STID 4117

OCT 1 0 2001

THIRD QUARTER 2001
GROUNDWATER MONITORING

ABE Petroleum LLC
17715 Mission Boulevard
Hayward, California 94539

REVIEWED 10/15/01 AG

Prepared for

Mr. Paul Garg
ABE Petroleum LLC

Prepared by

Sierra Environmental, Inc.

October 2, 2001
Project 01-103.05

Sierra Environmental, Inc.
Environmental Consultants

October 2, 2001
Project 01-103.05

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

Subject: Report for Third 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 third 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 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
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.

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 1st 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 2nd 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.

GROUNDWATER MONITORING

On September 20, 2001, Sierra performed 3rd quarter 2001 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 24 to 25 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 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 decreasing trend in TPHG and an increasing trend in MTBE in groundwater beneath the site. Table II presents Summary of the analytical results.

CONCLUSION AND RECOMMENDATIONS

The groundwater data obtained during this monitoring event show decrease in TPHG concentrations and increase in MTBE concentrations. The concentrations of TPHG, benzene, and MTBE remain to be high in the groundwater samples. To confirm that this trend will not change at the end of the fall, Sierra recommends continuing with the remaining groundwater monitoring for 2001.

LIMITATIONS

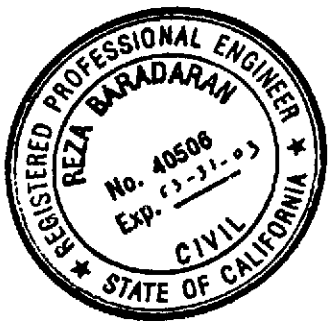
The content and conclusion provided by Sierra in this report are based on information collected during its assessment/monitoring, which include, but are not limited to field observations and analytical results for the groundwater samples collected at the Site.

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	-	QA/QC Protocol
Appendix B	-	Certified Analytical Results and Chain-of-Custody Documentation & Groundwater Monitoring Data Forms

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

R01-103.05\3rdQ2001GWM\AF10022001

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
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
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

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

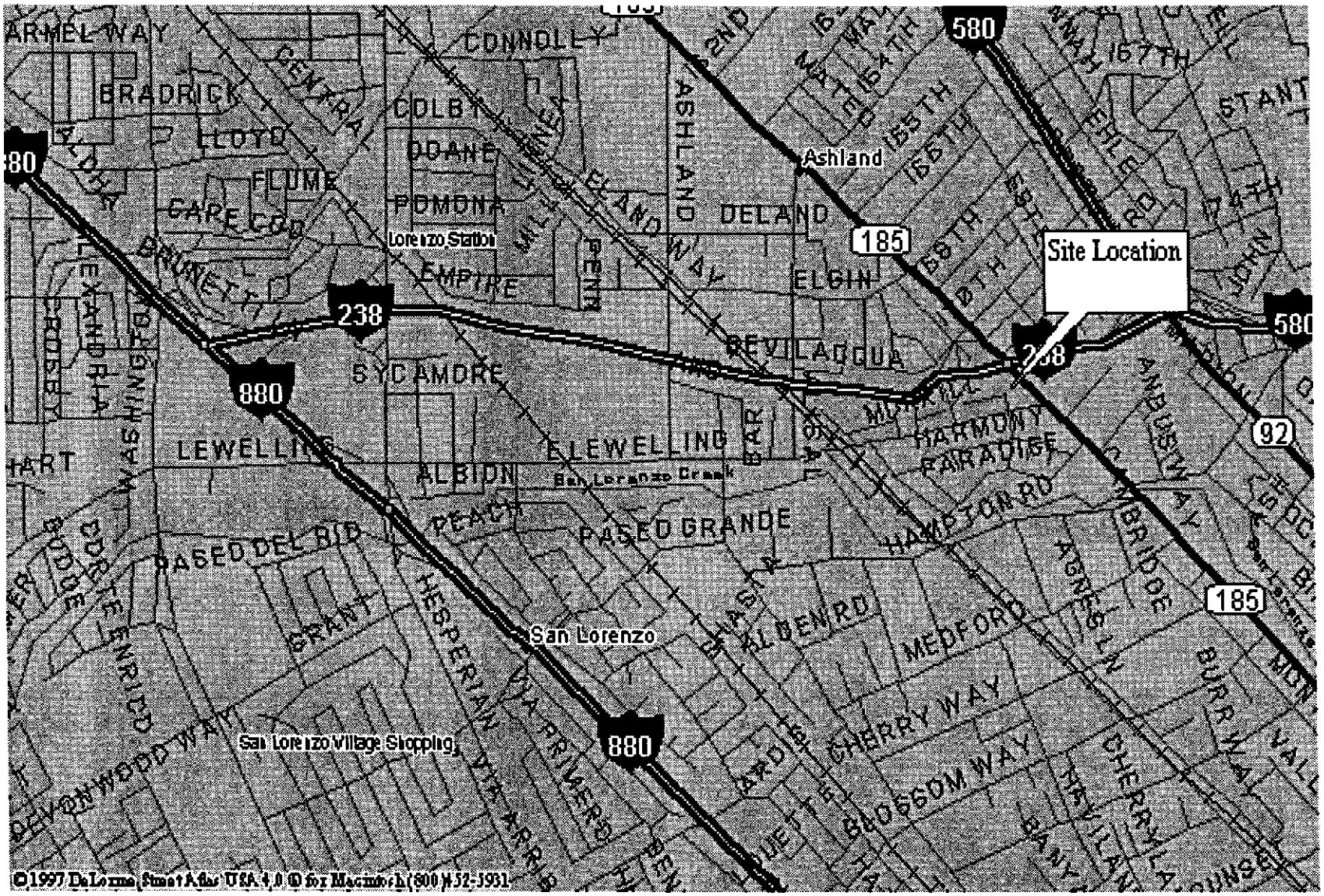
TABLE II
ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

