Harding Lawson Associates

April 2, 1990

9382,040.02

California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612

01-1126
4-2-90

Attention: Mr. Don Dalke ✓

Gentlemen:

Proposed Changes to Monitoring Program
Soil Treatment System
Pacific Renaissance Plaza
Oakland, California

This letter transmits Harding Lawson Associates' (HLA) *Report of System Monitoring, December 1989 - February 1990, Soil Treatment System, Pacific Renaissance Plaza, Oakland, California*, describing the operations and monitoring of the in situ biotreatment system at the Pacific Renaissance Plaza (PRP) site in Oakland. The report was prepared by HLA on behalf of the Redevelopment Agency of the City of Oakland (Agency). The letter also discusses operations and monitoring activities for the system planned during the next quarter.

Recent conversations with PRP developers indicate excavation is scheduled to start in June 1990. Within the constraints of available budgets authorized by the Agency, it is HLA's plan to extend system operations as close as practical to the start of excavation. To aid in reaching this goal, we are implementing several changes to our monitoring and reporting schedule that, in our judgment, will not compromise our ability to monitor the hydraulic control of injected/infiltrated water, and will provide us with data on the progress of the treatment in specific areas of interest.

The changes being implemented are:

- Collect groundwater samples from selected monitoring and extraction wells two more times prior to system shutdown: once in April and once immediately prior to shutdown. The latter round is expected to occur in mid-May, assuming economic constraints or construction schedule changes do not force earlier termination of operation.

- Continue to collect and analyze for organics samples from all currently sampled offsite compliance wells: MW-7, MW-12, MW-18, MW-19, and MW-20.

- Continue to collect and analyze for organics samples from the extraction wells located in areas where soil or groundwater data indicate the possible continued presence of elevated levels of gasoline in soils: EW-6, EW-15, and EW-22.

- Report on the operations, monitoring and performance of the system on a quarterly basis, as required by your authorization letter of February 22, 1989. The next quarterly report will cover activities in March through May 1990 and will be submitted on or before July 2, 1990.

If you have any questions regarding these planned changes, please feel free to call David Leland at 899-7352 or Pete Mote at 899-7397.

Yours very truly,

HARDING LAWSON ASSOCIATES

David F. Leland
Associate Hydrologist

Peter A. Mote
Principal Geologist

DFL/PAM/lan/I12085-CT

Attachment: Report of System Monitoring, December 1989 through February 1990
Soil Treatment System, Pacific Renaissance Plaza, Oakland, California

cc: Peter Chen, Agency
Donnell Choy, City Attorney's Office (without attachment)
Lowell Miller, Alameda County Health Department
Richard Hiett, RWQCB (without attachment)

A Report Prepared for

California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street, Suite 700
Oakland, California 94612

REPORT OF SYSTEM MONITORING
DECEMBER 1989 - FEBRUARY 1990
SOIL TREATMENT SYSTEM
PACIFIC RENAISSANCE PLAZA
OAKLAND, CALIFORNIA

HLA Job No. 9382,040.02

Submitted on behalf of:

City of Oakland Redevelopment Agency
1417 Clay Street
Oakland, California 94612

by

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March 30, 1990

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1.0 INTRODUCTION AND BACKGROUND

1.1 Introduction

This report describes the operation and monitoring of the in situ soil treatment system at the Pacific Renaissance Plaza (PRP) site in Oakland, California, for the period February 2 to March 1, 1990 and discusses the performance of the system during the fourth quarter of operation, from December 7, 1989 to March 1, 1990. The PRP site, part of the Oakland Chinatown Redevelopment Project Area, is bounded by 9th, Franklin, and Webster streets and the East Bay Municipal Utility District (EBMUD) property line approximately 100 feet north of the center line of 10th Street (Plate 1). The soil treatment system is designed to remove petroleum hydrocarbons from soil within the site boundaries before the soil is excavated during construction of the complex. The system began operation on March 4, 1989. Discussions with Pacific Renaissance Associates, the developer of the project, indicate that construction is scheduled to begin in May 1990.

This report has been prepared by Harding Lawson Associates (HLA) on behalf of the City of Oakland Redevelopment Agency (Agency). It is submitted in accordance with monitoring and reporting requirements set forth by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), in a letter to the City of Oakland dated February 22, 1989, and clarified in a letter dated March 17, 1989, from HLA to the RWQCB.

1.2 Previous Reports

Site history and characterization activities completed by HLA in 1988 are reported in *Site Characterization, Pacific Renaissance Plaza, Chinatown Redevelopment Project Area, Oakland, California (HLA, 1988)*. The site characterization report also presents a preliminary screening of soil treatment alternatives and an evaluation of the potential for effectively removing hydrocarbons from soil at the site using biodegradation. The *Report of Waste Discharge, Pacific Renaissance Plaza, Chinatown Redevelopment Project Area, Oakland, California (HLA, 1989a)*, discusses the design of the soil treatment system and presents the results of the biodegradation treatability study and the proposed operations and monitoring plan for the system. Site background, environmental setting, and previous investigations are also described in the report.

Characterization of the extent of soil contamination at the PRP site was updated in the *Report of System Monitoring: March 1989, Soil Treatment System, Pacific Renaissance Plaza, Oakland, California (HLA, 1989b)*, using results of analyses of soil samples collected during treatment system well installation activities. System operation and monitoring from March 1989 through January 1990 are described in *HLA 1989b through i and 1990a through c*. The objective of the system and a description of the process are presented in *HLA, 1989e*.

2.0 TREATMENT SYSTEM OPERATIONS - FEBRUARY 1990

System operational activities and adjustments made in February are summarized below:

- Pumps in Extraction Wells EW-8 and EW-20 were reconditioned; the pumps were removed from the wells and run in a chlorine/soap bath. Water-level probes for all of the wells were also cleaned.
- The concentration of nutrients in the injection water was maintained at approximately 40 parts per million (ppm).
- The sand filter at the influent of the carbon treatment system was backwashed twice daily on days when site personnel were present. The bag filters were changed approximately every four days. The carbon canisters were not backwashed this month.
- Water injected at Wells IW-2, IW-3, IW-4, IW-5, and IW-6 was recycled from the carbon treatment system effluent without the addition of nutrients or hydrogen peroxide.
- Injection Well IW-9 was shut off.

3.0 TREATMENT SYSTEM MONITORING - FEBRUARY 1990

3.1 Flow Rate, Water-Level, and Water Chemistry Monitoring

Flow rates, water levels, and water chemistry were monitored using procedures described in *HLA, 1989e*. Water samples were collected from selected extraction wells, injection wells, and monitoring wells and analyzed for inorganic and organic constituents and microbial populations. Samples from selected extraction wells were analyzed for ethylene dibromide by EPA Test Method 504 in addition to the normal analyses by EPA Test Methods 8015 and 8020. The additional analyses were performed to aid in health and safety planning in preparation for construction excavation.

3.2 Numerical Modeling of Groundwater Flow

The numerical model of groundwater flow at the site, developed during the design phase of the project, is described in the *Report of Waste Discharge* (*HLA, 1989a*). The model is based on the groundwater flow computer code MODFLOW developed by U.S. Geological Survey (*McDonald and Harbaugh, 1984*). Individual injection well, infiltration basin, and extraction well flow rates from January 31 to February 27 were averaged for use as model input (Tables 1 and 2) to simulate groundwater elevations at the site for February 27 (Plate 2).

4.0 RESULTS

4.1 Hydraulic Analysis

Flow rates for wells and infiltration basins installed by HLA were calculated based on readings from the flowmeters on the wellheads. Average injection and extraction rates for February are presented in Tables 1 and 2. From January 31 to February 27, the total flow rate for all injection wells was about 19.40 gallons per minute (gpm). The flow rate for injection wells located south of 10th Street, (Wells IW-1 to IW-9, and IW-12 to IW-14) was about 19.35 gpm. The average flow rate into Basins BA-1 to BA-7 was about 2.28 gpm from January 31 to February 27; the average flow rate into Basins BA-8 and BA-9 was about 0.42 gpm and into BA-10 about 0.83 gpm (Table 1). All the influent to these covered basins is assumed to infiltrate. Total flow into all injection wells and infiltration basins, calculated as a monthly average, was about 22.93 gpm.

During this monitoring period, the total flow rate for all extraction wells was 24.67 gpm. The flow rate for Wells EW-1 through EW-20 was about 23.81 gpm, and for Well EW-21 and Well EW-22 was about 0.86 gpm (Table 2). The total of extraction rates exceeded the total of injection/infiltration rates by about 1.74 gpm in February.

During this quarterly period (December 1989 through February 1990) the total flow from all injection operations was 2,944,910 gallons and the total flow from all extraction operations was 3,055,763 gallons. The total extraction flow exceeded the total injection flow by about 110,853 gallons.

Table 3 presents measurements of depth to water in monitoring wells and calculated water-level elevations from February 2, 1989 to February 27, 1990. Groundwater elevations on February 27, 1990 are shown on Plate 2 and represent

conditions approximately 360 days after system startup. Contours of groundwater elevations simulated using the numerical model are also presented on Plate 2. In some cases, locations of injection and extraction points used in the model differ slightly from actual well locations because of the nature of discretization of the modeled area.

Water-level contours calculated using the site model can be used to assess the hydraulic control of injected water. Simulated contours for February 27 (Plate 2) indicate overall hydraulic control of injected water. Most injected water is recovered by the extraction wells without traveling off site. At the eastern and western ends of the site, some of the injected water may travel off site as it moves toward the extraction wells.

In general, the simulated water levels show good agreement with water-level elevations measured at monitoring wells. The correlation coefficient, r, is the measure of least squares best fit straight line and was calculated to have a value of 0.94 for the February 27 results, where r = 1.00 represents a perfect match.

4.2 Distribution of Inorganic Constituents and Microbial Populations in Groundwater

Tables 4 and 5 present the inorganic chemical and microbiological analysis results for the bioremediation treatment system from startup through March 1, 1990. Nitrate and phosphate concentrations in groundwater at the site for the February 28 - March 1, 1990 sampling round are presented on Plates 4 and 5, respectively.

4.3 Distribution of Petroleum Hydrocarbons in Groundwater

Results of analyses of groundwater samples for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene and xylenes are presented in Table 6. Laboratory data sheets for all organic analyses performed this round are presented in Appendix A. Petroleum hydrocarbon concentrations as TPH (gasoline) for the February 28 - March 1, 1990, sampling round are presented on Plate 6.

Reported TPH values for samples from Monitoring Wells MW-7, MW-13, MW-16, MW-17, and MW-19 are higher for the March sampling round than for the February round. Reported TPH values for the remaining eight monitoring wells are similar to or less than values for the February round. Petroleum hydrocarbons as gasoline were not detected at MW-12, MW-18, and MW-20 located west of the site.

The TPH concentrations for all extraction wells remained stable or decreased from the previous sampling round.

Reported TPH values for samples from all monitoring and extraction wells except MW-16, EW-6 and EW-21 have generally remained stable or decreased during this quarter.

5.0 ACTIVITIES PLANNED FOR MARCH 1990

On the basis of observed performance, selected injection wells may be redeveloped to improve the injection rate efficiency. Wells will be swabbed over the entire screened interval to remove silt from the slotted sections. The wells will be bailed to remove the silt and then pumped until the water is clear.

Monitoring of water levels, flow rates, and inorganic and organic constituent concentrations will continue.

6.0 REFERENCES

Harding Lawson Associates, 1988. *Site Characterization, Pacific Renaissance Plaza, Chinatown Redevelopment Project Area, Oakland, California.* December 22.

_____, 1989a. *Report of Waste Discharge, Pacific Renaissance Plaza, Chinatown Redevelopment Area, Oakland, California.* February.

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_____, 1989f. *Report of System Monitoring: July 1989, Soil Treatment System, Pacific Renaissance Plaza, Oakland, California.* October 5.

_____, 1989g. *Report of System Monitoring: June through August 1989, Soil Treatment System, Pacific Renaissance Plaza, Oakland, California.* October 2.

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_____, 1990a. *Report of System Monitoring: September through November, 1989, Soil Treatment System, Pacific Renaissance Plaza, Oakland, California.* January 9.

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McDonald, D.G., and A.W. Harbaugh, 1984. *A Modular Three-Dimensional Finite Difference Groundwater Flow Model,* U.S. Geological Survey, Open-File Report 83-875.

Table 1. Injection Well and Infiltration Basin Flow Rates - February 1990

Injection Well Flow Rates

Meter No.	27-Feb-90 Totalizer Reading	31-Jan-90 Totalizer Reading	Elapsed Time (min)	Average Flow Rate (gpm)
IW-1	1628551	1561892	38750	1.72
IW-2	1558923	1487893	38750	1.83
IW-3	1318933	1262422	38750	1.46
IW-4	1544246	1473678	38750	1.82
IW-5	513677	481863	38750	0.82
IW-6	721950	691019	38750	0.80
IW-7	1748470	1670811	38750	2.00
IW-8	572578	552260	38750	0.52
IW-9	836894	836894	38750	0.00
IW-10	108579	106701	38750	0.05
IW-11	557179	557179	38750	0.00
IW-12	393933	273238	38750	3.11
IW-13	298365	211594	38750	2.24
IW-14	340653	223913	38750	3.01
Total (1-9,12-14)	11477173	10727477	38750	19.35
Total (10,11)	665758	663880	38750	0.05
Total (1-14)	12142931	11391357	38750	19.40

Note: Totalizer readings in gallons.

Infiltration Basin Flow Rates

Meter No.	27-Feb-90 Totalizer Reading	31-Jan-90 Totalizer Reading	Elapsed Time (min)	Average Flow Rate (gpm)
BA-1	252730	237109	38750	0.40
BA-2	150357	137359	38750	0.34
BA-3	206909	192380	38750	0.37
BA-4	135169	125683	38750	0.24
BA-5	430453	408683	38750	0.56
BA-6 **				
BA-7	172364	158583	38750	0.36
BA-8	167081	153535	38750	0.35
BA-9	59090	56227	38750	0.07
BA-10	134997	102932	38750	0.83
Total (1-7)	1347982	1259797	38750	2.28
Total (8,9)	226171	209762	38750	0.42
Total (1-10)	1709150	1572491	38750	3.53

Note: Totalizer readings in gallons.

**: Basin flow rate is included in BA-5

Table 2. Extraction Well Flow Rates - February 1990

Meter No.	27-Feb-90 Totalizer Reading	31-Jan-90 Totalizer Reading	Elapsed Time (min)	Average Flow Rate (gpm)
EW-1	474566	429212	38750	1.17
EW-2	519058	478725	38750	1.04
EW-3	859521	788330	38750	1.84
EW-4	607670	561513	38750	1.19
EW-5	590826	560282	38750	0.79
EW-6	198549	192861	38750	0.15
EW-7	171317	163527	38750	0.20
EW-8	447179	424258	38750	0.59
EW-9	562075	521664	38750	1.04
EW-10	423984	397324	38750	0.69
EW-11	498166	450285	38750	1.24
EW-12	407416	371138	38750	0.94
EW-13	410674	380692	38750	0.77
EW-14	469879	435425	38750	0.89
EW-15	804032	744638	38750	1.53
EW-16	1239883	1141867	38750	2.53
EW-17	1118736	1021719	38750	2.50
EW-18	1100216	996431	38750	2.68
EW-19	812808	759818	38750	1.37
EW-20	414810	388980	38750	0.67
EW-21	159387	142143	38750	0.45
EW-22	101716	85649	38750	0.41
Total (1-20)	12131365	11208689	38750	23.81
Total (21-22)	261103	227792	38750	0.86
Total (1-22)	12392468	11436481	38750	24.67

Note: Totalizer readings in gallons.

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Table 3. Water Level Elevations - January 1989 through January 1990

Well No.	MW-2		MW-3		MW-5		MW-6		MW-7		MW-8		MW-9		MW-10	
	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
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
05-Jan-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
02-Feb-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
08-Feb-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
15-Feb-89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-Feb-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
25-Feb-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
02-Mar-89	-	-	-	-	-	-	-	-	-	-	-	-	30.05	8.45	27.23	9.12
11-Mar-89	-	-	-	-	-	-	-	-	-	-	-	-	23.06	15.44	23.59	12.76
18-Mar-89	-	-	32.20	6.15	32.01	5.85	-	-	31.52	7.58	-	-	22.45	16.05	23.17	13.18
25-Mar-89	-	-	27.76	10.59	27.53	10.33	-	-	30.08	9.02	-	-	22.62	15.88	23.19	13.16
30-Mar-89	-	-	-	-	-	-	-	-	-	-	-	-	23.00	15.50	23.56	12.79
04-Apr-89	28.52	11.03	27.56	10.79	-	-	28.00	11.59	29.00	10.10	30.45	10.02	22.61	15.89	23.34	13.01
08-Apr-89	-	-	-	-	-	-	-	-	-	-	-	-	23.12	15.38	23.50	12.85
11-Apr-89	-	-	-	-	-	-	-	-	-	-	-	-	23.37	15.13	23.64	12.71
12-Apr-89	28.59	10.96	27.63	10.72	-	-	27.17	12.42	28.96	10.14	30.45	10.02	-	-	-	-
18-Apr-89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-Apr-89	-	-	-	-	-	-	-	-	28.13	10.97	-	-	23.36	15.14	23.41	12.94
25-Apr-89	-	-	-	-	-	-	-	-	-	-	-	-	22.80	15.70	23.39	12.96
02-May-89	28.71	10.84	26.84	11.51	-	-	27.49	12.10	28.54	10.56	29.80	10.67	22.73	15.77	23.54	12.81
09-May-89	27.99	11.56	26.58	11.77	26.11	11.75	27.34	12.25	28.34	10.76	29.68	10.79	23.04	15.46	23.86	12.49
17-May-89	27.80	11.75	26.62	11.73	-	-	27.11	12.48	28.16	10.94	29.27	11.20	23.33	15.17	23.63	12.72
22-May-89	27.52	12.03	28.17	10.18	25.98	11.88	26.89	12.70	27.69	11.41	28.68	11.79	23.94	14.56	23.54	12.81
31-May-89	27.99	11.56	26.28	12.07	-	-	27.11	12.48	28.28	10.82	29.31	11.16	24.17	14.33	24.54	11.81
05-Jun-89	27.60	11.95	25.83	12.52	24.96	12.90	27.00	12.59	28.18	10.92	29.41	11.06	19.72	18.78	23.22	13.13
14-Jun-89	27.58	11.97	26.00	12.35	25.52	12.34	26.88	12.71	28.09	11.01	29.20	11.27	20.53	17.97	22.66	13.69
19-Jun-89	-	-	-	-	-	-	-	-	-	-	-	-	20.31	18.19	22.74	13.61
28-Jun-89	-	-	27.88	10.47	25.39	12.47	-	-	-	-	-	-	21.26	17.24	22.66	13.69
05-Jul-89	27.34	12.21	25.92	12.43	25.50	12.36	26.66	12.93	27.68	11.42	28.99	11.48	21.88	16.62	23.41	12.94
21-Jul-89	-	-	24.73	13.62	25.44	12.42	-	-	27.60	11.50	-	-	21.39	17.11	23.04	13.31
28-Jul-89	-	-	-	-	-	-	-	-	-	-	-	-	21.36	17.14	23.03	13.32
01-Aug-89	27.22	12.33	26.67	11.68	25.36	12.50	26.61	12.98	27.44	11.66	28.79	11.68	21.60	16.90	23.19	13.16
09-Aug-89	27.18	12.37	25.91	12.44	25.36	12.50	26.57	13.02	27.40	11.70	28.74	11.73	21.66	16.84	21.77	14.58
15-Aug-89	27.24	12.31	25.95	12.40	25.48	12.38	27.63	11.96	27.62	11.48	28.79	11.68	21.80	16.70	22.86	13.49
30-Aug-89	27.21	12.34	-	-	25.69	12.17	26.60	12.99	27.52	11.58	28.66	11.81	22.98	15.52	23.20	13.15
06-Sep-89	27.22	12.33	25.93	12.42	25.55	12.31	26.61	12.98	27.38	11.72	28.77	11.70	21.97	16.53	23.78	12.57
28-Sep-89	-	-	-	-	-	-	-	-	-	-	-	-	22.37	16.13	22.40	13.95
03-Oct-89	26.71	12.84	25.24	13.11	24.75	13.11	26.30	13.29	27.35	11.75	28.29	12.18	22.55	15.95	21.60	14.75
01-Nov-89	26.49	13.06	25.07	13.28	24.55	13.31	26.12	13.47	26.96	12.14	28.14	12.33	22.33	16.17	22.57	13.78
20-Nov-89	26.28	13.27	24.91	13.44	-	-	25.96	13.63	26.80	12.30	28.00	12.47	22.46	16.04	22.30	14.05
04-Dec-89	26.18	13.37	24.76	13.59	24.04	13.82	25.88	13.71	26.87	12.23	27.91	12.56	22.22	16.28	20.89	15.46
21-Dec-89	26.40	13.15	26.05	12.30	24.55	13.31	25.10	14.49	26.93	12.17	27.98	12.49	22.98	15.52	22.07	14.28
02-Jan-90	26.40	13.15	25.08	13.27	24.58	13.28	25.00	14.59	26.96	12.14	27.91	12.56	23.38	15.12	22.32	14.03
31-Jan-90	26.04	13.51	24.74	13.61	24.29	13.57	25.80	13.79	26.61	12.49	27.70	12.77	23.18	15.32	21.76	14.59
27-Feb-90	26.02	13.53	24.68	13.67	23.99	13.87	25.69	13.90	26.54	12.56	27.59	12.88	23.12	15.38	21.65	14.70

Notes:
Elevations are in feet above mean sea level (MSL).
Depth to water in feet measured from top of casing.

