

April 5, 1996

Mr. Steve Chrissanthos Alameda Cellars 1709 Otis Drive Alameda, CA 94501

RE: Biannual Groundwater Monitoring

901 Lincoln Avenue, Alameda, California

ACC Job No. 6039-2b

Dear Mr. Chrissanthos:

Enclosed please find the report for the biannual groundwater monitoring for the groundwater monitoring wells associated with the ongoing subsurface investigation at the above referenced property. This work was performed in accordance with requests from Ms. Juliet Shin of the Alameda County Health Care Services Agency to document that the residual contaminants impacting the groundwater are attenuating and do not pose a human health risk.

Groundwater samples obtained from monitoring wells MW-1 and MW-4 were submitted to Chromalab, Inc., for petroleum hydrocarbon analysis, in accordance with the "Tri-Regional Guidelines for Underground Storage Tank Sites."

The results of the groundwater analysis indicated nondetectable concentrations in monitoring well MW-4. Sample analytical results from monitoring well MW-1 indicated detectable levels of total petroleum hydrocarbons as gasoline, benzene, and total xylenes.

Laboratory analytical results indicated decreased concentrations of constituents in groundwater. Overall concentrations have decreased with time indicating a degrading and/or dissipating source. Based on all previous work performed at the site to date, groundwater and soil impact appears to be isolated in the immediate vicinity around monitoring well MW-1. Based on site investigation and 3 years of groundwater monitoring conducted at this site, ACC feels that the remaining impact around the vicinity of monitoring well MW-1 will not pose a significant threat to groundwater quality in the area. Further groundwater monitoring and sampling should produce no added benefit. ACC surmises that the concentrations of hydrocarbons within the groundwater around well MW-1 will continue to degrade, and requests that the site be closed from further action and groundwater monitoring.

Mr. Chrissanthos April 5, 1996 Page 2

If you have any comments regarding this report, please call me at (510) 638-8400.

Sincerely,

Misty C. Kaltreider Project Geologist

cc: Ms. Juliet Shin, Alameda County Health Care Services Agency, Division of Hazardous

Materials



BIANNUAL GROUNDWATER MONITORING REPORT 901 Lincoln Avenue Alameda, California

ACC Job No. 94-6039-2b

Prepared for:

Mr. Steve Chrissanthos Alameda Cellars 1709 Otis Drive Alameda, CA 94501

April 1996

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Prepared by:

Misty Kaltreider Project Geologist

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Reviewed by:

David R. DeMent, RG #5874

DAVID R. DEMEN

Registered Geologist

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BIANNUAL GROUNDWATER MONITORING REPORT 901 Lincoln Avenue Alameda, California

1.0 INTRODUCTION

On behalf of Mr. Steve Chrissanthos and Alameda Cellars, ACC Environmental Consultants, Inc., (ACC) has prepared this report on biannual groundwater monitoring performed at the above referenced site (Figure 1). The purpose of the work was to evaluate changes in the groundwater direction and gradient and monitor the extent of petroleum hydrocarbons in the groundwater by obtaining samples from the existing monitoring wells.

2.0 BACKGROUND

In March 1990, two 10,000-gallon gasoline tanks and one 2,000-gallon diesel tank were removed from the site. Analysis of the soil samples collected from beneath the two gasoline tanks indicated concentrations up to 710 parts per million (ppm) of total petroleum hydrocarbons as gasoline (TPHg). Soil samples collected from beneath the diesel tank indicated nondetectable concentrations of total petroleum hydrocarbons as diesel (TPHd).

According to a request from the Alameda County Health Care Services Agency, Hazardous Materials Division (ACHCSA), a Preliminary Site Assessment was conducted to further evaluate soil contamination from the gasoline release on site. ACC was retained by Mr. Chrissanthos to perform the work requested by the ACHCSA.

On December 4, 1992, three monitoring wells were installed on site. Analytical results of soil samples collected during drilling boring MW-1 indicated concentrations of 56 ppm of TPHg and concentrations of benzene, toluene, ethylbenzene, and total xylenes (BTEX). Monitoring well MW-1 is located adjacent to the former tank excavation. Soil samples collected from the other borings indicated constituents of concern were not above reporting limits.

