



September 25, 1996

Mr. Jeffrey A. Hirsch
Assistant Vice President and Asset Manager
Wells Fargo Trust
Asset Management Division
Trust Real Estate Department
P.O. Box 63939
San Francisco, CA 94163

STD
4852

RE: Groundwater Monitoring Report
Blumert Trust, 490 43rd Street, Oakland, California
ACC Project No. 6305-1.1

Dear Mr. Hirsch:

The enclosed report summarizes results of groundwater monitoring at the above referenced site performed by ACC Environmental Consultants, Inc., (ACC) on September 3, 1996. Sample analytical results indicate that minor concentrations of gasoline constituents and mineral spirits occur in groundwater at the site in the vicinity of the former underground storage tanks. Concentrations have generally decreased since May 1996.

ACC recommends that a copy of this report be submitted to the Alameda County Health Care Services Agency, Department of Environmental Health, in a timely manner.

Mr. Dale Klettke
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

If you have any comments regarding this report, please call me.

Sincerely,

David R. DeMent, RG
Senior Geologist

/DRD.mcr

Enclosure

cc: Mr. Kenneth Cheitlin, McShane, Schnack & Cheitlin

ENVIRONMENTAL
PROTECTION
96 OCT 10 PM 3:28

GROUNDWATER MONITORING REPORT

**490 43rd Street
Oakland, California**

ACC Project No. 6305-1.1

Prepared for:

Mr. Jeffrey A. Hirsch
Wells Fargo Trust
525 Market Street, 18th Floor
San Francisco, California

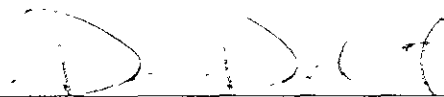
September 25, 1996

Prepared by:



Misty C. Kaltreider
Project Geologist

Reviewed by:



David R. DeMent, RG
Senior Geologist

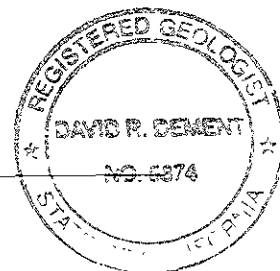


TABLE OF CONTENTS

	Page
1.0 INTRODUCTION	1
2.0 BACKGROUND	1
3.0 GROUNDWATER MONITORING AND SAMPLING	2
3.1 Groundwater Monitoring	2
3.2 Groundwater Gradient	3
3.3 Groundwater Sampling	4
4.0 RESULTS OF GROUNDWATER MONITORING	5
5.0 DISCUSSION	6
5.1 Analytical Results and Laboratory Procedures	7
6.0 CONCLUSIONS	8
7.0 RECOMMENDATIONS	8
8.0 REFERENCES	9

TABLES

1 - Groundwater Gradient and Flow Direction.....	3
2 - Groundwater Monitoring Data	3
3 - Groundwater Analytical Results	5

FIGURES

- 1 - Location Map
- 2 - Site Plan
- 3 - Gradient Map (September 3, 1996)

APPENDICES

- 1 - Well Monitoring Worksheet
- 2 - Analytical Results and Chain of Custody Record
- 3 - Letter from Chromalab, Inc.

GROUNDWATER MONITORING REPORT

490 43rd Street
Oakland, California

1.0 INTRODUCTION

Groundwater monitoring and sampling was conducted by ACC Environmental Consultants, Inc., (ACC) for Wells Fargo Trust on behalf of the Blumert Trust, 490 43rd Street, Oakland, California (Figure 1). Groundwater monitoring and sampling was conducted at the request of the Alameda County Health Care Services Agency, Department of Environmental Health (ACHCSA) for additional site investigation and delineation of impacted groundwater.

The purpose of the work was to monitor groundwater flow direction and gradient and evaluate the presence of petroleum hydrocarbons in the local groundwater associated with former gasoline and paint thinner (mineral spirit) underground storage tanks (USTs). The locations of the groundwater monitoring wells and pertinent site features are illustrated on Figure 2.

2.0 BACKGROUND

The site is located at the northeastern corner of Telegraph Avenue and 43rd Street, Oakland, California (Figure 2). The property is relatively flat, at an elevation of approximately 90 feet above mean sea level (MSL). The predominant groundwater flow direction is to the south-southwest.

The facility formerly operated one 1,000-gallon gasoline UST and one 350-gallon mineral spirit UST, which were removed on December 11, 1991 (Figure 2). Laboratory analysis of soil samples collected underneath the gasoline tank indicated concentrations up to 220 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg) and minor concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX). Laboratory analysis of soil samples collected underneath the mineral spirit tank indicated concentrations up to 25 ppm mineral spirits. Groundwater was observed in the excavation at a depth of approximately 12.5 feet below ground surface (bgs). The tank pit, which contained both former USTs, was overexcavated on March 31, 1992, to remove additional impacted soil. Laboratory analysis of soil samples collected from excavation sidewalls indicated concentrations up to 720 ppm TPHg, 30 ppm BTEX constituents, and 190 ppm mineral spirits.

Three groundwater monitoring wells were installed on April 12, 1993, by Kaprealian Engineering, Inc., (KEI) and have been monitored periodically since that time. Gradient has been calculated at approximately 0.01 foot/foot and flow direction has consistently been to the south-southwest. Groundwater samples collected from the three groundwater monitoring wells have indicated elevated TPHg and mineral spirit concentrations.

On June 1, 1994, KEI drilled exploratory soil borings EB1 and EB2 (Figure 2). Concentrations of TPHg and mineral spirits were detected in soil samples collected from boring EB2 at a depth of 10 to 12 feet bgs. Grab groundwater samples from borings EB1 and EB2 indicated concentrations of TPHg at 3.400 parts per billion (ppb) and 9.200 ppb, respectively, and mineral spirits at 7,000 ppb

and 3,700 ppb, respectively. Sieve analysis of saturated soil at the site determined the soil should be classified as silty sand (SM).

