FOURTH QUARTER 2002
GROUNDWATER MONITORING

ABE Petroleum LLC
17715 Mission Boulevard
Hayward, California 94539

Prepared for

Mr. Paul Garg
ABE Petroleum LLC

Prepared by

Sierra Environmental, Inc.

January 3, 2003
Project 02-103.07

Sierra Environmental, Inc.
Environmental Consultants

January 3, 2003
Project 02-103.07

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

Subject: Report for Fourth Quarter 2002 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 fourth quarter 2002 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 (# 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 was 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.

1670 Newhall St., Suite 212
Santa Clara, Ca 95050
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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.

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.

On March 30, 2001, Sierra performed first quarter 2001 groundwater monitoring at the Site. The field and analytical results are presented in Table I and II. Groundwater was measured at approximately 20 to 21 feet from top of the well casing (TOC) at the Site with a northwesterly flow direction.

On June 22, 2001, Sierra performed second quarter 2001 groundwater monitoring at the Site. Groundwater levels were measured at approximately 22 to 23 feet below TOC with a northwesterly flow direction during this monitoring event.

On September 20, 2001, Sierra performed third quarter 2001 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 24 to 25 feet below TOC with a northwesterly flow direction during this monitoring event.

On December 27, 2001, Sierra performed fourth quarter 2001 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.59 to 23.82 feet below TOC with a northwesterly flow direction during this monitoring event.

On September 24, 2002, Sierra performed third quarter 2002 groundwater monitoring at the Site. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 23.69 to 24.89 feet below TOC with a northwesterly flow direction during this monitoring event.

GROUNDWATER MONITORING

On December 17, 2002, Sierra performed fourth quarter 2002 groundwater monitoring at the Site. Sierra's field personnel measured the groundwater levels at MW1 through MW3 (Figure 3) using an electronic sounder. Depth of groundwater was measured to the TOC. Groundwater levels were measured at approximately 22.75 to

23.99 feet below TOC with a northwesterly flow direction during this monitoring event. Table I presents the groundwater measurement data.

Sierra's field personnel purged the wells using bailers. pH, temperature, and electrical 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 was stored in 55-gallon drums at a designated location at the Site. Sierra's quality assurance/quality control (QA/QC) protocol is presented in Appendix A.

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 B.

ANALYTICAL RESULTS

Analytical results obtained in this monitoring event show a slight increase in gasoline constituents in groundwater samples collected from MW1, MW2, and MW3. Table II presents Summary of the analytical results.

CONCLUSION AND RECOMMENDATIONS

The groundwater data obtained during this monitoring event show a slight increase of the gasoline constituents in the groundwater samples. The concentrations of TPHG, benzene, and MTBE remain to be high in the groundwater beneath the Site.

Sierra is in the process of preparing a work plan for offsite plume delineation. Sierra will submit the work plan for ACHCS review and approval shortly.

Sierra recommends to consider an interim soil and groundwater remediation for the Site.

LIMITATIONS

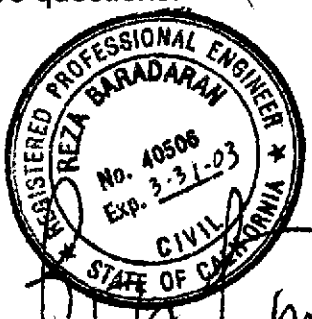
The content and conclusion provided by Sierra in this report are based on information collected during its assessment/monitoring, which include, but are not limited to field observations and analytical results for the groundwater samples collected at the Site.

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.

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	-	QA/QC Protocol
Appendix B	-	Certified Analytical Results and Chain-of-Custody Documentation

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

R02-103.06\4thQ2002GWM\MH0132003

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	2	99.46	20.32	79.14
	3-30-01			20.30	79.16
	6-22-01			21.91	77.55
	9-20-01			23.56	75.90
	12-27-01			22.59	76.87
	9-24-02			23.69	75.77
	12-17-02			22.75	76.71
MW2	8-18-00	2	100.58	21.55	79.03
	3-30-01			21.55	79.03
	6-22-01			23.15	77.43
	9-20-01			24.78	75.80
	12-27-01			23.82	76.76
	9-24-02			24.89	75.69
	12-17-02			23.99	76.59
MW3	8-18-00	2	99.69	20.68	79.01
	3-30-01			20.68	79.01
	6-22-01			22.31	77.38
	9-20-01			23.92	75.77
	12-27-01			22.95	76.74
	9-24-02			24.03	75.66
	12-17-02			23.09	76.60

