PRELIMINARY SUBSURFACE ASSESSMENT

ABE Petroleum

17715 Mission Boulevard
Hayward, California 94539

Prepared for

Mr. Paul Garg
ABE Petroleum

Prepared by

Sierra Environmental, Inc.

August 31, 2000
Project 00-103.03

Sierra Environmental, Inc.
Environmental Consultants

July 31, 2000
Project 00-103.03

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

Subject: Report for Preliminary Subsurface Assessment, 17715 Mission Boulevard, Hayward, California

Dear Mr. Garg:

Sierra Environmental, Inc. (Sierra) is pleased to present this report summarizing results of preliminary subsurface assessment Sierra performed at the subject location, hereafter, referred to as Site. Figure 1 shows the Site location. The assessment was requested by Alameda County Health Care Services (ACHCS) in a letter dated June 24, 1998, and January 4, 2000, as result of gasoline impact to soils beneath the Site. ACHCS requested the Site's owner to determine the vertical extent and magnitude of soil contamination, and assess whether groundwater beneath the Site has been impacted with gasoline constituents.

This report includes field observations and physical and chemical information for soil and groundwater obtained during the preliminary subsurface assessment at the Site, and our recommendations.

OBJECTIVE

The objective of the assessment was to determine horizontal and vertical extent of soil contamination within the proximity of the Site property boundaries, and to assess whether groundwater beneath the Site has been impacted with gasoline constituents.

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BACKGROUND

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 on September 16, 1997. 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. 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.

SCOPE OF WORK

Sierra prepared a work plan dated September 30, 1998, describing scope of the assessment, and submitted the work plan to ACHCS for review and approval. Mr. Amir Gholami of ACHCS approved the work in a letter dated August 19, 1999.

Sierra drilled 3 exploratory soil borings and converted them to groundwater monitoring well MW1 through MW3 at the Site. Sierra obtained well construction permits from Alameda County Public Works Agency (ACPWA) for the wells. Sierra collected soil samples from the borings for chemical analysis, developed the wells, and collected groundwater samples for chemical analysis. Sierra retained an independent land surveyor to survey top of the well casing elevations. Sierra measured groundwater elevations, and determined its gradient. Sierra prepared this report summarizing the findings.

PREFIELD ACTIVITIES

Sierra prepared a health and safety plan, marked boring locations, coordinated with a state-licensed drilling contractor, a state-certified analytical laboratory, and the client. Sierra prepared appropriate drilling and well construction permit application for each well and submit to ACPWA, and notify Underground Services Alert (USA) to clear all the underground utilities. Sierra prepared necessary equipment and material before starting the drilling activities. Sierra contacted ACHCA's representative prior to starting the work and notified them of the starting drilling date and time.

FIELD ACTIVITIES

Drilling Activities

On August 14, 2000, Sierra retained Hew Drilling Company, Inc. (Hew) of Palo Alto, California, to drill three 8-inch-diameter borings and converted them to groundwater monitoring wells MW1 through MW3. Hew is a State-certified drilling contractor (C57-604987). The well locations are shown in Figure 3. Hew utilized a CME 55 drilling equipment to drill the borings. Soil borings were drilled using clean hollow-stem augers. The borings were drilled to approximately 35 feet bgs. Groundwater was first encountered in the borings ranging approximately 27 to 34 feet bgs and raised to approximately 22-24 feet bgs. Soil types encountered in the borings were consistent, and they were consisted of interbeded lenses of silty sandy clay and clayey silty sand with a thin lens of sand at approximately 19 to 22 feet bgs.

Sierra stored the drill cuttings in 55-gallon drums, sealed and labeled the drums, and placed them at a designated location at the Site.

All sampling equipment were washed with Liqui-Nox® (a phosphate-free laboratory detergent) and rinsed with clean tap water at each sampling interval. Wash and rinse water was stored in a 55-gallon drum at a designated area at the Site.

Soil Sampling

Hew drilled MW1 first. Sierra collected soil samples at 5-foot intervals starting at 5 feet bgs using a California standard split spoon sampler lined with clean 6-inch-long stainless steel rings. After collection, the samples were inspected for soil type, unusual odor or stain, and screened with a photoionization detector (PID). Soil types and their physical appearances were documented in boring logs. Soil sample MW1-5 through MW1-30 were collected from MW1 for analysis. Hydrocarbon odor was detected in soil samples collected at 10 feet bgs and below this depth in boring MW1. Soil samples M2-5 through M2-30 were collected from boring MW2. Soil samples MW3-5 through MW3-30 were collected from boring MW3. After inspection, the samples were sealed with Teflon® tape and plastic end- caps, labeled, and placed in a cooler. Sierra delivered the samples to Entech Analytical Labs, Inc. (Entech) of Sunnyvale, California for chemical analysis. Entech is an independent State-certified analytical laboratory (ELAP # I-2346). The samples were analyzed for gasoline constituents. Table 1 summarizes the analytical results for the soil samples. Appendix B presents the exploratory boring logs.

Groundwater Monitoring Well Construction and Development

The groundwater monitoring wells were constructed using 2-inch-diameter slotted, and solid polyvinyl chloride (PVC) casings. The slotted section of the casings were packed with sand and connected to solid casings. Approximately 1 foot of Bentonite® pellet was placed on the sand packs and hydrated before neat Portland cement was used to seal

the annular spaces of the wells. The well-heads were secured with locking expansion caps, and 8-inch-diameter manholes. Well construction diagrams, and copies of the well construction permits are enclosed in Appendix C.

On August 18, 2000, Sierra developed the wells to clean and stabilize the sand and aquifer material around the slotted section of the wells. Sierra measured groundwater levels in the wells. No product was observed on the groundwater of the wells. Hydrocarbon odor was detected in the water extracted from the wells. Petroleum hydrocarbon sheen was observed on the water of the wells After purging the wells, Sierra collected groundwater sample MW-1 through MW-3 from the wells for chemical analysis. After collection, water samples were transferred into clean volatile organic analysis (VOA) vials provided by Entech. The VOAs were sealed with Teflon®-septum screw caps, labeled, placed on ice, and transported to Entech with appropriate chain-of-custody documentation. Summary of the analytical results for the groundwater samples is presented in table II.

All the sampling and groundwater measurement equipment were washed with Liqui-Nox® and rinsed with tap water. The extracted water from the wells was stored in a 55-gallon drum at the Site. The drum was sealed, labeled, and stored at the Site.

Sierra performed its field activities in accordance with its QA/QC protocol (Appendix D).

Well-Head Survey

On August 18, 2000, Sierra retained David Purcell, an independent professional surveyor, to survey top of the well casings at the Site. Groundwater and surveyed casing elevations are presented in Table III. Top of the well casings were surveyed in relation to a relative elevation (assumed 100') on the sidewalk curb, near the Site. According to the survey results, groundwater flow direction appears to be toward northwest with a gradient of 0.001 ft/ft.

CHEMICAL ANALYSIS

All soil and groundwater samples were analyzed for TPHG using United State Environmental Protection Agency (EPA) modified method 8015, and for benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) using EPA method 8020. One groundwater sample (MW-1) was also analyzed for fuel oxygenates using EPA method 8260. Certified analytical results and chain-of-custody documentation are presented in Appendix E.

SUMMARY

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.

DISCUSSION

The highest concentrations of gasoline constituents were detected in soil and groundwater samples collected from MW1 suggesting that the former tank complex may be the major source of the groundwater impact beneath the Site. Among gasoline constituents benzene and MTBE are considered carcinogens and, therefore, their presence above threshold levels may adversely impact groundwater quality.

