

Missing 7/18/92 61

A Report Prepared for

Redevelopment Agency of the City of Oakland  
1333 Broadway, 9th Floor  
Oakland, California 94612

01-1126

**REPORT OF GROUNDWATER MONITORING  
DECEMBER 1991  
CHINATOWN REDEVELOPMENT PROJECT AREA  
OAKLAND, CALIFORNIA**

HLA Job No. 9382,040.02

Submitted to:

California Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, California 94612

Pacific Renaissance Plaza.  
9th + Webster

QUALITY CONTROL BOARD  
MAY 11 1992  
RTH

by

Mark T. Egbert  
Mark T. Egbert  
Project Geologist

David F. Leland  
David F. Leland, P.E.  
Associate Engineer

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

May 6, 1992

TABLE OF CONTENTS

---

LIST OF TABLES.....	iii
LIST OF ILLUSTRATIONS .....	iii
1.0 INTRODUCTION.....	1
2.0 QUARTERLY GROUNDWATER MONITORING.....	2
3.0 RESULTS .....	3
3.1 Groundwater Elevations and Potentiometric Contours.....	3
3.2 Analytical Results - Groundwater Monitoring Wells .....	3
4.0 DISCUSSION.....	5
5.0 REFERENCES.....	6

TABLES

ILLUSTRATION

Appendix

RESULTS OF LABORATORY ANALYSIS OF  
GROUNDWATER SAMPLES FROM MONITORING WELLS

DISTRIBUTION

**LIST OF TABLES**

---

- Table 1      Water-Level Elevations - August 1990 through December 1991
- Table 2      Results of Organic Chemical Analyses of Groundwater Samples from  
Monitoring Wells

**ILLUSTRATION**

---

- Plate 1      Plan of Sites and Vicinity and Water-Level Contour Map -  
December 1991

## 1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring in the Chinatown Redevelopment Project Area (Project Area) of Oakland, California (Plate 1), for December 1991. Dewatering activities at the Pacific Renaissance Plaza (PRP) site were completed on July 1, 1991. Quarterly groundwater monitoring was recommended through June 1992 in Harding Lawson Associates' report titled *Groundwater Monitoring and Dewatering Effluent Treatment System, Operation and Monitoring, April through July 1991 (HLA, 1991)*.

Groundwater monitoring in December 1991 consisted of sampling four monitoring wells and measuring water levels in 11 wells. Groundwater flow directions were evaluated in the vicinity of the PRP site; the presence and distribution of gasoline and gasoline constituents also were evaluated in groundwater at the PRP site.

## 2.0 QUARTERLY GROUNDWATER MONITORING

Water levels were measured in 11 wells and groundwater samples were collected from Monitoring Wells MW-7, MW-18, and MW-19, and MW-23 on December 20, 1991. Samples were taken to monitor hydraulic conditions in the Project Area and to monitor groundwater chemistry in the 4 wells. A field blank was also poured and kept with the groundwater samples.

Standard HLA decontamination protocol was followed prior to sampling. HLA employees performing field work were trained in safety procedures and used Level D personal protective equipment.

At least three well volumes were purged from the wells prior to sampling; the purge water was collected in 55-gallon drums onsite. Groundwater samples were collected with a stainless steel bailer. After being decanted into 40-milliliter sample bottles, samples were labeled and stored on ice until delivery under chain of custody to Pace Laboratories, Inc. (PACE), of Novato, California, for chemical analysis. The groundwater samples collected from Wells MW-7 and MW-19 were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Test Method 8020 and for total petroleum hydrocarbons (TPH) as gasoline using EPA Test Method 8015. The groundwater samples collected from Wells MW-18 and MW-23 and the field blank sample were analyzed using EPA Test Method 8020.