To further evaluate the extent of hydrocarbon impact to soil and groundwater, ACC performed an exploratory boring investigation in April 1996. ACC drilled two exploratory soil borings (SB1 and SB2) to characterize soil conditions in the immediate vicinity of the former tank excavation and six additional exploratory borings (B3 through B8) upgradient and downgradient of the former USTs to characterize groundwater in the general vicinity of the former tank excavation (Figure 2). Concentrations of mineral spirits were detected in sample SB1-9.0 at 52 ppm and in sample SB2-9.0 at 78 ppm. Grab groundwater samples were collected from borings B3 through B8 and analyzed for TPHg, BTEX, and mineral spirits. Concentrations of TPHg ranged from nondetectable in samples collected from borings B3 and B8 to 46,000 ppb in boring B6. Concentrations of mineral spirits ranged from nondetectable in samples collected from borings B3 and B8 to 16,000 ppb in boring B7. Petroleum hydrocarbon impacts to shallow groundwater were not fully delineated, but concentrations of TPHg and mineral spirits appear to have migrated preferentially along utility trench lines. General aquifer quality appears to be poor, and subsurface groundwater migration is believed to be minimal based on soil type, flat hydraulic gradient, and minimal surface water infiltration.

ACC arranged a meeting between the responsible parties and ACHCSA on August 29, 1996. As a result of the meeting, well sampling protocol was modified to include dissolved oxygen measurements in the wells using a flow cell, and during the next sampling event, duplicate water samples would be analyzed at both Sequoia Analytical (Sequoia) in Walnut Creek, California, and Chromalab, Inc., (Chromalab) in Pleasanton, California. ACHCSA would evaluate the September sampling results to determine future monitoring or subsurface investigation requirements at the site.

3.0 GROUNDWATER MONITORING AND SAMPLING

ACC monitored and sampled wells MW-1 through MW-3 on September 3, 1996. This sampling event was performed primarily to attempt to confirm previous decreases in TPHg and mineral spirit concentrations reported in May 1996. Work at the site included measuring depth to water, subjectively evaluating groundwater in the wells, and purging and sampling the wells for laboratory analysis.

3.1 Groundwater Monitoring

Before groundwater sampling, the depth to the surface of the water table was measured from the top of the well casing using a Solinst water level meter. The water level measurements were recorded to the nearest 0.01 foot with respect to MSL. Groundwater monitoring data obtained at the site is included as Appendix 1

3.2 Groundwater Gradient

The groundwater flow direction as determined from monitoring well data collected on September 3, 1996, is illustrated on Figure 3. Based on groundwater elevation calculations, groundwater flow is predominantly toward the southeast at an average gradient of 0.012 foot/foot. Historic groundwater gradient at the site is summarized in Table 1.

TABLE 1 - GROUNDWATER GRADIENT AND FLOW DIRECTION

Date Monitored	Average Gradient (foot/foot)	Direction
04/14/94	0.007	south
05/23/94	0.008	south
06/16/94	0.007	south
04/12/95	0.010	south-southwest
05/10/95	0.011	south-southwest
06/28/95	0.010	south-southwest
12/05/95	0.020	south-southwest
05/30/96	0.014	southwest
09/03/96	0.012	southeast

Information regarding well elevations and groundwater levels is summarized in Table 2.

TABLE 2 - GROUNDWATER MONITORING DATA

Well Number	Date	Depth to Water*	Groundwater Elevation
MW-1 (91.02')	04/14/94	11.19	79.83
	05/23/94	10.75	80.27
	06/16/94	11.72	79.30
	04/12/95	9.72	81.31
	05/10/95	10.11	80.91
	06/28/95	10.91	80.11
	12/05/95	12.21	78.81
	05/30/96	10.23	80.79
	09.03.96	12.10	78.92

Well Number	Date	Depth to Water*	Groundwater Elevation
MW-2 (90.55')	04/14/94	10.95	79.60
	05/23/94	10.52	80.03
	06/16/94	11.49	79.06
	04/12/95	9.59	80.96
	05/10/95	10.00	80.55
	06/28/95	10.95	79.60
	12/05/95	12.34	78.21
	05/30/96	10.01	80.54
	09/03/96	11.87	78.68
MW-3 (90.90')	04/14/94	11.23	79.67
	05/23/94	10.74	80.16
	06/16/94	11.81	79.09
	04/12/95	9.72	81.18
	05/10/95	10.16	80.74
	06/28/95	10.99	79.91
	12/05/95	12.39	78.51
	05/30/96	9.97	80.93
	09/03/96	12.40	78.50

Notes: * Depth to water measured in feet below top of casing
(91.02') = Surveyed elevations to the top of the well casing

3.3 Groundwater Sampling

Prior to groundwater sampling, each well was purged using a disposable polyethylene bailer and dissolved oxygen concentration was measured using a Horiba U-10™ in a continuous flow cell. The factory calibrated Horiba U-10™ was used to measure pH, conductivity, temperature, salinity, and turbidity. When temperature, pH, and conductivity of the water stabilized and a minimum of four well casing volumes of water had been removed, groundwater samples were collected. Following purging, each well was allowed to recharge before sampling.

Wells were sampled using a new, disposable polyethylene bailer attached to new string. From each monitoring well, laboratory supplied sample vials and bottles were filled to overflowing and sealed so that no air was trapped in the vial or bottle. Once filled, vials were inverted and tapped to test for air bubbles. Sample containers were labeled with self-adhesive, pre-printed tags. All samples were stored in pre-chilled, insulated containers pending delivery to a state-certified laboratory for analysis. Duplicate water samples were collected in wells MW-2 and MW-3.

Water purged during the development and sampling of the monitoring wells was temporarily stored on site in Department of Transportation approved 55-gallon drums pending receipt of laboratory analytical results and proper disposal

4.0 RESULTS OF GROUNDWATER SAMPLING

Groundwater samples collected from groundwater monitoring wells MW-1 through MW-3 were submitted to Chromalab in Pleasanton, California, following chain of custody protocol and duplicate groundwater samples collected from monitoring wells MW-2 and MW-3 were submitted to Sequoia, in Walnut Creek, California, following chain of custody protocol. Groundwater samples collected from the wells were analyzed for TPHg and mineral spirits using EPA Method 8015 Modified, and BTEX and methyl tertiary butyl ether (MTBE) using EPA Method 8020. Dissolved oxygen values consistently ranged from 0.40 to 0.70 ppm in the three wells. A copy of the chain of custody record and laboratory analytical reports is included as Appendix 2. Groundwater sample analytical results are summarized in Table 3.

