

ALL ENVIRONMENTAL, INC.

Environmental Engineering & Construction

ENVIRONMENTAL
PROTECTION

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March 10, 1995
Job No. 1031

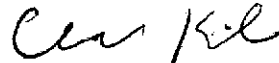
Ms. Jennifer Eberle
Alameda County Health Care Services Agency
1131 Harbour Bay Parkway, Room 250
Alameda, CA 94502-6577

Subject: **3635 13th Avenue, Oakland, California**
2nd Quarterly Monitoring Report

Dear Ms. Eberle:

We are enclosing one copy of the referenced report for your review, which presents the results of the 2nd quarter of groundwater monitoring at 3635 13th Avenue in Oakland. If you have any questions or comments regarding the findings presented in this report, please call at (510) 820-3224.

Sincerely,



Charles Kissick, CEG
Senior Geologist

cc: John Williamson

ALL ENVIRONMENTAL, INC.

Environmental Engineering & Construction

11/19/94
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December 19, 1994
Job No. 1031

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
1131 Harbour Bay Parkway, 2nd Floor
Alameda, CA 94502-6577

Subject: **3635 13th Avenue, Oakland, California**
Well Installation Report

Dear Ms. Eberle:

We are enclosing one copy of the referenced report for your review, which presents details on the installation of groundwater monitoring wells at 3635 13th Avenue in Oakland. If you have any questions or comments regarding the findings presented in this report, please call at (510) 820-3224.

Sincerely,



Charles Kissick, CEG
Senior Geologist

cc: John Williamson

Corporate Headquarters:

2641 Crow Canyon Rd., #5
San Ramon, CA 94583
(510) 820-3224

Los Angeles Office:

5031 Pacific Coast Hwy., #178
Torrance, CA 90505
(310) 328-8878

11:00
11/23/94
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FINAL REPORT

**SOIL BORING AND
MONITORING WELL INSTALLATION**

3635 13th Avenue
Oakland, CA

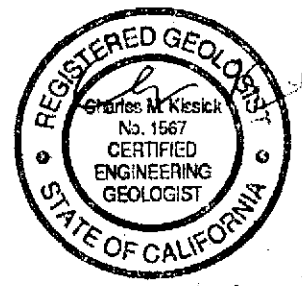
12-14-94

Prepared For:

Mr. John Williamson
1511 Wellington Street
Oakland, CA 94602

Prepared By:

All Environmental, Inc.
2641 Crow Canyon Road, Suite 5
San Ramon, CA 94583



exp. 12/96

December 14, 1994

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1.0 INTRODUCTION

All Environmental, Inc. (AEI) was contracted by John Williamson to conduct soil and groundwater investigations at 3635 13th Avenue in Oakland, California. The location of the site is shown in Figure 1, Site Location Map. Three underground storage tanks were removed from the site by Aqua Science Engineers, Inc. in December of 1992 (Ref. 3). The three tanks consisted of one 250 gallon steel waste oil tank, and two steel gasoline tanks, with capacities of 500 and 1000 gallons. The former locations of the tanks are shown in Figure 2, Site Plan.

AEI removed and disposed of approximately 360 cubic yards of hydrocarbon contaminated soil in September of 1993 (Ref. 2). The levels (up to 8200 ppm oil and grease) of contamination and the presence of groundwater in the excavation made necessary the additional soil and groundwater investigations outlined herein.

AEI prepared a Work Plan, dated December 9, 1993 (Ref. 1) to outline the proposed soil and groundwater investigation. This was approved by the ACHCSA prior to initiation of the work. Three monitoring wells, MW-1 through MW-3, were installed on the site on March 24, 1994, for the purpose of monitoring groundwater contamination. Because of funding delays, the wells were left undeveloped until November 11, 1994. Groundwater samples were retrieved from the wells on November 22, 1994. The locations of the monitoring wells are shown in Figure 2, Site Plan. This report describes the well installation work, as well as the results of analytical tests performed on soil and groundwater samples.

2.0 SITE DESCRIPTION

The site is located in a largely residential zone of Oakland approximately 100 yards east of Highway 580, at the northwest corner of 13th Street and Excelsior, as shown in Figure 1. The property slopes gently toward the southeast and is currently undeveloped, consisting of an empty dirt lot. The nearest significant surface water is Lake Merritt, located approximately one mile to the west.