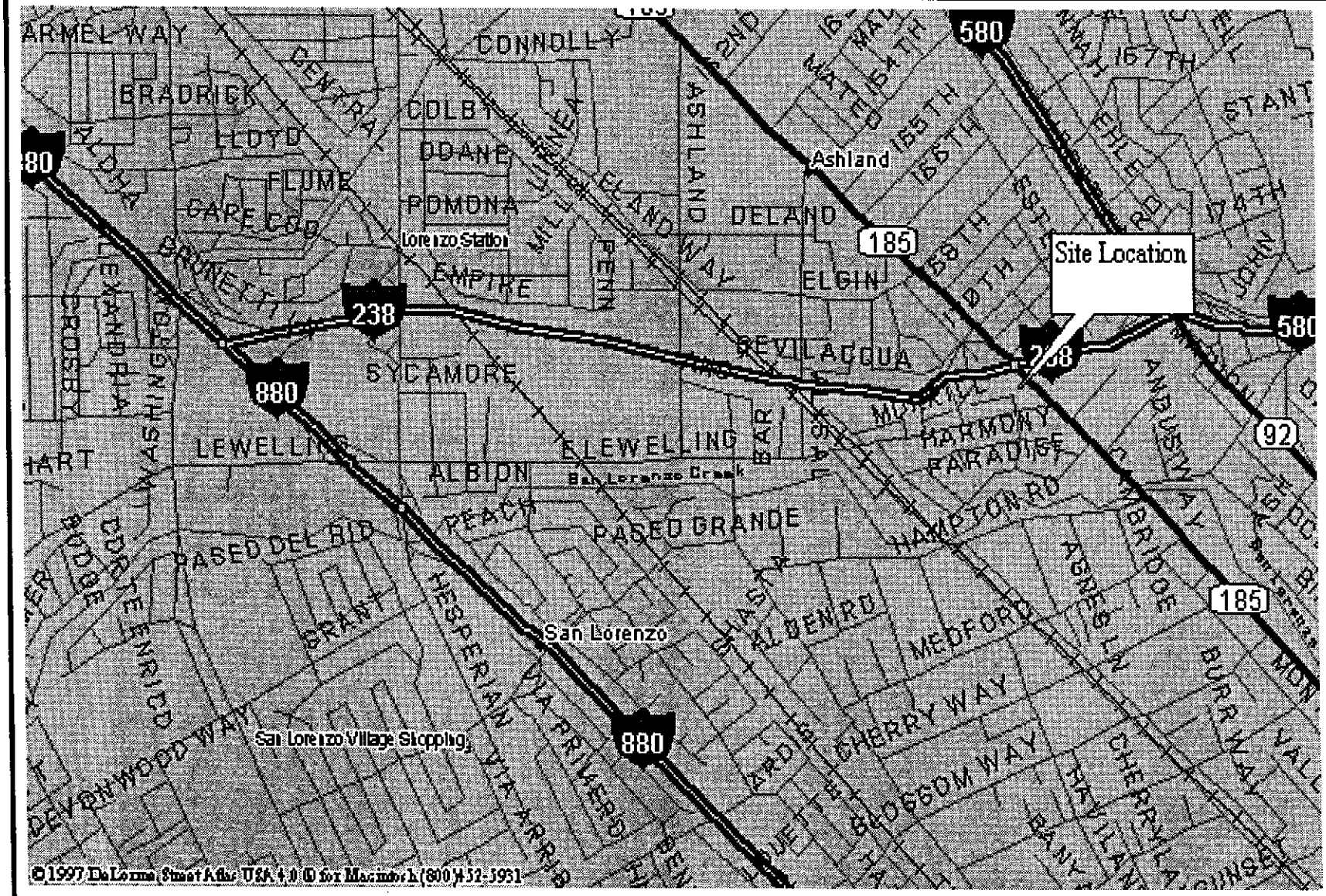
1. Depths to groundwater were measured to the top of the well casings
2. Water table elevations were measured in relation to an assumed datum (100') relative elevation

