88		39.0		4.7	ND	0.2		0.7		7.0	ND	0.2	ND	0.2	ND	0.2		1700	NT	
	16-Jun-88		4.5		0.9	ND	0.2	ND	0.2		1.7	ND	0.2	ND	0.2	ND	0.2		830	NT	
*	30-Jun-88		8.5	ND	6.0	ND	6.0	ND	7.2	NT		ND	6.0	ND	6.0	ND	6.0		630	NT	
	15-Jul-88		10.0		1.2	ND	0.2	ND	0.2		2.4	ND	0.2	ND	0.2	ND	0.2		12000	NT	
	27-Jul-88		9.9		1.1	ND	0.2	ND	0.2		3.4	ND	0.2	ND	0.2	ND	0.2		1200	NT	
	12-Aug-88		9.1		1.5	ND	0.2	ND	0.2		4.7	ND	0.2	ND	0.2	ND	0.2		1100	NT	
	26-Aug-88		7.1		1.0	ND	0.2	ND	0.2		2.0	ND	0.2	ND	0.2	ND	0.2		790	NT	
	09-Sep-88		8.4		1.6	ND	0.2		0.9		3.1	ND	0.2	ND	0.2	ND	0.2		790	NT	
	23-Sep-88		12.0		1.6	ND	0.2		1.2		5.8	ND	0.2	ND	0.2	ND	0.2		720	NT	
	30-Sep-88		13.0		2.8	ND	0.2		1.6		8.3	ND	0.2	ND	0.2	ND	0.2		1700	NT	
	02-Nov-88		24.0		0.8	ND	1.0		5.6		11.0	ND	1.0	ND	1.0	ND	1.0		770	NT	
	02-Dec-88		12.0		0.7	ND	0.2		3.1		9.4	ND	0.2	ND	0.2	ND	0.2		840	NT	
	04-Jan-89	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2		630	NT	
	03-Feb-89	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	250	NT	
MW-3	10-Mar-88	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	50	ND	10.0
	18-Mar-88	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	50	ND	1.0
	25-Mar-88	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	50	ND	1.0
	01-Apr-88		0.7		0.4	ND	0.2	ND	0.2		1.2	ND	0.2	ND	0.2	ND	0.2	ND	50	NT	
	15-Apr-88	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	50	NT	
	28-Apr-88	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	50	NT	
	28-Apr-88	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	50	NT	
	11-May-88	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	50	NT	
	27-May-88	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	50	NT	
	16-Jun-88	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	50	NT	
	27-Jul-88	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	50	NT	
	26-Aug-88	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	50	NT	
	30-Sep-88	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	50	NT	
	02-Nov-88	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	ND	50	NT	
	02-Dec-88	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	50	NT	
	04-Jan-89	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	50	NT	

Table 4. Results of Chemical Analyses of Ground-Water Samples
 Purgeable Aromatics (EPA Method 602 and 8020) and
 Total Petroleum Hydrocarbons (EPA Method 8015)

Harding Lawson Associates

WELL	DATE	BENZENE		TOLUENE		CHLORO-BENZENE		ETHYL-BENZENE		XYLENES		1,3 DI-CHLORO-BENZENE		1,4 DI-CHLORO-BENZENE		1,2 DI-CHLORO-BENZENE		TPH AS GASOLINE		TPH AS DIESEL		
		ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	mg/l	ST	mg/l	ST	mg/l	
DHS Action Level (a)			0.7		100		30		680		620		130	LOQ	0.2		130	--		--		
MW-5	03-Feb-89	ND	0.2		0.92	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	250		NT	
	10-Mar-88	ND	0.2		0.3	ND	0.2	ND	0.2		0.8	ND	0.2	ND	0.2	ND	0.2	ND	50	ND	10.0	
	18-Mar-88	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	50	ND	1.0	
	25-Mar-88	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.6	ND	0.2	ND	0.2	ND	50	ND	1.0	
	01-Apr-88	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	50		NT	
	08-Apr-88	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	50		NT	
	15-Apr-88	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	50		NT	
	22-Apr-88	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	50		NT	
	28-Apr-88	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	50		NT	
	05-May-88	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	50		NT	
	11-May-88	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	50		NT	
	11-May-88	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	50		NT	
	18-May-88	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	50		NT	
	27-May-88	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	50		NT	
	16-Jun-88	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	50		NT	
	* 30-Jun-88	ND	4.4	ND	6.0	ND	6.0	ND	7.2	NT		6.0	ND	6.0	ND	6.0	ND	6.0	ND	50		NT
	15-Jul-88	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	50		NT	
	27-Jul-88	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	50		NT	
	12-Aug-88	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	50		NT	
	26-Aug-88	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	50		NT	
	09-Sep-88	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	50		NT	
	23-Sep-88	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	50		NT	
	30-Sep-88	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	50		NT	
	02-Nov-88	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	50		NT	
	02-Dec-88	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	NT		NT		NT		NT			NT	
04-Jan-89	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	50		NT		
03-Feb-89	ND	0.2		0.95	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	25		NT		
MW-6	09-Mar-88		2100.0		4900.0		0.8			8100.0	ND	33.0	ND	33.0	ND	33.0	ND	33.0	48000	ND	10.0	
	09-Mar-88		2000.0		4200.0	ND	0.2		1100.0	5600.0	ND	0.2	ND	33.0	ND	33.0	ND	33.0	47000	ND	10.0	
	21-Mar-88		3028.0		2089.0		14.0		1308.0	2980.0	ND	0.2	ND	0.2	ND	0.2	ND	0.2	53000	ND	1.0	
	21-Mar-88		3680.0		3180.0		125.0		1580.0	6300.0	ND	0.2	ND	0.2	ND	0.2	ND	0.2	51000	ND	1.0	
	25-Mar-88		18.0		27.0	ND	0.2	ND	0.2	48.0	ND	0.3	ND	0.2	ND	0.2	ND	0.2	31000		9.0	
	25-Mar-88		13.0		27.0	ND	0.2		8.0	49.0	ND	0.2	ND	0.2	ND	0.2	ND	0.2	50000		9.0	
	01-Apr-88		440.0		490.0	ND	2.0		300.0	970.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	32000		NT	
	01-Apr-88		430.0		500.0	ND	1.0		300.0	990.0	ND	1.0	ND	1.0	ND	1.0	ND	1.0	39000		NT	
	08-Apr-88		2340.0 ++		2890.0 ++	ND	2.0		34.0	2520.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	34050		NT	
	08-Apr-88		2760.0		3.0	ND	2.0		9.5	390.0	ND	2.0	ND	2.0	ND	2.0	ND	2.0	4010		NT	
	15-Apr-88		456.0		1467.0	ND	0.2		3479.0	547.0	ND	0.2	ND	0.2	ND	0.2	ND	0.2	23000		NT	
	22-Apr-88		890.0		4400.0	ND	10.0		240.0	6100.0		3300.0	ND	10.0	ND	10.0	ND	10.0	37000		NT	
	22-Apr-88		520.0		2700.0	ND	10.0		26.0	2200.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	26000		NT	
	28-Apr-88		340.0		3350.0	ND	100.0	ND	100.0	5000.0	ND	100.0	ND	100.0	ND	100.0	ND	100.0	32000		NT	
	05-May-88		585.0		3740.0	ND	10.0		200.0	6930.0	ND	10.0	ND	10.0	ND	10.0	ND	10.0	38000		NT	

Table 4. Results of Chemical Analyses of Ground-Water Samples Purgeable Aromatics (EPA Method 602 and 8020) and Total Petroleum Hydrocarbons (EPA Method 8015)

Harding Lawson Associates

WELL	DATE	BENZENE		TOLUENE		CHLORO-BENZENE		ETHYL-BENZENE		XYLENES		1,3 DI-CHLORO-BENZENE		1,4 DI-CHLORO-BENZENE		1,2 DI-CHLORO-BENZENE		TPH AS GASOLINE		TPH AS DIESEL	
		ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	mg/l	ST	mg/l
DHS Action Level (a)			0.7		100		30		680		620		130	LOQ	0.2		130		--		--
	05-May-88		365.0		2370.0	ND	10.0		90.0		4330.0	ND	10.0	ND	10.0	ND	10.0		19000		NT
	11-May-88		310.0		3100.0	ND	10.0		45.0		4700.0	ND	10.0	ND	10.0	ND	10.0		34000		NT
	18-May-88		150.0		1600.0	ND	20.0		40.0		3000.0	ND	20.0	ND	20.0	ND	20.0		25000		NT
	18-May-88		200.0		1800.0	ND	20.0		28.0		3300.0	ND	10.0	ND	10.0	ND	10.0		26000		NT
	27-May-88		740.0		7300.0	ND	20.0		740.0		13000.0	ND	20.0	ND	20.0	ND	20.0		36000		NT
	03-Jun-88		260.0		2500.0	ND	20.0		320.0		5100.0	ND	20.0	ND	20.0	ND	20.0		39000		NT
	03-Jun-88		260.0		2300.0	ND	20.0		290.0		4800.0	ND	20.0	ND	20.0	ND	20.0		32000		NT
	16-Jun-88		280.0		3100.0	ND	20.0		370.0		5500.0	ND	20.0	ND	20.0	ND	20.0		30000		NT
	16-Jun-88		190.0		2200.0	ND	20.0		330.0		4000.0	ND	20.0	ND	20.0	ND	20.0		25000		NT
*	30-Jun-88		170.0		2000.0	ND	6.0		260.0	NT		ND	6.0	ND	6.0	ND	6.0		21000		NT
*	30-Jun-88		170.0		1700.0	ND	6.0	ND	7.2	NT		ND	6.0	ND	6.0	ND	6.0		13000		NT
	15-Jul-88		8.4		300.0	ND	0.2		89.0		570.0	ND	0.2		2.6	ND	0.2		8600		NT
	27-Jul-88		70.0		260.0	ND	0.2		0.7		1000.0	ND	0.2	ND	0.2	ND	0.2		4400		NT
	27-Jul-88		64.0		280.0	ND	0.2		0.7		1000.0	ND	0.2	ND	0.2	ND	0.2		4900		NT
	12-Aug-88		34.0		190.0	ND	4.0		4.0		930.0	ND	4.0	ND	4.0	ND	4.0		6100		NT
	12-Aug-88		38.0		250.0	ND	5.0		5.0		1200.0	ND	5.0	ND	5.0	ND	5.0		7300		NT
	26-Aug-88		35.0		70.0	ND	0.2		0.2		430.0	ND	0.2	ND	0.2	ND	0.2		3500		NT
	26-Aug-88	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2		3900		NT
	09-Sep-88		29.0		77.0	ND	0.2		250.0		490.0	ND	0.2	ND	0.2	ND	0.2		3600		NT
	09-Sep-88		32.0		61.0	ND	0.2		2.0		170.0	ND	0.2	ND	0.2	ND	0.2		4700		NT
	30-Sep-88		15.0		50.0		1.1	ND	0.2		240.0	ND	0.2	ND	0.2	ND	0.2		5500		NT
	30-Sep-88		12.0		40.0	ND	0.2	ND	0.2		180.0	ND	0.2	ND	0.2	ND	0.2		4000		NT
	02-Nov-88		20.0		65.0	ND	0.2	ND	0.2		200.0	ND	0.2	ND	0.2	ND	0.2	ND	50		NT
	02-Dec-88		53.0		120.0	ND	0.2		20.0		380.0	ND	0.2	ND	0.2	ND	0.2		2700		NT
	02-Dec-88		38.0		95.0	ND	0.2		12.0		280.0	ND	0.2	ND	0.2	ND	0.2		2000		NT
	04-Jan-89		28.0		260.0	ND	2.0		16.0		710.0	ND	2.0	ND	2.0	ND	2.0		3300		NT
	03-Feb-89		68.0		350.0	ND	0.2		53.0		691.0	ND	0.2	ND	0.2	ND	0.2		250		NT
	03-Feb-89		65.0		7.5	ND	0.2		36.0		500.0	ND	0.2	ND	0.2	ND	0.2		320		NT
MW-7	09-Mar-88		2.1		5.4	ND	0.2		2.6		6.1	ND	0.2	ND	0.2	ND	0.2		430	ND	10.0
	18-Mar-88		0.8	ND	0.2		1.9	ND	0.2		1.1	ND	0.2	ND	0.2	ND	0.2		180	ND	1.0
	25-Mar-88	ND	0.2		1.7	ND	0.2		0.4	ND	0.2	ND	0.2	ND	0.2	ND	0.2		53	ND	1.0
	01-Apr-88	ND	0.2		0.5	ND	0.2		1.4		2.4	ND	0.2	ND	0.2	ND	0.2		128		NT
	15-Apr-88	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	50		NT
	28-Apr-88	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	0.4	ND	50		NT
	11-May-88	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	50		NT
	27-May-88	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	50		NT
	16-Jun-88	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	50		NT
	27-Jul-88	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	50		NT
	26-Aug-88	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	50		NT
	30-Sep-88	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	50		NT
	02-Nov-88	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	50		NT
	02-Dec-88	ND	0.2	ND	0.2	ND	0.2	ND	0.2	NT	0.2	NT	0.2	NT	0.2	NT	0.2	NT	50		NT
	04-Jan-89	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	50		NT

Table 4. Results of Chemical Analyses of Ground-Water Samples
Purgeable Aromatics (EPA Method 602 and 8020) and
Total Petroleum Hydrocarbons (EPA Method 8015)

Harding Lawson Associates

WELL	DATE	BENZENE		TOLUENE		CHLORO-BENZENE		ETHYL-BENZENE		XYLENES		1,3 DI-CHLORO-BENZENE		1,4 DI-CHLORO-BENZENE		1,2 DI-CHLORO-BENZENE		TPH AS GASOLINE		TPH AS DIESEL	
		ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	mg/l	ST	mg/l
DHS Action Level (a)			0.7		100		30		680		620		130	LOQ	0.2		130	--		--	
MW-8	03-Feb-89	ND	0.2		0.87	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	250	NT	
	10-Mar-88	ND	0.2		3.2	ND	0.2		0.3		1.5	ND	0.2	ND	0.2	ND	0.2		50	ND	10.0
	18-Mar-88	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	50	ND	1.0
	25-Mar-88	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	50	ND	1.0
	31-Mar-88	ND	0.6	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	50	ND	0.5
	15-Apr-88	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	50	NT	
	28-Apr-88	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	50	NT	
	11-May-88	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	50	NT	
	27-May-88	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	50	NT	
	16-Jun-88	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	50	NT	
	27-Jul-88	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	50	NT	
	26-Aug-88	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	50	NT	
30-Sep-88	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	50	NT		
02-Nov-88	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	50	NT		
02-Dec-88	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	50	NT		
04-Jan-89	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	50	NT		
03-Feb-89	ND	0.2		0.95	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	250	NT		
MW-9	10-Mar-88		110.0		95.0	ND	0.4		16.0		230.0	ND	0.4	ND	0.4	ND	0.4		4700	ND	10.0
	21-Mar-88		400.0		184.0		0.4	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2		3400	ND	1.0
	* 30-Jun-88		160.0		83.0	ND	6.0	ND	7.2	NT		ND	6.0	ND	6.0	ND	6.0		91	NT	
	15-Jul-88		200.0		170.0	ND	0.2	ND	0.2		81.0	ND	0.2	ND	0.2	ND	0.2		880	NT	
	15-Jul-88		110.0		77.0	ND	0.2	ND	0.2		46.0	ND	0.2	ND	0.2	ND	0.2		180	NT	
	26-Aug-88		65.0		28.0	ND	0.2	ND	0.2		40.0	ND	0.2	ND	0.2	ND	0.2		970	NT	
	29-Sep-88		75.0		113.0	ND	0.2	ND	0.2		53.0	ND	0.2	ND	0.2	ND	0.2		140	NT	
	** 01-Nov-88		140.0		63.0	ND	0.5	ND	0.5		40.0	ND	0.5	ND	0.5	ND	0.5		480	NT	
	02-Dec-88		362.0		186.0	ND	0.5	ND	0.5		175.0	NT		NT		NT			2100	NT	
	03-Feb-89		137.0		77.0	ND	0.2	ND	0.2		81.0	ND	0.2	ND	0.2	ND	0.2		210	NT	
MW-10	09-Sep-88		910.0		690.0	ND	4.0		42.0		270.0	ND	4.0	ND	4.0	ND	4.0		2900	NT	
	29-Sep-88		140.0		16.0	ND	0.2	ND	0.2		230.0	ND	0.2	ND	0.2	ND	0.2		1700	NT	
	** 01-Nov-88		200.0		55.0	ND	0.5	ND	0.5		250.0	ND	5.0	ND	5.0	ND	5.0		1380	NT	
	02-Dec-88		500.0		58.0	ND	0.2	ND	0.2		420.0	ND	0.2	ND	0.2	ND	0.2		1600	NT	
	03-Feb-89		370.0		230.0	ND	0.2		3.6		319.0	ND	0.2	ND	0.2	ND	0.2		130	NT	
MW-11	09-Sep-88		520.0		670.0	ND	2.0		13.0		180.0	ND	2.0	ND	2.0	ND	2.0		1200	NT	
	29-Sep-88		3.6		1.2	ND	0.2	ND	0.2		250.0	ND	0.2	ND	0.2	ND	0.2		1700	NT	
	** 01-Nov-88		1300.0		1900.0	ND	5.0	ND	5.0		820.0	ND	5.0	ND	5.0	ND	5.0		6500	NT	
	02-Dec-88		19.0		1.5	ND	0.2	ND	0.2		460.0	ND	0.2	ND	0.2	ND	0.2		840	NT	
	03-Feb-89		860.0		700.0	ND	0.2		5.4		780.0	ND	0.2	ND	0.2	ND	0.2		460	NT	

Table 4. Results of Chemical Analyses of Ground-Water Samples
Purgeable Aromatics (EPA Method 602 and 8020) and
Total Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE		TOLUENE		CHLORO-BENZENE		ETHYL-BENZENE		XYLENES		1,3 DI-CHLORO-BENZENE		1,4 DI-CHLORO-BENZENE		1,2 DI-CHLORO-BENZENE		TPH AS GASOLINE		TPH AS DIESEL	
		ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	ug/l	ST	mg/l	ST	mg/l
DHS Action Level (a)			0.7		100		30		680		620		130	LOQ	0.2		130		--		--
BLANK																					
	09-Mar-88	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	50	ND	10.0
	21-Mar-88	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	50	ND	1.0
	25-Mar-88	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	50	ND	1.0
	31-Mar-88	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	50	NT	
	08-Apr-88	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	50	NT	
	15-Apr-88	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	50	NT	
	22-Apr-88	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	50	NT	
	28-Apr-88	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	50	NT	
	05-May-88	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	50	NT	
	11-May-88	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	50	NT	
	18-May-88	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	50	NT	
	27-May-88	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	50	NT	
	03-Jun-88	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	50	NT	
	16-Jun-88	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	50	NT	
*	30-Jun-88	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	50	NT	
	15-Jul-88	ND	0.2		0.7	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	50	NT	
	27-Jul-88	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	50	NT	
	02-Nov-88	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	50	NT	
	02-Dec-88	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	50	NT	
	03-Feb-89	ND	0.2		0.89	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	0.2	ND	250	NT	

NOTES:

(a): Marshack, 1988.

ST: Status.

ND: Not detected at level shown.

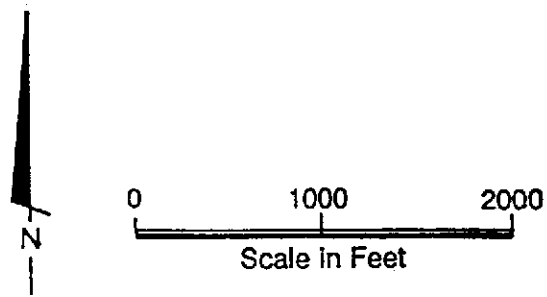
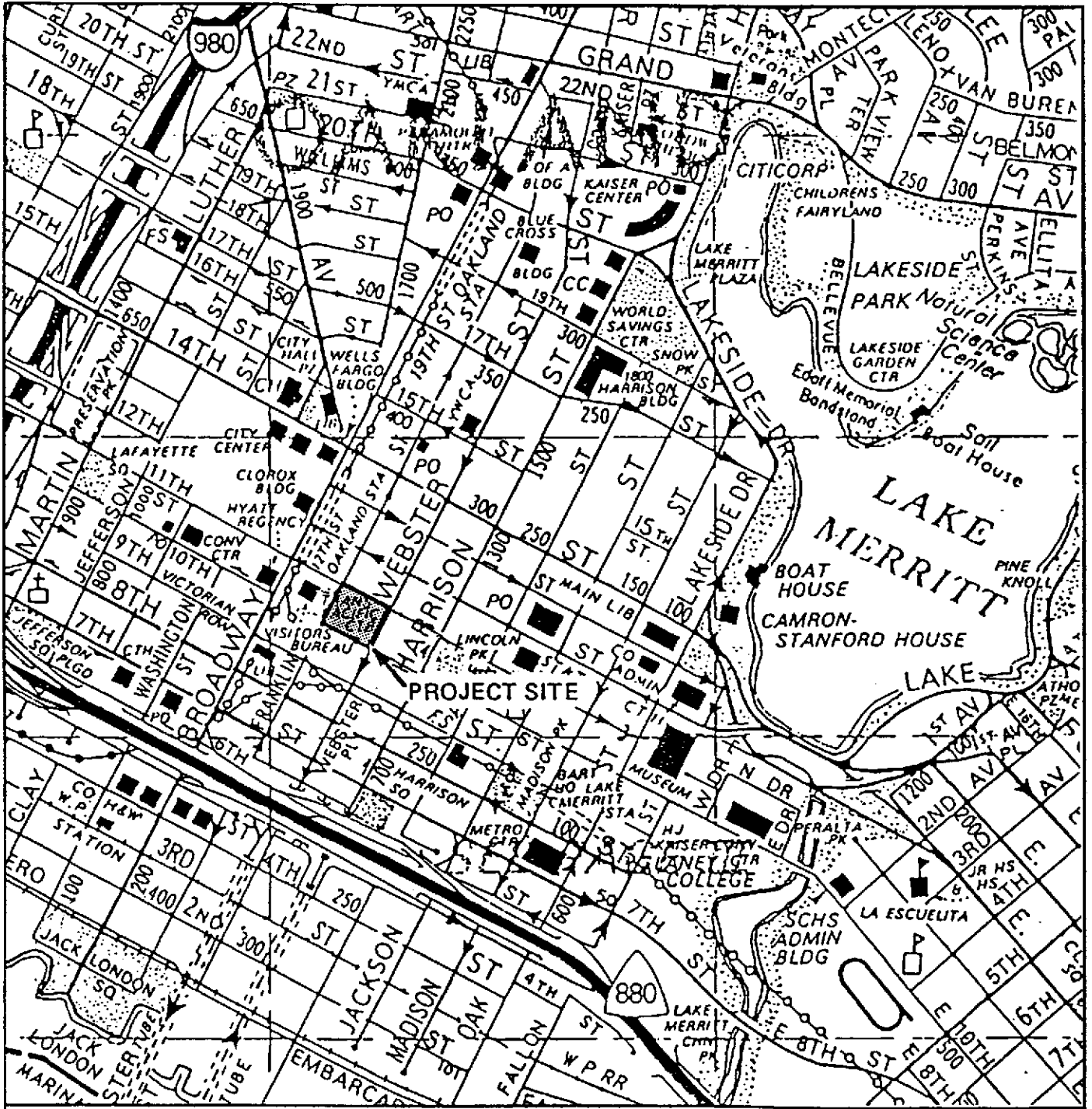
NT: Not tested.

LOQ: Limit of Quantification.

*: Analysis performed by NET Pacific using EPA Test Method 624.

**: Analysis performed using EPA Test Method 6240.

++: Matrix Interference in lab analysis.



Harding Lawson Associates
Engineers and Geoscientists

Location Map
A-Aquifer Monitoring Report
Chinatown Redevelopment Project Area
Oakland, California

PLATE
1

DRAWN DM	JOB NUMBER 9382,019.02	APPROVED <i>D. Feland</i>	DATE 12/89	REVISED	DATE
-------------	---------------------------	------------------------------	---------------	---------	------

**LARGE
MAP
REMOVED**

Appendix

**RESULTS OF LABORATORY ANALYSIS OF
GROUND-WATER SAMPLES**



April 15, 1988

Mr. David Leland
Harding Lawson Associates
200 Rush Landing Rd.
Novato, CA 94947

re: Oakland Chinatown: analysis of system poisons

Dear David,
Enclosed are the reports for samples received from the Oakland Chinatown site on March 10, 1988. Analysis of the system poisons was performed by Firemans Fund Environmental Laboratory in Petaluma, and the original report from Firemeans Fund is enclosed. The field identification assigned by Harding Lawson is not included on this report, so I am providing a list of corresponding IDs.

<u>Firemans Fund ID</u>	<u>Harding Lawson ID</u>	<u>WESCO ID</u>
6394	8810-0901 mw-7	8-2171
6395	8810-0902 mw-2	8-2176
6396	8810-0903 mw-6	8-2181
6397	8810-0904 mw-6	8-2186
6398	8810-0905 Blank	8-2191

If you have any question regarding these analyses, please feel free to call me or Doug Oram, Special Projects Chemist, here at WESCO.

Sincerely,

Michelle Casey

Michelle Casey
Sample Control Supervisor

3/9



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Michelle Casey
Wesco Laboratories
14 Galli Drive
Suite A
Novato, CA 94949

*sampled
3/19*

L A B O R A T O R Y R E S U L T S

Page 1

Supply/Order No.:
Client's Survey No.:
Contract/PO No.: HLA0831.1-L
Release No.:

Laboratory Job No.: 881103
Date Received: 03/10/88
Date Reported: 03/31/88
Client Code: WES01

ASSAY: METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET.	LIM.
6394	82171 WATER			
	AL	68.4 mg/lt		0.1
	FE	111.50 mg/lt		0.05
6395	82176 WATER			
	AL	26.0 mg/lt		0.1
	FE	46.00 mg/lt		0.05
6396	82181 WATER			
	AL	77.7 mg/lt		0.1
	FE	150.00 mg/lt		0.05
6397	82186 WATER			
	AL	79.3 mg/lt		0.1
	FE	149.30 mg/lt		0.05
6398	82191 WATER			
	AL	<0.02 mg/lt		0.02
	FE	<0.016 mg/lt		0.016

ANALYST: NANCY S. TESCHE

APPROVED BY *J.T.*
JERRY TUMA, PH.D., CIH
LABORATORY DIRECTOR



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 881103

VOLATILE ORGANICS IN WATER (EPA601/602)

COMPOUNDS:	LAB#6394	LAB#6395	LAB#6396	LAB#6397
PURGEABLES	SMP#2171	SMP#2176	SMP#2181	SMP#2186
-----	PPM	PPM	PPM	PPM
VINYL CHLORIDE	<0.01	<0.01	<0.01	<0.01
ACETONE	<1.0	<1.0	<1.0	<1.0
METHYL ETHYL KETONE	<1.0	<1.0	<1.0	<1.0

ANALYST: MARK VALENTINI



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

L A B O R A T O R Y R E S U L T S

Page 3

Laboratory Job No.: 881103

VOLATILE ORGANICS IN WATER (EPA601/602)

COMPOUNDS:

LAB#6398

SMP#2191

PPM

PURGEABLES

VINYL CHLORIDE

<0.01

ACETONE

<1.0

METHYL ETHYL KETONE

<1.0

ANALYST: MARK VALENTINI



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Page 4

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 881103

COMMON SOLVENTS IN WATER (EPA8015)

COMPOUNDS:	LAB#6394 SMP#2171 PPM	LAB#6395 SMP#2176 PPM	LAB#6396 SMP#2181 PPM	LAB#6397 SMP#2186 PPM
METHANOL	<5.0	<5.0	<5.0	<5.0
ETHANOL	<5.0	<5.0	<5.0	<5.0
METHYL ACETATE	<5.0	<5.0	<5.0	<5.0

NOTE: INJECTIONS OF STANDARDS CONTAINING ACETIC ACID AND ETHYLENE GLYCOL INDICATED THESE COMPOUNDS COULD NOT BE DETECTED ADEQUATELY USING THE G.C. COLUMN SELECTED. NO STANDARD WAS AVAILABLE FOR ACETALDEHYDE.

ANALYST: MARK VALENTINI



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

L A B O R A T O R Y R E S U L T S

Page 5

Laboratory Job No.: 881103

COMMON SOLVENTS IN WATER (EPA8015)

COMPOUNDS:

LAB#6398
SMP#2191
PPM

-----	-----
METHANOL	<5.0
ETHANOL	<5.0
METHYL ACETATE	<5.0

ANALYST: MARK VALENTINI



WESCO Laboratories

Report Date:	18-Mar-88	Client Contract/PO:	09382,022.02
Client:	Harding Lawson Associates	Date Sampled:	09-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	10-Mar-88
Submitted by:	K. Hunter	Extract/Digest/Purge	
Preservatives:	none	Date:	10-Mar-88
Analyst:	Arntzen	Analysis Completion	
WESCO JOB #:	HLA 0831.1-L	Date:	10-Mar-88
Analytical Method:	EPA 5030/8015	Hold Time:	1 day


```
=====
LAB #:      8-2174                      MATRIX:    WATER
CLIENT'S ID:  88100901                 mw-7
=====
COMPOUND                RESULT                Detection
                        (ug/l)                Limit (ug/l)
-----
Gasoline-----          430                      50.0
-----
```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 75 %

```
=====
LAB #:      8-2179                      MATRIX:    WATER
CLIENT'S ID:  88100902                 mw-2
=====
COMPOUND                RESULT                Detection
                        (ug/l)                Limit (ug/l)
-----
Gasoline-----          6300                     250
-----
```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 91 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 10-Mar-88
 Analysis Completion
 Date: 10-Mar-88
 Hold Time: 1 day

=====
 LAB #: 8-2184 MATRIX: WATER
 CLIENT'S ID: 88100903 mw-6
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	48000	12500


 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 89 %

=====
 LAB #: 8-2189 MATRIX: WATER
 CLIENT'S ID: 88100904 mw-6
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	47000	500

 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 103 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 10-Mar-88
 Analysis Completion
 Date: 10-Mar-88
 Hold Time: 1 day

=====

LAB #:	8-2194	MATRIX:	WATER
CLIENT'S ID:	88100905		<i>Blank</i>

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 71 %

N.D.: Not Detected


[Signature]

 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.1-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.1	HLA 0831.1
Gasoline-----	N.D.	23	10
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	104 %	104 %	105

N.D.: Not Detected



Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attalla
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 3550/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 10-Mar-88
 Analysis Completion
 Date: 10-Mar-88
 Hold Time: 1 day

=====

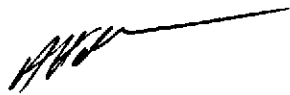
MATRIX: SOIL

=====

LAB #	CLIENT ID	Diesel (mg/kg)	Detection Limit (mg/kg)
8-2175	8810901 -7	N.D.	10
8-2180	8810902 -2	N.D. *	10
8-2185	8810903 -6	N.D. *	10
8-2190	8810904 -6	N.D. *	10
8-2195	8810905 Blank	N.D.	10

* : Gasoline present in sample.

N.D.: Not Detected



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD : EPA 3550/8015

HLA 0831.1-L

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.1-L	HLA 0831.1-L
Diesel	N.D.	2	56

N.D.: Not Detected



Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 10-Mar-88
 Analysis Completion
 Date: 10-Mar-88
 Hold time: 1 day

LAB #: 8-2172

MATRIX: WATER

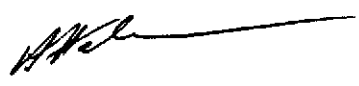
CLIENT'S ID: 88100901 MW-7

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	90 %
1,4-Dichlorobutane	103 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 10-Mar-88
 Analysis Completion
 Date: 10-Mar-88
 Hold time: 1 day

LAB #: 8-2177

MATRIX: WATER


CLIENT'S ID: 88100902 mw-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	200
Chloromethane	N.D.	200
Vinyl Chloride	N.D.	200
Bromomethane	N.D.	200
Chloroethane	N.D.	200
Trichlorofluoromethane	N.D.	200
1,1-Dichloroethene	N.D.	50
Methylene Chloride	N.D.	50
trans-1,2-Dichloroethene	N.D.	50
1,1-Dichloroethane	N.D.	50
Chloroform	N.D.	50
1,1,1-Trichloroethane (TCA)	N.D.	50
Carbon Tetrachloride	N.D.	50
1,2-Dichloroethane (EDC)	N.D.	50
Trichloroethene (TCE)	N.D.	50
1,2-Dichloropropane	N.D.	50
Bromodichloromethane	N.D.	50
2-Chloroethylvinyl ether	N.D.	50
trans-1,3-Dichloropropene	N.D.	50
cis-1,3-Dichloropropene	N.D.	50
1,1,2-Trichloroethane	N.D.	50
Tetrachloroethene	N.D.	50
Dibromochloromethane	N.D.	50
Chlorobenzene	N.D.	50
Bromoform	N.D.	50
1,1,2,2-Tetrachloroethane	N.D.	50
1,3-Dichlorobenzene	N.D.	50
1,4-Dichlorobenzene	N.D.	50
1,2-Dichlorobenzene	N.D.	50

QUALITY CONTROL DATA

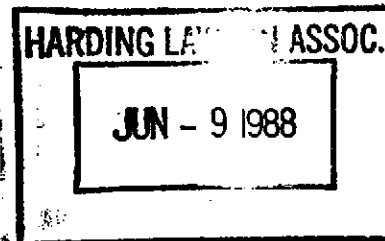
Surrogate Spike	Percent Recovery
Bromochloromethane	90 %
1,4-Dichlorobutane	92 %

N.D.: Not Detected


 Analytical Supervisor



May 24, 1988



Mr. David Leland
HARDING LAWSON ASSOCIATES
P.O. Box 578
Novato, CA 94947

RE: HLA Job #9382,026.02
Wesco Job #HLA 0831.1-L

Dear Mr. Leland:

Enclosed is a revised report for your City of Oakland's Chinatown water sample dated March 9, 1988.

For EPA Method 602, your sample #88100903, Chlorobenzene should read Not Detected. Also, for EPA Method 601, sample #88100903, Dibromochloromethane should also read as Not Detected.

We apologize for any inconvenience this may have caused. Feel free to call with any questions you may have concerning this report.

Sincerely,

Michelle Casey
Michelle Casey
Sample Control

/dd



WESCO Laboratories

Report Date:	13-May-88	Client Contract/PO:	09382,022.02
Client:	Harding Lawson Associates	Date Sampled:	09-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	10-Mar-88
Submitted by:	K.Hunter	Extract/Digest/Purge	
Preservatives:	none	Date:	12-Mar-88
Analyst:	Arntzen/Lewis	Analysis Completion	
WESCO JOB #:	HLA 0831.1-L, revised	Date:	12-Mar-88
Analytical Method:	EPA 602	Hold Time:	3 days

=====

LAB #:	8-2182	MATRIX:	WATER
CLIENT'S ID:	88100903		


=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2100	33
Toluene-----	4900	33
Chlorobenzene-----	N.D.	33
Ethylbenzene-----	*	33
Xylene-----	8100	33
1,3-Dichlorobenzene-----	N.D.	33
1,4-Dichlorobenzene-----	N.D.	33
1,2-Dichlorobenzene-----	N.D.	33

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	127 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K.Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L, revised
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 12-Mar-88
 Analysis Completion
 Date: 12-Mar-88
 Hold time: 3 days

LAB #: 8-2187

MATRIX: WATER

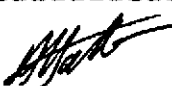
CLIENT'S ID: 88100904

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	0.8	0.5
trans-1,2-Dichloroethene	0.9	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	13	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	48	0.5
Trichloroethene (TCE)	5300	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	7	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	90 %

N.D.: Not Detected


 Analytical Supervisor



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

CHAIN OF CUSTODY FORM

HLA 0231.4-2

Job Number: 09382, 022, 02
Name/Location: City of Oakland
Project Manager: Dave Island

Samplers: Rick Hutten
Dave Evans
Tom Walker
Recorder: Richard J. Hunt
(Signature Required)

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pflnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. L+H	System			
X	X				X	X				
X	Y				X	X				
X	Y				X	X				
X	Y				X	X				
X	X				X	X				

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/NOTES
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	
	23	X				11			88	10	09	01	88	03	
23	X				11			88	10	09	02	88	03	09	1315
23	X				11			88	10	09	03	88	03	09	1500
23	X				11			88	10	09	04	88	03	09	1500
23	X				11			88	10	09	05	88	03	09	1550

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						5 day turnaround time on analysis - call Dave Island

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Richard J. Hunt</u>	RECEIVED BY: (Signature) <u>Richard J. Hunt</u>	DATE/TIME <u>3/10/87 10A</u>
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) <u>Richard J. Hunt</u>	DATE/TIME <u>3/10/87 9:00A</u>	RECEIVED FOR LAB BY: (Signature) <u>R. Hunter</u>
METHOD OF SHIPMENT <u>hand delivered</u>		

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 12-Mar-88
 Analysis Completion
 Date: 12-Mar-88
 Hold time: 3 days

LAB #: 8-2182

CLIENT'S ID: 88100903

mw-u

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	12	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	46	0.5
Trichloroethene (TCE)	5600	83.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	9	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	93 %
1,4-Dichlorobutane	72 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge Date: 12-Mar-88
 Analysis Completion Date: 12-Mar-88
 Hold time: 3 days


=====
 LAB #: 8-2187
 CLIENT'S ID: 88100904 MW-6
 MATRIX: WATER
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	0.8	0.5
trans-1,2-Dichloroethene	0.9	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	13	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	48	0.5
Trichloroethene (TCE)	5300	83.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	7	0.5
Dibromochloromethane	1.1	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

 QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	90 %

 N.D.: Not Detected


 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 12-Mar-88
 Analysis Completion
 Date: 12-Mar-88
 Hold time: 3 days

LAB #: 8-2192

MATRIX: WATER

CLIENT'S ID: 88100905 *Blank*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	N.D.	83.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

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

N.D.: Not Detected

[Signature]
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.1-L


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.	2	92
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.	10	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.	4	99
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	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	100 %	102 %	94 %
1,4-Dichlorobutane	91 %	106 %	106 %

N.D.: Not Detected

N.S.: Not Spiked


 Analytical Supervisor

Report Date: 18-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.1-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 09-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge Date: 12-Mar-88
 Analysis Completion Date: 12-Mar-88
 Hold Time: 3 days

=====

LAB #: 8-2172
 CLIENT'S ID: 88100901 mw-7
 MATRIX: WATER

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2.1	0.2
Toluene-----	5.4	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	2.6	0.2
Xylene-----	6.1	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 137 %*

=====

LAB #: 8-2177
 CLIENT'S ID: 88100902 mw-2
 MATRIX: WATER

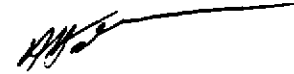
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	471	20
Toluene-----	514	20
Chlorobenzene-----	N.D.	20
Ethylbenzene-----	162	20
Xylene-----	157	20
1,3-Dichlorobenzene-----	N.D.	20
1,4-Dichlorobenzene-----	N.D.	20
1,2-Dichlorobenzene-----	N.D.	20

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 115 %

* : Matrix interference
 N.D.: Not Detected


 Analytical Supervisor

Report Date: 18-Mar-88 Client Contract/PO: 09382,022.02
 Client: Harding Lawson Associates Date Sampled: 09-Mar-88
 Attn: David Leland Site: City of Oakland
 Sampled by: Rick Hutton Date Received: 10-Mar-88
 Submitted by: K. Hunter Extract/Digest/Purge
 Preservatives: none Date: 12-Mar-88
 Analyst: Arntzen/Lewis Analysis Completion
 WESCO JOB #: HLA 0831.1-L Date: 12-Mar-88
 Analytical Method: EPA 602 Hold Time: 3 days

=====

LAB #: 8-2182 MATRIX: WATER
 CLIENT'S ID: 88100903 mw-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2100	33
Toluene-----	4900	33
Chlorobenzene-----	0.8	0.2
Ethylbenzene-----	*	33
Xylene-----	8100	33
1,3-Dichlorobenzene-----	N.D.	33
1,4-Dichlorobenzene-----	N.D.	33
1,2-Dichlorobenzene-----	N.D.	33

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 127 %

=====

LAB #: 8-2187 MATRIX: WATER
 CLIENT'S ID: 88100904 mw-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2000	33
Toluene-----	4200	33
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1100	33
Xylene-----	5600	33
1,3-Dichlorobenzene-----	N.D.	33
1,4-Dichlorobenzene-----	N.D.	33
1,2-Dichlorobenzene-----	N.D.	33

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 133 %

* : Ethylbenzene possibly combined with xylenes.
 N.D.: Not Detected

Handwritten Signature
 Analytical Supervisor

Report Date: 18-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Rick Hutton
Submitted by: K. Hunter
Preservatives: none
Analyst: Arntzen/Lewis
WESCO JOB #: HLA 0831.1-L
Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
Date Sampled: 09-Mar-88
Site: City of Oakland
Date Received: 10-Mar-88
Extract/Digest/Purge
Date: 12-Mar-88
Analysis Completion
Date: 12-Mar-88
Hold Time: 3 days

LAB #: 8-2192

CLIENT'S ID: 88100905

Blank

MATRIX: WATER

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)


Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene

Percent Recovery
127 %

N.D.: Not Detected



Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.1-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.1-L	HLA 0831.1-L
Benzene-----	N.D.	10	104
Toluene-----	N.D.	1	103
p-Xylene-----	N.D.	0	109

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	88 %	104 %	113 %

N.D.: Not Detected



Analytical Supervisor



Hing Lawson Associates
 7000 Redwood Blvd.
 P.O. Box 578
 Novato, CA 94948
 (415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0831... - 2

Job Number: 09382, 022, 012
 Name/Location: City of Oakland
 Project Manager: Dave Ireland

Samplers: Rick Hutter
Dave Evans
Tom Walker
 Recorder: Richard J. Hutter
 (Signature Required)

ANALYSIS REQUESTED	
EPA 601/8010	
EPA 602/8020	
EPA 624/8240	
EPA 625/8270	
Priority Pestic. Metals	
Benzene/Toluene/Xylene	
Total Petrol. Hydrocarb. L+H	
5/2/84 P. 21.005	

SOURCE CODE	MATRIX					#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER				DATE				STATION DESCRIPTION/NOTES
	Water	Sediment	Soil	Oil		Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time		
	23	X					11			88	10	09	01	88	03	09	
23	X					11			88	10	09	02	88	03	09	13	15
23	X					11			88	10	09	03	88	03	09	15	00
23	X					11			88	10	09	04	88	03	09	15	00
23	X					11			88	10	09	05	88	03	09	15	500

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD			
Yr	Wk	Seq					RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
						5 day turnaround time on analysis - call Dave Ireland	<u>Richard J. Hutter</u>	<u>Catherine Henrich</u>	3/10/87 10A	
							DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
							<u>Catherine Henrich</u>	3/10/87 10A	<u>R. Henrich</u>	3/10/87 9:05
							METHOD OF SHIPMENT <u>hand delivered</u>			

April 15, 1988

Mr. David Leland
Harding Lawson Associates
200 Rush Landing Rd.
Novato, CA 94947

Re: Oakland Chinatown: System Poisons
HLA 0831.3 -L

Dear David,

Enclosed are the reports for samples received from the Oakland Chinatown site on March 10, 1988. Analysis of the system poisons was performed by Firemeans Fund Environmental Laboratory in Petaluma, and the original report from Firemans Fund is enclosed. The field identification assigned by Harding Lawson is not included on this report, so I am providing a list of corresponding IDs.

sampled 3/10

<u>Firemans Fund ID</u>	<u>Harding Lawson ID</u>	<u>WESCO ID</u>
6607	8810-1001 mw-8	8-2207
6608	8810-1002 mw-5	8-2212
6609	8810-1003 mw-3	8-2217
6610	8810-1004 mw-9	8-2222

If you have any questions regarding these analyses, please feel free to call me or Dr. Doug Oram, Special Projects Chemist, here at WESCO.

