

A Report Prepared for

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

**REPORT OF GROUNDWATER MONITORING  
MARCH 1992  
CHINATOWN REDEVELOPMENT PROJECT AREA  
OAKLAND, CALIFORNIA**

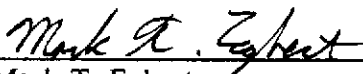
HLA Job No. 9382,040.02


*May 20, 1992*

Submitted to:

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

by

  
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\_\_\_\_\_  
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May 20, 1992

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DISTRIBUTION

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**ILLUSTRATION**

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## 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 March 1992. 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 March 1992 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 March 27, 1992. 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 March 1992 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 northwestern portions of the Project Area and generally west to south in the southern portions of the Project Area. Water level elevations along Webster Street at Wells MW-3 and MW-19 are higher than at Well MW-22, indicating an easterly component of flow in this 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 all 11 wells between December 20, 1991 and March 27, 1992, with increases ranging from 0.51 foot at MW-21 to 2.29 feet at MW-3.

#### 3.2 Analytical Results - Groundwater Monitoring Wells

Results of chemical analyses of the groundwater samples collected on March 27, 1992, 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 groundwater samples from Monitoring Wells MW-7, MW-19, and MW-23. BTEX compounds detected at MW-19 have decreased since December 1991 and are lower than concentrations measured before PRP dewatering activities began in November 1990. Except for a trace of toluene on June 6, 1991, BTEX compounds had not been previously detected in samples from Well MW-23. In the sample from Monitoring Well MW-7, benzene, ethylbenzene, and xylenes were

#### 4.0 DISCUSSION AND RECOMMENDATIONS

Results of analysis of water samples collected in March 1992 indicate that concentrations of petroleum hydrocarbons and BTEX compounds at MW-19 are lower than the December 1991 concentrations and generally lower than the pre-dewatering concentrations for those constituents. In addition, the chemical concentrations at MW-7 are similar to pre-dewatering concentrations and appear to originate from an upgradient chemical source associated with the two underground storage tanks removed in December 1991 from near the corner of 10th and Franklin Streets. This is suggested by the absence of BTEX constituents during dewatering when flow directions at MW-7 were generally south to east (HLA, 1991). Except for toluene, BTEX compounds had not been detected previously at MW-23.

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 March 1992 measurements, the third round of water-level data collected since dewatering activities ceased, continue to show some influence of the buildings constructed in the Project Area. The potentiometric contours show the effect of the PRP building and shoring system as barriers to groundwater flow. These barriers may affect upgradient (east side) water levels and may account, in part, for the relatively greater increases in water levels observed at Wells MW-3 and MW-19 than at other wells. In addition, the apparent change in groundwater flow direction on the east side of the Project Area, compared to westerly preconstruction flow directions, suggests the possible presence of a recharge source in this area. Possible explanations for this pattern include exfiltration from storm drains during storm events or a leaking water main. The pattern of potentiometric contours interpreted from the March water-level measurements indicates that the effects of dewatering 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.

The next quarterly groundwater monitoring round is scheduled for June 1992. Water levels will be measured in Monitoring Wells MW-2, MW-3, MW-6, MW-7, MW-8, and MW-18 through MW-23. Samples from Monitoring Wells MW-18 and MW-23 will be analyzed for BTEX, and samples from MW-7 and MW-19 will be analyzed for TPH as gasoline and BTEX. In addition, a duplicate sample will be collected from MW-23 to assess the accuracy of laboratory results. Results will be presented in a report to be submitted to the Regional Water Quality Control Board.