TABLE II
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

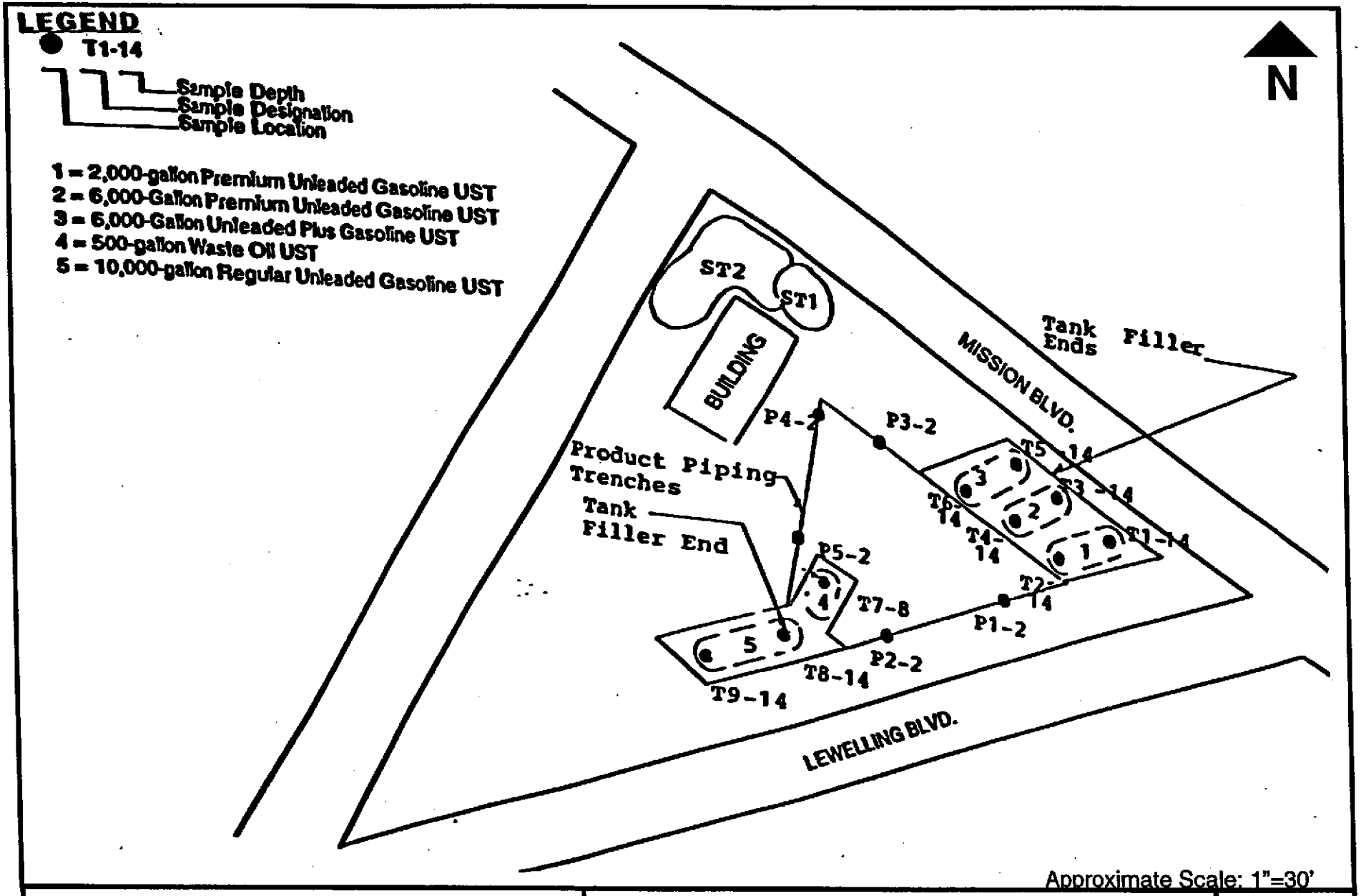
Sample ID	Sample Date	Sample Location	TPHG[1] ppb[3]	Benzene ppb	Toluene ppb	Ethylbenzene ppb	Xylenes ppb	MTBE[2] ppb
MW-1	8-18-00	MW1	280,000	10,000	16,000	11,000	49,000	4,000
*	3-30-01		98,000	8,600	14,000	6,300	26,000	7,600
*	6-22-01		110,000	7,500	12,000	5,700	24,000	3,800
*	9-20-01		93,000	8,700	11,000	6,300	27,000	4,600
*	12-27-01		140,000	7,700	11,000	6,500	28,000	7,700
*	9-24-02		110,000	4,600	4,000	4,000	18,000	3,400
*	12-17-02		110,000	6,600	6,700	5,400	23,000	2,900
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
*	6-22-01		57,000	2,500	350	4,200	12,000	1,800
*	9-20-01		42,000	2,300	230	4,300	12,000	2,200
*	12-27-01		70,000	2,900	390	4,800	14,000	2,400
*	9-24-02		110,000	1,600	200	3,400	9,100	2,500
*	12-17-02		66,000	2,400	340	4,600	13,000	1,900
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
*	6-22-01		35,000	4,000	340	2,900	7,600	4,100
*	9-20-01		30,000	3,800	260	2,500	6,600	5,300
*	12-27-01		39,000	4,400	340	3,000	6,700	5,500
*	9-24-02		53,000	4,100	270	3,100	6,600	6,400
*	12-17-02		40,000	3,600	240	2,200	5,700	5,200