Initial groundwater samples collected from the on site monitoring wells on December 15, 1992, indicated below detectable levels of constituents. In February 24, 1993, ACC performed a soil investigation at the property to evaluate the lateral and vertical extent of soil contamination adjacent to monitoring well MW-1. Analytical results of soil samples collected indicated below detectable levels of petroleum hydrocarbon constituents in the soil. It was concluded that petroleum hydrocarbon impact on site is limited to soil around monitoring well MW-1.

In October 1993, monitoring well MW-4 was installed downgradient of monitoring well MW-1 on site (Figure 2). Laboratory analysis of soil samples collected during drilling indicated below detectable levels of constituents. In November 1993, laboratory analysis of groundwater samples collected from the on site monitoring wells indicated below detectable levels of constituents in monitoring wells MW-2, MW-3, and MW-4.

In December 1993, ACHCSA approved a reduction in groundwater sampling. The revised groundwater sampling and monitoring program included performing monitoring of all four wells on site and collecting groundwater samples from only monitoring wells MW-1 and MW-4 on a biannual basis. Groundwater samples collected from these wells should be analyzed for TPHg and BTEX.

In 1995, a request for site closure with no further monitoring was requested based on the continual degrading of dissolved petroleum hydrocarbon concentrations in monitoring well MW-1 and degrading concentrations since 1993. The request for closure was denied by the ACHCSA in a letter dated December 11, 1995, due to the elevated concentrations of benzene reported in monitoring well MW-1 in August 1995. The ACHCSA requested continued biannual monitoring.

3.0 GROUNDWATER MONITORING AND SAMPLING

ACC conducted biannual groundwater monitoring on February 23, 1996. Work at the site included measuring depth to water, subjectively evaluating groundwater in the wells, and purging and sampling the wells in preparation for laboratory analysis.

3.1 Groundwater Monitoring

Prior to groundwater monitoring, the depth to the surface of the water table was measured from the top of the polyvinyl chloride casing in each on site monitoring well using a Solinst water level meter. Information regarding depths of wells, well elevations and groundwater levels are summarized in Table 1.

TABLE 1 - GROUNDWATER DEPTH INFORMATION

Well No. Well Elevation	Sample Date	Depth to Groundwater (feet)	Groundwater Elevation (MSL)
MW-1	12/15/92	10.27	8.72
18.99	01/06/93	8.67	10.32
	02/09/93	6.67	12.01
	03/20/93	6.94	12.05
	04/08/93	7.25	11.74
	05/17/93	8.67	10.32
	06/23/93	9.58	9.41
	07/13/93	10.21	8.78
,	08/10/93	10.78	8.21
	09/10/93	11.21	7.78
	10/25/93	11.58	7.41
	11/12/93	11.74	7.25
	02/16/94	8.94	10.05
	03/10/94	8.71	10.32
	05/16/94	9.76	9.23
	08/29/94	11.28	7.71
	02/15/95	6.76	12.23
-	08/28/95	10.03	8.96
	02/23/96	6.81	12.18
MW-2	12/15/92	10.14	8.89
19.03	01/06/93	8.50	10.53
	02/09/93	6.66	12.37
	03/20/93	6.53	12.50
	04/08/93	6.83	12.20
	05/17/93	8.34	10.69
	06/23/93	9.36	9.67
	07/13/93	9.99	9.04
	08/10/93	10.54	8.49
	09/10/93	11.08	7.95
	10/25/93	11.41	7.62
	11/12/93	11.58	7.45
	02/16/94	8.71	10.32
	03/10/94	7.93	11.10
	05/16/94	9.58	9.45
	08/29/94	11.16	7.87
	02/15/95	6.32	12.71
	08/28/95	9.75	9.28
	02/23/96	6.37	12.66