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Table 3. Water Level Elevations - January 1989 through January 1990

Well No.	MW-11		MW-12		MW-13		MW-14		MW-15		MW-16		MW-17		MW-18	
	GROUND SURFACE 37.98	TOP OF CASING 37.55	GROUND SURFACE 37.70	TOP OF CASING 37.00	GROUND SURFACE 39.79	TOP OF CASING 40.77	GROUND SURFACE 39.27	TOP OF CASING 40.26	GROUND SURFACE 39.69	TOP OF CASING 40.73	GROUND SURFACE 39.55	TOP OF CASING 40.53	GROUND SURFACE 39.16	TOP OF CASING 40.16	GROUND SURFACE 36.52	TOP OF CASING 35.88
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
05-Jan-89	30.30	7.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
02-Feb-89	30.03	7.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-
08-Feb-89	29.52	8.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-Feb-89	-	-	28.89	8.11	-	-	-	-	-	-	-	-	-	-	26.89	8.99
18-Feb-89	28.02	9.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25-Feb-89	29.05	8.50	30.87	6.13	32.63	8.14	31.07	9.19	32.83	7.90	32.43	8.10	32.02	8.14	26.90	8.98
02-Mar-89	28.98	8.57	28.46	8.54	32.79	7.98	32.28	7.98	32.40	8.33	32.50	8.03	-	-	26.66	9.22
11-Mar-89	28.93	8.62	28.22	8.78	30.12	10.65	28.64	11.62	27.10	13.63	25.64	14.89	23.45	16.71	26.28	9.60
18-Mar-89	27.79	9.76	27.85	9.15	30.29	10.48	28.20	12.06	26.62	14.11	24.74	15.79	23.35	16.81	26.18	9.70
25-Mar-89	28.10	9.45	27.47	9.53	29.76	11.01	27.79	12.47	26.28	14.45	24.88	15.65	23.35	16.81	25.70	10.18
30-Mar-89	28.48	9.07	27.43	9.57	30.12	10.65	27.99	12.27	26.50	14.23	25.48	15.05	-	-	-	-
04-Apr-89	28.61	8.94	28.44	8.56	29.60	11.17	27.84	12.42	26.84	13.89	25.53	15.00	24.18	15.98	26.10	9.78
08-Apr-89	29.31	8.24	-	-	30.49	10.28	27.81	12.45	26.81	13.92	25.74	14.79	24.28	15.88	25.82	10.06
11-Apr-89	29.45	8.10	-	-	30.62	10.15	28.04	12.22	27.21	13.52	26.24	14.29	24.83	15.33	-	-
12-Apr-89	-	-	28.64	8.36	-	-	-	-	-	-	-	-	-	-	26.16	9.72
18-Apr-89	-	-	-	-	-	-	-	-	27.08	13.65	26.02	14.51	24.64	15.52	-	-
19-Apr-89	26.77	10.78	26.98	10.02	30.19	10.58	27.13	13.13	-	-	-	-	-	-	25.89	9.99
25-Apr-89	29.18	8.37	27.47	9.53	30.40	10.37	27.75	12.51	27.01	13.72	25.97	14.56	24.57	15.59	27.91	7.97
02-May-89	28.44	9.11	27.36	9.64	29.42	11.35	27.50	12.76	25.91	14.82	24.42	16.11	22.71	17.45	25.76	10.12
09-May-89	27.09	10.46	26.85	10.15	29.86	10.91	27.38	12.88	26.63	14.10	25.37	15.16	23.89	16.27	25.38	10.50
17-May-89	28.88	8.67	27.63	9.37	29.10	11.67	27.73	12.53	27.25	13.48	26.23	14.30	24.85	15.31	25.59	10.29
22-May-89	28.56	8.99	27.62	9.38	30.24	10.53	27.95	12.31	27.25	13.48	26.34	14.19	25.28	14.88	25.27	10.61
31-May-89	29.18	8.37	28.16	8.84	30.34	10.43	27.99	12.27	27.42	13.31	26.31	14.22	24.91	15.25	26.04	9.84
05-Jun-89	28.92	8.63	28.08	8.92	29.88	10.89	26.18	14.08	25.83	14.90	24.67	15.86	22.62	17.54	25.98	9.90
14-Jun-89	28.66	8.89	27.97	9.03	29.31	11.46	26.54	13.72	24.54	16.19	24.73	15.80	20.44	19.72	25.89	9.99
19-Jun-89	28.20	9.35	27.47	9.53	29.06	11.71	26.21	14.05	24.11	16.62	22.06	18.47	19.72	20.44	25.91	9.97
28-Jun-89	28.57	8.98	27.83	9.17	29.47	11.30	26.65	13.61	24.97	15.76	23.01	17.52	20.89	19.27	25.76	10.12
05-Jul-89	27.61	9.94	27.10	9.90	29.15	11.62	26.78	13.48	25.23	15.50	23.52	17.01	21.56	18.60	25.68	10.20
21-Jul-89	27.58	9.97	27.03	9.97	28.71	12.06	26.62	13.64	25.19	15.54	23.42	17.11	21.52	18.64	25.58	10.30
28-Jul-89	27.48	10.07	-	-	28.61	12.16	26.38	13.88	24.32	16.41	22.29	18.24	20.25	19.91	-	-
01-Aug-89	26.64	10.91	26.35	10.65	28.74	12.03	26.43	13.83	24.78	15.95	22.94	17.59	21.15	19.01	25.32	10.56
09-Aug-89	27.17	10.38	26.85	10.15	29.21	11.56	26.68	13.58	25.28	15.45	23.45	17.08	21.59	18.57	25.31	10.57
15-Aug-89	27.16	10.39	26.98	10.02	29.42	11.35	26.97	13.29	25.85	14.88	24.07	16.46	21.21	18.95	25.49	10.39
30-Aug-89	26.87	10.68	26.44	10.56	29.17	11.60	27.42	12.84	26.24	14.49	24.86	15.67	23.24	16.92	25.37	10.51
06-Sep-89	26.92	10.63	26.33	10.67	28.88	11.89	27.17	13.09	26.00	14.73	24.45	16.08	22.75	17.41	25.24	10.64
28-Sep-89	28.26	9.29	-	-	29.83	10.94	26.75	13.51	26.28	14.45	24.93	15.60	23.34	16.82	-	-
03-Oct-89	27.30	10.25	26.85	10.15	29.53	11.24	26.85	13.41	26.50	14.23	25.19	15.34	23.65	16.51	25.38	10.50
01-Nov-89	28.12	9.43	27.28	9.72	29.27	11.50	26.97	13.29	26.55	14.18	25.39	15.14	23.98	16.18	25.68	10.20
20-Nov-89	27.43	10.12	26.73	10.27	29.18	11.59	26.68	13.58	26.45	14.28	25.31	15.22	23.91	16.25	25.46	10.42
04-Dec-89	27.59	9.96	26.82	10.18	29.16	11.61	26.20	14.06	25.92	14.81	24.83	15.70	23.31	16.85	25.45	10.43
21-Dec-89	26.38	11.17	26.36	10.64	29.15	11.62	26.84	13.42	26.33	14.40	25.09	15.44	23.53	16.63	25.32	10.56
02-Jan-90	26.63	10.92	26.79	10.21	29.32	11.45	26.94	13.32	26.15	14.58	25.22	15.31	23.85	16.31	25.37	10.51
31-Jan-90	26.33	11.22	26.22	10.78	29.09	11.68	26.80	13.46	26.42	14.31	25.25	15.28	23.71	16.45	25.10	10.78
27-Feb-90	26.39	11.16	26.37	10.63	29.29	11.48	26.89	13.37	26.78	13.95	25.72	14.81	24.29	15.87	25.19	10.69

Notes:
Elevations are in feet above mean sea level (MSL).
Depth to water in feet measured from top of casing.

Table 3. Water Level Elevations - January 1989 through January 1990

Well No.	MW-19		MW-20	
	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING
	37.15	36.62	38.32	37.86
DATE	Depth to Water	Elevation	Depth to Water	Elevation
05-Jan-89	-	-	-	-
02-Feb-89	-	-	-	-
08-Feb-89	-	-	-	-
15-Feb-89	-	-	-	-
18-Feb-89	-	-	-	-
25-Feb-89	-	-	-	-
02-Mar-89	-	-	-	-
11-Mar-89	-	-	-	-
18-Mar-89	-	-	-	-
25-Mar-89	-	-	-	-
30-Mar-89	-	-	-	-
04-Apr-89	-	-	-	-
08-Apr-89	-	-	-	-
11-Apr-89	-	-	-	-
12-Apr-89	-	-	-	-
18-Apr-89	-	-	-	-
19-Apr-89	-	-	-	-
25-Apr-89	-	-	-	-
02-May-89	-	-	-	-
09-May-89	-	-	-	-
17-May-89	-	-	-	-
22-May-89	-	-	-	-
31-May-89	-	-	-	-
05-Jun-89	-	-	-	-
14-Jun-89	-	-	-	-
19-Jun-89	-	-	-	-
28-Jun-89	-	-	-	-
05-Jul-89	-	-	-	-
21-Jul-89	-	-	-	-
28-Jul-89	-	-	-	-
01-Aug-89	-	-	-	-
09-Aug-89	-	-	-	-
15-Aug-89	-	-	-	-
30-Aug-89	-	-	-	-
06-Sep-89	-	-	-	-
28-Sep-89	-	-	-	-
03-Oct-89	-	-	-	-
01-Nov-89	-	-	-	-
20-Nov-89	-	-	-	-
04-Dec-89	-	-	-	-
21-Dec-89	22.32	14.30	26.63	11.23
02-Jan-90	22.60	14.02	26.80	11.06
31-Jan-90	22.20	14.42	26.44	11.42
27-Feb-90	22.04	14.58	26.45	11.41

Notes:
Elevations are in feet above mean sea level (MSL).
Depth to water in feet measured from top of casing.

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

Harding Lawson Associates

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
EW-1								
	15-Mar-89	17.6	ND	NT	ND	ND	7.8E+6	1.2E+2
	29-Mar-89	9.7	3.5	NT	NT	ND	1.8E+6	3.8E+2
	04-Apr-89	13.2	3.8	NT	ND	ND	3.3E+5	2.2E+2
	11-Apr-89	24.6	2.8	NT	NT	ND	NT	NT
	18-Apr-89	30.8	1.0	4.1	ND	ND	3.3E+5	7.8E+1
	25-Apr-89	33.4	3.0	4.8	NT	ND	6.8E+4	2.1E+1
	02-May-89	37.0	5.0	4.9	NT	ND	4.5E+5	9.5E+1
	09-May-89	22.9	2.5	9.8*	NT	ND	5.2E+5	7.0E+2
	17-May-89	37.0	1.5	7.5	NT	ND	2.6E+5	1.4E+2
	23-May-89	15.8	5.3	11.1	NT	ND	NT	NT
	31-May-89	52.8	2.8	5.9	NT	ND	7.6E+5	4.6E+2
	05-Jun-89	25.9	ND	14.5	NT	ND	NT	NT
	14-Jun-89	17.6	2.3	12.6	NT	ND	NT	NT
	20-Jun-89	NT	NT	19.3	NT	NT	NT	NT
	27-Jun-89	52.8	NT	16.5	NT	NT	NT	NT
	06-Jul-89	47.3	4.0	13.3	NT	ND	9.3E+5	7.0E+3
	22-Jul-89	33.0	6.7	NT	NT	ND	NT	NT
	03-Aug-89	46.2	7.8	NT	NT	ND	NT	NT
	07-Sep-89	63.8	14.5	17.7	NT	ND	NT	NT
	18-Sep-89	74.8	17.0	12.2	NT	ND	NT	NT
	29-Sep-89	NT	NT	17.3	NT	NT	NT	NT
	05-Oct-89	59.4	21.5	14.9	NT	ND	NT	NT
	02-Nov-89	59.4	24.0	16.2	NT	ND	NT	NT
	04-Dec-89	54.2	21.3	10.2	NT	ND	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	04-Jan-90	58.0	22.4	NT	NT	0.7	NT	NT
	22-Jan-90	NT	NT	9.4	NT	NT	NT	NT
	01-Feb-90	52.4	19.2	NT	NT	ND	NT	NT
	08-Feb-90	NT	NT	11.2	NT	NT	NT	NT
	15-Feb-90	NT	NT	17.1	NT	NT	NT	NT
	22-Feb-90	NT	NT	13.0	NT	NT	NT	NT
	01-Mar-90	72.9	19.2	9.9	NT	ND	NT	NT
EW-2								
	23-May-89	NT	NT	15.8	NT	NT	NT	NT
	31-May-89	NT	NT	12.7	NT	NT	NT	NT
	05-Jun-89	NT	NT	16.3	NT	NT	NT	NT
	14-Jun-89	NT	NT	15.6	NT	NT	NT	NT
	20-Jun-89	NT	NT	19.6	NT	NT	NT	NT
	27-Jun-89	NT	NT	18.9	NT	NT	NT	NT
	06-Jul-89	NT	NT	16.5	NT	NT	NT	NT
	21-Jul-89	NT	NT	16.5	NT	NT	NT	NT
	07-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	18-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	29-Sep-89	NT	NT	>20.0	NT	NT	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

Harding Lawson Associates

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	04-Dec-89	NT	NT	19.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	02-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	01-Mar-90	NT	NT	>20.0	NT	NT	NT	NT
EW-3								
	23-May-89	NT	NT	20.0	NT	NT	NT	NT
	31-May-89	NT	NT	18.3	NT	NT	NT	NT
	05-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	14-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	20-Jun-89	NT	NT	19.7	NT	NT	NT	NT
	27-Jun-89	NT	NT	NT	NT	NT	NT	NT
	06-Jul-89	NT	NT	14.0	NT	NT	NT	NT
	21-Jul-89	NT	NT	>20.0	NT	NT	NT	NT
	07-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	18-Sep-89	NT	NT	19.9	NT	NT	NT	NT
	29-Sep-89	NT	NT	18.5	NT	NT	NT	NT
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	04-Dec-89	NT	NT	13.5	NT	NT	NT	NT
	21-Dec-89	NT	NT	15.2	NT	NT	NT	NT
	02-Jan-90	NT	NT	11.1	NT	NT	NT	NT
	22-Jan-90	NT	NT	13.4	NT	NT	NT	NT
	08-Feb-90	NT	NT	14.1	NT	NT	NT	NT
	15-Feb-90	NT	NT	12.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	12.7	NT	NT	NT	NT
	01-Mar-90	NT	NT	11.7	NT	NT	NT	NT
EW-4								
	15-Mar-89	16.7	0.6	NT	ND	ND	5.1E+6	9.5E+1
	29-Mar-89	25.5	2.8	NT	NT	ND	5.3E+5	1.7E+2
	04-Apr-89	31.7	4.0	NT	ND	ND	2.5E+5	6.8E+1
	11-Apr-89	34.1	3.3	NT	NT	ND	4.3E+4	4.5E+1
	18-Apr-89	43.6	5.3	7.9	ND	ND	4.3E+4	1.1E+2
	25-Apr-89	49.3	5.0	4.8	NT	ND	9.0E+4	1.7E+2
	02-May-89	48.4	9.0	4.9	NT	ND	2.5E+5	2.0E+3
	09-May-89	70.4	11.8	9.8*	NT	ND	NT	NT
	17-May-89	50.6	16.0	7.5	NT	ND	NT	NT
	23-May-89	52.8	17.0	NT	NT	ND	5.8E+6	7.8E+1
	31-May-89	47.9	17.0	18.9	NT	ND	NT	NT
	05-Jun-89	49.1	16.6	>20.0	NT	ND	1.3E+5	4.9E+2
	14-Jun-89	27.1	17.0	14.5	NT	ND	6.1E+5	2.4E+5
	20-Jun-89	48.4	17.0	18.5	NT	ND	2.3E+6	2.2E+4
	27-Jun-89	NT	18.0	16.8	NT	ND	8.0E+5	1.4E+4