Sincerely,

Michelle Casey
Michelle Casey
Sample Control Supervisor



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Michelle Casey
Wesco Laboratories
14 Galli Drive
Suite A
Novato, CA 94949

L A B O R A T O R Y R E S U L T S

Page 1

Supply/Order No.:
Client's Survey No.:
Contract/PO No.: HLA0831-3-L
Release No.:

Laboratory Job No.: 881132
Date Received: 03/11/88
Date Reported: 03/31/88
Client Code: WES01

ASSAY:METAL SCAN BY ICP(EPA 6010)

LABNO	SMPLNO-ID	RESULTS	DET. LIM.
6607	8-2207 WATER		
	AL	57.7 mg/lt	0.1
	FE	117.10 mg/lt	0.05
6608	8-2212 WATER		
	AL	23.3 mg/lt	0.1
	FE	39.50 mg/lt	0.05
6609	8-2217 WATER		
	AL	22.3 mg/lt	0.1
	FE	37.70 mg/lt	0.05
6610	8-2222 WATER		
	AL	159.2 mg/lt	0.1
	FE	374.80 mg/lt	0.05

ANALYST:NANCY S.TESCHE

APPROVED BY
JERRY TSMA, PH.D., CIH
LABORATORY DIRECTOR



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

Page 2

L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 881132

VOLATILE ORGANICS IN WATER (EPA601/602)

COMPOUNDS:	LAB#6607	LAB#6608	LAB#6609	LAB#6610
PURGEABLES	SMP#2207	SMP#2212	SMP#2217	SMP#2222
	PPM	PPM	PPM	PPM
VINYL CHLORIDE	<0.01	<0.01	<0.01	<0.01
ACETONE	<1.0	<1.0	<1.0	<1.0
METHYL ETHYL KETONE	<1.0	<1.0	<1.0	<1.0

ANALYST: MARK VALENTINI



**FIREMAN'S FUND
INSURANCE COMPANIES**

Environmental Laboratory
3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

ENVIRONMENTAL LABORATORY

LABORATORY RESULTS

Page 3

Laboratory Job No.: 881132

COMMON SOLVENTS IN WATER (EPA8015)

COMPOUNDS:

	LAB#6607 SMP#2207 PPM	LAB#6608 SMP#2212 PPM	LAB#6609 SMP#2217 PPM	LAB#6610 SMP#2222 PPM
METHANOL	<5.0	<5.0	<5.0	<5.0
ETHANOL	<5.0	<5.0	<5.0	<5.0
METHYL ACETATE	<5.0	<5.0	<5.0	<5.0

NOTE: INJECTIONS OF STANDARDS CONTAINING ACETIC ACID AND ETHYLENE GLYCOL INDICATED THESE COMPOUNDS COULD NOT BE DETECTED ADEQUATELY USING THE GC COLUMN SELECTED. NO STANDARD WAS AVAILABLE FOR ACETALDEHYDE.

ANALYST: MARK VALENTINI



Report Date: 11-Apr-88
Client: " " "

Report Date: 11-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Rick Hutton
Submitted by: Rick Hutton
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.3
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,022.02
Date Sampled: 10-Mar-88
Site: City of Oakland
Date Received: 10-Mar-88
Extract/Digest/Purge
Date: 11-Mar-88
Analysis Completion
Date: 11-Mar-88
Hold Time: 1 day

=====
LAB #: 8-2210
CLIENT'S ID: 101001 *mw-2*
=====
MATRIX: WATER
=====
COMPOUND RESULT (ug/l) Detection Limit (ug/l)

Gasoline----- N.D. 50.0


QUALITY CONTROL DATA
Surrogate Spike % Recovery 101 %
Fluorobenzene

=====
LAB #: 8-2215
CLIENT'S ID: 101002 *mw-5*
=====
MATRIX: WATER
=====
COMPOUND RESULT (ug/l) Detection Limit (ug/l)

Gasoline----- N.D. 50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery 102 %
Fluorobenzene

N.D.: Not Detected



Analytical Supervisor

Report Date:	11-Apr-88	Client Contract/PO:	9382,022.02
Client:	Harding Lawson Associates	Date Sampled:	10-Mar-88
Attn:	David Leland	Site:	City of Oakland
Sampled by:	Rick Hutton	Date Received:	10-Mar-88
Submitted by:	Rick Hutton	Extract/Digest/Purge	
Preservatives:	none	Date:	11-Mar-88
Analyst:	Arntzen	Analysis Completion	
WESCO JOB #:	HLA 0831.3	Date:	11-Mar-88
Analytical Method:	EPA 5030/8015	Hold Time:	1 day

```

=====
LAB #:      8-2220
CLIENT'S ID: 101003   mw-3
=====
COMPOUND           RESULT           Detection
                   (ug/l)           Limit (ug/l)
-----
Gasoline-----   N.D.           50.0
=====

```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 95 %

```

=====
LAB #:      8-2225
CLIENT'S ID: 101004   mw-9
=====
COMPOUND           RESULT           Detection
                   (ug/l)           Limit (ug/l)
-----
Gasoline-----   4700           100
=====

```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 110 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.3
 METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	23	103

QUALITY CONTROL DATA

Surrogate	Spike % Recovery
Fluorobenzene	101 %
	104 %
	105%

N.D.: Not Detected



 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 11-Mar-88
 Analysis Completion
 Date: 11-Mar-88
 Hold time: 1 day

LAB #: 8-2208

CLIENT'S ID: 101001 mw-8

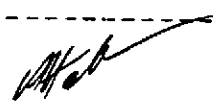
MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	130	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	101 %
1,4-Dichlorobutane	93 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 11-Mar-88
 Analysis Completion
 Date: 11-Mar-88
 Hold time: 1 day


=====
 LAB #: 8-2213
 CLIENT'S ID: 101002 mw-5
 MATRIX: WATER
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane-----	N.D.	2.0
Chloromethane-----	N.D.	2.0
Vinyl Chloride-----	N.D.	2.0
Bromomethane-----	N.D.	2.0
Chloroethane-----	N.D.	2.0
Trichlorofluoromethane-----	N.D.	2.0
1,1-Dichloroethene-----	8	0.5
Methylene Chloride-----	N.D.	0.5
trans-1,2-Dichloroethene-----	N.D.	0.5
1,1-Dichloroethane-----	6.6	0.5
Chloroform-----	N.D.	0.5
1,1,1-Trichloroethane (TCA)-----	N.D.	0.5
Carbon Tetrachloride-----	N.D.	0.5
1,2-Dichloroethane (EDC)-----	N.D.	0.5
Trichloroethene (TCE)-----	N.D.	0.5
1,2-Dichloropropane-----	N.D.	0.5
Bromodichloromethane-----	N.D.	0.5
2-Chloroethylvinyl ether-----	N.D.	0.5
trans-1,3-Dichloropropene-----	N.D.	0.5
cis-1,3-Dichloropropene-----	N.D.	0.5
1,1,2-Trichloroethane-----	N.D.	0.5
Tetrachloroethene-----	2.6	0.5
Dibromochloromethane-----	N.D.	0.5
Chlorobenzene-----	N.D.	0.5
Bromoform-----	N.D.	0.5
1,1,2,2-Tetrachloroethane-----	N.D.	0.5
1,3-Dichlorobenzene-----	N.D.	0.5
1,4-Dichlorobenzene-----	N.D.	0.5
1,2-Dichlorobenzene-----	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	87 %
1,4-Dichlorobutane	91 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 11-Mar-88
 Analysis Completion
 Date: 11-Mar-88
 Hold time: 1 day


=====
 LAB #: 8-2218
 CLIENT'S ID: 101003 mw-3
 MATRIX: WATER
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane-----	N.D.	2.0
Chloromethane-----	N.D.	2.0
Vinyl Chloride-----	N.D.	2.0
Bromomethane-----	N.D.	2.0
Chloroethane-----	N.D.	2.0
Trichlorofluoromethane-----	N.D.	2.0
1,1-Dichloroethene-----	21	0.5
Methylene Chloride-----	N.D.	0.5
trans-1,2-Dichloroethene-----	N.D.	0.5
1,1-Dichloroethane-----	28	0.5
Chloroform-----	N.D.	0.5
1,1,1-Trichloroethane (TCA)-----	N.D.	0.5
Carbon Tetrachloride-----	N.D.	0.5
1,2-Dichloroethane (EDC)-----	2.7	0.5
Trichloroethene (TCE)-----	N.D.	0.5
1,2-Dichloropropane-----	N.D.	0.5
Bromodichloromethane-----	N.D.	0.5
2-Chloroethylvinyl ether-----	N.D.	0.5
trans-1,3-Dichloropropene-----	N.D.	0.5
cis-1,3-Dichloropropene-----	N.D.	0.5
1,1,2-Trichloroethane-----	N.D.	0.5
Tetrachloroethene-----	N.D.	0.5
Dibromochloromethane-----	N.D.	0.5
Chlorobenzene-----	N.D.	0.5
Bromoform-----	N.D.	0.5
1,1,2,2-Tetrachloroethane-----	N.D.	0.5
1,3-Dichlorobenzene-----	N.D.	0.5
1,4-Dichlorobenzene-----	N.D.	0.5
1,2-Dichlorobenzene-----	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	65 %
1,4-Dichlorobutane	94 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 11-Mar-88
 Analysis Completion
 Date: 11-Mar-88
 Hold time: 1 day

LAB #: 8-2223

CLIENT'S ID: 101004 mw-9

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	9	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	2.6	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	2.3	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	3.5	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	0.6	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	76 %
1,4-Dichlorobutane	91 %

N.D.: Not Detected



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.3


COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0831.1-L	Spike % recovery HLA 0831.1-L
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.	2	92
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.	10	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.	4	99
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	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	100 %	102 %	94 %
1,4-Dichlorobutane	91 %	106 %	106 %

N.D.: Not Detected

N.S.: Not Spiked


 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge Date: 11-Mar-88
 Analysis Completion Date: 11-Mar-88
 Hold Time: 1 day

=====
 LAB #: 8-2210 MATRIX: WATER
 CLIENT'S ID: 101001 mw-8
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	3.2	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	0.3	0.2
Xylene-----	1.5	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 101 %


=====
 LAB #: 8-2215 MATRIX: WATER
 CLIENT'S ID: 101002 mw-5
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	0.3	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	0.8	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 102 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 11-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Rick Hutton
 Submitted by: Rick Hutton
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.3
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 10-Mar-88
 Site: City of Oakland
 Date Received: 10-Mar-88
 Extract/Digest/Purge
 Date: 11-Mar-88
 Analysis Completion
 Date: 11-Mar-88
 Hold Time: 1 day

LAB #: 8-2220

CLIENT'S ID: 101003 mw-3

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 95 %

LAB #: 8-2225

CLIENT'S ID: 101004 mw-9


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	110	0.4
Toluene	95	0.4
Chlorobenzene	N.D.	0.4
Ethylbenzene	16	0.4
Xylene	230	0.4
1,3-Dichlorobenzene	N.D.	0.4
1,4-Dichlorobenzene	N.D.	0.4
1,2-Dichlorobenzene	N.D.	0.4

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 110 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.3
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.1-L	HLA 0831.1-L
Benzene-----	N.D.	2	112
Toluene-----	N.D.	2	100
p-Xylene-----	N.D.	5	98
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	101 %	104 %	105 %

N.D.: Not Detected



Analytical Supervisor



WESCO Laboratories

31

MAR 31 1988
ENVIRONMENTAL SERVICES
DIVISION

Report Date:	29-Mar-88	Client Contract/PO:	09382,022.02
Client:	Harding Lawson Associates	Date Sampled:	18-Mar-88
Attn:	David Leland	Site:	City of Oakland, Wells #2
Sampled by:	B. Loskutoff	Date Received:	18-Mar-88
Submitted by:	B. Loskutoff	Extract/Digest/Purge	
Preservatives:	none	Date:	21-Mar-88
Analyst:	Attalla	Analysis Completion	
WESCO JOB #:	HLA 0831.11-L	Date:	24-Mar-88
Analytical Method:	3510/8015	Hold Time:	3 days

=====
MATRIX: WATER
=====

LAB #	CLIENT ID		Diesel (mg/l)	Detection limit(mg/l)
8-2668	111821	MW-3	N.D.	1.0
8-2672	111822	MW-8	N.D.	1.0
8-2676	111823	MW-7	N.D.	1.0
8-2680	111824	MW-5	N.D.	1.0

N.D.: Not Detected

Attalla

Analytical Supervisor

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

HLA 0831.11-L

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
----------	---------------	--------------------------------	---------------------

Job #

HLA 0831.17-L

HLA 0831.17-L

Diesel

N.D.

0

98

N.D.: Not Detected



Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 3 days

LAB #: 8-2665

MATRIX: WATER

CLIENT'S ID: 111821 mw-3

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	40	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	20	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	2.3	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	83 %
1,4-Dichlorobutane	82 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 3 days

LAB #: 8-2669

MATRIX: WATER

CLIENT'S ID: 111822 mw-8

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	90 %
1,4-Dichlorobutane	91 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 3 days

LAB #: 8-2673

CLIENT'S ID:

111823 mw-7

MATRIX: WATER

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

QUALITY CONTROL DATA

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

N.D.: Not Detected


 Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 3 days

LAB #: 8-2677

MATRIX: WATER

CLIENT'S ID: 111824 mw-5

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	18	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	10	0.5
Chloroform	2	0.5
1,1,1-Trichloroethane (TCA)	1.5	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	1.3	0.5
Trichloroethene (TCE)	1.0	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	86 %
1,4-Dichlorobutane	88 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601


HLA 0831.11-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation ATL 0807-L	Spike % recovery ATL 0807-L
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.	11	96
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.	11	88
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.	20	93
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	9	91
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	80 %	98 %	98 %
1,4-Dichlorobutane	87 %	94 %	95 %

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


 Analytical Supervisor



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

CHAIN OF CUSTODY FORM

HLA 0831.11

Job Number: 09382,022-02

Name/Location: City of Oakland

Project Manager: Dave Leland

Samplers: Bill Coskrotoff, Tim Walker

Recorder: [Signature]
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1824	88	03	18	1555
23	X				2			88	11	1824	88	03	18	1555
23	X				2			88	11	1824	88	03	18	1555
23	X				2			88	11	1824	88	03	18	1555

STATION DESCRIPTION/NOTES
Inferred analysis for
Inferred analysis for

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Piltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - Lights	TPH - Heavy		
							X	X		
X										
	X						X	X		

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

5 day turnaround on all analysis			CHAIN OF CUSTODY RECORD			WESCO
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME				
<u>[Signature]</u>						
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			
<u>[Signature]</u>	3/18/88 1745	<u>[Signature]</u>	3/18/88 17:17			
METHOD OF SHIPMENT						

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold Time: 3 days

LAB #: 8-2674

MATRIX: WATER

CLIENT'S ID: 111823 *mw-7*

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
 Fluorobenzene 89 %

LAB #: 8-2678

MATRIX: WATER

CLIENT'S ID: 111824 *mw-5*

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
 Fluorobenzene 104 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold Time: 3 days

LAB #: 8-2674

MATRIX: WATER

CLIENT'S ID: 111823 mw-7

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	0.8	0.2
Toluene	N.D.	0.2
Chlorobenzene	1.9	0.2
Ethylbenzene	N.D.	0.2
Xylene	1.1	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 103 %

LAB #: 8-2678

MATRIX: WATER

CLIENT'S ID: 111824 mw-5

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 102 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.11-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		ATL 0807-L	ATL 0807-L
Benzene-----	N.D.	16	79
Toluene-----	N.D.	2	94
p-Xylene-----	N.D.	1	94

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	70 %	101 %	89 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 28-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: B. Loskutoff
Submitted by: B. Loskutoff
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.11-L
Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
Date Sampled: 18-Mar-88
Site: City of Oakland, Wells #2
Date Received: 18-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 3 days

=====
LAB #: 8-2665 MATRIX: WATER
CLIENT'S ID: 111821 mw-3
=====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 105 %

=====
LAB #: 8-2669 MATRIX: WATER
CLIENT'S ID: 111822 mw-8
=====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 106 %

N.D.: Not Detected



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.11-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		ATL 0807-L	ATL 0807-L
Benzene-----	N.D.	16	79
Toluene-----	N.D.	2	94
p-Xylene-----	N.D.	1	94

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	70 %	101 %	89 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold Time: 3 days

=====
 LAB #: 8-2665 MATRIX: WATER
 CLIENT'S ID: 111821 mw-3
 =====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 105 %


=====
 LAB #: 8-2669 MATRIX: WATER
 CLIENT'S ID: 111822 mw-8
 =====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 106 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 28-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: B. Loskutoff
Submitted by: B. Loskutoff
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.11-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
Date Sampled: 18-Mar-88
Site: City of Oakland, Wells #2
Date Received: 18-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 3 days

LAB #: 8-2666

MATRIX: WATER

CLIENT'S ID: 111821 mw-3

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 92 %

LAB #: 8-2670

MATRIX: WATER

CLIENT'S ID: 111822 mw-8

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 103 %

N.D.: Not Detected


Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.11-L
METHOD: EPA 5030/8015


COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.12-L	HLA 0831.12-L
Gasoline-----	N.D.	10	87

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	81 %	93 %	86 %

N.D.: Not Detected

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



Analytical Supervisor



May 24, 1988

Mr. David Leland
HARDING LAWSON ASSOCIATES
P.O. Box 578
Novato, CA 94947

RE: HLA Job #9382, ⁰²⁶02
Wesco Job #HLA 0831.11-L

Dear Mr. Leland

Enclosed is a revised report for your City of Oakland's Chinatown.

The result for your sample #8811822, sampled March 18, 1988, was transposed to read Dibromochloromethane -- 0.9 ug/l, but should read Tetrachloroethene -- 0.9 ug/L.

We hope that this has not caused you any inconvenience. Please call should you have any questions concerning this report.

Sincerely,

Michelle Casey
Sample Control

/dd



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

CHAIN OF CUSTODY FORM

HLA 0831-11

Samplers: Bill Coskrotff, Tim Walker

Job Number: 09382,022-02

Name/Location: City of Oakland

Project Manager: Dave Leland

Recorder: *Bill Coskrotff*
(Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1824	88	03	18	1555
23	X				2			5		5	5			1555
23	X				2			5		5	5			1555
23	X				2			5		5	5			1555

STATION DESCRIPTION/NOTES
Inferred analysis for
Inferred analysis for

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - Lights	TPH - Heavy		
							X			
								X		
X										
	X									
							X			
								X		

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

5 day turnaround on all analyses

CHAIN OF CUSTODY RECORD WESCO

RELINQUISHED BY: (Signature) <i>Bill Coskrotff</i>	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) <i>Bill Coskrotff</i>	DATE/TIME 3/12/88 1745	RECEIVED FOR LAB BY: (Signature) <i>Sherrill Casoy</i> 3/18 17:4
METHOD OF SHIPMENT		

Report Date: 28-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: B. Loskutoff
Submitted by: B. Loskutoff
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.11-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
Date Sampled: 18-Mar-88
Site: City of Oakland, Wells #2
Date Received: 18-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 3 days

LAB #: 8-2674

CLIENT'S ID: 111823

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene

89 %

LAB #: 8-2678

CLIENT'S ID: 111824

MATRIX: WATER


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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene

104 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 28-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: B. Loskutoff
 Submitted by: B. Loskutoff
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.11-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 18-Mar-88
 Site: City of Oakland, Wells #2
 Date Received: 18-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold Time: 3 days

LAB #: 8-2674
 CLIENT'S ID: 111823 mw-7

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	0.8	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	1.9	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	1.1	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 103 %

LAB #: 8-2678
 CLIENT'S ID: 111824 mw-5


MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 102 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.11-L
METHOD: EPA 602


=====

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation ATL 0807-L	Spike % recovery ATL 0807-L
Job #			
Benzene-----	N.D.	16	79
Toluene-----	N.D.	2	94
p-Xylene-----	N.D.	1	94

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	70 %	101 %	89 %

N.D.: Not Detected



Analytical Supervisor



H. G. Lawson Associates
 765 Redwood Blvd
 P.O. Box 578
 Novato, CA 94948
 (415) 892-0821

CHAIN OF CUSTODY FORM

HLA 0801.11

Job Number: 09382,022.02
 Name/Location: City of Oakland
 Project Manager: Dave Leland

Samplers: Bill Loskutoff, Tim Walker

Recorder: Bill Loskutoff
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2			88	11	1821	88	03	18	1320
23	X				2			88	11	1821				
23	X				2			88	11	1821				
23	X				2			88	11	1821				
23	X				2			88	11	1822	88	03	18	1415
23	X				2			88	11	1822				
23	X				2			88	11	1822				
23	X				2			88	11	1822				
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1823	88	03	18	1510

STATION DESCRIPTION/NOTES
Inferred analysis for
Inferred analysis for

ANALYSIS REQUESTED									
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - Lights	TPH - Heavy	
X									
X									
					X				
X							X		
X							X		
X									

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

5 day turnaround on all analysis
 CHAIN OF CUSTODY RECORD **WESCO**

RELINQUISHED BY: (Signature) <i>Bill Loskutoff</i>	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) <i>Bill Loskutoff</i>	DATE/TIME 3/18/88/1745	RECEIVED FOR LAB BY: (Signature) <i>Michelle Casey</i> 3/18/1745
METHOD OF SHIPMENT		



Ring Lawson Associates

5 Redwood Blvd.

P.O. Box 578

Novato, CA 94948

(415) 892-0821

CHAIN OF CUSTODY FORM

HLA 3/11

Job Number: 09382,022-02

Name/Location: City of Oakland

Project Manager: Dave Leland

Samplers: Bill Laskeroff, Tim Walker

Recorder: Bill Laskeroff
(Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1823	88	03	18	1510
23	X				2			88	11	1824	88	03	18	1555
23	X				2									1555
23	X				2									1555
23	X				2									1555

STATION DESCRIPTION/
NOTES

Inferred analysis for

Inferred analysis for

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Piktnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - Lights	TPH - Heavy		
							X			
							X			
X										
	X									
							X			
							X			

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

5 day turnaround on all analysis

CHAIN OF CUSTODY RECORD WESCO

RELINQUISHED BY: (Signature) Bill Laskeroff	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) Bill Laskeroff	DATE/TIME 3/18/88 1745	RECEIVED FOR LAB BY: (Signature) Wachelle Casey 3/18 17:45
METHOD OF SHIPMENT		

Report Date: 29-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Bill Loskutoff
Submitted by: Bill Loskutoff
Preservatives: none
Analyst: Attalla/Arntzen
WESCO JOB #: HLA 0831.14-L
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02
Date Sampled: 21-Mar-88
Site: City of Oakland, Wells
Date Received: 21-Mar-88
Extract/Digest/Purge Date: 21-Mar-88
Analysis Completion Date: 21-Mar-88
Hold Time: 0 days

=====
LAB #: 8-2841 MATRIX: WATER
CLIENT'S ID: 122121 MW-2
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	182	0.2
Toluene-----	9.2	0.2
Chlorobenzene-----	6	0.2
Ethylbenzene-----	33	0.2
Xylene-----	33	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2


QUALITY CONTROL DATA
Surrogate Spike Percent Recovery
Fluorobenzene 98 %

=====
LAB #: 8-2843 MATRIX: WATER
CLIENT'S ID: 122122 MW-9
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	400	0.2
Toluene-----	184	0.2
Chlorobenzene-----	0.4	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA
Surrogate Spike Percent Recovery
Fluorobenzene 174 %*

N.D.: Not Detected
* : Matrix interference



Analytical Supervisor

Report Date: 29-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Bill Loskutoff
Submitted by: Bill Loskutoff
Preservatives: none
Analyst: Attalla/Arntzen
WESCO JOB #: HLA 0831.14-L
Analytical Method: EPA 602

Client Contract/PO: 09382,026.02
Date Sampled: 21-Mar-88
Site: City of Oakland, Wells
Date Received: 21-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 0 days

LAB #: 8-2845

CLIENT'S ID: 122123 MW-6

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	3028	0.2
Toluene-----	2089	0.2
Chlorobenzene-----	14	0.2
Ethylbenzene-----	1308	0.2
Xylene-----	2980	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 133 %*

LAB #: 8-2847

CLIENT'S ID: 122124 MW-6


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	3680	0.2
Toluene-----	3180	0.2
Chlorobenzene-----	125	0.2
Ethylbenzene-----	1580	0.2
Xylene-----	6300	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 129 %*

N.D.: Not Detected
* : Matrix interference


Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold Time: 0 days

LAB #: 8-2849
 CLIENT'S ID: 122125 *Blank*

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene

Percent Recovery
 103 %

N.D.: Not Detected

Attalla

 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.14-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		ATL 0807-L	ATL 0807-L
Benzene-----	N.D.	16	79
Toluene-----	N.D.	2	94
p-Xylene-----	N.D.	1	94
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	70 %	101 %	89 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge Date: 21-Mar-88
 Analysis Completion Date: 21-Mar-88
 Hold time: 0 days

LAB #: 8-2841

MATRIX: WATER

CLIENT'S ID: 122121

MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	1.5	0.5
Methylene Chloride	1.3	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	1.4	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	166	0.5
Trichloroethene (TCE)	276	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	2.3	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

2. waiting for new stat 6/1/88

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	105 %
1,4-Dichlorobutane	116 %

N.D.: Not Detected

Attalla

Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 0 days

LAB #: 8-2843

CLIENT'S ID: 122122 *mw-9*

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	12.6	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	3	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	2.6	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	5	0.5
Trichloroethene (TCE)	1.0	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	109 %
1,4-Dichlorobutane	120 %

N.D.: Not Detected

Attalla
 Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 0 days

LAB #: 8-2845

MATRIX: WATER

CLIENT'S ID: 122123 *mw-6*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	1.4	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	8.7	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	90	0.5
Trichloroethene (TCE)	276	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	10	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	111 %
1,4-Dichlorobutane	119 %

N.D.: Not Detected

Attalla
 Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 0 days

LAB #: 8-2847

MATRIX: WATER

CLIENT'S ID: 122124 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	2.5	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	1.3	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	12.3	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	111 %
1,4-Dichlorobutane	120 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 29-Mar-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Bill Loskutoff
 Submitted by: Bill Loskutoff
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.14-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,026.02
 Date Sampled: 21-Mar-88
 Site: City of Oakland, Wells
 Date Received: 21-Mar-88
 Extract/Digest/Purge
 Date: 21-Mar-88
 Analysis Completion
 Date: 21-Mar-88
 Hold time: 0 days

LAB #: 8-2849

MATRIX: WATER

CLIENT'S ID: 122125 *Blank*

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	108 %
1,4-Dichlorobutane	110 %

N.D.: Not Detected

MSK
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.14-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation ATL 0807-L	Spike % recovery ATL 0807-L
Job #			
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.	11	96
Methylene Chloride	N.D.	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane	N.D.	-	N.S.
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE)	N.D.	11	88
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.	20	93
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	9	91
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	80 %	98 %	98 %
1,4-Dichlorobutane	87 %	94 %	95 %

N.D.: Not Detected

N.S.: Not Spiked

Atkins

Analytical Supervisor

Report Date: 29-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Bill Loskutoff
Submitted by: Bill Loskutoff
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.14-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02
Date Sampled: 21-Mar-88
Site: City of Oakland, Wells
Date Received: 21-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 0 days

LAB #: 8-2840

MATRIX: WATER

CLIENT'S ID: 122121

MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	4500	250

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 108 %

LAB #: 8-2842

MATRIX: WATER

CLIENT'S ID: 122122

MW-9

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	3400	250

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 82 %

LAB #: 8-2844

MATRIX: WATER


CLIENT'S ID: 122123

MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	53000	2500

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 83 %


Analytical Supervisor

Report Date: 29-Mar-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Bill Loskutoff
Submitted by: Bill Loskutoff
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.14-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,026.02
Date Sampled: 21-Mar-88
Site: City of Oakland, Wells
Date Received: 21-Mar-88
Extract/Digest/Purge
Date: 21-Mar-88
Analysis Completion
Date: 21-Mar-88
Hold Time: 0 days

LAB #: 8-2846

CLIENT'S ID: 122124 *MW-6*

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	51000	500

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 89 %

LAB #: 8-2848

CLIENT'S ID: 122125 *Blank*

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 105 %

N.D.: Not Detected

Attk

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.14-L
 METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation HLA 0831.12-L	Spike % recovery HLA 0831.12-L
Benzene-----	N.D.	23	106
Toluene-----	N.D.	4	91
p-Xylene-----	N.D.	6	89
Gasoline-----	N.D.	10	87

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	99 %	93 %	86 %

N.D.: Not Detected

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



 Analytical Supervisor

Job Number: 09382,022.02
Name/Location: City of Ukiah
Project Manager: Dave Leland

Samplers: Bill Loskutoff, Tim Walker

Recorder: Bill Loskutoff
(Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X				2			88	12	21	21	88	03	21	1055
23	X				2			88	12	21	21				
23	X				2			88	12	21	21				
23	X				2			88	12	21	21				
23	X				2			88	12	21	22	88	03	21	1152
23	X				2			88	12	21	22				
23	X				2			88	12	21	22				
23	X				2			88	12	21	23	88	03	21	1300
23	X				2			88	12	21	23	88	03	21	1300

STATION DESCRIPTION/NOTES

Inferred analysis for

Inferred analysis for

ANALYSIS REQUESTED											
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Piltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - Light	TPH - Heavy			
X											
	X										
						X					
							X				
X											
	X										
							X				
								X			
X											

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

5 day turnaround on all analysis

CHAIN OF CUSTODY RECORD Wesco

RELINQUISHED BY: (Signature) <u>Bill Loskutoff</u>	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) <u>Bill Loskutoff</u>	DATE/TIME <u>3/21/88/1600</u>	RECEIVED FOR LAB BY: (Signature) <u>Michelle Cary</u>
METHOD OF SHIPMENT		DATE/TIME <u>3/21/1600</u>



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

CHAIN OF CUSTODY FORM

162A 083114-L

Job Number: 09382,022-02
Name/Location: City of Oakland
Project Manager: Dave Leland

Samplers: Bill Loskutoff, Tim Walker
Recorder: Bill Loskutoff
(Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X				2			88	12	21	23	88	03	21	1300
23	X				2			88	12	21	23	88	03	21	1300
23	X				2			88	12	21	24				1315
23	X				2			88	12	21	24				1315
23	X				2			88	12	21	24				1315
23	X				2			88	12	21	24				1315
23	X				1			88	12	21	25				1330
23	X				1			88	12	21	25				1330
23	X				1			88	12	21	25				1330
23	X				1			88	12	21	25				1330

STATION DESCRIPTION/NOTES

Inferred analysis for

Inferred analysis for

Inferred analysis for

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

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

5 days turnaround on all analysis

CHAIN OF CUSTODY RECORD

WESCO

RELINQUISHED BY: (Signature) <u>Bill Loskutoff</u>	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) <u>Bill Loskutoff</u>	DATE/TIME <u>3/21/88 1600</u>	RECEIVED FOR LAB BY: (Signature) <u>Michelle Casey</u>
METHOD OF SHIPMENT		

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



WESCO Laboratories

Report Date: 06-Apr-88	Client Contract/PO: 09382,022.02
Client: Harding Lawson Associates	Date Sampled: 25-Mar-88
Attn: David Leland	Site: City of Oakland, Wells
Sampled by: Tim Walker	Date Received: 25-Mar-88
Submitted by: JMK	Extract/Digest/Purge Date: 30-Mar-88
Preservatives: none	Analysis Completion Date: 30-Mar-88
Analyst: Attalla	Hold Time: 5 days
WESCO JOB #: HLA 0831.20-L	
Analytical Method: 3510/8015	

=====

MATRIX: WATER

=====

LAB #	CLIENT ID	Diesel (mg/l)	Detection limit(mg/l)
8-3298	122331 <i>325</i>	N.D.	1.0
8-3299	122332 <i>325</i>	N.D.	1.0
8-3300	122333 <i>YOW-5</i>	N.D.	1.0
8-3301	122334 <i>YOW-7</i>	N.D.	1.0
8-3302	122335 <i>YOW-5</i>	N.D.	1.0
8-3303	122336 <i>YOW-2</i>	N.D.	1.0
8-3304	122337 <i>YOW-10</i>	9*	1.0
8-3305	122338 <i>YOW-6</i>	9*	1.0

N.D.: Not Detected

* : Compound detected could be a light petroleum hydrocarbon.