Well No.	Sample Date	Depth to	Groundwater
Well Elevation		Groundwater (feet)	Elevation (MSL)
MW-3 19.35	12/15/92 01/06/93 02/09/93 03/20/93	10.44 8.91 7.26 7.16	8.91 10.44 12.09 12.19
	04/08/93	7.49	11.86
	05/17/93	9.01	10.34
	06/23/93	10.22	9.13
	07/13/93	10.58	8.77
	08/10/93	11.12	8.23
	09/10/93	11.68	7.67
	10/25/93	11.98	7.37
	11/12/93	12.12	7.23
	02/16/94	9.18	10.17
	03/10/94 03/10/94 05/16/94 08/29/94 02/15/95 08/28/95 02/23/96	8.32 10.28 11.77 6.87 10.27 6.93	10.17 10.83 9.07 7.58 12.50 9.08 12.42
MW-4 18.51	08/23/93; 10/25/93 11/12/93 02/16/94 03/10/94 05/16/94 08/29/94	10.27 11.43 11.59 7.80 8.36 9.66 11.11	9.08 7.08 6.92 10.71 10.15 8.85 7.40
	02/15/95	6.75	11.76
	08/28/95	9.95	8.56
	02/23/96	6.75	11.76

Notes: All measurements in feet MSL = Mean sea level

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During sampling, after water level measurements were taken, monitoring wells MW-1 and MW-4 were purged by hand using a designated, disposable polyethylene bailer for each well. Groundwater pH, temperature, and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Four well volumes were removed to purge each well. Worksheets of groundwater conditions monitored during purging are attached in Appendix 1.

3.2 Groundwater Gradient

Groundwater levels were measured from the four existing monitoring wells on February 23, 1996, and were used to calculate groundwater elevation (Figure 3). The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to MSL data. Based on groundwater elevation calculations, groundwater flow direction is toward the northwest at an average gradient of 0.009 foot/foot. The groundwater flow direction, as determined from monitoring well data, is consistent with previous sampling events. Table 2 summarizes the current and historic groundwater gradient and direction of groundwater flow on site.

TABLE 2 - HISTORICAL GROUNDWATER GRADIENT

Date Monitored	Gradient (foot/foot)	Direction
12/15/92	0.002	west-southwest
01/06/93	0.004	northwest
02/09/93	0.008	northwest
03/10/93	0.009	northwest
04/08/93	0.011	northwest
05/17/93	0.008	northwest
06/23/93	0.008	north-northwest
07/13/93	0.006	northwest
08/10/93	0.006	northwest
09/10/93	, 0.006	northwest
10/25/93	0.007	northwest
11/12/93	0.006	northwest
02/16/94	0.0F	northwest
03/10/94	0.01	northwest
05/16/94	0.016	northwest
08/29/94	0.006	northwest
02/15/95	0.009	northwest
08/23/95	0.008	northwest
02/23/96	0.009	northwest

3.3 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-1 and MW-4 on February 23, 1996. After the groundwater had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using the designated disposable polyethylene bailer. Two 40 milliliter VOA vials, without headspace, were filled from the water collected from each monitoring well to be sampled.

The samples were preserved on ice and submitted to Chromalab, Inc. under chain of custody protocol. Laboratory results with chain of custody forms are attached in Appendix 2.

4.0 RESULTS OF GROUNDWATER MONITORING

The samples were analyzed for TPHg and BTEX by EPA Method 8015/8020. Laboratory analytical results are summarized in Table 3 and attached in Appendix 2.

TABLE 3 - ANALYTICAL RESULTS - GROUNDWATER

Well No.	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Tohiene (μg/L)	Ethylbenzene (μg/L)	Total Xylenes (μg/L)
MW-1	12/15/92 03/10/93 06/23/93 09/10/93 10/25/93 11/12/93 02/16/94 03/10/94 05/16/94 08/29/94 02/15/95 08/28/95 02/23/96	<50 100 6,800 15,000 5,400 69 520 500 80 2,400 100	<0.5 0.86 2,500 4.400 1,900 1.5 14 12 1.9 650 7.4	<0.5 <0.5 1,100 620 1.1 <0.5 1.1 1.3 <0.5 7.4 <0.5	<0.5 <0.5 100 850 700 <0.5 9.0 2.2 <0.5 68 <0.5	<0.5 6.3 560 630 20 3.1 8.9 4.6 3.6 19 4.3
MW-2	12/15/92 03/10/93 06/23/93 09/10/93 10/25/93 11/12/93 02/16/94 03/10/94 05/16/94 08/29/94 02/15/95 08/28/95 02/23/96	<50 <50 <50 <50 <50 	<0.5 <0.5 <0.5 <0.5 <0.5 	<0.5 <0.5 <0.5 <0.5 <0.5 	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5