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

Harding Lawson Associates

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	06-Jul-89	48.4	17.0	13.9	NT	ND	NT	NT
	22-Jul-89	45.1	20.5	NT	NT	ND	NT	NT
	03-Aug-89	57.2	20.5	NT	NT	ND	NT	NT
	17-Aug-89	61.6	20.0	NT	NT	0.7	NT	NT
	07-Sep-89	83.6	12.0	9.0	NT	1.3	NT	NT
	18-Sep-89	72.6	24.6	8.1	NT	1.2	NT	NT
	29-Sep-89	NT	NT	8.6	NT	NT	NT	NT
	05-Oct-89	NT	NT	4.8	NT	NT	NT	NT
	23-Oct-89	70.4	17.0	9.1	NT	1.2	2.9E+5	5.4E+3
	02-Nov-89	69.5	18.0	4.7	NT	0.9	1.0E+6	2.3E+2
	04-Dec-89	78.5	20.3	>20.0	NT	1.6	NT	NT
	21-Dec-89	NT	NT	4.1	NT	NT	NT	NT
	04-Jan-90	72.9	16.5	8.4	NT	1.8	NT	NT
	22-Jan-90	NT	NT	3.0	NT	NT	NT	NT
	01-Feb-90	58.0	10.1	NT	NT	1.6	2.1E+5	9.2E+4
	08-Feb-90	NT	NT	6.2	NT	NT	NT	NT
	15-Feb-90	NT	NT	3.2	NT	NT	NT	NT
	22-Feb-90	NT	NT	4.1	NT	NT	NT	NT
	01-Mar-90	56.1	9.9	4.6	NT	1.2	NT	NT
EW-5								
	29-Mar-89	28.0	3.8	NT	NT	ND	NT	NT
	18-Apr-89	NT	NT	8.6	NT	NT	NT	NT
	25-Apr-89	NT	NT	12.8	NT	NT	NT	NT
	02-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	NT	NT	15.0*	NT	NT	NT	NT
	17-May-89	NT	NT	NT	NT	NT	NT	NT
	23-May-89	NT	NT	>20.0	NT	NT	NT	NT
	31-May-89	NT	NT	17.8	NT	NT	NT	NT
	05-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	14-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	20-Jun-89	NT	NT	19.9	NT	NT	NT	NT
	27-Jun-89	NT	NT	19.6	NT	NT	NT	NT
	06-Jul-89	NT	NT	19.0	NT	NT	NT	NT
	18-Sep-89	NT	NT	18.5	NT	NT	NT	NT
	29-Sep-89	NT	NT	8.5	NT	NT	NT	NT
	05-Oct-89	NT	NT	16.5	NT	NT	NT	NT
	04-Dec-89	NT	NT	19.4	NT	NT	NT	NT
	21-Dec-89	NT	NT	12.0	NT	NT	NT	NT
	02-Jan-90	NT	NT	11.2	NT	NT	NT	NT
	22-Jan-90	NT	NT	12.9	NT	NT	NT	NT
	08-Feb-90	NT	NT	15.1	NT	NT	NT	NT
	15-Feb-90	NT	NT	12.5	NT	NT	NT	NT
	22-Feb-90	NT	NT	12.4	NT	NT	NT	NT
	01-Mar-90	NT	NT	12.5	NT	NT	NT	NT
EW-6								
	23-May-89	NT	NT	7.6	NT	NT	NT	NT

Harding Lawson Associates

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	31-May-89	NT.	NT	17.5	NT	NT	NT	NT
	05-Jun-89	NT	NT	14.5	NT	NT	NT	NT
	14-Jun-89	NT	NT	12.3	NT	NT	NT	NT
	20-Jun-89	NT	NT	19.5	NT	NT	NT	NT
	27-Jun-89	NT	NT	12.0	NT	NT	NT	NT
	06-Jul-89	NT	NT	8.2	NT	NT	NT	NT
	18-Sep-89	NT	NT	10.3	NT	NT	NT	NT
	29-Sep-89	NT	NT	0.8	NT	NT	NT	NT
	05-Oct-89	NT	NT	0.8	NT	NT	NT	NT
	02-Nov-89	34.8	11.0	2.6	NT	ND	1.6E+7	3.5E+4
	20-Nov-89	33.7	6.7	2.0	NT	0.5	9.5E+6	2.2E+4
	04-Dec-89	29.9	6.4	1.1	NT	0.5	3.8E+6	7.9E+3
	21-Dec-89	2.1	8.0	2.9	NT	0.9	1.5E+5	4.8E+3
	04-Jan-90	2.4	8.8	2.6	NT	1.1	1.9E+5	7.9E+3
	22-Jan-90	NT	NT	1.3	NT	NT	NT	NT
	01-Feb-90	4.3	4.5	NT	NT	1.1	5.7E+6	9.2E+4
	08-Feb-90	NT	NT	3.3	NT	NT	NT	NT
	15-Feb-90	NT	NT	1.5	NT	NT	NT	NT
	22-Feb-90	NT	NT	NT	NT	NT	NT	NT
	01-Mar-90	8.0	4.8	2.2	NT	0.9	NT	NT
EW-7								
	23-May-89	NT	NT	1.8	NT	NT	NT	NT
	31-May-89	NT	NT	11.2	NT	NT	NT	NT
	05-Jun-89	NT	NT	5.3	NT	NT	NT	NT
	14-Jun-89	NT	NT	5.6	NT	NT	NT	NT
	20-Jun-89	NT	NT	1.9	NT	NT	NT	NT
	27-Jun-89	NT	NT	8.0	NT	NT	NT	NT
	06-Jul-89	37.4	3.3	6.2	NT	ND	NT	NT
	18-Sep-89	NT	NT	1.5	NT	NT	NT	NT
	29-Sep-89	NT	NT	1.1	NT	NT	NT	NT
	05-Oct-89	39.2	11.0	1.0	NT	0.6	2.2E+6	7.9E+3
	23-Oct-89	26.9	4.8	0.9	NT	ND	3.5E+5	3.5E+3
	02-Nov-89	17.6	3.5	1.5	NT	ND	1.4E+6	1.7E+4
	20-Nov-89	29.9	1.6	2.9	NT	ND	4.5E+6	3.5E+4
	04-Dec-89	36.5	2.4	4.5	NT	ND	9.3E+6	1.3E+4
	21-Dec-89	41.5	1.6	0.5	NT	ND	5.2E+6	3.5E+4
	04-Jan-90	7.3	4.3	NT	ND	ND	2.2E+6	1.4E+4
	22-Jan-90	NT	NT	3.9	NT	NT	NT	NT
	01-Feb-90	51.4	5.1	NT	NT	ND	3.7E+6	1.3E+4
	08-Feb-90	NT	NT	3.7	NT	NT	NT	NT
	15-Feb-90	NT	NT	2.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	2.7	NT	NT	NT	NT
	01-Mar-90	37.4	4.3	2.3	NT	ND	NT	NT
EW-8								
	15-Mar-89	11.4	0.5	NT	ND	ND	NT	NT
	29-Mar-89	28.0	3.5	NT	NT	ND	NT	NT

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Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	04-Apr-89	33.0	3.8	NT	ND	ND	3.1E+5	1.4E+2
	11-Apr-89	37.8	2.8	NT	NT	ND	2.0E+4	4.5E+1
	18-Apr-89	33.4	3.8	4.0	NT	ND	4.1E+5	1.4E+2
	25-Apr-89	47.5	8.0	10.9	NT	ND	3.4E+4	9.5E+1
	02-May-89	39.6	11.0	9.8	NT	ND	6.8E+4	5.6E+2
	09-May-89	39.6	15.5	12.1*	NT	ND	6.5E+5	1.8E+2
	17-May-89	57.2	14.3	6.9	NT	ND	NT	NT
	23-May-89	47.5	13.3	14.9	NT	ND	NT	NT
	31-May-89	57.2	13.0	NT	NT	ND	2.5E+5	3.8E+2
	05-Jun-89	57.2	15.8	15.9	NT	ND	NT	NT
	14-Jun-89	39.6	15.0	16.9	NT	ND	NT	NT
	20-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	27-Jun-89	55.0	15.5	15.6	NT	0.5	NT	NT
	06-Jul-89	36.4	16.4	10.7	NT	0.6	2.3E+6	4.9E+4
	22-Jul-89	33.7	18.3	NT	NT	0.8	6.4E+5	4.9E+4
	03-Aug-89	46.2	25.5	NT	NT	3.1	1.5E+7	1.2E+3
	17-Aug-89	49.5	20.0	NT	NT	1.3	2.9E+6	5.4E+3
	07-Sep-89	29.7	20.0	4.3	NT	2.9	NT	NT
	18-Sep-89	39.6	21.0	14.4	NT	2.0	NT	NT
	29-Sep-89	NT	NT	5.2	NT	NT	NT	NT
	05-Oct-89	59.0	25.0	9.2	NT	2.0	6.3E+6	3.5E+4
	23-Oct-89	46.2	22.0	10.8	NT	1.9	1.2E+6	2.2E+4
	02-Nov-89	40.7	19.6	9.7	NT	1.5	3.8E+6	1.1E+4
	20-Nov-89	39.3	18.1	7.4	NT	2.9	4.1E+6	2.2E+4
	04-Dec-89	28.1	11.2	1.1	NT	5.6	7.1E+6	9.2E+4
	21-Dec-89	43.9	17.1	12.3	NT	2.9	3.7E+6	5.4E+4
	04-Jan-90	45.8	18.1	11.8	NT	4.0	2.7E+6	2.4E+5
	22-Jan-90	NT	NT	3.9	NT	NT	NT	NT
	01-Feb-90	55.2	19.7	NT	NT	3.5	2.4E+5	2.4E+3
	08-Feb-90	NT	NT	10.4	NT	NT	NT	NT
	15-Feb-90	NT	NT	NT	NT	NT	NT	NT
	22-Feb-90	NT	NT	12.2	NT	NT	NT	NT
	01-Mar-90	54.2	19.2	11.2	NT	3.8	NT	NT
EW-9								
	23-May-89	NT	NT	11.9	NT	NT	NT	NT
	31-May-89	NT	NT	17.2	NT	NT	NT	NT
	05-Jun-89	NT	NT	12.7	NT	NT	NT	NT
	14-Jun-89	NT	NT	19.1	NT	NT	NT	NT
	20-Jun-89	NT	NT	NT	NT	NT	NT	NT
	27-Jun-89	NT	NT	15.3	NT	NT	NT	NT
	06-Jul-89	NT	NT	12.8	NT	NT	NT	NT
	18-Sep-89	NT	NT	16.3	NT	NT	NT	NT
	29-Sep-89	NT	NT	14.0	NT	NT	NT	NT
	05-Oct-89	NT	NT	13.6	NT	NT	NT	NT
	04-Dec-89	40.2	16.5	9.3	NT	2.6	NT	NT
	21-Dec-89	50.5	18.1	19.1	NT	3.6	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	04-Jan-90	48.6	19.7	13.8	NT	3.8	NT	NT
	22-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	01-Feb-90	49.6	17.6	NT	NT	2.8	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	13.8	NT	NT	NT	NT
	22-Feb-90	NT	NT	14.4	NT	NT	NT	NT
	01-Mar-90	50.5	19.7	15.5	NT	2.8	NT	NT
EW-10								
	23-May-89	NT	NT	10.7	NT	NT	NT	NT
	31-May-89	NT	NT	11.1	NT	NT	NT	NT
	05-Jun-89	NT	NT	13.0	NT	NT	NT	NT
	14-Jun-89	NT	NT	16.0	NT	NT	NT	NT
	20-Jun-89	NT	NT	NT	NT	NT	NT	NT
	27-Jun-89	NT	NT	16.4	NT	NT	NT	NT
	06-Jul-89	NT	NT	13.5	NT	NT	NT	NT
	07-Sep-89	42.9	15.5	4.6	NT	ND	NT	NT
	18-Sep-89	48.4	NT	17.2	NT	NT	2.6E+7	2.2E+4
	29-Sep-89	NT	NT	7.2	NT	NT	NT	NT
	05-Oct-89	56.8	21.5	4.5	NT	NT	3.5E+6	1.4E+4
	23-Oct-89	55.0	21.6	14.9	NT	ND	2.8E+6	1.8E+4
	02-Nov-89	51.7	22.6	15.8	NT	0.6	NT	NT
	20-Nov-89	46.8	21.3	10.5	NT	1.2	7.6E+6	1.4E+4
	04-Dec-89	NT	NT	14.7	NT	NT	NT	NT
	21-Dec-89	46.8	17.1	15.4	NT	2.3	5.6E+6	9.2E+4
	02-Jan-90	NT	NT	9.3	NT	NT	NT	NT
	22-Jan-90	NT	NT	11.6	NT	NT	NT	NT
	08-Feb-90	NT	NT	12.2	NT	NT	NT	NT
	15-Feb-90	NT	NT	10.9	NT	NT	NT	NT
	22-Feb-90	NT	NT	18.6	NT	NT	NT	NT
	01-Mar-90	NT	NT	9.4	NT	NT	NT	NT
EW-11								
	23-May-89	NT	NT	11.9	NT	NT	NT	NT
	31-May-89	NT	NT	15.5	NT	NT	NT	NT
	05-Jun-89	NT	NT	16.5	NT	NT	NT	NT
	14-Jun-89	NT	NT	17.4	NT	NT	NT	NT
	20-Jun-89	NT	NT	15.9	NT	NT	NT	NT
	27-Jun-89	NT	NT	12.9	NT	NT	NT	NT
	06-Jul-89	NT	NT	14.8	NT	NT	NT	NT
	07-Sep-89	49.9	14.3	18.1	NT	ND	NT	NT
	18-Sep-89	NT	NT	18.4	NT	NT	NT	NT
	29-Sep-89	NT	NT	17.7	NT	NT	NT	NT
	05-Oct-89	NT	NT	15.1	NT	NT	NT	NT
	23-Oct-89	57.6	17.0	16.1	NT	ND	NT	NT
	20-Nov-89	43.9	20.8	18.8	NT	1.2	NT	NT
	04-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	ND	NT	NT

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Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	02-Jan-90	NT	NT	>20.0	NT	ND	NT	NT
	22-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	01-Mar-90	NT	NT	>20.0	NT	NT	NT	NT
EW-12								
	15-Mar-89	13.2	1.0	NT	ND	ND	NT	NT
	29-Mar-89	22.0	3.3	NT	NT	ND	NT	NT
	04-Apr-89	22.9	3.8	NT	ND	ND	NT	NT
	11-Apr-89	20.2	3.8	NT	NT	ND	NT	NT
	18-Apr-89	28.6	1.3	5.6	NT	ND	NT	NT
	25-Apr-89	39.2	2.8	2.6	NT	ND	NT	NT
	02-May-89	33.4	3.0	4.9	NT	ND	1.0E+6	3.5E+2
	09-May-89	31.7	2.3	5.1*	NT	ND	4.6E+5	2.4E+2
	17-May-89	52.0	1.0	3.5	NT	ND	NT	NT
	23-May-89	34.3	1.3	9.1	NT	ND	NT	NT
	31-May-89	30.3	2.5	11.3	NT	ND	NT	NT
	05-Jun-89	26.4	ND	13.6	NT	ND	NT	NT
	14-Jun-89	45.1	ND	14.1	NT	ND	5.3E+6	2.4E+5
	20-Jun-89	39.2	1.3	16.3	NT	ND	NT	NT
	27-Jun-89	11.0	2.8	NT	NT	ND	6.8E+6	1.7E+4
	06-Jul-89	41.8	3.8	NT	NT	ND	6.4E+5	4.9E+4
	22-Jul-89	26.8	7.0	NT	NT	ND	NT	NT
	03-Aug-89	48.4	8.5	NT	NT	ND	2.3E+5	2.1E+2
	17-Aug-89	59.0	10.6	NT	NT	ND	1.2E+5	2.4E+3
	07-Sep-89	58.3	17.0	3.8	NT	ND	NT	NT
	18-Sep-89	53.9	15.5	19.5	NT	ND	1.8E+5	7.0E+3
	29-Sep-89	NT	NT	18.7	NT	NT	NT	NT
	05-Oct-89	58.3	21.5	18.3	NT	ND	NT	NT
	04-Dec-89	41.1	20.3	>20.0	NT	ND	NT	NT
	21-Dec-89	NT	NT	17.8	NT	NT	NT	NT
	04-Jan-90	48.6	17.1	15.6	NT	ND	6.6E+5	1.3E+4
	22-Jan-90	NT	NT	18.6	NT	NT	NT	NT
	01-Feb-90	41.1	12.8	NT	NT	ND	7.4E+5	3.3E+3
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	15.4	NT	NT	NT	NT
	22-Feb-90	NT	NT	14.7	NT	NT	NT	NT
	01-Mar-90	42.1	16.0	11.1	NT	ND	NT	NT
EW-13								
	23-May-89	NT	NT	14.6	NT	NT	NT	NT
	31-May-89	NT	NT	16.4	NT	NT	NT	NT
	05-Jun-89	NT	NT	17.9	NT	NT	NT	NT
	14-Jun-89	NT	NT	14.5	NT	NT	NT	NT
	20-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	27-Jun-89	NT	NT	14.5	NT	NT	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

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WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	06-Jul-89	NT	NT	>20.0	NT	NT	NT	NT
	22-Jul-89	40.7	11.8	NT	NT	ND	4.1E+5	1.4E+4
	07-Sep-89	63.8	21.5	>20.0	NT	ND	NT	NT
	18-Sep-89	NT	NT	19.0	NT	NT	NT	NT
	29-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	02-Jan-90	NT	NT	19.9	NT	NT	NT	NT
	22-Jan-90	NT	NT	8.1	NT	NT	NT	NT
	08-Feb-90	NT	NT	10.6	NT	NT	NT	NT
	15-Feb-90	NT	NT	9.2	NT	NT	NT	NT
	22-Feb-90	NT	NT	12.5	NT	NT	NT	NT
	01-Mar-90	NT	NT	10.3	NT	NT	NT	NT
EW-14								
	18-Apr-89	NT	NT	NT	NT	NT	1.1E+7	1.4E+3
	25-Apr-89	NT	NT	4.9	NT	NT	NT	NT
	02-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	NT	NT	9.6*	NT	NT	NT	NT
	17-May-89	48.4	5.0	7.0	NT	ND	2.5E+5	1.1E+3
	23-May-89	39.2	5.8	14.6	NT	ND	3.3E+5	7.9E+2
	31-May-89	44.0	6.8	14.1	NT	ND	NT	NT
	05-Jun-89	46.2	4.8	14.3	NT	ND	3.4E+6	3.5E+4
	14-Jun-89	48.4	5.8	14.3	NT	ND	1.3E+7	1.6E+5
	20-Jun-89	NT	NT	12.9	NT	NT	NT	NT
	27-Jun-89	NT	NT	11.9	NT	NT	NT	NT
	06-Jul-89	63.8	8.0	14.9	NT	ND	8.9E+6	3.3E+4
	22-Jul-89	44.0	12.0	NT	NT	ND	NT	NT
	07-Sep-89	53.9	22.0	14.8	NT	1.1	NT	NT
	18-Sep-89	45.1	18.0	17.4	NT	0.6	1.4E+7	1.1E+4
	29-Sep-89	NT	NT	18.0	NT	NT	NT	NT
	05-Oct-89	63.8	25.0	>20.0	NT	ND	1.9E+7	2.4+5
	21-Dec-89	NT	NT	10.6	NT	NT	NT	NT
	02-Jan-90	NT	NT	18.1	NT	NT	NT	NT
	22-Jan-90	NT	NT	17.1	NT	NT	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	12.3	NT	NT	NT	NT
	22-Feb-90	NT	NT	15.0	NT	NT	NT	NT
	01-Mar-90	NT	NT	13.8	NT	NT	NT	NT
EW-15								
	18-Apr-89	NT	NT	NT	NT	NT	1.1E+6	1.4E+2
	25-Apr-89	45.8	23.0	1.1	ND	NT	1.6E+5	4.7E+2
	02-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	58.1	26.5	>20.0*	NT	1.2	1.8E+6	1.6E+4
	17-May-89	45.4	22.4	8.9	NT	1.8	3.9E+6	3.5E+3
	23-May-89	41.0	19.1	>20.0	NT	2.7	1.3E+7	1.3E+4
	31-May-89	63.8	21.5	>20.0	NT	3.5	6.6E+6	2.4E+5