3.0 GEOLOGY

The geology at the site consists of early Pleistocene older alluvium deposits of mostly silty and sandy clay. Based on the borings drilled on the site, the subsurface materials consist mostly of silty and sandy clays with occasional layers, up to 4 feet thick, of silty sand. Geologic logs of monitoring wells MW-1 through MW-3 are included with this report for review in Appendix A, Boring and Well Completion Logs.

Because of the relatively low permeability of the soils, the depth to groundwater was not

readily apparent during drilling of two of the wells, MW-2 and MW-3, although depths to groundwater were estimated in the field, based on observed moisture contents of soil samples. In Well MW-1, the water level had come up to 16 feet below ground surface by the end of the day. Static water levels could not be obtained until after well development, which took place on November 11, 1994, as discussed in Section 6, Well Development and Sampling. Water level measurements made on November 21 showed depths to water to range from 10.9 to 12.5 feet. Groundwater gradients are discussed in detail in Section 8, Groundwater Gradient.

static

4.0 WELL CONSTRUCTION

All three groundwater monitoring wells were drilled and installed on March 24, 1994, using a hollow stem auger drill, at the locations shown in Figure 2. Drilling proceeded to depths of 25 to 36 feet, with soil samples taken at approximately 5-foot intervals. Boring logs, which are included in Appendix A, were maintained by a registered geologist with AEI. The well construction in each well is included in the right-hand column of the Boring Logs.

Two-inch flush threaded PVC well casing was installed through the auger to the total depth of each boring. The bottom several feet of each well consisted of 0.020" slotted well screen with a flush threaded bottom cap. The screened intervals are shown in the Boring Logs. Number 3 Monterey sand was poured through the auger from the total depth to 1 foot above the slotted well screen. Approximately 1 foot of bentonite pellets were placed above the sand and hydrated with tap water. The remainder of the borings were filled to near grade with neat cement grout. Flush mounted traffic rated well covers were installed over the well casings, and a locking, water tight inner cap was placed on each casing to complete the installation.

Soil excavated by the augers was placed in DOT 17H drums which were labelled and stored on site pending analysis and proper disposal. The augers were steam cleaned between each boring, with the rinsate being stored in drums on site. The down-hole sampling tools were cleaned and rinsed with TSP solution between samplings. All drums containing soil cuttings and water (both from rinsate and purging) were removed from the site for proper disposal.

5.0 SOIL SAMPLING

Undisturbed soil samples were taken at approximately 5 foot intervals during drilling. Samples were taken with a 2 inch ID split spoon sampler, driven by successive blows with a 140 pound hammer, with a 30 inch drop. Blow counts per six inch travel were recorded. The samples were collected into pre-cleaned 2" by 6" stainless steel liners within the split spoon, and used for field classification of the soil. Selected samples were sealed with aluminum foil, plastic end caps, and duct tape. Soil sampling equipment was decontaminated prior to each use with a TSP solution and rinsed with tap water in plastic buckets.

Soil samples taken from near the estimated capillary fringe (the area near the top of the groundwater table, at a depth of about 10 feet) were tested, along with one other sample. The samples were placed in an ice chest and transported under chain of custody procedures to Priority Environmental Labs, a State certified analytical laboratory, for analysis.

6.0 WELL DEVELOPMENT AND SAMPLING

The wells were developed on November 11, 1994. Despite the long time span between well drilling and development, Well MW-2 had remained nearly dry, with only about 1 foot of water at the bottom. Therefore, the well was developed by filling the well with bottled drinking water, up to the top of the well screen. The well was then surged, using a development rig, by raising and lowering, in one-foot increments, a surging device. This was done along the entire screened portion of the well. Once the surging was completed, the same volume of water that had been introduced earlier was pumped out. After development of the well, water started coming in at a slow but steady rate, filling the well within hours. The other two wells had no problems taking in groundwater, so they were developed by purging 10 well volumes. During purging, the pumped water maintained a clear appearance for several gallons.