### 3.0 RESULTS

#### 3.1 Groundwater Elevations and Potentiometric Contours

Depths to groundwater and calculated water levels for December 1991 are presented in Table 1; potentiometric contours interpreted from the water-level data are shown on Plate 1. The data indicate groundwater flow is to the northwest in the northern portions of the Project Area and generally west to south in the southern portions of the Project Area. Potentiometric data are not interpreted in the area bounded by 9th, 11th, Franklin, and Webster streets, the area occupied by the PRP and East Bay Municipal Utility District buildings.

Water levels increased in 10 of 11 wells between September 19 and December 20, 1991, with increases ranging from 0.42 foot at MW-18 to 1.18 feet at MW-8. The water level decreased in Monitoring Well MW-23 by 0.11 feet.

#### 3.2 Analytical Results - Groundwater Monitoring Wells

Results of chemical analyses of the groundwater samples collected on December 20, 1991, are presented in Table 2 along with historical groundwater chemistry data for BTEX and TPH as gasoline for all monitoring wells. Laboratory reports for groundwater samples are presented in the Appendix.

BTEX compounds were detected in the groundwater samples collected from Monitoring Well MW-19; BTEX concentrations have increased since September 1991 but are generally lower than concentrations measured before dewatering activities began in November 1990. Benzene, ethylbenzene, and xylenes were detected at concentrations similar to pre-dewatering concentrations in the sample from Monitoring Well MW-7. Benzene was detected at a concentration of 0.0004 milligrams/liter (mg/l) in the sample

from Well MW-18. No other compounds were detected at MW-18. BTEX compounds were not detected at Well MW-23 or in the field blank sample.

In Monitoring Well MW-19, TPH as gasoline was detected in December 1991 at a concentration of 9.6 mg/l, similar to the concentration of 11 mg/l measured prior to dewatering in May 1990. TPH as gasoline was detected in Well MW-7 at a concentration of 0.32 mg/l; similar concentrations were measured prior to dewatering.

#### 4.0 DISCUSSION

Results of analysis of water samples collected in December 1991 indicate that concentrations of petroleum hydrocarbons and BTEX compounds in MW-19 are similar to pre-dewatering concentrations for those constituents. In addition, the chemical concentrations in MW-7 are similar to pre-dewatering concentrations and appear to originate from a source in the current upgradient direction. This is suggested by the absence of BTEX constituents in samples from this location when flow directions were generally south to east (*HLA, 1991*).

On the basis of water levels measured in March 1988 (*HLA, 1989*), before the initiation of dewatering activities in the Project Area, HLA estimated groundwater flow to be generally to the west. The December 1991 measurements, the second round of water-level data collected since dewatering activities ceased, show some influence of the buildings constructed in the Project Area. The potentiometric contours indicate that the PRP building and shoring system (including the shoring wall installed along Webster, Ninth, and Franklin Streets) act as barriers to groundwater flow, which is directed around the building. The pattern of potentiometric contours interpreted from the December water-level measurements is similar to the pattern interpreted from September measurements and indicates that the effects of dewatering have dissipated and are no longer evident. In the vicinity of Well MW-19, groundwater flow is estimated to be west to south. At MW-7, the flow direction is estimated to be generally to the west.



5.0 REFERENCES

Harding Lawson Associates, 1989. *A-Aquifer Monitoring Report, Chinatown Redevelopment Project Area, Oakland, California.* January 31.

\_\_\_\_\_, 1991. *Groundwater Monitoring and Dewatering Effluent Treatment System, Operation and Monitoring, April through July 1991, Chinatown Redevelopment Project Area, Oakland, California.* August 16.