TABLE 3 - GROUNDWATER SAMPLE ANALYTICAL RESULTS

Well / Date	Mineral Spirits	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-1							
04/29/93	600	290	31	1.9	2.7	5.4	--
12/13/93	820	1,700	170	22	19	48	--
03/15/94	1,200	2,100	250	12	27	38	--
06/16/94	430	700	35	6.8	8.7	10	--
09/13/94	73	170	6.6	1.6	2.4	3.3	--
12/08/94	170	420	16	3.0	2.9	2.7	--
03/14/95	65	630	39	ND	7.0	8.6	--
06/28/95	130	720	100	7.8	23	32	--
10/13/95	900	290	8.6	0.55	2.8	1.4	--
12/05/95	70	94	5.6	ND	0.67	0.53	--
05/30/96	< 50	1,700 ⁽¹⁾	62	< 0.5	16	18	< 5
09/03/96	< 50	570	1.8	0.61	8.5	7.3	< 5
MW-2							
04/29/93	4,100	11,000	2,400	51	76	160	--
12/13/93	2,600	11,000	1,400	66	150	94	--
06/16/94	11,000	18,000	2,100	ND	200	70	--
09/13/94	5,400	12,000	1,400	50	200	89	--
12/08/94	3,200	11,000	1,700	34	200	86	--
03/14/95	670	14,000	1,500	41	160	66	--
06/28/95	8,700	11,000	1,700	ND	230	78	--
10/13/95	1,500	9,400	1,200	41	200	61	--
12/05/95	24,000	150,000	890	200	720	500	--
05/30/96	< 50	10,000	61	5.1	28	11	< 5 ⁽²⁾
09/03/96	< 50	7,400	960	19	130	37	< 100 ⁽²⁾
09/03/96 ⁽³⁾	2,800	7,800	1,400	< 0.5	210	91	300

Well / Date	Mineral Spirits	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-3							
04/29/93	5,800	8,500	840	17	40	42	--
12/13/93	3,500	6,200	580	120	65	120	--
06/16/94	4,700	7,700	910	ND	86	50	--
09/13/94	8,700	6,800	430	14	45	37	--
12/08/94	2,100	1,500	820	ND	52	28	--
03/14/95	480	5,600	250	11	25	30	--
06/28/95	2,100	14,000	650	18	70	54	--
10/13/95	430	2,500	270	1.9	15	10	--
12/05/95	5,400	4,200	250	ND	26	ND	--
05/30/96	< 50	5,300 ⁽¹⁾	65	1.5	9.0	5.1	< 5 ⁽²⁾
09/03/96	< 50	8,900	460	17	51	77	< 25 ⁽²⁾
09/03/96 ⁽³⁾	7,100	4,800	800	14	39	39	120

Notes: All water results are reported in µg/L = ppb
 < = Not detected at laboratory reporting limit indicated (see analytical report)
 -- = Analysis not performed
 (1) Value revised by Chromalab from May 1996, submission 9605835
 (2) Confirmed by gas chromatography/mass spectrometry (GC/MS)
 (3) Duplicate sample analysis by Sequoia

5.0 DISCUSSION

Groundwater elevation fluctuated in each well since May 1996. Groundwater elevation decreased in wells MW-1 and MW-2, 1.87 and 1.86 feet, respectively. Groundwater elevation in well MW-3 decreased 2.43 feet since the last monitoring event. These fluctuations in groundwater elevation, groundwater flow direction, and the lack of any correspondence between groundwater elevation and the concentrations of dissolved constituents in groundwater, can be interpreted as evidence to the general lack of permeability and continuity in the saturated soils adjacent to the former USTs.

Following the approved sampling protocol, all three groundwater monitoring wells were monitored and sampled. Using TPHg values recently revised by Chromalab for May 1996, the September 3, 1996, sampling event indicates that the concentrations of TPHg decreased approximately 66% in well MW-1, decreased approximately 25% in well MW-2, and increased approximately 68% in well MW-3 according to results reported by Chromalab. Benzene decreased approximately 1,600% in well MW-1 but increased 1,500% in well MW-2 and 700% in well MW-3.

Groundwater gradient was calculated at approximately 0.012 foot/foot and flow direction was southeast on September 3, 1996 (Figure 3). Previous flow direction had been predominantly south-southwest, but based on the close proximity of the monitoring wells and the non-uniform elevation changes measured in the wells, fluctuations in gradient and flow direction should be anticipated and may not reflect regional trends.

Based on previous site investigation and groundwater monitoring and sampling performed in May and September 1996, ACC believes that the attenuation of petroleum hydrocarbons is low. Support for this conclusion can be inferred from previous sample analytical results and correspondence of the petroleum hydrocarbon concentrations with flow direction or groundwater elevation. These inferences include: 1) concentrations of TPHg and BTEX remained fairly consistent in all three monitoring wells (April 1993 to October 1995) with no appreciable degradation with time; 2) fluctuations in petroleum hydrocarbon concentrations correspond with changes in flow direction (e.g., flow direction fluctuated to the southeast and concentrations decreased in well MW-2 and increased in MW-3); and 3) concentrations of petroleum hydrocarbons do not correspond with fluctuations in groundwater elevation, which is normally observed at sites with similar hydrogeology.

5.1 Analytical Results and Laboratory Procedures

When Chromalab analyzed the monitoring well samples in May 1996 and reported large decreases in the concentrations of dissolved-phase petroleum hydrocarbons, these results and previous analytical results became suspect. To verify the May sampling event and previously reported petroleum hydrocarbon values, ACC collected duplicate water samples from wells MW-2 and MW-3 for analysis by Chromalab and Sequoia with the identical message on the chain of custody record that the samples contained a mixture of gasoline and mineral spirits and the laboratory should take all appropriate precautions.

ACC discussed the analytical results in detail with Mr. Gary Cook, Chromalab, and Mr. Allen Kemp, Sequoia. ACC is satisfied the laboratory analytical results reported by Chromalab are more representative of groundwater conditions. Both laboratories use standard methods for the constituents involved but they report overlapping hydrocarbons detected with the two 8015M methods differently. Gasoline constituents and mineral spirits overlap on a chromatogram: gasoline predominantly contains hydrocarbon chains from C⁴ to C¹³ and mineral spirits predominantly contain hydrocarbon chains from C⁸ to C¹³. To avoid "double counting," Chromalab compares the sample gasoline chromatogram to a gasoline standard chromatogram and the sample mineral spirit chromatogram to a mineral spirit standard chromatogram. The majority of the petroleum hydrocarbons are a closer match to gasoline than to mineral spirits. Sequoia's standard policy is to report concentrations in the appropriate range by comparison to gasoline and mineral spirits regardless of chromatogram overlap. Chromalab's policy is to report the petroleum hydrocarbon in a mixture such as that found at the subject site as the constituent it matches best. In doing so, Chromalab's policy better accounts for the total amount of material present and avoids "double counting" constituents in the C⁸ to C¹³ range.