Analytical Supervisor


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

HLA 0831.20-L

COMPOUND	Blank mg/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.20-L	HLA 0831.20-L

Diesel	N.D.	8	100
--------	------	---	-----

N.D.: Not Detected



Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 01-Apr-88
 Analysis Completion
 Date: 01-Apr-88
 Hold Time: 7 days

=====
 LAB #: 8-3282 MATRIX: WATER
 CLIENT'S ID: 122331 *Print*

=====
 COMPOUND RESULT Detection
 (ug/l) Limit (ug/l) *7 ppb M 218/13*
 Gasoline----- N.D. 50.0

 QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 99 %

=====
 LAB #: 8-3284 MATRIX: WATER
 CLIENT'S ID: 122332 *100-3*

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

 QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 78 %

=====
 LAB #: 8-3286 MATRIX: WATER
 CLIENT'S ID: 122333 *100-8*

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

 QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 95 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor

Report Date: 06-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: JMK
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.20-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
Date Sampled: 25-Mar-88
Site: City of Oakland, Wells
Date Received: 25-Mar-88
Extract/Digest/Purge
Date: 01-Apr-88
Analysis Completion
Date: 01-Apr-88
Hold Time: 7 days

LAB #: 8-3288

CLIENT'S ID: 122334 YMS-7

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	53	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 111 %

LAB #: 8-3290

CLIENT'S ID: 122335 YMS-5

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 97 %

LAB #: 8-3292

CLIENT'S ID: 122336 YMS-2


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	3200	250.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 115 %

N.D.: Not Detected


Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 01-Apr-88
 Analysis Completion
 Date: 01-Apr-88
 Hold Time: 7 days

=====

LAB #:	8-3294	MATRIX:	WATER
CLIENT'S ID:	122337		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	31000	250.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 103 %

=====

LAB #:	8-3296	MATRIX:	WATER
CLIENT'S ID:	122338		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	50000	500.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 130 %*

N.D.: Not Detected
 * : Matrix interference



 Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.20-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.20-L	HLA 0831.20-L
Gasoline-----	N.D.	17	100

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	95 %	127 %	124 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 29-Mar-88
 Analysis Completion
 Date: 29-Mar-88
 Hold Time: 4 days

LAB #: 8-3282

CLIENT'S ID: 122331

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 92 %

LAB #: 8-3284

CLIENT'S ID: 122332


MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 89 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 29-Mar-88
 Analysis Completion
 Date: 29-Mar-88
 Hold Time: 4 days

=====
 LAB #: 8-3286 MATRIX: WATER
 CLIENT'S ID: 122333 MW-6
 =====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 93 %


=====
 LAB #: 8-3288 MATRIX: WATER
 CLIENT'S ID: 122334 MW-7
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	1.7	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	0.4	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 97 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 29-Mar-88
 Analysis Completion
 Date: 29-Mar-88
 Hold Time: 4 days

=====

LAB #: 8-3290 MATRIX: WATER
 CLIENT'S ID: 122335 *mw-5*

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	0.6	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 94 %

=====

LAB #: 8-3292 MATRIX: WATER
 CLIENT'S ID: 122336 *mw-2*

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	83	0.2
Toluene-----	10	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	11.2	0.2
Xylene-----	15	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 129 %

N.D.: Not Detected

Phel

 Analytical Supervisor

Report Date: 06-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: JMK
Preservatives: none
Analyst: Farah
WESCO JOB #: HLA 0831.20-L
Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
Date Sampled: 25-Mar-88
Site: City of Oakland, Wells
Date Received: 25-Mar-88
Extract/Digest/Purge
Date: 29-Mar-88
Analysis Completion
Date: 29-Mar-88
Hold Time: 4 days

LAB #: 8-3294

MATRIX: WATER

CLIENT'S ID: 122337

mw-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	18	0.2
Toluene	27	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	N.D.	0.2
Xylene	48	0.2
1,3-Dichlorobenzene	0.3	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 92 %

LAB #: 8-3296

MATRIX: WATER

CLIENT'S ID: 122338

mw-6

Dup

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	13	0.2
Toluene	27	0.2
Chlorobenzene	N.D.	0.2
Ethylbenzene	8.0	0.2
Xylene	49	0.2
1,3-Dichlorobenzene	N.D.	0.2
1,4-Dichlorobenzene	N.D.	0.2
1,2-Dichlorobenzene	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 93 %

N.D.: Not Detected


Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.20-L
METHOD: EPA 602

=====

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.20-L	HLA 0831.20-L
Benzene-----	N.D.	3	111
Toluene-----	N.D.	4	98
p-Xylene-----	N.D.	5	101

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	101 %	96 %	99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3283

MATRIX: WATER

CLIENT'S ID: 122331 ^{TB}

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	86 %
1,4-Dichlorobutane	72 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3285

MATRIX: WATER

CLIENT'S ID: 122332

mw-3

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	40	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	24	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	2.4	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	95 %
1,4-Dichlorobutane	82 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3287

CLIENT'S ID: 122333

mw-4

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	1.3	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	0.7	0.5
Trichloroethene (TCE)	5.8	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	0.8	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	84 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3289

CLIENT'S ID: 122334

mw-7

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	0.7	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	79 %
1,4-Dichlorobutane	102 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3291

CLIENT'S ID: 122335

mw-6

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	17	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	11	0.5
Chloroform	2	0.5
1,1,1-Trichloroethane (TCA)	2.6	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	1.2	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	93 %
1,4-Dichlorobutane	86 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3293

MATRIX: WATER

CLIENT'S ID: 122336 *mw-2*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	18.6	0.5
Methylene Chloride	11.7	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	3.9	0.5
Chloroform	2.7	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	62	0.5
1,2-Dichloroethane (EDC)	19	0.5
Trichloroethene (TCE)	5409	0.5
1,2-Dichloropropane	5.0	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	0.9	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	73 %
1,4-Dichlorobutane	97 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3295

MATRIX: WATER

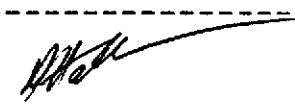
CLIENT'S ID: 122337 -MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	24	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	5.2	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	22	0.5
Trichloroethene (TCE)	5811	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	90 %
1,4-Dichlorobutane	82 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 06-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: JMK
 Preservatives: none
 Analyst: Farah
 WESCO JOB #: HLA 0831.20-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 25-Mar-88
 Site: City of Oakland, Wells
 Date Received: 25-Mar-88
 Extract/Digest/Purge
 Date: 28-Mar-88
 Analysis Completion
 Date: 28-Mar-88
 Hold time: 3 days

LAB #: 8-3297

CLIENT'S ID: 122338

MW-6 Dup


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	22	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	4	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	22	0.5
Trichloroethene (TCE)	5961	0.5
1,2-Dichloropropane	2	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	73 %
1,4-Dichlorobutane	74 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD: EPA 601


HLA 0831.20-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0831.20-L	Spike % recovery HLA 0831.20-L
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.	12	100
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.	0	91
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	94
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	3	89
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	88 %	102 %	103 %
1,4-Dichlorobutane	86 %	71 %	72 %

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

PLA 0807.00

Job Number: 9382 022 02
 Name/Location: City 8 Oakland
 Project Manager: Dave Leland

Samplers: JMK
RTW
 Recorder: _____
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23					7			88	12	2331	88	03	25	0800
23					8			88	12	2332	88	03	25	0835
23					8			88	12	2333	88	03	25	0915
23					8			88	12	2334	88	03	25	1008
23					8			88	12	2335	88	03	25	1105
23					8			88	12	2336	88	03	25	1235
23					8			88	12	2337	88	03	25	1315
23					8			88	12	2338	88	03	25	1330

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pestic. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	TPH - LIGHT	TPH - HEAVY		
X	X						X	X		
X	X						X	X		
X	X						X	X		
X	X						X	X		
X	X						X	X		
X	X						X	X		
X	X						X	X		

WESCO

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						5 DAY TURNAROUND TIME
						"INEEDED ANALYSIS FOR TPH-HEAVY"

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)
METHOD OF SHIPMENT		DATE/TIME

[Signature]
 3/5/88


WESCO Laboratories

Report Date: 13-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.28-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
Date Sampled: 01-Apr-88
Site: City of Oakland, Wells
Date Received: 01-Apr-88
Extract/Digest/Purge Date: 05-Apr-88
Analysis Completion Date: 05-Apr-88
Hold Time: 4 days

=====
LAB #: 8-3656 **MATRIX:** WATER
CLIENT'S ID: 133111 *70.11-5 3/81*

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


QUALITY CONTROL DATA
Surrogate Spike % Recovery
 Fluorobenzene 84 %

=====
LAB #: 8-3658 **MATRIX:** WATER
CLIENT'S ID: 133112 *70.11-5 3/81*

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
 Fluorobenzene 100 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.28-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 05-Apr-88
 Analysis Completion
 Date: 05-Apr-88
 Hold Time: 4 days

=====

LAB #:	8-3660	MATRIX:	WATER
CLIENT'S ID:	133113		

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	128	50.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 97 %

=====

LAB #:	8-3662	MATRIX:	WATER
CLIENT'S ID:	133114		

=====

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

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 101 %

N.D.: Not Detected



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.28-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.27-L	HLA 0831.27-L
Gasoline-----	N.D.	0	73

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	101 %	121 %	119 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.28-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 06-Apr-88
 Analysis Completion
 Date: 06-Apr-88
 Hold Time: 5 days

LAB #: 8-3656

MATRIX: WATER

CLIENT'S ID: 133111 *mw-3*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	0.7	0.2
Toluene-----	0.4	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	1.2	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 84 %

LAB #: 8-3658

MATRIX: WATER

CLIENT'S ID: 133112 *mw-3*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	0.6	0.2
Toluene-----	N.D.	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 100 %

N.D.: Not Detected

 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.28-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge Date: 06-Apr-88
 Analysis Completion Date: 06-Apr-88
 Hold Time: 5 days

LAB #: 8-3660

CLIENT'S ID: 133113

mw-7

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2
Toluene-----	0.5	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1.4	0.2
Xylene-----	2.4	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 95 %

LAB #: 8-3662

CLIENT'S ID: 133114

TB

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 101 %

N.D.: Not Detected

 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.28-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.27-L	HLA 0831.27-L
Benzene-----	N.D.	26	100
Toluene-----	N.D.	7	93
p-Xylene-----	N.D.	12	80

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	101 %	121 %	119 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.28-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 08-Apr-88
 Analysis Completion
 Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3661

MATRIX: WATER

CLIENT'S ID: 133113


mw-7

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	85 %
1,4-Dichlorobutane	86 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.28-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 08-Apr-88
 Analysis Completion
 Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3663

MATRIX: WATER

CLIENT'S ID: 133114

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	85 %
1,4-Dichlorobutane	86 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601


HLA 0831.28-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0842-L	Spike % recovery HLA 0842-L
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.	5	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)	N.D.	15	105
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	101
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	1	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	117 %	95 %	88 %
1,4-Dichlorobutane	106 %	99 %	102 %

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



 Analytical Supervisor



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

CHAIN OF CUSTODY FORM

Samplers: WALKER TJ
LARKIN C

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

Job Number: 09382 022 02
 Name/Location: CITY OF OAKLAND
 Project Manager: DAVE LELAND

Recorder: J Walker
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/ NOTES
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X				X			08	133	101	08	09	31	1330	vvvvv
23	X				X			08	133	120	08	03	31	1430	vvvvv
23	X				X			08	133	130	08	03	31	1530	vvvvv
23	X				X			08	133	140	08	03	31	1530	vvvvv

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						5 DAY E-2

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)
METHOD OF SHIPMENT		DATE/TIME

J Walker - 4/01/88 1410
[Signature] 4/1/88

RECEIVED

APR 18 1988



WESCO Laboratories

WESTERN SERVICES

Client: **Harding Lawson Associates**

Attn: **David Leland**
 Sampled by: **Tim Walker**
 Submitted by: **Tim Walker**
 Preservatives: **none**
 Analyst: **Arntzen/Lewis**
 WESCO JOB #: **HLA 0831.27-L**
 Analytical Method: **EPA 5030/8015**

13-Apr-88

Client Contract/PO: **09382,022.02**
 Date Sampled: **01-Apr-88**
 Site: **City of Oakland, Wells**
 Date Received: **01-Apr-88**
 Extract/Digest/Purge
 Date: **04-Apr-88**
 Analysis Completion
 Date: **04-Apr-88**
 Hold Time: **3 days**

LAB #: 8-3646

CLIENT'S ID: 130115 *Y10-5*

MATRIX: WATER

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

Gasoline	N.D.	50.0
----------	------	------

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 122 %

LAB #: 8-3648

CLIENT'S ID: 130116 *Y10-6*

MATRIX: WATER

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

Gasoline	N.D.	50.0
----------	------	------

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 122 %

LAB #: 8-3650

CLIENT'S ID: 130117 *Y10-7*

MATRIX: WATER

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

Gasoline	3400	250.0
----------	------	-------

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 107 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 13-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Arntzen/Lewis
WESCO JOB #: HLA 0831.27-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 09382,022.02
Date Sampled: 01-Apr-88
Site: City of Oakland, Wells
Date Received: 01-Apr-88
Extract/Digest/Purge
Date: 04-Apr-88
Analysis Completion
Date: 04-Apr-88
Hold Time: 3 days

LAB #: 8-3652

CLIENT'S ID: 130118

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	32000	500.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 120 %

LAB #: 8-3654

CLIENT'S ID: 130119

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	39000	500.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 126 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 04-Apr-88
 Analysis Completion
 Date: 04-Apr-88
 Hold Time: 3 days

=====
 LAB #: 8-3650 MATRIX: WATER
 CLIENT'S ID: 130117 *mw-2*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	17	1.0
Toluene-----	7	1.0
Chlorobenzene-----	N.D.	1.0
Ethylbenzene-----	4	1.0
Xylene-----	9	1.0
1,3-Dichlorobenzene-----	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	1.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 107 %

=====
 LAB #: 8-3652 MATRIX: WATER
 CLIENT'S ID: 130118 *mw-6*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	440	2.0
Toluene-----	490	2.0
Chlorobenzene-----	N.D.	2.0
Ethylbenzene-----	300	2.0
Xylene-----	970	2.0
1,3-Dichlorobenzene-----	N.D.	2.0
1,4-Dichlorobenzene-----	N.D.	2.0
1,2-Dichlorobenzene-----	N.D.	2.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 120 %

N.D.: Not Detected

Atak

 Analytical Supervisor

Report Date: 13-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Arntzen/Lewis
WESCO JOB #: HLA 0831.27-L
Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
Date Sampled: 01-Apr-88
Site: City of Oakland, Wells
Date Received: 01-Apr-88
Extract/Digest/Purge
Date: 04-Apr-88
Analysis Completion
Date: 04-Apr-88
Hold Time: 3 days

LAB #: 8-3654

MATRIX: WATER

CLIENT'S ID: 130119

*M-W-U
Dup*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	430	1.0
Toluene-----	500	1.0
Chlorobenzene-----	N.D.	1.0
Ethylbenzene-----	300	1.0
Xylene-----	990	1.0
1,3-Dichlorobenzene-----	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	1.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 126 %

N.D.: Not Detected



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.27-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.27-L	HLA 0831.27-L
Benzene-----	N.D.	26	100
Toluene-----	N.D.	7	93
p-Xylene-----	N.D.	12	80
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	101 %	121 %	119 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 08-Apr-88
 Analysis Completion
 Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3647

CLIENT'S ID: 130115

MW-5


MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	20.5	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	10	0.5
Chloroform	2	0.5
1,1,1-Trichloroethane (TCA)	2	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	0.9	0.5
Trichloroethene (TCE)	0.6	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	92 %
1,4-Dichlorobutane	79 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: BPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge Date: 08-Apr-88
 Analysis Completion Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3649

MATRIX: WATER

CLIENT'S ID: 130116

DW-1

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	73 %
1,4-Dichlorobutane	75 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 08-Apr-88
 Analysis Completion
 Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3651

MATRIX: WATER

CLIENT'S ID: 130117

mw-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	10.0
Chloromethane	N.D.	10.0
Vinyl Chloride	N.D.	10.0
Bromomethane	N.D.	10.0
Chloroethane	N.D.	10.0
Trichlorofluoromethane	N.D.	10.0
1,1-Dichloroethene	N.D.	2.5
Methylene Chloride	N.D.	2.5
trans-1,2-Dichloroethene	N.D.	2.5
1,1-Dichloroethane	N.D.	2.5
Chloroform	10	2.5
1,1,1-Trichloroethane (TCA)	N.D.	2.5
Carbon Tetrachloride	N.D.	2.5
1,2-Dichloroethane (EDC)	7.5	2.5
Trichloroethene (TCE)	2000	2.5
1,2-Dichloropropane	N.D.	2.5
Bromodichloromethane	N.D.	2.5
2-Chloroethylvinyl ether	N.D.	2.5
trans-1,3-Dichloropropene	N.D.	2.5
cis-1,3-Dichloropropene	N.D.	2.5
1,1,2-Trichloroethane	N.D.	2.5
Tetrachloroethene	13	2.5
Dibromochloromethane	N.D.	2.5
Chlorobenzene	N.D.	2.5
Bromoform	N.D.	2.5
1,1,2,2-Tetrachloroethane	N.D.	2.5
1,3-Dichlorobenzene	N.D.	2.5
1,4-Dichlorobenzene	N.D.	2.5
1,2-Dichlorobenzene	N.D.	2.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	73 %
1,4-Dichlorobutane	81 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge Date: 08-Apr-88
 Analysis Completion Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3653

MATRIX: WATER

CLIENT'S ID: 130118 MW-V

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	14	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	27	0.5
Trichloroethene (TCE)	11100	50.0
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	11	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	82 %

N.D.: Not Detected

AW
 Analytical Supervisor

Report Date: 13-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.27-L
 Analytical Method: EPA 601

Client Contract/PO: 09382,022.02
 Date Sampled: 01-Apr-88
 Site: City of Oakland, Wells
 Date Received: 01-Apr-88
 Extract/Digest/Purge
 Date: 08-Apr-88
 Analysis Completion
 Date: 08-Apr-88
 Hold time: 7 days

LAB #: 8-3655

MATRIX: WATER

CLIENT'S ID: 130119

MW-V
Dup

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	18	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	39	0.5
Trichloroethene (TCE)	11300	50.0
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	15	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	92 %

N.D.: Not Detected

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.27-L

COMPOUND	Blank (ug/l)	Spike Duplicate & deviation ATL 0818-L	Spike & recovery ATL 0818-L
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.	14	124
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.	5	102
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.	2	105
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	7	113
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	71 %	130 %	136 %
1,4-Dichlorobutane	92 %	124 %	119 %

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


 Analytical Supervisor

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

Samplers: WALKER TJ
LARKIN C
 Recorder: [Signature]
 (Signature Required)

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

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/NOTES
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X				X			88	130	11	88	80	30	10820	W
23	X				X			88	130	11	88	80	30	10930	W
23	X				X			88	130	11	88	80	30	11200	W
23	X				X			88	130	11	88	80	30	11330	W
23	X				X			88	130	11	88	80	30	11330	W

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						5 DAY
						<u>2</u>
						EXCEPT 1 SAMPLE
						#88130116
						WHICH IS
						24 HR

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)
METHOD OF SHIPMENT		


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.38-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.40-L	HLA 0831.40-L
Gasoline-----	N.D.	2	103

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	103 %	102 %	99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 14-Apr-88
 Analysis Completion
 Date: 14-Apr-88
 Hold Time: 6 days

LAB #: 8-3929

MATRIX: WATER

CLIENT'S ID: 140851 MW-5

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 110 %

LAB #: 8-3930

MATRIX: WATER

CLIENT'S ID: 140852 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	51	0.2
Toluene-----	3.0	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	1.4	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 106 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 19-Apr-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Walker/Larkin
Submitted by: C. Larkin
Preservatives: none
Analyst: Attalla/Arntzen
WESCO JOB #: HLA 0831.38-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 08-Apr-88
Site: City of Oakland, Wells
Date Received: 08-Apr-88
Extract/Digest/Purge
Date: 14-Apr-88
Analysis Completion
Date: 14-Apr-88
Hold Time: 6 days

=====

LAB #: 8-3931 MATRIX: WATER
CLIENT'S ID: 140853 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2340 *	2.0
Toluene-----	2890 *	2.0
Chlorobenzene-----	N.D.	2.0
Ethylbenzene-----	34	2.0
Xylene-----	2520	2.0
1,3-Dichlorobenzene-----	N.D.	2.0
1,4-Dichlorobenzene-----	N.D.	2.0
1,2-Dichlorobenzene-----	N.D.	2.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 106 %

=====

LAB #: 8-3932 MATRIX: WATER
CLIENT'S ID: 140854 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	2760	2.0
Toluene-----	3	2.0
Chlorobenzene-----	N.D.	2.0
Ethylbenzene-----	9.5	2.0
Xylene-----	390	2.0
1,3-Dichlorobenzene-----	N.D.	2.0
1,4-Dichlorobenzene-----	N.D.	2.0
1,2-Dichlorobenzene-----	N.D.	2.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 122 %*

N.D.: Not Detected
* : Matrix Interference

Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attalla/Arntzen
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 14-Apr-88
 Analysis Completion
 Date: 14-Apr-88
 Hold Time: 6 days

LAB #: 8-3933

MATRIX: WATER

CLIENT'S ID: 140855 *Blank*

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

QUALITY CONTROL DATA
 Surrogate Spike
 Fluorobenzene

Percent Recovery
 105 %

N.D.: Not Detected



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.38-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.40-L	HLA 0831.40-L
Benzene-----	N.D.	3	100
Toluene-----	N.D.	1	101
p-Xylene-----	N.D.	2	101

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	103 %	102 %	99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge:
 Date: 16-Apr-88
 Analysis Completion
 Date: 16-Apr-88
 Hold time 8 days

LAB #: 8-3934

MATRIX: WATER

CLIENT'S ID: 140851 MW-5

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	24	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	12	0.5
Chloroform	3.0	0.5
1,1,1-Trichloroethane (TCA)	2.5	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	1.0	0.5
Trichloroethene (TCE)	0.7	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	88 %
1,4-Dichlorobutane	84 %

N.D.: Not Detected

AKL
 Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 16-Apr-88
 Analysis Completion
 Date: 16-Apr-88
 Hold time 8 days

LAB #: 8-3935

MATRIX: WATER


CLIENT'S ID: 140852 MW-Z

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	0.8	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	8.8	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	5.3	0.5
Trichloroethene (TCE)	10900	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	128 %
1,4-Dichlorobutane	127 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 16-Apr-88
 Analysis Completion
 Date: 16-Apr-88
 Hold time 8 days

LAB #: 8-3936
 CLIENT'S ID: 140853

MATRIX: WATER

MW-4

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	200.0
Chloromethane	N.D.	200.0
Vinyl Chloride	N.D.	200.0
Bromomethane	N.D.	200.0
Chloroethane	N.D.	200.0
Trichlorofluoromethane	N.D.	200.0
1,1-Dichloroethene	N.D.	50.0
Methylene Chloride	N.D.	50.0
trans-1,2-Dichloroethene	N.D.	50.0
1,1-Dichloroethane	N.D.	50.0
Chloroform	N.D.	50.0
1,1,1-Trichloroethane (TCA)	N.D.	50.0
Carbon Tetrachloride	N.D.	50.0
1,2-Dichloroethane (EDC)	N.D.	50.0
Trichloroethene (TCE)	10200	50.0
1,2-Dichloropropane	N.D.	50.0
Bromodichloromethane	N.D.	50.0
2-Chloroethylvinyl ether	N.D.	50.0
trans-1,3-Dichloropropene	N.D.	50.0
cis-1,3-Dichloropropene	N.D.	50.0
1,1,2-Trichloroethane	N.D.	50.0
Tetrachloroethene	N.D.	50.0
Dibromochloromethane	N.D.	50.0
Chlorobenzene	N.D.	50.0
Bromoform	N.D.	50.0
1,1,2,2-Tetrachloroethane	N.D.	50.0
1,3-Dichlorobenzene	N.D.	50.0
1,4-Dichlorobenzene	N.D.	50.0
1,2-Dichlorobenzene	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	83 %
1,4-Dichlorobutane	81 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 16-Apr-88
 Analysis Completion
 Date: 16-Apr-88
 Hold time 8 days

LAB #: 8-3937

MATRIX: WATER

CLIENT'S ID: 140854 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	0.6	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	17	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	26.3	0.5
Trichloroethene (TCE)	11500	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	23	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	21	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	93 %
1,4-Dichlorobutane	102 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 19-Apr-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Walker/Larkin
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.38-L
 Analytical Method: EPA 601

Client Contract/PO: 9382,022.02
 Date Sampled: 08-Apr-88
 Site: City of Oakland, Wells
 Date Received: 08-Apr-88
 Extract/Digest/Purge
 Date: 16-Apr-88
 Analysis Completion
 Date: 16-Apr-88
 Hold time 8 days

LAB #: 8-3938

MATRIX: WATER

CLIENT'S ID: 140855

Blank

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	88 %
1,4-Dichlorobutane	83 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

METHOD: EPA 601

COMPOUND	Blank (ug/l)	Spike Duplicate	Spike
		% deviation HLA 0831.41-L	% recovery HLA 0831.41-L
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	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.	9	101
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	10	100
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	8	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	69 %	98 %	104 %
1,4-Dichlorobutane	90 %	99 %	98 %

N.D.: Not Detected

N.S.: Not Spiked



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.38-L

METHOD: EPA 601

SAMPLES #: 8-3936, 8-3938

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation HLA 0831.38-L	Spike % recovery HLA 0831.38-L
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	1.5	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane(M.S.)	N.D.	1	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.	2	93
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	5	97
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	3	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	80 %	86 %	90 %
1,4-Dichlorobutane	76 %	90 %	90 %

N.D.: Not Detected

N.S.: Not Spiked


Analytical Supervisor



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

CHAIN OF CUSTODY FORM

HLA 58-L
6/1-38

Job Number: 9382, 022.02
Name/Location: CITY OF OAKLAND
Project Manager: DAVE LELAND

Samplers: C. LARKIN / T. WALKER

Recorder: Christopher L.
(Signature Required)

SOURCE CODE	MATRIX				CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				4			88	14	0851	88	04	08	1300
23	X				4			88	14	0852	88	04	08	1300
23	X				4			88	14	0853	88	04	08	1607
23	X				4			88	14	0854	88	04	08	1607
23	X				4			88	14	0855	88	04	08	1624

STATION DESCRIPTION/
NOTES

ANALYSIS REQUESTED							
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Ptlmnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (L)	
X	X				X		
X	X				X		
X	X				X		
X	X				X		
X	X				X		

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

WESLO
CHAIN OF CUSTODY RECORD

RELINQUISHED BY: <i>(Signature)</i> <u>Christopher L.</u>	RECEIVED BY: <i>(Signature)</i>	DATE/TIME
RELINQUISHED BY: <i>(Signature)</i>	RECEIVED BY: <i>(Signature)</i>	DATE/TIME
RELINQUISHED BY: <i>(Signature)</i>	RECEIVED BY: <i>(Signature)</i>	DATE/TIME
RELINQUISHED BY: <i>(Signature)</i>	RECEIVED BY: <i>(Signature)</i>	DATE/TIME
DISPATCHED BY: <i>(Signature)</i>	DATE/TIME	RECEIVED FOR LAB BY: <i>(Signature)</i> <u>H. Blankenship</u>
METHOD OF SHIPMENT		DATE/TIME <u>4/8/88</u>



WESCO Laboratories

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,022:02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 21-Apr-88
 Analysis Completion
 Date: 21-Apr-88
 Hold Time: 6 days

LAB #: 8-4133
 CLIENT'S ID: 151501

MATRIX: WATER

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

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene

99 %

LAB #: 8-4134
 CLIENT'S ID: 151502

MATRIX: WATER

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

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene

90 %

LAB #: 8-4135
 CLIENT'S ID: 151503

MATRIX: WATER

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

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene

96 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 01-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: C. Larkin
Submitted by: K. Hunter
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.45-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,022.02
Date Sampled: 15-Apr-88
Site: City of Oakland, Wells
Date Received: 15-Apr-88
Extract/Digest/Purge
Date: 21-Apr-88
Analysis Completion
Date: 21-Apr-88
Hold Time: 6 days

LAB #: 8-4136

MATRIX: WATER

CLIENT'S ID: 151504

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

105 %

LAB #: 8-4137

MATRIX: WATER

CLIENT'S ID: 151505

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

96 %

LAB #: 8-4138

MATRIX: WATER

CLIENT'S ID: 151506

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)

Gasoline----- N.D.

50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

106 %

N.D.: Not Detected


Analytical Supervisor

Report Date: 01-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: C. Larkin
Submitted by: K. Hunter
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.45-L
Analytical Method: EPA 5030/8015

Client Contract/PO: 9382,022.02
Date Sampled: 15-Apr-88
Site: City of Oakland, Wells
Date Received: 15-Apr-88
Extract/Digest/Purge
Date: 21-Apr-88
Analysis Completion
Date: 21-Apr-88
Hold Time: 6 days

LAB #: 8-4139

CLIENT'S ID: 151507

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	1600	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery

Fluorobenzene 85 %

LAB #: 8-4140

CLIENT'S ID: 151508

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	23000	5000

QUALITY CONTROL DATA

Surrogate Spike & Recovery

Fluorobenzene 95 %

N.D.: Not Detected



Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.45-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Job #		HLA 0831.50-L	HLA 0831.50-L
Gasoline-----	N.D.	7	107

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	101 %	93 %	93 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 01-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: C. Larkin
Submitted by: K. Hunter
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.45-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 15-Apr-88
Site: City of Oakland, Wells
Date Received: 15-Apr-88
Extract/Digest/Purge
Date: 21-Apr-88
Analysis Completion
Date: 21-Apr-88
Hold Time: 6 days

LAB #: 8-4133

MATRIX: WATER

CLIENT'S ID: 151501 MW-8

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 101 %

LAB #: 8-4134

MATRIX: WATER

CLIENT'S ID: 151502 MW-7

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 103 %

N.D.: Not Detected


Analytical Supervisor

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/9382,022.02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 20-Apr-88
 Analysis Completion
 Date: 20-Apr-88
 Hold time, days: 5

LAB #: 8-4137 8-4138
 CLIENT'S ID: 151505 151506


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	30.6	37.0	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	14.3	14.0	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)	1.3	1.1	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 %
 1,4-Dichlorobutane 91 %

79 %
 78 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 601
 MATRIX: WATER


Client Contract/9382,022.02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 20-Apr-88
 Analysis Completion
 Date: 20-Apr-88
 Hold time, days: 5

 LAB #: 8-4139 8-4140
 CLIENT'S ID: 151507 151508

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-----	4.5	16.0	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)-----	3.0	20.8	0.5
Trichloroethene (TCE)-----	4100	9760	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-----	12.0	21.5	0.5
Dibromochloromethane-----	N.D.	N.D.	0.5
Chlorobenzene-----	N.D.	1.3	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 84 % 100 %
 1,4-Dichlorobutane 96 % 119 %

N.D.: Not Detected



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.45-L

METHOD: EPA 601

SAMPLE #: 8-4135 - 8-4140

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.	5	103
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	106
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	0	105
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	6	107
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 %	97 %	110 %
1,4-Dichlorobutane	102 %	95 %	116 %

N.D.: Not Detected

N.S.: Not Spiked


Analytical Supervisor



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

CHAIN OF CUSTODY FORM

HLA 0831 - 2

Job Number: 9382 022 02
 Name/Location: Oakland
 Project Manager: Dave Coland

Samplers: Joseph Keown
Chris Linkin
 Recorder: _____
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				4			88	15	1501	88	04	15	1035
23	X				4			88	15	1502	88	04	15	1100
23	X				4			88	15	1503	88	04	15	1215
28	X				4			88	15	1504	88	04	15	1220
23	X				4			88	15	1505	88	04	15	1310
23	X				4			88	15	1506	88	04	15	1315
23	X				4			88	15	1507	88	04	15	1400
23	X				4			88	15	1508	88	04	15	1425

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. List
X	X				Y	
X	X				X	
Y	X				X	
X	X				X	
X	X				X	
X	X				X	
X	X				Y	
X	X				X	

WESCO

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						5-day TAT.

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
METHOD OF SHIPMENT		

M. Coland
 4/15/88

Report Date: 01-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: C. Larkin
Submitted by: K. Hunter
Preservatives: none
Analyst: Attia
WBSCO JOB #: HLA 0831.45-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 15-Apr-88
Site: City of Oakland, Wells
Date Received: 15-Apr-88
Extract/Digest/Purge
Date: 21-Apr-88
Analysis Completion
Date: 21-Apr-88
Hold Time: 6 days

LAB #: 8-4135
CLIENT'S ID: 151503 MW-5
MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene
Percent Recovery
106 %

LAB #: 8-4136
CLIENT'S ID: 151504 Blank
MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene
Percent Recovery
105 %

N.D.: Not Detected


Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.45-L
METHOD: EPA 602
SAMPLES #: 8-4133, 4134

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	2	103
Toluene-----	N.D.	7	102
p-Xylene-----	N.D.	11	102

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	102 %	99 %	99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 21-Apr-88
 Analysis Completion
 Date: 21-Apr-88
 Hold Time: 6 days

 LAB #: 8-4137 MATRIX: WATER
 CLIENT'S ID: 151505 MW-3

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 109 %

 LAB #: 8-4138 MATRIX: WATER
 CLIENT'S ID: 151506 MW-3

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 104 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 01-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: C. Larkin
Submitted by: K. Hunter
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.45-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 15-Apr-88
Site: City of Oakland, Wells
Date Received: 15-Apr-88
Extract/Digest/Purge
Date: 21-Apr-88
Analysis Completion
Date: 21-Apr-88
Hold Time: 6 days

LAB #: 8-4139
CLIENT'S ID: 151507 MW-2
MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	25.3	0.2
Toluene-----	2.1	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	5.1	0.2
Xylene-----	3.0	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene
Percent Recovery
130 %

LAB #: 8-4140
CLIENT'S ID: 151508 MW-6
MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	456	0.2
Toluene-----	1470	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	3480	0.2
Xylene-----	547	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene
Percent Recovery
104 %

N.D.: Not Detected

Attia
Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.45-L
METHOD: EPA 602
SAMPLES #: 8-4135 - 8-4140

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	5	93
Toluene-----	N.D.	4	95
p-Xylene-----	N.D.	3	96

QUALITY CONTROL DATA

Surrogate Spike % recovery			
Fluorobenzene	102 %	102 %	99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/9382,022.02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 20-Apr-88
 Analysis Completion
 Date: 20-Apr-88
 Hold time, days: 5

LAB #: 8-4133 8-4134
 CLIENT'S ID: 151501 151502

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	0.6	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.	1.0	0.5
Trichloroethene (TCE)	9.8	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	0.7	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	88 %	86 %
1,4-Dichlorobutane	86 %	88 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.45-L

METHOD: EPA 601

SAMPLE #: 8-4133, 4134

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	100
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.	0	95
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene (M.S.)	N.D.	2	102
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	0	98
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	109 %	97 %	99 %
1,4-Dichlorobutane	95 %	91 %	97 %

N.D.: Not Detected

N.S.: Not Spiked


Analytical Supervisor

Report Date: 01-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: C. Larkin
 Submitted by: K. Hunter
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.45-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/9382,022.02
 Date Sampled: 15-Apr-88
 Site: City of Oakland, Wells
 Date Received: 15-Apr-88
 Extract/Digest/Purge
 Date: 20-Apr-88
 Analysis Completion
 Date: 20-Apr-88
 Hold time, days: 5

LAB #: 8-4135 8-4136
 CLIENT'S ID: 151503 151504

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	18.5	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	9.3	N.D.	0.5
Chloroform	3.6	N.D.	0.5
1,1,1-Trichloroethane (TCA)	1.6	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.0	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 98 %
 1,4-Dichlorobutane 87 %

84 %
 85 %

N.D.: Not Detected


 Analytical Supervisor



MAY 23 1988

Report Date:	19-May-88	Client Contract/PO:	9382,022.02
Client:	Harding Lawson Associates	Date Sampled:	22-Apr-88
Attn:	David Leland	Site:	City of Oakland, Wells
Sampled by:	Tim Walker	Date Received:	22-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	26-Apr-88
Analyst:	Attia/ Lewis	Analysis Completion	
WESCO JOB #:	HLA 0831.53-L, rev.	Date:	26-Apr-88
Analytical Method:	EPA 5030/8015	Hold Time:	4 days
Matrix:	WATER		

```

=====
LAB #:      8-4361          CLIENT ID:      162271
=====
COMPOUND           RESULT           Detection
                   (ug/l)           Limit (ug/l)
Gasoline----- N.D.                50.0
=====
    
```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 107 %

```

=====
LAB #:      8-4362          CLIENT ID:      162272
=====
COMPOUND           RESULT           Detection
                   (ug/l)           Limit (ug/l)
Gasoline----- 1200                50.0
=====
    
```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 99 %

```

=====
LAB #:      8-4363          CLIENT ID:      162273
=====
COMPOUND           RESULT           Detection
                   (ug/l)           Limit (ug/l)
Gasoline----- 37000                2,500.0
=====
    
```

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 94 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor



MONITORING WELLS

4-22-88

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia/ Lewis
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 5030/8015
 Matrix: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 26-Apr-88
 Analysis Completion
 Date: 26-Apr-88
 Hold Time: 4 days

=====

LAB #:	8-4361	CLIENT ID:	162271	MW-5
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=====

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

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 107 %

=====

LAB #:	8-4362	CLIENT ID:	162272	MW-2
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	12000	50.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 99 %

=====

LAB #:	8-4363	CLIENT ID:	162273	MW-6
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Gasoline-----	37000	2,500.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 94 %

N.D.: Not Detected

Attia

 Analytical Supervisor

Report Date: 05-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Attia/ Lewis
WESCO JOB #: HLA 0831.53-L
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 9382,022.02
Date Sampled: 22-Apr-88
Site: City of Oakland, Wells
Date Received: 22-Apr-88
Extract/Digest/Purge
Date: 26-Apr-88
Analysis Completion
Date: 26-Apr-88
Hold Time: 4 days

=====
LAB #: 8-4364

CLIENT ID:

162274

MW-6

=====
COMPOUND

RESULT

Detection

(ug/l)

Limit (ug/l)

Gasoline----- 26000

2,500.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene

97 %

=====
LAB #: 8-4365

CLIENT ID:

162275

DW-1

=====
COMPOUND

RESULT

Detection

(ug/l)

Limit (ug/l)

Gasoline----- N.D.

50.0


QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene

105 %

N.D.: Not Detected




Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.53-L
METHOD: EPA 5030/8015
SAMPLES #:8-4361-4365

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	11	109
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	97 %	93 %	93 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 05-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Arntzen
WESCO JOB #: HLA 0831.53-L
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 9382,022.02
Date Sampled: 22-Apr-88
Site: City of Oakland, Wells
Date Received: 22-Apr-88
Extract/Digest/Purge
Date: 26-Apr-88
Analysis Completion
Date: 26-Apr-88
Hold Time: 4 days

=====

LAB #:	8-4366	CLIENT ID:	162276 <i>Blank</i>
--------	--------	------------	---------------------

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 105 %

() N.D.: Not Detected

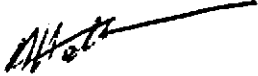
[Signature]

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.53-L
METHOD: EPA 5030/8015
SAMPLES #: 8-4366

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	11	99
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	106 %	96 %	95 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 25-Apr-88
 Analysis Completion
 Date: 25-Apr-88
 Hold Time: 3 days

=====
 LAB #: 8-4361 MATRIX: WATER
 CLIENT'S ID: 162271 MW-5
 =====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 107 %


=====
 LAB #: 8-4362 MATRIX: WATER
 CLIENT'S ID: 162272 MW-2
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	22	0.2
Toluene-----	3.2	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1.5	0.2
Xylene-----	4.5	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 99 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 602

Client Contract/PO:9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 25-Apr-88
 Analysis Completion
 Date: 25-Apr-88
 Hold Time: 3 days

=====

LAB #: 8-4363 MATRIX: WATER
 CLIENT'S ID: 162273 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	890	10.0
Toluene-----	4400	10.0
Chlorobenzene-----	N.D.	10.0
Ethylbenzene-----	240	10.0
Xylene-----	6100	10.0
1,3-Dichlorobenzene-----	3300	10.0
1,4-Dichlorobenzene-----	N.D.	10.0
1,2-Dichlorobenzene-----	N.D.	10.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 94 %

=====

LAB #: 8-4364 MATRIX: WATER
 CLIENT'S ID: 162274 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	520	10.0
Toluene-----	2700	10.0
Chlorobenzene-----	N.D.	10.0
Ethylbenzene-----	26	10.0
Xylene-----	2200	10.0
1,3-Dichlorobenzene-----	N.D.	10.0
1,4-Dichlorobenzene-----	N.D.	10.0
1,2-Dichlorobenzene-----	N.D.	10.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 97 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 25-Apr-88
 Analysis Completion
 Date: 25-Apr-88
 Hold Time: 3 days

=====
 LAB #: 8-4365

MATRIX: WATER

CLIENT'S ID: 162275

DW-1

=====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 105 %

N.D.: Not Detected


Attia

 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.53-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	5	97
Toluene-----	N.D.	7	107
p-Xylene-----	N.D.	7	99
QUALITY CONTROL DATA			
Surrogate Spike % recovery			
Fluorobenzene	97 %	93 %	93 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia/ Lewis
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 7

LAB #	8-4367	8-4368	
CLIENT'S ID	162271	MW-5	162272 MW-2
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	20	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	11.6	N.D.	0.5
Chloroform	4.8	3.5	0.5
1,1,1-Trichloroethane (TCA)	2.3	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.6	2.7	0.5
Trichloroethene (TCE)	N.D.	2400	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	0.9	7.5	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 %
 1,4-Dichlorobutane 100 %

88 %
 85 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia/ Lewis
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 7

=====

LAB #	8-4369		8-4370	
CLIENT'S ID	162273	MW-6	162274	MW-6

=====

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-----	0.7	N.D.	0.5
1,1-Dichloroethane-----	N.D.	N.D.	0.5
Chloroform-----	23	25	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)-----	11.8	14	0.5
Trichloroethene (TCE)-----	9300	11100	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-----	0.6	N.D.	0.5
Tetrachloroethene-----	22	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-Tetrachloro-----	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

MSB Confirmed w/ Lisa from Wastes 6-14-88

0.6 ug/L (162273) 4-22-88

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery		
Bromochloromethane	104 %	105 %
1,4-Dichlorobutane	102 %	91 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor

Report Date: 05-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia/ Lewis
 WESCO JOB #: HLA 0831.53-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 22-Apr-88
 Site: City of Oakland, Wells
 Date Received: 22-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 7

=====

LAB #	8-4371	8-4372
CLIENT'S ID	162275 DW-1	162276 Blank

=====

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	98 %	96 %
1,4-Dichlorobutane	102 %	99 %

N.D.: Not Detected

Attia

 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.53-L

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.	6	106
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	108
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene (M.S.)	N.D.	4	108
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	1	109
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	87 %	118 %	113 %
1,4-Dichlorobutane	93 %	112 %	116 %

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

112 11 4031.23-2

Job Number: 09392 022 02
 Name/Location: CITY OF OAKLAND
 Project Manager: DAVE LELAND

Samplers: WALKER TR
ERDMAN R
 Recorder: [Signature]
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER				DATE				STATION DESCRIPTION/NOTES	ANALYSIS REQUESTED					
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time	EPA 601/8010		EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Piltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.
23	X				X			08	1	6227288	04	22	1100	www	X	X	X	X	X	X	X	
23	X				X			08	1	6227388	04	22	1200	www	X	X	X	X	X	X	X	
23	X				X			08	1	6227489	04	22	1300	www	X	X	X	X	X	X	X	
23	X				X			08	1	6227588	04	22	1300	www	X	X	X	X	X	X	X	
23	X				X			08	1	6227688	04	22	1400	www	X	X	X	X	X	X	X	

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD			
Yr	Wk	Seq					RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
						5 day TAT				
DISPATCHED BY: (Signature)							DATE/TIME	RECEIVED FOR LAB BY: (Signature)		DATE/TIME
METHOD OF SHIPMENT							1715	[Signature]		4/22/88

Laboratory Copy Project Office Copy Field or Copy



WESCO Laboratories

Report Date:	25-May-88	Client Contract/PO:	09382,022.02
Client:	Harding Lawson Associates	Date Sampled:	28-Apr-88
Attn:	David Leland	Site:	City of Oakland, Wells
Sampled by:	Tim Walker	Date Received:	28-Apr-88
Submitted by:	Tim Walker	Extract/Digest/Purge	
Preservatives:	none	Date:	29-Apr-88
Analyst:	Lewis	Analysis Completion	
WESCO JOB #:	HLA 0831.60-L	Date:	29-Apr-88
Analytical Method:	EPA 5030/8015	Hold Time:	1 day
Matrix:	WATER		