MTBE is a colorless chemical compound that is manufactured for primary use in gasoline. It is a common compound in reformulated fuel developed to reduce smog and meet Clean Air Act goals. MTBE has been used in gasoline since 1979, but came into statewide, year-round use in 1996. The characteristics of MTBE are unlike those of other gasoline constituents and solvents. MTBE is highly soluble and migrates quickly with groundwater. It does not adhere onto soil particles, and it does not appear to readily biodegrade in the environment. EPA has labeled MTBE a "possible" human carcinogen. Cal/EPA has established and interim "action level" (AL) of 35 ppb in drinking water (Santa Clara Valley Water District, Facts about MTBE and Drinking Water in Santa Clara County, May 29, 1997). Preliminary Remedial Goal (PRG) for MTBE in tap water, as prescribed by EPA, is 20 µg/l (ppb). PRG for benzene in tap water is 0.39 ppb.

RECOMMENDATIONS

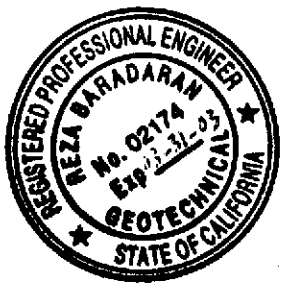
Because concentrations of MTBE and benzene in groundwater sample collected from the wells at the Site are above regulatory threshold, Sierra recommends to perform one hydrologic cycle (four quarters) of groundwater monitoring to document groundwater data at different groundwater fluctuation cycle. The groundwater monitoring also will enable us to determine whether gasoline constituents, benzene and MTBE in particular, in groundwater beneath the Site remain stable, and decrease with natural attenuation.

Additionally, Sierra recommends to perform a subsurface investigation to delineate the horizontal extend of the gasoline plume. The scope of the investigation can be designed to obtain adequate information to perform a risk-based corrective action (RBCA) for the Site.

Sierra appreciates the opportunity of 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, CAC
Principal

Attachments:

Table I	-	Analytical Results for Soil Samples
Table II	-	Analytical Results for Groundwater Samples
Table III	-	Groundwater Elevation Data
Figure 1	-	Site Location Map
Figure 2	-	Former UST and Soil Sample Locations
Figure 3	-	Groundwater Monitoring Well Locations
Appendix A	-	Site's Historical Analytical Data for Soil Samples
Appendix B	-	Exploratory Boring Logs
Appendix C	-	Groundwater Monitoring Well Construction Diagrams & Permits
Appendix D	-	QA/QC Protocol
Appendix E	-	Certified Analytical Results and Chain-of-Custody Documentation

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

TABLE I
ANALYTICAL RESULTS FOR SOIL SAMPLES

Sample ID	Sample Date	Sample Depth	Sample Location	TPHG[1] ppm[3]	Benzene ppm	Toluene ppm	Ethylbenzene ppm	Xylenes ppm	MTBE[2] ppm
MW1-5	8-14-00	5	MW1	1.8	ND[4]	0.13	ND	ND	0.39
MW1-10	8-14-00	10	MW1	12	0.17	0.17	0.56	2.0	0.91
MW1-15	8-14-00	15	MW1	20	0.21	0.91	0.75	3.7	1.7
MW1-20	8-14-00	20	MW1	720	2.2	25	14	64	3.4
MW1-25	8-14-00	25	MW1	26	1.4	2.8	0.95	4.8	1.2
MW1-30	8-14-00	30	MW1	120	1.6	2.7	4.3	18	ND
MW2-5	8-14-00	5	MW2	ND	ND	ND	ND	ND	ND
MW2-10	8-14-00	10	MW2	ND	0.032	0.013	0.11	0.40	ND
MW2-15	8-14-00	15	MW2	ND	ND	ND	ND	ND	ND
MW2-20	8-14-00	20	MW2	ND	ND	ND	ND	ND	ND
MW2-25	8-14-00	25	MW2	17	0.079	0.021	0.12	0.13	ND
MW2-30	8-14-00	30	MW2	130	0.54	0.17	2.1	5.2	ND
MW3-5	8-14-00	5	MW3	ND	ND	ND	ND	ND	ND
MW3-10	8-14-00	10	MW3	ND	ND	ND	ND	ND	ND
MW3-15	8-14-00	15	MW3	ND	ND	ND	ND	ND	ND
MW3-20	8-14-00	20	MW3	ND	0.007	ND	0.009	ND	ND
MW3-25	8-14-00	25	MW3	22	0.21	0.073	0.72	2.2	ND
MW3-30	8-14-00	30	MW3	83	0.93	0.52	3.0	13	ND

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

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	280000	10000	16000	11000	49000	4000
MW-2	8-18-00	MW2	290000	3700	990	7300	26000	ND[4]
MW-3	8-18-00	MW3	46000	3200	550	3700	14000	2200

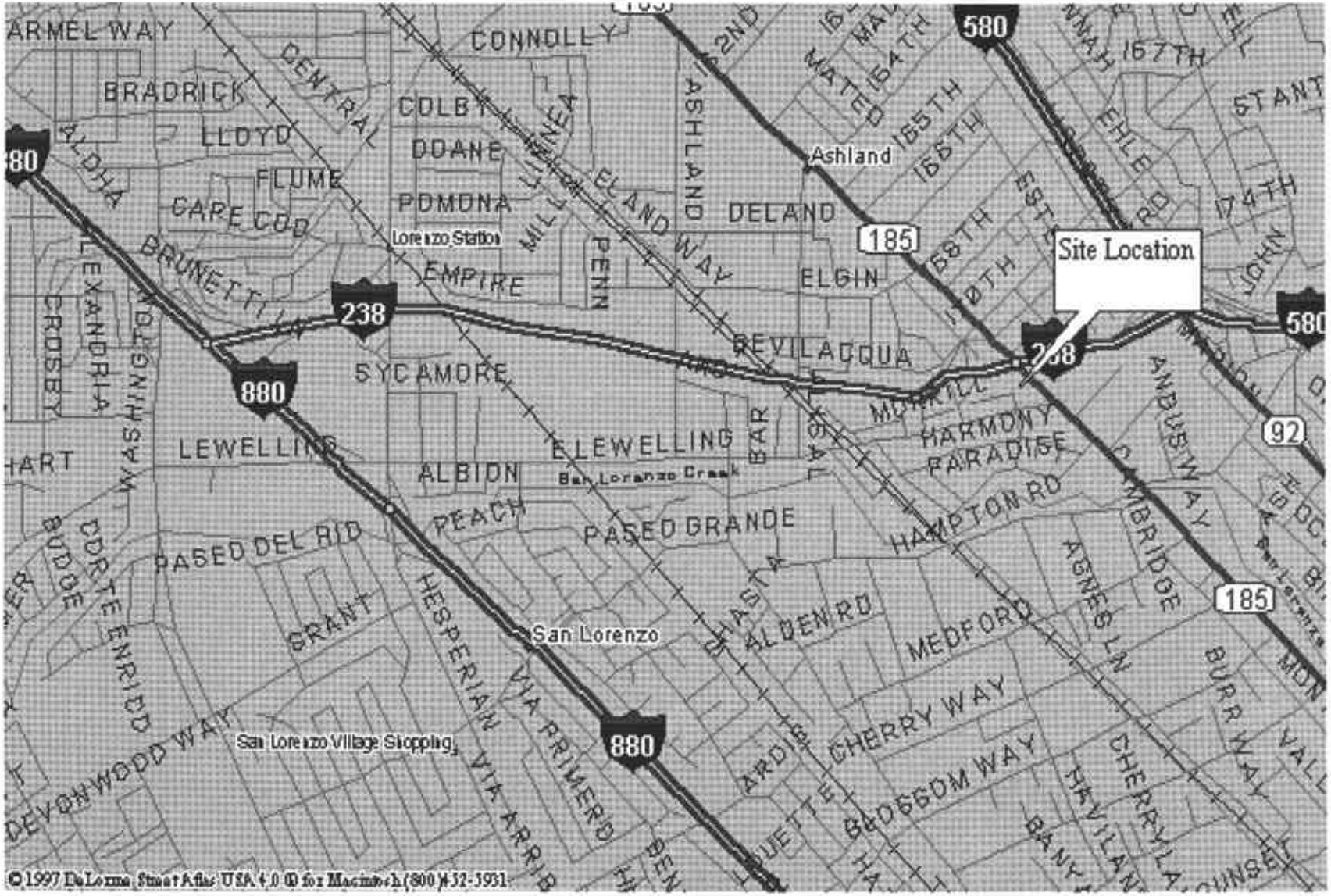
1. TPHG = Total Petroleum Hydrocarbons as Gasoline
2. MTBE = Methyl Tertiary Butyl Ether
3. ppb = Parts Per Billion
4. ND = Below Laboratory Detection Limit

