

A·C·C

ENVIRONMENTAL
CONSULTANTS

ALCO
HAZMAT

94 JUL -6 PM 2: 16

June 27, 1994

Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

RE: Quarterly Groundwater Sampling
901 Lincoln Avenue, Alameda, California

Dear Mr. Chrissanthos:

The attached report describes the materials and procedures used during groundwater sampling of the monitoring wells located at 901 Lincoln Avenue, Alameda, California.

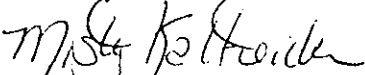
This work was performed to evaluate the presence or absence of residual hydrocarbon concentrations in groundwater by obtaining samples from two of the existing four monitoring wells on-site.

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 non-detectable concentrations in monitoring well MW-4. Sample analysis results from monitoring well MW-1 indicated detectable levels of Total Petroleum Hydrocarbons (TPH) as gasoline and Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

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

Sincerely,



Misty C. Kaltreider
Geologist

cc: Ms. Juliet Shin - Alameda County Health Care Services - Division of Hazardous Materials

INSTALLATION OF ADDITIONAL MONITORING WELL AND
QUARTERLY GROUNDWATER SAMPLING

901 LINCOLN AVENUE
ALAMEDA, CALIFORNIA

June 1994

Prepared for:
Mr. Steve Chrissanthos
Alameda Cellars
1702 Lincoln Avenue
Alameda, CA 94501

Prepared by:

Prepared by:

Misty Kaltreider

Misty Kaltreider
Project Geologist

Reviewed by:

Christopher M. Palmer

Christopher M. Palmer, CEG #1262
Certified Engineering Geologist

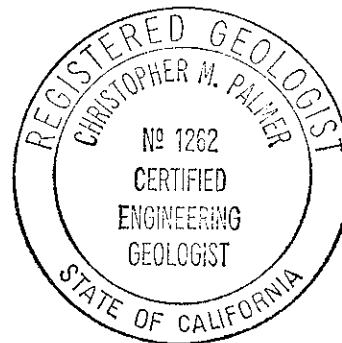


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1.0 INTRODUCTION

This report presents the procedures and findings of quarterly groundwater sampling conducted by ACC Environmental Consultants, Inc., ("ACC") on behalf of Mr. Steve Chrissanthos and Alameda Cellars, site owner at 901 Lincoln Avenue, Alameda, California. The project objective is to evaluate extent of petroleum hydrocarbons in the groundwater by obtaining samples from the existing monitoring wells.

2.0 BACKGROUND

The site is presently occupied by E-Z Liquors, a commercial liquor store. The property is owned by Mr. Steve Chrissanthos. In March, 1990, two 10,000-gallon gasoline tanks and one 2,000-gallon diesel tank were removed from the above referenced site. Analysis of the soil samples collected from beneath the two gasoline tanks indicated up to 710 parts per million (ppm) of Total Petroleum Hydrocarbons (TPH) as gasoline. Soil samples collected from beneath the diesel tank indicated less than detectable levels of TPH as diesel.

Per request of Alameda County Health Care Services - Hazardous Materials Division, a preliminary Site Assessment was conducted to further evaluate the soil contamination from the gasoline release on-site.

ACC was retained by Mr. Chrissanthos to perform the work requested by the Alameda County Health Care Services.

In December 4, 1992, three monitoring wells were installed on-site. Analytical results of soil collected during drilling indicated 55.96 parts per million (ppm) of TPH as gasoline with benzene, toluene, ethylbenzene, and total xylenes (BTEX) from monitoring well MW-1. Soil samples collected from the other borings indicated constituents below detectable levels.

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 on 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 hydrocarbon constituents in the soil. It was concluded that 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. Laboratory analysis of soil samples collected during drilling indicated below detectable levels of constituents.

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. Detectable levels of TPH as gasoline with BTEX was reported in the groundwater sample from monitoring well MW-1. Laboratory results of groundwater collected from monitoring wells MW-2 and MW-3 indicated non-detect for five consecutive quarters.

In December 1993, Alameda County Health Care Services Agency approved a reduction in groundwater sampling on-site. The revised groundwater sampling and monitoring program included performing

monitoring on all four wells on-site and collecting groundwater samples from only monitoring wells MW-1 and MW-4. Groundwater samples from these wells were analyzed for TPH as gasoline with BTEX.

