5710
-1117

FIRST QUARTER 2001
GROUNDWATER MONITORING

ABE Petroleum LLC
17715 Mission Boulevard
Hayward, California 94539

4/12/01

Prepared for

Mr. Paul Garg
ABE Petroleum LLC

Prepared by

Sierra Environmental, Inc.

April 10, 2001
Project 01-103.04

Sierra Environmental, Inc.
Environmental Consultants

April 10, 2001
Project 01-103.04

Mr. Paul Garg
ABE Petroleum LLC
33090 Mission Boulevard
Union City, California 94587

Subject: Report for First Quarter 2001 Groundwater Monitoring, ABE Petroleum LLC, 17715 Mission Boulevard, Hayward, California

Dear Mr. Garg:

Sierra Environmental, Inc. (Sierra) is pleased to present this report summarizing the results of the first quarter 2001 groundwater monitoring at the subject location, hereafter, referred to as Site. Figure 1 shows the Site location. The groundwater monitoring was concurred by Alameda County Health Care Services (ACHCS) in a letter dated February 16, 2000, as result of gasoline impact to groundwater beneath the Site.

Sierra obtained and recorded groundwater data, and collected groundwater samples from three groundwater monitoring wells (MW1 through MW3) at the Site for chemical analysis. Sierra submitted the samples to Entech Analytical Labs, Inc. (Entech) of Santa Clara, California. Entech is an independent State-certified analytical laboratory (ELAP # 2346).

BACKGROUND

On September 16, 1997, Balch Petroleum Contractors & Builders, Inc. (Balch) of Milpitas, California, removed one 2,000-gallon, two 6,000-gallon, one 10,000-gallon single-wall steel gasoline, and one 500-gallon single-wall steel waste oil USTs from the Site. Former UST locations are shown in Figure 2. No hole or damage were observed in the tanks. No groundwater was encountered in the tank excavations. After UST removal, Sierra collected soil samples from the tank excavations for chemical analysis.

2084 Alameda Way, Suite 201
San Jose, California 95126
Phone (408) 248-3700
Fax (408) 248-4700

Up to 2,300 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHG) was detected in the soil samples collected from beneath the tanks at approximately 14 feet below ground surface (bgs). The soil sample locations are shown in Figure 2. The analytical results are presented in Appendix A.

On August 14, 2000, Sierra drilled three exploratory borings and converted them to groundwater monitoring well MW1 through MW3 . The wells are approximately 35 feet deep. Sierra collected soil and groundwater samples from the borings/wells for chemical analysis. The analytical results showed up to 720 ppm TPHG, 2.2 ppm benzene, and 3.4 ppm MTBE in the soil samples. Up to 290000 ppb TPHG, 10000 ppb benzene, and 4300 ppb MTBE were detected in the groundwater samples. Gasoline constituents were detected in groundwater samples collected from all three monitoring wells.

Groundwater was measured at approximately 20-21 feet bgs at the Site with a northwesterly flow direction.

GROUNDWATER MONITORING

On March 30, 2001, Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 3) using an electronic sounder. Depth of groundwater were measured to the top of the well casings (TOC). Table I presents the groundwater measurement data.

Groundwater levels were measured at approximately 20 to 21 feet below TOC with a northwesterly flow direction during this monitoring event.

Sierra's field personnel purged the wells using bailers. pH, temperature, and conductivity of groundwater was recorded during the purging activities to affirm that groundwater in the wells have stabilized. After completion of the purging, groundwater samples MW-1 through MW-3 were collected from the wells. After collection, the groundwater from each well was transferred into clean volatile organic analysis (VOA) vials. The VOAs were sealed with Teflon-septum screw caps, labeled, placed in a cooler, and delivered to Entech with chain-of-custody documentation.

All sampling and measurement equipment were washed with Liqui-Nox® (a phosphate free laboratory detergent), and rinsed with tap water at each measurement and sampling interval. Purged and wash water were stored in 55-gallon drums at a designated location at the Site. Sierra's quality control/quality assurance (QA/QC) protocol is presented in Appendix B.

CHEMICAL ANALYSIS

The samples were analyzed for TPHG using the United States Environmental Protection Agency (EPA) modified method 8015, and for benzene, toluene, ethyl benzene, and total xylenes (BTEX) and methyl tertiary butyl ether (MTBE) using EPA method 8020. Additionally, the samples were analyzed for fuel oxygenates using EPA method 8260B. Copies of certified analytical results and chain-of-custody documentation are presented in Appendix C.