Based on the chromatograms and analytical results of the September samples, Chromalab revised its May 1996 analytical report, which originally applied this policy but reported all the constituents as mineral spirits. Based on conversations with Mr. Cook and Mr. Kemp, ACC believes 1) "double counting" of petroleum hydrocarbons in the C⁸ to C¹³ range occurred in previous sampling events; and 2) accurately calculating the relative percentages of TPHg and mineral spirits in the same carbon chain range is impossible using standard EPA Method 8015M.

MTBE analysis was also performed by both laboratories. Sequoia reported 300 ppb MTBE in the sample from well MW-2 and 120 ppb in well MW-3 in September 1996. Chromalab observed a suspect MTBE peak on the BTEX chromatogram from well MW-2, which could have been quantified as 222 ppb MTBE. However, Chromalab's policy is to confirm MTBE using EPA Method 8240 (GC/MS), which confirmed that the spike is of another component and not MTBE; therefore, no reportable MTBE was present in any of the three water samples. Sequoia only performs this confirmation upon request and at an additional charge.

A letter explaining Chromalab's policy and its rationale in reporting analytical results from this site is attached as Appendix 3. ACC's evaluations are based on Chromalab's analytical results.

6.0 CONCLUSIONS

Based on results of 11 consecutive sampling events and ACC's second sampling and monitoring event, we have made the following conclusions:

- Groundwater samples from monitoring wells MW-1 through MW-3 are highly representative of groundwater conditions in the vicinity of the former USTs due to proximity of the wells to the former UST excavation; however, this proximity may be indicative of a single area of impacted groundwater or "plume" being sampled three times;
- Dissolved petroleum hydrocarbons as gasoline and mineral spirits continue to be detected in groundwater in the immediate vicinity of wells MW-1 through MW-3; however, concentrations of mineral spirits are thought to be low and difficult to quantify; MTBE was not detected in any of the wells;
- Downgradient extent of groundwater impacted by TPHg and mineral spirits is unknown;
- Dissolved oxygen levels are extremely low in the three existing groundwater monitoring wells, which could indicate it is being utilized by natural bioremedial processes;
- Flow direction shifted approximately 80 degrees to the southeast with no appreciable change in gradient; and
- Concentrations of dissolved constituents continue to fluctuate but have demonstrated an overall decrease in wells MW-2 and MW-3; petroleum hydrocarbon impacts to groundwater appears to be slowly declining through natural bioremedial processes.

7.0 RECOMMENDATIONS

Since groundwater monitoring and sampling data have been collected quarterly since April 1993, seasonal trends have been characterized, decreasing trends in concentrations of constituents of

concern have been documented, and previous analytical results for the constituents of concern have been overstated. Therefore, ACC recommends the following:

- Continue groundwater monitoring in wells MW-1 through MW-3 biannually for 1 year, beginning immediately, and evaluate groundwater monitoring results at that time;
- Install one groundwater monitoring well for the purpose of evaluating downgradient extent of the constituents of concern;
- Cooperate with the groundwater investigation being proposed at 489 43rd Street for mutual benefit and to avoid any duplication of effort;
- Analyze future groundwater samples from wells MW-1 through MW-3 at Chromalab to more accurately evaluate groundwater conditions at the site; and
- Evaluate options to artificially introduce dissolved oxygen into shallow groundwater to assist natural bioremediation processes in a manner that will not prove detrimental to the role of the existing groundwater monitoring wells in evaluating groundwater conditions.

The next sampling event is tentatively scheduled for March 1997. ACC requests that ACHCSA approve these recommendations in writing, or provide a rationale why it is inappropriate to implement them at this time.

8.0 REFERENCES

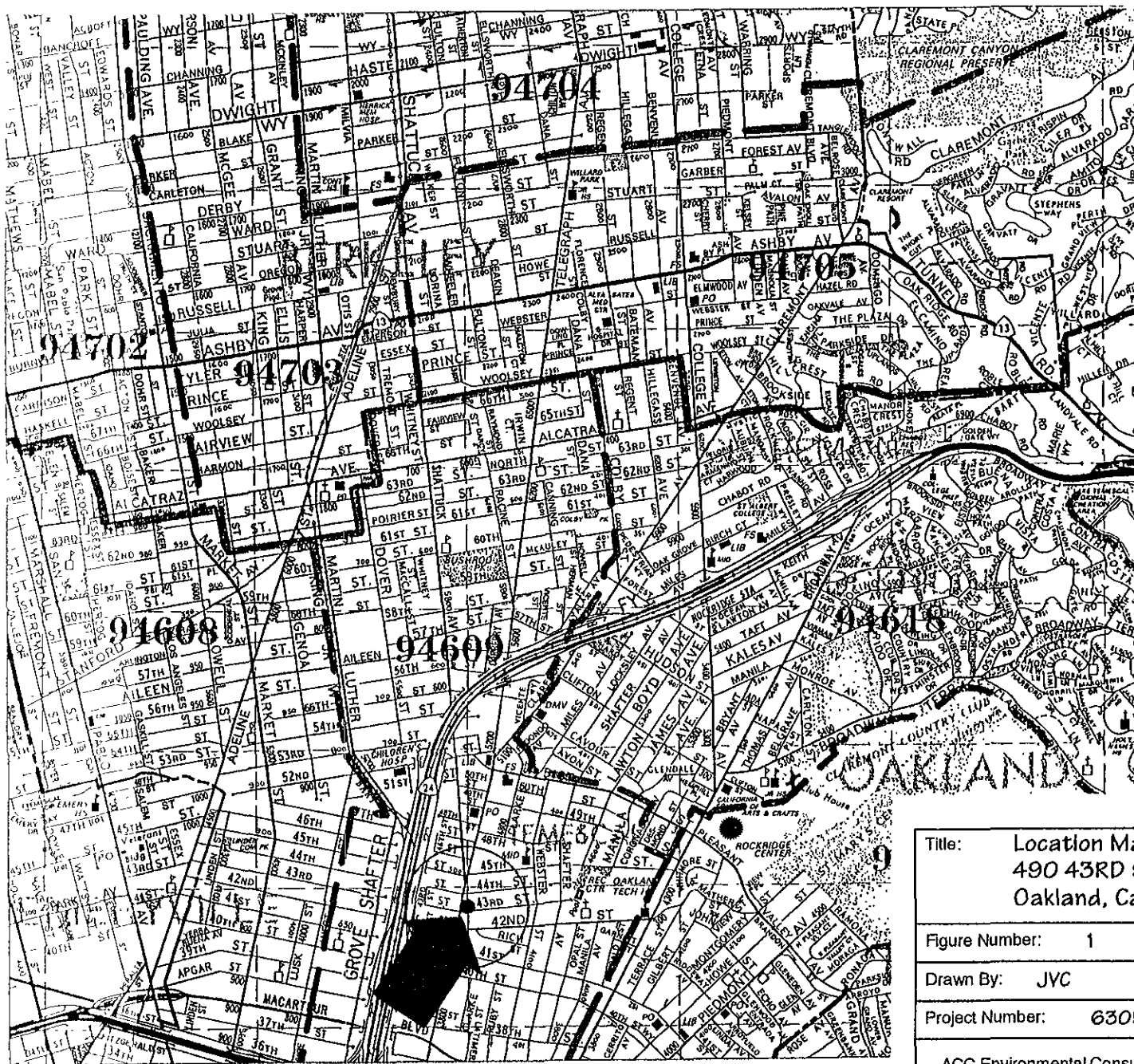
ACC Environmental Consultants, Inc. May 23, 1996. *Additional Site Investigation Report, 490 43rd Street, Oakland, CA*. Prepared for Wells Fargo Trust on behalf of the Blumert Trust.