=====

LAB #:	8-4486	CLIENT ID:	172881	MW-2
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	2000	100.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 97 %

=====

LAB #:	8-4488	CLIENT ID:	172882	MW-3
--------	--------	------------	--------	------

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 104 %

=====

LAB #:	8-4490	CLIENT ID:	172883	MW-3
--------	--------	------------	--------	------

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 102 %

=====

LAB #:	8-4492	CLIENT ID:	172884	MW-5
--------	--------	------------	--------	------

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 103 %

N.D.: Not Detected

Report Date: 25-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Lewis
WESCO JOB #: HLA 0831.60-L
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 09382,022.02
Date Sampled: 28-Apr-88
Site: City of Oakland, Wells
Date Received: 28-Apr-88
Extract/Digest/Purge
Date: 29-Apr-88
Analysis Completion
Date: 29-Apr-88
Hold Time: 1 day

=====

LAB #:	8-4494	CLIENT ID:	172885	MW-6
=====				
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		32000		25000

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

94 %

=====

LAB #:	8-4496	CLIENT ID:	172886	MW-78
=====				
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

100 %

=====

LAB #:	8-4498	CLIENT ID:	172887	MW-87
=====				
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

96 %

=====

LAB #:	8-4500	CLIENT ID:	172888	Blank
=====				
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

86 %

N.D.: Not Detected

D. Hall

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.60-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	6	109

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	102 %	92 %	102 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 25-May-88 Client Contract/PO: 09382,022.02
 Client: Harding Lawson Associates Date Sampled: 28-Apr-88
 Attn: David Leland Site: City of Oakland, Wells
 Sampled by: Tim Walker Date Received: 28-Apr-88
 Submitted by: Tim Walker Extract/Digest/Purge
 Preservatives: none Date: 29-Apr-88
 Analyst: Lewis Analysis Completion
 WESCO JOB #: HLA 0831.60-L Date: 29-Apr-88
 Analytical Method: EPA 602 Hold Time: 1 day

=====

LAB #: 8-4486 MATRIX: WATER
 CLIENT'S ID: 172881 MW-2

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	26.5	0.4
Toluene-----	3.6	0.4
Chlorobenzene-----	N.D.	0.4
Ethylbenzene-----	2.0	0.4
Xylene-----	5.5	0.4
1,3-Dichlorobenzene-----	N.D.	0.4
1,4-Dichlorobenzene-----	N.D.	0.4
1,2-Dichlorobenzene-----	N.D.	0.4

QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 97 %

=====

LAB #: 8-4488 MATRIX: WATER
 CLIENT'S ID: 172882 MW-3

=====

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

QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 104 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold Time: 1 day

LAB #: 8-4490

CLIENT'S ID: 172883 MW-3

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 102 %

LAB #: 8-4492

CLIENT'S ID: 172884 MW-5

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 103 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 25-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Lewis
WESCO JOB #: HLA 0831.60-L
Analytical Method: EPA 602

Client Contract/PO: 09382,022.02
Date Sampled: 28-Apr-88
Site: City of Oakland, Wells
Date Received: 28-Apr-88
Extract/Digest/Purge
Date: 29-Apr-88
Analysis Completion
Date: 29-Apr-88
Hold Time: 1 day

=====
LAB #: 8-4498
CLIENT'S ID: 17287 MW-8
MATRIX: WATER
=====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 96 %

=====
LAB #: 8-4500
CLIENT'S ID: 172888 Blank
MATRIX: WATER
=====

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 87 %

N.D.: Not Detected



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.60-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	8	100
Toluene-----	N.D.	5	112
p-Xylene-----	N.D.	15	113
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	102 %	92 %	102 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 1

=====

LAB #:	8-4487	8-4489
CLIENT'S ID:	MW-2 172881	MW-3 172882

=====

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.	50.0	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.	18.0	0.5
Chloroform-----	3.8	N.D.	0.5
1,1,1-Trichloroethane (TCA)-----	N.D.	0.9	0.5
Carbon Tetrachloride-----	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)-----	2.4	1.8	0.5
Trichloroethene (TCE)-----	2300	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-----	6.5	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	82 %	100 %
1,4-Dichlorobutane	81 %	89 %

N.D.: Not Detected

[Signature]

Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 1

=====
 LAB #: 8-4491 8-4493
 CLIENT'S ID: MW-3 172883 MW-5 172884
 =====

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	37.0	18.0	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	16.0	9.0	0.5
Chloroform	N.D.	3.7	0.5
1,1,1-Trichloroethane (TCA)	N.D.	2.2	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.5	1.1	0.5
Trichloroethene (TCE)	N.D.	0.6	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
 1,4-Dichlorobutane

75 % 81 %
 68 % 90 %

 N.D.: Not Detected

Attia

 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 1

LAB #: 8-4495
 CLIENT'S ID: MW-6 172885

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	200.0
Chloromethane	N.D.	200.0
Vinyl Chloride	N.D.	200.0
Bromomethane	N.D.	200.0
Chloroethane	N.D.	200.0
Trichlorofluoromethane	N.D.	200.0
1,1-Dichloroethene	N.D.	50.0
Methylene Chloride	N.D.	50.0
trans-1,2-Dichloroethene	N.D.	50.0
1,1-Dichloroethane	N.D.	50.0
Chloroform	N.D.	50.0
1,1,1-Trichloroethane (TCA)	N.D.	50.0
Carbon Tetrachloride	N.D.	50.0
1,2-Dichloroethane (EDC)	N.D.	50.0
Trichloroethene (TCE)	11600	50.0
1,2-Dichloropropane	N.D.	50.0
Bromodichloromethane	N.D.	50.0
2-Chloroethylvinyl ether	N.D.	50.0
trans-1,3-Dichloropropene	N.D.	50.0
cis-1,3-Dichloropropene	N.D.	50.0
1,1,2-Trichloroethane	N.D.	50.0
Tetrachloroethene	N.D.	50.0
Dibromochloromethane	N.D.	50.0
Chlorobenzene	N.D.	50.0
Bromoform	N.D.	50.0
1,1,2,2-Tetrachloroethane	N.D.	50.0
1,3-Dichlorobenzene	N.D.	50.0
1,4-Dichlorobenzene	N.D.	50.0
1,2-Dichlorobenzene	N.D.	50.0

QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Bromochloromethane 79 %
 1,4-Dichlorobutane 82 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 1

LAB #: MW-8 8-4497 MW-7 8-4499
 CLIENT'S ID: ~~MW-7~~ 172886 ~~MW-8~~ 172887

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	0.9	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.	2.6	0.5
Trichloroethene (TCE)	20.0	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
 1,4-Dichlorobutane

83 % 107 %
 77 % 92 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.60-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 28-Apr-88
 Site: City of Oakland, Wells
 Date Received: 28-Apr-88
 Extract/Digest/Purge
 Date: 29-Apr-88
 Analysis Completion
 Date: 29-Apr-88
 Hold time, days: 1

LAB #: 8-4501
 CLIENT'S ID: *Blank* 172888

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	1.2	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	7.4	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Bromochloromethane 89 %
 1,4-Dichlorobutane 90 %

N.D.: Not Detected

Attia

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.60-L

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	102
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.	8	101
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	5	103
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	6	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	70 %	98 %	97 %
1,4-Dichlorobutane	79 %	98 %	93 %

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



Analytical Supervisor



Lawson Associates
 Envir. Anal Services Division
 200 Rush Landing Road
 Novato, California 94947
 (415) 892-0821

CHAIN OF CUSTODY FORM

Job Number: 09382 022 02
 Name/Location: CITY OF OAKLAND
 Project Manager: DAVE DELAND

Samplers: WALKER TJ
LIEBERMAN GA
 Recorder: [Signature]
 (Signature Required)

ANALYSIS REQUESTED							
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Piltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				X			08	17	2881	88	04	28	
23	X				X			08	17	2882	88	04	28	
23	X				X			08	17	2883	88	04	28	
23	X				X			08	17	2884	88	04	28	
23	X				X			08	17	2885	88	04	28	
23	X				X			08	17	2886	88	04	28	
23	X				X			08	17	2887	88	04	28	
23	X				X			08	17	2888	88	04	28	

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

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)
[Signature]	4/24/88 1:00	[Signature]
METHOD OF SHIPMENT		4/28/88



WESCO Laboratories

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 5030/8015
 Matrix: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge Date: 06-May-88
 Analysis Completion Date: 06-May-88
 Hold Time: 1 day

=====

LAB #:	8-4683	CLIENT ID:	180512	MW-5
--------	--------	------------	--------	------

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 102 %

=====

LAB #:	8-4684	CLIENT ID:	180513	MW-2
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	1400	50.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 89 %

=====

LAB #:	8-4685	CLIENT ID:	180514	MW-6
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	38000	5,000.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 94 %

=====

LAB #:	8-4686	CLIENT ID:	180515	Blank
--------	--------	------------	--------	-------

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
 Fluorobenzene 102 %

N.D.: Not Detected

Handwritten signature

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Arntzen/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 5030/8015
 Matrix: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge
 Date: 06-May-88
 Analysis Completion
 Date: 06-May-88
 Hold Time: 1 day

```


=====
LAB #:      8-4687                CLIENT ID:      180516      MW-6
=====
COMPOUND                                RESULT          Detection
                                           (ug/l)         Limit (ug/l)
-----
Total Petroleum Hydrocarbons (light)----- 19000          2,500.0
-----
QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene                          93 %
  
```

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.65-L
 METHOD: EPA 5030/8015

```

=====
COMPOUND          Blank          Spike Duplicate    Spike
                  ug/l           % deviation        % recovery
-----
Gasoline-----   N.D.                2                  96
-----
QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene     89 %                97 %                98 %
  
```

N.D.: Not Detected



 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Farah/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge
 Date: 06-May-88
 Analysis Completion
 Date: 06-May-88
 Hold Time: 1 day

=====
 LAB #: 8-4683 MATRIX: WATER
 CLIENT'S ID: 180512 MW-5
 =====

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


 QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 99 %

=====
 LAB #: 8-4684 MATRIX: WATER
 CLIENT'S ID: 180513 MW-2
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	32.0	0.2
Toluene-----	4.3	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	1.7	0.2
Xylene-----	10.0	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

 QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 167 %*

N.D.: Not Detected
 * : Matrix Interference



 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Farah/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge Date: 06-May-88
 Analysis Completion Date: 06-May-88
 Hold Time: 1 day

=====

LAB #: 8-4685 MATRIX: WATER
 CLIENT'S ID: 180514 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	585	10.0
Toluene-----	3740	10.0
Chlorobenzene-----	N.D.	10.0
Ethylbenzene-----	200	10.0
Xylene-----	6930	10.0
1,3-Dichlorobenzene-----	N.D.	10.0
1,4-Dichlorobenzene-----	N.D.	10.0
1,2-Dichlorobenzene-----	N.D.	10.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	108 %

=====

LAB #: 8-4686 MATRIX: WATER
 CLIENT'S ID: 180515 Blank

=====

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

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Fluorobenzene	97 %

N.D.: Not Detected

[Signature]

 Analytical Supervisor

Report Date: 25-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Farah/Lewis
WESCO JOB #: HLA 0831.65-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 05-May-88
Site: City of Oakland
Date Received: 05-May-88
Extract/Digest/Purge
Date: 06-May-88
Analysis Completion
Date: 06-May-88
Hold Time: 1 day

=====
LAB #: 8-4687 MATRIX: WATER
CLIENT'S ID: 180516 MW-6
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	365	10.0
Toluene-----	2370	10.0
Chlorobenzene-----	N.D.	10.0
Ethylbenzene-----	90	10.0
Xylene-----	4330	10.0
1,3-Dichlorobenzene-----	N.D.	10.0
1,4-Dichlorobenzene-----	N.D.	10.0
1,2-Dichlorobenzene-----	N.D.	10.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 104 %



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.65-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	4	96
Toluene-----	N.D.	1	109
p-Xylene-----	N.D.	2	100

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	89 %	97 %	98 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 25-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.65-L
Analytical Method: EDB by EPA 601
MATRIX: WATER

Client Contract/PO: 9382,022.02
Date Sampled: 05-May-88
Site: City of Oakland
Date Received: 05-May-88
Extract/Digest/Purge
Date: 06-May-88
Analysis Completion
Date: 06-May-88
Hold time, days: 1

=====

LAB #: 8-4682

CLIENT'S ID: 180511 NE Sump

=====


COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide-----	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery

Bromochloromethane 105 %
1,4-Dichlorobutane 103 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Farah/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge
 Date: 06-May-88
 Analysis Completion
 Date: 06-May-88
 Hold time, days: 1

LAB #: 8-4683 8-4684
 CLIENT'S ID: MW-5 180512 MW-2 180513

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	22.8	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	9.9	N.D.	0.5
Chloroform	4.3	1.6	0.5
1,1,1-Trichloroethane (TCA)	1.5	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	0.9	1.4	0.5
Trichloroethene (TCE)	0.6	1100	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.	3.2	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
 1,4-Dichlorobutane

87 % 94 %
 89 % 82 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Farah/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9362,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge
 Date: 06-May-88
 Analysis Completion
 Date: 06-May-88
 Hold time, days: 1


LAB #: 8-4685 8-4687
 CLIENT'S ID: MW-6 180514 MW-6 180516

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	100.0
Chloromethane	N.D.	N.D.	100.0
Vinyl Chloride	N.D.	N.D.	100.0
Bromomethane	N.D.	N.D.	100.0
Chloroethane	N.D.	N.D.	100.0
Trichlorofluoromethane	N.D.	N.D.	100.0
1,1-Dichloroethene	N.D.	N.D.	25.0
Methylene Chloride	N.D.	N.D.	25.0
trans-1,2-Dichloroethene	N.D.	N.D.	25.0
1,1-Dichloroethane	N.D.	N.D.	25.0
Chloroform	N.D.	N.D.	25.0
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	25.0
Carbon Tetrachloride	N.D.	N.D.	25.0
1,2-Dichloroethane (EDC)	N.D.	N.D.	25.0
Trichloroethene (TCE)	14100	11900	25.0
1,2-Dichloropropane	N.D.	N.D.	25.0
Bromodichloromethane	N.D.	N.D.	25.0
2-Chloroethylvinyl ether	N.D.	N.D.	25.0
trans-1,3-Dichloropropene	N.D.	N.D.	25.0
cis-1,3-Dichloropropene	N.D.	N.D.	25.0
1,1,2-Trichloroethane	N.D.	N.D.	25.0
Tetrachloroethene	N.D.	N.D.	25.0
Dibromochloromethane	N.D.	N.D.	25.0
Chlorobenzene	N.D.	N.D.	25.0
Bromoform	N.D.	N.D.	25.0
1,1,2,2-Tetrachloroethane	N.D.	N.D.	25.0
1,3-Dichlorobenzene	N.D.	N.D.	25.0
1,4-Dichlorobenzene	N.D.	N.D.	25.0
1,2-Dichlorobenzene	N.D.	N.D.	25.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery		
Bromochloromethane	84 %	93 %
1,4-Dichlorobutane	81 %	94 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 25-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Farah/Lewis
 WESCO JOB #: HLA 0831.65-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 05-May-88
 Site: City of Oakland
 Date Received: 05-May-88
 Extract/Digest/Purge
 Date: 06-May-88
 Analysis Completion
 Date: 06-May-88
 Hold time, days: 1

LAB #: 8-4686
 CLIENT'S ID: *Blank* 180515

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Bromochloromethane 86 %
 1,4-Dichlorobutane 88 %

N.D.: Not Detected

Atwell

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601

HLA 0831.65-L

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.	5	106
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.	5	107
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	6	105
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	4	107
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	78 %	104 %	104 %
1,4-Dichlorobutane	84 %	106 %	108 %

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



 Analytical Supervisor



WESCO Laboratories

Report Date: 30-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge Date: 13-May-88
 Analysis Completion Date: 13-May-88
 Hold time: 2 days

LAB #: 8-4806

MATRIX: WATER


CLIENT'S ID: 191111 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	0.8	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	7.5	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	3.8	0.5
Trichloroethene (TCE)	5200	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	10.6	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	82 %
1,4-Dichlorobutane	83 %

.D.: Not Detected


 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 ttn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold time: 2 days

LAB #: 8-4808

MATRIX: WATER

CLIENT'S ID: 191112 MW-3

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	48	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	17	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	1.0	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	2.1	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	83 %
1,4-Dichlorobutane	85 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold time: 2 days

LAB #: 8-4810

MATRIX: WATER

CLIENT'S ID: 191113 MW-5

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	19	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	9.8	0.5
Chloroform	4.2	0.5
1,1,1-Trichloroethane (TCA)	2.4	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	1.3	0.5
Trichloroethene (TCE)	0.7	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	100 %
1,4-Dichlorobutane	87 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 ttn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold time: 2 days


 LAB #: 8-4812
 CLIENT'S ID: 191114 MW-8⁷ MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	3.5	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

 QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	87 %
1,4-Dichlorobutane	76 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 30-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 23-May-88
 Analysis Completion
 Date: 23-May-88
 Hold time: 12 days

LAB #: 8-4814

MATRIX: WATER

CLIENT'S ID: 191115 MW-5

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	18	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	7.5	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	2.0	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	74 %
1,4-Dichlorobutane	98 %

N.D.: Not Detected

Wells
 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 23-May-88
 Analysis Completion
 Date: 23-May-88
 Hold time: 12 days

LAB #: 8-4816

CLIENT'S ID: 191116 MW-78

MATRIX: WATER

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	10.0	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	95 %
1,4-Dichlorobutane	91 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 23-May-88
 Analysis Completion
 Date: 23-May-88
 Hold time: 12 days

LAB #: 8-4810

MATRIX: WATER

CLIENT'S ID: 191117 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	11000	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	91 %
1,4-Dichlorobutane	76 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 27-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 601

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold time: 2 days

LAB #: 8-4820

MATRIX: WATER

CLIENT'S ID: 191118 *Blank*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	2.0
Chloromethane	N.D.	2.0
Vinyl Chloride	N.D.	2.0
Bromomethane	N.D.	2.0
Chloroethane	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0
1,1-Dichloroethene	N.D.	0.5
Methylene Chloride	35	0.5
trans-1,2-Dichloroethene	N.D.	0.5
1,1-Dichloroethane	N.D.	0.5
Chloroform	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	0.5
Trichloroethene (TCE)	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5
Bromodichloromethane	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5
Tetrachloroethene	N.D.	0.5
Dibromochloromethane	N.D.	0.5
Chlorobenzene	N.D.	0.5
Bromoform	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	0.5
1,3-Dichlorobenzene	N.D.	0.5
1,4-Dichlorobenzene	N.D.	0.5
1,2-Dichlorobenzene	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery
Bromochloromethane	87 %
1,4-Dichlorobutane	84 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 30-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Evans/Walker
Submitted by: David Evans
Preservatives: none
Analyst: Lewis/Attia
WESCO JOB #: HLA 0831.67
Analytical Method: EDB by EPA 601

Client Contract/PO: 9382.022.02
Date Sampled: 11-May-88
Site: City of Oakland, Wells
Date Received: 11-May-88
Extract/Digest/Purge
Date: 13-May-88
Analysis Completion
Date: 13-May-88
Hold time: 2 days

LAB #: 8-4806 MATRIX: WATER
CLIENT'S ID: 191111 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	0.5

QUALITY CONTROL DATA
Surrogate Spike Percent Recovery
Bromochloromethane 82 %
1,4-Dichlorobutane 83 %

LAB #: 8-4818 MATRIX: WATER
CLIENT'S ID: 191117 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	N.D.	0.5

QUALITY CONTROL DATA
Surrogate Spike Percent Recovery
Bromochloromethane 91 %
1,4-Dichlorobutane 76 %

N.D.: Not Detected



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.67

METHOD: EPA 601

SAMPLES #: 8-4806, 4808, 4810, 4812, 4820

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	96
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.	3	102
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	5	101
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	1	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	85 %	100 %	101 %
1,4-Dichlorobutane	87 %	96 %	94 %

N.D.: Not Detected

N.S.: Not Spiked

Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.67

METHOD: EPA 601

AMPLES #: 8-4814, 4816, 4818

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	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.	33	107
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	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.	18	83
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 %	97 %
1,4-Dichlorobutane	106 %	81 %	85 %

N.D.: Not Detected

N.S.: Not Spiked



Analytical Supervisor

Report Date: 30-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Evans/Walker
Submitted by: David Evans
Preservatives: none
Analyst: Attia/Lewis
WESCO JOB #: HLA 0831.67
Analytical Method: EPA 602

Client Contract/PO: 9382.022.02
Date Sampled: 11-May-88
Site: City of Oakland, Wells
Date Received: 11-May-88
Extract/Digest/Purge
Date: 13-May-88
Analysis Completion
Date: 13-May-88
Hold Time: 2 days

LAB #: 8-4807

MATRIX: WATER

CLIENT'S ID: 191111 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	8.7	0.2
Toluene-----	0.6	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	N.D.	0.2
Xylene-----	1.0	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 102 %

LAB #: 8-4809

MATRIX: WATER

CLIENT'S ID: 191112 MW-3

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 97 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 30-May-88
 Client: Harding Lawson Associates
 ttn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Attia/Lewis
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 602

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold Time: 2 days

LAB #: 8-4815 MATRIX: WATER
 CLIENT'S ID: 191115 MW-5

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

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 100 %

LAB #: 8-4817 MATRIX: WATER
 CLIENT'S ID: 191116 MW-78

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

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 99 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 30-May-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Evans/Walker
 Submitted by: David Evans
 Preservatives: none
 Analyst: Attia/Lewis
 WESCO JOB #: HLA 0831.67
 Analytical Method: EPA 602

Client Contract/PO: 9382.022.02
 Date Sampled: 11-May-88
 Site: City of Oakland, Wells
 Date Received: 11-May-88
 Extract/Digest/Purge
 Date: 13-May-88
 Analysis Completion
 Date: 13-May-88
 Hold Time: 2 days

LAB #: 8-4819 MATRIX: WATER
 CLIENT'S ID: 191117 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	310	10.0
Toluene	3100	10.0
Chlorobenzene	N.D.	10.0
Ethylbenzene	45	10.0
Xylene	4700	10.0
1,3-Dichlorobenzene	N.D.	10.0
1,4-Dichlorobenzene	N.D.	10.0
1,2-Dichlorobenzene	N.D.	10.0


QUALITY CONTROL DATA
 Surrogate Spike
 Fluorobenzene Percent Recovery 80 %

LAB #: 8-4821 MATRIX: WATER
 CLIENT'S ID: 191118 Blank

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

QUALITY CONTROL DATA
 Surrogate Spike
 Fluorobenzene Percent Recovery 94 %

N.D.: Not Detected


 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.67
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	7	102
Toluene-----	N.D.	1	107
p-Xylene-----	N.D.	3	109

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	91 %	111 %	109 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 30-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Evans/Walker
Submitted by: David Evans
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.67
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 9382.022.02
Date Sampled: 11-May-88
Site: City of Oakland, Wells
Date Received: 11-May-88
Extract/Digest/Purge
Date: 13-May-88
Analysis Completion
Date: 13-May-88
Hold Time: 2 days

=====

LAB #:	8-4807	CLIENT ID:	191111	MW-2
=====		=====		
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		1400		50.0

QUALITY CONTROL DATA
Surrogate Spike & Recovery
Fluorobenzene 102 %

=====

LAB #:	8-4809	CLIENT ID:	191112	MW-3
=====		=====		
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike & Recovery
Fluorobenzene 97 %

=====

LAB #:	8-4811	CLIENT ID:	191113	MW-5
=====		=====		
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike & Recovery
Fluorobenzene 99 %

=====

LAB #:	8-4813	CLIENT ID:	191114	MW-77
=====		=====		
COMPOUND		RESULT		Detection
		(ug/l)		Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----		N.D.		50.0

QUALITY CONTROL DATA
Surrogate Spike & Recovery
Fluorobenzene 95 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 30-May-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Evans/Walker
Submitted by: David Evans
Preservatives: none
Analyst: Attia
WESCO JOB #: HLA 0831.67
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 9382.022.02
Date Sampled: 11-May-88
Site: City of Oakland, Wells
Date Received: 11-May-88
Extract/Digest/Purge
Date: 13-May-88
Analysis Completion
Date: 13-May-88
Hold Time: 2 days

=====

LAB #: 8-4815 CLIENT ID: 191115 MW-5

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 100 %

=====

LAB #: 8-4817 CLIENT ID: 191116 MW-78

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 99 %

=====

LAB #: 8-4819 CLIENT ID: 191117 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	34000	2,500.0

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 80 %

=====

LAB #: 8-4821 CLIENT ID: 191118 Blank

=====

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 94 %

N.D.: Not Detected

Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.67
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	6	99

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	91 %	111 %	109 %

N.D.: Not Detected



Analytical Supervisor



WESCO Laboratories

Report Date: 02-Jun-88 Client Contract/PO: 9382.022.02
 Client: Harding Lawson Associates Date Sampled: 18-May-88
 Attn: David Leland Site: City of Oakland, Wells
 Sampled by: Larkin/Evans **RECEIVED** Date Received: 18-May-88
 Submitted by: C. Larkin Extract/Digest/Purge Date: 19-May-88
 Preservatives: none Analysis Completion Date: 19-May-88
 Analyst: Arntzer Analysis Completion Date: 19-May-88
 WESCO JOB #: HLA 0811.68-L Date: 19-May-88
 Analytical Method: EPA 504.2 Hold Time: 1 day
 Matrix: WATER

RECEIVED
 JUN - 6 1988
 HARDING LAWSON ASSOC.

=====

LAB #:	8-5149	CLIENT ID:	201711	MW-2
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	660	100.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 101 %

=====

LAB #:	8-5150	CLIENT ID:	201712	MW-5
--------	--------	------------	--------	------

=====

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 #:	8-5151	CLIENT ID:	201713	MW-6
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	25000	5,000.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 92 %

=====

LAB #:	8-5152	CLIENT ID:	201714	MW-6
--------	--------	------------	--------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	26000	2,500.0

QUALITY CONTROL DATA
 Surrogate Spike & Recovery
 Fluorobenzene 89 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor


BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.68-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	2	105

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	98 %	88 %	82 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 02-Jun-88
 Client: Harding Lawson Associates
 :tn: David Leland
 Sampled by: Larkin/Evans
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.68-L
 Analytical Method: EPA 602

Client Contract/PO: 9382.022.02
 Date Sampled: 18-May-88
 Site: City of Oakland, Wells
 Date Received: 18-May-88
 Extract/Digest/Purge
 Date: 19-May-88
 Analysis Completion
 Date: 19-May-88
 Hold Time: 1 day

LAB #: 8-5149

MATRIX: WATER

CLIENT'S ID: 201711 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	20	0.4
Toluene-----	2.1	0.4
Chlorobenzene-----	N.D.	0.4
Ethylbenzene-----	N.D.	0.4
Xylene-----	4.5	0.4
1,3-Dichlorobenzene-----	N.D.	0.4
1,4-Dichlorobenzene-----	N.D.	0.4
1,2-Dichlorobenzene-----	N.D.	0.4

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 101 %

LAB #: 8-5150

MATRIX: WATER

CLIENT'S ID: 201712 MW-5

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

QUALITY CONTROL DATA

Surrogate Spike
 Fluorobenzene Percent Recovery
 106 %

N.D.: Not Detected

Atella
 Analytical Supervisor

Report Date: 02-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Larkin/Evans
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.68-L
 Analytical Method: EPA 602

Client Contract/PO: 9382.022.02
 Date Sampled: 18-May-88
 Site: City of Oakland, Wells
 Date Received: 18-May-88
 Extract/Digest/Purge Date: 19-May-88
 Analysis Completion Date: 19-May-88
 Hold Time: 1 day

LAB #: 8-5151

MATRIX: WATER

CLIENT'S ID: 201713 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	150	20.0
Toluene	1600	20.0
Chlorobenzene	N.D.	20.0
Ethylbenzene	40	20.0
Xylene	3000	20.0
1,3-Dichlorobenzene	N.D.	20.0
1,4-Dichlorobenzene	N.D.	20.0
1,2-Dichlorobenzene	N.D.	20.0

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 92 %

LAB #: 8-5152

MATRIX: WATER

CLIENT'S ID: 201714 MW-6

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	200	10.0
Toluene	1800	10.0
Chlorobenzene	N.D.	10.0
Ethylbenzene	28	10.0
Xylene	3300	10.0
1,3-Dichlorobenzene	N.D.	10.0
1,4-Dichlorobenzene	N.D.	10.0
1,2-Dichlorobenzene	N.D.	10.0

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 89 %


N.D.: Not Detected

A. Hall
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.68-L
METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	7	102
Toluene-----	N.D.	2	104
p-Xylene-----	N.D.	2	104
QUALITY CONTROL DATA			
Surrogate Spike % Recovery			
Fluorobenzene	98 %	88 %	82 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 02-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Larkin/Evans
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.68-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382.022.02
 Date Sampled: 18-May-88
 Site: City of Oakland, Wells
 Date Received: 18-May-88
 Extract/Digest/Purge Date: 19-May-88
 Analysis Completion Date: 19-May-88
 Hold time, days: 1

=====

LAB #:	8-5154	8-5155	
CLIENT'S ID:	MW-2 201711	201712	MW-5

=====

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.	41	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.	11	0.5
Chloroform-----	2.3	4.5	0.5
1,1,1-Trichloroethane (TCA)-----	N.D.	2.4	0.5
Carbon Tetrachloride-----	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)-----	1.2	2.0	0.5
Trichloroethene (TCE)-----	1900	1.2	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-----	4.5	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	96 %	100 %
1,4-Dichlorobutane	81 %	85 %

N.D.: Not Detected

Att

 Analytical Supervisor

METHOD: EPA 601

SAMPLES #: 8-5154, 5155

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	101
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	94
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	2	95
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	2	88
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	73 %	105 %	105 %
1,4-Dichlorobutane	113 %	93 %	93 %

N.D.: Not Detected

N.S.: Not Spiked

[Signature]
 Analytical Supervisor

Report Date: 02-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Larkin/Evans
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Arntzen
 WESCO JOB #: HLA 0831.68-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382.022.02
 Date Sampled: 18-May-88
 Site: City of Oakland, Wells
 Date Received: 18-May-88
 Extract/Digest/Purge
 Date: 19-May-88
 Analysis Completion
 Date: 19-May-88
 Hold time, days: 1

LAB #: 8-5156 8-5157
 CLIENT'S ID: MW-6 201713 201714 MW-6

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	200.0
Chloromethane	N.D.	N.D.	200.0
Vinyl Chloride	N.D.	N.D.	200.0
Bromomethane	N.D.	N.D.	200.0
Chloroethane	N.D.	N.D.	200.0
Trichlorofluoromethane	N.D.	N.D.	200.0
1,1-Dichloroethene	N.D.	0.8	50.0
Methylene Chloride	N.D.	N.D.	50.0
trans-1,2-Dichloroethene	1.7	2.0	50.0
1,1-Dichloroethane	N.D.	N.D.	50.0
Chloroform	22.8	21.8	50.0
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	50.0
Carbon Tetrachloride	N.D.	N.D.	50.0
1,2-Dichloroethane (EDC)	14	17	50.0
Trichloroethene (TCE)	8900	6900	50.0
1,2-Dichloropropane	N.D.	N.D.	50.0
Bromodichloromethane	N.D.	N.D.	50.0
2-Chloroethylvinyl ether	N.D.	N.D.	50.0
trans-1,3-Dichloropropene	N.D.	N.D.	50.0
cis-1,3-Dichloropropene	N.D.	N.D.	50.0
1,1,2-Trichloroethane	1.7	N.D.	50.0
Tetrachloroethene	82	78	50.0
Dibromochlorometh	N.D.	N.D.	50.0
Chlorobenzene	N.D.	N.D.	50.0
Bromoform	N.D.	N.D.	50.0
1,1,2,2-Tetrachlo	N.D.	N.D.	50.0
1,3-Dichlorobenze	N.D.	N.D.	50.0
1,4-Dichlorobenze	N.D.	N.D.	50.0
1,2-Dichlorobenze	N.D.	N.D.	50.0

*MSB Confirmed 6-4-88
 with Lisa of Wastco
 1,1,2-Trichloroethane
 1.7 ug/L on 5/18/88
 (201713)*

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery		
Bromochloromethane	124 %	128 %
1,4-Dichlorobutane	95 %	103 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB

HLA 0831.68-L

METHOD: EPA 601

SAMPLES #: 8-5156, 5157

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	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.	2	118
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(M.S.)	N.D.	3	96
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(M.S.)	N.D.	3	96
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	80 %	103 %	98 %
1,4-Dichlorobutane	108 %	95 %	94 %

N.D.: Not Detected

N.S.: Not Spiked

Alfatta

Analytical Supervisor



WESCO Laboratories

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge Date: 31-May-88
 Analysis Completion Date: 31-May-88
 Hold Time: 4 days

LAB #: 8-5373

CLIENT'S ID: 212701

MW-3

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 88 %

LAB #: 8-5374

CLIENT'S ID: 212702

MW-5

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Fluorobenzene Percent Recovery 94 %

N.D.: Not Detected

Analytical Supervisor

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge
 Date: 31-May-88
 Analysis Completion
 Date: 31-May-88
 Hold Time: 4 days

LAB #: 8-5375

CLIENT'S ID: 212703 MW-8

MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 95 %

LAB #: 8-5376

CLIENT'S ID: 212704 MW-7


MATRIX: WATER

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 96 %

N.D.: Not Detected


 Analytical Supervisor

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge
 Date: 31-May-88
 Analysis Completion
 Date: 31-May-88
 Hold Time: 4 days

LAB #: 8-5377 MATRIX: WATER
 CLIENT'S ID: 212705 MW-7

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

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 95 %

LAB #: 8-5378 MATRIX: WATER
 CLIENT'S ID: 212706 MW-2

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	0.3 ✓	0.2
Toluene-----	1.2 ✓	0.2
Chlorobenzene-----	N.D.	0.2 ✓
Ethylbenzene-----	N.D.	0.2 ✓
Xylene-----	2.6 ✓	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 113 %

N.D.: Not Detected

Attia
 Analytical Supervisor

Report Date: 07-Jun-88 Client Contract/PO: 9382,022.02
 Client: Harding Lawson Associates Date Sampled: 27-May-88
 Attn: David Leland Site: City of Oakland, Wells
 Sampled by: Tim Walker Date Received: 27-May-88
 Submitted by: Tim Walker Extract/Digest/Purge
 Preservatives: none Date: 31-May-88
 Analyst: Lewis/Attia Analysis Completion
 WESCO JOB #: HLA 0831.71-L Date: 31-May-88
 Analytical Method: EPA 602 Hold Time: 4 days

LAB #: 8-5379 MATRIX: WATER
 CLIENT'S ID: 212707 *NW-6*

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	740	20.0
Toluene	7300	20.0
Chlorobenzene	N.D.	20.0
Ethylbenzene	740	20.0
Xylene	13000	20.0
1,3-Dichlorobenzene	N.D.	20.0
1,4-Dichlorobenzene	N.D.	20.0
1,2-Dichlorobenzene	N.D.	20.0

QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 98 %

LAB #: 8-5380 MATRIX: WATER
 CLIENT'S ID: 212708 *Blank*

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

QUALITY CONTROL DATA
 Surrogate Spike Percent Recovery
 Fluorobenzene 97 %

N.D.: Not Detected

Attia
 Analytical Supervisor

QUALITY CONTROL DATA

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.71-L

METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	1	104
Toluene-----	N.D.	1	107
p-Xylene-----	N.D.	1	105

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 115 % 101 % 101 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 07-Jun-88
Client: Harding Lawson Associates
Attn: David Leland
Sampled by: Tim Walker
Submitted by: Tim Walker
Preservatives: none
Analyst: Lewis/Attia
WESCO JOB #: HLA 0831.71-L
Analytical Method: EPA 5030/8015
Matrix: WATER

Client Contract/PO: 9382,022.02
Date Sampled: 27-May-88
Site: City of Oakland, Wells
Date Received: 27-May-88
Extract/Digest/Purge
Date: 31-May-88
Analysis Completion
Date: 31-May-88
Hold Time: 4 days

LAB #: 8-5373 CLIENT ID: 212701 MW-3

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 #: 8-5374 CLIENT ID: 212702 MW-5

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 95 %

LAB #: 8-5375 CLIENT ID: 212703 MW-8

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene 92 %

LAB #: 8-5376 CLIENT ID: 212704 MW-7

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

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

N.D.: Not Detected

109
Attia
Analytical Supervisor

Report Date: 07-Jun-88 Client Contract/PO: 9382,022.02
 Client: Harding Lawson Associates Date Sampled: 27-May-88
 Attn: David Leland Site: City of Oakland, Wells
 Sampled by: Tim Walker Date Received: 27-May-88
 Submitted by: Tim Walker Extract/Digest/Purge
 Preservatives: none Date: 31-May-88
 Analyst: Lewis/Attia Analysis Completion
 WESCO JOB #: HLA 0831.71-L Date: 31-May-88
 Analytical Method: EPA 5030/8015 Hold Time: 4 days
 Matrix: WATER

=====

LAB #: 8-5377 CLIENT ID: 212705 MW-7

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 109 %

=====

LAB #: 8-5378 CLIENT ID: 212706 MW-2

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	1700	50.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 100 %

=====

LAB #: 8-5379 CLIENT ID: 212707 MW-6

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	36000	5,000.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 100 %

=====

LAB #: 8-5380 CLIENT ID: 212708 Blank

=====

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 101 %

N.D.: Not Detected

Analytical Supervisor *Attia*

QUALITY CONTROL DATA
BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.71-L
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	5	84

QUALITY CONTROL DATA

Surrogate Spike % Recovery		
Fluorobenzene 96 %	82 %	81 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge Date: 31-May-88
 Analysis Completion Date: 31-May-88
 Hold time, days: 4

LAB #: 8-5373 8-5374
 CLIENT'S ID: MW-3 212701 212702 MW-5

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	24	20	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	0.5
1,1-Dichloroethane	10	9.5	0.5
Chloroform	0.6	4.0	0.5
1,1,1-Trichloroethane (TCA)	0.6	1.7	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	0.9	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 83 %
 1,4-Dichlorobutane 71 %

90 %
 73 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022,02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge Date: 31-May-88
 Analysis Completion Date: 31-May-88
 Hold time, days: 4

LAB #: MW-7 8-5375 MW-8 8-5376 MW-8
 CLIENT'S ID: MW-8 212703 212704 MW-7

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.	1.7	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)	1.4	N.D.	0.5
Trichloroethene (TCE)	N.D.	13	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	87 %	84 %
1,4-Dichlorobutane	81 %	71 %

N.D.: Not Detected

Water levels indicate that samples
 and reported results for
 MW-7 and MW-8 for this
 date were reversed. *DFL*
 Analytical Supervisor *A. Hall*

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge Date: 31-May-88
 Analysis Completion Date: 31-May-88
 Hold time, days: 4

LAB #: MW-8 8-5377 8-5378
 CLIENT'S ID: MW-7 212705 212706 MW-2

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.	1.1	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	1.8	7.0	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.	42.3	0.5
Trichloroethene (TCE)	11	3100	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.	5.6	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	87 %	88 %
1,4-Dichlorobutane	65 %	105 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor

Report Date: 07-Jun-88
 Client: Harding Lawson Associates
 Attn: David Leland
 Sampled by: Tim Walker
 Submitted by: Tim Walker
 Preservatives: none
 Analyst: Lewis/Attia
 WESCO JOB #: HLA 0831.71-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 27-May-88
 Site: City of Oakland, Wells
 Date Received: 27-May-88
 Extract/Digest/Purge
 Date: 31-May-88
 Analysis Completion
 Date: 31-May-88
 Hold time, days: 4

LAB #: 8-5379 8-5380
 CLIENT'S ID: MW-G 212707 212708 Blank

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	0.5	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	1.0	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	18	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)	5.4	N.D.	0.5
Trichloroethene (TCE)	6700	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	0.6	N.D.	0.5
Tetrachloroethene	18	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 79 %
 1,4-Dichlorobutane 77 %