**LARGE  
MAP  
REMOVED**

Table 1. WATER-LEVEL ELEVATIONS - AUGUST 1990 THROUGH DECEMBER 1991

Well No.	MW-2		MW-3		MW-6		MW-7		MW-8		MW-12	
	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING
	40.05	39.55	39.02	38.35	39.95	39.59	39.35	39.10	40.63	40.47	37.70	37.00
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
3-Aug-90	25.59	13.96	25.33	13.02	25.37	14.22	25.38	13.72	27.02	13.45	21.15	15.85
27-Aug-90	-	-	-	-	-	-	-	-	-	-	-	-
12-Sep-90	-	-	-	-	-	-	-	-	-	-	24.08	12.92
13-Sep-90	-	-	-	-	-	-	25.15	13.95	-	-	-	-
14-Nov-90	25.38	14.17	23.91	14.44	25.25	14.34	24.97	14.13	26.72	13.75	23.37	13.63
3-Dec-90	26.12	13.43	24.69	13.66	25.44	14.15	27.66	11.44	27.28	13.19	25.45	11.55
11-Jan-91	28.60	10.95	28.97	9.38	27.50	12.09	29.82	9.28	29.04	11.43	*	*
11-Feb-91	32.39	7.16	32.37	5.98	29.43	10.16	32.35	6.75	30.88	9.59	*	*
8-Mar-91	33.57	5.98	32.29	6.06	30.41	9.18	32.04	7.06	31.98	8.49	*	*
12-Apr-91	32.67	6.88	31.89	6.46	30.25	9.34	31.37	7.73	32.01	8.46	*	*
10-May-91	31.90	7.65	31.29	7.06	29.94	9.65	30.94	8.16	31.66	8.81	*	*
6-Jun-91	32.56	6.99	30.94	7.41	30.27	9.32	31.06	8.04	31.94	8.53	*	*
19-Sep-91	26.94	12.61	25.28	13.07	26.58	13.01	26.96	12.14	28.65	11.82	*	*
20-Dec-91	25.94	13.61	24.23	14.12	25.74	13.85	25.83	13.27	27.47	13.00	*	*

## NOTES:

Elevations are in feet above mean sea level (MSL).

Depth to water measured in feet from top of casing.

- \* Well MW-12 was damaged during excavation and construction activities and can no longer be monitored.

Table 1. WATER-LEVEL ELEVATIONS - AUGUST 1990 THROUGH DECEMBER 1991

Well No.	MW-18		MW-19		MW-20		MW-21		MW-22		MW-23	
	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING	GROUND SURFACE	TOP OF CASING
	36.52	35.88	37.15	36.62	38.32	37.86	38.67	38.08	37.70	37.34	34.68	34.23
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
3-Aug-90	24.41	11.47	25.32	11.30	25.01	12.85	27.60	10.48	-	-	-	-
27-Aug-90	-	-	-	-	-	-	27.52	10.56	22.93	14.41	22.45	11.78
12-Sep-90	-	-	-	-	24.06	13.80	27.38	10.70	-	-	-	-
13-Sep-90	24.33	11.55	22.44	14.18	-	-	-	-	22.78	14.56	21.27	12.96
14-Nov-90	24.13	11.75	21.97	14.65	24.47	13.39	27.32	10.76	22.65	14.69	21.80	12.43
3-Dec-90	24.81	11.07	22.16	14.46	26.29	11.57	27.39	10.69	22.78	14.56	22.00	12.23
11-Jan-91	25.90	9.98	25.33	11.29	28.38	9.48	28.03	10.05	24.98	12.36	22.51	11.72
11-Feb-91	26.40	9.48	26.55	10.07	29.55	8.31	28.08	10.00	26.05	11.29	22.69	11.54
8-Mar-91	26.44	9.44	26.56	10.06	29.95	7.91	28.33	9.75	26.63	10.71	22.77	11.46
12-Apr-91	26.31	9.57	25.92	10.70	29.62	8.24	28.52	9.56	26.22	11.12	22.36	11.87
10-May-91	25.48	10.40	24.90	11.72	29.01	8.85	28.34	9.74	25.84	11.50	22.14	12.09
6-Jun-91	25.61	10.27	24.75	11.87	29.06	8.80	28.21	9.87	25.69	11.65	22.17	12.06
19-Sep-91	25.23	10.65	23.12	13.50	26.46	11.40	27.81	10.27	23.73	13.61	22.35	11.88
20-Dec-91	24.81	11.07	22.37	14.25	25.56	12.30	27.33	10.75	23.11	14.23	22.46	11.77