ANALYTICAL RESULTS

The analytical result for the water samples showed a decreasing trend of gasoline constituents, except MTBE, in the groundwater beneath the Site.

Table II presents Summary of the analytical results.

CONCLUSION AND RECOMMENDATIONS

The groundwater data obtained during this monitoring event suggest that natural attenuation may have contributed in reducing the gasoline constituents in the groundwater beneath the Site. The concentrations of TPHG, benzene, and MTBE remain to be high in the groundwater samples. To confirm that this trend will not change, Sierra recommends to continue with the remaining groundwater monitoring for 2001.

LIMITATIONS

The content and conclusion provided by Sierra in this report are based on information collected during its assessment/monitoring, which include, but are not limited to field observations and analytical results for the groundwater samples collected at the Site.

Sierra assumes that the samples collected and laboratory results are reasonably representative of the whole Site, which may not be the case at unsampled areas.

This assessment/monitoring was performed in accordance with generally accepted principles and practices of environmental engineering and assessment in Northern California at the time of the work. This report presents our professional opinion based on our findings, technical knowledge, and experience working on similar projects. No warranty, either expressed or implied, is made. The conclusions presented are based on the analytical results and current regulatory requirements. We are not responsible for the impact of any changes in environmental standards or regulations in the future.

Sierra appreciates to have the opportunity assisting you on this project. Please feel welcome to call us if you have questions.

Very Truly Yours,
Sierra Environmental, Inc.

Reza Baradaran, PE, GE
Principal

Mitch Hajiaghai, REA II, CAC
Principal

Attachments:

Table I	-	Groundwater Elevation Data
Table II	-	Analytical Results for Groundwater Samples
Figure 1	-	Site Location Map
Figure 2	-	Former UST and Soil Sample Locations
Figure 3	-	Groundwater Monitoring Well Locations
Appendix A	-	Historical Analytical Results
Appendix B	-	QA/QC Protocol
Appendix C	-	Certified Analytical Results and Chain-of-Custody Documentation & Field Notes

cc: Mr. Amir Gholami, ACHCS (1 Copy)

R01-103.04\1st Q2001GWM \ MH04102001

TABLE I

GROUNDWATER ELEVATION DATA

Well ID	Measurement Date	Well Casing Diameter (in)	Well Casing Elevation (ft)	Depth to Water[1] (ft)	Water Table[2] Elevation (ft)
MW1	8-18-00 3-30-01	2	99.46	20.32 20.30	79.14 79.16
MW2	8-18-00 3-30-01	2	100.58	21.55 21.55	79.03 79.03
MW3	8-18-00 3-30-01	2	99.69	20.68 20.68	79.01 79.01