85 %
 72 %

N.D.: Not Detected

Attia
 Analytical Supervisor

QUALITY CONTROL DATA

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.71-L

METHOD: EPA 601

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.	4	115
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	109
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene (M.S.)	N.D.	3	113
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	1	116
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 %	106 %	106 %
1,4-Dichlorobutane	101 %	104 %	103 %

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

[Signature]

 Analytical Supervisor



Environmental Services Division
 200 Ross Landing Road
 Novato, California 94947
 (415) 892-0821

CHAIN OF CUSTODY FORM

Job Number: CITY OF OAKLAND
 Name/Location: 09382 022 CR
 Project Manager: DAVE LELAND

Samplers: WALKER TJ
EVANS DM
 Recorder: [Signature]
 (Signature Required)

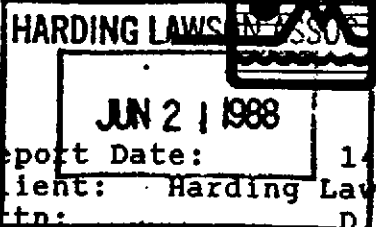
CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
3	X				X			08	21	2701	08	05	21	
3	X				X			08	21	2702	08	05	21	
3	X				X			08	21	2703	08	05	21	
3	X				X			08	21	2704	08	05	21	
3	X				X			08	21	2705	08	05	21	
3	X				X			08	21	2706	08	05	21	
3	X				X			08	21	2707	08	05	21	
3	X				X			08	21	2708	08	05	21	

STATION DESCRIPTION/
NOTES

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

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

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
[Signature]	[Signature]	
[Signature]	[Signature]	
[Signature]	[Signature]	
[Signature]	[Signature]	
DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature) DATE/TIME
[Signature]	5/27/08 2:00	[Signature] 5/27/08 2:00
METHOD OF SHIPMENT		



WESCO Laboratories

Report Date: 14-Jun-88
 Client: Harding Lawson Associates
 Attn: D. Leland
 Sampled by: Larkin/Lieberman
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Lewis
 WESCO JOB #: HLA 0831.73-L
 Analytical Method: EPA 5030/8015
 Matrix: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 03-Jun-88
 Site: City of Oakland, Well
 Date Received: 03-Jun-88
 Extract/Digest/Purge Date: 07-Jun-88
 Analysis Completion Date: 07-Jun-88
 Hold Time: 4 days

=====

LAB #:	8-5573	CLIENT ID:	88220302	MW-2
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=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	2700 ✓	50.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 113 %

=====

LAB #:	8-5574	CLIENT ID:	88220303	MW-6
--------	--------	------------	----------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	*39000 ✓	1,000.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 120 %

=====

LAB #:	8-5575	CLIENT ID:	88220304	MW-6
--------	--------	------------	----------	------

=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	32000 ✓	1,000.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 105 %

N.D.: Not Detected

[Signature]
 Analytical Supervisor


QUALITY CONTROL DATA
BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB #
METHOD: EPA 5030/8015

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	12	92

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	104 %	83 %	85 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Jun-88
 Client: Harding Lawson Associates
 Attn: D. Leland
 Sampled by: Larkin/Lieberman
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Lewis
 WESCO JOB #: HLA 0831.73-L
 Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
 Date Sampled: 03-Jun-88
 Site: City of Oakland, Well
 Date Received: 03-Jun-88
 Extract/Digest/Purge
 Date: 07-Jun-88
 Analysis Completion
 Date: 07-Jun-88
 Hold Time: 4 days

=====
 LAB #: 8-5573 MATRIX: WATER
 CLIENT'S ID: 220302 MW-2
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	39	0.2
Toluene-----	4.7	0.2
Chlorobenzene-----	N.D.	0.2
Ethylbenzene-----	0.7	0.2
Xylene-----	0.0	0.2
1,3-Dichlorobenzene-----	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2

QUALITY CONTROL DATA
 Surrogate Spike
 Fluorobenzene Percent Recovery 101 %

=====
 LAB #: 8-5574 MATRIX: WATER
 CLIENT'S ID: 220303 MW-6
 =====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	260	20.0
Toluene-----	2500	20.0
Chlorobenzene-----	N.D.	20.0
Ethylbenzene-----	320	20.0
Xylene-----	5100	20.0
1,3-Dichlorobenzene-----	N.D.	20.0
1,4-Dichlorobenzene-----	N.D.	20.0
1,2-Dichlorobenzene-----	N.D.	20.0

QUALITY CONTROL DATA
 Surrogate Spike
 Fluorobenzene Percent Recovery 94 %

N.D.: Not Detected

 Analytical Supervisor

Report Date: 13-Jun-88
Client: Harding Lawson Associates
Attn: D. Leland
Sampled by: Larkin/Lieberman
Submitted by: C. Larkin
Preservatives: none
Analyst: Lewis
WESCO JOB #: HLA 0831.73-L
Analytical Method: EPA 602

Client Contract/PO: 9382,022.02
Date Sampled: 03-Jun-88
Site: City of Oakland, Well
Date Received: 03-Jun-88
Extract/Digest/Purge
Date: 07-Jun-88
Analysis Completion
Date: 07-Jun-88
Hold Time: 4 days

LAB #: 8-5575

CLIENT'S ID:

220304

MW-6

MATRIX: WATER


COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	260	20.0
Toluene-----	2300	20.0
Chlorobenzene-----	N.D.	20.0
Ethylbenzene-----	290	20.0
Xylene-----	4800	20.0
1,3-Dichlorobenzene-----	N.D.	20.0
1,4-Dichlorobenzene-----	N.D.	20.0
1,2-Dichlorobenzene-----	N.D.	20.0

QUALITY CONTROL DATA

Surrogate Spike
Fluorobenzene

Percent Recovery
91 %

N.D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA

BLANK, SPIKE DUPLICATE AND SPIKE REPORT FOR JOB # HLA 0831.73-L

METHOD: EPA 602

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	2	98
Toluene-----	N.D.	1	99
p-Xylene-----	N.D.	0	98

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 96 % 99 % 101 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 13-Jun-88
 Client: Harding Lawson Associates
 Attn: D. Leland
 Sampled by: Larkin/Lieberman
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Lewis
 WESCO JOB #: HLA 0831.73-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 03-Jun-88
 Site: City of Oakland, Well
 Date Received: 03-Jun-88
 Extract/Digest/Purge
 Date: 07-Jun-88
 Analysis Completion
 Date: 07-Jun-88
 Hold time, days: 4

LAB #: 8-5572 8-5573
 CLIENT'S ID: MW-5 220301 220302 MW-2

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	20	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	123	2.2	0.5
1,1-Dichloroethane	11	N.D.	0.5
Chloroform	N.D.	13	0.5
1,1,1-Trichloroethane (TCA)	N.D.	22	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	1.5	0.5
Trichloroethene (TCE)	1.0	1500	0.5
1,2-Dichloropropane	0.6	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.	4.7	0.5
Dibromochloromethane	N.D.	N.D.	0.5
Chlorobenzene	0.8	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	95 %	87 %
1,4-Dichlorobutane	85 %	77 %

N.D.: Not Detected

M.H. etc
 Analytical Supervisor

Report Date: 13-Jun-88
 Client: Harding Lawson Associates
 Attn: D. Leland
 Sampled by: Larkin/Lieberman
 Submitted by: C. Larkin
 Preservatives: none
 Analyst: Lewis
 WESCO JOB #: HLA 0831.73-L
 Analytical Method: EPA 601
 MATRIX: WATER

Client Contract/PO: 9382,022.02
 Date Sampled: 03-Jun-88
 Site: City of Oakland, Well
 Date Received: 03-Jun-88
 Extract/Digest/Purge Date: 07-Jun-88
 Analysis Completion Date: 07-Jun-88
 Hold time, days: 4

=====
 LAB #: 8-5574 8-5575
 CLIENT'S ID: MW-6 220303 220304 MW-6
 =====

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	1.0	1.0	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	20	20	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)	3.3	3.3	0.5
Trichloroethene (TCE)	4500	6600	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	0.5	N.D.	0.5
Tetrachloroethene	12	11	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 %
 1,4-Dichlorobutane 75 %

N.D.: Not Detected

M. Helt

 Analytical Supervisor

QUALITY CONTROL DATA

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
 METHOD: EPA 601


HLA 0831.73-L

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	114
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	110
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene (M.S.)	N.D.	6	111
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	107
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 %	112 %	111 %
1,4-Dichlorobutane	83 %	102 %	102 %

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



 Analytical Supervisor



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

CHAIN OF CUSTODY FORM

7211 0031 73

Job Number: 9382, 022.02
Name/Location: City of OAKLAND
Project Manager: DAVE LELAND

Samplers: C. Larkin / G. Lieberman

Recorder: Cherilyn Larkin
(Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				3			08	22	0301	08	06	03	1058
23	X				3			08	22	0302	08	06	03	1358
23	X				3			08	22	0303	08	06	03	1735
23	X				3			08	22	0304	08	06	03	1735

STATION DESCRIPTION/
NOTES

ANALYSIS REQUESTED							
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Plltnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. (G)	
X	X	X	X		X		
X	X	X	X		X		
X	X	X	X		X		

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

CHAIN OF CUSTODY RECORD			
RELINQUISHED BY: (Signature) <i>Cherilyn L</i>	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) <i>Cherilyn L</i>	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
METHOD OF SHIPMENT		<i>M. Blanchard</i> 6/3/83	

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

RECEIVED
JUL 11 1988
HARDING LAWSON ASSOC.

Report date: July 6, 1988
 Client: Harding Lawson Associates
 P.O. Box 578
 Novato, CA 94947

Place job #: HLA 0831.75-L

Date sampled: June 16, 1988
 Sampled by: B. Loskutoff

Site: City of Oakland
 Attn.: D. Leland

Date received: June 17, 1988
 Submitted by: B. Loskutoff

P.O.: 09382,022.02

Lab #	Client ID	Matrix	Analysis
8- 5930	88241601	MW-28 water	TPH only 5030/8015
8- 5930	88241601	water	Vol Org. Cpds. 601+ 602
8- 5931	88241602	MW-87 water	TPH only 5030/8015
8- 5931	88241602	water	Vol Org. Cpds. 601+ 602
8- 5932	88241603	MW-5 water	TPH only 5030/8015
8- 5932	88241603	water	Vol Org. Cpds. 601+ 602
8- 5933	88241604	Blank water	TPH only 5030/8015
8- 5933	88241604	water	Vol Org. Cpds. 601+ 602
8- 5934	88241605	MW-2 water	TPH only 5030/8015
8- 5934	88241605	water	Vol Org. Cpds. 601+ 602
8- 5935	88241606	MW-3 water	TPH only 5030/8015
8- 5935	88241606	water	Vol Org. Cpds. 601+ 602
8- 5936	88241607	MW-4 water	TPH only 5030/8015
8- 5936	88241607	water	Vol Org. Cpds. 601+ 602
8- 5937	88241608	MW-6 water	TPH only 5030/8015
8- 5937	88241608	water	Vol Org. Cpds. 601+ 602
8- 5938	88241621	water	TPH only 5030/8015
8- 5938	88241621	water	Vol Org. Cpds. 601+ 602
8- 5939	88241622	water	TPH only 5030/8015
8- 5939	88241622	water	Vol Org. Cpds. 601+ 602
8- 5940	88241623	water	TPH only 5030/8015
8- 5940	88241623	water	Vol Org. Cpds. 601+ 602
8- 5941	88241624	water	TPH only 5030/8015
8- 5941	88241624	water	Vol Org. Cpds. 601+ 602

Report date: July 6, 1988
Client: Harding Lawson Associates
P.O Box 578
Novato, CA 94947

Pace job #: HLA 0831.75-L

Date sampled: June 16, 1988
Sampled by: B. Loskutoff

Site: City of Oakland
Attn.: D. Leland

Date received: June 17, 1988
Submitted by: B. Loskutoff

P.O.: 09382,022.02

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.

V. Blanchard

Sample Controller

Report Date: 05-Jul-88 Extract/Purge Date: 23-Jun-88
 WESCO JOB #: HLA 0831.75-L Completion Date: 23-Jun-88
 Analytical Method: EPA 5030/8015/602 Analyst: Attia
 MATRIX: WATER

LAB #: 8-5930 MW-78 CLIENT'S ID: 241601

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

Total Petroleum Hydrocarbons (light)---	N.D.	50.0
---	------	------

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 96 %

LAB #: 8-5931 MW-87 CLIENT'S ID: 241602

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

Total Petroleum Hydrocarbons (light)---	N.D.	50.0
---	------	------

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 105 %

LAB #: 8-5932 MW-5 CLIENT'S ID: 241603

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

Total Petroleum Hydrocarbons (light)---	N.D.	50.0
---	------	------

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 90 %

LAB #: 8-5933 Blank CLIENT'S ID: 241604

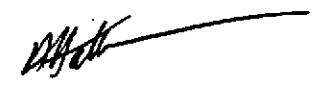
COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
----------	------------------	---------------------------

Total Petroleum Hydrocarbons (light)---	N.D.	50.0
---	------	------

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 94 %

N.D.: Not Detected


Analytical Supervisor

Report Date: 05-Jul-88 Extract/Purge Date: 23-Jun-88
WESCO JOB #: HLA 0831.75-L Completion Date: 23-Jun-88
Analytical Method: EPA 5030/8015/602 Analyst: Attia
MATRIX: WATER

LAB #: 8-5934 MW-2 CLIENT'S ID: 241605

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	830	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 118 %

LAB #: 8-5935 MW-3 CLIENT'S ID: 241606

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 87 %

LAB #: 8-5936 MW-6 CLIENT'S ID: 241607

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	30,000	5000


QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 89 %

LAB #: 8-5937 MW-6 CLIENT'S ID: 241608

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	25,000	12500

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 81 %

N.D.: Not Detected



Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA
 METHOD: EPA 5030/8015/602 WESCO JOB #: HLA 0831.75-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	7	94

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 104 % 95 % 99 %

N.D.: Not Detected

[Handwritten Signature]

 Analytical Supervisor

FORMERLY WESCO LABORATORIES

Report Date: 19-Jul-88
 TEST JOB #: HLA 0831.75-L
 Analytical Method: EPA 601
 MATRIX: WATER

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

HARDING LAWSON ASSO

JUL 29 1988

MW-⁹7 MW-⁷8 MW-5 Blank

LAB #: 8-5930 8-5931 8-5932 8-5933 8-5712
 CLIENT'S ID: 241601 241602 241603 241604 YMH060688-59

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoroethane	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
Vinyl Chloride	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Bromoethane	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
Trichlorofluoroethane	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.	2.0
Methylene Chloride	N.D.	N.D.	110	N.D.	N.D.	2.0
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethane	N.D.	N.D.	13	N.D.	N.D.	2.0
Chloroform	1.8	N.D.	3.6	0.6	N.D.	2.0
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	2.7	N.D.	N.D.	2.0
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,2-Dichloroethane (EDC)	N.D.	2.6	1.6	N.D.	N.D.	2.0
Trichloroethane (TCE)	22	N.D.	0.8	N.D.	N.D.	2.0
2-Dichloropropane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Tetrachloroethene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Dibromochloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Chlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
Bromoform	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	N.D.	2.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery					
Bromoethane	82%	75%	77%	73%	101%
1,4-Dichlorobutane	76%	71%	75%	72%	100%

N.D.: Not Detected

Attia

Analytical Supervisor

QUALITY CONTROL DATA

ANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

MLA 0831.75-L

METHOD: EPA 601

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Dichlorodifluoroethane	N.D.	-	N.S.
Chloroethane	N.D.	-	N.S.
Vinyl Chloride	N.D.	-	N.S.
Bromoethane	N.D.	-	N.S.
Chloroethane	N.D.	-	N.S.
Trichlorofluoroethane	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.S.)	N.D.	3	92
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.S.)	N.D.	17	86
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene(N.S.)	N.D.	6	96
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene(N.S.)	N.D.	17	104
Dibromochloroethane	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

Bromochloroethane	97 %	81 %	87 %
1,4-Dichlorobutane	107 %	95 %	98 %

N.D.: Not Detected

N.S.: Not Spiked



Analytical Supervisor

Report Date: 30-Jun-88
Job #: HLA 0031.75-L
Analytical Method: EPA 601
Matrix: WATER

Extract/Purge Date: 24-Jun-88
Completion Date: 24-Jun-88
Analyst: Attia/Levis

	MW-2	MW-3	MW-6	MW-6		
LAB #	8-5934	8-5935	8-5936	8-5937	8-5938	
CLIENT ID	241605	241606	241607	241608	241621	
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.	22.5	N.D.	2.1	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.	0.7	1.1	N.D.	0.5
1,1-Dichloroethane	N.D.	7.2	N.D.	N.D.	N.D.	0.5
Chloroform	9.4	N.D.	49	20	N.D.	0.5
1,1,1-Trichloroethane	N.D.	0.9	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	1.3	1.0	2.0	3.2	N.D.	0.5
Trichloroethene	1,150	0.7	3,900	5,300	N.D.	0.5
(1,1-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.	2.5	2.4	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	1.6	2.0	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	27	31	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	2.2	5.0	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.	6.5	2.0	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	7.0	2.0	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	6.4	4.5	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike & Recovery

Bromo-chloromethane	80 %	87 %	87 %	74 %	102 %
1,4-Dichlorobutane	91 %	81 %	80 %	82 %	79 %

N. D.: Not Detected


Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Test Date: 30-Jun-88
WESCO JOB #: NLA 0831.75-E
Analytical Method: EPA 801
Matrix: WATER

Extract/Purge Date: 24-Jun-88
Completion Date: 24-Jun-88
Analyst: Attia/Lewis

LAB # 8-5939 8-5940 8-5941
WELT ID 241622 241623 241624

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
Ethylene Chloride	N.D.	2.0	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	0.5
cis-1,2-Dichloroethane	N.D.	N.D.	N.D.	0.5
Chloroform	N.D.	N.D.	N.D.	0.5
1,1,1-Trichloroethane	N.D.	N.D.	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5	6.4	0.5
1,1-Dichloroethene	N.D.	N.D.	52	0.5
1,1-Dichloropropane	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	0.5
1-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 & Recovery

Bromochloromethane	64 %	85 %	101 %
1,4-Dichlorobutane	76 %	79 %	81 %

N. D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA

NR, SPIKE DUPLICATE AND SPIKE REPORT JOB # NLA 0831.75-1
METHOD: EPA 601
SAMPLE #: 8-5930 - 8-5933

COMPOUND	Blank (ng/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.	3	92
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Trichloroethene	N.D.	17	86
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.	6	96
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	17	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.
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 %	81 %	87 %
1,4-Dichlorobutane	107 %	95 %	98 %

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

[Signature]
Analytical Supervisor

Report Date: 05-Jul-88 Extract/Purge Date: 24-Jun-88
 WESCO JOB #: HLA 0831.75-L Completion Date: 24-Jun-88
 Analytical Method: EPA 602 Analyst: Attia
 MATRIX: WATER

LAB #: *MW-7* 8-5930 *MW-8* 8-5931
 CLIENT'S ID: 241601 241602

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 & Recovery
 Fluorobenzene 97% 94%

LAB #: *MW-5* 8-5932 *Blank* 8-5933
 CLIENT'S ID: 241603 241604

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 & Recovery
 Fluorobenzene 93% 92%

N.D.: Not Detected

Attia

 Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 602

WESCO JOB#: HLA 0831.75-L

SAMPLE #: 8-5930 - 8-5933

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	3	101
Toluene	N.D.	4	101
p-Xylene	N.D.	1	103

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 89 % 101 % 98 %

N.D.: Not Detected

M. Hall

 Analytical Supervisor

Report Date: 07-Jul-88
PACE JOB #: HLA 0831.75-L
Analytical Method: EPA 602
MATRIX: WATER

Extract/Purge Date: 24-Jun-88
Completion Date: 24-Jun-88
Analyst: Attia

	<i>MW-2</i>	<i>MW-3</i>
LAB #:	8-5934	8-5935
CLIENT'S ID:	241605	241606

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	4.5	N.D.	0.2
Toluene-----	0.9	N.D.	0.2
Chlorobenzene-----	N.D.	N.D.	0.2
Ethylbenzene-----	N.D.	N.D.	0.2
Xylene-----	1.7	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	95% 97%

	<i>MW-6</i>	<i>KW-6</i>
LAB #:	8-5936	8-5937
CLIENT'S ID:	241607	241608

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	280	190	20
Toluene-----	3,100	2,200	20
Chlorobenzene-----	N.D.	N.D.	20
Ethylbenzene-----	370	330	20
Xylene-----	5,500	4,000	20
1,3-Dichlorobenzene-----	N.D.	N.D.	20
1,4-Dichlorobenzene-----	N.D.	N.D.	20
1,2-Dichlorobenzene-----	N.D.	N.D.	20

Surrogate Spike	Percent Recovery
Fluorobenzene	101% 90%

N.D.: Not Detected

Attia

Analytical Supervisor

Report Date: 05-Jul-88 Extract/Purge Date: 23-Jun-88
 WESCO JOB #: HLA 0831.75-L Completion Date: 23-Jun-88
 Analytical Method: EPA 5030/8015/602 Analyst: Attia
 MATRIX: WATER

LAB #: 8-5938 CLIENT'S ID: 241621
 =====
 COMPOUND RESULT Detection
 (ug/l) Limit (ug/l)

 Total Petroleum Hydrocarbons (light)--- N.D. 50.0

 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 85 %

LAB #: 8-5939 CLIENT'S ID: 241622
 =====
 COMPOUND RESULT Detection
 (ug/l) Limit (ug/l)

 Total Petroleum Hydrocarbons (light)--- N.D. 50.0

 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 79 %

LAB #: 8-5940 CLIENT'S ID: 241623
 =====
 COMPOUND RESULT Detection
 (ug/l) Limit (ug/l)

 Total Petroleum Hydrocarbons (light)--- N.D. 50.0

 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 92 %

LAB #: 8-5941 CLIENT'S ID: 241624
 =====
 COMPOUND RESULT Detection
 (ug/l) Limit (ug/l)

 Total Petroleum Hydrocarbons (light)--- 90 50.0

 QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 89 %

N.D.: Not Detected

Attia

 Analytical Supervisor



laboratories, inc.

FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 07-Jul-88
PACE JOB #: HLA 0831.75-L
Analytical Method: EPA 602
MATRIX: WATER

Extract/Purge Date: 24-Jun-88
Completion Date: 24-Jun-88
Analyst: Attia

LAB #: 8-5938 8-5939
CLIENT'S ID: 241621 241622

Table with 4 columns: COMPOUND, RESULT (ug/l), RESULT (ug/l), Detection Limit (ug/l). Rows include Benzene, Toluene, Chlorobenzene, Ethylbenzene, Xylene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene.

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 95% 101%

LAB #: 8-5940 8-5941
CLIENT'S ID: 241623 241624

Table with 4 columns: COMPOUND, RESULT (ug/l), RESULT (ug/l), Detection Limit (ug/l). Rows include Benzene, Toluene, Chlorobenzene, Ethylbenzene, Xylene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene.

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 91% 98%

Handwritten signature

Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 602

PACE JOB#: HLA 0831.75-L

SAMPLE #: 8-5934 - 8-5941

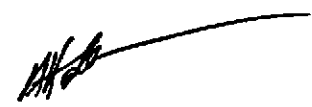
COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	1	99
Toluene	N.D.	8	97
p-Xylene	N.D.	2	103

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 95 % 95 % 103 %

N.D.: Not Detected



Analytical Supervisor

HARDING LAWSON ASSOC.

AUG 12 1988

Report date: August 10, 1988
Client: Harding Lawson Associates
P.O. Box 578
Novato, CA 94947
Attn.: David Leland

Page job #: HLA 0831.77-L

MONITORING WELLS

6-30-88

Date sampled: June 30, 1988
Sampled by: Evans/Lewis

Site: City of Oakland

Date received: July 1, 1988
Submitted by: D. Evans

P.O.: 09382,022.02

Lab #	Client ID	Matrix	Analysis
8- 6494	88263001	water	TPH only 5030/8015
8- 6494	88263001	water	Vol Org. Cpds. 8010+8020
8- 6495	88263002	water	TPH only 5030/8015
8- 6495	88263002	water	Vol Org. Cpds. 8010+8020
8- 6496	88263003	water	TPH only 5030/8015
8- 6496	88263003	water	Vol Org. Cpds. 8010+8020
8- 6497	88263004	water	TPH only 5030/8015
8- 6497	88263004	water	Vol Org. Cpds. 8010+8020
8- 6498	88263005	water	TPH only 5030/8015
8- 6498	88263005	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.

Please note: due to instrument failure the 8010+8020 analysis was run together as an 8240.

C. Sontag

Sample Controller

Report Date: 09-Aug-88
PACE JOB #: HLA 0831-77-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 13-Jul-88
Completion Date: 13-Jul-88
Analyst: LEWIS

MW-2

LAB #: 8-6494 CLIENT'S ID: 263001
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	630.0	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 84 %

MW-9

LAB #: 8-6495 CLIENT'S ID: 263002
=====

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	91.0	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 108 %

MW-5

LAB #: 8-6496 CLIENT'S ID: 263003
=====

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 94 %

N.D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 5030/8015

PACE JOB #:

HLA 0831.77-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	3	89

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene	110 %	90 %	96 %
---------------	-------	------	------

N.D.: Not Detected



 Analytical Supervisor

Report Date: 10-Aug-88
PACE JOB #: HLA 0831.77-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 13-Jul-88
Completion Date: 13-Jul-88
Analyst: LEWIS

LAB #: 8-6497

CLIENT'S ID: 263004

MW-6

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)

Total Petroleum Hydrocarbons (light)--- 21,000 5,000

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

97 %

MW-6

LAB #: 8-6498

CLIENT'S ID: 263005

COMPOUND

RESULT
(ug/l)

Detection
Limit (ug/l)

Total Petroleum Hydrocarbons (light)--- 13,000 1,000

QUALITY CONTROL DATA

Surrogate Spike & Recovery
Fluorobenzene

107 %

QUALITY CONTROL DATA

METHOD: EPA 5030/8015

PACE JOB #:

HLA 0831.77-L

COMPOUND

Blank
ug/l

Spike Duplicate
& deviation

Spike
& recovery

Gasoline----- N.D. 8 87

QUALITY CONTROL DATA


Surrogate Spike & Recovery
Fluorobenzene

159 %

89 %

88 %

N.D.: Not Detected


Analytical Supervisor

FORMERLY WESCO LABORATORIES

Report Date: 09-Aug-88 Extract/Purge Date: 05-Jul-88
 PACE JOB #: HLA 0831.77-L Analysis Completion: 05-Jul-88
 Analytical Method: EPA 8240 Analyst: NET
 MATRIX: WATER

LAB #: MW-2 MW-9 MW-5
 8-6494 8-6495 8-6496
 CLIENT ID: 263001 263002 263003

COMPOUND	Result (ug/l)	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Chloromethane	N.D.	N.D.	N.D.	0.5
Vinyl Chloride	N.D.	N.D.	N.D.	0.5
Bromomethane	N.D.	N.D.	N.D.	0.5
Chloroethane	N.D.	N.D.	N.D.	0.5
Trichlorofluoromethane	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethene	N.D.	N.D.	N.D.	2.8
Methylene Chloride	N.D.	N.D.	N.D.	2.8
trans-1,2-Dichloroethene	70	N.D.	N.D.	1.6
1,1-Dichloroethane	N.D.	N.D.	N.D.	4.7
Chloroform	6.2	N.D.	N.D.	1.6
1,1,1-Trichloroethane	N.D.	N.D.	N.D.	3.8
1,2-Dichloroethane	N.D.	N.D.	N.D.	2.8
Carbon Tetrachloride	N.D.	N.D.	N.D.	2.8
Benzene	875	4160	N.D.	4.4
1,2-Dichloropropane	N.D.	N.D.	N.D.	6.0
Trichloroethene	7,600	N.D.	N.D.	1.9
Bromodichloromethane	N.D.	N.D.	N.D.	2.2
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
Toluene	N.D.	* 83	N.D.	6.0
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	7.0
Dibromochloromethane	N.D.	N.D.	N.D.	3.1
Chlorobenzene	N.D.	N.D.	N.D.	6.0
Ethylbenzene	N.D.	N.D.	N.D.	7.2
Bromoform	N.D.	N.D.	N.D.	4.7
Tetrachloroethane	12	N.D.	N.D.	4.1
1,1,2,2,-Tetrachloroethane	N.D.	N.D.	N.D.	6.9
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	6.0
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	6.0
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	6.0

QUALITY CONTROL DATA	Surrogate Spike % Recover		
1,2-Dichloroethane-d4	74 %	76%	77%
Toluene-d8	76 %	81%	73%
4-Bromofluorobenzene	77 %	82%	75%

N.D.: Not Detected

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Analytical Supervisor

FORMERLY WESCO LABORATORIES

Report Date: 09-Aug-88 Extract/Purge Date: 05-Jul-88
 PACE JOB #: HLA 0831.77-L Analysis Completion : 05-Jul-88
 Analytical Method: EPA 8240 Analyst: NET
 MATRIX: WATER

MW-6 MW-6
 LAB #: 8-6497 8-6498
 CLIENT ID: 263004 263005

COMPOUND	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Chloromethane	N.D.	N.D.	0.5
Vinyl Chloride	N.D.	N.D.	0.5
Bromomethane	N.D.	N.D.	0.5
Chloroethane	N.D.	N.D.	0.5
Trichlorofluoromethane	N.D.	N.D.	0.5
1,1-Dichloroethene	N.D.	N.D.	2.8
Methylene Chloride	N.D.	N.D.	2.8
trans-1,2-Dichloroethene	160	160	1.6
1,1-Dichloroethane	N.D.	N.D.	4.7
Chloroform	N.D.	N.D.	1.6
1,1,1-Trichloroethane	N.D.	N.D.	3.8
1,2-Dichloroethane	N.D.	N.D.	2.8
Carbon Tetrachloride	N.D.	N.D.	2.8
Benzene	170	160	4.4
1,2-Dichloropropane	N.D.	N.D.	6.0
Trichloroethene	4,500	4,300	1.9
Bromodichloromethane	N.D.	N.D.	2.2
trans-1,3-Dichloropropene	N.D.	N.D.	0.5
Toluene	2,000	1,700	6.0
cis-1,3-Dichloropropene	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	7.0
Dibromochloromethane	N.D.	N.D.	3.1
Chlorobenzene	N.D.	N.D.	6.0
Ethylbenzene	260	N.D.	7.2
Bromoform	N.D.	N.D.	4.7
Tetrachloroethene	16	15	4.1
1,1,2,2,-Tetrachloroethane	N.D.	N.D.	6.9
1,3-Dichlorobenzene	N.D.	N.D.	6.0
1,4-Dichlorobenzene	N.D.	N.D.	6.0
1,2-Dichlorobenzene	N.D.	N.D.	6.0

QUALITY CONTROL DATA	Surrogate Spike % Recovery	
1,2-Dichloroethane-d4	80 %	82%
Toluene-d8	80 %	83%
4-Bromofluorobenzene	78 %	81%

N.D.: Not Detected

[Signature]
 Analytical Supervisor

FORMERLY WESCO LABORATORIES
QUALITY CONTROL DATA
METHOD: EPA 8240

PACE JOB #: HLA 0831.77-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
1,1-Dichloroethene	N.D.	3	87
Trichloroethene	N.D.	2	81
Chlorobenzene	N.D.	5	98
Toluene	N.D.	5	98
Benzene	N.D.	0.3	86

N.D.: Not Detected M.S.: Matrix Spike
N.S.: Not Spiked



Analytical Supervisor

HARDING-LAWSON ASSOCIATES
Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, California

SEP 20 1988

Pace job #: ~~MLA-0931.81-L~~

MONITORING WELLS
7/15/88

Report date: September 16, 1988
Client: Harding Lawson Associates
P.O Box 578
Novato, CA 94947
Attn.: DAVID LELAND

Date sampled: July 15, 1988
Sampled by: BILL LOSKUTOFF

Site: CITY OF OAKLAND

Date received: July 15, 1988
Submitted by: BILL LOSKUTOFF

P.O.: 09382.022.02

Lab #	Client ID	Matrix	Analysis
8- 6907	88281501	soil	TPH (light) only 5030/8015
8- 6907	88281501	soil	Vol Org. Cpds. 601+602
	MW-2		
8- 6908	88281502	soil	TPH (light) only 5030/8015
8- 6908	88281502	soil	Vol Org. Cpds. 601+602
	MW-5		
8- 6909	88281503	soil	TPH (light) only 5030/8015
8- 6909	88281503	soil	Vol Org. Cpds. 601+602
	MW-6		
8- 6910	88281504	soil	TPH (light) only 5030/8015
8- 6910	88281504	soil	Vol Org. Cpds. 601+602
	MW-9		
8- 6911	88281505	soil	TPH (light) only 5030/8015
8- 6911	88281505	soil	Vol Org. Cpds. 601+602
	MW-9		
8- 6912	88281506	soil	TPH (light) only 5030/8015
8- 6912	88281506	soil	Vol Org. Cpds. 601+602
	Blank		



REPORT OF LABORATORY ANALYSIS

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

FORMERLY WESCO LABORATORIES

Report date: September 16, 1988
Client: Harding Lawson Associates
P.O Box 578
Novato, CA 94947
Attn.: DAVID LELAND

Pace job #: HLA 0831.81-L

Date sampled: July 15, 1988
Sampled by: BILL LOSKUTOFF

Site: CITY OF OAKLAND

Date received: July 15, 1988
Submitted by: BILL LOSKUTOFF

P.O.: 09382.022.02

Lab #	Client ID	Matrix	Analysis
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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. Santuz

Sample Controller

REPORT OF LABORATORY ANALYSIS

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

Report Date: 14-Sep-88
PACE JOB #: HLA 0831.81-1
Analytical Method: EPA 8010
MATRIX: SOIL


Extract/Purge Date: 18-Jul-88
Completion Date: 18-Jul-88
Analyst: ATTIA/LEWIS

	MW-2	MW-5	MW-6	
LAB #:	8-6907	8-6908	8-6909	
CLIENT'S ID:	281501	281502	281503	
COMPOUND	RESULT (ug/kg)	RESULT (ug/kg)	RESULT (ug/kg)	Detection Limit (ug/kg)
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.	14	N.D.	0.5
Methylene Chloride	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	1	N.D.	8.4	0.5
1,1-Dichloroethane	N.D.	9	N.D.	0.5
Chloroform	5	4	30	0.5
1,1,1-Trichloroethane (TCA)	N.D.	1.2	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	N.D.	1.2	N.D.	0.5
Trichloroethene (TCE)	4,600*	1.2	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	4.0	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.	2.6	0.5
1,1,2-Trichloroethane	N.D.	N.D.	3.2	0.5
Tetrachloroethene	8.5	N.D.	42	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.	1.6	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.	2.6	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
Bromochloromethane	83%	81%	110%
1,4-Dichlorobutane	97%	85%	139% M.I.

N.D.: Not Detected
M.I.: Matrix Interference
*: Quantified at 100 times dilution.


Analytical Supervisor

Report Date: 13-Sep-88
PACE JOB #: HLA 0831.81-1
Analytical Method: EPA 8010
MATRIX: SOIL

Extract/Purge Date: 20-Jul-88
Completion Date: 20-Jul-88
Analyst: ATTIA/LEWIS

LAB #: 8-6910 MW-9 MW-9 Blank
CLIENT'S ID: 281504 281505 281506

COMPOUND	RESULT (ug/kg)	RESULT (ug/kg)	RESULT (ug/kg)	Detection Limit (ug/kg)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	2.0
Chloromethane	17	31	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	5.8	4.7	N.D.	0.5
Methylene Chloride	N.D.	N.D.	0.7	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	1.1	1.0	N.D.	0.5
Chloroform	6.0	5.4	N.D.	0.5
1,1,1-Trichloroethane (TCA)	0.7	0.6	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.3	1.0	N.D.	0.5
Trichloroethene (TCE)	1.2	0.7	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	94%	86%	79%
1,4-Dichlorobutane	112%	98%	98%

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

Attia
Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #
METHOD : EPA 8010
SAMPLE #: 8-6907 - 8-6909

HLA 0831.81-1

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.	5	102
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.	8	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.	2	86
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	-	N.S.
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 %	106 %	117 %
1,4-Dichlorobutane	100 %	125 %	123 %

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



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.81-1

METHOD : EPA 8010

SAMPLE #: 8-6910, 8-6911, 8-6912

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	100
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	93
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	107
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	4	98
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	85 %	106 %	100 %
1,4-Dichlorobutane	114 %	106 %	105 %

N.D.: Not Detected

N.S.: Not Spiked

Alto

Analytical Supervisor

QUALITY CONTROL DATA


METHOD: 5030/8015 PACE JOB #: HLA 0831.81-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	8	89

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 92 % 88 % 96 %

N.D.: Not detected



Analytical Supervisor



FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 14-Sep-88
PACE JOB #: HLA 0831.81-L
Analytical Method: EPA 8020
MATRIX: SOIL

Extract/Purge Date: 20-Jul-88
Completion Date: 20-Jul-88
Analyst: ATTIA/LEWIS

	MW-9	MW-9	Blank
LAB #:	8-6910	8-6911	8-6912
CLIENT'S ID:	281504	281505	281506

COMPOUND	RESULT (ug/kg)	RESULT (ug/kg)	RESULT (ug/kg)	Detection Limit (ug/kg)
Benzene	200	110	N.D.	0.2
Toluene	170	77	0.7	0.2
Chlorobenzene	N.D.	N.D.	N.D.	0.2
Ethylbenzene	N.D.	N.D.	N.D.	0.2
Xylene	81	46	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	103%	96%	95%

QUALITY CONTROL DATA

METHOD: EPA 8020 PACE JOB#: HLA 0831.81-

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	1	94
Toluene	N.D.	2	100
p-Xylene	N.D.	3	101

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	100 %	95 %	96

N.D.: Not Detected

Analytical Supervisor

WESCO LABORATORIES

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB #

HLA 0831.83-L

METHOD : EPA 8010

SAMPLE #: 8-7142, 8-7146, 8-7147

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	103
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	106
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	112
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	106
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	95 %	90 %	108 %
1,4-Dichlorobutane	98 %	107 %	104 %

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

Atkins
 Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Report Date: 04-Jan-80
 PRICE JOB #: HLA 0831.83-L
 Analytical Method: EPA 8020
 MATRIX: WATER

Extract/Purge Date: SEE BELOW
 Completion Date: SEE BELOW
 Analyst: ATTIA

	MW-3	MW-5	MW-2	
LAB #:	8-7140	8-7141	8-7142	
CLIENT'S ID:	302701	302702	302703	
DATE COMPLETED:	28-Jul-88	28-Jul-88	01-Aug-88	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene	N.D.	N.D.	9.9	0.2
Toluene	N.D.	N.D.	1.1	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.	2.4	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 Fluorobenzene Percent Recovery 98 % 98 % 110 %

	MW-7	Blank	MW-8	
LAB #:	8-7143	8-7144	8-7145	
CLIENT'S ID:	302704	302705	302706	
DATE COMPLETED:	28-Jul-88	28-Jul-88	28-Jul-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 Fluorobenzene Percent Recovery 97 % 99 % 97 %

N.D.: Not Detected

Attia

REPORT OF LABORATORY ANALYSIS

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

Report Date: 04-Jan-80
 TRACE JOB #: HLA 0831.83-L
 Analytical Method: EPA 8020
 MATRIX: WATER

Extract/Purge Date: SEE BELOW
 Completion Date: SEE BELOW
 Analyst: ATTIA

	MW-6	MW-6
LAB #:	8-7146	8-7147
CLIENT'S ID:	302707	302708
DATE COMPLETED:	01-AUG-88	01-AUG-88

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	170	64	0.2
Toluene-----	250	280	0.2
Chlorobenzene-----	N.D.	N.D.	0.2
Ethylbenzene-----	0.7	0.7	0.2
Xylene-----	1,000	1,000	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	131 %*	129 %*

N.D.: Not Detected
 *: Matrix Interference



laboratories, inc.

WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#: HLA 0831.83-L

SAMPLE #: 8-7140, 8-7141, 8-7143, 8-7144, 8-7145

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	2	91
Toluene	N.D.	6	95
p-Xylene	N.D.	6	96

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene	100 %	95 %	95%
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QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#: HLA 0831.83-L

SAMPLE #: 8-7142, 8-7146, 8-7147

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene	N.D.	1	99
Toluene	N.D.	3	99
p-Xylene	N.D.	3	99

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene	97 %	98 %	98%
---------------	------	------	-----

N.D.: Not Detected

Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

HARDING LAWSON ASSOC.
 AUG 31 1988
 Page Job #: HLA 0831.83-L

Report date: August 30, 1988
 Client: Harding Lawson Associates
 200 Rush Landing Road
 Novato, CA 94947
 Attn.: D. Leland

MONITORING WELLS
 7-27-88

Date sampled: July 27, 1988
 Sampled by: B. Loskutoff
 Date received: July 28, 1988
 Submitted by: B. Loskutoff

Site: City of Oakland
 P.O.: 09382,022.02

Lab #	Client ID	Matrix	Analysis
7140	88302701	water	TPH (light) only 5030/8015
7140	88302701 MW-3	water	Vol Org. Cpds. 8010+8020
7141	88302702	water	TPH (light) only 5030/8015
7141	88302702 MW-5	water	Vol Org. Cpds. 8010+8020
7142	88302703	water	TPH (light) only 5030/8015
7142	88302703 MW-2	water	Vol Org. Cpds. 8010+8020
7143	88302704	water	TPH (light) only 5030/8015
7143	88302704 MW-7	water	Vol Org. Cpds. 8010+8020
7144	88302705	water	TPH (light) only 5030/8015
7144	88302705 Blank	water	Vol Org. Cpds. 8010+8020
7145	88302706	water	TPH (light) only 5030/8015
7145	88302706 MW-8	water	Vol Org. Cpds. 8010+8020
7146	88302707	water	TPH (light) only 5030/8015
7146	88302707 MW-6	water	Vol Org. Cpds. 8010+8020
7147	88302708	water	TPH (light) only 5030/8015
7147	88302708 MW-6	water	Vol Org. Cpds. 8010+8020

Report date: August 30, 1988
Client: Harding Lavson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831.83-L

Date sampled: July 27, 1988
Sampled by: B. Loskutoff

Site: City of Oakland

Date received: July 28, 1988
Submitted by: B. Loskutoff

P.O.: 09382,022.02

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. Sontag

Sample Controller



REPORT OF LABORATORY ANALYSIS

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

WESCO LABORATORIES, INC.

WESCO LABORATORIES

Report date: 22-Aug-88
LABORATORY JOB #: HLA 0831.83-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 28-Jul-88
Completion Date: 28-Jul-88
Analyst: ATTIA

LAB #: 8-7140 *MW-3* CLIENT'S ID: 302701

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

QUALITY CONTROL DATA

Fluorobenzene	Surrogate Spike % Recovery	101 %
---------------	----------------------------	-------

LAB #: 8-7141 *MW-5* CLIENT'S ID: 302702

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

QUALITY CONTROL DATA

Fluorobenzene	Surrogate Spike % Recovery	105 %
---------------	----------------------------	-------

LAB #: 8-7142 *MW-2* CLIENT'S ID: 302703

COMPOUND	RESULT (ug/l)	Detection Limit(ug/l)
Total Petroleum Hydrocarbons (light)---	1,200	250

QUALITY CONTROL DATA

Fluorobenzene	Surrogate Spike % Recovery	101 %
---------------	----------------------------	-------

N.D.: Not Detected

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

laboratories, inc.

WESCO LABORATORIES

Report Date: 22-Aug-88
ACE JOB #: HLA 0831.83-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 05-May-88
Completion Date: 05-May-88
Analyst: ATTIA

QUALITY CONTROL DATA

METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.83-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	4	91

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	100 %	104 %	104 %

N.D.: Not detected

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

laboratories, inc.

(WESCO LABORATORIES)

Report Date: 22-Aug-88
ACE JOB #: HLA 0831.83-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 28-Jul-88
Completion Date: 28-Jul-88
Analyst: ATTIA

JOB #: 8-7143

MW-7

CLIENT'S ID: 302704

COMPOUND

RESULT
(ug/l)

Detection
Limit(ug/l)

Total Petroleum Hydrocarbons (light)--- N.D. 50.0

QUALITY CONTROL DATA
Fluorobenzene

Surrogate Spike % Recovery
101 %

JOB #: 8-7144

Blank

CLIENT'S ID: 302705

COMPOUND

RESULT
(ug/l)

Detection
Limit(ug/l)

Total Petroleum Hydrocarbons (light)--- N.D. 50.0

QUALITY CONTROL DATA
Fluorobenzene

Surrogate Spike % Recovery
102 %

JOB #: 8-7145

MW-8

CLIENT'S ID: 302706

COMPOUND

RESULT
(ug/l)

Detection
Limit(ug/l)

Total Petroleum Hydrocarbons (light)--- N.D. 50.0

QUALITY CONTROL DATA
Fluorobenzene

Surrogate Spike % Recovery
103 %

N.D.: Not Detected

Analytical Supervisor



laboratories, inc.

71 WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

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

Report Date: 22-Aug-88
ACE JOB #: HLA 0831.83-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Extract/Purge Date: 28-Jul-88
Completion Date: 28-Jul-88
Analyst: ATTIA

AB #: 8-7146

MW-6 ✓

CLIENT'S ID:

302707

COMPOUND

RESULT
(ug/l)

Detection
Limit(ug/l)

Total Petroleum Hydrocarbons (light)---

4,400

50.0

QUALITY CONTROL DATA
fluorobenzene

Surrogate Spike & Recovery
93 % M.I.

AB #: 8-7147

MW-6 ✓

CLIENT'S ID:

302708

COMPOUND

RESULT
(ug/l)

Detection
Limit(ug/l)

Total Petroleum Hydrocarbons (light)---

4,900

50.0

QUALITY CONTROL DATA
fluorobenzene

Surrogate Spike & Recovery
95 % M.I.

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

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

WESCO LABORATORIES, INC.

Report Date: 22-Aug-88
 ANALYSIS JOB #: HLA 0831.83-L
 Analytical Method: EPA 8010
 MATRIX: WATER

Extract/Purge Date: SEE BELOW
 Completion Date: SEE BELOW
 Analyst: ATTIA

LAB #:
 CLIENT'S ID:
 DATE COMPLETED:

	MW-3	MW-5	MW-2
LAB #:	8-7140	8-7141	8-7142
CLIENT'S ID:	302701	302702	302703
DATE COMPLETED:	28-JUL-88	28-JUL-88	01-AUG-88

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
1,1-Dichloroethane	N.D.	N.D.	N.D.	2.0
1,2-Dichloroethane	N.D.	N.D.	N.D.	2.0
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	2.0
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	2.0
1,1,1,2-Tetrachloroethane	N.D.	N.D.	N.D.	2.0
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	22	24	N.D.	0.5
1,2-Dichloroethene	N.D.	N.D.	0.9	0.5
1,1-Dichloroethane	8.7	12	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	2.0	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	2.1	0.5
1,1,1,2-Tetrachloroethane	N.D.	N.D.	4,800*	0.5
1,1,2,2-Tetrachloroethane	1.2	1.8	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
1,1,1,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	8.6	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
1,1,1,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	0.5
1,1,1,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery		
1,1-Dichloroethane	114%	110%	98%
1,2-Dichloroethane	98%	98%	103%

N.D.: Not Detected
 * Quantified at 100 times dilution.

Attia

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

laboratories, inc.

WESCO LABORATORIES

Report Date: 22-Aug-88
ACE JOB #: HLA 0831.83-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 28-Jul-88
Completion Date: 28-Jul-88
Analyst: LEWIS

AB #: 8-7143 8-7144 8-7145
CLIENT'S ID: 302704 302705 302706

Table with 5 columns: COMPOUND, RESULT (ug/l), RESULT (ug/l), RESULT (ug/l), Detection Limit (ug/l). Lists various chemical compounds and their results.

QUALITY CONTROL DATA

Table with 4 columns: Surrogate Spike, Percent Recovery, and two columns of recovery percentages for Bromochloromethane and 1,4-Dichlorobutane.

Not Detected

Signature: [Handwritten]
Analytical Supervisor



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

CHAIN OF CUSTODY FORM

HLA 0831.83-

Samplers: Bill Leskutoff, Jeff Lewis

Job Number: 09382,022.02

Name/Location: City of Oakland

Project Manager: Dave Leland

Recorder: Bill Leskutoff
 (Signature Required)

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pflnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb. - Light	EPA 8010	8020	Collection & Storage by Rick Huston	7/27/88
							X	X	X	X
							X	X	X	X
							X	X	X	X
							X	X	X	X
							X	X	X	X
							X	X	X	X
							X	X	X	X
							X	X	X	X

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/ NOTES	
	Water	Sediment	Soil	Oil	Unpres.	H ₂ SO ₄	HNO ₃			Yr	Wk	Seq	Yr	Mo	Dy		Time
23	X				3					88	30	2701	88	07	27	1339	Y
23	X				3							02				1518	X
23	X				3							03				1345	X
23	X				3							04				1535	X
23	X				3							05				1300	X
23	X				3							06				1700	X
23	X				3							07				1740	X
23	X				3							08				1400	X

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						7/27 - Call Rick Huston in AM re: Analyses 8/8 7/25/88

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Bill Leskutoff</u>	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE
DISPATCHED BY: (Signature) <u>Bill Leskutoff</u>	DATE/TIME 7/27/88 1915	RECEIVED FOR LAB BY: (Signature) <u>Marie Lella Casazza</u>

WES10 (PA)

pace
laboratories, inc.
FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS
HARDING LAWSON ASSOC.

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

SEP 12 1988

Pace job #: HLA 0831.87-1

Report date: September 7, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

MONITORING WELLS
8-12-88

Date sampled: August 12, 1988
Sampled by: David Evans

Site: City of Oakland

Date received: August 12, 1988
Submitted by: David Evans

P.O.: 09382, 022.02

Lab #	Client ID	Matrix	Analysis
8- 7546	321101	MW-2	water
8- 7546	321101		water
			TPH (light) only 5030/8015 Vol Org. Cpds. 8010 + 8020
8- 7547	321102	MW-5	water
8- 7547	321102		water
			TPH (light) only 5030/8015 Vol Org. Cpds. 8010 + 8020
8- 7548	321103	MW-6	water
8- 7548	321103		water
			TPH (light) only 5030/8015 Vol Org. Cpds. 8010 + 8020
8- 7549	321104	MW-6	water
8- 7549	321104		water
			TPH (light) only 5030/8015 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. Santos

Sample Controller

QUALITY CONTROL DATA
METHOD: EPA 5030/8015


PACE JOB #: HLA 0831.87-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline	N.D.	0	86

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	82 %	94 %	98 %

N.D.: Not Detected



Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Report Date: 06-Sep-88
PACE JOB #: HLA 0831.87-L
Analytical Method: EPA 8010
MATRIX: WATER

Extract/Purge Date: 19-Aug-88
Completion Date: 19-Aug-88
Analyst: ARNTZEN

MW-2 MW-5
8-7546 8-7547
321101 321102

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	1.5	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.	25	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	1.5	N.D.	0.5
1,1-Dichloroethane	N.D.	9.6	0.5
Chloroform	5.3	4.5	0.5
1,1,1-Trichloroethane (TCA)	N.D.	2.0	0.5
Carbon Tetrachloride	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	2.1	1.5	0.5
Trichloroethene (TCE)	5,000*	0.7	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	8.0	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	105%	92 %
1,4-Dichlorobutane	91%	91 %

N.D.: Not Detected
*: TCE quantified at 100 times dilution.

Attella

Analytical Supervisor

Report Date: 06-Sep-88
 PACE JOB #: HLA 0831.87-L
 Analytical Method: EPA 8010
 MATRIX: WATER

Extract/Purge Date: 19-Aug-88
 Completion Date: 19-Aug-88
 Analyst: ARNTZEN

	MW-6	MW-6	
LAB #:	8-7548	8-7549	
CLIENT'S ID:	321103	321104	
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	0.8	0.9	0.5
Methylene Chloride	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	5.6	5.8	0.5
1,1-Dichloroethane	N.D.	N.D.	0.5
Chloroform	16	20	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)	4.0	4.2	0.5
Trichloroethene (TCE)	14,000**	12,000**	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	0.9	0.9	0.5
Tetrachloroethene	20	20	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	103%	105 %
1,4-Dichlorobutane	91%	88 %

N.D.: Not Detected
 **: TCE quantified at 200 times dilution

Arntzen
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.87-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.	1	99
Methylene Chloride	N.D.	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane (M.S.)	N.D.	-	N.S.
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

[Signature]
Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

laboratories, inc.

FORMERLY WESCO LABORATORIES

Report date: September 23, 1988
 Client: Harding Lawson Associates
 200 Rush Landing Road
 Novato, CA 94947
 Attn.: D Leland

Pace job #: HLA 0831.90-L

MONITORING WELLS
 8-26-88

Date sampled: August 26, 1988
 Sampled by: D. Harms

Site: City of Oakland

Date received: August 26, 1988
 Submitted by: D. Harms

P.O.: 09382,022.02

Lab #	Client ID	Matrix	Analysis
7938	88342601	MW-5	TPH (light) only 5030/8015
8-7938	88342601		Vol Org. Cpds. 8010+8020
7939	88342602	MW-8	TPH (light) only 5030/8015
8-7939	88342602		Vol Org. Cpds. 8010+8020
7940	88342603	MW-7	TPH (light) only 5030/8015
8-7940	88342603		Vol Org. Cpds. 8010+8020
7941	88342604	MW-2	TPH (light) only 5030/8015
8-7941	88342604		Vol Org. Cpds. 8010+8020
7942	88342605	MW-6	TPH (light) only 5030/8015
8-7942	88342605		Vol Org. Cpds. 8010+8020
7943	88342606	MW-6	TPH (light) only 5030/8015
8-7943	88342606		Vol Org. Cpds. 8010+8020
7944	88342607	MW-3	TPH (light) only 5030/8015
8-7944	88342607		Vol Org. Cpds. 8010+8020
7945	88342608	MW-9	TPH (light) only 5030/8015
8-7945	88342608		Vol Org. Cpds. 8010+8020

REPORT OF LABORATORY ANALYSIS

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

Report Date: 23-Sep-88
 QACE JOB #: HLA 0831.90-L
 Analytical Method: EPA 8010
 Matrix: WATER

Extract/Purge Date: 01-Sep-88
 Completion Date: 01-Sep-88
 Analyst: ATTIA

COMPOUND	MW-2		MW-6	
	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
AB #:	8-7941		8-7942	
CLIENT ID	342604		342605	
Dichlorodifluoromethane	N.D.	2.0	N.D.	2.0
Chloromethane	N.D.	2.0	N.D.	2.0
Vinyl Chloride	N.D.	2.0	N.D.	2.0
Bromomethane	N.D.	2.0	N.D.	2.0
Chloroethane	N.D.	2.0	N.D.	2.0
Trichlorofluoromethane	N.D.	2.0	N.D.	2.0
,1-Dichloroethene	N.D.	0.5	N.D.	0.5
Ethylene Chloride	N.D.	0.5	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5	3.4	0.5
,1-Dichloroethane	N.D.	0.5	N.D.	0.5
Chloroform	1.1	0.5	20	0.5
,1,1-Trichloroethane (TCA)	N.D.	0.5	N.D.	0.5
Carbon Tetrachloride	N.D.	0.5	N.D.	0.5
,2-Dichloroethane (EDC)	1.6	0.5	2.7	0.5
Trichloroethene (TCE)	4,700	50.0	10,000	62.5
,2-Dichloropropane	N.D.	0.5	N.D.	0.5
Bromodichloromethane	N.D.	0.5	N.D.	0.5
-Chloroethylvinyl ether	N.D.	0.5	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	0.5	N.D.	0.5
,1,2-Trichloroethane	N.D.	0.5	N.D.	0.5
Tetrachloroethene	7.6	0.5	16	0.5
Dibromochloromethane	N.D.	0.5	N.D.	0.5
Chlorobenzene	N.D.	0.5	N.D.	0.5
Bromoform	N.D.	0.5	N.D.	0.5
,1,2,2-Tetrachloroethane	N.D.	0.5	N.D.	0.5
,3-Dichlorobenzene	N.D.	0.5	N.D.	0.5
,4-Dichlorobenzene	N.D.	0.5	N.D.	0.5
,2-Dichlorobenzene	N.D.	0.5	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike % Percent Recovery

Bromochloromethane	100%	118%
,4-Dichlorobutane	86%	95%

N.D.: Not Detected

Attia
 Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Report Date: 23-Sep-88 Extract/Purge Date: 02-Sep-88
 ACE JOB #: HLA 0831.90-L Completion Date: 02-Sep-88
 Analytical Method: EPA 8010 Analyst: ATTIA
 Matrix: WATER

	MW-6	MW-3	MW-9
Sample #:	8-7943	8-7944	8-7945
CLIENT ID	342606	342607	342608

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
trichlorodifluoromethane	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
monomethane	N.D.	N.D.	N.D.	2.0
hydroethane	N.D.	N.D.	N.D.	2.0
trichlorofluoromethane	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	14	1.5	0.5
ethylene Chloride	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	3.2	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	6.6	0.7	0.5
chloroform	17	N.D.	5.7	0.5
1,1,1-Trichloroethane (TCA)	N.D.	0.6	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	2.8	0.8	2.1	0.5
1,1,2-Trichloroethane (TCE)	14,000*	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	0.5
1,1-dichloromethane	N.D.	N.D.	N.D.	0.5
1-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	0.6	N.D.	N.D.	0.5
tetrachloroethene	17	N.D.	N.D.	0.5
bromochloromethane	N.D.	N.D.	N.D.	0.5
chlorobenzene	N.D.	N.D.	N.D.	0.5
chloroform	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	0.5
1,3-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

1,1-dichloroethane	111%	104%	96%
1,2-Dichlorobutane	86%	95%	91%

N.D.: Not Detected
 *TCE Quantified at 125 times dilution.

Attia
 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.90-L
 METHOD : EPA 8010
 SAMPLE #: 8-7938, 7939, 7940

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.
Ethylene Chloride	N.D.	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane	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)	N.D.	7	92
1,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
1-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	N.D.	8	72
Bromochloromethane	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 %	10 %

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



 Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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


ANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.90-L
METHOD : EPA 8010
SAMPLE #: 8-7941, 7942

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
chlorodifluoromethane	N.D.	-	N.S.
bromomethane	N.D.	-	N.S.
vinyl Chloride	N.D.	-	N.S.
monomethane	N.D.	-	N.S.
propoethane	N.D.	-	N.S.
trichlorofluoromethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
ethylene Chloride	N.D.	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane	N.D.	6	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)	N.D.	7	95
2,2-Dichloropropane	N.D.	-	N.S.
1,1,1-trichloromethane	N.D.	-	N.S.
chloroethylvinyl ether	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	2	95
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
tetrachloroethene	N.D.	9	93
bromochloromethane	N.D.	-	N.S.
chlorobenzene	N.D.	-	N.S.
chloroform	N.D.	-	N.S.
1,1,2,2-Tetrachloroethane	N.D.	-	N.S.
1,2-Dichlorobenzene	N.D.	-	N.S.
1,4-Dichlorobenzene	N.D.	-	N.S.
1,3-Dichlorobenzene	N.D.	-	N.S.

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
1,1,1-trichloromethane	104 %	97 %	91 %
1,2-Dichlorobutane	111 %	95 %	98 %

N.D.: Not Detected
 -: Not Spiked



 Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.90-L
 METHOD : EPA 8010
 SAMPLE #: 8-7943, 8-7944, 8-7945

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-Dichloroethene	N.D.	-	N.S.
Methylene Chloride	1.0	-	N.S.
rans-1,2-Dichloroethene	N.D.	-	N.S.
,1-Dichloroethane	N.D.	4	101
Chloroform	N.D.	-	N.S.
,1,1-Trichloroethane (TCA)	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
,2-Dichloroethane (EDC)	N.D.	-	N.S.
Trichloroethene (TCE)	N.D.	6	105
,2-Dichloropropane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
-Chloroethylvinyl ether	N.D.	-	N.S.
rans-1,3-Dichloropropene	N.D.	4	104
is-1,3-Dichloropropene	N.D.	-	N.S.
,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	1	103
Dibromochloromethane	N.D.	-	N.S.
Chlorobenzene	N.D.	-	N.S.
Bromoform	N.D.	-	N.S.
,1,2,2-Tetrachloroethane	N.D.	-	N.S.
,3-Dichlorobenzene	N.D.	-	N.S.
,4-Dichlorobenzene	N.D.	-	N.S.
,2-Dichlorobenzene	N.D.	-	N.S.

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Bromochloromethane	100 %	97 %	101 %
,4-Dichlorobutane	101 %	101 %	102 %

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

Walt
 Analytical Supervisor

Report Date: 20-Sep-88
Revised Date: 31-Jul-89
PACE JOB #: HLA 0831.90-L
Analytical Method: EPA 5030/8015/8020

Extract/Purge Date: 30-Aug-88
Completion Date: 30-Aug-88
Analyst: ATTIA
MATRIX: WATER

LAB #:	MW-5	MW-8	MW-7
	8-7938	8-7939	8-7940
CLIENT'S ID:	342601	342602	342603

COMPOUND	RESULT (ug/L)	RESULT (ug/L)	RESULT (ug/L)	Detection Limit (ug/L)
Total Petroleum Hydrocarbons (Light)	N.D.	N.D.	N.D.	50.0

QUALITY CONTROL DATA Surrogate Spike % Recovery
Fluorobenzene 102%

LAB #:	MW-2	MW-6
	8-7941	8-7942
CLIENT'S ID:	342604	342605

COMPOUND	RESULT (ug/L)	Detection Limit (ug/L)	RESULT (ug/L)	Detection Limit (ug/L)
Total Petroleum Hydrocarbons (Light)	790	50.0	3,500	500

QUALITY CONTROL DATA Surrogate Spike % Recovery
Fluorobenzene 128% M.I. 96%

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


Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

laboratories, inc.

FORMERLY WESCO LABORATORIES

QUALITY CONTROL DATA

METHOD: EPA 5030/8015/8020 PACE JOB #: HLA 0831.90

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
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Baseline-----	N.D.	5	98
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QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Chlorobenzene	94 %	93 %	98%

N.D.: Not Detected

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

FORMERLY WESCO LABORATORIES

Report Date: 20-Sep-88
ACE JOB #: HLA 0831.90-L
Analytical Method: EPA 8020
MATRIX: WATER

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

Table with 5 columns: AB #, LIENT'S ID, COMPOUND, RESULT (ug/l), and Detection Limit (ug/l). Rows include benzene, toluene, chlorobenzene, ethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, and 1,2-Dichlorobenzene. Results are mostly N.D.

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Chlorobenzene 105 % 103 % 105 %

Table with 5 columns: AB #, LIENT'S ID, COMPOUND, RESULT (ug/l), and Detection Limit (ug/l). Rows include benzene, toluene, chlorobenzene, ethylbenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, and 1,2-Dichlorobenzene. Results show various concentrations like 7.1, 1.0, 2.0, 430.

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Chlorobenzene 101 % 126%M.I. 124%M.I.

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

Handwritten signature
Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

FORMERLY WESCO LABORATORIES

Report Date: 20-Sep-88
ACE JOB #: HLA 0831.90-L
Analytical Method: EPA 8020
MATRIX: WATER

Extract/Purge Date: 02-Sep-88
Completion Date: 02-Sep-88
Analyst: ATTIA

Well #: MW-3 MW-9
CLIENT'S ID: 8-7944 8-7945
342607 342608

Table with 4 columns: COMPOUND, RESULT (ug/l), RESULT (ug/l), Detection Limit (ug/l). Rows include Benzene, Toluene, Chlorobenzene, Xylenes, and Dichlorobenzenes.

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Chlorobenzene 101 % 111 %

QUALITY CONTROL DATA

METHOD: EPA 8020 PACE JOB#: HLA 0831.90-L
SAMPLE #: 8-7943, 8-7944, 8-7945

Table with 4 columns: COMPOUND, Blank (ug/l), Spike Duplicate % deviation, Spike % recovery. Rows include Benzene, Toluene, and Xylene.

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Chlorobenzene 102 % 97 % 99%

N.D.: Not Detected

Handwritten signature

Analytical Supervisor



REPORT OF LABORATORY ANALYSIS

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

FORMERLY WESCO LABORATORIES

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#:

HLA 0831.90-L

SAMPLE #: 8-7941, 8-7942

Table with 4 columns: COMPOUND, Blank (ug/l), Spike Duplicate % deviation, Spike % recovery. Rows include Benzene, Toluene, and p-Xylene.

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Table with 4 columns: Surrogate Spike % Recovery, 98 %, 100 %, 100%

N.D.: Not Detected

Handwritten signature

Analytical Supervisor

OCT 5 1988

Offices:

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

Report date: October 3, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831193-L

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

Site: City of Oakland

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

P.O.: 09382, 022.02

Lab #	Client ID	Matrix	Analysis
8- 8278	88360901	MW-5 water	TPH (light) only 5030/8015
8- 8278	88360901	water	Vol Org. Cpds. 8010+8020
8- 8279	88360902	MW-2 water	TPH (light) only 5030/8015
8- 8279	88360902	water	Vol Org. Cpds. 8010+8020
8- 8280	88360903	MW-6 water	TPH (light) only 5030/8015
8- 8280	88360903	water	Vol Org. Cpds. 8010+8020
8- 8281	88360904	MW-10 water	TPH (light) only 5030/8015
8- 8281	88360904	water	Vol Org. Cpds. 8010+8020
8- 8282	88360905	MW-11 water	TPH (light) only 5030/8015
8- 8282	88360905	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 Lisa Petersen, our Client Services Coordinator at (415)883-6100.

C. Dontaef

Sample Controller

Report Date: 27-Sep-88
 PACE JOB #: HLA 0831.93-L
 Analytical Method: 5030/8015
 MATRIX: WATER

Completion Date: 15-Sep-88
 Reported by: D.Gill
 Analyst: ATTIA

LAB #: 8-8278 CLIENT'S ID: MW-5 360901

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

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 103 %

LAB #: 8-8279 CLIENT'S ID: MW-Z 360902

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	790	50.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 119 %

LAB #: 8-8280 CLIENT'S ID: MW-6 360903

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	3,600	500

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 96 %

N.D.: Not Detected



 Analytical Supervisor

Report Date: 27-Sep-88
PACE JOB #: HLA 0831.93-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Completion Date: 15-Sep-88
Reported by: D.Gill
Analyst: ATTIA

LAB #: 8-8281

CLIENT'S ID: *MW-10* 360904

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	<i>2,900</i>	500

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

✓
108 %

LAB #: 8-8282

CLIENT'S ID: *MW-11* 360905

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	<i>1,200</i>	250

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

✓
111 %

N.D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA
 METHOD: 5030/8015

PACE JOB #: HLA 0831.93-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 %
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N.D.: Not Detected



 Analytical Supervisor

Report Date: 18-Nov-88
PACE JOB #: HLA 0831.93-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date:
Reported by:
Analyst: ATTIA

SEE BELOW
D.Gill

LAB #: 8-8278 8-8279 8-8280 8-8281 8-8282
CLIENT'S ID: 360901 360902 360903 360904 360905

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	16	N.D.	N.D.	16	2.6	0.5
Methylene Chloride	0.7	0.6	0.5	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.8	1.7	N.D.	N.D.	0.5
1,1-Dichloroethane	8.8	N.D.	N.D.	4.1	2.7	0.5
Chloroform	6.4	5.5	19	N.D.	N.D.	0.5
1,1,1-Trichloroethane (TCA)	1.3	N.D.	N.D.	N.D.	1.4	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.4	1.0	2.1	17	28	0.5
Trichloroethene (TCE)	N.D.	3,800*	940**	62	5.6	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.	5.9	13	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

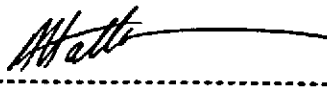
QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery				
Bromochloromethane	107 %	98 %	104 %	95 %	89 %
1,4-Dichlorobutane	103 %	91 %	83 %	103 %	96 %

N.D.: Not Detected

*: TCE quantified at 50 times dilution

** : TCE quantified at 100 times dilution



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.93-L
METHOD : EPA 8010
SAMPLE #: 8-8278, 8-8279, 8-8280

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	1.2	-	N.S.
trans-1,2-Dichloroethene	N.D.	-	N.S.
1,1-Dichloroethane (M.S.)	N.D.	14	94
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	91
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	99
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	5	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	99 %	103 %	99% %
1,4-Dichlorobutane	111 %	101 %	97% %

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



Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # NLA 0831.93-L

METHOD : EPA 8010

SAMPLE #: 8-8281, 8-8282

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	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.	3	97
1,2-Dichloropropene	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.	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	91 %	100 %	106% \times
1,4-Dichlorobutane	107 %	106 %	105% \times

N.D.: Not Detected

N.S.: Not Spiked

Report Date: 27-Sep-88
PACE JOB #: HLA 0831.93-L
Analytical Method: EPA 8020
MATRIX: WATER

Completion Date: 26-Jul-88
Reported by: D.Gill
Analyst: ATTIA

	MW-5	MW-2	MW-6
LAB #:	8-8278	8-8279	8-8280
CLIENT'S ID:	360901	360902	360903
COMPLETION DATE:	15-SEP-88	15-SEP-88	15-SEP-88

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	8.4	29	0.2
Toluene-----	N.D.	1.6	77	0.2
Chlorobenzene-----	N.D.	N.D.	N.D.	0.2
Ethylbenzene-----	N.D.	0.9	250	0.2
Xylene-----	N.D.	3.1	490	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 %	119 %	105 %

	MW-10	MW-11
LAB #:	8-8281	8-8282
CLIENT'S ID:	360904	360905
COMPLETION DATE:	16-SEP-88	16-SEP-88

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	910	4.0	520	2.0
Toluene-----	690	4.0	670	2.0
Chlorobenzene-----	N.D.	4.0	N.D.	2.0
Ethylbenzene-----	42	4.0	13	2.0
Xylene-----	270	4.0	180	2.0
1,3-Dichlorobenzene-----	N.D.	4.0	N.D.	2.0
1,4-Dichlorobenzene-----	N.D.	4.0	N.D.	2.0
1,2-Dichlorobenzene-----	N.D.	4.0	N.D.	2.0

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Fluorobenzene	104 %	109 %

Attia
Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#:

HLA 0831.93-L

SAMPLE #: 8-8278, 8-8279, 8-8280

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%

SAMPLE #: 8-8281, 8-8282

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	8	102
Toluene-----	N.D.	7	101
p-Xylene-----	N.D.	8	102

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 98 % 98 % 10%

N.D.: Not Detected



Analytical Supervisor

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

Pace job #: HLA 0831.96-L
MONITORING WELLS
9-23-88

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

Site: City of Oakland

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

P.O.: 09382 022 02

Lab #	Client ID	Matrix	Analysis
8- 9146	88382301	MW-5 water	TPH (light) only 5030/8015
8- 9146	88382301	water	Vol Org. Cpds. 8010+8020
8- 9147	88382302	water	TPH (light) only 5030/8015
8- 9147	88382302	MW-2 water	Vol Org. Cpds. 8010+8020
8- 9148	88382304	water	TPH (light) only 5030/8015
8- 9148	88382304	MW-6 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 Lisa Petersen, our Client Services Coordinator at (415) 883-6100.



Sample Controller

QUALITY CONTROL DATA

METHOD: EPA 5030/8015 PACE JOB #: HLA 0831.96-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	1	97
Toluene-----	N.D.	1	100
p-Xylene-----	N.D.	1	98
Gasoline-----	N.D.	0	112

QUALITY CONTROL DATA

Surrogate Spike % Recovery
 Fluorobenzene 103 % 93 % 93%

N.D.: Not Detected



 Analytical Supervisor

Report Date: 11-Oct-88
PACE JOB #: HLA 0831.96-L
Analytical Method: EPA 8010
Matrix: WATER

Extract/Purge Date: 28-Sep-88
Reported by: D.Gill
Analyst: ARNTZEN

	MW-5	MW-2	MW-6	
LAB #:	8-9146	8-9147	8-9148	
CLIENT ID	382301	382302	382303	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane-----	1.7	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-----	16	N.D.	N.D.	0.5
Methylene Chloride-----	N.D.	0.6	N.D.	0.5
trans-1,2-Dichloroethene-----	N.D.	1.3	2.1	0.5
1,1-Dichloroethane-----	10	N.D.	N.D.	0.5
Chloroform-----	6.1	4.6	19	0.5
1,1,1-Trichloroethane (TCA)-----	1.8	N.D.	N.D.	0.5
Carbon Tetrachloride-----	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)-----	1.4	1.5	2.5	0.5
Trichloroethene (TCE)-----	N.D.	4,100*	13,000**	0.5
1,2-Dichloropropane-----	N.D.	N.D.	N.D.	0.5
Bromodichloromethane-----	N.D.	N.D.	0.5	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.	6.5	13	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	102%	102%	102%
1,4-Dichlorobutane	94%	98%	103%

N.D.: Not Detected

*:TCE quantified at 50 times dilution .

** : TCE quantified at 125 times dilution.

AG
Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.96-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.	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.	-	N.S.
Trichloroethene (TCE)	N.D.	8	94
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	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

Report date: October 21, 1988
 Client: Harding Lawson Associates
 200 Rush Landing Road
 Novato, CA 94947
 Attn.: D. Leland

Pace job #: HLA 0831.99-L

MONITORING WELLS
 9-30-88

Date sampled: September 30, 1988
 Sampled by: T. Walker

Site: City of Oakland

Date received: September 30, 1988
 Submitted by: T. Walker

P.O.: 09382,022.02

Lab #	Client ID		Matrix	Analysis
8- 9508	88393001		water	TPH (light) only 5030/8015
8- 9508	88393001	MW-7	water	Vol Org. Cpds. 8010 + 8020
8- 9509	88393002		water	TPH (light) only 5030/8015
8- 9509	88393002	MW-8	water	Vol Org. Cpds. 8010 + 8020
8- 9510	88393003		water	TPH (light) only 5030/8015
8- 9510	88393003	MW-2	water	Vol Org. Cpds. 8010 + 8020
8- 9511	88393004		water	TPH (light) only 5030/8015
8- 9511	88393004	MW-6	water	Vol Org. Cpds. 8010 + 8020
8- 9512	88393005		water	TPH (light) only 5030/8015
8- 9512	88393005	MW-6	water	Vol Org. Cpds. 8010 + 8020
8- 9513	88393006		water	TPH (light) only 5030/8015
8- 9513	88393006	MW-5	water	Vol Org. Cpds. 8010 + 8020
8- 9514	88393007		water	TPH (light) only 5030/8015
8- 9514	88393007	MW-3	water	Vol Org. Cpds. 8010 + 8020

Report date: October 21, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831.99-L

Date sampled: September 30, 1988
Sampled by: T. Walker

Site: City of Oakland

Date received: September 30, 1988
Submitted by: T. Walker

P.O.: 09382,022.02

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

Report Date: 20-Oct-88 Completion Date: 07-Oct-88
 PACE JOB #: HLA 0831.99-L Reported by: J.HARWOOD
 Analytical Method: 5030/8015 Analyst: ATTIA
 MATRIX: WATER

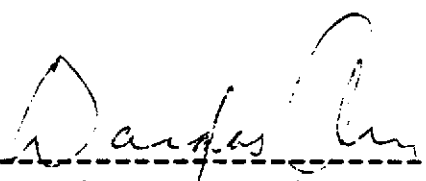
	MW-7		MW-8	
LAB #:	8-9508		8-9509	
CLIENT'S ID:	393001		393002	
=====				
COMPOUND	RESULT	Detection	RESULT	Detection
	(ug/l)	Limit	(ug/l)	Limit
		(ug/l)		(ug/l)
Total Petroleum Hydrocarbons				
(light)---	N.D.	50.0	N.D.	50.0

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 92 % 92 %

	MW-2		MW-6	
LAB #:	8-9510		8-9511	
CLIENT'S ID:	393003		393004	
=====				
COMPOUND	RESULT	Detection	RESULT	Detection
	(ug/l)	Limit	(ug/l)	Limit
		(ug/l)		(ug/l)
Total Petroleum Hydrocarbons				
(light)---	1,700	500	5,500	500

QUALITY CONTROL DATA
 Surrogate Spike % Recovery
 Fluorobenzene 94 % 100 %

N.D.: Not Detected.



 Analytical Supervisor

Report Date: 20-Oct-88
PACE JOB #: HLA 0831.99-L
Analytical Method: 5030/8015
MATRIX: WATER

Completion Date: 07-Oct-88
Reported by: J.HARWOOD
Analyst: ATTIA

	MW-6	MW-5
LAB #:	8-9512	8-9513
CLIENT'S ID:	393005	393006

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	4,000	500	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 92 %

LAB #:	MW-3
CLIENT'S ID:	8-9514 393007

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

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 90 %

N.D.: Not Detected.



Analytical Supervisor

PACE JOB #: HLA 0831.99-L
 Analytical Method: 5030/8015
 MATRIX: WATER

QUALITY CONTROL DATA
 METHOD: 5030/8015

PACE JOB #: HLA 0831.99-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	5	105

QUALITY CONTROL DATA

Surrogate Spike % Recovery			
Fluorobenzene	96 %	99 %	96 %

N.D.: Not Detected

Danfy

 Analytical Supervisor

Report Date: 21-Oct-88
PACE JOB #: HLA 0831.99-L
Analytical Method: EPA 8010
Matrix: WATER

Completion Date: 06-Oct-88
Reported by: J. HARWOOD
Analyst: ATTIA

	MW-7	MW-8	MW-2	
LAB #:	8-9508	8-9509	8-9510	
CLIENT ID	393001	393002	393003	
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.	0.9	0.5
1,1-Dichloroethane-----	N.D.	N.D.	N.D.	0.5
Chloroform-----	N.D.	0.5	3.5	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)-----	4.4	N.D.	1.3	0.5
Trichloroethene (TCE)-----	N.D.	8.5	3,600*	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.	5.6	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	88%	82%	80%
1,4-Dichlorobutane	99%	89%	84%

N.D.: Not Detected

*: TCE quantified at 100 times dilution.

[Signature]
Analytical Supervisor

BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOB # HLA 0831.99-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	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)	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	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	104 %	103 %	103 %

N.D.: Not Detected

N.S.: Not Spiked


 Analytical Supervisor

Report Date: 20-Oct-88
PACE JOB #: HLA 0831.99-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 07-Oct-88
Reported by: J. HARWOOD
Analyst: LEWIS

LAB #:	MW-6	MW-6	MW-5	MW-3
	8-9511	8-8512	8-9513	8-9514
CLIENT'S ID:	393004	393005	393006	393007

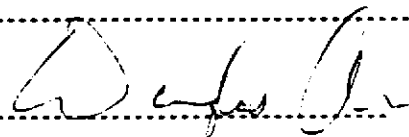
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	N.D.	2.0
Chloromethane	N.D.	N.D.	N.D.	N.D.	2.0
Vinyl Chloride	N.D.	N.D.	N.D.	N.D.	2.0
Bromomethane	N.D.	N.D.	N.D.	N.D.	2.0
Chloroethane	N.D.	N.D.	N.D.	N.D.	2.0
Trichlorofluoromethane	N.D.	N.D.	N.D.	N.D.	2.0
1,1-Dichloroethene	N.D.	N.D.	16.0	9.2	0.5
Methylene Chloride	N.D.	N.D.	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	1.3	1.1	N.D.	N.D.	0.5
1,1-Dichloroethane	N.D.	N.D.	10.0	4.7	0.5
Chloroform	15.0	14.0	6.6	N.D.	0.5
1,1,1-Trichloroethane (TCA)	N.D.	N.D.	1.8	N.D.	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane (EDC)	1.4	1.3	1.3	0.6	0.5
Trichloroethene (TCE)	8,600*	7,900*	7.5	N.D.	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	0.5
cis-1,3-Dichloropropene	N.D.	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5
Bromoform	N.D.	N.D.	N.D.	N.D.	0.5
1,1,2,2-Tetrachloroethane	N.D.	N.D.	N.D.	N.D.	0.5
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery			
Bromochloromethane	90%	92%	107%	88%
1,4-Dichlorobutane	89%	96%	92%	84%

N.D.: Not Detected

*: TCE quantified at 100x dilution.