## NOTES:

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

Table 2. RESULTS OF ORGANIC CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING 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-3	10-Mar-88	ND	ND	ND	ND	ND
	18-Mar-88	ND	ND	ND	ND	ND
	25-Mar-88	ND	ND	ND	ND	ND
	1-Apr-88	0.7	0.4	ND	1.2	ND
	15-Apr-88	ND	ND	ND	ND	ND
	28-Apr-88 @	ND/ND (0.4)	ND/ND (0.4)	ND/ND (0.4)	ND/ND (0.4)	ND/ND
	11-May-88	ND	ND	ND	ND	ND
	27-May-88	ND	ND	ND	ND	ND
	16-Jun-88	ND	ND	ND	ND	ND
	27-Jul-88	ND	ND	ND	ND	ND
	26-Aug-88	ND	ND	ND	ND	ND
	30-Sep-88	ND	ND	ND	ND	ND
	2-Nov-88	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND
	2-Dec-88	ND	ND	ND	ND	ND
	4-Jan-89	ND	ND	ND	ND	ND
	3-Feb-89	ND	0.0009	ND	ND	ND
3-Dec-90	ND	0.0002 †	ND	ND	ND	
8-Mar-91	ND	ND	ND	ND	ND	
6-Jun-91	ND	ND	ND	ND	ND a	
MW-7	4-Apr-89	ND	0.0007	0.0010	0.0012	ND
	3-May-89	ND	0.0012	0.0018	0.0048	0.27
	6-Jun-89	0.0010	0.001	0.0022	0.0011	0.4
	7-Jul-89	0.0002	0.001	0.00034	0.0059	0.56
	2-Aug-89	ND	0.0015	0.0054	0.0059	0.7
	7-Sep-89	ND	ND	ND	0.0015	0.59
	5-Oct-89	ND	0.0011	0.0008	0.0013	0.73
	2-Nov-89	0.0002	0.001	0.0055	0.0036	0.63
	6-Dec-89	0.0006	0.0087	0.0059	0.0036	0.32
	3-Jan-90	0.0007	0.0007	0.0006	0.0013	0.18
	1-Feb-90	ND	0.0009	ND	0.0009	ND
	28-Feb-90	ND	0.0006	0.0004	0.0052	0.09
	11-Apr-90	ND	0.0007	0.0033	0.0029	0.130
	18-May-90	ND	0.0008	0.0014	0.0008	0.43
	13-Sep-90	ND	0.0019	ND	ND	NT
	3-Dec-90	0.0002	0.0024	0.0019	0.0012	0.32
	11-Feb-91	ND	ND	ND	ND	ND
8-Mar-91	ND	ND	ND	ND	ND	
6-Jun-91	ND	ND	ND	ND	ND	
20-Dec-91	0.0002	ND	0.0029	0.0078	0.32	
MW-12	15-Feb-89	ND	ND	ND	ND	ND
	3-Mar-89	NT	NT	NT	NT	ND
	5-Apr-89	0.0014	0.0023	ND	0.0054	ND
	2-May-89	0.026	0.0033	ND	0.0063	0.10
	7-Jun-89	0.034	0.0037	ND	0.012	0.18
	6-Jul-89	0.029	0.0025	ND	0.0059	0.12
	2-Aug-89	0.023	0.002	ND	0.005	ND
	7-Sep-89 @	0.051/0.059	0.0016/0.0022	ND/ND	0.0049/0.0058	ND/ND
	5-Oct-89 @	0.037/0.040	0.0032/0.0031	ND/ND	0.0086/0.0094	ND/ND
	2-Nov-89	0.0056	0.0011	ND	0.0019	0.071
	6-Dec-89	0.0062	0.0012	ND	0.0017	0.06
	3-Jan-90	0.0086	0.0010	ND	0.0012	0.09
	1-Feb-90 @	0.0018/0.0024	0.0010/0.0004	ND/ND	0.0005/0.0004	ND/ND
	1-Mar-90	0.0018	0.0014	ND	0.0003	ND
	11-Apr-90	0.0066	0.0174	0.0015	0.0116	0.147
	18-May-90	ND	0.0009	ND	ND	ND
12-Sep-90	ND	ND	ND	0.0002	NT	
3-Dec-90	0.0006	0.0002 †	ND	0.0002 †	ND	