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 MARCH 1992

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	*	*
27-Mar-92	24.05	15.50	21.94	16.41	23.92	15.67	24.01	15.09	25.64	14.83	*	*

## 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 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 *	0.0005/0.0002 *	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	†
	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	
27-Mar-92	0.0016	ND b	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	5.8	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	1.4
	10-May-91	0.32	0.088	0.055	0.160	1.8
	6-Jun-91 @	0.38/0.46	0.027/0.038	0.023/0.030	0.092/0.15	3.4/NT
	19-Sep-91	0.21	0.023	0.094	0.15	3.5
	20-Dec-91	1.0	0.24	0.5	1.2	9.6
	27-Mar-92	0.34	0.13	0.12	0.34	3.6
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	†
	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 *	0.0005/0.0002 *	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
	27-Mar-92	0.0056	0.0064	0.0016	0.0082	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
	27-Mar-92	ND b	ND b	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.

Specific limits of detection for compounds detected in March 1992 groundwater samples are presented in the appendix of this report.

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**

April 10, 1992

APR 92 9:04

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

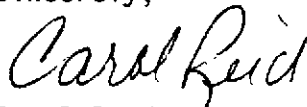
RE: PACE Project No. 420327.502  
Client Reference: 09382,039.02

Dear Mr. Leland:

Enclosed is the report of laboratory analyses for samples received March 27, 1992.

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

Sincerely,



Carol Reid  
Project Manager

Enclosures

Mr. David Leland  
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April 10, 1992  
 PACE Project Number: 42032750

Client Reference: 09382,039.02

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

70 0061300  
 03/27/92  
 03/27/92  
 92032705

*Well*  
*MW-7*

DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015)  
 PURGEABLE AROMATICS (BTXE BY EPA 8020):

	<u>Units</u>	<u>MDL</u>		<u>DATE ANALYZED</u>
			-	04/07/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	110	04/07/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/07/92
Benzene	ug/L	0.5	0.6	04/07/92
Toluene	ug/L	0.5	ND	04/07/92
Ethylbenzene	ug/L	0.5	1.0	04/07/92
Xylenes, Total	ug/L	0.5	2.0	04/07/92

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



Mr. David Leland  
 Page 3

April 10, 1992  
 PACE Project Number: 42032750

Client Reference: 09382,039.02

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

70 0061288  
 03/27/92  
 03/27/92  
 92032703

*Well  
 MW-18*

Units      MDL      DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE AROMATIC COMPOUNDS, EPA 8020

Parameter	Units	MDL	MDL	DATE ANALYZED
Benzene	ug/L	0.5	1.6	04/08/92
Toluene	ug/L	0.5	ND	04/08/92
Ethylbenzene	ug/L	0.5	ND	04/08/92
Xylenes, Total	ug/L	0.5	ND	04/08/92

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

Harding Lawson Associates  
 200 Rush Landing Road  
 Novato, CA 94945

April 10, 1992  
 PACE Project Number: 42032750

Attn: Mr. David Leland

Client Reference: 09382,039.02

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

70 0061261  
 03/27/92  
 03/27/92  
 92032701

*Well  
 MW-19*

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
<b>ORGANIC ANALYSIS</b>			
<b>PURGEABLE FUELS AND AROMATICS</b>			
<b>TOTAL FUEL HYDROCARBONS, (LIGHT):</b>			
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	500	3600
<b>PURGEABLE AROMATICS (BTXE BY EPA 8020):</b>			
Benzene	ug/L	5.0	340
Toluene	ug/L	5.0	130
Ethylbenzene	ug/L	5.0	120
Xylenes, Total	ug/L	5.0	340

MDL Method Detection Limit

Mr. David Leland  
 Page 2

April 10, 1992  
 PACE Project Number: 42032750

Client Reference: 09382,039.02

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

70 0061270  
 03/27/92  
 03/27/92  
 92032702

*Well  
 MW-23*

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
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ORGANIC ANALYSIS

PURGEABLE AROMATIC COMPOUNDS, EPA 8020

Benzene	ug/L	0.5	5.6	04/07/92
Toluene	ug/L	0.5	6.4	04/07/92
Ethylbenzene	ug/L	0.5	1.6	04/07/92
Xylenes, Total	ug/L	0.5	8.2	04/07/92