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
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
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

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

** Additionally, 630 ppb tert-Butanol was detected in the sample

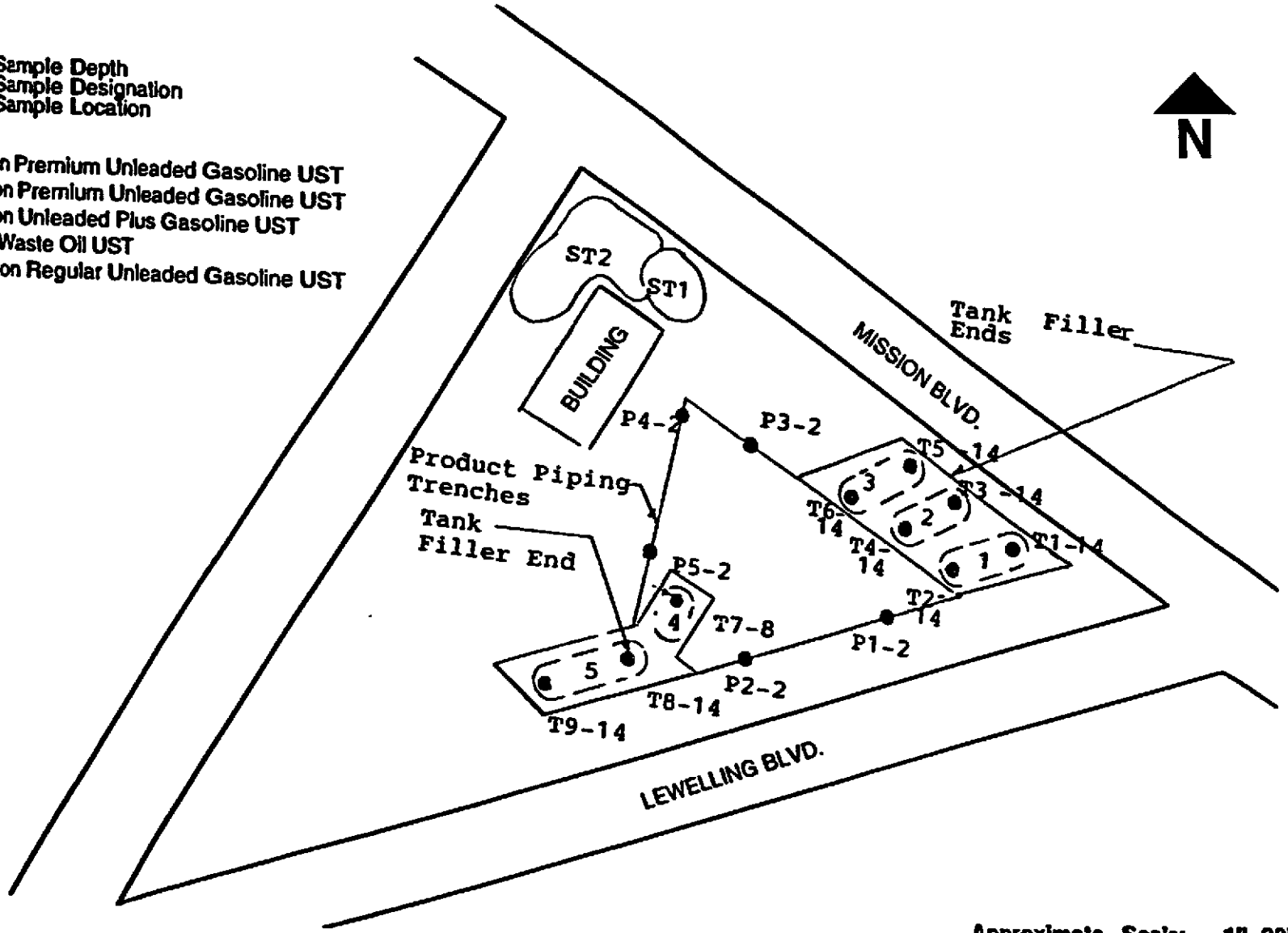


SIERRA ENVIRONMENTAL, INC. *Environmental Consultants* 1670 Newhall St., Suite 212, Santa Clara, CA 95050 Phone [408]248-2700 • Fax [408] 248-4700	**SITE