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

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WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	05-Jun-89	43.6	28.1	>20.0	NT	3.7	6.4E+6	1.6E+5
	14-Jun-89	48.4	15.8	18.2	NT	2.0	9.2E+6	2.4E+5
	20-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	27-Jun-89	NT	NT	18.5	NT	NT	NT	NT
	06-Jul-89	52.8	25.7	19.3	NT	2.5	4.9E+6	1.7E+5
	22-Jul-89	30.4	33.8	NT	NT	3.4	2.4E+6	2.4E+4
	03-Aug-89	50.6	33.8	NT	NT	4.0	3.3E+5	1.8E+3
	07-Sep-89	56.8	85.8	>20.0	NT	7.2	NT	NT
	18-Sep-89	64.9	38.0	>20.0	NT	5.8	2.1E+7	5.4E+4
	29-Sep-89	NT	NT	14.5	NT	NT	NT	NT
	05-Oct-89	59.4	45.0	>20.0	NT	5.2	3.5E+6	5.4E+4
	23-Oct-89	52.1	39.0	>20.0	NT	6.1	7.6E+6	4.9E+4
	02-Nov-89	46.9	36.3	>20.0	NT	7.7	1.4E+6	1.3E+4
	20-Nov-89	51.4	29.3	>20.0	NT	7.0	7.0E+6	2.4E+4
	04-Dec-89	61.7	30.7	>20.0	NT	8.0	4.1E+5	2.4E+4
	21-Dec-89	68.3	29.3	16.9	NT	6.7	2.6E+6	2.8E+4
	04-Jan-90	80.4	30.4	17.1	NT	6.8	NT	NT
	22-Jan-90	NT	NT	18.2	NT	NT	NT	NT
	01-Feb-90	87.9	30.4	NT	NT	5.8	7.0E+4	2.4E+3
	08-Feb-90	NT	NT	13.2	NT	NT	NT	NT
	15-Feb-90	NT	NT	11.4	NT	NT	NT	NT
	22-Feb-90	NT	NT	19.4	NT	NT	NT	NT
	01-Mar-90	65.5	26.1	12.6	NT	4.4	3.6E+5	--
EW-16								
	15-Mar-89	1.8	0.5	NT	ND	ND	NT	NT
	29-Mar-89	18.4	3.0	NT	NT	ND	NT	NT
	04-Apr-89	31.7	5.0	NT	ND	ND	5.7E+5	3.9E+2
	11-Apr-89	28.6	4.8	NT	NT	ND	1.2E+5	2.2E+2
	18-Apr-89	37.8	14.0	1.0	ND	1.2	3.2E+6	1.4E+3
	25-Apr-89	47.5	11.0	NT	NT	ND	8.4E+5	7.0E+2
	02-May-89	46.2	15.0	9.3	NT	ND	3.5E+5	1.4E+4
	09-May-89	46.2	18.5	14.7*	NT	0.6	2.2E+6	1.3E+3
	17-May-89	36.3	13.3	3.7	NT	ND	4.4E+5	2.2E+3
	23-May-89	29.7	11.8	10.1	NT	ND	8.6E+5	1.4E+3
	31-May-89	35.2	11.8	11.1	NT	0.7	5.9E+6	3.5E+3
	05-Jun-89	31.5	12.5	12.6	NT	ND	1.8E+6	2.2E+3
	14-Jun-89	29.7	13.3	11.8	NT	ND	3.7E+7	2.4E+5
	20-Jun-89	8.8	13.5	15.8	NT	ND	2.0E+7	3.5E+4
	27-Jun-89	42.9	13.3	19.7	NT	ND	9.5E+5	2.4E+5
	06-Jul-89	55.0	16.0	15.8	NT	ND	9.1E+6	1.1E+5
	22-Jul-89	23.8	18.3	NT	NT	1.4	NT	NT
	03-Aug-89	42.9	20.0	NT	NT	2.1	NT	NT
	17-Aug-89	52.8	25.6	NT	NT	2.3	8.0E+5	3.1E+3
	07-Sep-89	55.0	25.0	18.8	NT	1.3	NT	NT
	18-Sep-89	NT	NT	19.8	NT	NT	NT	NT
	29-Sep-89	NT	NT	15.1	NT	NT	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	05-Oct-89	55.0	25.8	14.0	NT	2.9	NT	NT
	02-Nov-89	28.2	20.0	13.3	NT	2.2	NT	NT
	21-Dec-89	NT	NT	16.7	NT	NT	NT	NT
	02-Jan-90	NT	NT	19.2	NT	NT	NT	NT
	22-Jan-90	NT	NT	19.2	NT	NT	NT	NT
	08-Feb-90	NT	NT	14.8	NT	NT	NT	NT
	15-Feb-90	NT	NT	14.6	NT	NT	NT	NT
	22-Feb-90	NT	NT	19.9	NT	NT	NT	NT
	01-Mar-90	NT	NT	16.4	NT	NT	NT	NT
EW-17								
	18-Apr-89	NT	NT	16.8	NT	NT	NT	NT
	25-Apr-89	6.2	8.3	NT	ND	ND	NT	NT
	02-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	66.0	19.8	18.0*	NT	ND	1.2E+6	1.6E+4
	17-May-89	46.2	15.8	7.8	NT	ND	8.5E+5	3.5E+3
	23-May-89	44.0	14.2	18.0	NT	ND	6.5E+5	9.5E+2
	31-May-89	46.2	14.0	19.6	NT	ND	6.5E+5	2.8E+3
	05-Jun-89	52.8	13.2	18.2	NT	ND	NT	NT
	14-Jun-89	45.1	14.2	17.0	NT	ND	NT	NT
	20-Jun-89	NT	NT	18.5	NT	NT	NT	NT
	27-Jun-89	NT	NT	16.1	NT	NT	NT	NT
	06-Jul-89	NT	NT	16.4	NT	NT	NT	NT
	18-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	29-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	19.3	NT	NT	NT	NT
	02-Jan-90	NT	NT	16.9	NT	NT	NT	NT
	22-Jan-90	NT	NT	17.1	NT	NT	NT	NT
	08-Feb-90	NT	NT	15.9	NT	NT	NT	NT
	15-Feb-90	NT	NT	13.9	NT	NT	NT	NT
	22-Feb-90	NT	NT	14.4	NT	NT	NT	NT
	01-Mar-90	NT	NT	19.3	NT	NT	NT	NT
EW-18								
	18-Apr-89	NT	NT	10.5	NT	NT	NT	NT
	25-Apr-89	6.2	NT	9.2	NT	NT	NT	NT
	02-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	NT	NT	18.2*	NT	NT	NT	NT
	17-May-89	38.4	NT	8.0	NT	ND	NT	NT
	23-May-89	37.0	NT	17.8	NT	ND	7.0E+5	NT
	31-May-89	46.2	NT	17.8	NT	ND	5.4E+6	1.7E+3
	05-Jun-89	NT	NT	19.1	NT	NT	NT	NT
	14-Jun-89	42.9	NT	14.5	NT	ND	NT	NT
	20-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	27-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	06-Jul-89	NT	NT	>20.0	NT	NT	NT	NT
	18-Sep-89	NT	NT	>20.0	NT	NT	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

Harding Lawson Associates

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	29-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	02-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Jan-90	NT	NT	18.0	NT	NT	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	14.3	NT	NT	NT	NT
	22-Feb-90	NT	NT	19.5	NT	NT	NT	NT
	01-Mar-90	NT	NT	19.0	NT	NT	NT	NT
EW-19								
	15-Mar-89	NT	NT	NT	NT	NT	NT	NT
	29-Mar-89	NT	NT	NT	NT	NT	NT	NT
	04-Apr-89	18.5	4.0	NT	ND	ND	NT	NT
	11-Apr-89	33.4	4.0	NT	NT	ND	NT	NT
	18-Apr-89	41.8	7.0	9.0	NT	ND	NT	NT
	25-Apr-89	NT	NT	7.2	NT	NT	NT	NT
	02-May-89	50.6	2.5	7.2	NT	ND	NT	NT
	09-May-89	NT	6.8	13.5*	NT	NT	NT	NT
	17-May-89	38.4	3.3	8.3	NT	ND	1.1E+6	1.6E+4
	23-May-89	37.0	2.5	16.5	NT	ND	NT	NT
	31-May-89	NT	NT	>20.0	NT	NT	NT	NT
	05-Jun-89	46.2	3.5	18.5	NT	ND	7.9E+5	1.1E+4
	14-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	20-Jun-89	NT	NT	>20.0	NT	NT	NT	NT
	27-Jun-89	NT	NT	19.5	NT	NT	NT	NT
	06-Jul-89	56.8	8.5	>20.0	NT	ND	2.5E+6	1.6E+6
	22-Jul-89	44.0	11.0	NT	NT	ND	NT	NT
	03-Aug-89	46.9	16.0	NT	NT	ND	NT	NT
	17-Aug-89	61.6	17.2	NT	NT	NT	2.9E+4	1.7E+3
	07-Sep-89	61.6	24.6	>20.0	NT	>20.0	NT	NT
	18-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	29-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	05-Oct-89	70.4	27.5	>20.0	NT	ND	NT	NT
	23-Oct-89	59.4	27.0	>20.0	NT	ND	NT	NT
	02-Nov-89	57.9	32.5	>20.0	NT	ND	NT	NT
	04-Dec-89	51.4	25.3	>20.0	NT	ND	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	04-Jan-90	54.2	20.3	>20.0	NT	0.9	NT	NT
	22-Jan-90	NT	NT	19.4	NT	NT	NT	NT
	02-Feb-90	60.8	20.3	NT	NT	1.2	NT	NT
	08-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	15-Feb-90	NT	NT	16.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	19.5	NT	NT	NT	NT
	01-Mar-90	65.5	21.9	18.0	NT	1.2	NT	NT
EW-20								
	14-Jun-89	NT	NT	19.1	NT	NT	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

Harding Lawson Associates

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	20-Jun-89	NT	NT	17.9	NT	NT	NT	NT
	27-Jun-89	NT	NT	17.5	NT	NT	NT	NT
	06-Jul-89	NT	NT	16.7	NT	NT	NT	NT
	22-Jul-89	NT	NT	17.1	NT	NT	NT	NT
	07-Sep-89	NT	NT	>20.0	NT	NT	NT	NT
	18-Sep-89	NT	NT	19.9	NT	NT	NT	NT
	29-Sep-89	NT	NT	14.0	NT	NT	NT	NT
	05-Oct-89	NT	NT	>20.0	NT	NT	NT	NT
	21-Dec-89	NT	NT	>20.0	NT	NT	NT	NT
	02-Jan-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Jan-90	NT	NT	19.5	NT	NT	NT	NT
	08-Feb-90	NT	NT	10.3	NT	NT	NT	NT
	15-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	22-Feb-90	NT	NT	>20.0	NT	NT	NT	NT
	01-Mar-90	NT	NT	13.7	NT	NT	NT	NT
EW-21								
	23-May-89	NT	NT	NT	NT	NT	NT	NT
	31-May-89	17.6	5.0	NT	NT	ND	3.7E+4	2.4E+4
	05-Jun-89	17.6	1.3	NT	NT	ND	9.3E+4	7.9E+3
	14-Jun-89	26.0	1.0	NT	NT	ND	5.8E+4	2.4E+4
	20-Jun-89	29.0	0.8	NT	NT	ND	1.5E+5	7.0E+3
	27-Jun-89	27.1	0.8	NT	NT	ND	NT	NT
	06-Jul-89	43.6	0.5	NT	NT	ND	NT	NT
	22-Jul-89	26.8	0.5	NT	NT	ND	NT	NT
	03-Aug-89	26.8	0.5	NT	NT	ND	NT	NT
	17-Aug-89	48.0	3.0	NT	NT	ND	2.9E+4	1.7E+3
	07-Sep-89	23.8	7.8	9.0	NT	ND	NT	NT
	18-Sep-89	39.2	9.5	9.4	NT	ND	NT	NT
	29-Sep-89	NT	NT	7.9	NT	NT	NT	NT
	05-Oct-89	39.4	9.5	10.3	NT	ND	NT	NT
	23-Oct-89	48.0	9.1	13.8	NT	ND	NT	NT
	02-Nov-89	39.2	12.0	15.4	NT	ND	NT	NT
	20-Nov-89	40.2	10.9	12.4	NT	ND	NT	NT
	05-Dec-89	29.9	8.8	12.6	NT	ND	5.7E+5	1.1E+4
	21-Dec-89	25.2	7.5	5.8	NT	0.5	5.1E+5	2.2E+3
	04-Jan-90	27.1	6.9	6.7	NT	ND	2.8E+5	4.9E+3
	22-Jan-90	NT	NT	6.4	NT	NT	NT	NT
	01-Feb-90	23.4	6.7	NT	NT	ND	1.7E+5	2.4E+3
	08-Feb-90	NT	NT	7.6	NT	NT	NT	NT
	15-Feb-90	NT	NT	5.1	NT	NT	NT	NT
	22-Feb-90	NT	NT	3.5	NT	NT	NT	NT
	01-Mar-90	20.6	5.9	4.7	NT	ND	1.9E+5	--
EW-22								
	20-Nov-89	38.3	7.2	NT	NT	ND	NT	NT
	21-Dec-89	NT	NT	4.9	NT	NT	NT	NT
	02-Jan-90	21.5	4.0	4.5	NT	ND	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	22-Jan-90	NT	NT	3.8	NT	NT	NT	NT
	01-Feb-90	9.4	5.1	NT	NT	1.2	9.4E+6	1.3E+4
	08-Feb-90	NT	NT	3.9	NT	NT	NT	NT
	15-Feb-90	NT	NT	4.3	NT	NT	NT	NT
	22-Feb-90	NT	NT	3.5	NT	NT	NT	NT
	01-Mar-90	11.2	3.2	2.9	NT	ND	9.0E+6	--
Injection Composite								
	21-Mar-89	26.0	42.0	NT	NT	15.0	NT	NT
	18-Apr-89	37.8	110.0	NT	NT	37.4	NT	NT
	24-Apr-89	24.6	45.0	NT	NT	22.0	NT	NT
	01-May-89	23.2	40.0	NT	NT	8.3	NT	NT
	09-May-89	29.9	13.5	NT	NT	1.5	NT	NT
	17-May-89	24.6	37.5	NT	NT	6.1	NT	NT
	23-May-89	31.7	42.5	NT	NT	9.1	NT	NT
	31-May-89	45.1	50.0	NT	NT	14.5	NT	NT
	06-Jun-89	35.9	30.0	NT	NT	10.2	NT	NT
	20-Jun-89	35.9	35.0	NT	NT	8.8	NT	NT
	27-Jun-89	26.4	29.0	NT	NT	9.8	NT	NT
	06-Jul-89	34.8	42.5	NT	NT	9.4	NT	NT
	22-Jul-89	23.8	42.5	NT	NT	10.2	NT	NT
	03-Aug-89	23.8	38.5	NT	NT	10.2	NT	NT
	17-Aug-89	17.6	80.0	NT	NT	16.0	NT	NT
	07-Sep-89	35.0	50.0	NT	NT	10.9	NT	NT
	18-Sep-89	55.0	58.0	NT	NT	17.4	NT	NT
	05-Oct-89	48.4	35.0	NT	NT	5.4	NT	NT
	23-Oct-89	33.4	40.5	NT	NT	6.2	NT	NT
	02-Nov-89	18.7	39.0	NT	NT	7.3	NT	NT
	20-Nov-89	33.7	40.0	NT	NT	9.6	NT	NT
	04-Dec-89	27.1	36.0	NT	NT	8.7	NT	NT
	21-Dec-89	NT	NT	NT	NT	NT	NT	NT
	03-Jan-90	28.1	34.7	NT	NT	6.7	NT	NT
	01-Feb-90	21.5	36.8	NT	NT	5.5	NT	NT
	01-Mar-90	9.7	29.9	NT	NT	5.5	NT	NT
Extraction Composite								
	21-Mar-89	NT	NT	NT	NT	NT	NT	NT
	18-Apr-89	NT	NT	NT	NT	NT	NT	NT
	24-Apr-89	55	6.8	NT	NT	ND	NT	NT
	01-May-89	NT	NT	NT	NT	NT	NT	NT
	09-May-89	44.0	15.6	NT	NT	ND	NT	NT
	17-May-89	44.0	13.0	NT	NT	0.5	NT	NT
	23-May-89	45.4	15.5	NT	NT	ND	NT	NT
	31-May-89	48.4	11.0	NT	NT	ND	NT	NT

Table 4. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from System Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.1(ppm)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	06-Jun-89	38.5	12.0	NT	NT	ND	NT	NT
	20-Jun-89	27.1	14.0	NT	NT	ND	NT	NT
	27-Jun-89	50.6	13.6	NT	NT	ND	NT	NT
	06-Jul-89	66.0	16.6	NT	NT	0.5	NT	NT
	22-Jul-89	37.4	18.0	NT	NT	0.8	NT	NT
	03-Aug-89	48.4	21.4	NT	NT	1.4	NT	NT
	17-Aug-89	39.6	NT	NT	NT	1.7	NT	NT
	07-Sep-89	NT	NT	NT	NT	NT	NT	NT
	18-Sep-89	59.4	28.0	NT	NT	1.9	NT	NT
	05-Oct-89	61.6	27.5	NT	NT	4.0	NT	NT
	23-Oct-89	57.2	26.0	NT	NT	2.9	NT	NT
	02-Nov-89	NT	NT	NT	NT	NT	NT	NT
	20-Nov-89	46.8	21.9	NT	NT	2.2	NT	NT
	04-Dec-89	46.8	22.4	NT	NT	2.9	NT	NT
	21-Dec-89	51.4	21.3	NT	NT	2.1	NT	NT
	02-Jan-90	55.2	20.8	NT	NT	2.1	NT	NT
	01-Feb-90	57.0	21.3	NT	NT	2.7	NT	NT
	01-Mar-90	62.6	20.8	NT	NT	1.5	NT	NT

NOTES:

HCU: Hydrocarbon Utilizers
TC: Total Count
LOD: Limit of Detection.
NA: Limit of Detection not applicable.
ND: Not detected at or above LOD.
NT: Not tested.
*: Dissolved oxygen samples collected on 5/12/89.
--: Results not available.

Inorganic constituents are reported in parts per million (ppm).
Microbial counts are reported in colony-forming units per milliliter of water (CFU/ml).
Analysis performed by HLA Laboratory.