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 in the Sample



SIERRA ENVIRONMENTAL, INC. *Environmental Consultants* 1670 Newhall St., Suite 212, Santa Clara, CA 95050 Phone [408]248-2700 • Fax [408] 248-4700	**SITE LOCATION MAP** Fourth Quarter 2002 Groundwater Monitoring ABE Petroleum LLC 17715 Mission Boulevard • Hayward • California	**FIGURE** **1** January 3, 2003 Project 02-103.06



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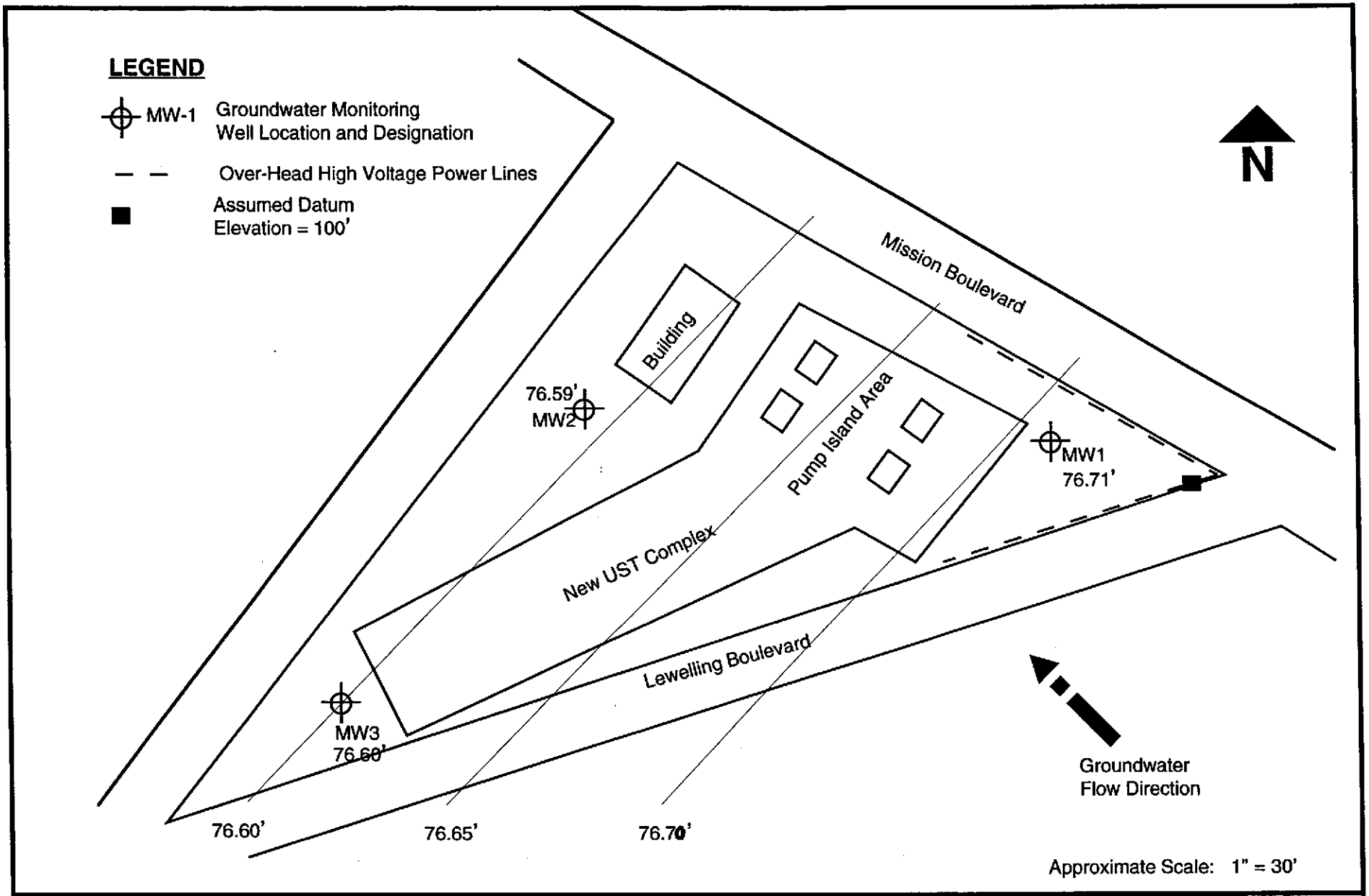
Former UST and Soil Sample Locations