LOCATION MAP** Third Quarter 2001, Groundwater Monitoring ABE Petroleum LLC 17715 Mission Boulevard • Hayward • California	**FIGURE** **1** October 2, 2001 Project 01-103.05

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'

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Former UST and Soil Sample Locations

Third Quarter 2001 Groundwater Monitoring
ABE Petroleum LLC

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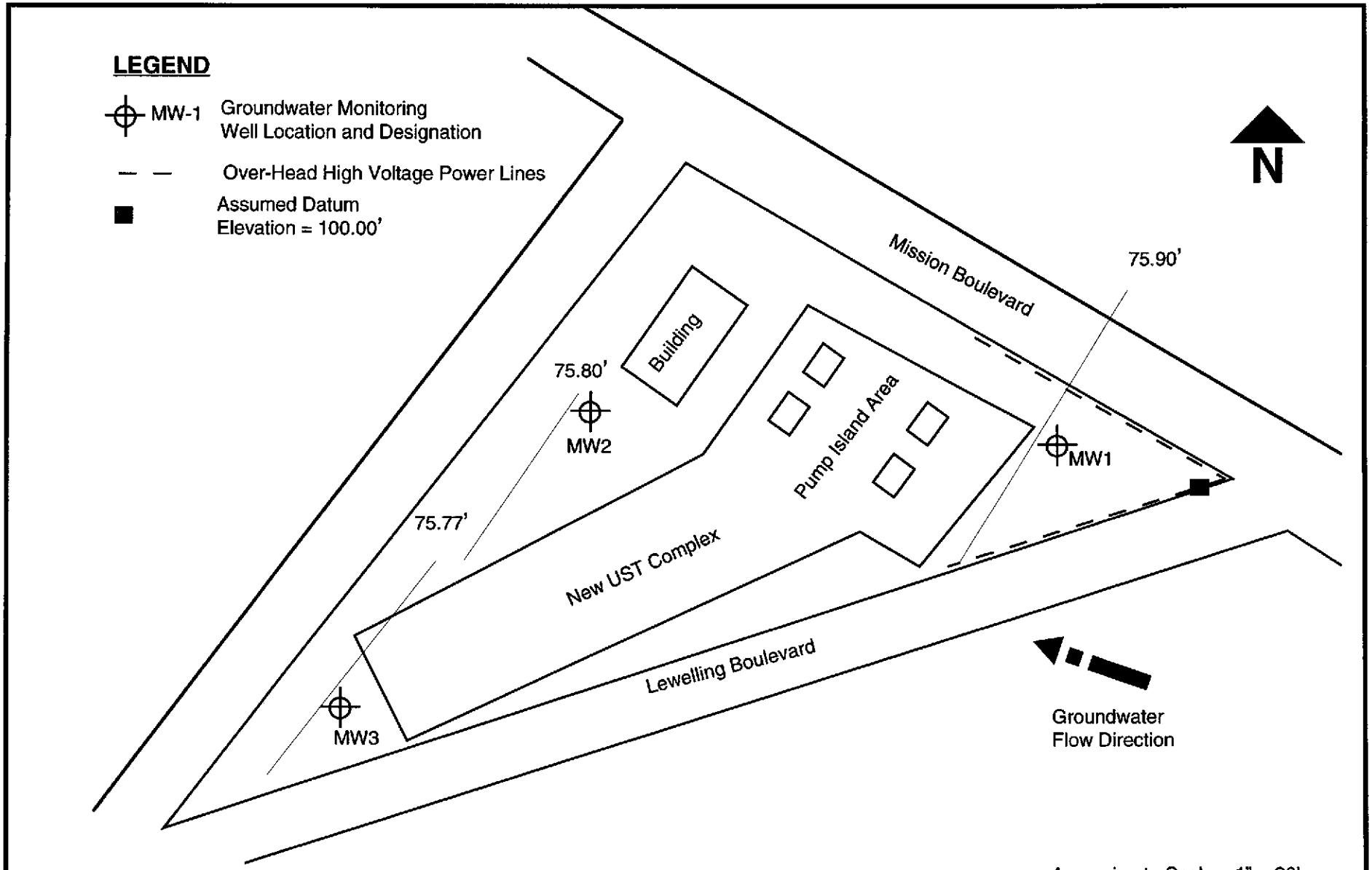
FIGURE 2