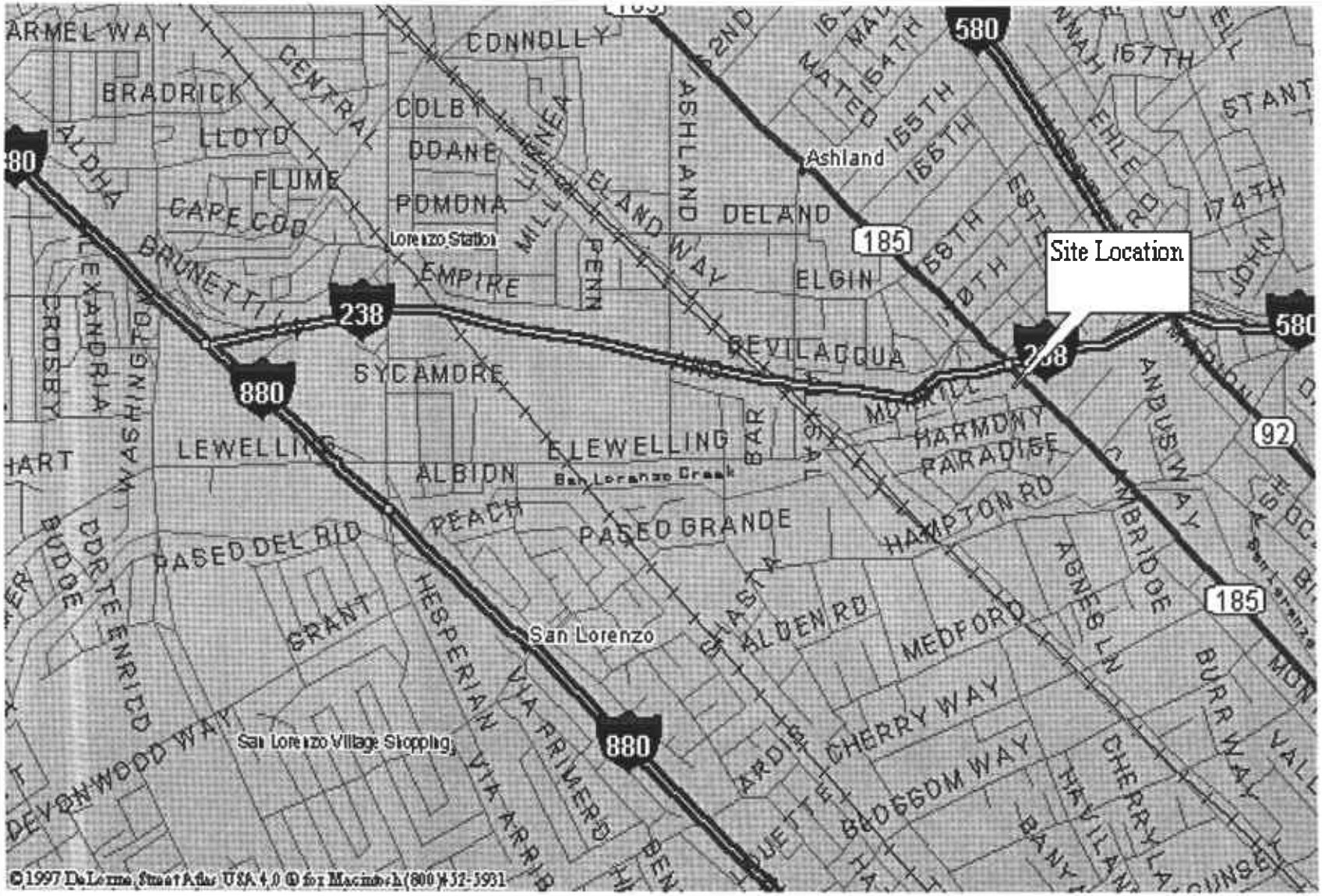
1. Depths to groundwater were measured to the top of the well casings
2. Water table elevations were measured in relation to an assumed datum (100') relative elevation

TABLE II
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Sample ID	Sample Date	Sample Location	TPHG[1] ppb[3]	Benzene ppb	Toluene ppb	Ethylbenzene ppb	Xylenes ppb	MTBE[2] ppb
MW-1*	8-18-00	MW1	280,000	10,000	16,000	11,000	49,000	4,000
*	3-30-01		98,000	8,600	14,000	6,300	26,000	7,600
MW-2	8-18-00	MW2	290,000	3700	990	7,300	26,000	ND[4]
*	3-30-01		47,000	3,200	470	4,500	13,000	3,100
MW-3	8-18-00	MW3	46,000	3,200	550	3,700	14,000	2,200
*	3-30-01		30,000	3,300	340	2,800	9,100	4,700

1. TPHG = Total Petroleum Hydrocarbons as Gasoline
2. MTBE = Methyl Tertiary Butyl Ether
3. ppb = Parts Per Billion
4. ND = Below Laboratory Detection Limit

* The Sample was Analyzed for Fuel Oxygenates using EPA Method 8260B. Only MTBE was Detected using the method



SIERRA ENVIRONMENTAL, INC.
Environmental Consultants
2084 Alameda Way, Suite 201, San Jose, CA 95126
Phone [408]248-2700 • Fax [408] 248-4700