Fourth Quarter 2002 Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE 2

January 3 2003
Project 02-103.07



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Phone [408]248-3700 • Fax [408] 248-4700

Groundwater Monitoring Well Locations

Fourth Quarter 2002 Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE 3

January 3, 2003
Project 02-103.07

Appendix A
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 activates 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 tap 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 B
CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Entech Analytical Labs, Inc.

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

December 24, 2002

Mitch Hajiaghai
Sierra Environmental, Inc.
1670 Newhall Street, Suite 212
Santa Clara, CA 95050

Order: 32589
Project Name: ABE Petroleum
Project Number: 02-103.07
Project Notes:

Date Collected: 12/17/2002
Date Received: 12/17/2002
P.O. Number: 02-103.07

On December 17, 2002, samples were received under documentented chain of custody. Results for the following analyses are attached:

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

Patti Sandrock
QA/QC Manager

Entech Analytical Labs, Inc.

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

Sierra Environmental, Inc.
1670 Newhall Street, Suite 212
Santa Clara, CA 95050
Attn: Mitch Hajiaghai

Date: 12/24/02
Date Received: 12/17/2002
Project Name: ABE Petroleum
Project Number: 02-103.07
P.O. Number: 02-103.07
Sampled By: Mike Hajiaghai

Certified Analytical Report

Order ID: 32589 **Lab Sample ID:** 32589-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	6600		250	0.5	125	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Toluene	6700		250	0.5	125	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Ethyl Benzene	5400		250	0.5	125	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Xylenes, Total	23000		250	1	250	µg/L	N/A	12/20/2002	WGC42697	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	113.2	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	110000		250	50	12500	µg/L	N/A	12/20/2002	WGC42697	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	119.1	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)

Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

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Santa Clara, CA 95050
Attn: Mitch Hajiaghai

Date: 12/24/02
Date Received: 12/17/2002
Project Name: ABE Petroleum
Project Number: 02-103.07
P.O. Number: 02-103.07
Sampled By: Mike Hajiaghai

Certified Analytical Report

Order ID: 32589 **Lab Sample ID:** 32589-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	2400		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Toluene	340		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Ethyl Benzene	4600		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Xylenes, Total	13000		200	1	200	µg/L	N/A	12/20/2002	WGC42697	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	113.6	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	66000		200	50	10000	µg/L	N/A	12/20/2002	WGC42697	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	122.1	65 - 135