Table 2. RESULTS OF ORGANIC CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING 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-18	15-Feb-89	ND	ND	ND	ND	ND
	3-Mar-89	NT	NT	NT	NT	ND
	5-Apr-89	ND	ND	ND	ND	ND
	2-May-89	ND	ND	ND	ND	ND
	7-Jun-89	ND	ND	ND	ND	ND
	6-Jul-89	ND	ND	ND	ND	ND
	2-Aug-89	ND	ND	ND	ND	ND
	6-Sep-89	ND	ND	ND	ND	ND
	5-Oct-89	ND	ND	ND	ND	ND
	1-Nov-89	ND	ND	ND	ND	ND
	6-Dec-89	ND	0.0009	ND	0.0013	ND
	2-Jan-90	0.016	0.0080	0.0014	0.0098	0.10
	1-Feb-90	ND	ND	ND	ND	ND
	1-Mar-90	0.0003	ND	ND	0.0002	ND
	11-Apr-90	0.0004	0.0006	0.0005	0.0003	ND
	18-May-90	ND	ND	ND	ND	ND
	13-Sep-90	0.0027	ND	ND	ND	NT
	4-Dec-90	0.0029	0.0002 †	ND	0.0003 †	ND
	8-Mar-91	0.0009	0.0003	ND	ND	ND
	6-Jun-91	ND	ND	ND	ND a	NT
19-Sep-91	ND b	ND b	ND b	ND b	ND	
20-Dec-91	0.0004	ND	ND b	ND b	NT	
MW-19	15-Dec-89	5.0	0.30	0.078	0.61	12
	3-Jan-90	3.0	0.46	0.12	1.1	13
	1-Feb-90	1.1	0.022	LT 0.0040	0.032	1.9
	1-Mar-90	4.2	0.92	0.24	0.82	9.2
	11-Apr-90	3.8	1.1	0.82	0.34	10
	18-May-90	5.6	0.75	0.70	0.78	11
	13-Sep-90	1.4	1.2	0.35	1.6	NT
	4-Dec-90	2.1	1.5	0.42	1.6	12
	11-Feb-91	0.45	0.12	0.086	0.21	2.7
	8-Mar-91	0.52	0.057	0.020	0.083	1.40
	10-May-91	0.32	0.088	0.055	0.160	1.80
	6-Jun-91 @	0.38/0.46	0.027/0.038	0.023/0.030	0.092/0.15	3.40/NT
	19-Sep-91	0.21	0.023	0.094	0.15	3.50
	20-Dec-91	1.0 (0.005)	0.24 (0.005)	0.5 (0.005)	1.2 (0.005)	9.60 (0.50)
MW-20	15-Dec-89	ND	ND	ND	ND	ND
	3-Jan-90	0.0004	0.0004	ND	0.0008	ND
	1-Feb-90	ND	0.0014	ND	0.0005	ND
	28-Feb-90	ND	ND	ND	0.0005	ND
	11-Apr-90	0.0028	0.0110	0.0011	0.0066	ND
	18-May-90	ND	ND	ND	ND	ND
	12-Sep-90	ND	ND	ND	ND	NT
	3-Dec-90	ND	0.0002 †	ND	ND	ND
	8-Mar-91	ND	ND	ND	ND	ND
6-Jun-91	ND	ND	ND	ND a	NT	
MW-21	27-Aug-90	ND	ND	ND	ND	NT
	12-Sep-90	ND	ND	ND	ND	NT
	3-Dec-90	ND	0.0005 †	ND	0.0011 †	ND
	8-Mar-91	ND	ND	ND	ND	ND
	6-Jun-91	ND	ND	ND	ND a	NT