Kaprealian Engineering, Inc. January 18, 1996. *Quarterly Report, Walter Blumert Co., Inc., 490 43rd Street, Oakland, California*. Prepared for Wells Fargo Bank.

Kaprealian Engineering, Inc. July 27, 1996. *Quarterly Report, Walter Blumert Co., Inc., 490 43rd Street, Oakland, California*. Prepared for Wells Fargo Bank.

Kaprealian Engineering, Inc. July 20, 1994. *Continuing Subsurface Investigation and Quarterly Report, Walter Blumert Co., Inc., 490 43rd Street, Oakland, California*. Prepared for Wells Fargo Bank.

California Regional Water Quality Control Board, San Francisco Bay Region. January 5, 1996. *Memorandum to: San Francisco Bay Area Agencies Overseeing UST Cleanup and Other Interested Parties*. Prepared by Mr. Kevin Graves, P.E.

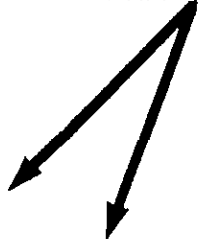


SOURCE: THOMAS BROTHERS GUIDE

Title: Location Map 490 43RD Street Oakland, California	
Figure Number: 1	Scale:
Drawn By: JVC	Date: 12/19/95
Project Number: 6305-1.1	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	

TELEGRAPH AVENUE

Approximate Groundwater Flow Direction



EXISTING BUILDING

LOADING DOCK

EQUIPMENT STORAGE

ASPHALT SURFACE

EXISTING BUILDING

EXISTING FENCE

Storm Sewer

Former Excavation Boundary

SIDEWALK

6" Water Line

43RD STREET

Gas Line

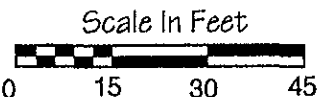
Storm Sewer

Former 1,000-Gallon Gasoline UST (489 43rd Street)

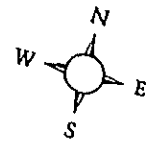
Former 350-Gallon Paint Thinner UST

Legend

- MW 2 Existing Groundwater Monitoring Well
- B4 ACC Soil Boring Location (April 16, 1996)
- EB2 Kaprealian Engineering Boring Location
- Former Underground Storage Tank



Title: Site Plan 490 43rd Street Oakland, California	
Figure Number: 2	Scale: 1" = 30"
Drawn By: JVC	Date: 4/17/96
Project Number: 6305-1.1	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	



TELEGRAPH AVENUE

EXISTING BUILDING

LOADING DOCK

EQUIPMENT STORAGE

ASPHALT SURFACE

EXISTING FENCE

Storm Sewer

6" Water Line

43RD STREET

Gas Line

Storm Sewer

Former 1,000-Gallon Gasoline UST (489 43rd Street)

(78.92')
MW-1

MW-2
(78.68')

MW-3
(78.50')

78.9'




78.7'

78.6'

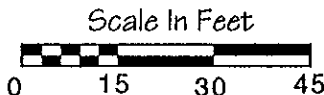
78.8'

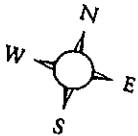
SIDEWALK

Legend

- MW-2  - Existing Groundwater Monitoring Well
-  - Calculated Groundwater Flow Direction
-  - Calculated Groundwater Elevation Contour

Groundwater Elevation Data collected on September 3, 1996



Title: Gradient Map 490 43rd Street Oakland, California	
Figure Number: 3	Scale: 1" = 30"
Drawn By: JVC	Date: 9/17/96
Project Number: 6305-1.1	
ACC Environmental Consultants 7977 Capwell Drive, Suite 100 Oakland, California 94621 (510) 638-8400 Fax: (510) 638-8404	

JOB NAME: 440 43RD ST.	PURGE METHOD: Manual Bailing & hand pump
SITE ADDRESS: 11	SAMPLED BY: Jeremy, David & Martha
JOB #: 6305-1.1	LABORATORY: Chromalabs & Seoria
DATE: 9/3/96	ANALYSIS: Gas/RTX, MTBE, to Mineral Spirits
Onsite Drum Inventory SOIL:	MONITORING <input checked="" type="checkbox"/> DEVELOPING <input type="checkbox"/>
EMPTY: WATER: 90%	SAMPLING <input checked="" type="checkbox"/>