* The Sample was Analyzed for Fuel Oxygenates using EPA Method 8260. Only MTBE was Detected using the method. 4300 ppb MTBE was recorded in the Same Sample Using EPA method 8020.

TABLE III
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
MW2	8-18-00	2	100.58	21.55	79.03
MW3	8-18-00	2	99.69	20.68	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



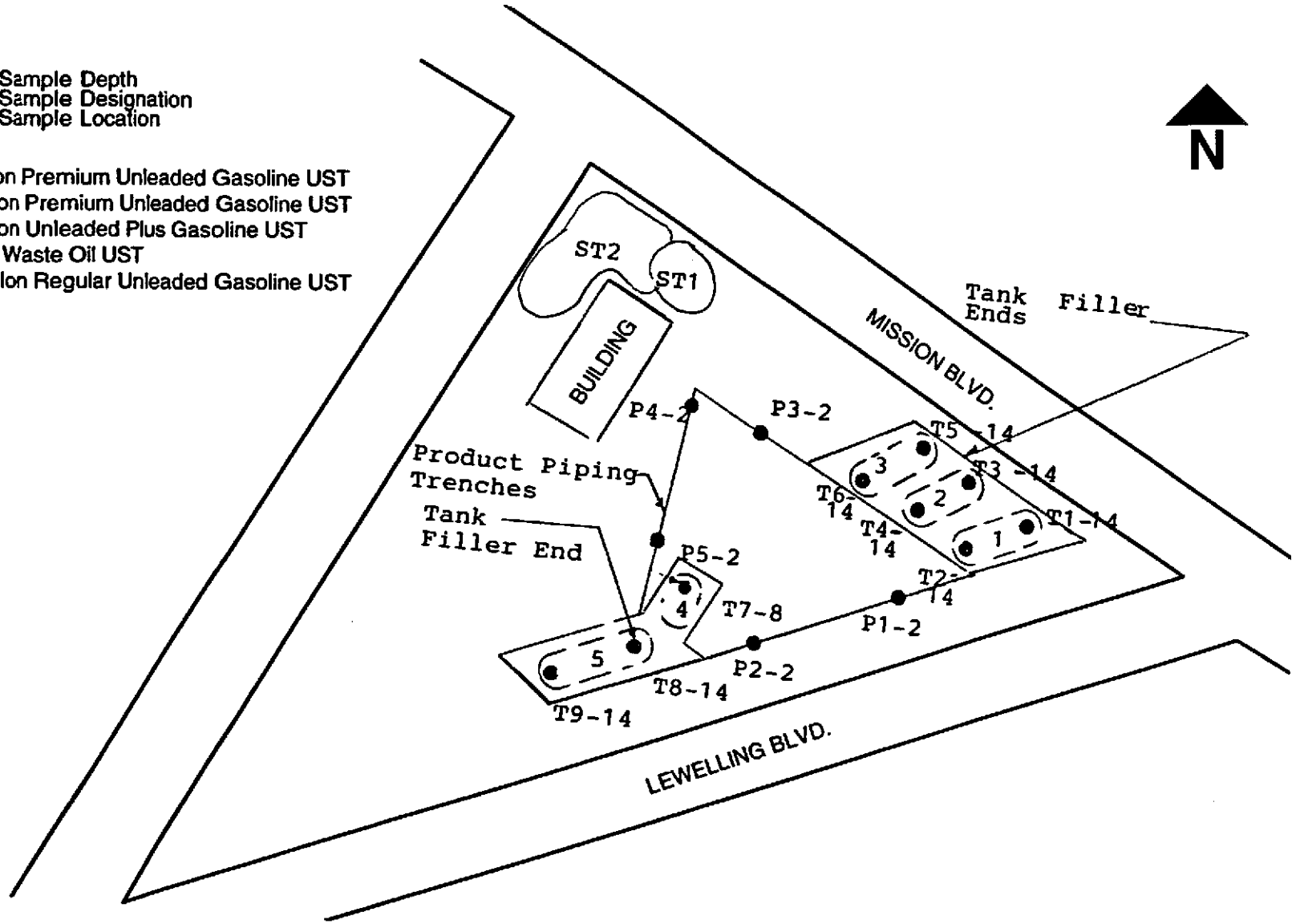
SIERRA ENVIRONMENTAL, INC. *Environmental Consultants* 2084 Alameda Way, Suite 201, San Jose, CA 95126 Phone [408]248-2700 • Fax [408] 248-4700	**SITE LOCATION MAP** Preliminary Subsurface Assessment 17715 Mission Boulevard • Hayward • California	**FIGURE 1** August 2000 Project 00-103.03