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
MW-1								
	03-Aug-89	5.3	ND	NT	NT	ND	NT	NT
MW-5								
	06-Jun-89	10.1	2.5	1.7	NT	ND	NT	NT
	06-Jul-89	NT	2.5	1.7	NT	ND	NT	NT
MW-7								
	06-Jun-89	ND	4.8	1.8	NT	ND	NT	NT
	06-Jul-89	ND	ND	1.8	NT	ND	NT	NT
	22-Jul-89	ND	0.5	NT	NT	ND	NT	NT
	03-Aug-89	ND	3.3	NT	NT	ND	NT	NT
	07-Sep-89	ND	9.0	NT	NT	ND	NT	NT
	05-Oct-89	ND	8.0	NT	NT	ND	NT	NT
	02-Nov-89	ND	ND	5.3	NT	ND	NT	NT
	06-Dec-89	ND	5.3	5.9	NT	ND	NT	NT
	03-Jan-90	ND	1.6	NT	NT	ND	NT	NT
	01-Feb-90	ND	1.6	NT	NT	ND	NT	NT
	28-Feb-90	ND	1.6	NT	NT	ND	NT	NT
MW-8								
	06-Jun-89	NT	NT	4.2	NT	NT	NT	NT
	06-Jul-89	NT	NT	4.2	NT	NT	NT	NT
	02-Nov-89	NT	NT	6.5	NT	NT	NT	NT
MW-9								
	03-Mar-89	37.0/32.0	1.5	1.0**	ND	ND	5.3E+5	9.5E+2
	15-Mar-89	6.0	6.0	NT	ND	ND	5.9E+6	1.8E+2
	29-Mar-89	37.0	32.0	NT	NT	ND	1.8E+6	2.1E+2
	04-Apr-89	41.8	36.0	NT	ND	ND	3.6E+5	1.1E+2
	11-Apr-89	42.1	60.0	NT	NT	ND	3.6E+5	1.4E+2
	18-Apr-89	56.3	60.0	8.4	ND	0.9	1.2E+6	2.2E+2
	25-Apr-89	88.0	50.0	>20.0	NT	2.9	9.9E+5	3.5E+3
	02-May-89	74.8	62.5	18.2	NT	4.8	3.5E+6	5.4E+3
	09-May-89	44.0	37.5	16.6	NT	6.2	NT	NT
	17-May-89	41.0	21.3	8.5	NT	5.6	NT	NT
	23-May-89	54.1	20.0	NT	NT	3.9	NT	NT
	31-May-89	NT	NT	NT	NT	NT	NT	NT
	06-Jun-89	46.2	34.0	NT	NT	10.8	NT	NT
	14-Jun-89	63.8	14.0	13.9	NT	3.3	NT	NT
	06-Jul-89	56.8	30.0	NT	NT	NT	NT	NT
	22-Jul-89	37.4	29.0	NT	NT	4.4	NT	NT
	03-Aug-89	38.5	25.0	NT	NT	5.5	NT	NT
	17-Aug-89	74.4	20.0	NT	NT	3.9	NT	NT
	07-Sep-89	83.6	39.0	15.5	NT	6.6	NT	NT
	05-Oct-89	105.6	41.3	13.5	NT	5.6	NT	NT
	02-Nov-89	78.3	18.6	18.9	NT	2.3	1.7E+6	7.0E+3
	05-Dec-89	91.6	20.3	11.0	NT	2.0	NT	NT
	02-Jan-90	87.9	26.7	NT	NT	1.3	NT	NT

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	01-Feb-90	74.8	24.0	NT	NT	0.9	NT	NT
	28-Feb-90	74.8	24.5	NT	NT	0.8	NT	NT
MW-10								
	03-Mar-89	8.4/5.5*	1.0	4.0**	ND	ND	2.3E+5	3.5E+2
	15-Mar-89	5.5	1.2	NT	ND	ND	NT	NT
	29-Mar-89	11.4	4.5	NT	NT	ND	NT	NT
	04-Apr-89	15.0	1.3	NT	ND	ND	NT	NT
	11-Apr-89	16.5	2.3	NT	NT	ND	NT	NT
	18-Apr-89	16.0	5.3	5.0	NT	ND	NT	NT
	25-Apr-89	14.1	2.0	2.2	NT	ND	NT	NT
	02-May-89	19.4	6.5	2.6	NT	ND	NT	NT
	09-May-89	17.6	1.8	3.1	NT	ND	NT	NT
	17-May-89	21.1	1.5	1.9	NT	ND	NT	NT
	23-May-89	17.6	1.3	NT	NT	ND	NT	NT
	31-May-89	NT	NT	NT	NT	NT	NT	NT
	06-Jun-89	17.6	2.3	2.0	NT	ND	NT	NT
	14-Jun-89	23.1	ND	2.1	NT	NT	NT	NT
	06-Jul-89	20.9	ND	NT	NT	NT	NT	NT
	22-Jul-89	17.6	0.5	NT	NT	ND	NT	NT
	03-Aug-89	23.8	ND	NT	NT	ND	NT	NT
	17-Aug-89	16.5	1.3	NT	NT	ND	NT	NT
	07-Sep-89	18.0	1.5	6.2	NT	ND	NT	NT
	18-Sep-89	9.9	6.0	NT	NT	ND	NT	NT
	05-Oct-89	21.8	11.0	6.1	NT	0.7	NT	NT
	23-Oct-89	23.8	3.0	6.5	NT	ND	3.2E+6	7.0E+3
	02-Nov-89	21.1	1.5	8.9	NT	ND	NT	NT
	20-Nov-89	7.1	0.5	6.5	NT	ND	1.9E+6	5.4E+4
	05-Dec-89	23.6	7.7	6.5	NT	ND	1.1E+5	2.4E+4
	03-Jan-90	1.1	2.1	NT	NT	0.5	3.1E+6	3.5E+4
	01-Feb-90	8.0	3.2	NT	NT	ND	1.1E+6	1.7E+4
	28-Feb-90	8.6	2.4	NT	NT	ND	NT	NT
MW-11								
	03-Mar-89	ND/ND*	0.8	2.0**	ND	ND	1.1E+6	2.8E+3
	15-Mar-89	ND	1.0	NT	ND	ND	NT	NT
	29-Mar-89	31.7	4.3	NT	NT	ND	NT	NT
	04-Apr-89	37.0	5.0	NT	ND	ND	NT	NT
	11-Apr-89	40.7	24.0	NT	NT	ND	3.8E+5	1.1E+2
	18-Apr-89	56.3	26.0	5.7	ND	ND	1.2E+6	1.7E+2
	25-Apr-89	44.0	29.7	11.8	NT	ND	4.7E+5	1.1E+3
	02-May-89	74.8	41.3	17.1	NT	ND	2.4E+6	5.4E+3
	09-May-89	57.2	29.7	12.5	NT	ND	1.4E+6	5.4E+3
	17-May-89	46.2	21.5	9.9	NT	ND	3.5E+6	1.6E+4
	23-May-89	52.8	15.8	NT	NT	ND	2.0E+6	3.3E+3
	31-May-89	58.3	29.7	>20.0	NT	ND	7.0E+5	2.4E+5
	06-Jun-89	66.0	33.0	NT	NT	ND	5.0E+6	2.8E+4
	14-Jun-89	52.8	25.7	14.9	NT	0.5	1.2E+7	2.4E+5

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	20-Jun-89	61.6	24.8	12.8	NT	0.9	7.1E+6	1.1E+4
	06-Jul-89	56.8	32.8	NT	NT	NT	8.5E+6	5.4E+5
	22-Jul-89	33.0	27.2	NT	NT	9.6	NT	NT
	03-Aug-89	52.8	19.1	NT	NT	4.3	1.9E+5	1.1E+4
	17-Aug-89	58.3	38.9	NT	NT	5.8	1.1E+6	1.8E+4
	07-Sep-89	61.6	47.2	15.3	NT	7.4	1.3E+6	4.9E+3
	18-Sep-89	56.8	40.6	NT	NT	6.6	9.1E+6	9.5E+3
	05-Oct-89	70.4	47.5	19.4	NT	7.5	2.1E+6	1.1E+4
	23-Oct-89	50.6	41.3	11.4	NT	4.7	NT	NT
	02-Nov-89	56.5	40.0	16.4	NT	6.1	1.7E+6	7.9E+3
	20-Nov-89	52.4	28.0	16.1	NT	4.6	NT	NT
	05-Dec-89	55.2	33.6	14.0	NT	8.0	7.8E+5	1.4E+4
	03-Jan-90	59.8	25.1	NT	NT	3.6	1.2E+6	1.7E+4
	01-Feb-90	67.3	26.7	NT	NT	2.3	1.4E+6	1.3E+4
	28-Feb-90	61.7	24.0	NT	NT	3.2	NT	NT
MW-12								
	03-Mar-89	11.4/6.2*	1.0	5.8**	ND	ND	7.1E+5	1.1E+1
	15-Mar-89	12.3	1.1	NT	ND	ND	NT	NT
	29-Mar-89	13.6	4.8	NT	NT	ND	NT	NT
	04-Apr-89	11.4	1.5	NT	ND	ND	NT	NT
	11-Apr-89	7.5	5.0	NT	NT	ND	NT	NT
	18-Apr-89	9.2	6.8	2.1	ND	ND	NT	NT
	25-Apr-89	3.5	1.8	1.4	NT	ND	NT	NT
	02-May-89	12.3	5.0	2.3	NT	ND	NT	NT
	09-May-89	9.7	2.5	2.2	NT	ND	NT	NT
	17-May-89	9.6	2.5	3.5	NT	ND	NT	NT
	23-May-89	8.3	1.3	1.8	NT	ND	NT	NT
	31-May-89	10.3	2.5	2.1	NT	ND	NT	NT
	06-Jun-89	9.2	2.8	NT	NT	ND	NT	NT
	20-Jun-89	8.4	1.0	4.0	NT	ND	NT	NT
	06-Jul-89	4.8	ND	NT	NT	NT	NT	NT
	22-Jul-89	5.3	0.5	NT	NT	ND	NT	NT
	03-Aug-89	7.7	0.5	NT	NT	ND	NT	NT
	17-Aug-89	2.0	1.3	NT	NT	ND	NT	NT
	07-Sep-89	4.5	4.8	NT	NT	ND	NT	NT
	18-Sep-89	4.2	5.8	NT	NT	ND	NT	NT
	05-Oct-89	3.4	5.3	NT	NT	ND	NT	NT
	02-Nov-89	7.0	2.3	4.9	NT	ND	NT	NT
	05-Dec-89	2.6	5.3	5.5	NT	ND	NT	NT
	03-Jan-90	1.7	1.6	NT	NT	ND	NT	NT
	01-Feb-90	0.9	1.3	NT	NT	ND	NT	NT
	01-Mar-90	0.9	1.6	NT	NT	ND	NT	NT
MW-13								
	03-Mar-89	11.4/8.6*	1.0	2.0**	0.25	ND	4.1E+6	1.7E+2
	15-Mar-89	9.2	1.1	NT	ND	ND	NT	NT
	29-Mar-89	8.8	6.3	NT	NT	ND	NT	NT

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	04-Apr-89	9.7	3.5	NT	ND	ND	NT	NT
	11-Apr-89	13.2	2.8	NT	NT	ND	NT	NT
	18-Apr-89	15.0	8.5	6.0	NT	ND	NT	NT
	25-Apr-89	20.2	2.5	NT	NT	ND	NT	NT
	02-May-89	37.8	2.3	6.8	NT	ND	NT	NT
	09-May-89	42.1	1.5	9.9	NT	ND	NT	NT
	17-May-89	37.0	1.5	10.3	NT	ND	NT	NT
	23-May-89	33.4	1.3	NT	NT	ND	NT	NT
	06-Jun-89	40.5	3.0	NT	NT	ND	NT	NT
	27-Jun-89	57.2	0.8	18.5	NT	ND	5.9E+5	1.1E+3
	06-Jul-89	36.5	ND	NT	NT	NT	5.6E+5	7.8E+2
	22-Jul-89	33.1	0.5	NT	NT	ND	NT	NT
	03-Aug-89	56.3	3.0	NT	NT	ND	NT	NT
	17-Aug-89	47.4	4.3	NT	NT	ND	NT	NT
	07-Sep-89	59.8	10.0	NT	NT	ND	NT	NT
	05-Oct-89	35.2	9.0	12.8	NT	ND	NT	NT
	02-Nov-89	41.8	3.0	13.1	NT	ND	NT	NT
	06-Dec-89	34.6	6.7	12.6	NT	ND	NT	NT
	03-Jan-90	42.1	0.5	NT	NT	ND	NT	NT
	01-Feb-90	47.7	3.2	NT	NT	ND	NT	NT
	01-Mar-90	43.9	2.7	NT	NT	ND	NT	NT
MW-14								
	03-Mar-89	37.0/22.0*	0.8	3.0**	ND	ND	3.6E+5	2.2E+2
	15-Mar-89	37.0	1.0	NT	ND	ND	NT	NT
	29-Mar-89	22.8	3.8	NT	NT	ND	NT	NT
	04-Apr-89	29.9	3.8	NT	ND	ND	NT	NT
	11-Apr-89	37.4	2.8	NT	NT	ND	NT	NT
	18-Apr-89	43.6	5.8	NT	NT	ND	NT	NT
	25-Apr-89	35.2	1.3	NT	NT	ND	NT	NT
	02-May-89	40.5	5.3	6.7	NT	ND	NT	NT
	09-May-89	45.8	1.8	11.7	NT	ND	NT	NT
	17-May-89	51.0	1.5	9.2	NT	ND	NT	NT
	23-May-89	52.4	1.5	NT	NT	ND	NT	NT
	31-May-89	70.4	2.5	16.2	NT	ND	4.2E+5	2.4E+5
	06-Jun-89	44.7	2.0	NT	NT	ND	NT	NT
	27-Jun-89	48.4	0.8	12.0	NT	ND	1.1E+6	2.4E+5
	06-Jul-89	22.5	ND	NT	NT	NT	2.5E+6	2.4E+5
	22-Jul-89	33.4	0.5	NT	NT	ND	3.8E+6	9.5E+3
	03-Aug-89	38.7	3.0	NT	NT	ND	NT	NT
	17-Aug-89	35.2	4.3	13.0	NT	ND	NT	NT
	07-Sep-89	59.8	7.5	NT	NT	ND	NT	NT
	05-Oct-89	63.8	14.8	>20.0	NT	ND	NT	NT
	02-Nov-89	72.6	11.0	>20.0	NT	ND	NT	NT
	05-Dec-89	61.7	10.9	16.5	NT	ND	NT	NT
	03-Jan-90	46.8	12.8	NT	NT	ND	NT	NT
	01-Feb-90	35.5	10.7	NT	NT	ND	NT	NT

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	28-Feb-90	43.9	9.6	NT	NT	ND	NT	NT
MW-15								
	03-Mar-89	42.2/19.0	0.9	4.0**	ND	ND	4.5E+5	2.8E+2
	10-Mar-89	40.5	2.2	NT	NT	NT	1.0E+6	2.8E+2
	15-Mar-89	35.2	1.2	NT	ND	ND	6.9E+6	2.8E+2
	29-Mar-89	20.2	4.2	NT	NT	ND	9.1E+5	2.1E+2
	04-Apr-89	24.6	5.3	NT	ND	ND	4.4E+5	1.4E+2
	11-Apr-89	23.1	4.0	NT	NT	ND	2.7E+6	1.7E+2
	18-Apr-89	31.9	1.3	6.3	ND	ND	3.1E+6	2.9E+1
	25-Apr-89	42.2	1.8	9.6	ND	ND	2.2E+5	4.6E+1
	02-May-89	50.6	3.5	11.4	NT	ND	8.5E+5	1.2E+2
	09-May-89	33.0	1.8	9.6	NT	ND	2.4E+6	2.4E+3
	17-May-89	48.4	2.3	12.1	NT	ND	4.6E+5	2.8E+3
	23-May-89	48.4	1.8	11.3	NT	ND	1.0E+6	3.3E+2
	06-Jun-89	53.9	2.5	NT	NT	ND	NT	NT
	06-Jul-89	46.9	7.5	NT	NT	ND	3.8E+6	3.3E+4
	22-Jul-89	28.2	10.3	NT	NT	ND	1.7E+6	2.2E+3
	03-Aug-89	38.5	10.8	NT	NT	ND	NT	NT
	17-Aug-89	70.4	18.6	NT	NT	ND	NT	NT
	07-Sep-89	56.8	29.0	16.5	NT	1.6	NT	NT
	18-Sep-89	56.8	32.0	NT	NT	1.6	NT	NT
	05-Oct-89	70.0	29.0	>20.0	NT	1.5	NT	NT
	02-Nov-89	60.7	36.0	>20.0	NT	1.9	1.3E+5	4.9E+3
	05-Dec-89	54.2	30.4	19.2	NT	3.2	NT	NT
	21-Dec-89	43.9	27.2	NT	NT	2.3	1.2E+5	4.9E+3
	02-Jan-90	55.2	28.3	NT	NT	6.7	NT	NT
	01-Feb-90	57.0	28.3	NT	NT	2.7	NT	NT
	01-Mar-90	80.4	25.1	NT	NT	2.0	NT	NT
MW-16								
	03-Mar-89	49.3/17.0	1.2	2.0**	ND	ND	8.4E+5	1.4E+2
	10-Mar-89	14.5	2.2	NT	ND	ND	1.4E+5	1.2E+3
	15-Mar-89	11.4	3.0	NT	ND	ND	6.0E+6	1.1E+3
	29-Mar-89	33.4	7.2	NT	NT	ND	1.6E+6	3.5E+3
	04-Apr-89	39.6	11.5	NT	0.2	NT	2.2E+6	1.2E+3
	11-Apr-89	37.8	16.0	NT	NT	ND	6.7E+5	1.4E+3
	18-Apr-89	52.8	20.0	14.0	ND	ND	1.3E+6	2.3E+2
	25-Apr-89	49.3	22.0	>20.0	ND	ND	5.1E+5	2.2E+2
	02-May-89	57.2	31.3	14.6	NT	ND	2.2E+6	1.7E+3
	09-May-89	59.4	23.6	15.3	NT	ND	4.0E+6	9.5E+2
	17-May-89	41.8	16.5	9.5	NT	ND	6.8E+5	1.4E+3
	23-May-89	46.2	23.9	17.3	NT	ND	1.0E+6	2.2E+3
	31-May-89	61.6	15.7	16.2	NT	ND	4.4E+5	4.9E+3
	06-Jun-89	43.6	18.2	NT	NT	ND	4.0E+6	2.8E+4
	20-Jun-89	61.6	7.6	5.3	NT	ND	1.1E+7	5.4E+4
	06-Jul-89	55.4	23.1	NT	NT	1.5	5.7E+6	4.9E+4
	22-Jul-89	55.0	10.7	NT	NT	ND	NT	NT

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	MCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	03-Aug-89	45.8	10.0	NT	NT	1.3	1.1E+5	1.8E+3
	17-Aug-89	74.8	19.0	NT	NT	1.5	8.1E+5	1.4E+4
	07-Sep-89	61.6	52.1	16.6	NT	3.7	8.2E+5	1.1E+4
	18-Sep-89	28.2	42.9	NT	NT	5.4	1.4E+6	5.4E+4
	05-Oct-89	66.0	49.0	>20.0	NT	6.3	1.8E+6	7.9E+3
	23-Oct-89	48.4	36.5	>20.0	NT	4.7	NT	NT
	02-Nov-89	48.4	35.0	>20.0	NT	5.5	NT	NT
	20-Nov-89	42.1	26.7	18.2	NT	4.1	4.4E+5	1.1E+4
	05-Dec-89	55.2	32.0	>20.0	NT	5.8	9.2E+5	2.8E+4
	02-Jan-90	65.5	30.4	NT	NT	3.8	2.7E+6	5.4E+4
	01-Feb-90	51.4	29.9	NT	NT	3.3	3.9E+5	9.2E+4
	01-Mar-90	58.9	26.7	NT	NT	6.0	NT	NT
MW-17								
	03-Mar-89	NT	NT	NT	NT	NT	NT	NT
	10-Mar-89	12.3	0.8	NT	ND	ND	1.6E+5	1.1E+3
	15-Mar-89	7.5	3.1	NT	ND	ND	1.1E+7	3.5E+3
	29-Mar-89	25.5	3.8	NT	NT	ND	2.6E+6	1.1E+3
	04-Apr-89	35.2	3.5	NT	ND	ND	3.3E+6	6.8E+2
	11-Apr-89	49.4	8.0	NT	NT	ND	1.5E+6	3.9E+2
	18-Apr-89	52.8	16.0	11.8	ND	ND	1.2E+6	1.4E+2
	25-Apr-89	51.0	11.6	13.5	ND	ND	6.0E+5	1.7E+2
	02-May-89	52.8	17.0	13.3	NT	ND	5.1E+6	3.5E+2
	09-May-89	44.9	5.0	6.6	NT	ND	6.5E+6	9.5E+2
	17-May-89	47.7	17.6	8.4	NT	ND	3.0E+6	5.4E+3
	23-May-89	57.2	14.5	17.0	NT	ND	1.1E+6	3.9E+2
	06-Jun-89	46.2	16.0	NT	NT	ND	3.0E+6	3.5E+4
	14-Jun-89	42.9	18.0	15.4	NT	ND	3.0E+6	4.3E+4
	27-Jun-89	56.8	11.0	NT	NT	ND	1.1E+7	9.2E+4
	06-Jul-89	50.6	13.0	NT	NT	ND	7.2E+6	1.1E+5
	22-Jul-89	45.8	20.0	NT	NT	ND	7.3E+5	7.9E+4
	03-Aug-89	70.4	14.0	NT	NT	1.0	8.3E+4	1.3E+3
	17-Aug-89	63.8	20.0	NT	NT	1.7	2.3E+5	9.2E+3
	07-Sep-89	79.2	32.0	NT	NT	1.4	9.2E+6	1.3E+4
	18-Sep-89	71.5	24.6	NT	NT	3.3	6.5E+5	1.7E+4
	05-Oct-89	75.9	39.0	NT	NT	5.8	9.3E+5	2.4E+4
	23-Oct-89	52.8	38.0	>20.0	NT	4.7	8.4E+5	1.6E+5
	02-Nov-89	57.2	36.0	>20.0	NT	6.9	NT	NT
	20-Nov-89	52.4	24.0	15.4	NT	4.8	NT	NT
	05-Dec-89	65.5	28.8	19.4	NT	7.3	NT	NT
	03-Jan-90	53.3	30.4	NT	NT	9.2	3.7E+5	1.1E+4
	01-Feb-90	NT	NT	NT	NT	NT	NT	NT
	01-Mar-90	59.8	27.2	NT	NT	3.6	NT	NT
MW-18								
	03-Mar-89	15.4/9.3*	0.5	2.9**	ND	ND	1.3E+6	7.9E+1
	15-Mar-89	4.0	1.1	NT	ND	ND	NT	NT
	29-Mar-89	8.8	3.0	NT	NT	ND	NT	NT