	PURGE		HYDRA READINGS		OBSERVATIONS
	VOLUME				
WELL: MW1	(Gal)	pH	Temp. (F)	Cond. un/cm	<input type="checkbox"/> Froth
DEPTH OF BORING: 22.37	1.6	6.41	21.6	.553	<input type="checkbox"/> Sheen
DEPTH TO WATER: 12.1	3.2	6.48	20.9	.565	<input type="checkbox"/> Odor Type <u>N/A</u>
WATER COLUMN: 10.26	4.8	6.53	20.5	.527	<input type="checkbox"/> Free Product
WELL DIAMETER: 2"					Amount _____ Type <u>N/A</u>
WELL VOLUME: 1.6					<input type="checkbox"/> Other
COMMENTS: 87 Turb .02% Salinity	↓				
	6.4	6.48	20.1	.514	Sampled 15:00
WELL: MW2	(Gal)	pH	Temp. (F)	Cond. un/cm	<input type="checkbox"/> Froth
DEPTH OF BORING: 21.16	1.5	6.51	21.6	.451	<input type="checkbox"/> Sheen
DEPTH TO WATER: 11.87	3.0	6.50	21.5	.477	<input checked="" type="checkbox"/> Odor Type <u>N/A</u>
WATER COLUMN: 9.23	4.5	6.58	20.7	.544	<input type="checkbox"/> Free Product
WELL DIAMETER: 2"					Amount _____ Type <u>N/A</u>
WELL VOLUME: 1.5					<input type="checkbox"/> Other
COMMENTS: 62 Turb .02% Salinity	↓				
	6.0	6.57	20.6	.573	Sampled 15:00
WELL: MW3	(Gal)	pH	Temp. (F)	Cond. un/cm	<input type="checkbox"/> Froth
DEPTH OF BORING: 21.51	1.5	6.43	21.0	.676	<input type="checkbox"/> Sheen
DEPTH TO WATER: 12.40	3.0	6.47	20.9	.687	<input checked="" type="checkbox"/> Odor Type <u>N/A</u>
WATER COLUMN: 9.11	4.5	6.47	20.7	.678	<input type="checkbox"/> Free Product
WELL DIAMETER: 2"					Amount _____ Type <u>N/A</u>
WELL VOLUME: 1.5					<input type="checkbox"/> Other
COMMENTS: 73 Turb .02% Salinity	↓				
	6.0	6.5	20.5	.673	Sampled 15:15

ANALYTICAL RESULTS AND CHAIN OF CUSTODY RECORD



**Sequoia
Analytical**

680 Chesapeake Drive
404 N. Wiget Lane
819 Stricker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

ACC Environmental Consultants 7977 Capwell Drive Suite 100 Oakland, CA 94621 Attention: Dave DeMent	Client Project ID: 490 - 43rd St., Oakland Sample Matrix: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 609-0209	Sampled: Sep 3, 1996 Received: Sep 4, 1996 Reported: Sep 11, 1996
--	--	---

QC Batch Number: GC091198 GC091196
802011A 802011A

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 609-0209 MW-2	Sample I.D. 609-0210 MW-3
Purgeable Hydrocarbons	50	7,800	4,800
Benzene	0.50	1,400	800
Toluene	0.50	N.D.	14
Ethyl Benzene	0.50	210	78
Total Xylenes	0.50	91	39
MTBE:	2.5	300	120
Chromatogram Pattern:		Gasoline	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	100	20
Date Analyzed:	9/11/98	9/11/96
Instrument Identification:	HP-11	HP-11
Surrogate Recovery, %: (QC Limits = 70-130%)	118	136

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271


Jimmy Bava
Project Manager

6090209.A0E <1>





**Sequoia
Analytical**

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233
 404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673
 819 Sorfker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

ACC Environmental Consultants 7977 Capwell Drive Suite 100 Oakland, CA 94621 Attention: Dave DeMent	Client Project ID: 490 - 43rd St., Oakland Sample Matrix: Water Analysis Method: EPA 3510/8015 Mod. First Sample #: 609-0209	Sampled: Sep 3, 1996 Received: Sep 4, 1996 Reported: Sep 11, 1996
--	---	---

QC Batch Number: SF090696 SP090696

8015EXA 8015EXA

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS AS MINERAL SPIRITS

Analyte	Reporting Limit µg/L	Sample I.D. 609-0209	Sample I.D. 609-0210
---------	-------------------------	-------------------------	-------------------------

Extractable Hydrocarbons	50	2,800	7,100
--------------------------	----	-------	-------

Chromatogram Pattern:	Paint Thinner	Paint Thinner
-----------------------	---------------	---------------

Quality Control Data

Report Limit Multiplication Factor:	1.0	10
Date Extracted:	9/6/96	9/6/96
Date Analyzed:	9/6/96	9/9/96
Instrument Identification:	HP-3A	HP-3A

Extractable Hydrocarbons are quantitated against a fresh mineral spirit standard.
 Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL #1271

Jim Bava
 Jim Bava
 Project Manager

6090209 ACE <2>





SEQUOIA ANALYTICAL CHAIN OF CUSTODY

680 Chesapeake Drive • Redwood City, CA 94063 • (415) 364-9600 FAX (415) 364-9233
 819 West Striker Ave. • Sacramento, CA 95834 • (916) 921-9600 FAX (916) 921-0100
 1900 Bates Ave., Suite LM • Concord, CA 94520 • (510) 686-9600 FAX (510) 686-9689

000048

Company Name: ACC Environmental Consultants Project Name: 490 43rd Street, Oakland, CA
 Address: 7977 Capwell Drive Billing Address (if different):
 City: Oakland State: CA Zip Code: 94621
 Telephone: (510) 638-8400 FAX#: 638-8404 P.O. #: 6305-1.1
 Report To: D. Delmont Sampler: D. Delmont QC Data: Level A (Standard) Level B Level C Level D

Turnaround 10 Working Days 3 Working Days 2 - 8 Hours
 Time: 7 Working Days 2 Working Days
 5 Working Days 24 Hours

Analyses Requested
 Drinking Water
 Waste Water
 Other

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Sequoia's Sample #	TPH3/BTEX	MTBE	MINERAL TERN	AS P+J8	4/9/96	Comments
1. MW2	9/3/96 15:00	Water	3	1 liter 2 VOA's		X	X	X			6090200 Samples contain
2. MW3	↓ 15:15	↓	3	1 liter 2 VOA's		X	X	X			6090210 A mineral spirit
3.											and gasoline
4.											Mix, please
5.											take all
6.											appropriate
7.											precautions
8.											
9.											
10.											