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

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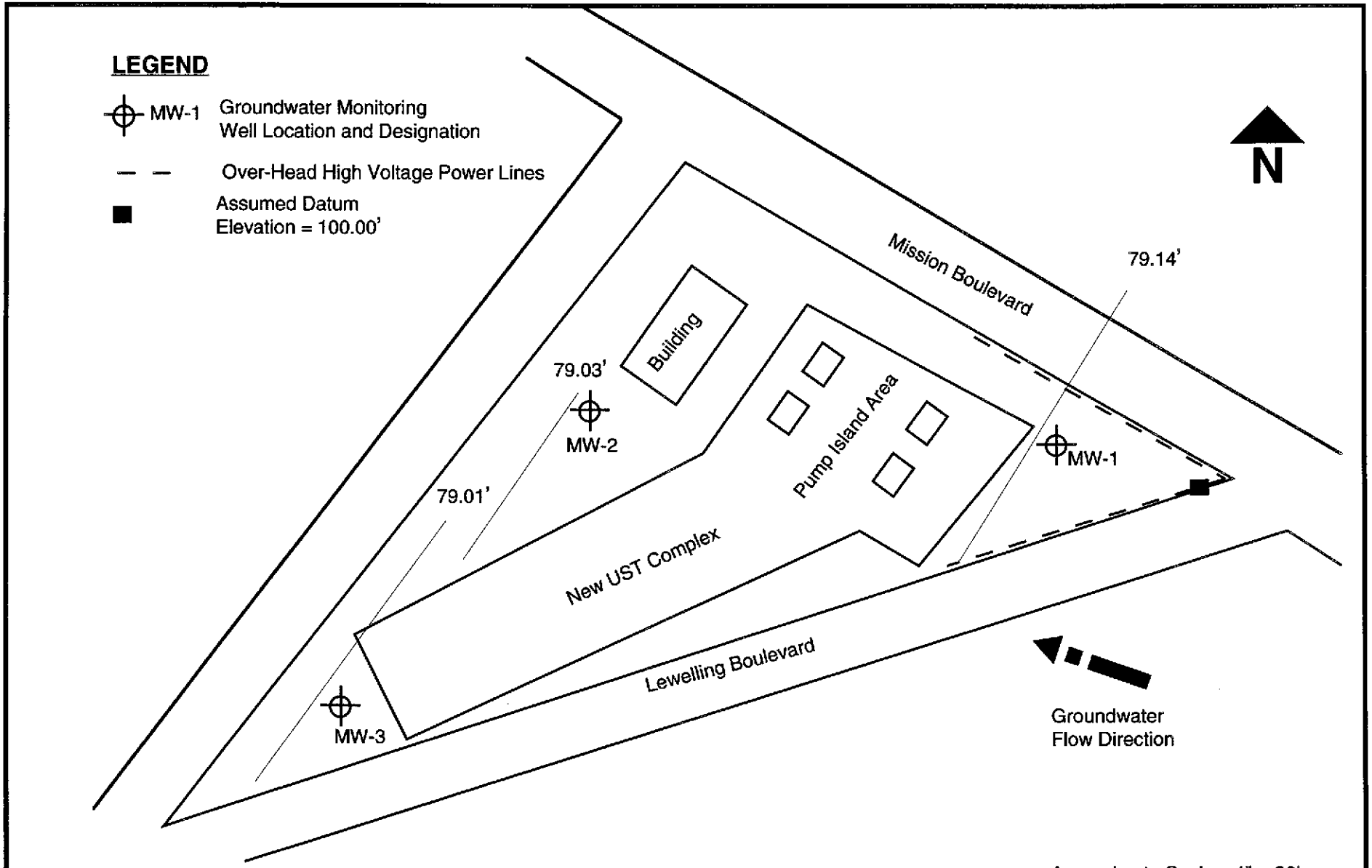
FIGURE 2

August 2000

Project 00-103.03



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Groundwater Monitoring Well Locations

Preliminary Subsurface Assessment

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FIGURE 3

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Project 00-103.03

Appendix A

SITE'S HISTORICAL ANALYTICAL DATA FOR SOIL SAMPLES

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[7]	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

EXPLORATORY BORING LOGS

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
			0		3" Asphalt & 4" Aggregate
0	3/6/13	MW1-5	5		ML? Dark brown clayey silt, damp to moist, no hydrocarbon odor
25	3/4/6	MW1-10	10		SM? Dark brown clayey silty sand, damp to moist, [redacted] odor
12	3/4/5	MW1-15	15		ML? Dark brown clayey silt, damp to moist, [redacted]
6	3/4/7	MW1-20	20		SM? Dark brown clayey silty sand, moist, [redacted]
7	5/9/14	MW1-25	25		CL? Brown silty clay, damp, h[redacted]

Remarks:

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Page 1 of 2	Boring Nº: MW1
Drilling Date : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
			25		
1	3/3/4	MW1-30	30		Green calyey silty sand, soft, saturated, [redacted] The water was first encountered at approximately 25' bgs and raised to 23' bgs within few minutes.
			35		Green clayey silty sand, increasing in clay, wet, bottom of boring at 35 feet bgs, the boring was converted to groundwater monitoring well MW1 the same day
			40		
			45		
			50		

Remarks:

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Page 2 of 2	Boring Nº: MW1
Drilling Date : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
			0		4" Asphalt, 4" concrete, 4" Aggregate
0	2/2/3	MW2-5	5		SW ? Dark brown clayey silty sand, damp, no hydrocarbon odor
0	4/5/5	MW2-10	10		CL ? Gray silty sandy clay , moist, no hydrocarbon odor
0	2/3/3	MW2-15	15		CL ? Brown silty sandy clay, moist, no hydrocarbon odor
					SP ? Lens of sand, [redacted] odor
2	2/1/2	MW2-20	20		Greenish blue clayey silty sand, moist, [redacted]
					SW ?
					CL ?
3	2/7/9	MW2-25	25		Brown silty sandy clay, moist, [redacted]

Remarks:

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Page 1 of 2

Boring Nº: MW2

Drilling Date : 8-14-2000

Project Nº: 00-103.03

Drilling Co. : Hew Drilling, Inc.

Field Personnel: M.H.

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
			25		
6	5/6/7	MW2-30	30		SW? Brown clayey silty sand, moist, hydrocarbon odor. The water was first encountered at approximately 34' bgs and raised to 22' bgs within few minutes.
			35		Bottom of boring at 35 feet bgs, the boring was converted to groundwater monitoring well MW2 the same day
			40		
			45		
			50		

Remarks:

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Page 2 of 2	Boring Nº: MW2
Drilling Date : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
			0		3" Asphalt & 4" Aggregate
0	2/2/3	MW3-5	5	SM?	Dark brown clayey silty sand, damp to moist, soft, no hydrocarbon odor
0	3/2/3	MW3-10	10	SM?	Brown clayey silty sand , damp to moist, soft, no hydrocarbon odor
0	1/1/1	MW3-15	15		Very soft, no hydrocarbon odor
0	2/3/5	MW3-20	20	SC?	Greenish blue fine sand with little clay, moist, [redacted] odor
				CL?	Brown silty sandy clay, damp to moist, h[redacted]
6	5/7/10	MW1-25	25		

Remarks:

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Page 1 of 2	Boring Nº MW3
Drilling Date : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

EXPLORATORY BORING LOG

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PID Reading (ppm)	Blows per 6" 18" Penetration	Sample Nº	Depth/ft	Graphic Log	Description
2	6/7/9	MW3-30	30		Green silty sandy clay, moist, hydrocarbon odor. The water was first encountered at approximately 32' bgs and raised to 22' bgs within few minutes.
			35		Bottom of boring at 35 feet bgs, the boring was converted to groundwater monitoring well MW3 the same day

Remarks:

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Page 2 of 2

Boring Nº: MW3

Drilling Date : 8-14-2000

Project Nº: 00-103.03

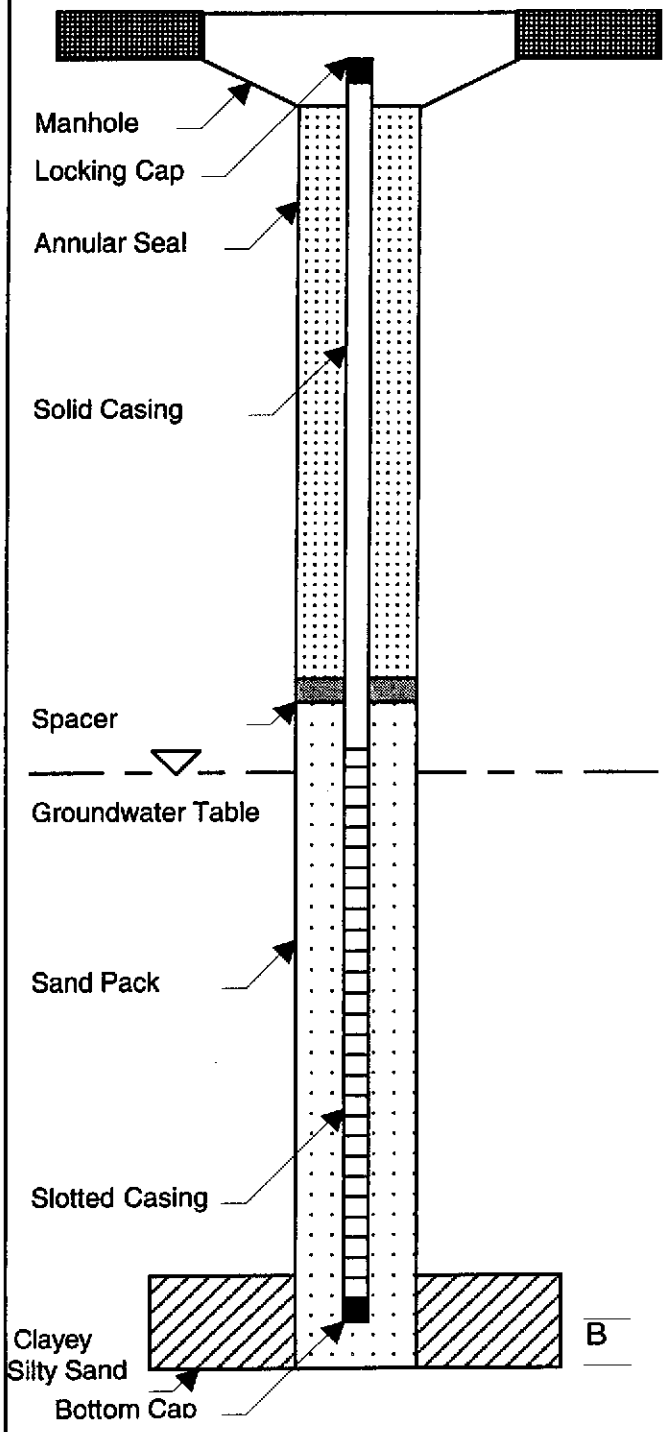
Drilling Co. : Hew Drilling, Inc.

Field Personnel: M.H.

Appendix C

WELL CONSTRUCTION DIAGRAMS & PERMITS

WELL CONSTRUCTION DIAGRAM



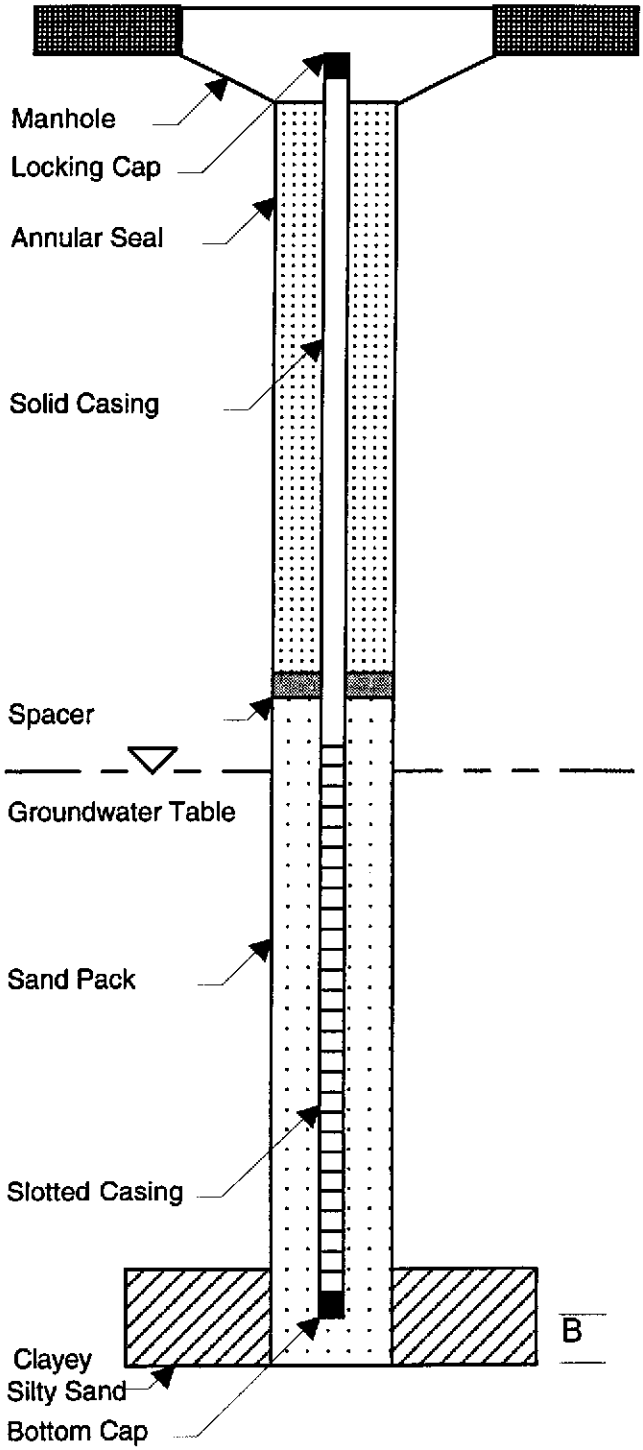
Boring Diameter:	8"
Boring Depth:	35'
Well Casing Diameter:	2"
Well Casing Material:	PVC, SCH 40
Slotted Section Length:	17.5
Solid Section Length:	17.75'
Sand Pack Material:	#3
Sand Pack Length:	17'
Spacer Material:	Bentonite
Spacer Length:	1'
Annular Seal Material:	Portland Cement
Annular Seal Length:	16'
Groundwater Level:	24' bgs
A:	0.75'
B:	1'

SIERRA ENVIRONMENTAL, INC.

An Environmental Consulting Company
2084 Alameda Way, Suite 201, San Jose, CA 95126

Well Permit Nº : W00-475	Well Nº: MW1
Date Constructed : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