Table 5. Results of Inorganic Chemical and Microbial Analyses of Groundwater Samples from Monitoring Wells

WELL	DATE	NITRATE	PHOSPHATE	DISSOLVED OXYGEN	DISSOLVED IRON (Fe)	AMMONIA	MICROBIAL ENUMERATION TC	MICROBIAL ENUMERATION HCU
LOD		0.5(ppm)	0.5(ppm)	0.5(mg/l)	0.1(ppm)	0.5(ppm)	NA (CFU/ml)	NA (CFU/ml)
	04-Apr-89	6.6	2.8	NT	ND	ND	NT	NT
	11-Apr-89	6.6	3.8	NT	NT	ND	NT	NT
	18-Apr-89	6.6	5.8	5.0	NT	ND	NT	NT
	25-Apr-89	2.2	1.3	3.0	NT	ND	NT	NT
	02-May-89	8.8	4.5	3.4	NT	ND	NT	NT
	09-May-89	11.6	1.8	4.1	NT	ND	NT	NT
	17-May-89	5.8	1.8	3.3	NT	ND	NT	NT
	23-May-89	14.5	1.5	3.9	NT	ND	NT	NT
	31-May-89	NT	NT	NT	NT	NT	NT	NT
	06-Jun-89	17.1	1.3	NT	NT	ND	NT	NT
	27-Jun-89	8.8	0.8	NT	NT	ND	NT	NT
	06-Jul-89	15.7	ND	NT	NT	NT	NT	NT
	22-Jul-89	17.2	0.5	NT	NT	ND	NT	NT
	03-Aug-89	11.0	0.5	NT	NT	ND	NT	NT
	17-Aug-89	16.5	1.3	NT	NT	ND	NT	NT
	07-Sep-89	15.0	3.0	NT	NT	ND	NT	NT
	05-Oct-89	22.0	6.0	NT	NT	ND	NT	NT
	02-Nov-89	15.0	2.3	NT	NT	ND	NT	NT
	06-Dec-89	13.5	5.9	6.1	NT	ND	NT	NT
	03-Jan-90	11.6	1.6	NT	NT	ND	NT	NT
	01-Feb-90	4.9	0.8	NT	NT	ND	NT	NT
	01-Mar-90	9.2	2.7	NT	NT	ND	NT	NT
MW-19								
	03-Jan-90	ND	2.4	NT	NT	ND	NT	NT
	01-Feb-90	5.8	1.3	NT	NT	ND	NT	NT
	01-Mar-90	6.4	3.7	NT	NT	ND	NT	NT
MW-20								
	03-Jan-90	10.1	2.1	NT	NT	ND	NT	NT
	01-Feb-90	7.3	1.3	NT	NT	ND	NT	NT
	28-Feb-90	9.7	1.3	NT	NT	ND	NT	NT

NOTES:

HCU: Hydrocarbon Utilizers
TC: Total Count
LOD: Limit of Detection.
NA: Limit of Detection not applicable.
ND: Not detected at or above LOD.
NT: Not tested.
* : First value from HLA laboratory
Second value from Pace Laboratories, Inc.
**: Results from Pace Laboratories, Inc.
--: Results not available.
Inorganic constituents reported in parts per million (ppm).
Microbial counts reported in colony-forming units per milliliter of water (CFU/ml).
Analyses performed by HLA laboratory unless otherwise indicated.

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
MW-5						
	03-May-89	ND	ND	ND	0.029	ND
	06-Jun-89	ND	ND	ND	ND	ND
MW-7						
	04-Apr-89	ND	0.0007	0.0010	0.0012	ND
	03-May-89	ND	0.0012	0.0018	0.0048	0.27
	06-Jun-89	0.001	0.001	0.0022	0.0011	0.4
	07-Jul-89	0.0002	0.001	0.00034	0.0059	0.56
	02-Aug-89	ND	0.00152	0.0054	0.0059	0.7
	07-Sep-89	ND	ND	ND	0.0015	0.59
	05-Oct-89	ND	0.0011	0.0006	0.0013	0.73
	02-Nov-89	0.0002	0.001	0.0055	0.0036	0.63
	06-Dec-89	0.0006	0.0087	0.0059	0.0036	0.32
	03-Jan-90	0.0007	0.0007	0.0006	0.0013	0.18
	01-Feb-90	ND	0.0009	ND	0.0003	ND
	28-Feb-90	ND	0.0006	0.0004	0.0052	0.09
MW-9						
	02-Mar-89	NT	NT	NT	NT	1.2
	04-Apr-89	0.19	0.35	0.041	0.36	1.5
	01-May-89	0.43	0.60	0.033	0.64	4.6
	06-Jun-89	0.36	0.106	0.110	0.10	1.6
	06-Jul-89	0.16	0.084	0.052	1.8	5.2
	02-Aug-89	0.032	0.034	0.012	1.6	4.9
	06-Sep-89	0.007	0.022	ND	0.36	1.5
	04-Oct-89	LT 0.025	0.08	LT 0.025	1.3	4.1
	01-Nov-89	0.0012/0.0007	0.014/0.015	ND/ND	0.67/0.69	3.1/2.9
	05-Dec-89	LT 0.0010	0.006	LT 0.0010	0.39	1.9
	02-Jan-90	0.011	0.041	0.0060	0.22	2.2
	31-Jan-90	0.0048	0.0026	LT 0.0010	0.12	1.0
	28-Feb-90	0.0013	0.0015	0.0003	0.10	0.69
MW-10						
	02-Mar-89	NT	NT	NT	NT	2.8
	04-Apr-89	1.6	0.76	0.13	0.68	4.2
	01-May-89	1.2	0.67	0.16	0.67	3.4
	06-Jun-89 @	0.66/0.64	0.14/0.14	0.11/0.10	0.24/0.14	4.8/4.3
	06-Jul-89	2.0	2.2	0.54	1.8	12
	02-Aug-89 @	8.8/8.6	1.7/1.7	0.36/0.34	1.5/1.5	19/20
	06-Sep-89 @	8.1/11	5.2/6.3	0.82/0.93	5.5/6.1	36/34
	04-Oct-89	40	79	11	94	620
	01-Nov-89	21	10	2.0	12	95
	05-Dec-89	21	14	2.6	17	90
	03-Jan-90	17	2.2	2.4	9.1	70
	31-Jan-90	8.1	1.2	0.51	1.6	25
	28-Feb-90	2.5	0.13	0.029	0.7	4.9

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
MW-11						
	02-Mar-89	NT	NT	NT	NT	15
	04-Apr-89	2.5	3.8	0.17	2.4	10
	19-Apr-89	3.8	2.8	ND	5.7	14
	01-May-89	1.3	1.7	0.069	1.7	5.2
	07-Jun-89	0.082	0.097	0.045	0.167	12
	06-Jul-89 @	2.1/2.3	2.5/2.8	0.14/0.16	2.6/3.0	15/15
	02-Aug-89	7.2	7.5	0.26	7.1	37
	06-Sep-89	5.0	6.5	0.41	5.2	47
	04-Oct-89	3.3	2.8	0.15	2.5	11
	01-Nov-89	2.1	2.8	0.11	1.8	13
	05-Dec-89	1.3	1.5	0.084	1.3	7.6
	03-Jan-90	0.11	0.27	0.017	0.53	2.7
	31-Jan-90	0.072	0.18	0.0052	0.31	1.7
	28-Feb-90	0.17	0.43	0.014	0.48	1.8
MW-12						
	15-Feb-89	ND	ND	ND	ND	ND
	03-Mar-89	NT	NT	NT	NT	ND
	05-Apr-89	0.0014	0.0023	ND	0.0054	ND
	02-May-89	0.026	0.0033	ND	0.0063	0.10
	07-Jun-89	0.034	0.0037	ND	0.012	0.18
	06-Jul-89	0.029	0.0025	ND	0.0059	0.12
	02-Aug-89	0.023	0.002	ND	0.005	ND
	07-Sep-89 @	0.051/0.059	0.0016/0.0022	ND/ND	0.0049/0.0058	ND/ND
	05-Oct-89 @	0.037/0.040	0.0032/0.0031	ND/ND	0.0086/0.0094	ND/ND
	02-Nov-89	0.0056	0.0011	ND	0.0019	0.071
	06-Dec-89	0.0062	0.0012	ND	0.0017	0.06
	03-Jan-90	0.0086	0.0010	ND	0.0012	0.09
	01-Feb-90	0.0018/0.0024	0.0010/0.0004	ND/ND	0.0005/0.0004	ND/ND
	01-Mar-90	0.0016	0.0014	ND	0.0003	ND
MW-13						
	02-Mar-89	NT	NT	NT	NT	1.4
	04-Apr-89	0.041	0.039	0.0038	0.28	0.71
	01-May-89	0.048	0.049	0.013	0.13	0.34
	07-Jun-89	0.051	0.037	0.02	0.082	0.98
	06-Jul-89	0.210	0.054	0.013	0.109	0.76
	02-Aug-89	0.098	0.011	0.0005	0.031	0.27
	07-Sep-89	0.039	0.0020	ND	0.0050	ND
	04-Oct-89	4.0	1.6	0.20	1.5	9.2
	01-Nov-89	1.7	0.086	0.091	0.37	5.6
	06-Dec-89 @	1.2/1.1	0.15/0.14	0.21/0.19	0.46/0.42	5.1/4.4
	03-Jan-90	0.92	0.13	0.20	0.38	3.7
	31-Jan-90	0.029	0.029	0.037	0.062	0.81
	01-Mar-90	0.042	0.0033	0.010	0.014	2.5

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
MW-14						
	02-Mar-89	NT	NT	NT	NT	ND
	04-Apr-89	0.44	0.063	ND	0.27	1.4
	01-May-89	0.35	0.011	ND	0.094	0.94
	07-Jun-89 @	0.057/ND	0.0022/ND	0.0005/ND	0.043/ND	1.1/0.64
	06-Jul-89	3.0	1.7	0.050	3.6	14
	01-Aug-89	0.49	0.084	ND	0.84	4.5
	06-Sep-89	1.0	0.090	ND	1.4	4.9
	04-Oct-89	0.70	0.015	ND	0.75	3.1
	01-Nov-89	0.36	0.0058	ND	0.24	1.4
	05-Dec-89	0.35	0.0065	LT 0.0010	0.25	1.3
	02-Jan-90	0.080	0.0017	ND	0.091	0.63
	31-Jan-90	0.094	0.047	0.0061	0.10	0.42
	28-Feb-90	0.13	0.0007	ND	0.014	0.22
MW-15						
	03-Mar-89	NT	NT	NT	NT	3.9
	04-Apr-89	0.88	0.97	0.11	0.93	3.7
	02-May-89	1.5	1.1	0.086	0.74	2.7
	07-Jun-89	5.7	4.3	0.3	2.4	22
	05-Jul-89	2.0	3.0	0.26	2.0	12
	03-Aug-89	2.6	2.8	0.75	3.8	24
	06-Sep-89	1.1	1.4	0.23	1.3	7.3
	04-Oct-89	0.59	1.1	0.076	0.59	3.7
	01-Nov-89	1.6	2.3	0.23	1.7	9.7
	05-Dec-89	1.7	2.6	0.22	1.3	10
	02-Jan-90	0.37	0.65	0.053	0.35	2.6
	31-Jan-90	0.45	0.65	0.080	0.17	3.7
	01-Mar-90	0.78	1.1	0.085	0.49	3.2
MW-16						
	02-Mar-89	NT	NT	NT	NT	2.1
	04-Apr-89	2.1	2.2	0.18	1.4	6.7
	02-May-89	0.74	0.94	0.11	0.95	2.7
	07-Jun-89	0.37	0.56	0.51	0.35	14
	05-Jul-89	1.9	2.7	1.8	4.5	16
	03-Aug-89 @	1.8/1.9	2.6/2.6	0.18/0.19	5.7/6.0	17/17
	06-Sep-89	0.96	3.3	0.26	1.3	8.9
	04-Oct-89	0.72	2.1	0.16	1.3	5.4
	02-Nov-89	0.74	2.8	0.37	2.4	11
	05-Dec-89	0.38	0.79	0.087	0.75	3.6
	02-Jan-90	0.25	0.39	0.037	0.36	1.9
	31-Jan-90	1.2	2.0	0.21	1.5	7.1
	01-Mar-90	1.9	3.0	0.26	1.8	9.7
MW-17						
	04-Apr-89	3.1	2.9	0.27	3.9	12

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
	02-May-89	1.2	1.0	0.11	1.4	3.9
	07-Jun-89	1.2	1.2	ND	1.3	6.3
	05-Jul-89	3.0	3.3	2.7	3.9	18
	02-Aug-89	4.8	9.5	0.63	14	47
	03-Aug-89	5.1	6.1	0.73	12	NT
	06-Sep-89	2.8	4.5	0.32	8.4	21
	04-Oct-89	0.47	0.092	0.018	1.0	2.8
	01-Nov-89	0.19	0.011	0.11	0.18	0.93
	05-Dec-89	0.16	0.036	0.0071	0.13	0.76
	03-Jan-90	0.056	0.0030	0.0010	0.022	0.25
	31-Jan-90	0.13	0.013	0.0014	0.050	0.30
	01-Mar-90	0.25/0.24	0.073/0.071	0.0069/0.0066	0.069/0.065	0.59/0.56
MW-18						
	15-Feb-89	ND	ND	ND	ND	ND
	03-Mar-89	NT	NT	NT	NT	ND
	05-Apr-89	ND	ND	ND	ND	ND
	02-May-89	ND	ND	ND	ND	ND
	07-Jun-89	ND	ND	ND	ND	ND
	06-Jul-89	ND	ND	ND	ND	ND
	02-Aug-89	ND	ND	ND	ND	ND
	06-Sep-89	ND	ND	ND	ND	ND
	05-Oct-89	ND	ND	ND	ND	ND
	01-Nov-89	ND	ND	ND	ND	ND
	06-Dec-89	ND	0.0009	ND	0.0013	ND
	02-Jan-90	0.016	0.0080	0.0014	0.0098	0.10
	01-Feb-90	ND	ND	ND	ND	ND
	01-Mar-90	0.0003	ND	ND	0.0002	ND
MW-19						
	15-Dec-89	5.0	0.30	0.078	0.61	12
	03-Jan-90	3.0	0.46	0.12	1.1	13
	01-Feb-90	1.1	0.022 LT	0.0040	0.032	1.9
	01-Mar-90	4.2	0.92	0.24	0.82	9.2
MW-20						
	15-Dec-89	ND	ND	ND	ND	ND
	03-Jan-90	0.0004	0.0004	ND	0.0008	ND
	01-Feb-90	ND	0.0014	ND	0.0005	ND
	28-Feb-90	ND	ND	ND	0.0005	ND
EW-1						
	04-Apr-89	1.6	1.0	0.087	1.8	5.9
	01-May-89	3.2	1.2	0.15	1.4	6.3
	05-Jun-89	7.7	5.0	0.2	3.5	24
	05-Jul-89	4.4	5.1	0.32	3.8	24
	02-Aug-89	3.1	4.0	0.4	2.9	23
	06-Sep-89	3.0	3.7	0.26	3.0	11

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE		ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *			0.0005/0.0002 *		0.25/0.05**
	05-Oct-89	1.3	1.7	LT	0.10	0.3	7.3
	02-Nov-89	2.4	4.0		0.23	2.1	19
	05-Dec-89	1.3	2.2		0.016	1.3	7.5
	04-Jan-90	1.7	3.2		0.25	1.7	13.0
	01-Feb-90	1.2	1.8		0.073	1.1	7.6
	01-Mar-90	1.2	1.4		0.037	1.0	4.7
EW-4							
	04-Apr-89	NT	NT		NT	NT	2.5
	01-May-89	0.56	0.28		0.034	0.72	2.0
	05-Jun-89	0.4	0.2		ND	0.6	3.1
	05-Jul-89	0.29	0.15		0.021	1.2	4.3
	02-Aug-89	0.23	0.1		0.023	1.1	6.3
	06-Sep-89	0.17	0.038	LT	0.0005	0.80	3.0
	02-Nov-89	0.12	0.089		0.009	0.48	5.3
	05-Dec-89	0.17	0.029		0.011	0.62	3.5
	04-Jan-90	0.17/0.2	0.027/0.0085		0.0085/0.0027	0.19/0.21	1.4/1.7
	01-Feb-90	0.38	0.035		0.0080	0.38	1.6
	01-Mar-90	0.0039	0.0019		0.0008	0.0040	0.33
EW-6							
	02-Nov-89	20	22		0.54	12	100
	05-Dec-89	20	24		1.3	13	93
	04-Jan-90	25	34		2.0	16	160
	01-Feb-90	26	49		3.1	22	120
	01-Mar-90	29	38		2.2	14	120
EW-7							
	05-Jul-89	18	16		0.67	10	74
	05-Oct-89	38	46	LT	0.50	11	210
	02-Nov-89	30	39		1.8	15	170
	05-Dec-89	27	36		1.9	17	130
	04-Jan-90	11	11		0.36	7.0	59
	01-Feb-90	9.4	8.2		0.19	4.4	38
	01-Mar-90	4.0	1.5	LT	0.5	6.7	19
EW-8							
	01-May-89	1.1	0.49		0.021	0.30	2.3
	05-Jun-89	2.5	2.0		ND	1.4	8.3
	05-Jul-89	3.3	2.9		0.22	3.1	19
	02-Aug-89	5.7	5.6		0.33	5.8	37
	06-Sep-89	5.7	5.5		0.19	10	38
	05-Oct-89	13	4.6	LT	0.25	7.0	71
	02-Nov-89	8.1	8.6		0.21	6.2	56
	05-Dec-89	8.8	0.51		0.037	3.0	8.8
	04-Jan-90	2.3	2.0		0.078	1.8	14
	01-Feb-90	4.0	3.8		0.020	5.3	15
	01-Mar-90	0.0038	0.0012		0.0005	0.33	1.1