Analytical Supervisor

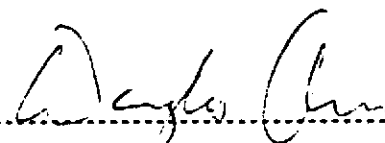
BLANK, SPIKE DUPLICATE AND SPIKE REPORT JOBHLA 0831.99-L
METHOD : EPA 8010

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.	5	100
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.	5	102
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.	-	N.S.
cis-1,3-Dichloropropene	N.D.	5	107
1,1,2-Trichloroethane	N.D.	-	N.S.
Tetrachloroethene (M.S.)	N.D.	2	108
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	81 %	95 %	100 %
1,4-Dichlorobutane	109 %	97 %	103 %

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


Analytical Supervisor

Report Date: 21-Oct-88
PACE JOB #: HLA 0831.99-L
Analytical Method: EPA 8020
MATRIX: WATER

Completion Date: 06-Oct-88
Reported by: J. Harwood
Analyst: Attia

	MW-7	MW-8	MW-2	
LAB #:	8-9508	8-9509	8-9510	
CLIENT'S ID:	393001	393002	393003	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	N.D.	13	0.2
Toluene-----	N.D.	N.D.	2.8	0.2
Chlorobenzene-----	N.D.	N.D.	N.D.	0.2
Ethylbenzene-----	N.D.	N.D.	1.6	0.2
Xylene-----	N.D.	N.D.	8.3	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 % 97 % 113 %

QUALITY CONTROL DATA

METHOD: EPA 8020 PACE JOB#: HLA 0831.99-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

Douglas Oran

Analytical Supervisor

Report Date: 20-Oct-88
PACE JOB #: HLA 0831.99-L
Analytical Method: EPA 8020
MATRIX: WATER

Completion Date: 07-Oct-88
Reported by: J. Harwood
Analyst: Attia/Lewis

LAB #:	MW-6	MW-6	
CLIENT'S ID:	8-9511	8-9512	
	393004	393005	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	15.0	12.0	0.2
Toluene-----	50.0	40.0	0.2
Chlorobenzene-----	1.1	N.D.	0.2
Ethylbenzene-----	N.D.	N.D.	0.2
Xylene-----	240	180	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 99 % 97%

LAB #:	MW-5	MW-3	
CLIENT'S ID:	8-9513	8-9514	
	393006	393007	
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 97 % 99%

Attia/Lewis

Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#:

HLA 0831.99-L

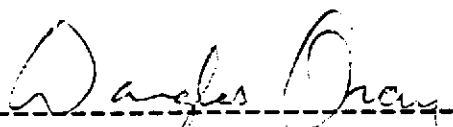
COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	2	99
Toluene-----	N.D.	1	100
p-Xylene-----	N.D.	2	100

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 98 % 98 % 98%

N.D.: Not Detected



Analytical Supervisor

Report date: November 29, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831104-L

MONITORING WELLS
11-1-88

Date sampled: November 1, 1988
Sampled by: T.J. Walker

Site: City of Oakland

Date received: November 1, 1988
Submitted by: T.J. Walker

P.O.: 09382 022 02

Lab #	Client ID	Matrix	Analysis
8- 1442	88450101	water	TPH (light) only 5030/8015
8- 1442	88450101	water	Vol Org. Cpds. 8010 + 8020
8- 1451	88450101	water	Priority Pollutant Metals (wat
8- 1442	88450101	water	EDB EPA 504
8- 1444	88450102	water	TPH (light) only 5030/8015
8- 1444	88450102	water	Vol Org. Cpds. 8010 + 8020
8- 1452	88450102	water	Priority Pollutant Metals (wat
8- 1444	88450102	water	EDB EPA 504
8- 1446	88450103	water	TPH (light) only 5030/8015
8- 1446	88450103	water	Vol Org. Cpds. 8010 + 8020
8- 1453	88450103	water	Priority Pollutant Metals (wat
8- 1446	88450103	water	EDB EPA 504

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. Montag
Sample Controller

Report Date: 29-Nov-88
 PACE JOB #: HLA 0831.104-L
 Analytical Method: EPA 8010
 Matrix: WATER

Completion Date: 15-Nov-88
 Reported by: J.HARWOOD
 Analyst: CHROMALAB

	MW-9	MW-10	MW-11
LAB #:	8-1442	8-1444	8-1446
CLIENT ID	450101	450102	450103

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit(ug/l)
Dichlorodifluoromethane-----	N.D.	N.D.	N.D.	1.0
Chloromethane-----	N.D.	N.D.	N.D.	1.0
Vinyl Chloride-----	N.D.	N.D.	N.D.	1.0
Bromomethane-----	N.D.	N.D.	N.D.	1.0
Chloroethane-----	N.D.	N.D.	N.D.	1.0
Trichlorofluoromethane-----	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethene-----	N.D.	10.7	N.D.	1.0
Methylene Chloride-----	16.0	13.7	15.9	1.0
trans-1,2-Dichloroethene-----	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethane-----	1.0	3.0	N.D.	1.0
Chloroform-----	5.1	N.D.	N.D.	1.0
1,1,1-Trichloroethane (TCA)-----	N.D.	N.D.	3.5	1.0
Carbon Tetrachloride-----	N.D.	N.D.	N.D.	1.0
1,2-Dichloroethane (EDC)-----	N.D.	7.5	27.0	1.0
Trichloroethene (TCE)-----	N.D.	55.0	N.D.	1.0
1,2-Dichloropropane-----	N.D.	N.D.	N.D.	1.0
Bromodichloromethane-----	N.D.	N.D.	N.D.	1.0
2-Chloroethylvinyl ether-----	N.D.	N.D.	N.D.	1.0
trans-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	1.0
cis-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	1.0
1,1,2-Trichloroethane-----	N.D.	N.D.	N.D.	1.0
Tetrachloroethene-----	N.D.	N.D.	N.D.	1.0
Dibromochloromethane-----	N.D.	N.D.	N.D.	1.0
Chlorobenzene-----	N.D.	N.D.	N.D.	1.0
Bromoform-----	N.D.	N.D.	N.D.	1.0
1,1,2,2-Tetrachloroethane-----	N.D.	N.D.	N.D.	1.0
1,3-Dichlorobenzene-----	N.D.	N.D.	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	N.D.	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	N.D.	N.D.	1.0

N.D.: Not Detected

NOTE: Report was sent out to Chromalab, no Q.C available.

Douglas Quans
 Analytical Supervisor

Report Date: 28-Nov-88
PACE JOB #: HLA 0831.104-L
Analytical Method: EPA 504
MATRIX: WATER

Extraction Date: 01-Nov-88
Completion Date: 14-Nov-88
Reported By: J. HARWOOD
Analyst: CLARK
Instrument I.D.: 3700 BETA

	MW-9	MW-10	MW-11	
LAB #:	8-1442	8-1444	8-1446	
CLIENT'S ID:	450101	450102	450103	
COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Ethylene Dibromide	0.15	0.03	0.16	0.01

BLANK, SPIKE DUPLICATE AND SPIKE REPORT

METHOD: EPA 504 PACE JOB #: HLA 0831.104-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Ethylene Dibromide	N.D. %	10 %	103%

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Ethylene Dibromide N.D. % 10 % 103%

N.D.: Not Detected

Douglas Oray
Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Report Date: 15-Nov-88
PACE JOB #: HLA 0831.104-L
Analytical Method: EPA 8020
MATRIX: WATER

Completion Date: SEE BELOW
Reported by: J. Harwood
Analyst: Attia

	MW-9	MW-10
LAB #:	8-1442	8-1444
CLIENT'S ID:	450101	450102
DATE:	07-Nov-88	07-Nov-88

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	140	0.2	200	0.5
Toluene-----	63	0.2	55	0.5
Chlorobenzene-----	N.D.	0.2	N.D.	0.5
Ethylbenzene-----	N.D.	0.2	N.D.	0.5
Xylene-----	40	0.2	250	0.5
1,3-Dichlorobenzene-----	N.D.	0.2	N.D.	0.5
1,4-Dichlorobenzene-----	N.D.	0.2	N.D.	0.5
1,2-Dichlorobenzene-----	N.D.	0.2	N.D.	0.5

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 120 %* 113 %

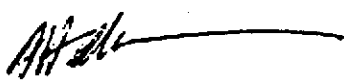
	MW-11
LAB #:	8-1446
CLIENT'S ID:	450103
DATE:	09-Nov-88

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	1,300	5.0
Toluene-----	1,900	5.0
Chlorobenzene-----	N.D.	5.0
Ethylbenzene-----	91	5.0
Xylene-----	820	5.0
1,3-Dichlorobenzene-----	N.D.	5.0
1,4-Dichlorobenzene-----	N.D.	5.0
1,2-Dichlorobenzene-----	N.D.	5.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 104 %

N.D.: Not Detected
*: Matrix Interference



Analytical Supervisor

Report Date: 14-Nov-88
PACE JOB #: HLA 0831.104-L
Analytical Method: SEE BELOW

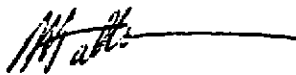
Completion Date: SEE BELOW
Reported by: J. Harwood
Analyst: Kibbler/Nackord/
Walker

MATRIX: WATER

LAB #	CLIENT ID	Antimony (Sb) (mg/l)	Arsenic (As) (mg/l)	Barium (Ba) (mg/l)	Beryllium (Be) (mg/l)	Cadmium (Cd) (mg/l)	Chromium (Cr) (mg/l)
DATE:		06-Nov-88	04-Nov-88	06-Nov-88	06-Nov-88	06-Nov-88	06-Nov-88
8-1451	450101 <i>MW-9</i>	N.D.	N.D.	0.15	N.D.	N.D.	0.01
8-1452	450102 <i>MW-10</i>	N.D.	N.D.	0.11	N.D.	N.D.	N.D.
8-1453	450103 <i>MW-11</i>	N.D.	N.D.	0.078	N.D.	N.D.	N.D.
Detection limit		0.2	0.003	0.01	0.01	0.01	0.01
Method number		EPA 200.7	EPA 7060	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7

LAB #	CLIENT ID	Cobalt (Co) (mg/l)	Copper (Cu) (mg/l)	Lead (Pb) (mg/l)	Mercury (Hg) (mg/l)	Molybdenum (Mo) (mg/l)	Nickel (Ni) (mg/l)
DATE:		06-Nov-88	06-Nov-88	06-Nov-88	03-Nov-88	06-Nov-88	06-Nov-88
8-1451	450101 <i>MW-9</i>	0.01	N.D.	N.D.	N.D.	N.D.	0.01
8-1452	450102 <i>MW-10</i>	0.01	N.D.	N.D.	N.D.	N.D.	0.01
8-1453	450103 <i>MW-11</i>	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Detection limit		0.01	0.01	0.05	<0.001	0.02	0.01
Method number		EPA 200.7	EPA 200.7	EPA 200.7	EPA 7470	EPA 200.7	EPA 200.7

LAB #	CLIENT ID	Selenium (Se) (mg/l)	Silver (Ag) (mg/l)	Thallium (Tl) (mg/l)	Vanadium (V) (mg/l)	Zinc (Zn) (mg/l)
DATE:		04-Nov-88	06-Nov-88	06-Nov-88	06-Nov-88	06-Nov-88
8-1451	450101 <i>MW-9</i>	N.D.	N.D.	N.D.	N.D.	0.077
8-1452	450102 <i>MW-10</i>	N.D.	N.D.	N.D.	N.D.	0.093
8-1453	450103 <i>MW-11</i>	N.D.	N.D.	N.D.	N.D.	0.066
Detection limit		0.005	0.01	0.2	0.01	0.01
Method number		EPA 7740	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7


Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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 Tampa, Florida
 Coralville, Iowa
 Novato, California

QUALITY CONTROL DATA

PAGE JOB #: HLA 0831.104-L

COMPOUND	Blank (mg/l)	Spike Duplicate % deviation	Spike % recovery
Antimony	N.D.	6.1	90
Arsenic	N.D.	4	62*
Barium	N.D.	3.6	100
Beryllium	N.D.	1.0	92
Cadmium	N.D.	3.3	87.0
Chromium	N.D.	1.8	101
Cobalt	N.D.	3.2	90
Copper	N.D.	1.8	94
Lead	N.D.	0.61	96.4
Mercury	N.D.	4.6	108
Molybdenum	N.D.	4.2	103
Nickel	N.D.	3.1	95.8
Selenium	N.D.	3	100
Silver	N.D.	2.4	88
Thallium	N.D.	17.4	73.4
Vanadium	N.D.	11.8	83
Zinc	N.D.	3.9	98.9

N.D.: Not Detected
 * Matrix Interference



 Analytical Supervisor

Report Date: 02-Dec-88 Completion Date: 08-Nov-88
 PACE JOB #: HLA 0831.104-L Reported by: J. Harwood
 Analytical Method: EPA 8270 Analyst: Siegmund

MATRIX: WATER

MW-9 MW-10 MW-11

LAB #: 8-1448 8-1449 8-1450
 CLIENT'S ID: 450101 450102 450103

BASE NEUTRALS	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
N-Nitrosodimethylamine	N.D.	N.D.	N.D.	n.d.
Aniline	N.D.	N.D.	N.D.	n.d.
Bis(2-chloroethyl) ether	N.D.	N.D.	N.D.	7
1,3-Dichlorobenzene	N.D.	N.D.	N.D.	2
1,4-Dichlorobenzene	N.D.	N.D.	N.D.	4
1,2-Dichlorobenzene	N.D.	N.D.	N.D.	2
Bis(2-chloroisopropyl) ether	N.D.	N.D.	N.D.	6
N-Nitroso-di-N-propylamine	N.D.	N.D.	N.D.	n.d.
Hexachloroethane	N.D.	N.D.	N.D.	2
Nitrobenzene	N.D.	N.D.	N.D.	2
Isophorone	N.D.	N.D.	N.D.	n.d.
Bis(2-chloroethoxy) methane	N.D.	N.D.	N.D.	5
1,2,4-Trichlorobenzene	N.D.	N.D.	N.D.	2
Naphthalene	N.D.	N.D.	N.D.	2
Hexachlorobutadiene	N.D.	N.D.	N.D.	1
Hexachlorocyclopentadiene	N.D.	N.D.	N.D.	n.d.
2-Chloronaphthalene	N.D.	N.D.	N.D.	2
Dimethylphthalate	N.D.	N.D.	N.D.	2
Acenaphthylene	N.D.	N.D.	N.D.	4
2,6-Dinitrotoluene	N.D.	N.D.	N.D.	2
Acenaphthene	N.D.	N.D.	N.D.	2
Dibenzofuran	N.D.	N.D.	N.D.	n.d.
2,4-Dinitrotoluene	N.D.	N.D.	N.D.	6
Diethyl phthalate	2.1	N.D.	10	2
Fluorene	N.D.	N.D.	N.D.	2
4-Chlorophenylphenyl ether	N.D.	N.D.	N.D.	4
N-Nitrosodiphenyl amine	N.D.	N.D.	N.D.	2
1,2-Diphenylhydrazine	N.D.	N.D.	N.D.	n.d.
4-Bromophenylphenyl ether	N.D.	N.D.	N.D.	2
Hexachlorobenzene	N.D.	N.D.	N.D.	2
Phenanthrene	N.D.	N.D.	N.D.	6
Anthracene	N.D.	N.D.	N.D.	2
Di-n-butyl phthalate	N.D.	N.D.	N.D.	3
Fluoranthene	N.D.	N.D.	N.D.	2
Benzidine	N.D.	N.D.	N.D.	n.d.
Pyrene	N.D.	N.D.	N.D.	2
Butylbenzyl phthalate	N.D.	N.D.	N.D.	3

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MW-9 MW-10 MW-11

BASE NEUTRALS (cont)

JOB #: HLA 0831.104-L

Analytical Method: EPA 8270

LAB #: 8-1448 8-1449 8-1450
 CLIENT'S ID: 450101 450102 450103

	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzo(a)anthracene	N.D.	N.D.	N.D.	8
3,3'-Dichlorobenzidine	N.D.	N.D.	N.D.	17
Chrysene	N.D.	N.D.	N.D.	3
Bis(2-ethylhexyl) phthalate	N.D.	N.D.	4.1	3
Di-n-octyl phthalate	N.D.	N.D.	N.D.	3
Benzo(b)fluoranthene	N.D.	N.D.	N.D.	5
Benzo(k)fluoranthene	N.D.	N.D.	N.D.	3
Benzo(a)pyrene	N.D.	N.D.	N.D.	3
Indeno(1,2,3-cd)pyrene	N.D.	N.D.	N.D.	4
Dibenzo(a,h)anthracene	N.D.	N.D.	N.D.	3
Benzo(g,h,i)perylene	N.D.	N.D.	N.D.	4

QUALITY CONTROL DATA	Base/Neutral	Surrogate	Spike	Recovery
Nitrobenzene-d5	53%	63%	48%	
2-Fluorobiphenyl	49%	53%	48%	
Terphenyl-d14	83%	75%	89%	

ACID COMPOUNDS	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Phenol	N.D.	N.D.	N.D.	2
2-Chlorophenol	N.D.	N.D.	N.D.	3
2-Methylphenol	N.D.	N.D.	N.D.	n.d.
4-Methylphenol	N.D.	N.D.	N.D.	n.d.
2-Nitrophenol	N.D.	N.D.	N.D.	4
2,4-Dimethylphenol	N.D.	N.D.	N.D.	3
Benzoic Acid	N.D.	N.D.	N.D.	n.d.
2,4-Dichlorophenol	N.D.	N.D.	N.D.	3
4-Chloro-3-methylphenol	N.D.	N.D.	N.D.	3
2,4,6-Trichlorophenol	N.D.	N.D.	N.D.	3
2,4,5-Trichlorophenol	N.D.	N.D.	N.D.	n.d.
2,4-Dinitrophenol	N.D.	N.D.	N.D.	40
4-Nitrophenol	N.D.	N.D.	N.D.	40
2-Methyl-4,6-dinitrophenol	N.D.	N.D.	N.D.	40
Pentachlorophenol	N.D.	N.D.	N.D.	3

QUALITY CONTROL DATA	Acid	Surrogate	Spike	Recovery
2-Fluorophenol	50%	47%	26%	
Phenol-d5	12%	27%	19%	
2,4,6-Tribromophenol	45%	57%	19%	

PESTICIDE COMPOUNDS

JOB #: HLA 0831.104-L

MW-9 MW-10 MW-11

Analytical Method: EPA 8270

LAB #:	8-1448	8-1449	8-1450	
CLIENT'S ID:	450101	450102	450103	
	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection (ug/l)
alpha-BHC	N.D.	N.D.	N.D.	n.d.
beta-BHC	N.D.	N.D.	N.D.	n.d.
gamma-BHC	N.D.	N.D.	N.D.	n.d.
delta-BHC	N.D.	N.D.	N.D.	n.d.
Heptachlor	N.D.	N.D.	N.D.	n.d.
Aldrin	N.D.	N.D.	N.D.	n.d.
Heptachlor epoxide	N.D.	N.D.	N.D.	n.d.
Endosulfan I	N.D.	N.D.	N.D.	n.d.
4,4'-DDE	N.D.	N.D.	N.D.	n.d.
Dieldrin	N.D.	N.D.	N.D.	n.d.
Endrin	N.D.	N.D.	N.D.	n.d.
Endosulfan II	N.D.	N.D.	N.D.	n.d.
4,4'-DDD	N.D.	N.D.	N.D.	n.d.
Endrin Aldehyde	N.D.	N.D.	N.D.	n.d.
4,4'-DDT	N.D.	N.D.	N.D.	n.d.
Endosulfan Sulfate	N.D.	N.D.	N.D.	n.d.

QUALITY CONTROL DATA	Pesticide Surrogate Spike Recovery		
Nitrobenzene-d5	53%	63%	48 %
2-Fluorobiphenyl	49%	53%	48 %
Terphenyl-d14	83%	75%	89 %

OTHER EXTRACTABLES	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection (ug/l)
Acetophenone	N.D.	N.D.	N.D.	n.d.
4-Aminobiphenyl	N.D.	N.D.	N.D.	n.d.
Arochlors	N.D.	N.D.	N.D.	n.d.
Benzyl Alcohol	N.D.	N.D.	N.D.	n.d.
Chlordane	N.D.	N.D.	N.D.	n.d.
4-Chloroaniline	N.D.	N.D.	N.D.	n.d.
1-Chloronaphthalene	N.D.	N.D.	N.D.	n.d.
Dibenz(a,j)acridine	N.D.	N.D.	N.D.	n.d.
2,6-Dichlorophenol	N.D.	N.D.	N.D.	n.d.
p-Dimethylaminoazobenzene	N.D.	N.D.	N.D.	n.d.
7,12-Dimethylbenz(a)-anthracene	N.D.	N.D.	N.D.	n.d.
alpha,alpha-Dimethylphenethylamine	N.D.	N.D.	N.D.	n.d.
Endrin Ketone	N.D.	N.D.	N.D.	n.d.
Ethylmethane sulfonate	N.D.	N.D.	N.D.	n.d.
Methoxychlor	N.D.	N.D.	N.D.	n.d.

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OTHER EXTRACTABLES (cont)

MW-9

MW-10

MW-11

JOB #: HLA 0831.104-L

Analytical Method:

EPA 8270

 LAB #: 8-1448 8-1449 8-1450
 CLIENT'S ID: 450101 450102 450103

	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection (ug/l)
3-Methylchloranthene	N.D.	N.D.	N.D.	n.d.
Methylmethane sulfonate	N.D.	N.D.	N.D.	n.d.
2-Methylnaphthalene	N.D.	N.D.	N.D.	n.d.
1-Naphthylamine	N.D.	N.D.	N.D.	n.d.
2-Naphthylamine	N.D.	N.D.	N.D.	n.d.
2-Nitroaniline	N.D.	N.D.	N.D.	n.d.
3-Nitroaniline	N.D.	N.D.	N.D.	n.d.
4-Nitroaniline	N.D.	N.D.	N.D.	n.d.
N-Nitrosophenylamine	N.D.	N.D.	N.D.	n.d.
N-Nitrosopiperidine	N.D.	N.D.	N.D.	n.d.
Pentachlorobenzene	N.D.	N.D.	N.D.	n.d.
Pentachloronitrobenzene	N.D.	N.D.	N.D.	n.d.
2-Picoline	N.D.	N.D.	N.D.	n.d.
Pronamide	N.D.	N.D.	N.D.	n.d.
1,2,4,5-Tetrachlorobenzene	N.D.	N.D.	N.D.	n.d.
2,3,4,6-Tetrachlorobenzene	N.D.	N.D.	N.D.	n.d.
Toxaphene	N.D.	N.D.	N.D.	n.d.
Biphenyl	N.D.	N.D.	N.D.	n.d.
Diphenylamine	N.D.	N.D.	N.D.	n.d.
beta-Naphthylamine	N.D.	N.D.	N.D.	n.d.
Dibenzothiophene	N.D.	N.D.	N.D.	n.d.

N.D.: Not Detected

N.A.: Not Applicable

n.d.: not determined

M.I.: Matrix Interference



 Analytical Supervisor
 (Pg. 4 of 4)

QUALITY CONTROL DATA

METHOD EPA 8270

PACE JOB#:

HLA 0831.104-L

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
BASE NEUTRAL COMPOUNDS			
N-Nitrosodimethylamine	N.D.	n.s.	n.s.
Aniline	N.D.	n.s.	n.s.
Bis(2-chloroethyl) ether	N.D.	n.s.	n.s.
1,3-Dichlorobenzene	N.D.	n.s.	n.s.
1,4-Dichlorobenzene (MS)	N.D.	29	28
1,2-Dichlorobenzene	N.D.	n.s.	n.s.
Bis(2-chloroisopropyl) ether	N.D.	n.s.	n.s.
N-Nitroso-di-N-propylamine	N.D.	n.s.	n.s.
Hexachloroethane	N.D.	n.s.	n.s.
Nitrobenzene-d5 (SS)	N.A.	36	53
Nitrobenzene	N.D.	n.s.	n.s.
Isophorone	N.D.	n.s.	n.s.
Bis(2-chloroethoxy)methane	N.D.	n.s.	n.s.
1,2,4-Trichlorobenzene	N.D.	n.s.	n.s.
Naphthalene	N.D.	n.s.	n.s.
Hexachlorobutadiene	N.D.	n.s.	n.s.
Hexachlorocyclopentadiene	N.D.	n.s.	n.s.
2-Fluorobiphenyl (SS)	N.A.	0	24
2-Chloronaphthalene	N.D.	n.s.	n.s.
Dimethylphthalate	N.D.	n.s.	n.s.
Acenaphthylene	N.D.	n.s.	n.s.
2,6-Dinitrotoluene	N.D.	n.s.	n.s.
Acenaphthene (MS)	N.D.	10	57
Dibenzofuran	N.D.	n.s.	n.s.
2,4-Dinitrotoluene (MS)	N.D.	5	21
Diethyl phthalate	N.D.	n.s.	n.s.
Fluorene	N.D.	n.s.	n.s.
4-Chlorophenylphenyl ether	N.D.	n.s.	n.s.
N-Nitrosodiphenyl amine	N.D.	n.s.	n.s.
1,2-Diphenylhydrazine	N.D.	n.s.	n.s.
4-Bromophenylphenyl ether	N.D.	n.s.	n.s.
Hexachlorobenzene	N.D.	n.s.	n.s.
Phenanthrene	N.D.	n.s.	n.s.
Anthracene	N.D.	n.s.	n.s.
Di-n-butyl phthalate	N.D.	n.s.	n.s.
Fluoranthene	N.D.	n.s.	n.s.
Benzidine	N.D.	n.s.	n.s.
Pyrene (MS)	N.D.	10	89
Terphenyl-d12 (SS)	N.A.	15	76
Butylbenzyl phthalate	N.D.	n.s.	n.s.
Benzo(a)anthracene	N.D.	n.s.	n.s.
3,3'-Dichlorobenzidine	N.D.	n.s.	n.s.

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QUALITY CONTROL DATA (cont)

METHOD: EPA 8270

PACE JOB #:HLA 0831.104-L

COMPOUND	Blank (ug/l)	Spike Duplicate & Deviation	% Spike Recovery
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BASE NEUTRAL COMPOUNDS

Chrysene	N.D.	n.s.	n.s.
Bis(2-ethylhexyl) phthalate	N.D.	n.s.	n.s.
Di-n-octyl phthalate	N.D.	n.s.	n.s.
Benzo(b) fluoranthene	N.D.	n.s.	n.s.
Benzo(k) fluoranthene	N.D.	n.s.	n.s.
Benzo(a) pyrene	N.D.	n.s.	n.s.
Indeno(1,2,3-cd) pyrene	N.D.	n.s.	n.s.
Dibenzo(a,h) anthracene	N.D.	n.s.	n.s.
Benzo(g,h,i) perylene	N.D.	n.s.	n.s.

ACID COMPOUNDS

2-Fluorophenol (SS)	N.A.	39	27
Phenol-d5 (SS)	N.A.	14	41
Phenol (MS)	N.D.	12	8
2-Chlorophenol	N.D.	n.s.	n.s.
2-Methylphenol	N.D.	n.s.	n.s.
4-Methylphenol	N.D.	n.s.	n.s.
2-Nitrophenol	N.D.	n.s.	n.s.
2,4-Dimethylphenol	N.D.	n.s.	n.s.
Benzoic Acid	N.D.	n.s.	n.s.
2,4-Dichlorophenol	N.D.	n.s.	n.s.
4-Chloro-3-methylphenol (MS)	N.D.	9	34
2,4,6-Trichlorophenol	N.D.	n.s.	n.s.
2,4,5-Trichlorophenol	N.D.	n.s.	n.s.
2,4-Dinitrophenol	N.D.	n.s.	n.s.
4-Nitrophenol	N.D.	N.R.	n.s.
2-Methyl-4,6-dinitrophenol	N.D.	n.s.	n.s.
2,4,6-Tribromophenol (SS)	N.A.	12	90
Pentachlorophenol (MS)	N.D.	19	66

PESTICIDES

alpha-BHC	N.D.	n.s.	n.s.
beta-BHC	N.D.	n.s.	n.s.
gamma-BHC	N.D.	n.s.	n.s.
delta-BHC	N.D.	n.s.	n.s.
Heptachlor	N.D.	n.s.	n.s.
Aldrin	N.D.	n.s.	n.s.
Heptachlor epoxide	N.D.	n.s.	n.s.

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QUALITY CONTROL DATA (cont)

METHOD: EPA 8270

PACE JOB #:HLA 0831.104-L

COMPOUND	Blank (ug/l)	Spike Duplicate % Deviation	% Spike Recovery
Dieldrin	N.D.	n.s.	n.s.
Endosulfan I	N.D.	n.s.	n.s.
4,4'-DDE	N.D.	n.s.	n.s.
4-Terphenyl-d14 (SS)	N.A.	n.s.	n.s.
Dieldrin	N.D.	n.s.	n.s.
Endrin	N.D.	n.s.	n.s.
Endosulfan II	N.D.	n.s.	n.s.
4,4'-DDD	N.D.	n.s.	n.s.
Endrin Aldehyde	N.D.	n.s.	n.s.
4,4'-DDT	N.D.	n.s.	n.s.
Endosulfan Sulfate	N.D.	n.s.	n.s.

QUALITY CONTROL DATA

Base/Neutral Blank S. S. Recovery	Acid Blank S. S. Recovery
Nitrobenzene-d5 64 %	2-Fluorophenol 28 %
2-Fluorobiphenyl 48 %	Phenol-d5 31 %
Terphenyl-d14 83 %	2,4,6-Tribromophenol 78 %

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



Analytical Supervisor
(Page 3 of 3)

Report Date: 12-Nov-88 Completion Date: 03-Nov-88
 PACE JOB #: HLA 0831.104-L Reported by: Petersen
 Analytical Method: EPA 8240 Analyst: MOEZZI
 MATRIX: WATER

MW-9 MW-10 MW-11

LAB #: 8-1443 8-1445 8-1447
 CLIENT ID: 450101 450102 450103

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	N.D.	N.D.	0.5
Chloromethane	N.D.	N.D.	N.D.	0.5
Vinyl Chloride	N.D.	N.D.	N.D.	0.5
Bromomethane	N.D.	N.D.	N.D.	0.5
Chloroethane	N.D.	N.D.	5.5	0.5
Trichlorofluoromethane	N.D.	N.D.	N.D.	0.5
2-Butanone (MEK)	N.D.	N.D.	N.D.	0.5
Iodomethane	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethene	2.1	7.8	N.D.	0.5
Carbon Disulfide	N.D.	N.D.	N.D.	0.5
Acrylonitrile	N.D.	N.D.	N.D.	0.5
Methylene Chloride	0.6	0.7	0.7	0.5
trans-1,2-Dichloroethene	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	1.9	3.0	0.7	0.5
Chloroform	4.4	N.D.	N.D.	0.5
1,1,1-Trichloroethane	N.D.	N.D.	N.D.	0.5
1,2-Dichloroethane	2.0	17	54	0.5
Carbon Tetrachloride	N.D.	N.D.	N.D.	0.5
Benzene	135*	205*	1300*	0.5
1,2-Dichloropropane	N.D.	N.D.	N.D.	0.5
Trichloroethene	0.5	66	5.7	0.5
Dibromomethane	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	N.D.	N.D.	0.5
3-Methyl-2-pentanone (MIBK)	N.D.	N.D.	N.D.	0.5

MW-9 MW-10 MW-11

PACE JOB #: HLA 0831.104-L Method: EPA 8240
LAB #: 8-1443 8-1445 8-1447
CLIENT ID: 450101 450102 450103


COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Toluene	63*	55*	1900*	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
2-Chloroethylvinyl ether	N.D.	N.D.	N.D.	0.5
Ethylmethacrylate	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	N.D.	N.D.	0.5
Chlorobenzene	N.D.	N.D.	N.D.	0.5
Ethylbenzene	3.0	6.9	91*	0.5
Bromoform	N.D.	N.D.	0.5	0.5
Xylene	39*	247*	820*	0.5
1,1,2,2,-Tetrachloroethane	N.D.	N.D.	0.5	0.5
1,2,3-Trichloropropane	N.D.	N.D.	N.D.	0.5
1,4-Dichloro-2-butene	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA	Surrogate Spike % Recovery		
1,2-Dichloroethane-d4	123 %	85 %	106 %
Toluene-d8	104 %	89 %	M.I. %
4-Bromofluorobenzene	91 %	107 %	107 %

N.D.: Not Detected

M.I.: Matrix interference with toluene.

* :Compounds saturated on GC/MS run and therefore quantified from 8020 analysis on GC.



Analytical Supervisor

(Pg.2 of 2)

QUALITY CONTROL DATA

METHOD: EPA 8240

PACE JOB #:HLA 0831.104-L

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.
2-Butanone (MEK)	N.D.	-	N.S.
Iodomethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Carbon Disulfide	N.D.	-	N.S.
Acrylonitrile	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.	8	104
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
Benzene (M.S.)	N.D.	1	118
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene (M.S.)	N.D.	3	108
Dibromomethane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
3-Methyl-2-pentanone (MIBK)	N.D.	-	N.S.

QUALITY CONTROL DATA (cont.)

METHOD:

EPA 8240

PACE JOB #:HLA 0831.104-L

Toluene (M.S.)	N.D.	24	95
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Ethylmethacrylate	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene (M.S.)	N.D.	17	100
Ethylbenzene	N.D.	-	N.S.
Bromoform	N.D.	-	N.S.
Xylene	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,2,3-Trichloropropane	N.D.	-	N.S.
1,4-Dichloro-2-butene	N.D.	-	N.S.

QUALITY CONTROL DATA

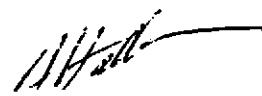
Surrogate Spike % Recovery

1,2-Dichloroethane-d4	92%	93 %	119%
Toluene-d8	128%	95 %	96%
4-Bromofluorobenzene	95%	92 %	84%

N.D.: Not Detected

M.S.: Matrix Spike

N.S.: Not Spiked



Analytical Supervisor

(Pg.2 of 2)

Report Date: 14-Nov-88
PACE JOB #: HLA 0831.104-L
Analytical Method: 5030/8015
MATRIX: WATER

Completion Date: SEE BELOW
Reported by: J. HARWOOD
Analyst: ATTIA

LAB #: 8-1442
DATE: 07-Nov-88
CLIENT'S ID: MW-9 450101

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	480	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 120 %* MW-10

LAB #: 8-1444
DATE: 07-Nov-88
CLIENT'S ID: 450102

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	1,380	125

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 113 % MW-11

LAB #: 8-1446
DATE: 09-Nov-88
CLIENT'S ID: 450103

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	6,500	1,250

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene 104 %

N.D.: Not Detected
*: Matrix Interference



Analytical Supervisor

QUALITY CONTROL DATA

METHOD: 5030/8015
LAB #: 8-1442, 8-1444

PACE JOB #:HLA 0831.104-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	2%	103%

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 96 %

98 % 111 %

QUALITY CONTROL DATA

METHOD: 5030/8015
LAB #: 8-1446

PACE JOB #:HLA 0831.104-L


COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	11%	102%

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 93 %

105 % 100 %

N.D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#:

HLA 0831.104-L

LAB #: 8-1442, 8-1444

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	10	109
Toluene-----	N.D.	1	107
p-Xylene-----	N.D.	3	107

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 96 % 98 % 111%

QUALITY CONTROL DATA

METHOD: EPA 8020

PACE JOB#:

HLA 0831.104-L

LAB #: 8-1446


COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	4	104
Toluene-----	N.D.	3	100
p-Xylene-----	N.D.	3	101

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 93 % 105 % 100%

N.D.: Not Detected



 Analytical Supervisor

Report date: November 28, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831105-L

MONITORING WELLS
11-2-88

Date sampled: November 2, 1988
Sampled by: Tim Walker

Site: City of Oakland

Date received: November 2, 1988
Submitted by: Tim Walker

P.O.: 9382 022 02

Lab #	Client ID		Matrix	Analysis
8- 1478	88450201	MW-7	water	TPH (light) only 5030/8015
8- 1478	88450201		water	Vol Org. Cpds. 8010 + 8020
8- 1479	88450202	MW-8	water	TPH (light) only 5030/8015
8- 1479	88450202		water	Vol Org. Cpds. 8010 + 8020
8- 1480	88450203	MW-5	water	TPH (light) only 5030/8015
8- 1480	88450203		water	Vol Org. Cpds. 8010 + 8020
8- 1481	88450204	MW-3	water	TPH (light) only 5030/8015
8- 1481	88450204		water	Vol Org. Cpds. 8010 + 8020
8- 1482	88450205	MW-2	water	TPH (light) only 5030/8015
8- 1482	88450205		water	Vol Org. Cpds. 8010 + 8020
8- 1483	88450206	MW-6	water	TPH (light) only 5030/8015
8- 1483	88450206		water	Vol Org. Cpds. 8010 + 8020
8- 1484	88450207	Blank	water	TPH (light) only 5030/8015
8- 1484	88450207		water	Vol Org. Cpds. 8010 + 8020

pace

laboratories, inc

FORMERLY WESCO LABORATORIES

REPORT OF LABORATORY ANALYSIS

Offices:
Minneapolis, Minnesota
Tampa, Florida
Coralville, Iowa
Novato, CaliforniaReport date: November 28, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: D. Leland

Pace job #: HLA 0831105-L

Date sampled: November 2, 1988
Sampled by: Tim Walker

Site: City of Oakland

Date received: November 2, 1988
Submitted by: Tim Walker

P.O.: 9382 022 02

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

Report Date: 18-Nov-88
PACE JOB #: HLA 0831.105-L
Analytical Method: 5030/8015
MATRIX: WATER

Completion Date: 12-Nov-88
Reported by: J.HARWOOD
Analyst: LEWIS
Instrument I.D.: Varian 3300

	MW-7	MW-8	MW-5
LAB #:	8-1478	8-1479	8-1480
CLIENT'S ID:	450201	450202	450203

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

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

	99%	97%	99%
LAB #:	MW-3 8-1481	MW-2 8-1482	MW-6 8-1484
CLIENT'S ID:	450204	450205	450207

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)-----	N.D.	770	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

	98%	115%	92%
LAB #:	8-1483		
CLIENT'S ID:			450206

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)---	2,100	125.0

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 0831.105-L

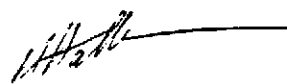
COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	4	98

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 100 % 99 % 97 %

N.D.: Not Detected



Analytical Supervisor

REPORT OF LABORATORY ANALYSIS

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

Report Date: 28-Nov-88
PACE JOB #: HLA 0831.105-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 16-Nov-88
Reported by: J. HARWOOD
Analyst: CHROMALAB

LAB #:	MW-7	MW-8	MW-5	MW-3	MW-2	MW-6	Blank	
CLIENT'S ID:	8-1478	8-1479	8-1480	8-1481	8-1482	8-1483	8-1484	
	450201	450202	450203	450204	450205	450206	450207	
COMPOUND	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	RESULT	Detection
	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	Limit
								(ug/l)
Dichlorodifluoromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Chloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Vinyl Chloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromomethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Chloroethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Trichlorofluoromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethene-----	N.D.	3.1	7.4	8.4	N.D.	N.D.	N.D.	1.0
Methylene Chloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
trans-1,2-Dichloroethene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethane-----	N.D.	N.D.	6.5	7.1	N.D.	N.D.	N.D.	1.0
Chloroform-----	N.D.	N.D.	4.6	N.D.	1.3	2.6	N.D.	1.0
1,1,1-Trichloroethane (TCA)-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Carbon Tetrachloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,2-Dichloroethane (EDC)-----	2.7	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Trichloroethene (TCE)-----	N.D.	3.4	N.D.	N.D.	46.0	449.0	1.1	1.0
1,2-Dichloropropane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromodichloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
2-Chloroethylvinyl ether-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
trans-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
cis-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1,2-Trichloroethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Tetrachloroethene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Dibromochloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Chlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromoform-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1,2,2-Tetrachloroethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,3-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0

N.D.: Not Detected

NOTE: Report was sent to Chromalab, no Q.C. available.