WELL CONSTRUCTION DIAGRAM



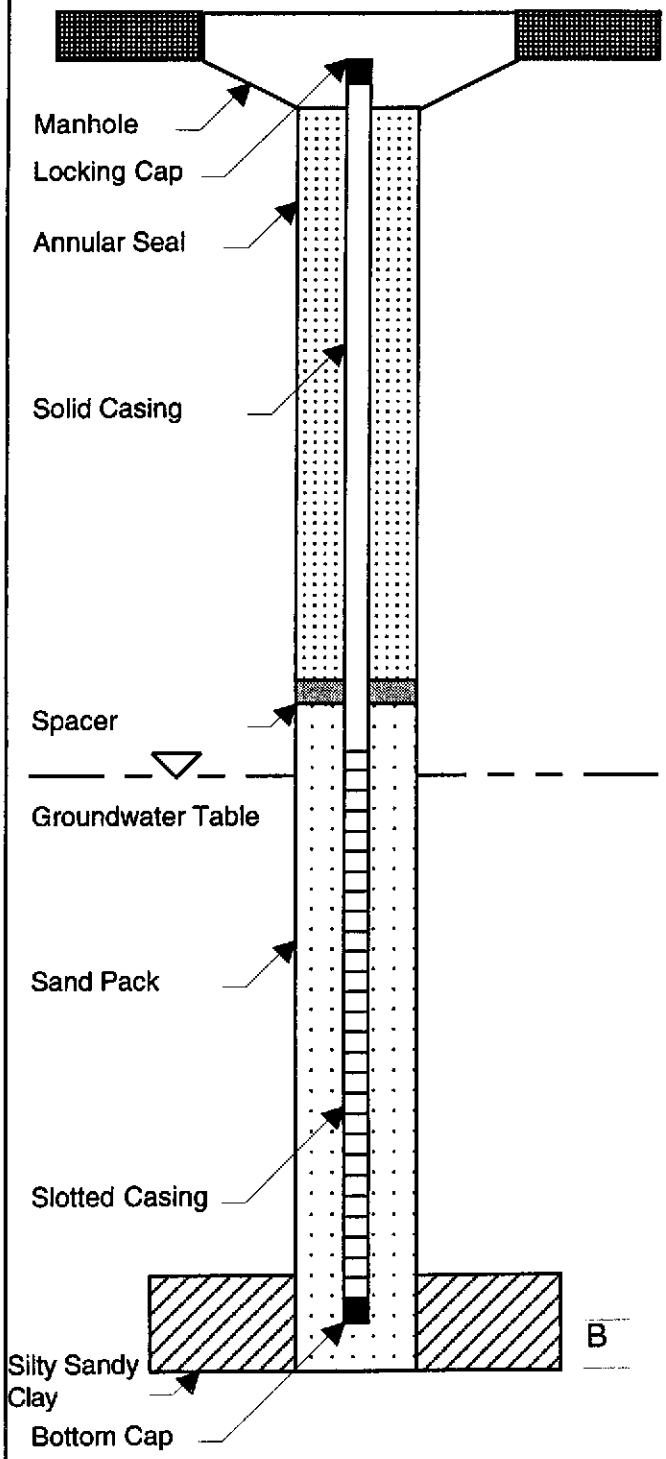
Boring Diameter:	8"
Boring Depth:	35'
Well Casing Diameter:	2"
Well Casing Material:	PVC, SCH 40
Slotted Section Length:	15'
Solid Section Length:	18.25'
Sand Pack Material:	#3
Sand Pack Length:	17'
Spacer Material:	Bentonite
Spacer Length:	1'
Annular Seal Material:	Portland Cement
Annular Seal Length:	16'
Groundwater Level:	22' bgs
A:	0.25'
B:	1'

SIERRA ENVIRONMENTAL, INC.

An Environmental Consulting Company
2084 Alameda Way, Suite 201, San Jose, CA 95126

Well Permit Nº : W00-476	Well Nº:
Date Constructed : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

WELL CONSTRUCTION DIAGRAM



Boring Diameter:	8"
Boring Depth:	35'
Well Casing Diameter:	2"
Well Casing Material:	PVC, SCH 40
Slotted Section Length:	[illegible]
Solid Section Length:	18.25'
Sand Pack Material:	#3
Sand Pack Length:	17'
Spacer Material:	Bentonite
Spacer Length:	1'
Annular Seal Material:	Portland Cement
Annular Seal Length:	16'
Groundwater Level:	22' bgs
A:	0.25'
B:	1'

SIERRA ENVIRONMENTAL, INC.

An Environmental Consulting Company
2084 Alameda Way, Suite 201, San Jose, CA 95126

Well Permit Nº : W00-477	Well No: MW3
Date Constructed : 8-14-2000	Project Nº: 00-103.03
Drilling Co. : Hew Drilling, Inc.	Field Personnel: M.H.

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD, CA. 94544
PHONE (510) 670-5554 FAX (510) 782-1939

USA # 230832.

8/10/00

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 17715 Mission Blvd.
Hayward, CA 94587

California Coordinates Source ____ ft. Accuracy ± ____ ft.
CCN ____ ft. CCE ____ ft.
APN ____

CLIENT
Name Paul Garg
Address 33090 Mission Blvd. Phone 510-471-5460
City Union City Zip 94587

APPLICANT
Name Sierra Environmental, Inc.
Fax 408-248-4700
Address 2084 Alameda Way Phone 408-248-3700
City San Jose Zip 95126

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57-604987

WELL PROJECTS HEW Drilling exp - 10-31-00
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number MW-2

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 8-14-2000
ESTIMATED COMPLETION DATE 8-14-2000

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 8/3/00

FOR OFFICE USE

PERMIT NUMBER WOO-475
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
(1.) A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
(2.) Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources WELL COMPLETION REPORT
(3.) Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

(C.) GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED [signature] DATE 8-3-00

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST STR. HAYWARD, CA. 94544
PHONE (510) 670-5554 FAX (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 17715 Mission Blvd, Hayward, CA 94587

California Coordinates Source ____ ft. Accuracy ± ____ ft.
CCN ____ ft. CCE ____ ft.
APN ____

CLIENT
Name Paul Garg
Address 33090 Mission Blvd. Phone 510-471-5460
City Union City Zip 94587

APPLICANT
Name Sierra Environmental, Inc.
Fax 408-248-4700
Address 2084 Alameda Way Phone 408-248-3700
City San Jose Zip 95126

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other ____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57-604987 HEW Drilling exp-10-31-00

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number MW-3

GEOTECHNICAL PROJECTS
Number of Borings ____ Maximum
Hole Diameter ____ in. Depth ____ ft.

ESTIMATED STARTING DATE 8-14-2000
ESTIMATED COMPLETION DATE 8-14-2000

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [signature] DATE 8/3/00

FOR OFFICE USE

PERMIT NUMBER WO-476
WELL NUMBER ____
APN ____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources WELL COMPLETION REPORT
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED [signature] DATE 8-3-00

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST STR, HAYWARD, CA. 94544
PHONE (510) 670-5554 FAX (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 17715 Mission Blvd.
Hayward, CA 94587

California Coordinates Source _____ ft. Accuracy ± ___ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT Paul Garg
Name
Address 33090 Mission Blvd. Phone 510 471 5460
City Union City Zip 94587

APPLICANT
Name Sierra Environmental, Inc.
Fax 408-248-4700
Address 2084 Alameda Way Phone 408-248-3700
City San Jose Zip 95126

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☒	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other _____	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐		

DRILLER'S LICENSE NO. C57-604987

WELL PROJECTS — New Drilling exp-10-31-00
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 35 ft.
Surface Seal Depth 20 ft. Number MW-1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 8-14-2000
ESTIMATED COMPLETION DATE 8-14-2000

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ DATE 8/3/00

FOR OFFICE USE

PERMIT NUMBER W00-477
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources - WELL COMPLETION REPORT
3. Permit is void if project not begun within 90 days of approval date.

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1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
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D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC
Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED _____ DATE 8-3-00

*** TOTAL PAGE.02 ***

Appendix D

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 E

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

August 23, 2000

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

Order: 21800
Project Name: ABE Station
Project Number: 00-103.03
Project Notes:

Date Collected: 8/14/00
Date Received: 8/15/00
P.O. Number:

On August 15, 2000, samples were received under documentented chain of custody. Results for the following analyses are attached:

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

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 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-001 **Client Sample ID:** MW1-5

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8020
Toluene	0.13		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8020
Ethyl Benzene	ND		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8020
Xylenes, Total	ND		25	0.001	0.025	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	0.39		25	0.005	0.125	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	1.8		25	0.050	1.25	mg/Kg	N/A	8/17/00	SGC1000817	EPA 8015 MOD. (Purgeable)

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

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-002 **Client Sample ID:** MW1-10

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.17		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.17		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	0.56		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	2.0		50	0.001	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	88	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	0.91		50	0.005	0.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	88	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	12		50	0.050	2.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	76	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-003 **Client Sample ID:** MW1-15

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.21		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.99		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	0.75		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	3.7		50	0.001	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	87	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	1.7		50	0.005	0.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	87	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	20		50	0.050	2.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	70	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-004 **Client Sample ID:** MW1-20