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
EW-9						
	21-Nov-89	ND	ND	ND	ND	ND
	05-Dec-89	4.5	6.7	0.35	5.7	27
	04-Jan-90	3.0	3.5	0.17	2.9	17
	02-Feb-90	2.0	2.9	0.17	2.4	14
	01-Mar-90	2.2	3.0	0.22	3.5	12
EW-10						
	07-Sep-89	8.1	7.4	0.80	9.2	42
	05-Oct-89	6.1	4.6	0.20	7.0	19
	02-Nov-89	1.7	1.2	0.048	3.3	14
EW-11						
	07-Sep-89	7.7	8.0	0.52	5.3	25
EW-12						
	01-May-89	1.8	0.66	0.048	0.62	3.6
	05-Jun-89	25	20	0.8	11	71
	05-Jul-89	5.2	5.6	0.38	3.4	25
	02-Aug-89	4.5	5.4	0.39	3.3	25
	07-Sep-89	2.2	1.8	0.059	2.2	9.9
	05-Oct-89	4.4	5.5	LT 0.10	2.0	21
	05-Dec-89	3.2	4.7	0.20	2.3	17
	04-Jan-90	1.8	2.4	0.10	1.7	9.1
	02-Feb-90	4.8	6.6	3.9	4.5	17
	01-Mar-90	1.7	2.5	0.15	1.8	9.3
EW-13						
	19-Apr-89	0.068	0.0064	ND	0.20	0.79
	07-Sep-89	3.3	3.2	1.8	0.026	15
EW-14						
	05-Jul-89	1.8	1.7	0.08	1.1	8.7
	07-Sep-89	4.1	3.5	0.20	3.7	16
	05-Oct-89	4.3	5.2	LT 0.10	0.74	24
EW-15						
	19-Apr-89 #	13080	61000	16000	140000	660000
	05-Jul-89	2.0	2.8	0.26	2.9	19
	02-Aug-89	1.7	3.4	0.68	2.5	15
	07-Sep-89	8.4	7.6	0.20	6.3	37
	05-Oct-89	2.6	1.7	LT 0.10	0.62	12
	02-Nov-89	ND	0.0014	ND	0.0029	0.16
	05-Dec-89	3.1	4.1	0.32	3.0	19
	04-Jan-90	0.72	0.69	0.026	0.43	3.5
	02-Feb-90	2.7	3.9	0.19	2.4	16
	01-Mar-90 ##	--	--	--	--	--
EW-16						
	04-Apr-89 @	2.8/3.3	2.0/2.6	0.10/0.14	0.99/1.2	8.9/8.8
	19-Apr-89	0.002	0.0027	ND	0.0021	0.57

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
	01-May-89	5.0	4.6	0.34	2.5	12
	05-Jun-89	2.5	2.6	ND	1.8	9.5
	05-Jul-89	2.8	3.6	0.28	1.8	16
	02-Aug-89	1.1	1.2	0.86	1.2	6.6
	07-Sep-89	2.6	2.7	0.21	1.9	11
	05-Oct-89	3.6	2.9	0.15	2.4	16
	02-Nov-89	1.8	1.7	0.82	0.33	11
EW-19						
	01-May-89	1.4	1.2	0.068	0.77	3.4
	05-Jun-89	0.9	0.6	ND	0.6	2.9
	05-Jul-89 @	2.2/1.4	0.62/0.71	0.041/0.043	0.72/0.8	4.8/5.3
	02-Aug-89	1.7	1.1	0.039	0.95	7.4
	07-Sep-89	2.5	2.1	0.15	1.5	9.1
	05-Oct-89	5.1	3.7	0.048	3.0	13
	02-Nov-89	0.35	0.29	0.028	0.31	3.2
	05-Dec-89	1.2	0.84	0.092	0.92	5.3
	04-Jan-90	1.0	1.5	0.082	0.9	5.3
	02-Feb-90	0.56	0.47	0.044	0.64	2.1
	01-Mar-90 ##	--	--	--	--	--
EW-20						
	04-Jan-90	1.3	11.0	0.83	8.4	36.0
EW-21						
	05-Jun-89	ND	ND	ND	0.3	3.2
	05-Jul-89	0.0026	0.015	0.017	0.095	1.1
	02-Aug-89	0.0027	0.012	0.0054	0.031	0.48
	07-Sep-89	0.0060	0.0095	0.0020	0.0026	0.34
	05-Oct-89	0.0009	0.0098	0.0012	0.0093	0.50
	02-Nov-89	0.002	0.028	0.0068	0.14	0.88
	05-Dec-89	0.0034	0.064	0.019	0.14	0.97
	04-Jan-90	0.004	0.10	0.041	0.35	1.8
	02-Feb-90	0.0053	0.33	0.13	0.84	3.6
	01-Mar-90	0.0029	0.23	0.052	0.48	1.5
EW-22						
	21-Nov-89	0.056	0.015 LT	0.005	0.12	6.1
	02-Feb-90	2.1	17	1.1	13	43
	01-Mar-90	2.2	16	1.1	11	42
BLANK						
	05-Apr-89	0.5	ND	ND	ND	ND
	01-May-89	ND	ND	ND	ND	ND
	06-Jun-89	ND	ND	ND	ND	ND
	06-Jul-89	ND	ND	ND	ND	ND
	01-Aug-89	ND	ND	ND	ND	ND
	02-Aug-89	ND	ND	ND	ND	ND
	03-Aug-89	ND	ND	ND	ND	ND

Table 6. Results of Organic Chemical Analyses of Groundwater Samples from Monitoring and System Wells

Purgeable Aromatics (EPA Method 8020)
Petroleum Hydrocarbons (EPA Method 8015)

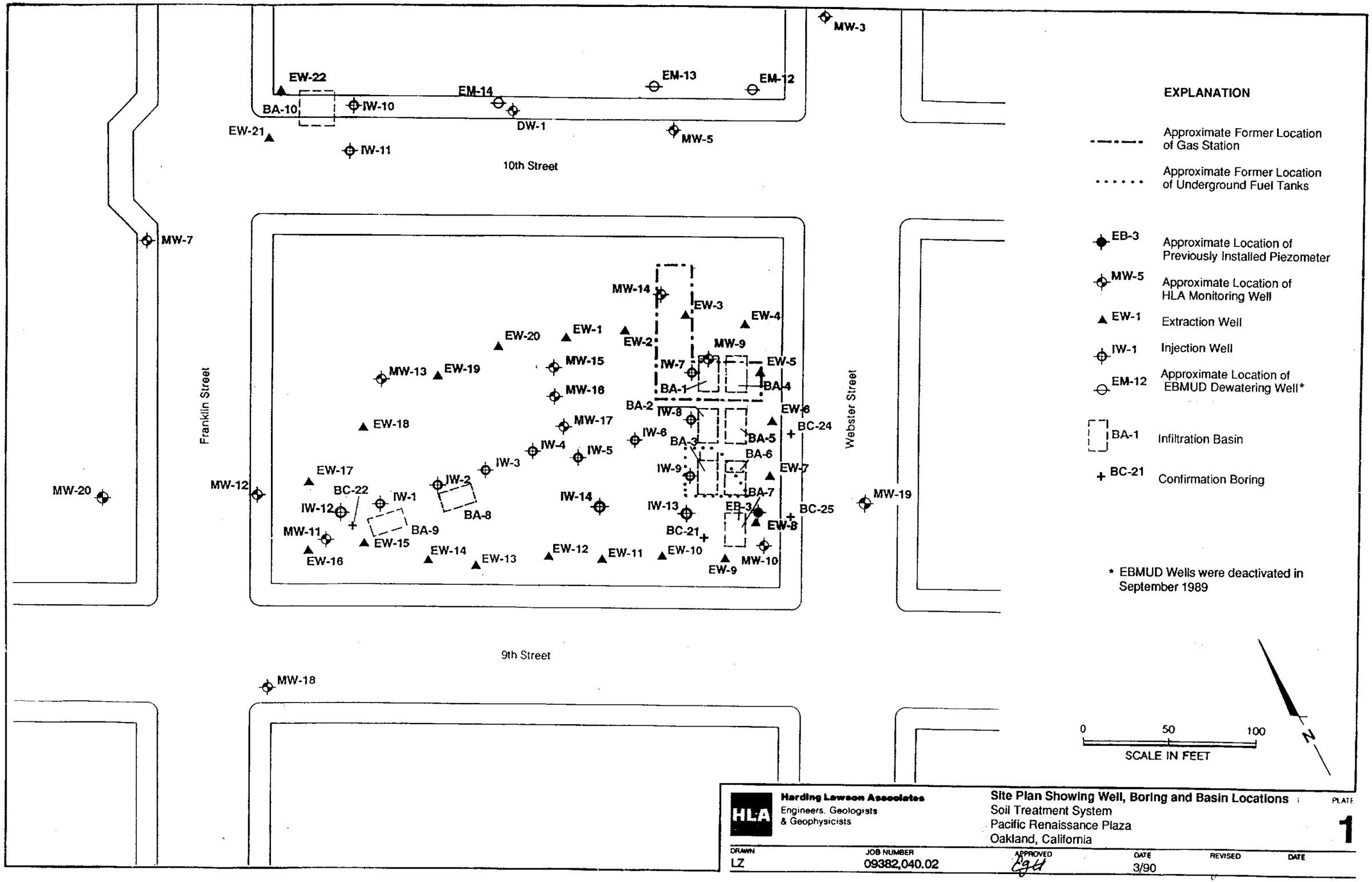
WELL	DATE	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES, TOTAL	TPH AS GASOLINE
LOD	(mg/l)	0.0005/0.0002 *		0.0005/0.0002 *		0.25/0.05**
	06-Sep-89	ND	ND	ND	ND	ND
	07-Sep-89	ND	ND	ND	ND	ND
	04-Oct-89	ND	ND	ND	ND	ND
	02-Nov-89	ND	ND	ND	ND	ND
	05-Dec-89	ND	ND	ND	ND	ND
	03-Jan-90	ND	0.0006	ND	0.0017	ND
EW COMPOSITE						
	01-Feb-90	0.16	0.045	0.0009	0.38	0.64

NOTES:

LOD: Limit of Detection.
ND: Not detected at or above LOD.
NT: Not tested.
*: LOD Changed to 0.0002 on 01-May-89
**: LOD Changed to 0.05 on 01-May-89
@: Two values indicate results of duplicate analyses.
LT: Less than the concentration indicated.
--: Results not available.
#: Free product observed in well.
##: For these samples, laboratory internal duplicate analyses were not consistent with one another.

Organic constituents reported in milligrams per liter.
Analyses performed by PACE Laboratories, Inc.

17597



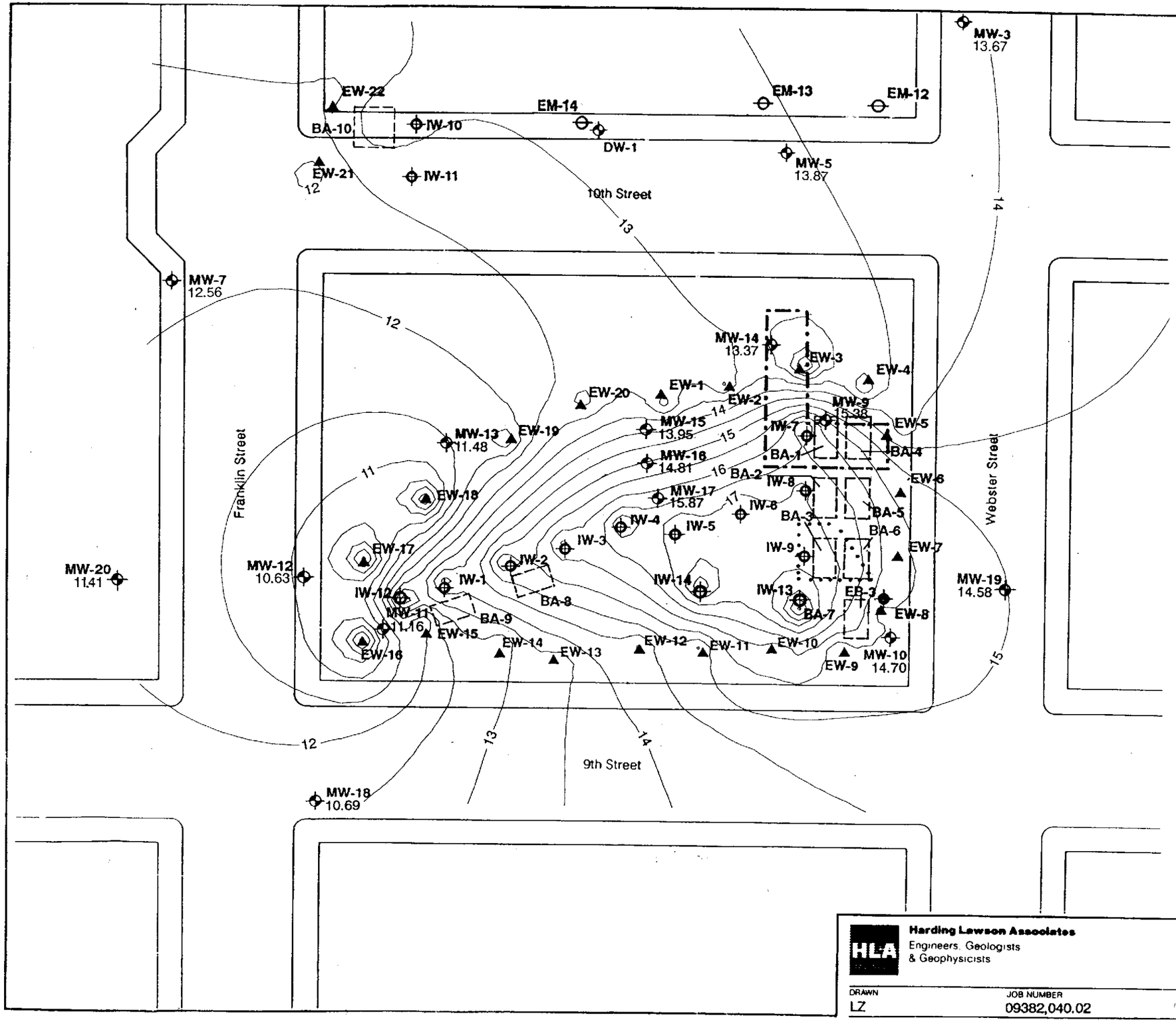
Harding Lawson Associates
Engineers, Geologists & Geophysicists

Site Plan Showing Well, Boring and Basin Locations
Soil Treatment System
Pacific Renaissance Plaza
Oakland, California

PLATE **1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
LZ	09382,040.02	Cgd	3/90		

17598



EXPLANATION

- Approximate Former Location of Gas Station
- Approximate Former Location of Underground Fuel Tanks
- EB-3 — Approximate Location of Previously Installed Piezometer
- MW-5 — Approximate Location of HLA Monitoring Well
- EW-1 — Extraction Well
- IW-1 — Injection Well
- EM-12 — Approximate Location of EBMUD Dewatering Well*
- BA-1 — Infiltration Basin
- 18.78 — Observed Groundwater Elevation (feet above MSL)
- 13 — Simulated Groundwater Elevation Contour (contour interval 0.5 feet)

* EBMUD Wells were deactivated in September 1989

0 50 100
SCALE IN FEET

N

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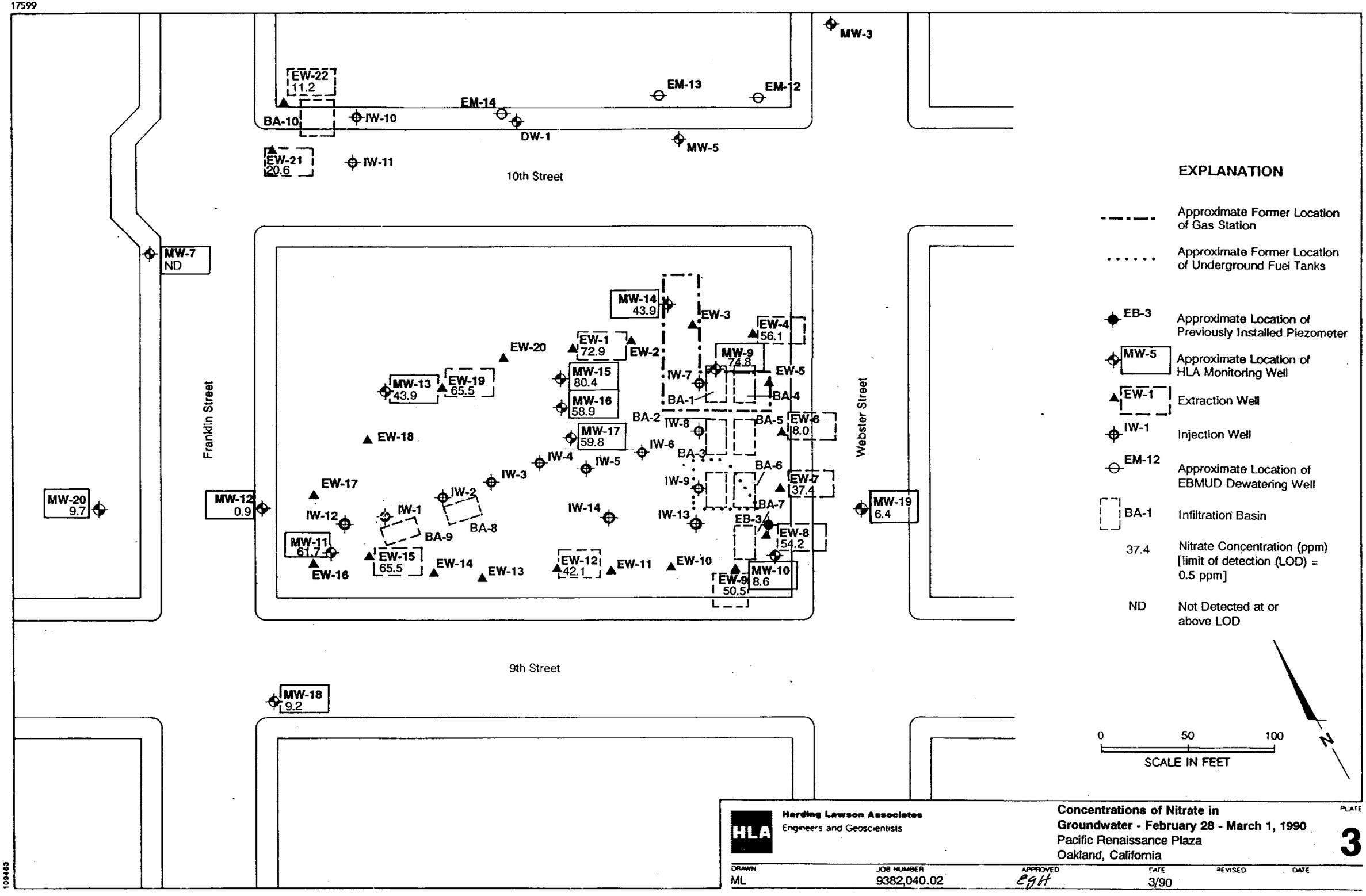
Observed and Simulated Groundwater Elevations - February 27, 1990
Pacific Renaissance Plaza
Oakland, California

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
LZ	09382,040.02	EGH	3/90		

17599



EXPLANATION

- Approximate Former Location of Gas Station
- Approximate Former Location of Underground Fuel Tanks
- EB-3 — Approximate Location of Previously Installed Piezometer
- MW-5 — Approximate Location of HLA Monitoring Well
- EW-1 — Extraction Well
- IW-1 — Injection Well
- EM-12 — Approximate Location of EBMUD Dewatering Well
- BA-1 — Infiltration Basin
- 37.4 — Nitrate Concentration (ppm) [limit of detection (LOD) = 0.5 ppm]
- ND — Not Detected at or above LOD