MDL Method Detection Limit

Mr. David Leland  
 Page 4

April 10, 1992  
 PACE Project Number: 420327502

Client Reference: 09382,039.02

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

70 0061296  
 03/27/92  
 03/27/92  
 92032704

*Field  
 Blank*

Units                      MDL                      DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE FUELS AND AROMATICS

TOTAL FUEL HYDROCARBONS, (LIGHT):

PURGEABLE AROMATICS (BTXE BY EPA 8020):

			-	04/07/92
			-	04/07/92
Benzene	ug/L	0.5	ND	04/07/92
Toluene	ug/L	0.5	ND	04/07/92
Ethylbenzene	ug/L	0.5	ND	04/07/92
Xylenes, Total	ug/L	0.5	ND	04/07/92

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

Mr. David Leland  
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QUALITY CONTROL DATA

April 10, 1992  
 PACE Project Number: 420327502

Client Reference: 09382,039.02

TPH GASOLINE/BTEX  
 Batch: 70 11351  
 Samples: 70 0061270, 70 0061300

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	Dup1 Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	354	109%	110%	0%
Benzene	ug/L	0.5	40.0	110%	106%	3%
Toluene	ug/L	0.5	40.0	110%	105%	4%
Ethylbenzene	ug/L	0.5	40.0	110%	106%	3%
Xylenes, Total	ug/L	0.5	80.0	110%	106%	3%

MDL Method Detection Limit  
 RPD Relative Percent Difference

Mr. David Leland  
 Page 7

QUALITY CONTROL DATA

April 10, 1992  
 PACE Project Number: 420327502

Client Reference: 09382,039.02

TPH GASOLINE/BTEX  
 Batch: 70 11352  
 Samples: 70 0061296

**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	349	109%	109%	0%
Benzene	ug/L	0.5	40.0	97%	100%	3%
Toluene	ug/L	0.5	40.0	97%	101%	4%
Ethylbenzene	ug/L	0.5	40.0	98%	100%	2%
Xylenes, Total	ug/L	0.5	80.0	97%	100%	3%

MDL Method Detection Limit  
 RPD Relative Percent Difference

**REPORT OF LABORATORY ANALYSIS**

Mr. David Leland  
 Page 8

QUALITY CONTROL DATA

April 10, 1992  
 PACE Project Number: 420327502

Client Reference: 09382,039.02

TPH GASOLINE/BTEX  
 Batch: 70 11392  
 Samples: 70 0061261, 70 0061288

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	Dup1 Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	354	108%	105%	2%
Benzene	ug/L	0.5	40.0	108%	109%	0%
Toluene	ug/L	0.5	40.0	110%	108%	1%
Ethylbenzene	ug/L	0.5	40.0	109%	108%	0%
Xylenes, Total	ug/L	0.5	80.0	110%	109%	0%

MDL Method Detection Limit  
 RPD Relative Percent Difference



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7655 Redwood Boulevard  
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Novato, California 94948  
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# CHAIN OF CUSTODY FORM

Lab: Page

Job Number: 09382, 039.02

Name/Location: P. R. P

Project Manager: Dave Leland

Samplers: David MEVANS

Recorder: David MEVANS  
(Signature Required)

## ANALYSIS REQUESTED

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>	#	#	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X							3		92	03	270	192	03	270	510	6126.1
23	X							3		92	03	270	272	03	270	525	27.0
23	X							3		92	03	270	392	03	270	555	28.8
23	X				2					92	03	270	492	03	270	610	29.6
23	X							3		92	03	270	592	03	270	620	30.0

EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	gasoline
	BTEX					
X	X				X	
X	X					
X	X					
X	X					
X					X	

5/1

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

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>David Mevans</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 Mevans</u>	DATE/TIME <u>7/27/92 0755</u>	RECEIVED FOR LAB BY: (Signature) <u>J. Nut</u>
METHOD OF SHIPMENT <u>Hand delivered</u>		



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MARCH 1992  
CHINATOWN REDEVELOPMENT PROJECT AREA  
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QUALITY CONTROL REVIEWER



R. Bruce Scheibach  
Registered Geologist - 5062