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	2.2		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	25		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	14		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	64		200	0.001	0.2	mg/Kg	N/A	8/17/00	SGC1000816	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	3.4		200	0.005	1	mg/Kg	N/A	8/17/00	SGC1000816	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
TPH as Gasoline	720		200	0.050	10	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	112	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

CA ELAP# I-2346

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-005 **Client Sample ID:** MW1-25

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	1.4		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	2.8		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	0.95		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	4.8		50	0.001	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	1.2		50	0.005	0.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	26		50	0.050	2.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	88	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

CA ELAP# I-2346

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
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Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-006 **Client Sample ID:** MW1-30

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	1.6		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	2.7		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	4.3		200	0.0005	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	18		200	0.001	0.2	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		200	0.005	1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	120		200	0.050	10	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	80	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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

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Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-007 **Client Sample ID:** MW2-5

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	125	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	125	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	130	65 - 135

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

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Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-008 **Client Sample ID:** MW2-10

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.032		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	0.013		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	0.11		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	0.40		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	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	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	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
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	46	65 - 135

Comment: Surrogate recovery out of control limits due to matrix interference

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

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Order ID: 21800 **Lab Sample ID:** 21800-009 **Client Sample ID:** MW2-15

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	111	65 - 135

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

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Order ID: 21800 **Lab Sample ID:** 21800-010 **Client Sample ID:** MW2-20

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	79	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	79	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	67	65 - 135

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

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Order ID: 21800 **Lab Sample ID:** 21800-011 **Client Sample ID:** MW2-25

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.079		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.021		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	0.12		25	0.0005	0.0125	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	0.13		25	0.001	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	74	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		25	0.005	0.125	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	74	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	17		25	0.050	1.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	67	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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

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Order ID: 21800 **Lab Sample ID:** 21800-012 **Client Sample ID:** MW2-30

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.54		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.17		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	2.1		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	5.2		50	0.001	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	76	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		50	0.005	0.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	76	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	130		50	0.050	2.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	109	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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

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Order ID: 21800 **Lab Sample ID:** 21800-013 **Client Sample ID:** MW3-5

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	109	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	109	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	116	65 - 135

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

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Order ID: 21800 **Lab Sample ID:** 21800-014 **Client Sample ID:** MW3-10

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	113	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	113	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/16/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	120	65 - 135

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

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Date: 8/22/00
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Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

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Order ID: 21800 **Lab Sample ID:** 21800-015 **Client Sample ID:** MW3-15

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	ND		1	0.005	0.005	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	128	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	128	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	134	65 - 135

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

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P.O. Number:
Sampled By: Client

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Order ID: 21800 **Lab Sample ID:** 21800-016 **Client Sample ID:** MW3-20

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.007		1	0.005	0.005	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8020
Toluene	ND		1	0.005	0.005	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8020
Ethyl Benzene	0.009		1	0.005	0.005	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8020
Xylenes, Total	ND		1	0.005	0.005	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		1	0.05	0.05	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	99	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	ND		1	1	1	mg/Kg	N/A	8/22/00	SGC4000822	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	92	65 - 135

Comment: -

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.

CA ELAP# I-2346

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-017 **Client Sample ID:** MW3-25

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.21		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.073		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	0.72		50	0.0005	0.025	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	2.2		50	0.001	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	94	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		50	0.005	0.25	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	94	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	22		50	0.050	2.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	75	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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

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CA ELAP# I-2346

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

Date: 8/22/00
Date Received: 8/15/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Client

Certified Analytical Report

Order ID: 21800 **Lab Sample ID:** 21800-018 **Client Sample ID:** MW3-30

Sample Time: **Sample Date:** 8/14/00 **Matrix:** Solid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	0.93		100	0.0005	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Toluene	0.52		100	0.0005	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Ethyl Benzene	3.0		100	0.0005	0.05	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020
Xylenes, Total	13		100	0.001	0.1	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		100	0.005	0.5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	83		100	0.050	5	mg/Kg	N/A	8/17/00	SGC1000816	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	67	65 - 135

Comment: Sample required methanol extraction due to high concentrations of target hydrocarbons

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.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC4000822
Matrix: Solid
Units: µg/kg

Date Analyzed: 08/22/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP µg/kg	**SP % R**	SPD µg/kg	**SPD %R**	% RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	5.2	ND	5.4	**105**	5.4	**104**	0.3	25	80-120
Toluene	8020	<5.0	29	ND	32	**110**	32	**110**	0.2	25	80-120
Ethyl Benzene	8020	<5.0	5.6	ND	6.0	**107**	5.9	**106**	0.7	25	80-120
Xylenes	8020	<5.0	32	ND	32	**99**	32	**98**	0.5	25	80-120
Gasoline	8015	<1000	469	ND	456	**97**	439	**94**	3.8	25	75-115
aaa-TFT(S.S.)-FID	8015			107%	105%		107%				65-135
aaa-TFT(S.S.)-PID	8020			97%	101%		105%				65-135

Definition of Terms:

- na: Not Analyzed in QC batch
- MB: Method Blank
- SA: Spike Added
- SR: Sample Result
- RPD(%): Duplicate Analysis - Relative Percent Difference
- SP: Spike Result
- SP (%R): Spike % Recovery
- SPD: Spike Duplicate Result
- SPD (%R): Spike % Recovery
- NC: Not Calculated

Entech Analytical Labs, Inc.

525 Del Rey Avenue, Suite E
Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC1000817
Matrix: Soil
Units: µg/kg

Date Analyzed: 08/17/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP	**SP % R**	SPD µg/kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	5.5	ND	5.1	**93**	5.4	**98**	4.8	25	70-130
Toluene	8020	<5.0	27.0	ND	30	**113**	31	**115**	2.2	25	70-130
Ethyl Benzene	8020	<5.0	5.5	ND	6.2	**112**	6.3	**114**	1.7	25	70-130
Xylenes	8020	<5.0	33.0	ND	36	**108**	36	**110**	1.8	25	70-130
Gasoline	8015	<1000	471	ND	515	**109**	519	**110**	0.7	25	75-125
aaa-TFT(S.S.)-PID	8020			109%	95%		94%				65-135
aaa-TFT(S.S.)-FID	8015			106%	105%		103%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
NC: Not Calculated

Entech Analytical Labs, Inc.

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QUALITY CONTROL RESULTS SUMMARY

METHOD: Gas Chromatography
Laboratory Control Sample

QC Batch #: SGC1000816
Matrix: Soil
Units: µg/kg

Date Analyzed: 08/16/00
Quality Control Sample: Blank Spike

PARAMETER	Method #	MB µg/kg	SA µg/kg	SR µg/kg	SP	**SP % R**	SPD µg/kg	**SPD %R**	RPD	QC LIMITS RPD	QC LIMITS %R
Benzene	8020	<5.0	5.5	ND	4.7	**85**	4.6	**83**	1.6	25	70-130
Toluene	8020	<5.0	27.0	ND	29	**109**	27	**101**	7.8	25	70-130
Ethyl Benzene	8020	<5.0	5.5	ND	5.6	**102**	5.5	**99**	2.7	25	70-130
Xylenes	8020	<5.0	33.0	ND	32	**98**	31	**95**	2.9	25	70-130
Gasoline	8015	<1000	471	ND	459	**97**	460	**98**	0.2	25	75-125
aaa-TFT(S.S.)-PID	8020			108%	93%		98%				65-135
aaa-TFT(S.S.)-FID	8015			106%	103%		108%				65-135