SITE LOCATION MAP

First Quarter 2001 Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE 1

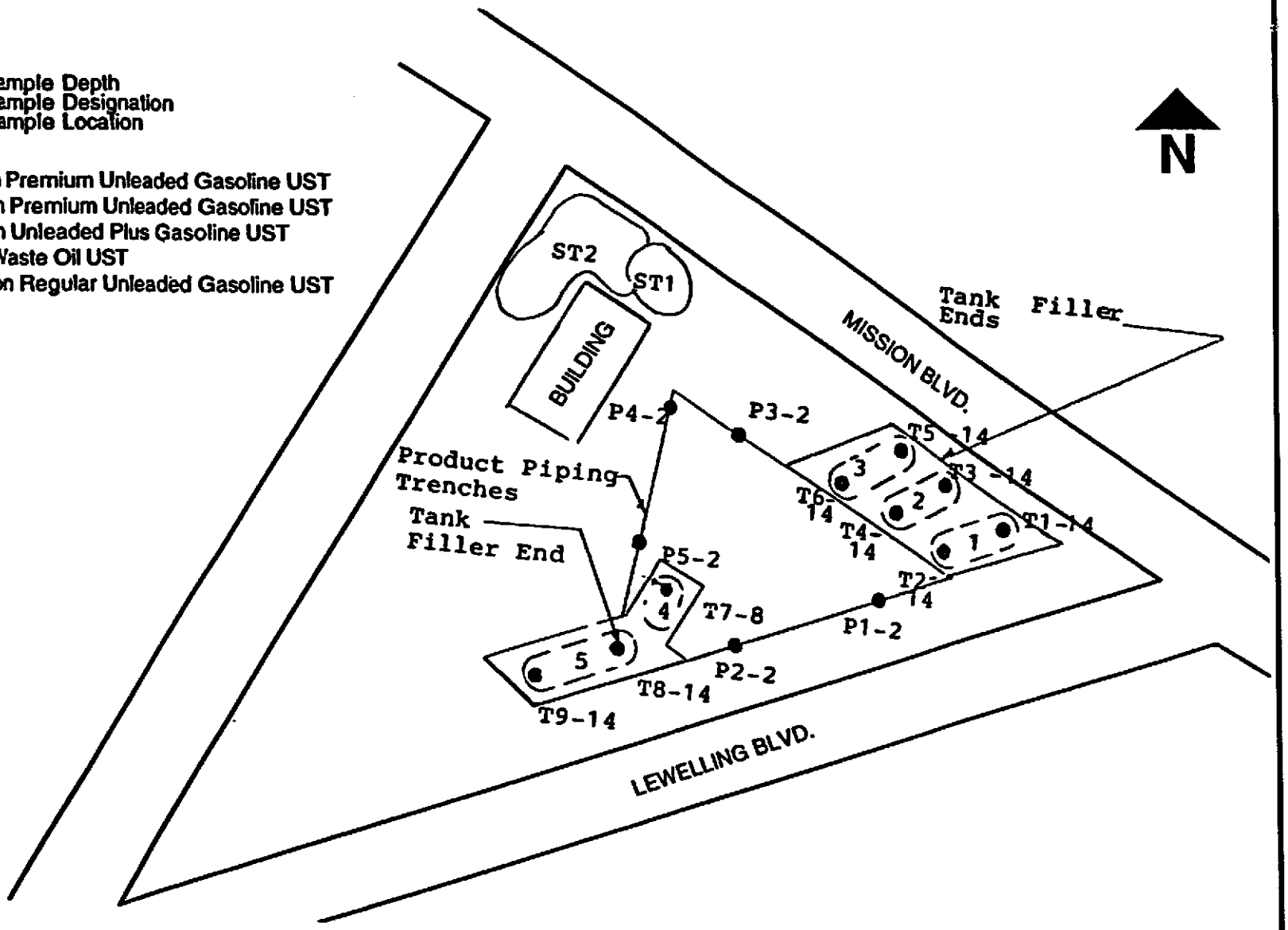
April 10, 2001
Project 01-103.04

LEGEND

● T1-14

- Sample Depth
- Sample Designation
- Sample Location

1 = 2,000-gallon Premium Unleaded Gasoline UST
2 = 6,000-Gallon Premium Unleaded Gasoline UST
3 = 6,000-Gallon Unleaded Plus Gasoline UST
4 = 500-gallon Waste Oil UST
5 = 10,000-gallon Regular Unleaded Gasoline UST



Approximate Scale: 1"=30'