Table 2. RESULTS OF ORGANIC CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FROM MONITORING 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-22	27-Aug-90	ND	ND	ND	ND	NT
	13-Sep-90	ND	ND	ND	ND	NT
	4-Dec-90	ND	0.0002 †	ND	0.0002 †	ND
	8-Mar-91	ND	ND	ND	ND	ND
	6-Jun-91	ND	ND	ND	ND a	NT
MW-23	27-Aug-90	ND	ND	ND	ND	NT
	13-Sep-90	ND	ND	ND	ND	NT
	4-Dec-90	ND	0.0002 †	ND	ND	ND
	8-Mar-91	ND	ND	ND	ND	ND
	6-Jun-91	ND	0.0004	ND	ND a	NT
	20-Dec-91	ND	ND	ND b	ND b	NT
BLANK	5-Apr-89	0.5	ND	ND	ND	ND
	1-May-89	ND	ND	ND	ND	ND
	6-Jun-89 @	ND/ND	ND/ND	ND/ND	ND/ND	ND/ND
	1-Aug-89	ND	ND	ND	ND	ND
	2-Aug-89	ND	ND	ND	ND	ND
	3-Aug-89	ND	ND	ND	ND	ND
	6-Sep-89	ND	ND	ND	ND	ND
	7-Sep-89	ND	ND	ND	ND	ND
	4-Oct-89	ND	ND	ND	ND	ND
	2-Nov-89	ND	ND	ND	ND	ND
	5-Dec-89	ND	ND	ND	ND	ND
	3-Jan-90	ND	0.0006	ND	0.0017	ND
	13-Sep-90	ND	ND	ND	ND	NT
	11-Feb-91	ND	ND	ND	ND	NT
	8-Mar-91	ND	ND	ND	ND	ND
	19-Sep-91	ND b	ND b	ND b	ND b	ND
	20-Dec-91	ND	ND	ND b	ND b	NT

## NOTES:

Results reported in milligrams per liter (mg/l); equivalent to parts per million.

Analyses performed by PACE Laboratories, Inc., Novato, California.

LOD: Limit of Detection.

ND: Not detected at or above LOD.

NT: Not tested.

(0.4): Numbers in parentheses are limits of detection.

\*: LOD Changed to 0.0002 on 01-May-89, unless otherwise noted.

\*\* : LOD Changed to 0.05 on 01-May-89, unless otherwise noted.

†: PACE laboratory reported toluene and total xylenes in the method blanks analyzed along with the samples.

@: Two values indicate results of duplicate analyses.

LT: Less than the concentration indicated.

a: Method detection limit is 0.0004 mg/l.

b: Method detection limit is 0.0005 mg/l.

**APPENDIX**  
**RESULTS OF LABORATORY ANALYSIS OF**  
**GROUNDWATER SAMPLES FROM MONITORING WELLS**



January 07, 1992

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

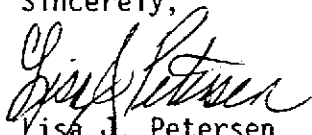
RE: PACE Project No. 411220.504  
Client Reference: 09382.039.02/PRP

Dear Mr. Leland:

Enclosed is the report of laboratory analyses for samples received December 20, 1991.