Definition of Terms:

na: Not Analyzed in QC batch
MB: Method Blank
SA: Spike Added
SR: Sample Result
RPD(%): Duplicate Analysis - Relative Percent Difference
SP: Spike Result
SP (%R): Spike % Recovery
SPD: Spike Duplicate Result
SPD (%R): Spike % Recovery
NC: Not Calculated

SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

CHAIN OF CUSTODY

Project Name: ABE STATION **Project No:** 00-603.03 **Date:** 8/14/00

Project Location: 17715 MISSION BLVD **Client:** ABE **Sampler:** M. Hajinghai

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	8020 MTBE BTEX	Fuel Oxygenates 8260	
MW1-5	8/14/00		Soil	1	X			21800-001				24-hour Other ____ Normal
MW1-10									002			24-hour Other ____ Normal
MW1-15									003			24-hour Other ____ Normal
MW1-20									004			24-hour Other ____ Normal
MW1-25									005			24-hour Other ____ Normal
MW1-30									006			24-hour Other ____ Normal
MW2-5									007			24-hour Other ____ Normal

00 AUG 15 7:49

Remarks:

Relinquished by	Date	Time	Received by	Date	Time
	8/15/00	7:43		8/15/00	7:48
Relinquished by	Date	Time	Received by	Date	Time

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SIERRA ENVIRONMENTAL, INC.
Environmental Consultants

CHAIN OF CUSTODY

Project Name: ABE STATION **Project No:** 00-103.03 **Date:** 8/14/00

Project Location: 17715 MISSION BLVD **Client:** ABE **Sampler:** M. Hajianghai

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	8020 MTBE BTEX	Fuel Oxygenates 8260	
MW2-10	8/14/00		Soil	1	X		21800-		008			24-hour Other ____ Normal
MW2-15									009			24-hour Other ____ Normal
MW2-20									010			24-hour Other ____ Normal
MW2-25									011			24-hour Other ____ Normal
MW2-30									012			24-hour Other ____ Normal
MW3-5									013			24-hour Other ____ Normal
MW3-10									014			24-hour Other ____ Normal

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Remarks:

Relinquished by	Date	Time	Received by	Date	Time
	8/15/00	7:45		8/15/00	7:48
Relinquished by	Date	Time	Received by	Date	Time

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CHAIN OF CUSTODY

Project Name: ABE STATION **Project No:** 00-103.03 **Date:** 8/14/00

Project Location: 17715 MISSION BLVD **Client:** ABE **Sampler:** M. 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	8020 MTBE BTEX	Fuel Oxygenates 8260	
MW3-15	8/14/00		Soil	1	X		21800-		015			24-hour Other ____ Normal
MW3-20	↓		↓	↓	↓			↓	016			24-hour Other ____ Normal
MW3-25									017			24-hour Other ____ Normal
MW3-30	↓		↓	↓	↓			↓	018			24-hour Other ____ Normal
												24-hour Other ____ Normal
												24-hour Other ____ Normal
												24-hour Other ____ Normal

00 AUG 15 7:48

Remarks:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/15/00	7:45	[signature]	8/15/00	7:48
Relinquished by	Date	Time	Received by	Date	Time

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Entech Analytical Labs, Inc.

CA ELAP# 2346

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August 28, 2000

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

Order:	21874	**Date Collected:**	8/18/00
Project Name:	ABE Station	**Date Received:**	8/18/00
Project Number:	00-103.03	**P.O. Number:**	
Project Notes:			

On August 18, 2000, 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 408-735-1550.

Sincerely,

Michelle L. Anderson
Lab Director

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

Date: 8/28/00
Date Received: 8/18/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 21874 **Lab Sample ID:** 21874-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 8/18/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	10000		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Toluene	16000		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Ethyl Benzene	11000		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Xylenes, Total	49000		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	4300		500	5	2500	µg/L	N/A	8/22/00	WGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	100	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	280000		500	50	25000	µg/L	N/A	8/22/00	WGC4000822	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.

CA ELAP# 2346

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

Date: 8/28/00
Date Received: 8/18/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 21874 **Lab Sample ID:** 21874-002 **Client Sample ID:** MW-2

Sample Time: **Sample Date:** 8/18/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3700		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Toluene	990		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Ethyl Benzene	7300		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020
Xylenes, Total	26000		500	0.5	250	µg/L	N/A	8/22/00	WGC4000822	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	ND		500	5	2500	µg/L	N/A	8/22/00	WGC4000822	EPA 8020

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

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	290000		500	50	25000	µg/L	N/A	8/22/00	WGC4000822	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

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

Date: 8/28/00
Date Received: 8/18/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 21874 **Lab Sample ID:** 21874-003 **Client Sample ID:** MW-3

Sample Time: **Sample Date:** 8/18/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Benzene	3200		100	0.5	50	µg/L	N/A	8/23/00	WGC4000822	EPA 8020
Toluene	550		100	0.5	50	µg/L	N/A	8/23/00	WGC4000822	EPA 8020
Ethyl Benzene	3700		100	0.5	50	µg/L	N/A	8/23/00	WGC4000822	EPA 8020
Xylenes, Total	14000		100	0.5	50	µg/L	N/A	8/23/00	WGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
Methyl-t-butyl Ether	2200		100	5	500	µg/L	N/A	8/23/00	WGC4000822	EPA 8020

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	97	65 - 135

Parameter	Result	Flag	DF	PQL	DLR	Units	Extraction Date	Analysis Date	QC Batch ID	Method
TPH as Gasoline	46000		100	50	5000	µg/L	N/A	8/23/00	WGC4000822	EPA 8015 MOD. (Purgeable)

Surrogate	Surrogate Recovery	Control Limits (%)
aaa-Trifluorotoluene	98	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 C. Anderson, Laboratory Director

Environmental Analysis Since 1983

Entech Analytical Labs, Inc.

CA ELAP# 2346

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

Date: 8/28/00
Date Received: 8/18/00
Project Name: ABE Station
Project Number: 00-103.03
P.O. Number:
Sampled By: Mitch Hajiaghai

Certified Analytical Report

Order ID: 21874 **Lab Sample ID:** 21874-001 **Client Sample ID:** MW-1

Sample Time: **Sample Date:** 8/18/00 **Matrix:** Liquid

Parameter	Result	Flag	DF	PQL	DLR	Units	Analysis Date	QC Batch ID	Method
Diisopropyl Ether	ND		500	5	2500	µg/L	8/25/00	WMS2000808	EPA 8260B
Ethyl-t-butyl Ether	ND		500	5	2500	µg/L	8/25/00	WMS2000808	EPA 8260B
Methyl-t-butyl Ether	4000		500	5	2500	µg/L	8/25/00	WMS2000808	EPA 8260B
tert-Amyl Methyl Ether	ND		500	5	2500	µg/L	8/25/00	WMS2000808	EPA 8260B
tert-Butanol	ND		500	20	10000	µg/L	8/25/00	WMS2000808	EPA 8260B

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	112	65 - 135
Dibromofluoromethane	95	65 - 135
Toluene-d8	89	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:** 00-103.02 **Date:** 8/18/2000

Project Location: 12715 Mission Blvd. **Client:** Paul Garg. **Sampler:** M. Hajiaghaie

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	8020 MTBE BTEX	Fuel Oxygenates 8260	
MW-1	8/18/2000		Water	5	X		21884-001				X	24-hour Other ___ Normal
MW-2	↓		↓	3	↓			-002				24-hour Other ___ Normal
MW-3	↓		↓	3	↓			-003				24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal
												24-hour Other ___ Normal

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Remarks:

Relinquished by	Date	Time	Received by	Date	Time
[signature]	8/18/2000	12:30	Mina Gussis	8/18/00	1215
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