3.0 PROCEDURES

3.2 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-1 and MW-4 on May 16, 1994. Prior to groundwater monitoring the depth to the surface of the water table was measured from the top of the PVC 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

<u>Date Sampled</u>	<u>Depth to Groundwater (ft)</u>	<u>Groundwater Elevation (ft)</u>
<u>Well No. MW-1 - 18.99 MSL</u>		
12/15/92	10.27	8.72
01/06/93	8.67	
02/09/93	6.98	12.01
03/10/93	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
<u>Well No. MW-2 - 19.03 MSL</u>		
12/15/92	10.14	8.89
01/06/93	8.50	10.53
02/09/93	6.66	12.37
03/10/93	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
10/25/95	11.41	7.62

TABLE 1 - Groundwater Depth Information, Cont.

<u>Date Sampled</u>	<u>Depth to Groundwater (ft)</u>	<u>Groundwater Elevation (ft)</u>
Well No. MW-2		
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
Well No. MW-3 - 19.35 MSL		
12/15/92	10.44	8.91
01/06/93	8.91	10.44
02/09/93	7.26	12.09
03/10/93	7.16	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	8.32	10.83
05/16/94	10.28	9.07
Well No. MW-4 - 18.51 MSL		
10/25/93	11.43	7.08
11/12/93	11.59	6.92
02/16/94	7.80	10.71
03/10/94	8.36	10.15
05/16/94	9.66	8.85

Notes: All measurements in feet; MSL = Mean Sea Level

During sampling, after water-level measurements were taken, monitoring well MW-1 and MW-4 were purged by hand using a designated disposable Teflon 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 A.

After the groundwater had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using the designated disposable Teflon bailer. Two 40 ml 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 B.

4.0 FINDINGS

4.1 Analytical Results - Groundwater

Groundwater samples were collected from monitoring wells MW-1 and MW-4 on May 16, 1994. The sample were analyzed for TPH as gasoline by EPA test method 5030 and BTEX by EPA test method 602. Laboratory analytical results are summarized in Table 2 and attached in Appendix B.

TABLE 2 - Analytical Results, Groundwater

Well Number	Date Sampled	TPH-gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW-1	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	100	0.86	<0.5	<0.5	6.3
	06/23/93	6,800	2,500	1,100	100	560
	09/10/93	15,000	4,400	620	850	630
	10/25/93	NT	NT	NT	NT	NT
	11/12/93	5,400	1,900	1.1	700	20
	02/16/94	69	1.5	<0.5	<0.5	3.1
	03/10/94	NT	NT	NT	NT	NT
	05/16/94	520	14	1.1	9.0	8.9
MW-2	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5
	10/25/93	NT	NT	NT	NT	NT
	11/12/93	<50	<0.5	<0.5	<0.5	<0.5
	02/16/94	NT	NT	NT	NT	NT
	03/10/94	NT	NT	NT	NT	NT
	05/16/94	NT	NT	NT	NT	NT
MW-3	12/15/92	<50	<0.5	<0.5	<0.5	<0.5
	03/10/93	<50	<0.5	<0.5	<0.5	<0.5
	06/23/93	<50	<0.5	<0.5	<0.5	<0.5
	09/10/93	<50	<0.5	<0.5	<0.5	<0.5
	10/25/93	NT	NT	NT	NT	NT
	11/12/93	<50	<0.5	<0.5	<0.5	<0.5
	02/16/94	NT	NT	NT	NT	NT
	03/10/94	NT	NT	NT	NT	NT
	05/16/94	NT	NT	NT	NT	NT

TABLE 2 - Analytical Results, Groundwater, Cont.

Well Number	Date Sampled	TPH-gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)
MW-4	10/25/93	<50	<0.5	<0.5	<0.5	<0.5
	11/12/93	<50	<0.5	<0.5	<0.5	<0.5
	02/16/94	----	----	----	----	----
	03/10/94	<50	<0.5	<0.5	<0.5	<0.5
	05/16/94	<50	<0.5	<0.5	<0.5	<0.5

Notes: ug/L = micrograms per liter (ppb); NT = not tested

4.2 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the on-site monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located in the curb on the northwest corner of the intersection of Ninth Street and Pacific Avenue in Alameda, California.

The groundwater gradient was calculated using measurements from the on-site monitoring wells. The location of the wells is shown in Figure 1 - Site Plan.

Groundwater elevations were collected from the wells on May 16, 1994 and are illustrated on Figure 2. The gradient was evaluated by triangulation using the elevation of the potentiometric surface measured with respect to Mean Sea Level datum. Table 3 summarizes the historic groundwater gradient and the direction of groundwater flow on-site.