Well No.	Date Sampled	TPHg (μg/L)	Benzene (μg/L)	Toluene (μg/L)	Ethylbenzene (µg/L)	Total Xylenes (μg/L)
MW-3	12/15/92 03/10/93 06/23/93 09/10/93 10/25/93 11/12/93 02/16/94 03/10/94 05/16/94 08/29/94 02/15/95 08/28/95 02/23/96	<50 <50 <50 <50 <50 	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5
MW-4	10/25/93 11/12/93 02/16/94 03/10/94 05/16/94 08/29/94 02/15/95 08/28/95 02/23/96	<50 <50 <50 <50 <50 <50 <50 <50 <50	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5

Notes: $\mu g/L = \text{micrograms per liter (ppb)}$

5.0 DISCUSSION

Laboratory analysis of groundwater samples collected from monitoring well MW-1 indicated detectable concentrations of TPHg, benzene, and total xylenes. No concentrations above reporting limits were detected in the groundwater sample collected from monitoring well MW-4, indicating a downgradient extent of petroleum hydrocarbons. Overall results of TPHg and BTEX constituents reported in monitoring well MW-1 indicated decreasing levels of contaminants; therefore, the constituents remaining from the original tank removal are degrading and will continue to degrade and dissipate with time.

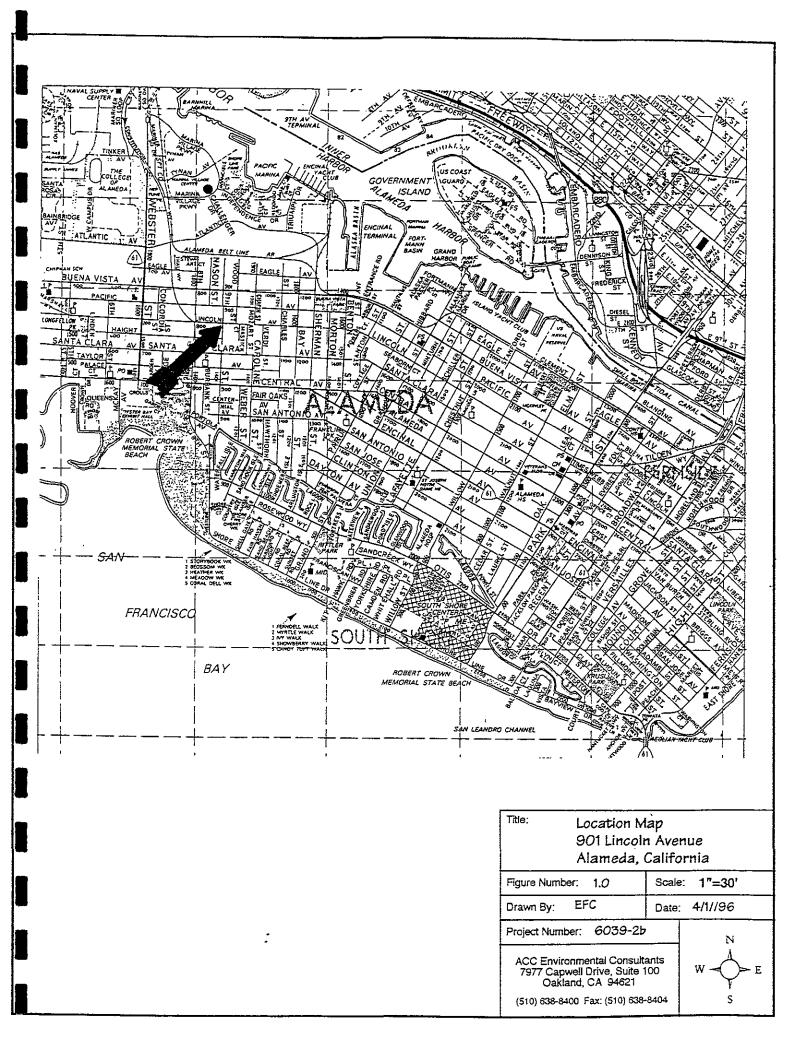
6.0 CONCLUSIONS AND RECOMMENDATIONS

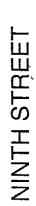
The concentrations of TPHg and BTEX detected within samples collected from monitoring well MW-1 have decreased significantly since August 1995. Due to the natural soil makeup of this site, migration of petroleum hydrocarbons is unlikely. Based on experience with similar site conditions,