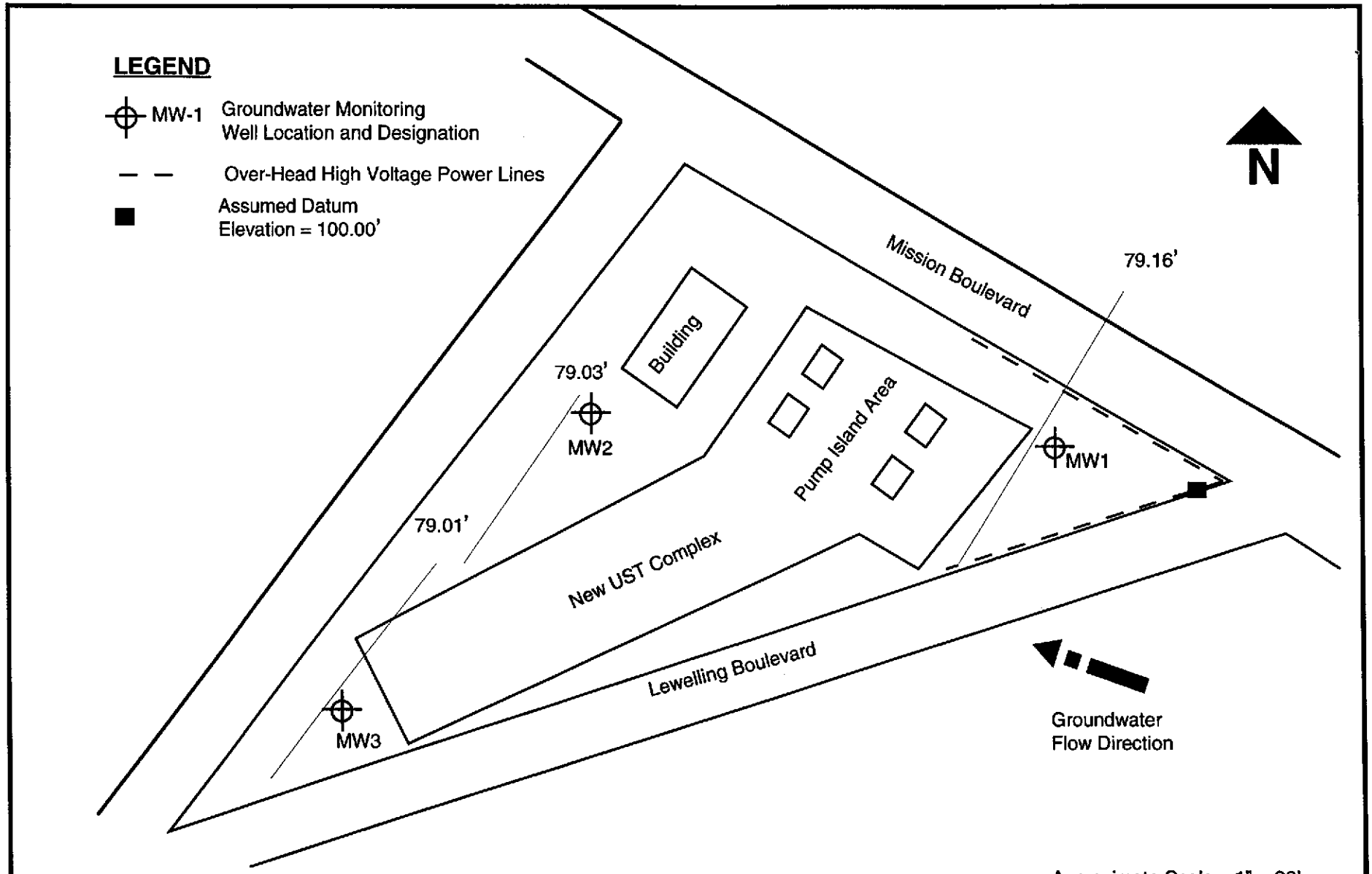
SIERRA ENVIRONMENTAL, INC.
Environmental Consultants
2084 Alameda Way, Suite 201, San Jose, CA 95126
Phone [408]248-3700 • Fax [408] 248-4700

Former UST and Soil Sample Locations

First Quarter 2001, Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE
2
April 10,2001
Project 01-103.04



SIERRA ENVIRONMENTAL, INC.
Environmental Consultants
2084 Alameda Way, Suite 201, San Jose, CA 95126
Phone [408]248-3700 • Fax [408] 248-4700

Groundwater Monitoring Well Locations

First Quarter 2001, Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE 3

April 10,2001
Project 01-103.04

Appendix A
HISTORICAL ANALYTICAL RESULTS

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS, FUEL TANK EXCAVATIONS

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
T1-14	9-16-97	Soil	2300	5.6	230	4800	2200	6100	ND[10]
T2-14	9-16-97	Soil	28	4.1	22	92	40	180	ND
T3-14	9-16-97	Soil	2700	7.5	460	3100	2400	6500	ND
T4-14	9-16-97	Soil	1100	12	100	1900	1500	4800	ND
T5-14	9-16-97	Soil	64	6.1	48	100	110	380	ND
T6-14	9-16-97	Soil	66	7.1	48	270	120	560	ND
T8-14	9-16-97	Soil	260	7.1	200	93	310	330	ND
T9-14	9-16-97	Soil	1.1	9.3	ND	5.3	ND	8.8	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts per billion
10. ND = Not Detected

TABLE 2

SOIL SAMPLE ANALYTICAL RESULTS, WASTE OIL TANK EXCAVATION

Sample	Date	Matrix	TPHG[1] ppm[8]	TPHD[2] ppm	BTEX[3] ppm	TRPH[4] ppm	VOCs[5] ppm	SVOCs[6] ppm	Metals[7] ppm
T7-8	9-16-97	Soil	ND[9]	ND	ND	14	ND	ND	*