TABLE 3 - Historic Groundwater Gradient

Date Monitored	Gradient (foot/foot)	Direction
12/15/92	0.00175	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	0.0064	northwest
08/10/93	0.0064	northwest
09/10/93	0.0064	northwest
10/25/93	0.0071	northwest
11/12/93	0.0056	northwest
02/16/94	0.01	northwest
03/10/94	0.01	northwest
05/16/94	0.016	northwest

5.0 CONCLUSION

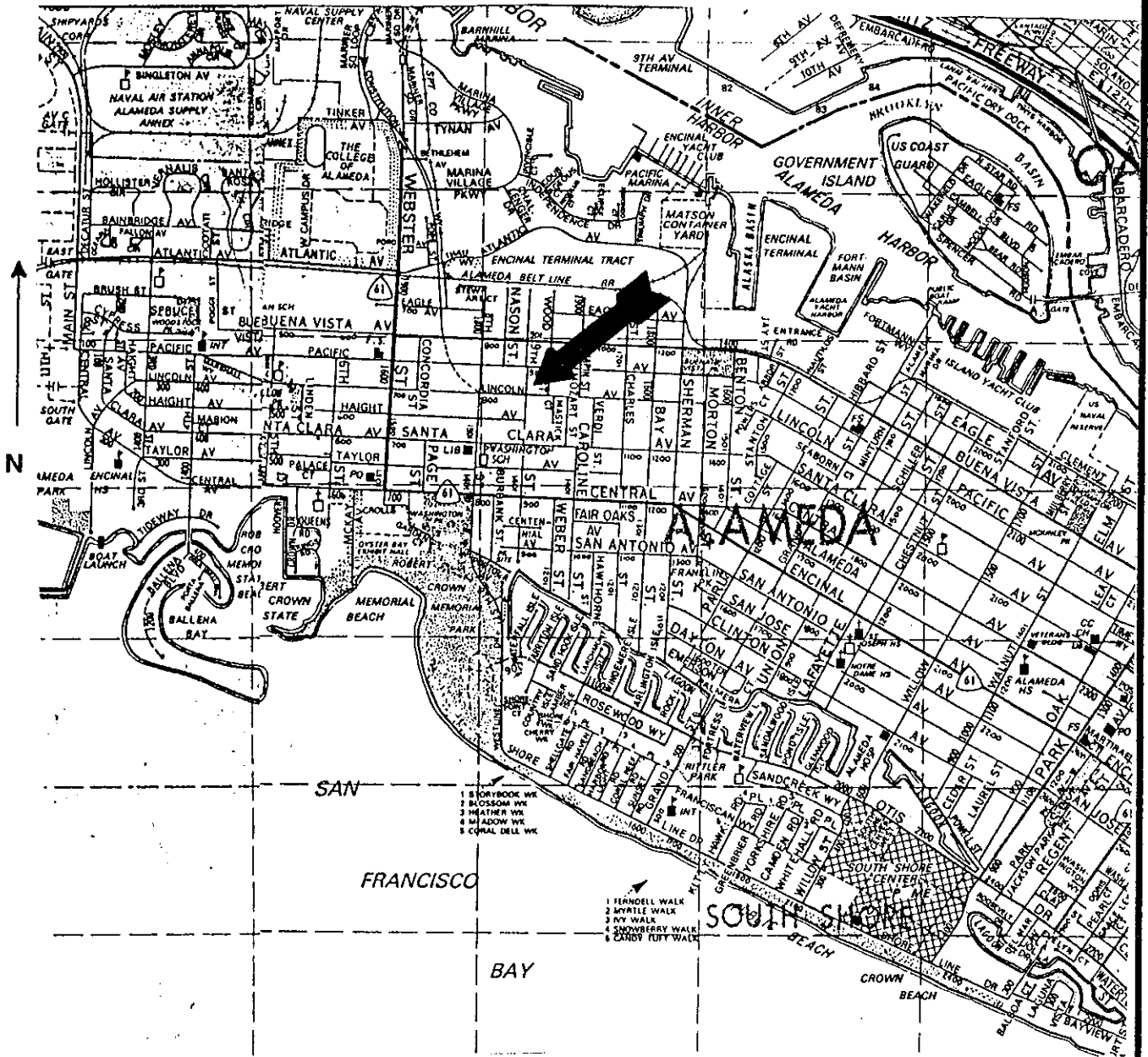
The data and observations discussed herein indicate that groundwater and soil has been impacted due to an unauthorized hydrocarbon release. In December 1992, low levels of Total Petroleum Hydrocarbons (TPH) as gasoline with BTEX were found in the soil sample collected at 11 feet bgs from boring MW-1. Soil staining was also observed in the same boring from 8 to 13 feet below ground surface. Initial sampling and analysis of the groundwater in December 1992 indicated no release had occurred to impact groundwater.