The wells were sampled on November 21 and 22, 1994, by first purging up to 5 volumes of groundwater into labeled drums. 10 to 18 gallons were pumped from the wells, and recovery of water levels to the original level was very slow in Wells MW-2 and MW-3, requiring about 12 hours. Field logs from the development and sampling are included in Appendix A, Boring and Well Logs and Well Sampling Field Logs.

Depths to groundwater were measured using a level indicator, before the wells were purged. Water was retrieved using a hand-held bailer and poured from the bailer into two amber liter bottles and two 40-ml vials until no head space remained and a positive meniscus was formed. The samples were labeled and placed on ice in an ice chest for transport to Priority Environmental Labs under chain of custody for analysis.

Groundwater sampling equipment was decontaminated between sampling by rinsing with TSP solution and tap water. Purge and rinse waters were placed on site in labeled drums for proper disposal.

7.0 SAMPLE ANALYSES

Two soil samples from each boring, and water samples from MW- 1 through MW-3 were sent to Priority Environmental Labs for analyses. All soil and water samples were analyzed for:

TPH-Gasoline (TPH-G) (EPA Method 5030/8015);
 Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX) (EPA Method 8020);
 Total Oil and Grease (EPA Method 5520).

In addition, soil samples were tested for Hydraulic Fluid (EPA Method 3550), and water samples were tested for TPH-Diesel (TPH-D) (EPA Method 3510).

Results of the tests are discussed in Section 9, Conclusions and Recommendations. Analytical results are listed in the following tables:

Table 1 - Water Sample Analyses, MW-1 Through MW-3

TEST	MW-1	MW-2	MW-3
TPH-G (ug/L)	210	11,000	200
TPH-D (ug/L)	ND	ND	ND
Benzene (ug/L)	ND	35	ND
Toluene (ug/L)	ND	21	ND
Eth. Benz. (ug/L)	ND	7.2	ND
Xylene (ug/L)	2.3	50	2.0
Oil & Grease (mg/L)	ND	ND	3.0

(5520 C+F)

11-22-94

Table 2 -Soil Sample Analyses, MW-1 Through MW-3

3-24-94

TEST	MW-1, S-2, 10'	MW-1, S-3, 15'	MW-2, S-2, 11'	MW-2, S-3, 15'	MW-3, S-2, 11'	MW-3, S-6, 30'
TPH-G (mg/Kg)	ND	15	5.9	7.7	ND	ND
Hyd. Fluid (mg/Kg)	ND	ND	ND	ND	ND	ND
Benzene (ug/Kg)	ND	40	140	36	ND	ND
Toluene (ug/Kg)	ND	28	84	58	ND	ND
Eth. Benz. (ug/Kg)	ND	26	52	11	ND	ND
Xylene (ug/Kg)	ND	67	160	240	9.4	ND
Oil & Grease (mg/Kg)	ND	ND	ND	ND	ND	ND

mg/Kg and mg/L = ppm; ug/Kg and ug/L = ppb; ND = not detected.