Analytical Supervisor

Report Date: 18-Nov-88
 PACE JOB #: HLA 0831.105-L
 Analytical Method: EPA 8020
 MATRIX: WATER

Completion Date: 08-Nov-88
 Reported by: J. Harwood
 Analyst: Attia
 Instrument I.D.: VARIAN 3400 II

	MW-7	MW-8	MW-5	
LAB #:	8-1478	8-1479	8-1480	
CLIENT'S ID:	450201	450202	450203	
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
Xylenes-----	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 96 % 89 % 94 %

	MW-3		MW-2	
LAB #:	8-1481		8-1482	
CLIENT'S ID:	450204		450205	
COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	0.2	24	1.0
Toluene-----	N.D.	0.2	0.8	1.0
Chlorobenzene-----	N.D.	0.2	N.D.	1.0
Ethylbenzene-----	N.D.	0.2	5.6	1.0
Xylene-----	N.D.	0.2	11	1.0
1,3-Dichlorobenzene-----	N.D.	0.2	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	0.2	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	0.2	N.D.	1.0

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
 Fluorobenzene 91 % 102 %

Analytical Method: EPA 8020 (cont.)
PACE JOB #: HLA 0831.105-L

	<i>MW-6</i>	<i>Blank</i>
LAB #:	8-1483	8-1484
CLIENT'S ID:	450206	450207

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	20	0.2	N.D.	0.2
Toluene-----	65	0.2	N.D.	0.2
Chlorobenzene-----	N.D.	0.2	N.D.	0.2
Ethylbenzene-----	N.D.	0.2	N.D.	0.2
Xylene-----	200	0.2	N.D.	0.2
1,3-Dichlorobenzene-----	N.D.	0.2	N.D.	0.2
1,4-Dichlorobenzene-----	N.D.	0.2	N.D.	0.2
1,2-Dichlorobenzene-----	N.D.	0.2	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike	Percent Recovery	
Fluorobenzene	115 %	94 %

QUALITY CONTROL DATA


METHOD: EPA 8020 PACE JOB#: HLA 0831.105-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
Benzene-----	N.D.	3	91
Toluene-----	N.D.	2	95
p-Xylene-----	N.D.	2	94

QUALITY CONTROL DATA

Surrogate Spike % Recovery		
Fluorobenzene	99 %	91 % 93%

N.D.: Not Detected



Analytical Supervisor
(Pg.2 of 2)

RECEIVED
DEC 29 1988
HARDING LAWSON ASSOC.

Report date: December 22, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Pace job #: HLA 0831111-L

Date sampled: December 1, 1988
Sampled by: Ocansey/Erdman

Site: City of Oakland

Date received: December 1, 1988
Submitted by: Rick Erdman

P.O.: 09382,022.02

Lab #	Client ID	Matrix	Analysis
8- 2357	88471201	water	TPH (light) only 5030/8015
8- 2357	88471201	water	Vol Org. Cpds. 8010 + 8020
8- 2358	88471202	water	TPH (light) only 5030/8015
8- 2358	88471202	water	Vol Org. Cpds. 8010 + 8020
8- 2359	88471203	water	TPH (light) only 5030/8015
8- 2359	88471203	water	Vol Org. Cpds. 8010 + 8020
8- 2360	88471204	water	TPH (light) only 5030/8015
8- 2360	88471204	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 Lisa Petersen, our Client Services Coordinator at (415)883-6100.

C. J. ...

Sample Controller

Report Date: 22-Dec-88 Analysis Completion : 08-DEC-88
 PACE JOB #: HLA 0831.111-L Reported By: J.HARWOOD
 Analytical Method: EPA 8240 Analyst: MOEZZI/SIEGMUND
 MATRIX: WATER

LAB #: 8-2357 8-2358 8-2359 8-2360
 CLIENT ID: 471201 471202 471203 471204

MW-4 *BLANK* *MW-7* *MW-5*

COMPOUND	Result (ug/l)	Detection Limit (ug/l)	Result (ug/l)	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
Dichlorodifluoromethane	N.D.	1.0	N.D.	N.D.	4.5	1.0
Chloromethane	N.D.	1.0	N.D.	N.D.	N.D.	1.0
Vinyl Chloride	N.D.	1.0	N.D.	N.D.	N.D.	1.0
Bromomethane	N.D.	1.0	N.D.	N.D.	N.D.	1.0
Chloroethane	N.D.	1.0	N.D.	N.D.	N.D.	1.0
Trichlorofluoromethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
2-Butanone (MEK)	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Iodomethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethene	4.0	0.5	N.D.	N.D.	12.5	0.5
Carbon Disulfide	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Acrylonitrile	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Methylene Chloride	N.D.	0.5	1.5	N.D.	N.D.	0.5
trans-1,2-Dichloroethene	N.D.	0.5	N.D.	N.D.	N.D.	0.5
1,1-Dichloroethane	3.6	0.5	N.D.	N.D.	9.1	0.5
Chloroform	5.7	0.5	N.D.	N.D.	4.8	0.5
1,1,1-Trichloroethane	N.D.	0.5	N.D.	N.D.	1.3	0.5
1,2-Dichloroethane	1.6	0.5	N.D.	N.D.	1.5	0.5
Carbon Tetrachloride	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Benzene	362**	10	N.D.	N.D.	N.D.	0.5
1,2-Dichloropropane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Trichloroethene	0.5	0.5	N.D.	N.D.	N.D.	0.5
Dibromomethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Bromodichloromethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
trans-1,3-Dichloropropene	N.D.	0.5	N.D.	N.D.	N.D.	0.5
3-Methyl-2-pentanone (MIBK)	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Toluene	186* *	10	N.D.	N.D.	N.D.	0.5

COMPOUNDS (cont.)

Analytical Method: EPA 8240 *MW09*
 LAB #: 8-2357
 CLIENT ID: 471201

PACE JOB #: *BLANK* *MW7* *MW5*
 8-2358 8-2359 8-2360
 471202 471203 471204


COMPOUND	Result (ug/l)	Detection Limit (ug/l)	Result (ug/l)	Result (ug/l)	Result (ug/l)	Detection Limit (ug/l)
cis-1,3-Dichloropropene	N.D.	0.5	N.D.	N.D.	N.D.	0.5
1,1,2-Trichloroethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
2-Chloroethylvinyl ether	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Ethylmethacrylate	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Dibromochloromethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
Tetrachloroethene	N.D.	0.5	N.D.	N.D.	N.D.	0.5
• Chlorobenzene	-N.D.	0.5	N.D.	-N.D.	-N.D.	0.5
• Ethylbenzene	N.D.	0.5	N.D.	-N.D.	-N.D.	0.5
Bromoform	N.D.	0.5	N.D.	N.D.	N.D.	0.5
• Xylene	-175*	10	N.D.	N.D.	-N.D.	0.5
1,1,2,2,-Tetrachloroethane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
1,2,3-Trichloropropane	N.D.	0.5	N.D.	N.D.	N.D.	0.5
1,4-Dichloro-2-butene	N.D.	0.5	N.D.	N.D.	N.D.	0.5

QUALITY CONTROL DATA

	Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	121 %	103%	98%	107%
Toluene-d8	97 %	105%	98%	88%
4-Bromofluorobenzene	96 %	82%	84%	87%

N.D.: Not Detected
 *: Dilution Factor is 20.

NOTE: EPA Method 8240 was substituted for EPA Method 8010 and 8020 due to instrument problems.



 Analytical Supervisor

QUALITY CONTROL DATA

METHOD: EPA 8240

PACE JOB #:

HLA 0831.111-L

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.
2-Butanone (MEK)	N.D.	-	N.S.
Iodomethane	N.D.	-	N.S.
1,1-Dichloroethene	N.D.	-	N.S.
Carbon Disulfide	N.D.	-	N.S.
Acrylonitrile	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	99
Chloroform	N.D.	-	N.S.
1,1,1-Trichloroethane	N.D.	-	N.S.
1,2-Dichloroethane	N.D.	-	N.S.
Carbon Tetrachloride	N.D.	-	N.S.
Benzene (M.S.)	N.D.	4	86
1,2-Dichloropropane	N.D.	-	N.S.
Trichloroethene (M.S.)	N.D.	1	88
Dibromomethane	N.D.	-	N.S.
Bromodichloromethane	N.D.	-	N.S.
trans-1,3-Dichloropropene	N.D.	-	N.S.
3-Methyl-2-pentanone (MIBK)	N.D.	-	N.S.
Toluene (M.S.)	N.D.	10	104

QUALITY CONTROL DATA (cont.)

Analytical Method: EPA 8240

PACE JOB #:

HLA 0831.111-L

COMPOUND	Blank (ug/l)	Spike Duplicate % deviation	Spike % recovery
cis-1,3-Dichloropropene	N.D.	-	N.S.
1,1,2-Trichloroethane	N.D.	-	N.S.
2-Chloroethylvinyl ether	N.D.	-	N.S.
Ethylmethacrylate	N.D.	-	N.S.
Dibromochloromethane	N.D.	-	N.S.
Tetrachloroethene	N.D.	-	N.S.
Chlorobenzene (M.S.)	N.D.	21	99
Ethylbenzene	N.D.	-	N.S.
Bromoform	N.D.	-	N.S.
Xylene	N.D.	-	N.S.
1,1,2,2,-Tetrachloroethane	N.D.	-	N.S.
1,2,3-Trichloropropane	N.D.	-	N.S.
1,4-Dichloro-2-butene	N.D.	-	N.S.

QUALITY CONTROL DATA	Blank	Spike	Spike Duplicate
Surrogate Spike % Recovery			
1,2-Dichloroethane-d4	105 %	101 %	98 %
Toluene-d8	108 %	88 %	74 %
4-Bromofluorobenzene	89 %	80 %	100 %

N.D.: Not Detected

N.S.: Not Spiked



Analytical Supervisor
(Page 2 of 2)

Report Date: 22-Dec-88
PACE JOB #: HLA 0831.111-L
Analytical Method: 5030/8015
MATRIX: WATER

Completion Date: 08-Dec-88
Reported by: J. HARWOOD
Analyst: HOUSER
Instrument I.D.: VARIAN 3300

LAB #: 8-2357
CLIENT'S ID: 471201

8-2358
471202

COMPOUND	RESULT (ug/l)	Detection Limit (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons- (light)	2,100	1,000.0	N.D.	50.0

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 105%

LAB #:
CLIENT'S ID:

MW-7
8-2359
471203

95 %
MW-5
8-2359
471204

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 93%

QUALITY CONTROL DATA
METHOD: 5030/8015

PACE JOB #: HLA 0831.111-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	1	98

QUALITY CONTROL DATA

Surrogate Spike % Recovery
Fluorobenzene 98 % 99 % 100 %

N.D.: Not Detected

[Signature]
Analytical Supervisor

RECEIVED

DEC 30 1988

HARDING LAWSON ASSOC

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

Report date: December 29, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Pace job #: HLA 0831112-L

Date sampled: December 2, 1988
Sampled by: Ocansey/Evans

Site: City of Oakland

Date received: December 2, 1988
Submitted by: David Evans

P.O.: 9382,022.02

Lab #	Client ID	Matrix	Analysis
8- 2439	88481205	MW-8	water
8- 2439	88481205		water
8- 2440	88481206	MW-3	water
8- 2440	88481206		water
8- 2441	88481207	MW-2	water
8- 2441	88481207		water
8- 2442	88481208	Trip	water
8- 2442	88481208	Blank	water
8- 2443	88481209	MW-6	water
8- 2443	88481209		water
8- 2444	88481210	MW-6	water
8- 2444	88481210		water
8- 2445	88481211	MW-11	water
8- 2445	88481211		water
8- 2446	88481212	MW-10	water
8- 2446	88481212		water

Report date: December 29, 1988
Client: Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947
Attn.: David Leland

Pace job #: HLA 0831112-L

Date sampled: December 2, 1988
Sampled by: Ocansey/Evans

Site: City of Oakland

Date received: December 2, 1988
Submitted by: David Evans

P.O.: 9382,022.02

Lab #	Client ID	Matrix	Analysis
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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.



Sample Controller

Report Date: 21-Dec-88
PACE JOB #: HLA 0831.112-L
Analytical Method: EPA 8010
MATRIX: WATER

Completion Date: 09-Dec-88
Reported by: J.HARWOOD
Analyst: CHROMALAB

LAB #:	MW 8	MW 3	MW 2	BLANK	MW 6	MW 6	MW 11	MW 10
	8-2439	8-2440	8-2441	8-2442	8-2443	8-2444	8-2445	8-2446
CLIENT'S ID:	481205	481206	481207	481208	481209	481210	481211	481212

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	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.	N.D.	N.D.	1.0
Chloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Vinyl Chloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromomethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Chloroethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Trichlorofluoromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethene-----	N.D.	12.0	N.D.	N.D.	N.D.	N.D.	N.D.	5.8	1.0
Methylene Chloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
trans-1,2-Dichloroethene-----	N.D.	N.D.	N.D.	12.7	N.D.	N.D.	N.D.	N.D.	1.0
1,1-Dichloroethane-----	N.D.	5.1	N.D.	N.D.	N.D.	N.D.	N.D.	2.0	1.0
Chloroform-----	N.D.	N.D.	N.D.	N.D.	7.0	N.D.	N.D.	N.D.	1.0
1,1,1-Trichloroethane (TCA)-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Carbon Tetrachloride-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,2-Dichloroethane (EDC)-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	55.4	N.D.	1.0
Trichloroethene (TCE)-----	2.8	1.1	286.6	N.D.	1,009	2,262	2.6	42.2	1.0
1,2-Dichloropropane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromodichloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
2-Chloroethylvinyl ether-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
trans-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
cis-1,3-Dichloropropene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1,2-Trichloroethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Tetrachloroethene-----	N.D.	N.D.	N.D.	N.D.	2.9	N.D.	N.D.	N.D.	1.0
Dibromochloromethane-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Chlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
Bromoform-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,1,2,2-Tetrachloroethane-----	N.D.	N.D.	N.D.	N.D.	1.4	N.D.	N.D.	N.D.	1.0
1,3-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,4-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0
1,2-Dichlorobenzene-----	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1.0

N.D.: Not Detected

NOTE: Samples were subbed out to Chromalab. No Quality Control Data is available.



.....
Analytical Supervisor

Report Date: 20-Dec-88
PACE JOB #: HLA 0831.112-L
Analytical Method: 5030/8015
MATRIX: WATER

Completion Date: 07-Dec-88
Reported by: J. HARWOOD
Analyst: ATTIA
Instrument I.D.: VARIAN 3300

LAB #: 8-2439 ^{MW-8} 8-2440 ^{MW-3}
CLIENT'S ID: 481205 481206

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

96% 96%
LAB #: 8-2441 ^{MW-1} 8-2442 ^{BLANK}
CLIENT'S ID: 481207 481208

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	840	N.D.	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

113% 94%

N.D.: Not Detected

Attia

Analytical Supervisor

Report Date: 20-Dec-88
PACE JOB #: HLA 0831.112-L
Analytical Method: EPA 5030/8015
MATRIX: WATER

Completion Date: 07-Dec-88
Reported by: J.HARWOOD
Analyst: ATTIA
Instrument I.D.: VARIAN 3300

LAB #: ^{mwb} 8-2443 ^{mwb} 8-2444
CLIENT'S ID: 481209 481210

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	2,700	2,000	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

86% 90%


LAB #: ^{mwl1} 8-2445 ^{mwl10} 8-2446
CLIENT'S ID: 481211 481212 88350124

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Total Petroleum Hydrocarbons (light)--	840	1,600	50.0

QUALITY CONTROL DATA
Surrogate Spike % Recovery
Fluorobenzene

122% 83%

N.D.: Not Detected



Analytical Supervisor

QUALITY CONTROL DATA

METHOD: 5030/8015

PACE JOB #:HLA 0831.112-L

COMPOUND	Blank ug/l	Spike Duplicate % deviation	Spike % recovery
Gasoline-----	N.D.	2	97

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 96 % 102 % 101 %

N.D.: Not Detected



Analytical Supervisor

Report Date: 20-Dec-88
PACE JOB #: HLA 0831.112-L
Analytical Method: EPA 8020
MATRIX: WATER

Completion Date: 07-Dec-88
Reported by: J. HARWOOD
Analyst: ATTIA
Instrument I.D.: VARIAN 3300

	MW-8	MW-3	MW-2	BLANK	
LAB #:	8-2439	8-2440	8-2441	8-2442	
CLIENT'S ID:	481205	481206	481207	481208	DEC-2

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	N.D.	N.D.	12	N.D.	0.2
Toluene-----	N.D.	N.D.	0.7	N.D.	0.2
Chlorobenzene-----	N.D.	N.D.	N.D.	N.D.	0.2
Ethylbenzene-----	N.D.	N.D.	3.1	N.D.	0.2
Xylenes-----	N.D.	N.D.	9.4	N.D.	0.2
1,3-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2
1,4-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2
1,2-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 96 % 96 % 113 % 94 %

	MW-6	MW-6	MW-11	MW-10	
LAB #:	8-2443	8-2444	8-2445	8-2446	
CLIENT'S ID:	481209	481210	481211	481212	

COMPOUND	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	RESULT (ug/l)	Detection Limit (ug/l)
Benzene-----	53	38	19	500	0.2
Toluene-----	120	95	1.5	58	0.2
Chlorobenzene-----	N.D.	N.D.	N.D.	N.D.	0.2
Ethylbenzene-----	20	12	N.D.	N.D.	0.2
Xylene-----	380	280	460	420	0.2
1,3-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2
1,4-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2
1,2-Dichlorobenzene----	N.D.	N.D.	N.D.	N.D.	0.2

QUALITY CONTROL DATA

Surrogate Spike Percent Recovery
Fluorobenzene 86 % 90 % 122 % 83 %

A. Hall

Analytical Supervisor



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 0831.112-L

Table with 4 columns: COMPOUND, Blank (ug/l), Spike Duplicate % deviation, Spike % recovery. Rows include Benzene, Toluene, and p-Xylene.

QUALITY CONTROL DATA

Surrogate Spike % Recovery

Fluorobenzene 96 % 102 % 101%

N.D.: Not Detected

Handwritten signature

Analytical Supervisor

Samplers: Caleb A. Ocansey / Dave Evans

Recorder: DME / C.A.O.
 (Signature Required)

Job Number: 938202202
 Name/Location: City of Oakland
 Project Manager: David Leland

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pestic. Metals	Benzene/Toluene/Xylenes	Total Petrol. Hydrocarb.	Other			Other
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				
X	X					X				

SOURCE CODE	MATRIX					#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/NOTES				
	Water	Sediment	Soil	Oil		Unpres.	H ₂ SO ₄	HNO ₃				Yr	Wk	Seq	Yr		Mo	Dy	Time	
23	X					3						88	48	12058	88	12	02	09	16	mw-8
23	X					3						88	48	12068	88	12	02	09	59	-3
23	X					3						88	48	12078	88	12	02	10	48	-2
23	X					3						88	48	12088	88	12	02	10	48	WR Trip Blank
23	X					3						88	48	12098	88	12	02	11	32	-6
27	X					3						88	48	12108	88	12	02	11	32	-6
23	X					8						88	48	12118	88	12	02	12	35	-11
23	X					8						88	48	12128	88	12	02	13	27	-10

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

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Caleb A. Ocansey</u>	RECEIVED BY: (Signature) <u>David M. Evans</u>	DATE/TIME <u>12/23</u>
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) <u>David M. Evans</u>	DATE/TIME <u>12/23 14:57</u>	RECEIVED FOR LAB BY: (Signature) <u>D. Santag</u>
METHOD OF SHIPMENT <u>Hand delivered in cooler w/ice</u>		

MONITORING WELLS

1-4-89

Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947

February 03, 1989
PACE Project Number: 490104.506

Attn: Mr. David Leland

Re: City of Oakland

Date Sample(s) Collected: 01/04/89

Date Sample(s) Received: 01/04/89

PACE Sample Number:

Parameter

Units

MW-5

MW-7

MW-8

70047

70048

70049

89010101

89010102

89010103

ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Parameter	Units	MDL	MW-5	MW-7	MW-8
Petroleum Fuels, Purgeable, as Gasoline (EPA Method 8015, Modified.)	mg/L	0.05	ND	ND	ND

HALOGENATED VOLATILE COMPOUNDS EPA 8010

Dichlorodifluoromethane	ug/L	2.0	ND	ND	ND
Chloromethane	ug/L	2.0	ND	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND	ND
Bromomethane	ug/L	2.0	ND	ND	ND
Chloroethane	ug/L	2.0	ND	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND	ND
1,1-Dichloroethene	ug/L	0.5	27	ND	ND
Methylene Chloride	ug/L	0.5	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	0.5	ND	ND	ND
1,1-Dichloroethane	ug/L	0.5	12	ND	ND
Chloroform	ug/L	0.5	5.7	ND	0.7
1,1,1-Trichloroethane (TCA)	ug/L	0.5	2.4	ND	ND
Carbon Tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.9	ND	ND
Trichloroethene (TCE)	ug/L	0.5	ND	ND	5.4
1,2-Dichloropropane	ug/L	0.5	ND	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND	ND
Tetrachloroethene	ug/L	0.5	ND	ND	ND

MDL Method Detection Limit, Estimated Value.

ND Not detected at or above the MDL.

Mr. David Leland
Page 2

February 03, 1989
PACE Project Number: 490104.506

PACE Sample Number: Parameter	Units	MDL	MW-5 70047 89010101	MW-7 70048 89010102	MW-8 70049 89010103
ORGANIC ANALYSIS					
HALOGENATED VOLATILE COMPOUNDS EPA 8010					
Dibromochloromethane	ug/L	0.5	ND	ND	ND
Chlorobenzene	ug/L	0.5	ND	ND	ND
Bromoform	ug/L	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.5	ND	ND	ND
Bromochloromethane (Surrogate Recovery)		NA	85%	72%	73%
1,4-Dichlorobutane (Surrogate Recovery)		NA	77%	77%	64%
AROMATIC VOLATILE COMPOUNDS EPA 8020					
Benzene	ug/L	0.2	ND	ND	ND
Toluene	ug/L	0.2	ND	ND	ND
Chlorobenzene	ug/L	0.2	ND	ND	ND
Ethylbenzene	ug/L	0.2	ND	ND	ND
Xylene	ug/L	0.2	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	ND	ND	ND
Fluorobenzene (Surrogate Recovery)		NA	111%	108%	120%

MDL Method Detection Limit; Estimated Value.
ND Not detected at or above the MDL.
NA Not Applicable.

REPORT OF LABORATORY ANALYSIS

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

February 03, 1989
PACE Project Number: 490104.506

PACE Sample Number: Parameter	Units	MDL	MW-2	MW-6	MW-3
			70050 89010104	70051 89010105	70052 89010106

ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Petroleum Fuels, Purgeable, as Gasoline	mg/L	0.05	0.63	-	ND
Petroleum Fuels, Purgeable, as Gasoline (EPA Method 8015, Modified.)	mg/L	0.5	-	3.3	-
HALOGENATED VOLATILE COMPOUNDS EPA 8010					
Dichlorodifluoromethane	ug/L	2.0	ND	ND	ND
Chloromethane	ug/L	2.0	ND	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND	ND
Bromomethane	ug/L	2.0	ND	ND	ND
Chloroethane	ug/L	2.0	ND	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND	ND
1,1-Dichloroethene	ug/L	0.5	ND	ND	23
Methylene Chloride	ug/L	0.5	ND	ND	ND
trans-1,2-Dichloroethene	ug/L	0.5	1.0	ND	ND
1,1-Dichloroethane	ug/L	0.5	ND	ND	8.9
Chloroform	ug/L	0.5	7.3	ND	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	ND	1.1
Carbon Tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.1	ND	1.1
Trichloroethene (TCE)	ug/L	0.5	-	-	ND
Trichloroethene (TCE)	ug/L	62.5	4700	4100	-
1,2-Dichloropropane	ug/L	0.5	ND	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND	ND
Tetrachloroethene	ug/L	0.5	11	ND	ND
Dibromochloromethane	ug/L	0.5	ND	ND	ND
Chlorobenzene	ug/L	0.5	ND	ND	ND
Bromoform	ug/L	0.5	ND	ND	ND

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

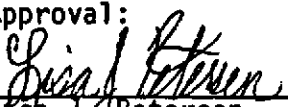
REPORT OF LABORATORY ANALYSIS

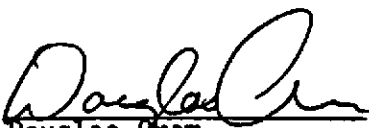
Offices:
 Minneapolis, Minnesota
 Tampa, Florida
 Coralville, Iowa
 Novato, California

February 03, 1989
 PACE Project Number: 490104.506

PACE Sample Number: Parameter	Units	MDL	MW-2	MW-6	AW-3
			70050 89010104	70051 89010105	70052 89010106
ORGANIC ANALYSIS					
HALOGENATED VOLATILE COMPOUNDS EPA 8010					
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.5	ND	ND	ND
Bromochloromethane (Surrogate Recovery)		NA	88%	61%	62%
1,4-Dichlorobutane (Surrogate Recovery)		NA	85%	59%	65%
AROMATIC VOLATILE COMPOUNDS EPA 8020					
Benzene	ug/L	0.2	ND	-	ND
Benzene	ug/L	2.0	-	28	-
Toluene	ug/L	0.2	ND	-	ND
Toluene	ug/L	2.0	-	260	-
Chlorobenzene	ug/L	0.2	ND	-	ND
Chlorobenzene	ug/L	2.0	-	ND	-
Ethylbenzene	ug/L	0.2	ND	-	ND
Ethylbenzene	ug/L	2.0	-	16	-
Xylene	ug/L	0.2	ND	-	ND
Xylene	ug/L	2.0	-	710	-
1,3-Dichlorobenzene	ug/L	0.2	ND	-	ND
1,3-Dichlorobenzene	ug/L	2.0	-	ND	-
1,4-Dichlorobenzene	ug/L	0.2	ND	-	ND
1,4-Dichlorobenzene	ug/L	2.0	-	ND	-
1,2-Dichlorobenzene	ug/L	0.2	ND	-	ND
1,2-Dichlorobenzene	ug/L	2.0	-	ND	-
Fluorobenzene (Surrogate Recovery)		-	-	-	120%
Fluorobenzene (Surrogate Recovery)		NA	111%	101%	-

MDL Method Detection Limit, Estimated Value.
 NA Not Applicable.
 ND Not detected at or above the MDL.

Approval:

 Lisa J. Petersen
 Project Manager for
 PACE Laboratories


 Douglas Gram
 Technical Reviewer for
 PACE Laboratories

REPORT OF LABORATORY ANALYSIS

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

FEBRUARY 3, 1989
MONITORING WELLS

Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94947

March 10, 1989
PACE Project Number: 490208.505

Attn: Mr. David Leland

Re: City of Oakland

Date Sample(s) Collected: 02/08/89
Date Sample(s) Received: 02/08/89

PACE Sample Number:
Parameter

Units

MDL

MW-5

MW-7

MW-8

70544

70545

70546

89060801

89060802

89060803

ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Petroleum Fuels, Purgeable, as Gasoline (EPA Method 8015, Modified)	mg/L	0.25	ND	ND	ND
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HALOGENATED VOLATILE COMPOUNDS EPA 8010

Dichlorodifluoromethane	ug/L	2.0	ND	ND	ND
Chloromethane	ug/L	2.0	ND	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND	ND
Bromomethane	ug/L	2.0	ND	ND	ND
Chloroethane	ug/L	2.0	ND	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND	ND
1,1-Dichloroethene	ug/L	0.5	27	ND	ND
Methylene Chloride	ug/L	0.5	1.8	1.3	1.2
trans-1,2-Dichloroethene	ug/L	0.5	ND	ND	ND
1,1-Dichloroethane	ug/L	0.5	11	ND	ND
Chloroform	ug/L	0.5	6.1	ND	1.2
1,1,1-Trichloroethane (TCA)	ug/L	0.5	2.2	ND	ND
Carbon Tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.8	2.2	ND
Trichloroethene (TCE)	ug/L	0.5	0.6	ND	4.4
1,2-Dichloropropane	ug/L	0.5	ND	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND	ND
Tetrachloroethene	ug/L	0.5	ND	ND	ND
Dibromochloromethane	ug/L	0.5	ND	ND	ND

MDL Method Detection Limit
ND Not detected at or above the MDL.

Mr. David Leland
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March 10, 1989
PACE Project Number: 490208.505

PACE Sample Number: Parameter	Units	MDL	70544 89060801	70545 89060802	70546 89060803
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ORGANIC ANALYSIS

HALOGENATED VOLATILE COMPOUNDS EPA 8010

Chlorobenzene	ug/L	0.5	ND	ND	ND
Bromoform	ug/L	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.5	ND	ND	ND
Bromochloromethane (Surrogate Recovery)	%		88	82	79
1,4-Dichlorobutane (Surrogate Recovery)	%		85	81	80

AROMATIC VOLATILE COMPOUNDS EPA 8020

Benzene	ug/L	0.2	ND	ND	ND
Toluene	ug/L	0.2	0.95	0.87	0.95
Chlorobenzene	ug/L	0.2	ND	ND	ND
Ethylbenzene	ug/L	0.2	ND	ND	ND
Xylene	ug/L	0.2	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	ND	ND	ND
Fluorobenzene (Surrogate Recovery)	%		85	83	68

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

REPORT OF LABORATORY ANALYSIS

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

Mr. David Leland
Page 3

March 10, 1989

PACE Project Number: 490208.505

MW-2
MW-6
MW-8

PACE Sample Number:
Parameter

Units	MDL	70547 89060804	70548 89060805	70549 89060806
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ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Petroleum Fuels, Purgeable, as Gasoline mg/L 0.25 ND LT 2.5 3.2
(EPA Method 8015, Modified)

HALOGENATED VOLATILE COMPOUNDS EPA 8010

Dichlorodifluoromethane	ug/L	2.0	ND	ND	ND
Chloromethane	ug/L	2.0	ND	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND	ND
Bromomethane	ug/L	2.0	ND	ND	ND
Chloroethane	ug/L	2.0	ND	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND	ND
1,1-Dichloroethene	ug/L	0.5	0.70	0.70	0.70
Methylene Chloride	ug/L	0.5	1.7	1.7	1.3
trans-1,2-Dichloroethene	ug/L	0.5	1.4	0.80	0.6
1,1-Dichloroethane	ug/L	0.5	ND	ND	ND
Chloroform	ug/L	0.5	3.8	7.7	6.9
1,1,1-Trichloroethane (TCA)	ug/L	0.5	0.8	0.8	0.7
Carbon Tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.3	1.8	1.5
Trichloroethene (TCE)	ug/L	0.5	400	75	470
1,2-Dichloropropane	ug/L	0.5	ND	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND	ND
Tetrachloroethene	ug/L	0.5	ND	5.6	4.2
Dibromochloromethane	ug/L	0.5	ND	ND	ND
Chlorobenzene	ug/L	0.5	ND	ND	ND
Bromoform	ug/L	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND	ND

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.
LT Compound not detected at or below LT value, dilution required.

Mr. David Leland
Page 4

March 10, 1989
PACE Project Number: 490208.505

mw-2
mw-6
mw-10

PACE Sample Number:
Parameter

Units	MDL	70547	70548	70549
		89060804	89060805	89060806

ORGANIC ANALYSIS

HALOGENATED VOLATILE COMPOUNDS EPA 8010

1,4-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.5	ND	ND	ND
Bromochloromethane (Surrogate Recovery)	%	93	98	98	89
1,4-Dichlorobutane (Surrogate Recovery)	%	95	95	93	79

AROMATIC VOLATILE COMPOUNDS EPA 8020

Benzene	ug/L	0.2	ND	58	65
Toluene	ug/L	0.2	ND	50	75
Chlorobenzene	ug/L	0.2	ND	ND	ND
Ethylbenzene	ug/L	0.2	ND	53	36
Xylene	ug/L	0.2	ND	59	500
1,3-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	ND	ND	ND
Fluorobenzene (Surrogate Recovery)	%	77	77	81	75

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

FORMERLY WESCO LABORATORIES

Mr. David Leland
Page 5

March 10, 1989

PACE Project Number: 490208.505

mw-3 *mw-11* *mw-10*
MW3 *MW11* *MW10*

PACE Sample Number:
Parameter

Units	MDL	89060807	89060808	89060809
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ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Petroleum Fuels, Purgeable, as Gasoline (EPA Method 8015, Modified)	mg/L	0.25	ND	4.6	LT 1.3
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HALOGENATED VOLATILE COMPOUNDS EPA 8010

Dichlorodifluoromethane	ug/L	2.0	ND	ND	ND
Chloromethane	ug/L	2.0	ND	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND	ND
Bromomethane	ug/L	2.0	ND	ND	ND
Chloroethane	ug/L	2.0	ND	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND	ND
1,1-Dichloroethene	ug/L	0.5	22	2	20
Methylene Chloride	ug/L	0.5	1.6	1.5	1.5
trans-1,2-Dichloroethene	ug/L	0.5	ND	ND	ND
1,1-Dichloroethane	ug/L	0.5	2.4	2.5	3.7
Chloroform	ug/L	0.5	ND	ND	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	3.2	ND	ND
Carbon Tetrachloride	ug/L	0.5	ND	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.0	42	12
Trichloroethene (TCE)	ug/L	0.5	ND	2.3	120
1,2-Dichloropropane	ug/L	0.5	ND	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND	ND
Tetrachloroethene	ug/L	0.5	ND	1.0	ND
Dibromochloromethane	ug/L	0.5	ND	ND	ND
Chlorobenzene	ug/L	0.5	ND	ND	ND
Bromoform	ug/L	0.5	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND	ND

MDL Method Detection Limit, Estimated Value.
 ND Not detected at or above the MDL.
 LT Compound not detected at or below LT value, dilution required.

Mr. David Leland
Page 6

March 10, 1989
PACE Project Number: 490208.505

MW-3
MW-2
MW-11
MW-6
MW-10
MW-3

PACE Sample Number:
Parameter

Units MDL 89060807 89060808 89060809

ORGANIC ANALYSIS

HALOGENATED VOLATILE COMPOUNDS EPA 8010

Parameter	Units	MDL	89060807	89060808	89060809
1,4-Dichlorobenzene	ug/L	0.5	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.5	ND	ND	ND
Bromochloromethane (Surrogate Recovery)	%		73	83	86
1,4-Dichlorobutane (Surrogate Recovery)	%		71	69	74

AROMATIC VOLATILE COMPOUNDS EPA 8020

Parameter	Units	MDL	89060807	89060808	89060809
Benzene	ug/L	0.2	ND	860*	370*
Toluene	ug/L	0.2	0.92	700*	230*
Chlorobenzene	ug/L	0.2	ND	ND	ND
Ethylbenzene	ug/L	0.2	ND	5.4	3.6*
Xylene	ug/L	0.2	ND	780*	319*
1,3-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,4-Dichlorobenzene	ug/L	0.2	ND	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	ND	ND	ND
Fluorobenzene (Surrogate Recovery)	%		85	92	92

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

* These results should be regarded as minimal concentrations.

Mr. David Leland
Page 7

March 10, 1989
PACE Project Number: 490208.505

mw-9 *Trip Blank*

PACE Sample Number:
Parameter

Units	MDL	70553 89060810	70554 89060811
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ORGANIC ANALYSIS

INDIVIDUAL PARAMETERS

Petroleum Fuels, Purgeable, as Gasoline (EPA Method 8015, Modified)	mg/L	0.25	2.1	ND
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HALOGENATED VOLATILE COMPOUNDS EPA 8010

Dichlorodifluoromethane	ug/L	2.0	ND	ND
Chloromethane	ug/L	2.0	ND	ND
Vinyl Chloride	ug/L	2.0	ND	ND
Bromomethane	ug/L	2.0	ND	ND
Chloroethane	ug/L	2.0	ND	ND
Trichlorofluoromethane	ug/L	2.0	ND	ND

1,1-Dichloroethene	ug/L	0.5	9.7	ND
Methylene Chloride	ug/L	0.5	1.0	2.6
trans-1,2-Dichloroethene	ug/L	0.5	ND	ND
1,1-Dichloroethane	ug/L	0.5	5.1	ND
Chloroform	ug/L	0.5	3.0	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	0.8	1.5

Carbon Tetrachloride	ug/L	0.5	ND	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	1.8	ND
Trichloroethene (TCE)	ug/L	0.5	0.8	ND
1,2-Dichloropropane	ug/L	0.5	ND	ND
Bromodichloromethane	ug/L	0.5	ND	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND	ND

trans-1,3-Dichloropropene	ug/L	0.5	ND	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND	ND
1,1,2-Trichloroethane	ug/L	0.5	ND	ND
Tetrachloroethene	ug/L	0.5	ND	ND
Dibromochloromethane	ug/L	0.5	ND	ND
Chlorobenzene	ug/L	0.5	ND	ND

Bromoform	ug/L	0.5	ND	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	ND
1,3-Dichlorobenzene	ug/L	0.5	ND	ND
1,4-Dichlorobenzene	ug/L	0.5	ND	ND

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

Mr. David Leland
Page 8

March 10, 1989
PACE Project Number: 490208.505

PACE Sample Number:
Parameter

Units

MDL

70553
89060810

70554
89060811

M.W. 9

Trip Blank

ORGANIC ANALYSIS

HALOGENATED VOLATILE COMPOUNDS EPA 8010

1,2-Dichlorobenzene	ug/L	0.5	ND	ND
Bromochloromethane (Surrogate Recovery)	%		84	80
1,4-Dichlorobutane (Surrogate Recovery)	%		72	74

AROMATIC VOLATILE COMPOUNDS EPA 8020

Benzene	ug/L	0.2	337	ND
Toluene	ug/L	0.2	77	0.89
Chlorobenzene	ug/L	0.2	ND	ND
Ethylbenzene	ug/L	0.2	ND	ND
Xylene	ug/L	0.2	81	ND
1,3-Dichlorobenzene	ug/L	0.2	ND	ND
1,4-Dichlorobenzene	ug/L	0.2	ND	ND
1,2-Dichlorobenzene	ug/L	0.2	ND	ND
Fluorobenzene (Surrogate Recovery)	%		86	91

MDL Method Detection Limit, Estimated Value.
ND Not detected at or above the MDL.

Approval:

Lisa J. Petersen

Lisa J. Petersen
Project Manager for
PACE Laboratories

Douglas Gram

Douglas Gram, Ph.D
Technical Reviewer for
PACE Laboratories



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

490208.30
 Lab: PAEE

Job Number: 0938202202
 Name/Location: City of Oakland
 Project Manager: David Leland

Samplers: Caleb A. Ocansey,
David Evans

Recorder: Caleb A. Ocansey
 (Signature Required)

		ANALYSIS REQUESTED													
SOURCE CODE	MATRIX	#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER	DATE	STATION DESCRIPTION/NOTES	EPA 601/6010	EPA 602/6020	EPA 624/6240	EPA 625/6270	Priority Pknt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015
		Unpres.	H ₂ SO ₄	HNO ₃											
23	X				89060801	8902081110	MW-5	X	X					X	
23	X				89060802	8902081207	-7	X	X					X	
23	X				89060803	8902081243	-8	X	X					X	
23	X				89060804	8902081350	-2	X	X					X	
23	X				89060805	8902081455	-6	X	X					X	
23	X				89060806	8902081455	-6 Duplicate	X	X					X	
23	X				89060807	8902081608	-3	X	X					X	
23	X				89060808	8902081644	-11	X	X					X	
23	X				89060809	8902081748	-10	X	X					X	
23	X				89060810	8902081714	-9	X	X					X	
23	X				89060811	8902081823	TRIP Blank	X	X					X	

SOURCE CODE	MATRIX	#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER	DATE	STATION DESCRIPTION/NOTES								
		Unpres.	H ₂ SO ₄	HNO ₃			Yr	Wk	Seq	Yr	Mo	Dy	Time		
23	X				89060801	8902081110									
23	X				89060802	8902081207									
23	X				89060803	8902081243									
23	X				89060804	8902081350									
23	X				89060805	8902081455									
23	X				89060806	8902081455									
23	X				89060807	8902081608									
23	X				89060808	8902081644									
23	X				89060809	8902081748									
23	X				89060810	8902081714									
23	X				89060811	8902081823									

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

CHAIN OF CUSTODY RECORD			
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
<u>Caleb A. Ocansey</u>	<u>David Evans</u>		
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
<u>David Evans</u>	<u>2/5/89 14:00</u>	<u>William Almon</u>	
METHOD OF SHIPMENT			

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AUGUST 1988 THROUGH FEBRUARY 1989
CHINATOWN REDEVELOPMENT PROJECT AREA
OAKLAND, CALIFORNIA
December 19, 1989

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QUALITY CONTROL REVIEWER

Tamara L. Williams

Tamara L. Williams
Geologist - 3954