October 2 2001
Project 01-103.05



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Groundwater Monitoring Well Locations

Third Quarter 2001 Groundwater Monitoring
ABE Petroleum LLC

17715 Mission Boulevard • Hayward • California

FIGURE 3

October 2, ,2001
Project 01-103.05

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 & GROUNDWATER MONITORING DATA FORMS

Entech Analytical Labs, Inc.

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

September 29, 2001

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

Order: 26989
Project Name: ABF Petroleum IIC
Project Number: 01-103 05
Project Notes:

Date Collected: 9/20/01
Date Received: 9/20/01
P.O. Number: 01-103 05

On September 20, 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
	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
Laboratory Director

Entech Analytical Labs, Inc.

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

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

Date: 9/28/01
Date Received: 9/20/01
Project Name: ABF Petroleum IIC
Project Number: 01-103 05
P.O. Number: 01-103 05
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26989 **Lab Sample ID:** 26989-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 9/20/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	8700		200	0.5	100	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Toluene	11000		200	0.5	100	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Ethyl Benzene	6300		200	0.5	100	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Xylenes, Total	27000		200	0.5	100	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	89	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	2900		200	5	1000	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	89	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
tert-Butanol	ND		50	20	1000	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Methyl-t-butyl Ether	4600		50	5	250	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Diisopropyl Ether	ND		50	5	250	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Ethyl-t-butyl Ether	ND		50	5	250	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
tert-Amyl Methyl Ether	ND		50	5	250	µg/L	N/A	9/26/01	WMS31183	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	127	65 - 135
Dibromofluoromethane	109	57 - 139
Toluene-d8	124	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	93000		200	50	10000	µg/L	N/A	9/25/01	WGC22171	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	94	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.
1670 Newhall Street
Santa Clara, CA 95050
Attn: Mitch Hajiaghai

Date: 9/28/01
Date Received: 9/20/01
Project Name: ABF Petroleum IIC
Project Number: 01-103 05
P.O. Number: 01-103 05
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26989 **Lab Sample ID:** 26989-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 9/20/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	2300		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Toluene	230		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Ethyl Benzene	4300		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Xylenes, Total	12000		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	81	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	1500		100	5	500	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	81	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
tert-Butanol	ND		25	20	500	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Methyl-t-butyl Ether	2200		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Diisopropyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Ethyl-t-butyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
tert-Amyl Methyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	127	65 - 135
Dibromofluoromethane	111	57 - 139
Toluene-d8	122	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	42000		100	50	5000	µg/L	N/A	9/25/01	WGC22171	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.