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

Sincerely,

  
Lisa J. Petersen  
Project Manager

Enclosures

**REPORT OF LABORATORY ANALYSIS**

Mr. David Leland  
 Page 5

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:  
 Parameter

70 0139732  
 12/20/91  
 12/20/91  
 91122005

*Well  
 MW-7*

Units                      MDL                      DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/02/92
Total Purgeable Fuels, as Gasoline	ug/L	50	320	01/02/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/02/92
Benzene	ug/L	0.2	0.2	01/02/92
Toluene	ug/L	0.2	ND	01/02/92
Ethylbenzene	ug/L	0.5	2.9	01/02/92
Xylenes, Total	ug/L	0.5	7.8	01/02/92

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

These data have been reviewed and are approved for release.

*Mark A. Valentini*

Mark A. Valentini, Ph.D.  
 Regional Director

**REPORT OF LABORATORY ANALYSIS**

Mr. David Leland  
 Page 3

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:

70 0139716  
 12/20/91  
 12/20/91  
 91122003

*Well  
 MW-18*

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

ORGANIC ANALYSIS

PURGEABLE AROMATICS (BTXE BY EPA 8020):

Benzene	ug/L	0.2	0.4	01/02/92
Toluene	ug/L	0.2	ND	01/02/92
Ethylbenzene	ug/L	0.5	ND	01/02/92
Xylenes, Total	ug/L	0.5	ND	01/02/92

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

Harding Lawson Associates  
 200 Rush Landing Road  
 Novato, CA 94945

January 07, 1992  
 PACE Project Number: 411220504

Attn: Mr. David Leland

Client Reference: 09382.039.02/PRP

*Well*

PACE Sample Number:

70 0139694

*MW-19*

Date Collected:

12/20/91

Date Received:

12/20/91

Client Sample ID:

91122001

Parameter

Units

MDL

DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Total Purgeable Fuels, as Gasoline ug/L

500

9600

01/02/92

PURGEABLE AROMATICS (BTXE BY EPA 8020):

Benzene ug/L

5.0

1000

01/02/92

Toluene ug/L

5.0

240

01/02/92

Ethylbenzene ug/L

5.0

500

01/02/92

Xylenes, Total ug/L

5.0

1200

01/02/92

MDL Method Detection Limit

**REPORT OF LABORATORY ANALYSIS**

Mr. David Leland  
 Page 2

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

*Well*

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:  
 Parameter

70 0139708  
 12/20/91  
 12/20/91  
 91122002

*MW-23*

Units                      MDL                      DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE AROMATICS (BTXE BY EPA 8020):

Parameter	Units	MDL	Result	DATE ANALYZED
Benzene	ug/L	0.2	ND	01/03/92
Toluene	ug/L	0.2	ND	01/03/92
Ethylbenzene	ug/L	0.5	ND	01/03/92
Xylenes, Total	ug/L	0.5	ND	01/03/92

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

**REPORT OF LABORATORY ANALYSIS**

Mr. David Leland  
 Page 4

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

PACE Sample Number:  
 Date Collected:  
 Date Received:  
 Client Sample ID:  
Parameter

70 0139724  
 12/20/91  
 12/20/91  
 91122004

*Field  
 Blank*

ORGANIC ANALYSIS

PURGEABLE AROMATICS (BTXE BY EPA 8020):

	<u>Units</u>	<u>MDL</u>		<u>DATE ANALYZED</u>
Benzene	ug/L	0.2	ND	01/02/92
Toluene	ug/L	0.2	ND	01/02/92
Ethylbenzene	ug/L	0.5	ND	01/02/92
Xylenes, Total	ug/L	0.5	ND	01/02/92

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

Mr. David Leland  
 Page 6

QUALITY CONTROL DATA

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

TPH GASOLINE/BTEX  
 Batch: 70 08916  
 Samples: 70 0139694

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	326	88%	108%	20%
Benzene	ug/L	0.5	40.0	81%	97%	17%
Toluene	ug/L	0.5	40.0	83%	98%	16%
Ethylbenzene	ug/L	0.5	40.0	86%	100%	15%
Xylenes, Total	ug/L	0.5	80.0	80%	98%	20%