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

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Sampled By: Mike Hajiaghai

Certified Analytical Report

Order ID: 32589 **Lab Sample ID:** 32589-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3600		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Toluene	240		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Ethyl Benzene	2200		200	0.5	100	µg/L	N/A	12/20/2002	WGC42697	EPA 8020
Xylenes, Total	5700		200	1	200	µg/L	N/A	12/20/2002	WGC42697	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	105.7	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	40000		200	50	10000	µg/L	N/A	12/20/2002	WGC42697	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	110.1	65 - 135

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

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Sampled By: Mike Hajiaghai

Certified Analytical Report

Order ID: 32589 **Lab Sample ID:** 32589-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		100	5	500	µg/L	12/18/2002	WMS11847B	EPA [redacted]
Ethyl-t-butyl Ether	ND		100	5	500	µg/L	12/18/2002	WMS11847B	EPA [redacted]
Methyl-t-butyl Ether	[redacted]		100	1	100	µg/L	12/18/2002	WMS11847B	EPA [redacted]
tert-Amyl Methyl Ether	ND		100	5	500	µg/L	12/18/2002	WMS11847B	EPA [redacted]
tert-Butanol	ND		100	10	1000	µg/L	12/18/2002	WMS11847B	EPA [redacted]

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	92.3	73 - 151
Dibromofluoromethane	96.6	57 - 156
Toluene-d8	90.8	77 - 150

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

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Certified Analytical Report

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Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		200	5	1000	µg/L	12/18/2002	WMS11847B	EPA 8260B
Ethyl-t-butyl Ether	ND		200	5	1000	µg/L	12/18/2002	WMS11847B	EPA 8260B
Methyl-t-butyl Ether	1900		200	1	200	µg/L	12/18/2002	WMS11847B	EPA 8260B
tert-Amyl Methyl Ether	ND		200	5	1000	µg/L	12/18/2002	WMS11847B	EPA 8260B
tert-Butanol	ND		200	10	2000	µg/L	12/18/2002	WMS11847B	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101.0	73 - 151
Dibromofluoromethane	101.0	57 - 156
Toluene-d8	104.0	77 - 150

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

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Sample Time: **Sample Date:** 12/17/2002 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		100	5	500	µg/L	12/19/2002	WMS11850	EPA 8260B
Ethyl-t-butyl Ether	ND		100	5	500	µg/L	12/19/2002	WMS11850	EPA 8260B
Methyl-t-butyl Ether	5200		100	1	100	µg/L	12/19/2002	WMS11850	EPA 8260B
tert-Amyl Methyl Ether	ND		100	5	500	µg/L	12/19/2002	WMS11850	EPA 8260B
tert-Butanol	ND		100	10	1000	µg/L	12/19/2002	WMS11850	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.1	73 - 151
Dibromofluoromethane	103.0	57 - 156
Toluene-d8	104.0	77 - 150

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

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

Patti Sandrock, QA/QC Manager

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

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

Quality Control Results Summary

QC Batch #: WGC42697
Matrix: Liquid
Units: µg/L
Date Analyzed: 12/20/2002

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
Test: TPH as Gasoline											
TPH as Gasoline	EPA 8015 M	ND		250		253.8	LCS	101.5			65.0 - 135.0
	Surrogate		**Surrogate Recovery**			**Control Limits (%)**					
	4-Bromofluorobenzene		79.0			65 - 135					
Test: BTEX											
Benzene	EPA 8020	ND		8		7.69	LCS	96.1			65.0 - 135.0
Ethyl Benzene	EPA 8020	ND		8		8.01	LCS	100.1			65.0 - 135.0
Toluene	EPA 8020	ND		8		7.43	LCS	92.9			65.0 - 135.0
Xylenes, total	EPA 8020	ND		24		24.4	LCS	101.7			65.0 - 135.0
	Surrogate		**Surrogate Recovery**			**Control Limits (%)**					
	4-Bromofluorobenzene		97.8			65 - 135					
Test: TPH as Gasoline											
TPH as Gasoline	EPA 8015 M	ND		250		246.2	LCSD	98.5	3.04	25.00	65.0 - 135.0
	Surrogate		**Surrogate Recovery**			**Control Limits (%)**					
	4-Bromofluorobenzene		79.0			65 - 135					
Test: BTEX											
Benzene	EPA 8020	ND		8		7.25	LCSD	90.6	5.89	25.00	65.0 - 135.0
Ethyl Benzene	EPA 8020	ND		8		7.35	LCSD	91.9	8.59	25.00	65.0 - 135.0
Toluene	EPA 8020	ND		8		6.95	LCSD	86.9	6.68	25.00	65.0 - 135.0
Xylenes, total	EPA 8020	ND		24		22.	LCSD	91.7	10.34	25.00	65.0 - 135.0
	Surrogate		**Surrogate Recovery**			**Control Limits (%)**					
	4-Bromofluorobenzene		98.4			65 - 135					