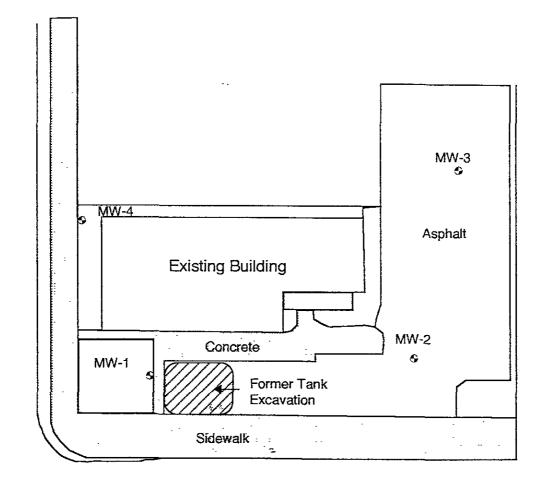
with minor petroleum hydrocarbon residues in soil overlying a shallow, poor quality aquifer, ACC believes the petroleum hydrocarbon concentrations will degrade over time. ACC feels that continued monitoring is not warranted based on the following conclusions:

- Groundwater at the site has been monitored since 1993. The concentrations of constituents have decreased significantly.
- The contaminant plume is stable, based on no reportable concentrations of constituents in monitoring well MW-4, located 50 feet downgradient of the former UST excavation.
- The concentration of benzene reported in the groundwater sample collected from monitoring well MW-1 is below RBCA Tier 1 guidelines for the exposure pathway of groundwater vapor intrusion into residential buildings, based on a 1x10⁻⁶ cancer risk.

Therefore, no significant risk to human health and the environment exists from the remnant impact around monitoring well MW-1. Concentrations within monitoring well MW-1 will continue to degrade over time.

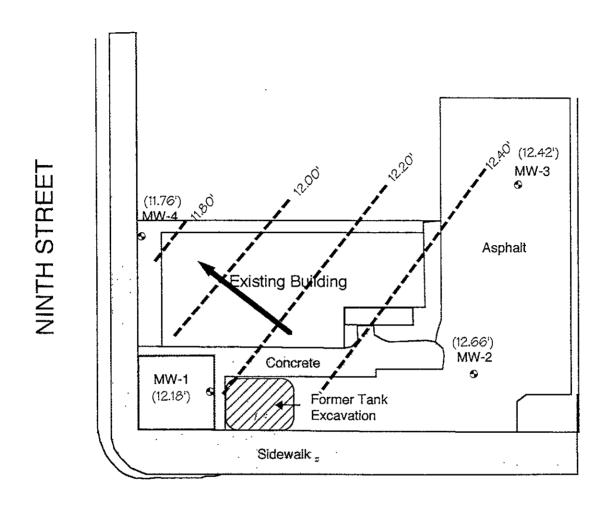






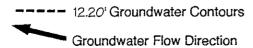
LINCOLN AVENUE

Title: Site Plan 901 Lincoln Ave Alameda, Calif	
Figure Number: 2.0	Scale: 1"=30'
Drawn By: EFC	Date: 4/1//96
Project Number: 6039-21	, N
ACC Environmental Consul 7977 Capwell Drive, Suite Oakland, CA 94621 (510) 638-8400 Fax: (510) 638	100 W - E