Relinquished By: [Signature] Date: 9/4/96 Time: 1445 Received By: [Signature] Date: 9/4/96 Time: 1445
 Relinquished By: [Signature] Date: 9/4/96 Time: 17:30 Received By: [Signature] Date: Time:
 Relinquished By: [Signature] Date: Time: Received By Lab: [Signature] Date: 9/6/96 Time: 17:30

SENT BY: SEQUOIA ANALYTICAL 9-11-99 15:40 WALNUT CREEK 510 83692041#4

Pink - Client
Yellow - Sequoia
White - Sequoia

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1996

Submission #: 9609030

ACC ENVIRONMENTAL CONSULTANTS

Atten: David DeMent

Project: 490 43RD STREET
Received: September 4, 1996

Project#: 6305-1.1

re: One sample for Gasoline, BTEX & MTBE analysis.
Method: EPA 5030/8015M/8020

Client Sample ID: MW 1

Spl#: 98656

Matrix: WATER

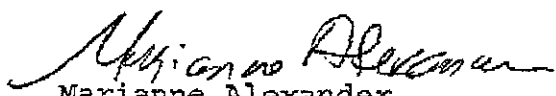
Sampled: September 3, 1996

Run#: 2994

Analyzed: September 5, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	570	50	N.D.	94.6	1
BENZENE	1.8	0.50	N.D.	90.6	1
TOLUENE	0.61	0.50	N.D.	88.2	1
ETHYL BENZENE	8.5	0.50	N.D.	89.7	1
XYLENES	7.3	0.50	N.D.	90.6	1
MTBE	N.D.	5.0	N.D.	106	1


 June Zhao
 Chemist


 Marianne Alexander
 Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDS)

September 11, 1996

Submission #: 9609030

ACC ENVIRONMENTAL CONSULTANTS

Atten: David DeMent

Project: 490 43RD STREET
Received: September 4, 1996

Project#: 6305-1.1

re: One sample for TEPH analysis.
Method: EPA METHOD 8015 (Mod)

Client Sample ID: MW 1

Spl#: 98656

Matrix: WATER

Extracted: September 6, 1996


Sampled: September 3, 1996

Run#: 3029

Analyzed: September 7, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
MINERAL SPIRITS	N.D.	50	N.D.	--	1

NOTE: Quantitation for the above Analyte is based on the response factor of Diesel.


Bruce Havlik
Chemist


Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDS)

September 11, 1996

Submission #: 9609030

ACC ENVIRONMENTAL CONSULTANTS

Atten: David DeMent

Project: 490 43RD STREET
Received: September 4, 1996

Project#: 6305-1.1

re: One sample for Gasoline, BTEX & MTBE analysis.
Method: EPA 5030/8015M/8020

Client Sample ID: MW 2

Spl#: 98657


Matrix: WATER

Sampled: September 3, 1996

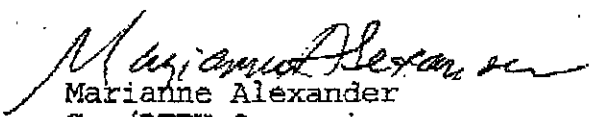
Run#: 2994

Analyzed: September 5, 1996

ANALYTE	RESULT	REPORTING	BLANK	BLANK	DILUTION
	(ug/L)	LIMIT	RESULT	SPIKE	
		(ug/L)	(ug/L)	(%)	FACTOR
GASOLINE	7400	1000	N.D.	94.6	20
BENZENE	960	10	N.D.	90.6	20
TOLUENE	19	10	N.D.	88.2	20
ETHYL BENZENE	130	10	N.D.	89.7	20
XYLENES	37	10	N.D.	90.6	20
MTBE	N.D.	100	N.D.	106	20



June Zhao
Chemist



Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1996

Submission #: 9609030

ACC ENVIRONMENTAL CONSULTANTS

Atten: David DeMent

Project: 490 43RD STREET
Received: September 4, 1996

Project#: 6305-1.1

re: One sample for TEPH analysis.
Method: EPA METHOD 8015 (Mod)

Client Sample ID: MW 2

Spl#: 98657

Matrix: WATER

Extracted: September 6, 1996

Sampled: September 3, 1996

Run#: 3029

Analyzed: September 7, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
MINERAL SPIRITS	N.D.	50	N.D.	--	1

NOTE: Quantitation for the above Analyte is based on the response factor of Diesel.

Bruce Havlik
ChemistAlex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 11, 1996

Submission #: 9609030

ACC ENVIRONMENTAL CONSULTANTS

Atten: David DeMent

Project: 490 43RD STREET
Received: September 4, 1996

Project#: 6305-1.1

re: One sample for TEPH analysis.
Method: EPA METHOD 8015 (Mod)

Client Sample ID: MW 3

Spl#: 98658

Matrix: WATER

Extracted: September 6, 1996

Sampled: September 3, 1996

Run#: 3029

Analyzed: September 7, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
MINERAL SPIRITS	N.D.	50	N.D.	--	1

NOTE: Quantitation for the above Analyte is based on the response factor of Diesel.



Bruce Havlik
Chemist



Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 24, 1996

Submission #: 9605835
REVISED FROM 06/06/96

ACC ENVIRONMENTAL CONSULTANTS

Atten: D. Dement

Project: 490 43rd St.
Received: May 30, 1996

Project #: 6305-1.1

re: Three samples for Paint Thinner analysis

Matrix: WATER	Extracted: June 3, 1996
Sampled: May 30, 1996	Analyzed: June 6, 1996
Method: EPA 3510/8015M	

Sample #	Client Sample ID	Paint Thinner ($\mu\text{g/L}$)
86643	MW-1	N.D.

Blank	N.D.
Blank Spike Recovery	79%
Reporting Limit	50

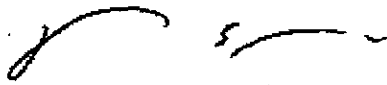
Note: Diesel was used as the spiking compound. Sample concentrations were quantified against the Diesel calibration.

Matrix: WATER	Extracted: June 5, 1996
Sampled: May 30, 1996	Analyzed: June 6, 1996
Method: EPA 3510/8015M	

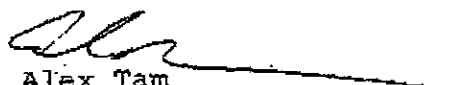
Sample #	Client Sample ID	Paint Thinner ($\mu\text{g/L}$)
86644	MW-2	N.D.
86645	MW-3	N.D.

Blank	N.D.
Blank Spike Recovery	75%
Reporting Limit	50

Note: Diesel was used as the spiking compound. Sample concentrations were quantified against the Diesel calibration.