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

Date: 9/28/01
Date Received: 9/20/01
Project Name: ABF Petroleum IIC
Project Number: 01-103 05
P.O. Number: 01-103 05
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 26989 **Lab Sample ID:** 26989-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 9/20/01 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3800		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Toluene	260		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Ethyl Benzene	2500		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020
Xylenes, Total	6600		100	0.5	50	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	85	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	3500		100	5	500	µg/L	N/A	9/25/01	WGC22171	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	85	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
tert-Butanol	630		25	20	500	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Methyl-t-butyl Ether	5300		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Diisopropyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
Ethyl-t-butyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B
tert-Amyl Methyl Ether	ND		25	5	125	µg/L	N/A	9/26/01	WMS31183	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	125	65 - 135
Dibromofluoromethane	110	57 - 139
Toluene-d8	123	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	30000		100	50	5000	µg/L	N/A	9/25/01	WGC22171	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	90	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 LLC **Project No:** 01-103.05 **Date:** 9/20/01

Project Location: 17715 Mission Blvd **Client:** ABE Petroleum **Sampler:** Mitch Hajiaghai

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 oxi 8260	
MW-1	9/20/01		Water	6	X			216989-001			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
	9/20/01	1558	Joseph Machado	9/20/01	1600
Relinquished by	Date	Time	Received by	Date	Time

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SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

GROUNDWATER MONITORING DATA FORM

Project No: 01-103.05 **Date:** 9/20/01

Project Name: ABE Petroleum LLC **Well Nº:** MW1

Field Personnel: Mitch Hajiaghai **Weather:**

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	23.56	9.69	0.16	0.64	1.44	1.55	4.65

Purge Method: Bailer **Measuring Reference:** Top of Well Casing

Time	11:20	11:25	11:30	11:37		
Volume Purged (gal)	0	1.5	3	4.65		
Temperature (° F)	73.8	70.4	69.9	69.5		
pH	6.15	5.98	6.29	5.87		
Specific Conductivity (umhos/cm)	500	480	490	490		
Turbidity/Color	GREEN	→	→	→		
Odor	HC ODOR	→	→	→		

Comments: HC Sheen, HC odor

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GROUNDWATER MONITORING DATA FORM

Project No: 01-103.05 **Date:** 9/20/01

Project Name: ABE Petroleum LLC **Well Nº:** MW2

Field Personnel: Mitch Hajiaghai **Weather:**

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"		
	33.75	24.78	8.97	0.16	0.64	1.44	1.43	4.32

Purge Method: Bailer **Measuring Reference:** Top of Well Casing

Time	10:30	10:41	10:50	11:02		
Volume Purged (gal)	0	1.5	2.5	4.5		
Temperature (° F)	71.8	71.2	72.9	76.3		
pH	6.86	6.65	6.6	6.76		
Specific Conductivity (umhos/cm)	800	790	790	810		
Turbidity/Color	Clear	SHEEN	→	→		
Odor	HC ODOR	→	→	→		

Comments: HC SHEEN & ODOR

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GROUNDWATER MONITORING DATA FORM

Project No: 01-103.05 **Date:** 9/20/01

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

Field Personnel: Mitch Hajiaghai **Weather:**

Project Location: 17215 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	23.92	9.83	0.16	0.64	1.44	1.57	4.71

Purge Method: Bailer **Measuring Reference:** Top of Well Casing

Time	10:25	10:37	10:40	10:45		
Volume Purged (gal)	0	1.5	2.5	5		
Temperature (° F)	70.1	71.2	71.3	72.1		
pH	6.59	6.84	6.77	6.72		
Specific Conductivity (umhos/cm)	910	920	980	990		
Turbidity/Color	CLEAR	GREEN →	→	→		
Odor	HC ODOR	→	→	→		

Comments: FEW DROPLETS OF SHEEN
STRONG HC ODOR

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SIERRA ENVIRONMENTAL, INC.
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CHAIN OF CUSTODY

Project Name: ABE Petroleum LLC **Project No:** 01-103.05 **Date:** 9/20/01

Project Location: 17715 Mission Blvd **Client:** ABE Petroleum **Sampler:** Mitch Hajiaghai

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 oxy 8260	
MW-1	9/20/01		Water	6	X						X	24-hour Other ____ Normal
MW-2	↓		↓	↓	↓						↓	24-hour Other ____ Normal
MW-3	↓		↓	↓	↓						↓	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
	9/20/01	1558	Joseph Machado	9/20/01	1600
Relinquished by	Date	Time	Received by	Date	Time

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