LINCOLN AVENUE

LEGEND



Elevations in Feet Above Mean Sea Level Water Levels Measured on February 23, 1996

Title: Groundwater Gradient 901 Lincoln Avenue Alameda, California						
Figure Number: 3.0	Scale: 1"=30'					
Drawn By: EFC	Date: 4/1//96					
Project Number: 6039-2b	N					
ACC Environmental Consult 7977 Capwell Drive, Suite 1 Oakland, CA 94621 (510) 638-8400 Fax: (510) 638-	00 W = E					

WELL MONITORING WORKSHEET



ACC MONITORING WELL WORKSHEET

JOB NAME: EZ LIQUOR	PURGE METHOD: MANUAL BAILING					
SITE ADDRESS: 901 LINCO		€	SAMPLED BY: J, CONKULD			
JOB#: 6039-26		:	LABORATO	DRY: CHE	ZUMALAB	
DATE: 2/23/96			ANALYSIS	TPH-	GAS, BT	EΧ
Onsite Drum Inventory SOIL:		-1.	MONITORII	νG ⊠(DEVELOPIN	G 🗆
EMPTY: WATER: / -			SAMPLING			
	₽ŮRGE	HYD/	AG READIN	es:		
	VOLUME		A STATE OF THE PARTY OF THE PAR		The same of the sa	ERVATIONS
WELL: MW-	(Gal)	pН	Temp. (F)			
DEPTH OF BORING: 13.95	[.1		67.3		Sheen	
DEPTH TO WATER: 6.81	2.2	12.43	66.5	587	Odor	Туре
WATER COLUMN: 7.14'	3.3	12.31	66.1		Free P	roduct
WELL DIAMETER: ユ゛					Amount	Type
WELL VOLUME: ≈ 1.1 gal					Other	
COMMENTS:						
	Ą					
	4.4	12.30	66.1	615		
WELL: MW-2	(Gal)	pH	Temp. (F)	Cond. up/cm	Froth	
DEPTH OF BORING: 16,05					Sheen	
DEPTH TO WATER: 6.37					Odor	Туре
WATER COLUMN: 9.68'					Free P	roduct
WELL DIAMETER: ユ``					Amount	Type
WELL VOLUME:					Other	
COMMENTS:					1	
WELL: MW-3	(Gal)	pН	Temp. (F)	Cond. un/cm	Froth	
DEPTH OF BORING: 17.15					Sheen	
DEPTH TO WATER: 6,93					Odor	Туре
WATER COLUMN: 10.22					Free P	roduct
WELL DIAMETER: 2"			1_		Amount	Type
WELL VOLUME:					Other	
COMMENTS:		<u> </u>			<u> </u>	
	1/			1		



ACC MONITORING WELL WORKSHEET

JOB NAME: EZ LIQUORS	PURGE METHOD: M. BAILING						
SITE ADDRESS: 901 LINCO	SITE ADDRESS: 901 LINCOLN AVE			SAMPLED BY: J. CONKLIN			
JOB#: 6039-25	LABORATO	RY: CHRO	MALAB				
DATE: 2/23/96		ANALYSIS:	TPH-C	AS, BTEX			
Onsite Drum Inventory SOIL:		ese s	MONITORIN	ie ≱(i	DEVELOPING		
EMPTY: WATER:			SAMPLING	×			
	PURGE	in i	AC READIN	es===			
	VOLUME				- 10BSERVATIONS		
WELL: MW-4	(Gal)	pН	Temp. (F)		Froth		
DEPTH OF BORING: 18,96	ス.0		68.3		Sheen		
DEPTH TO WATER: 6.75	4.0	11.60	67.7	563	Odor Type		
WATER COLUMN: 12,21	6.0	11.81	66.8	624	Free Product		
WELL DIAMETER: 2"					AmountType		
WELL VOLUME: ≈20 gal					Other		
COMMENTS:							
	<u> </u>						
	8.0	11.80	66.5	625			
WELL:	(Gal)	′ рН	Temp. (F)	Cond. un/cm	Froth		
DEPTH OF BORING:			2		Sheen		
DEPTH TO WATER:					Odar Type		
WATER COLUMN:					Free Product		
WELL DIAMETER:					AmountType		
WELL VOLUME:					Other		
COMMENTS:				ļ			
WELL:	(Gal)	pН	Temp. (F)	Cond. un/cm	Froth		
DEPTH OF BORING:					Sheen		
DEPTH TO WATER:					Odor Type		
WATER COLUMN:					Free Product		
WELL DIAMETER:					AmountType		
WELL VOLUME:	<u> </u>				Other		
COMMENTS:	-						
1							