Further soil investigation performed in February 1993, indicated hydrocarbon impact on-site is limited to soil around monitoring well MW-1.

An additional monitoring well (MW-4) was installed in October 1993. This well was located downgradient (northwest) of the former tank excavation to evaluate the extent of groundwater contaminate plume. Laboratory analysis of soil and groundwater samples collected from monitoring well MW-4 indicated below detectable levels of constituents for four rounds of sampling and analysis.

Since December substantial rainfall has increased the elevation of the groundwater. Contaminated soil adjacent to monitoring well MW-1 apparently has come into contact with the fluctuating groundwater. In our opinion, this represents residual contamination since data from monitoring well MW-4 (downgradient) shows soil and groundwater is not contaminated. Historic observations indicate that this contamination is not mobile and ACC anticipates a decline in concentrations overtime.

Pursuant to the Tri-Regional Board guidelines, ACC proposes to perform groundwater monitoring on a quarterly basis and include all four on-site monitoring wells. Groundwater sampling and chemical analysis will continue on a quarterly basis on monitoring wells MW-1 and MW-4. Potentiometric measurements will continue to be made in all four wells.



(Source: Thomas Bros.)

Vicinity Map

Scale: 1" = 2200'

ACC Environmental Consultants, Inc.
 1000 Atlantic Avenue, Suite 110
 Alameda, California 94501

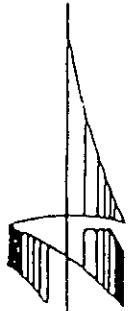
Vicinity Map
 901 Lincoln Ave.
 Alameda, California