Dennis Mayugba
Chemist



Alex Tam
Semivolatiles Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 13, 1996

Submission #: 9605835

ACC ENVIRONMENTAL CONSULTANTS

revised from 06/06/96

Atten: David DeMent

Project: 490 43RD ST.
Received: May 30, 1996

Project#: 6305-1.1


re: One sample for Gasoline, BTEX & MTBE analysis.
Method: EPA 5030/8015M/8020


Client Sample ID: MW-1
Spl#: 86643
Sampled: May 30, 1996

Matrix: WATER
Run#: 1610

Analyzed: June 5, 1996

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	1700	50	N.D.	83.2	1
BENZENE	62	0.50	N.D.	113	1
TOLUENE	N.D.	0.50	N.D.	112	1
ETHYL BENZENE	16	0.50	N.D.	108	1
XYLENES	18	0.50	N.D.	112	1
MTBE	N.D.	5.0	N.D.	92.0	1


June Zhao
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 13, 1996

Submission #: 9605835

ACC ENVIRONMENTAL CONSULTANTS

revised from 06/06/96

Atten: David DeMent

Project: 490 43RD ST.
Received: May 30, 1996

Project#: 6305-1.1

re: One sample for Gasoline, BTEX & MTBE analysis.
Method: EPA 5030/8015M/8020

Client Sample ID: MW-2

Spl#: 86644

Sampled: May 30, 1996

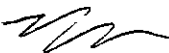
Matrix: WATER


Run#: 1610

Analyzed: June 5, 1996

<u>ANALYTE</u>	<u>RESULT</u> <u>(ug/L)</u>	<u>REPORTING</u> <u>LIMIT</u> <u>(ug/L)</u>	<u>BLANK</u> <u>RESULT</u> <u>(ug/L)</u>	<u>BLANK</u> <u>SPIKE</u> <u>(%)</u>	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	10000	50	N.D.	83.2	1
BENZENE	61	0.50	N.D.	113	1
TOLUENE	5.1	0.50	N.D.	112	1
ETHYL BENZENE	28	0.50	N.D.	108	1
XYLENES	11	0.50	N.D.	112	1
MTBE	N.D.	5.0	N.D.	92.0	1

Note: Estimated concentration for gasoline. Gasoline outside of calibration.


June Zhao
Chemist


Marianne Alexander
Gas/BTEX Supervisor

CHROMALAB, INC.

Environmental Services (SDB)

September 13, 1996

Submission #: 9605835

ACC ENVIRONMENTAL CONSULTANTS

revised from 06/06/96

Atten: David DeMent

Project: 490 43RD ST.
Received: May 30, 1996

Project#: 6305-1.1

re: One sample for Gasoline, BTEX & MTBE analysis.
Method: EPA 5030/8015M/8020


Client Sample ID: MW-3
Spl#: 86645
Sampled: May 30, 1996

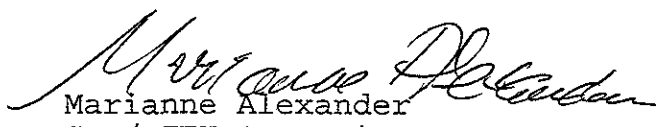
Matrix: WATER
Run#: 1610

Analyzed: June 5, 1996

<u>ANALYTE</u>	<u>RESULT</u> <u>(ug/L)</u>	<u>REPORTING</u> <u>LIMIT</u> <u>(ug/L)</u>	<u>BLANK</u> <u>RESULT</u> <u>(ug/L)</u>	<u>BLANK</u> <u>SPIKE</u> <u>(%)</u>	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	5300	50	N.D.	83.2	1
BENZENE	65	0.50	N.D.	113	1
TOLUENE	1.5	0.50	N.D.	112	1
ETHYL BENZENE	9.0	0.50	N.D.	108	1
XYLENES	5.1	0.50	N.D.	112	1
MTBE	N.D.	5.0	N.D.	92.0	1

Note: Estimated concentration for gasoline. Gasoline outside of calibration.


June Zhao
Chemist


Marianne Alexander
Gas/BTEX Supervisor

LETTER FROM CHROMALAB, INC.

CHROMALAB, INC.

FAX TRANSMISSION

Environmental Services (SDB)

containing 2 pages

From: Gary Cook, Chip Poalinelli

Date: September 16, 1996

To: Dave Dement - ACC

Fax #: 638-8404

Trouble receiving this? Call (510) 484-1919 or fax (510) 484-1096.

MESSAGE: re: Hydrocarbon testing for 490 43d St, ChromaLab Submissions 9605835 and 9609030

Thanks for the call on Thursday regarding inconsistencies between our reports from May and September samplings at the above site, and about inconsistencies between ours and Sequoia's results at that site.

Gas and Paint Thinner tests

We have reviewed our test results and found that our interpretation reported in submission 9609030 is the most accurate we can offer using these tests. In that submission, we reported gasoline in samples MW-1, MW-2, and MW-3. In these samples, we could not distinguish between gasoline and gasoline mixed with paint thinner, so we reported it all as gasoline.

Gasoline contains hydrocarbons ranging from 4 to about 13 carbons in length. The samples in samples MW-1, MW-2, and MW-3 include hydrocarbons spanning the entire range. So all three samples definitely include gasoline. Paint thinner typically spans the carbon range from 8 or 9 to 13 carbons. Our TEPH test for paint thinner spans the range from 9 to 13 carbons. Had any of the samples contained all paint thinner or mostly paint thinner with some gasoline, we would have reported the paint thinner.

Gasoline and paint thinner both have c8-c13 hydrocarbons. There is great potential to report the same material twice by the two methods. At ChromaLab, we attempt to avoid "double counting" hydrocarbon by having one or the other test report all of the material, whenever possible.

In the September report (9609030), we have done that. We have reported all of the material as gasoline, even though a substantial part of the material is in the c8 to c13 range.

In preparing the May report (9605835), our two groups discussed the test results, and decided that the TEPH results would be reported, while the Gasoline results would amount to "double counting" much of the hydrocarbon. In the light of further review, this is seen to be wrong. We are correcting it with the enclosed revised reports.

CHROMALAB, INC.

Environmental Services (SDB)

Dave Dement
ACC
September 16, 1996
page 2

Note that we're revising BOTH the gasoline and TEPH reports because by reporting all the hydrocarbon as gasoline, we should NOT report paint thinner--that would be double counting. You may note that the results change, because the most volatile gas components were not reported in the original TEPH report.

MTBE Results


In September's samples, we were asked to report MTBE as well as BTEX, by EPA 8020. This test method often falsely reports MTBE in the presence of gasoline. At ChromaLab, we confirm any positive results using EPA 8240 (GC/MS). When we did so, we found that there is no reportable amount of MTBE in these samples, and reported it as "not detected."

Comparing Hydrocarbon Results with those of Sequoia Analytical

I discussed hydrocarbon test reporting policies with Alan Kemp, Lab Director with Sequoia Analytical Lab in Walnut Creek. We discussed how our methods compare, and we agreed that the differences in reporting are probably due to differences in policies on how we report overlapping hydrocarbons by the two 8015 methods.

Please let me know if you have any questions.

Sincerely,


Chip Poalinelli
Operations Manager


Gary Cook
Director, Business Development