1. TPHG = Total petroleum hydrocarbons as gasoline
2. TPHD = Total petroleum hydrocarbons as diesel
3. BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
4. TRPH = Total Recoverable Petroleum Hydrocarbons
5. VOCs = Volatile Organic Compounds
6. SVOCs = Semivolatile Organic Compounds
7. Metals = * Cd @ 2.1 ppm, Cr @ 3.9 ppm, Pb @ 4.9 ppm, Ni @ 18 ppm, Zn @ 84 ppm
8. ppm = Parts per million
9. ND = Not Detected

TABLE 3

SOIL SAMPLE ANALYTICAL RESULTS, PIPING TRENCHES

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
P1-2	9-16-97	Soil	ND[10]	5.6	ND	ND	ND	ND	ND
P2-2	9-16-97	Soil	ND	11	ND	ND	ND	ND	ND
P3-2	9-16-97	Soil	ND	9.3	ND	ND	ND	ND	ND
P4-2	9-16-97	Soil	ND	5.5	ND	ND	ND	ND	ND
P5-2	9-16-97	Soil	ND	6.9	ND	ND	ND	ND	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts Per Billion
10. ND = Not Detected

TABLE 4

SOIL SAMPLE ANALYTICAL RESULTS, SOIL STOCKPILES

Sample	Date	Matrix	TPHG[1] ppm[8]	Lead[2] ppm	B[3] ppb[9]	T[4] ppb	E[5] ppb	X[6] ppb	MTBE[7] ppb
ST1 A,B,C,D	9-18-97	Soil	4.5	7.9	ND[10]	ND	ND	25	ND
ST2 A,B,C,D	9-18-97	Soil	ND	8.3	ND	ND	ND	ND	ND

1. TPHG = Total petroleum hydrocarbons as gasoline
2. Lead = Analyzed as total lead
3. B = Benzene
4. T = Toluene
5. E = Ethylbenzene
6. X = Total xylenes
7. MTBE = Methyl teritary butyl ether
8. ppm = Parts per million
9. ppb = Parts Per Billion
10. ND = Not Detected

Appendix B
QA/QC PROTOCOL

QA/QC PROTOCOL

Groundwater Level and Well Depth Measurements

Groundwater level and well depths are measured using electrical sounder. An electrical sounder consists of a reel, two-conductor cable, a water sensor, and a control panel with a buzzer. To measure groundwater level, the sensor is lowered into a well. A low current circuit is completed when the sensor makes contact with water. The current in the circuit is then amplified and activate a buzzer which produce an audible signal. Cable markings are divided at 0.05-foot increments. Well depths are measured to the nearest 0.01 foot. Groundwater levels are measured before and after sample collection to ensure data accuracy.

Well Purging

Low flow submersible electrical pumps or bailers are used to purge groundwater monitoring wells. Approximately 3 to 5 well casing volume of water is removed from the well as a measure to stabilize natural, and representative groundwater in each well. pH, electrical conductivity, and temperature of the purged water is measured and recorded at approximately each casing volume interval. Purge water is stabilized when pH is recorded within 0.5 unit, electrical conductivity is within 5 percent, and temperature is within 1.0 degree Celsius.

Groundwater Sampling

Groundwater samples are transferred into appropriate containers provided by certified analytical laboratories. The containers include proper preservatives, and labels with appropriate project information. Groundwater is transferred into the containers with as little agitation as possible. After collection, containers are sealed and checked to ensure that no head space or air bubbles are present in the sample.

After collection, if required, samples are kept in a cooler to be delivered to analytical laboratory with chain-of-custody documentation.

Equipment Decontamination

All sampling equipment are washed with Liqui-Nox® (a phosphate free laboratory detergent), and rinsed with tab and deionized water before each sampling event, and at each sampling interval. To reduce the risk of cross contamination, wells which have shown lower levels of contamination historically are purged and sampled first.

Analytical Procedures

Samples are analyzed by an accredited State-certified analytical laboratory using procedures prescribed by United State Environmental Protection Agency (EPA) and other Federal, State, and Local agencies. At minimum a field blank is analyzed with each group of samples for quality assurance measures. At minimum two qualified personnel review analytical results and compare them with historical data for consistency and accuracy.

Field Reports

All field observations are documented in field reports. A field report contain project information, climatic condition, contractor/subcontractor information, field observation, discussions and communications during each particular field activity. Field reports are stored in appropriate project files. Project managers review field reports to obtain necessary information regarding the status of each project on daily basis.