0 50 100

SCALE IN FEET

N

Concentrations of Nitrate in Groundwater - February 28 - March 1, 1990
Pacific Renaissance Plaza
Oakland, California

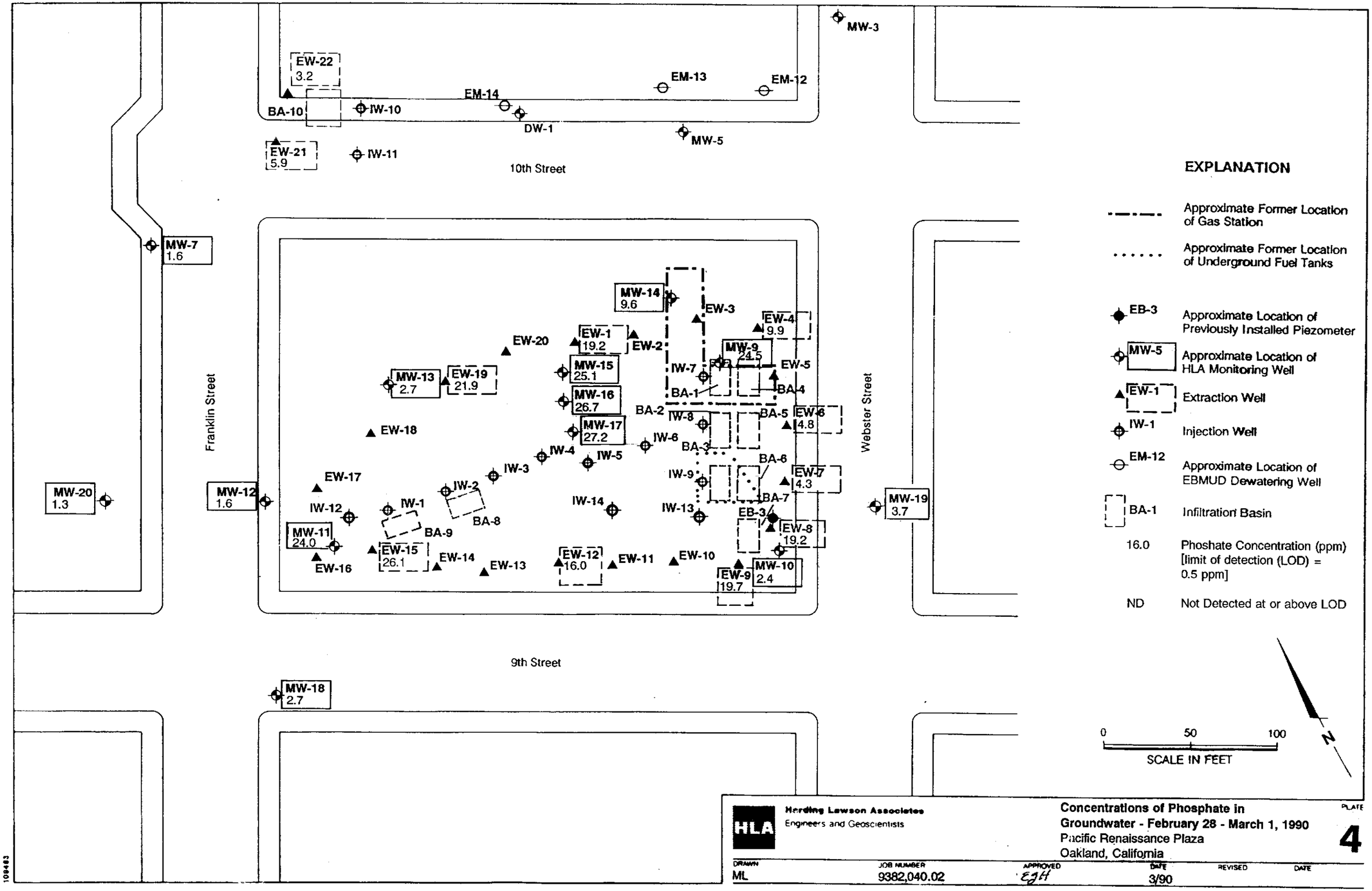
PLATE **3**

HLA Harding Lawson Associates
Engineers and Geoscientists

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
ML	9382,040.02	eght	3/90		

108463

17600



108483

HLA Harding Lawson Associates
Engineers and Geoscientists

Concentrations of Phosphate in Groundwater - February 28 - March 1, 1990
Pacific Renaissance Plaza
Oakland, California

PLATE **4**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
ML	9382,040.02	EJH	3/90		

17601

MW-3

EW-22
42

EM-13

EM-12

EM-14

BA-10

IW-10

DW-1

MW-5

EW-21
1.5

IW-11

10th Street

MW-7
0.09

MW-14
0.22

EW-3

EW-4
0.33

EW-20

EW-1
4.7

EW-2

MW-9
0.69

EW-5

MW-13
2.5

EW-19
ND

MW-15
3.2

IW-7

BA-4

MW-16
9.7

BA-1

BA-2

IW-8

BA-5

EW-6
120

MW-17
0.59/0.56

EW-18

IW-6

BA-3

IW-4

IW-5

IW-3

BA-6

IW-9

EW-7
19

EW-17

IW-2

MW-20
ND

MW-12
ND

IW-12

IW-1

IW-14

IW-13

BA-7

EB-3

MW-19
9.2

BA-8

BA-9

MW-11
1.8

EW-8
1.1

EW-15
ND

EW-14

EW-12
9.3

EW-11

EW-10

EW-16

EW-13

EW-9
12

MW-10
4.9

9th Street

MW-18
ND

Franklin Street

Webster Street

EXPLANATION

- Approximate Former Location of Gas Station
- Approximate Former Location of Underground Fuel Tanks
- EB-3 — Approximate Location of Previously Installed Piezometer
- MW-5 — Approximate Location of HLA Monitoring Well
- EW-1 — Extraction Well
- IW-1 — Injection Well
- EM-12 — Approximate Location of EBMUD Dewatering Well
- 12 — Petroleum Hydrocarbon Concentration (mg/l) as Gasoline [limit of detection (LOD) = 0.05 mg/l] Two Values Indicate Duplicate Samples
- ND — Not Detected at or above LOD
- BA-1 — Infiltration Basin

0 50 100
SCALE IN FEET

N

109463

Harding Lawson Associates
Engineers and Geoscientists

Concentrations of Petroleum Hydrocarbons in Groundwater - February 28 - March 1, 1990
Pacific Renaissance Plaza
Oakland, California

PLATE **5**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
ML	9382,040.02	EJH	3/90		

Appendix A

LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

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REPORT OF LABORATORY ANALYSIS

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Charlotte, North Carolina

March 15, 1990

Mr. David Leland
Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94945

RE: PACE Project No. 400228.506
PRP Oakland

Dear Mr. Leland:

Enclosed is the report of laboratory analyses for samples received February 28, 1990.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephen F. Nackord
Director, Sampling and Analytical Services

Enclosures

pace laboratories, inc.

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Novato, California
Leawood, Kansas
Irvine, California
Asheville, North Carolina
Charlotte, North Carolina

REPORT OF LABORATORY ANALYSIS

Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94945

March 15, 1990
PACE Project
Number: 400228506

Attn: Mr. David Leland

PRP Oakland

			MW-7	MW-20	MW-14
PACE Sample Number:			721260	721270	721280
Date Collected:			02/28/90	02/28/90	02/28/90
Date Received:			02/28/90	02/28/90	02/28/90
Parameter	Units	MDL	90092810	90092811	90092801
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	0.09	ND	0.22
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	ND	ND	0.13
Ethylbenzene	mg/L	0.0002	0.0004	ND	ND
Toluene	mg/L	0.0002	0.0006	ND	0.0007
Xylenes, Total	mg/L	0.0002	0.0052	0.0005	0.014

MDL Method Detection Limit
ND Not detected at or above the MDL.

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REPORT OF LABORATORY ANALYSIS

March 15, 1990
PACE Project
Number: 400228506

PRP Oakland

			MW-9	MW-10	MW-11
PACE Sample Number:			721290	721300	721310
Date Collected:			02/28/90	02/28/90	02/28/90
Date Received:			02/28/90	02/28/90	02/28/90
Parameter	Units	MDL	90092802	90092803	90092804
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	0.69	4.9	1.8
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.0013	2.5	0.17
Ethylbenzene	mg/L	0.0002	0.0003	0.029	0.014
Toluene	mg/L	0.0002	0.0015	0.13	0.43
Xylenes, Total	mg/L	0.0002	0.10	0.70	0.48

MDL Method Detection Limit

The data contained in this report were obtained using EPA or other approved methodologies. All analyses were performed by me or under my direct supervision.

Douglas E. Oram, Ph.D.
Organic Chemistry Manager

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

400228 · 506

Lab: Pace

Job Number: 09382,039.02

Name/Location: PRP

Project Manager: Dave Keland

Samplers: David M Evans, Glenn M Carter

Recorder: David M Evans (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015
23	X							3	90	09	28 10	90	02	28	1415	72126	X							X
23	X							3	90	09	28 11	90	02	28	1440	27	X							X
23	X							3	90	09	28 01	90	02	28	1520	28	X							X
23	X							3	90	09	28 02	90	02	28	1545	29	X							X
23	X							3	90	09	28 03	90	02	28	1620	30	X							X
23	X							3	90	09	28 04	90	02	28	1645	31	X							X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Regular turnaround time Please call Dave

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
David M Evans		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) David M Evans — DATE/TIME 2/28/90 17:10	RECEIVED FOR LAB BY: (Signature) Steph Matz — DATE/TIME PACE 2/28/90 17:10	
METHOD OF SHIPMENT: Hand delivered in cooler w/ice		

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

6533

[redacted]ing [redacted]on A[redacted]ates[redacted]

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

CHAIN OF CUSTODY FORM

Lab: Pace

Samplers: David MF Lewis
Glenn McCarter

Job Number: 09382.039.02

Name/Location: DRP

Project Manager: Dave Roland

Recorder: David MF Lewis
(Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015
	X							X	9	0	09	2	8	1	0	9	0	0	2	2	8	1	4	1	5	MW-7		X						X
	X							X	9	0	09	2	8	1	1	9	0	0	2	2	8	1	4	4	0	MW-20		X						X
	X							X	9	0	09	2	8	0	1	9	0	0	2	2	8	1	5	2	0	MW-14		X						X
	X							X	9	0	09	2	8	0	2	9	0	0	2	2	8	1	3	4	5	MW-9		X						X
	X							X	9	0	09	2	8	0	3	9	0	0	2	2	8	1	6	2	0	MW-10		X						X
	X							X	9	0	09	2	8	0	4	9	0	0	2	2	8	1	6	4	5	MW-11		X						X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Regular turnaround time Please call Dave

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
David MF Lewis		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) David MF Lewis — DATE/TIME 2/28/10 17:10	RECEIVED FOR LAB BY (Signature) Megan Mattz — DATE/TIME 2/28/10 17:10	
METHOD OF SHIPMENT Hand delivered to courier		

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

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REPORT OF LABORATORY ANALYSIS

MAR 90 9:52

March 20, 1990

Mr. David Leland
Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94945

RE: PACE Project No. 400301.505
PRP 09382,039.02

Dear Mr. Leland:

Enclosed is the report of laboratory analyses for samples received March 01, 1990.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Stephen Nackord

Stephen F. Nackord
Director, Sampling and Analytical Services

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REPORT OF LABORATORY ANALYSIS

Harding Lawson Associates
200 Rush Landing Road
Novato, CA 94945

March 20, 1990
PACE Project
Number: 400301505

Attn: Mr. David Leland

PRP 09382,039.02

Parameter	Units	MDL	MW-19	MW-18	MW-12
PACE Sample Number:			721870	721880	721890
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
			90090107	90090108	90090109
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	9.2	ND	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	4.2	0.0003	0.0016
Ethylbenzene	mg/L	0.0002	0.24	ND	ND
Toluene	mg/L	0.0002	0.92	ND	0.0014
Xylenes, Total	mg/L	0.0002	0.82	0.0002	0.0003

MDL Method Detection Limit
ND Not detected at or above the MDL.

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REPORT OF LABORATORY ANALYSIS

March 20, 1990
PACE Project
Number: 400301505

PRP 09382,039.02

			MW-13	MW-15	MW-16
PACE Sample Number:			721900	721910	721920
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
Parameter	Units	MDL	90090110	90090111	90090112
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	2.5	3.2	9.7
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.042	0.78	1.9
Ethylbenzene	mg/L	0.0002	0.010	0.085	0.26
Toluene	mg/L	0.0002	0.0033	1.1	3.0
Xylenes, Total	mg/L	0.0002	0.014	0.49	1.8

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. David Leland
Page 3

March 20, 1990
PACE Project Number: 400301505

PRP 09382,039.02

Parameter	Units	MDL	MW-17	MW-17	EW-1
PACE Sample Number:			721930	721940	721950
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
ORGANIC ANALYSIS			90090113	90090114	90093001
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	0.59	0.56	4.7
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.25	0.24	1.2
Ethylbenzene	mg/L	0.0002	0.0069	0.0066	0.037
Toluene	mg/L	0.0002	0.073	0.071	1.4
Xylenes, Total	mg/L	0.0002	0.069	0.065	1.0
1,2-DIBROMOETHANE (EDB) EPA METHOD 504					
1,2-Dibromoethane	ug/L	0.02	-	-	5.1
Date Extracted			-	-	03/07/90

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. David Leland
Page 4

March 20, 1990
PACE Project Number: 400301505

PRP 09382,039.02

			EW-4	EW-6	EW-7
PACE Sample Number:			721960	721970	721980
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
Parameter	Units	MDL	90093002	90093003	90093004
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	0.33	120	19.0
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.0039	29	4.0
Ethylbenzene	mg/L	0.0002	0.0008	2.2	LT 0.5
Toluene	mg/L	0.0002	0.0019	38	1.5
Xylenes, Total	mg/L	0.0002	0.0040	14	6.7
1,2-DIBROMOETHANE (EDB) EPA METHOD 504					
1,2-Dibromoethane	ug/L	0.02	3.8	85	6.3
Date Extracted			03/07/90	03/07/90	03/07/90

MDL Method Detection Limit
LT Less than.

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REPORT OF LABORATORY ANALYSIS

March 20, 1990
PACE Project
Number: 400301505

PRP 09382,039.02

Parameter	Units	MDL	EW-8	EW-9	EW-12
PACE Sample Number:			721990	722000	722010
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
			90093005	90093006	90093007
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	1.1	12.0	8.3
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.0038	2.2	1.7
Ethylbenzene	mg/L	0.0002	0.0005	0.22	0.15
Toluene	mg/L	0.0002	0.0012	3.0	2.5
Xylenes, Total	mg/L	0.0002	0.33	3.5	1.8
1,2-DIBROMOETHANE (EDB) EPA METHOD 504					
1,2-Dibromoethane	ug/L	0.02	LT 0.25 *	1.2	1.9
Date Extracted			03/07/90	03/07/90	03/07/90

MDL Method Detection Limit
LT Less than.
* Detection limit affected by sample matrix.

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REPORT OF LABORATORY ANALYSIS

March 20, 1990
PACE Project
Number: 400301505

PRP 09382,039.02

Parameter	Units	MDL	EW-15	EW-19	EW-21
PACE Sample Number:			722020	722030	722040
Date Collected:			03/01/90	03/01/90	03/01/90
Date Received:			03/01/90	03/01/90	03/01/90
			90093008	90093009	90093010
ORGANIC ANALYSIS					
PURGEABLE FUELS AND AROMATICS					
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	-	-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	ND	ND	1.5
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	-	-
Benzene	mg/L	0.0002	0.0007	0.0002	0.0029
Ethylbenzene	mg/L	0.0002	ND	ND	0.052
Toluene	mg/L	0.0002	ND	ND	0.23
Xylenes, Total	mg/L	0.0002	0.0002	ND	0.48
1,2-DIBROMOETHANE (EDB) EPA METHOD 504					
1,2-Dibromoethane	ug/L	0.02	6.0	1.0	0.2
Date Extracted			03/07/90	03/07/90	03/07/90

MDL Method Detection Limit
ND Not detected at or above the MDL.

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REPORT OF LABORATORY ANALYSIS

Mr. David Leland
Page 7

March 20, 1990
PACE Project Number: 400301505

PRP 09382,039.02

EW-22

Parameter	Units	MDL	
PACE Sample Number:			722050
Date Collected:			03/01/90
Date Received:			03/01/90
ORGANIC ANALYSIS			90093011
PURGEABLE FUELS AND AROMATICS			
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Total Purgeable Fuels, as Gasoline	mg/L	0.05	42
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	mg/L	0.0002	2.2
Ethylbenzene	mg/L	0.0002	1.1
Toluene	mg/L	0.0002	16
Xylenes, Total	mg/L	0.0002	11
1,2-DIBROMOETHANE (EDB) EPA METHOD 504			
1,2-Dibromoethane	ug/L	0.02	11
Date Extracted			03/07/90

MDL Method Detection Limit

The data contained in this report were obtained using EPA or other approved methodologies. All analyses were performed by me or under my supervision.

Stephen Nackord

Stephen F. Nackord
Director, Sampling and Analytical Services

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

400301 · SDS p. 1 of 2

Lab: Pace

Samplers: David M Evans
Glenn M Carter

Job Number: 09382,039,02

Name/Location: PRP

Project Manager: Dave Leland

Recorder: David M Evans (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr Wk Seq	DATE: Yr Mo Dy Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015	EDB 504
23	X							3	900901 0107	900301 0635	72187	X						X		
23	X							3	900901 0108	900301 0710	72188	X	X					X		
23	X							3	900901 0109	900301 0730	72189	X	X					X		
23	X							3	900901 0110	900301 0835	72190	X	X					X		
23	X							3	900901 0111	900301 0915	72191	X	X					X		
23	X							3	900901 0112	900301 1010	72192	X	X					X		
23	X							3	900901 0113	900301 1050	72193	X	X					X		
23	X							3	900901 0114	900301 1105	72194	X	X					X		
23	X							3	900901 3001	900301 1205	72195	X	X					X	X	
23								3	900901 3002	900301 1225	72196	X	X					X	X	

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

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) David M Evans	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) David M Evans — DATE/TIME 3-1-90 1515	RECEIVED FOR LAB BY: (Signature) Jane Pace — DATE/TIME 3/1 4:10	

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CHAIN OF CUSTODY FORM 400301 · 505

Lab: Pace p 2 of 2

Job Number: 09382,039.02
Name/Location: PRP
Project Manager: Dave Leland

Samplers: David M Evans
Glenn M Carter
Recorder: David M Evans
(Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCL	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllnt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	EPA 8015	EDB 504
23	X				2			3	90	09	3003	90	03	01	1240	72197		X						X	X
23	X				2			3	90	09	3004	90	03	01	1300	72198		X						X	X
23	X				2			3	90	09	3005	90	03	01	1320	72199		X						X	X
23	X				2			3	90	09	3006	90	03	01	1350	72200		X						X	X
23	X				2			3	90	09	3007	90	03	01	1410	72201		X						X	X
23	X				2			3	90	09	3008	90	03	01	1430	72202		X						X	X
23	X				2			3	90	09	3009	90	03	01	1450	72203		X						X	X
23	X				2			3	90	09	3010	90	03	01	1340	72204		X						X	X
23	X				2			3	90	09	3011	90	03	01	1315	72205		X						X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						2 Week turnaround time

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
David M Evans		
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME

DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
David M Evans	3-1-90 1515	Ime Towne Pace	3/1 4:10pm

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March 30, 1990

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Tamara L. Williams

Tamara L. Williams
Geologist - 3954