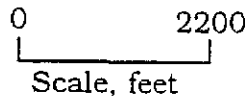
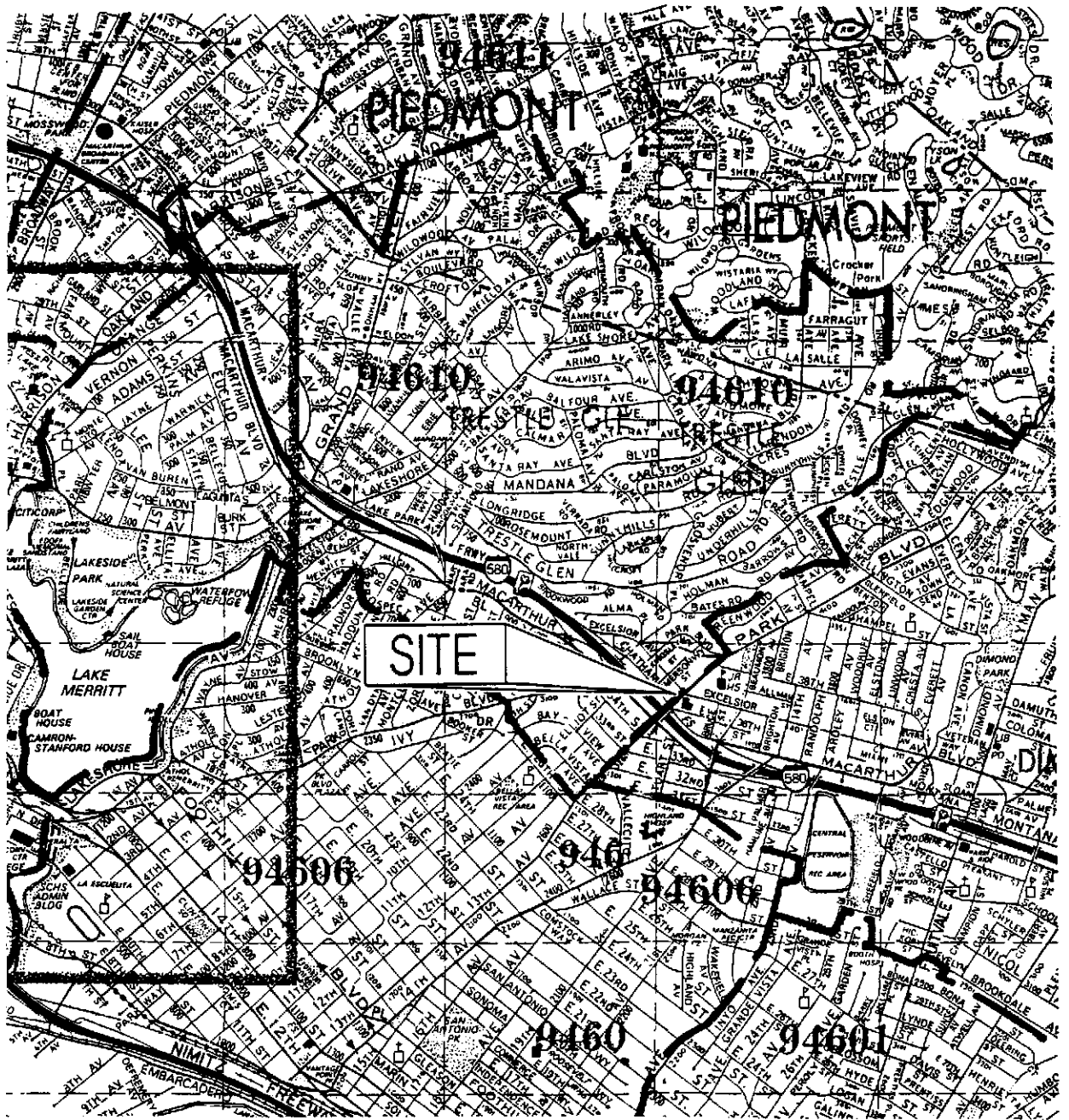
Laboratory results and chain of custody documents are included in Appendix B, Analytical Results.

8.0 GROUNDWATER GRADIENT

The three wells on the site were used to estimate the local groundwater gradient. Accurate measurements of water levels in the three wells were made on November 21, 1994. The depths to water for wells MW-1, MW-2, and MW-3 were 10.90, 12.54, and 11.53 feet, respectively. These depths correspond to the elevations shown in Figure 3, Groundwater Gradient. The groundwater elevations are based on elevations of the top of each well casing, as measured by a licensed land surveyor. As Figure 3 shows, the groundwater gradient is shown to trend toward the southeast, at a fairly steep gradient. This gradient direction follows the local topography, as the site is located just southeast of a ridge top that slopes away toward the southeast.