Appendix C
CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION & FIELD NOTES

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

April 10, 2001

Mitch Hajiaghai
Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126

Order:	25019	**Date Collected:**	3/30/2001
Project Name:	ABE Petroleum	**Date Received:**	3/30/2001
Project Number:	01-103.04	**P.O. Number:**	01-103.04
Project Notes:			

On March 30, 2001, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Gas/BTEX/MTBE	EPA 8015 MOD. (Purgeable)
		EPA 8020

Case Narrative: Due to an instrument resolution problem with MTBE by EPA 8020, the only MTBE result reported is by EPA 8260B. The invoice will be adjusted accordingly.

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/2001
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 3/30/2001 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	8600		500	0.5	250	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Toluene	14000		500	0.5	250	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Ethyl Benzene	6300		500	0.5	250	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Xylenes, Total	26000		500	0.5	250	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	106	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	98000		500	50	25000	µg/L	N/A	4/9/2001	WGC2010406	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	103	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/2001
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 3/30/2001 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3200		200	0.5	100	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Toluene	470		200	0.5	100	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Ethyl Benzene	4500		200	0.5	100	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020
Xylenes, Total	13000		200	0.5	100	µg/L	N/A	4/9/2001	WGC2010406	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	104	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	47000		200	50	10000	µg/L	N/A	4/9/2001	WGC2010406	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	101	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/2001
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 3/30/2001 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3300		50	0.5	25	µg/L	N/A	4/10/2001	WGC4010409A	EPA 8020
Toluene	340		50	0.5	25	µg/L	N/A	4/10/2001	WGC4010409A	EPA 8020
Ethyl Benzene	2800		50	0.5	25	µg/L	N/A	4/10/2001	WGC4010409A	EPA 8020
Xylenes, Total	9100		50	0.5	25	µg/L	N/A	4/10/2001	WGC4010409A	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	96	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	30000		50	50	2500	µg/L	N/A	4/10/2001	WGC4010409A	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	86	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

April 10, 2001

Mitch Hajiaghai
Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126

Order: 25019
Project Name: ABE Petroleum
Project Number: 01-103.04
Project Notes:

Date Collected: 3/30/01
Date Received: 3/30/01
P.O. Number: 01-103.04

On March 30, 2001, samples were received under documentented chain of custody. Results for the following analyses are attached:

Matrix	Test	Method
Liquid	Oxygenates by EPA 8260B	EPA 8260B

Chemical analysis of these samples has been completed. Summaries of the data are contained on the following pages. USEPA protocols for sample storage and preservation were followed.

Entech Analytical Labs, Inc. is certified by the State of California (#2346). If you have any questions regarding procedures or results, please call me at 408-588-0200.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/01
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 3/30/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		100	5	500	µg/L	4/4/01	WMS3010403	EPA 8260B
Ethyl-t-butyl Ether	ND		100	5	500	µg/L	4/4/01	WMS3010403	EPA 8260B
Methyl-t-butyl Ether	7600		100	5	500	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Amyl Methyl Ether	ND		100	5	500	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Butanol	ND		100	20	2000	µg/L	4/4/01	WMS3010403	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	113	65 - 135
Dibromofluoromethane	98	57 - 139
Toluene-d8	109	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/01
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 3/30/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		50	5	250	µg/L	4/4/01	WMS3010403	EPA 8260B
Ethyl-t-butyl Ether	ND		50	5	250	µg/L	4/4/01	WMS3010403	EPA 8260B
Methyl-t-butyl Ether	3100		50	5	250	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Amyl Methyl Ether	ND		50	5	250	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Butanol	ND		50	20	1000	µg/L	4/4/01	WMS3010403	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	112	65 - 135
Dibromofluoromethane	98	57 - 139
Toluene-d8	108	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Sierra Environmental, Inc.
2084 Alameda Way, Suite 201
San Jose, CA 95126
Attn: Mitch Hajiaghai

Date: 4/10/01
Date Received: 3/30/01
Project Name: ABE Petroleum
Project Number: 01-103.04
P.O. Number: 01-103.04
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 25019 **Lab Sample ID:** 25019-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 3/30/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		25	5	125	µg/L	4/4/01	WMS3010403	EPA 8260B
Ethyl-t-butyl Ether	ND		25	5	125	µg/L	4/4/01	WMS3010403	EPA 8260B
Methyl-t-butyl Ether	4700		25	5	125	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Amyl Methyl Ether	ND		25	5	125	µg/L	4/4/01	WMS3010403	EPA 8260B
tert-Butanol	ND		25	20	500	µg/L	4/4/01	WMS3010403	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	112	65 - 135
Dibromofluoromethane	98	57 - 139
Toluene-d8	110	65 - 135