MDL Method Detection Limit  
 RPD Relative Percent Difference



# REPORT OF LABORATORY ANALYSIS

Mr. David Leland  
Page 7

## QUALITY CONTROL DATA

January 07, 1992  
PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

TPH GASOLINE/BTEX  
Batch: 70 08934  
Samples: 70 0139708

### METHOD BLANK:

Parameter	Units	MDL	Method Blank
<b>TOTAL FUEL HYDROCARBONS, (LIGHT):</b>			
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
<b>PURGEABLE AROMATICS (BTXE BY EPA 8020):</b>			
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

### LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	349	102%	104%	1%
Benzene	ug/L	0.5	40.0	103%	98%	4%
Toluene	ug/L	0.5	40.0	101%	97%	4%
Ethylbenzene	ug/L	0.5	40.0	101%	99%	2%
Xylenes, Total	ug/L	0.5	80.0	100%	96%	4%

MDL Method Detection Limit  
RPD Relative Percent Difference



Mr. David Leland  
 Page 8

QUALITY CONTROL DATA

January 07, 1992  
 PACE Project Number: 411220504

Client Reference: 09382.039.02/PRP

TPH GASOLINE/BTEX

Batch: 70 08965

Samples: 70 0139716, 70 0139724, 70 0139732

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/L	0.2	ND
Toluene	ug/L	0.2	ND
Ethylbenzene	ug/L	0.3	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	273	96%	100%	4%
Benzene	ug/L	0.5	40.0	93%	102%	9%
Toluene	ug/L	0.5	40.0	93%	102%	9%
Ethylbenzene	ug/L	0.5	40.0	95%	104%	9%
Xylenes, Total	ug/L	0.5	80.0	94%	102%	8%

MDL Method Detection Limit  
 RPD Relative Percent Difference

Job Number: 09382.039.02  
 Name/Location: PRP  
 Project Manager: Dave Leland

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

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X		139	69.4	3				91	12	2006	14	11	2006	10
23	X		70.8	3					91	12	2008	9	11	2006	50
23	X		71.6	3					91	12	2003	9	11	2007	50
23	X		72.4	3					91	12	2004	9	11	2008	00
23	X		73.2	3					91	12	2005	9	11	2008	50

STATION DESCRIPTION/NOTES  
 Do not use per Mark Egbert  
 12/23/11

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

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

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>David M Evans</u>	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) <u>David M Evans</u>	DATE/TIME <u>12/23/11</u>	RECEIVED FOR LAB BY: (Signature) <u>Steph...</u>
METHOD OF SHIPMENT <u>Hand delivered in cooler w/ice</u>		

**DISTRIBUTION**

**REPORT OF GROUNDWATER MONITORING  
DECEMBER 1991  
CHINATOWN REDEVELOPMENT PROJECT AREA  
OAKLAND, CALIFORNIA  
May 5, 1992**

Copy No. \_\_\_

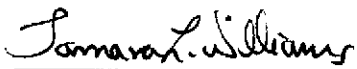
		<u>Copy No.</u>
1 copy:	California Regional Water Quality Control Board San Francisco Bay Region 2101 Webster Street, Suite 500 Oakland, California 94612  Attention: Mr. Donald Dalke	1
1 copy:	California Regional Water Quality Control Board San Francisco Bay Region 2101 Webster Street, Suite 500 Oakland, California 94612  Attention: Mr. Rich Hiatt	2
1 copy:	Alameda County Department of Environmental Health 80 Swan Way, Room 200 Oakland, California 94621  Attention: Mr. Paul Smith	3
2 copies:	Redevelopment Agency of the City of Oakland 1333 Broadway, 9th Floor Oakland, California 94612  Attention: Mr. Peter Chen	4-5

**DISTRIBUTION**  
(continued)

1 copy	HLA Master File	6
1 copy	Project Chronological File	7

MTE/DFL/yml/D21738-H

QUALITY CONTROL REVIEWER



---

Tamara L. Williams  
Geologist - 3954