Project No. 6039-2b

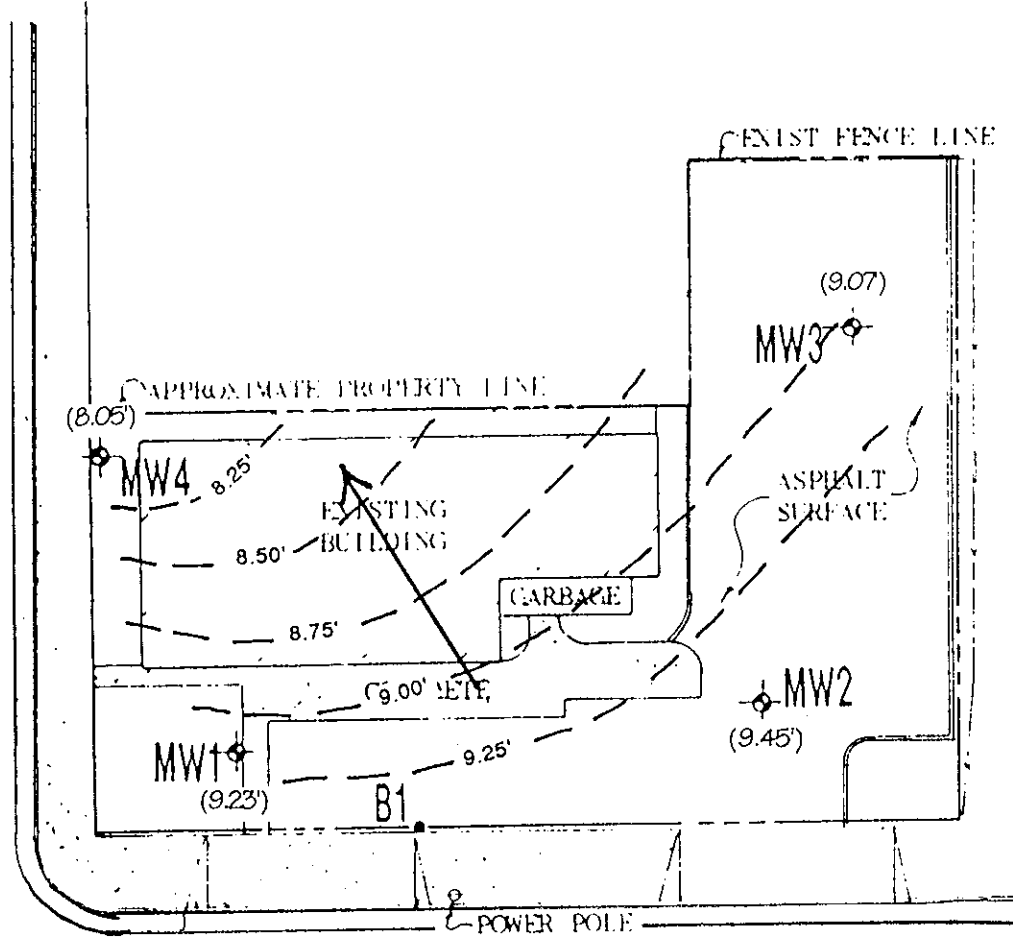
Date: 7/16/93

Dn by: CS

Figure 1

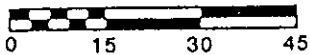


NINTH STREET



LINCOLN AVENUE

Scale: 1" = 30"



Elevations in Feet Above Mean Sea Level

05/16/1994

Drawn By: MCK

Project: 6039-2b

Figure 2:

Groundwater Gradient
901 Lincoln Ave., Alameda, CA

APPENDIX A

Well Sampling Well Development check one

Well Number: MW-1

Job Number: 6039-2

Job Name: 901 Lincoln

Date: 5-16-94

Sampler: Fallin

Depth to Water (measured from TOC): 9.76'

Inside Diameter of Casing: 2"

Depth of Boring: 13'

Method of well development/purging: Bail

Amount of Water Bailed/Pumped from well: 7-10

Depth to Water after well development ^{Sampling} 10.02

Depth to water prior to sampling: ↖

Bailed water stored on-site ? How ? 55 gal drum

Number of well volumes removed: 4+

TSP wash, distilled rinse, new rope ? New

Water Appearance:

	yes	no
froth		↑
irridescence		
oil		
smell		
product		
other, describe		

Samples Obtained:

TPH (gasoline)	✓
TPH (diesel)	
TPH (motor oil)	
BTXE	✗
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

Gallons Removed	pH	EC	Temp
5	6.85	0.15	64.1
10	7.12	0.22	64.7
15	7.19	0.23	64.8
20	7.18	0.21	64.8
25	7.19	0.23	64.9
30	7.19	0.23	64.8
35			
40			
45			
50			

Well Sampling Well Development

check one

Well Number: MW-4Job Number: 6039-2Job Name: 901 LincolnDate: 5-16-94Sampler: FallinDepth to Water (measured from TOC): 9.66'Inside Diameter of Casing: 2"Depth of Boring: 15'Method of well development/purging: BailAmount of Water Bailed/Pumped from well: 10-15Depth to Water after well development: 10.20'

Depth to water prior to sampling: _____

Bailed water stored on-site ? How ? 55 gal drumNumber of well volumes removed: 4+TSP wash, distilled rinse, new rope ? New

Water Appearance:

	yes	no
froth		X
irridescence		X
oil		
smell		
product		
other, describe		

Gallons Removed	pH	EC	Temp
5	7.70	0.51	67.2
10	7.14	0.49	66.1
15	7.35	0.46	66.3
20	7.33	0.47	66.3
25	7.36	0.46	66.2
30	7.34	0.46	66.2
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	X
TPH (diesel)	
TPH (motor oil)	
BTXE	X
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	
Field Blank	

APPENDIX B

CHROMALAB, INC.

Environmental Services (SDB)

May 27, 1994

ChromaLab File#: 9405250

ACC ENVIRONMENTAL CONSULTANTS

Atten: Misty Kaltreider

Project: 901 LINCOLN
Received: May 18, 1994

Project#: 6039-2b

re: 2 samples for Gasoline and BTEX analysis.

Matrix: WATER

Sampled: May 16, 1994

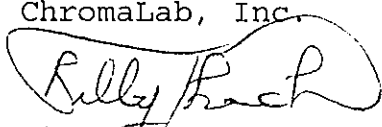
Lab Run#: 2922

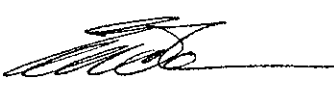
Analyzed: May 20, 1994

Method: EPA 5030/8015/602

Lab #	SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
51818	MW-1	520	14	1.1	9.0	8.9
51819	MW-4	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMITS		50	0.5	0.5	0.5	0.5
BLANK		N.D.	N.D.	N.D.	N.D.	0.5
BLANK SPIKE RECOVERY(%)		91	93	112	105	117

ChromaLab, Inc.


Billy Thach
Chemist


Eric Tam
Laboratory Director