DF = Dilution Factor ND = Not Detected DLR = Detection Limit Reported PQL = Practical Quantitation Limit

Analysis performed by Entech Analytical Labs, Inc. (CA ELAP #2346)

Michelle L. Anderson, Laboratory Director

Environmental Analysis Since 1983

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

CHAIN OF CUSTODY

Project Name: ABE Petroleum **Project No:** 01-103.04 **Date:** 3/30/01

Project Location: 1715 Mission Blvd **Client:** ABE Petroleum **Sampler:** M. Hajicaghei

Sample ID	Date Sampled	Sampling Time	Matrix	Nº of Containers	Analysis Requested							Turnaround Time
					8015/8020 TPHG BTEX, MTBE	8015 TPHD	418.1 TRPH	8010 VOCs	8270 SVOCs	Total Lead	Fuel oxgenates 8260	
MW-1	3/30/01	25019-001	Water	4	X						X	24-hour Other ___ Normal
MW-2	↓	-002	↓	↓	↓						↓	24-hour Other ___ Normal
MW-3	↓	-003	↓	↓	↓						↓	24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal

Remarks:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	3/30/01	1610	Joseph Machado	3/30/01	1605
Relinquished by	Date	Time	Received by	Date	Time

2084 Alameda Way • Suite 201 • San Jose • California • 95126
Phone (408) 248-3700 • Fax (408) 248-4700

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 Date: 3/30/01

Project Name: ABE PETROLEUM Well Nº: MW1

Field Personnel: M. Hajighai Weather: Clear and Warm

Project Location: 17715 Mission Blvd. Hayward.

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.25	20.30	12.95	0.16	0.64	1.44	2	6

Purge Method: Bailing Measuring Reference: TOC

Time	14:15 initial	14:20	12:25	12:31		
Volume Purged (gal)	0	2	4	6		
Temperature (° F)	76.3	72.9	73.5	73.5		
pH	6.98	6.62	6.33	6.40		
Specific Conductivity (umhos/cm)	550	550	550	660		
Turbidity/Color	clear	Brown	→	→		
Odor	PHC odor	→	→	→		

Comments: Hydrocarbon sheen on the water. Strong gasoline odor.

2084 Alameda Way • Suite 201 • San Jose • California • 95126
Phone (408) 248-3700 • Fax (408) 248-4700

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 Date: 3/30/01

Project Name: ABE Petroleum Well Nº: MW2

Field Personnel: M. Hojjaghai Weather: Clear and Warm

Project Location: 7715 Mission Blvd. Hayward

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.75	21.55	12.20	0.16	0.64	1.44	2	6

Purge Method: Bailing Measuring Reference: TOC

Time	13135 initial	13140	13146	13151		
Volume Purged (gal)	0	2	4	6		
Temperature (° F)	78.9	77.3	77.4	76.7		
pH	6.26	6.30	6.17	6.23		
Specific Conductivity (umhos/cm)	1230	1190	1180	1190		
Turbidity/Color	Clear	Brown	→	→		
Odor	HC odor	→		→		

Comments:

2084 Alameda Way • Suite 201 • San Jose • California • 95126
Phone (408) 248-3700 • Fax (408) 248-4700

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

GROUNDWATER MONITORING DATA FORM

Project No: 01-103.04 **Date:** 3/30/01

Project Name: ABE Petroleum **Well Nº:** MW3

Field Personnel: M. Hosseinpour **Weather:** Clear and Warm

Project Location: 1775 Mission Blvd. Hayward

PURGE WATER VOLUME CALCULATION	Total Well Depth (ft)	Depth to Water (ft	Water Column (ft)	Multiplier Casing Diameter			Casing Volume (gal)	Purged Volume (gal)
				2"	4"	6"		
	33.75	20.68		0.16	0.64	1.44	2.1	6.3

Purge Method: Bailing **Measuring Reference:** TOC

Time	12:50 initial	12:55	13:00	13:10		
Volume Purged (gal)	0	2	4	6.3		
Temperature (° F)	79.2	78.2	78.2	79.4		
pH	7.34	6.72	6.42	6.36		
Specific Conductivity (umhos/cm)	1370	1390	1370	1360		
Turbidity/Color	Brown	→	→	→		
Odor	P. Hydrocarbon odor	→	→	→		

Comments:

2084 Alameda Way • Suite 201 • San Jose • California • 95126
Phone (408) 248-3700 • Fax (408) 248-4700