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Quality Control Results Summary

QC Batch #: WMS11847B
Matrix: Liquid
Units: µg/L
Date Analyzed: 12/18/2002

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
Test: EPA 8260B											
1,1-Dichloroethene	EPA 8260B	ND		20		12.9	LCS	64.5			57.3 - 132.4
Benzene	EPA 8260B	ND		20		21.3	LCS	106.5			65.0 - 135.0
Chlorobenzene	EPA 8260B	ND		20		20.1	LCS	100.5			65.0 - 135.0
Methyl-t-butyl Ether	EPA 8260B	ND		20		15.6	LCS	78.0			56.0 - 135.0
Toluene	EPA 8260B	ND		20		19.7	LCS	98.5			65.0 - 135.0
Trichloroethene	EPA 8260B	ND		20		20.1	LCS	100.5			65.0 - 135.0

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	99.6	73 - 151
Dibromofluoromethane	85.9	57 - 156
Toluene-d8	102.0	77 - 150

Test: EPA 8260B											
1,1-Dichloroethene	EPA 8260B	ND		20		12.1	LCSD	60.5	6.40	25.00	57.3 - 132.4
Benzene	EPA 8260B	ND		20		21.3	LCSD	106.5	0.00	25.00	65.0 - 135.0
Chlorobenzene	EPA 8260B	ND		20		21.	LCSD	105.0	4.38	25.00	65.0 - 135.0
Methyl-t-butyl Ether	EPA 8260B	ND		20		15.	LCSD	75.0	3.92	25.00	56.0 - 135.0
Toluene	EPA 8260B	ND		20		19.9	LCSD	99.5	1.01	25.00	65.0 - 135.0
Trichloroethene	EPA 8260B	ND		20		20.2	LCSD	101.0	0.50	25.00	65.0 - 135.0

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	100.0	73 - 151
Dibromofluoromethane	83.0	57 - 156
Toluene-d8	101.0	77 - 150

Entech Analytical Labs, Inc.

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Quality Control Results Summary

QC Batch #: WMS11850
Matrix: Liquid

Units: µg/L
Date Analyzed: 12/19/02

Parameter	Method	Blank Result	Spike Sample ID	Spike Amount	Sample Result	Spike Result	QC Type	% Recovery	RPD	RPD Limits	Recovery Limits
Test: Oxygenates by EPA 8260B											
Methyl-t-butyl Ether	EPA 8260B	ND		20		15.4	LCS	77.0			56.0 - 135.0

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	101.0	73 - 151
Dibromofluoromethane	87.1	57 - 156
Toluene-d8	102.0	77 - 150

Test: Oxygenates by EPA 8260B											
Methyl-t-butyl Ether	EPA 8260B	ND		20		15.5	LCSD	77.5	0.00	25.00	56.0 - 135.0

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	102.0	73 - 151
Dibromofluoromethane	87.1	57 - 156
Toluene-d8	103.0	77 - 150

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

CHAIN OF CUSTODY

Project Name: ABE PETROLEUM **Project No:** 02-103.01 **Date:** 12-17-02

Project Location: 17715 MISSION BLVD **Client:** ABE PETROLEUM **Sampler:** MIKE HAJIAGHAEI

Sample ID	Date Sampled	Sampling Time	Matrix	Nº of Containers	Analysis Requested: 8015/8020 TPHG BTEX	8015 TPHD	418.1 TRPH	BTEX 8020	Fuel Oxygenates 8260B			Turnaround Time
MW-1	12/17/02		WATER	4	X				X		32589-001	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]	12/17/02	2:50	[signature]	12/17	3:00 PM

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