ANALYTICAL RESULTS

AND

CHAIN OF CUSTODY RECORD

CHROMALAB, INC.

Environmental Services (SDB)

March 5, 1996

Submission #: 9602642

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 901 LINCOLN

Project#: 6039-2B

Received: February 27, 1996

re: 2 samples for Gasoline and BTEX compounds analysis.

::

Method: EPA 5030/8015M/8020

Matrix: WATER

1 7

Sampled: February 23, 1996 Run#: 758

Analyzed: March 1, 1996

Spl# CLIENT SPL ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene	Etnyl Benzene (ug/L)	Yylenes (ug/L)	
79722 MW-1 79723 MW-4	100 N.D.	7.4 N.D.	N.D. N.D.	N.D. N.D.	4.3 N.D.	
Reporting Limits Blank Result Blank Spike Result (%	50 N.D.	0.50 N.D.	0.50 N.D. 110	0.50 - N.D. 114	0.50 N.D. 110	

June The

June Zhao Chemist Marianne Alexander

Gas/BTEX Supervisor

642/79722.79723 CHROMALAB, INC.

SURM #: 9602642 REP:

CLIENT: ACC

ОТНЕЯ

RECEIVED BY

72

24

26639

Chain of Custody 03/05/96 REF ##26639 Environmental Services (SDB) (DOHS 1094) ANALYSIS REPORT M. KALTREIDER PURCEABLE HALOCARBONS (EPA 601, 8010) NUMBER OF CONTAINERS Έ PRIORITY POLLUTANT METALS (13) 5 COMPANY ACC Environmental Consultants PURCEABLE AROMATICS BTEX (EPA 602, 8020) BASE/NEUTRALS, ACIDS (EPA 625/627, 8270, 525) w/BTEX (EPA 602, 8020) VOLATILE ORGANICS (EPA 624, 8240, 524.2) TOTAL OIL & GREASE (EPA 5520, 8+F, E+F) TPH - Diesel, TEPH (EPA 3510/3550, 8015) Ą, ADDRESS 7977 Capwell Drive, Suite 100 CAM METALS (17) LUFT METALS: Cd, Cr, P Oakland, California 94621 (EPA 608, 8080) EXTRACTION (TCLP, STLC) TOTAL LEAD (PHONE NO.) SAMPLERS (SIGNATURE) (510) 638-8400 (510) 638-8404 MATRIX PRESERV. TIME SAMPLE ID. H20 COOL 2/23/16 10 AM MW-1 11 11 11 MW-4 2. RELINQUISHED BY RELINQUISHED BY RELINQUISHED BY SAMPLE RECEIPT PROJECT INFORMATION TOTAL NO. OF CONTAINERS PROJECT NAME (SIGNATURE) (SIGNATURE) 901 LINCOLN (TIME) Ø HEAD SPACE TOHN CONKLIN PROJECT NUMBER 6039-2h (PRINTED NAME) REC'D GOOD CONDITION/COLD DATE ACC ENVIRONMENTAL 6039-2h P.O. # CONFORMS TO RECORD ICOMPANY (COMPANY)

SPECIAL INSTRUCTIONS/COMMENTS.

STANDARD

RECEIVED BY (TIME) (SIGNATIONE)

(PRINTED NAME)

RECEIVED BY (LABORATORY)