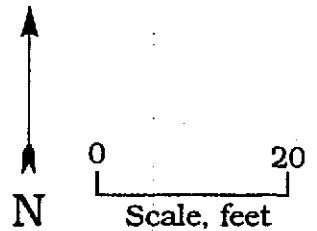
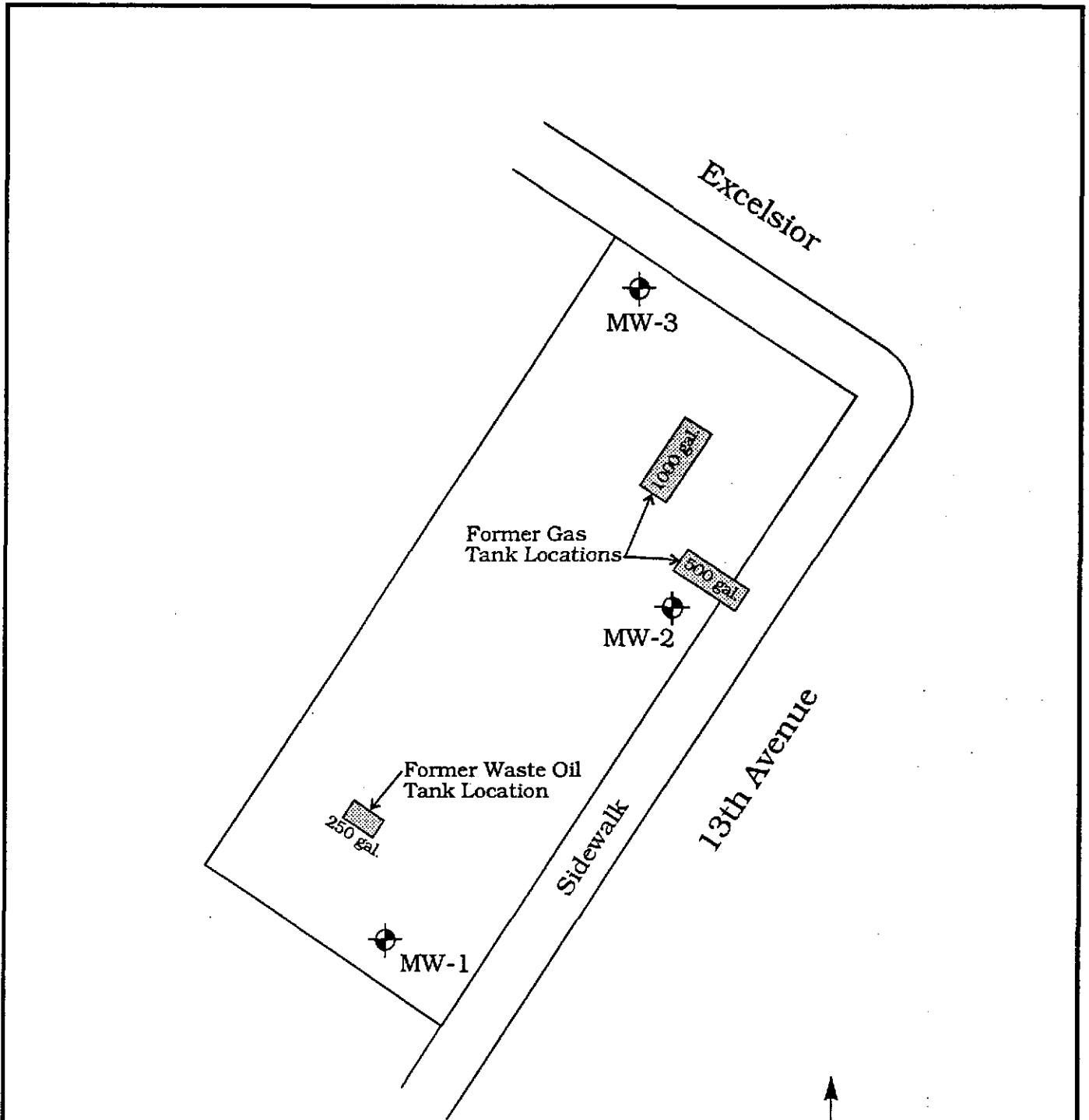
9.0 CONCLUSIONS AND RECOMMENDATIONS

AEI completed limited soil and groundwater monitoring on November 22, 1994 as follow-up to the removal of three underground storage tanks by Aqua Science Engineers in December of 1992. As part of this investigation, three 2" diameter groundwater monitoring wells were installed in the area around the gasoline and waste oil tank excavations, and soil and water samples were tested for gasoline, diesel, BTEX, oil & grease, and hydraulic fluid.



From Thomas Bro's. - 1993

ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA	
DRAWN BY:	REVISED BY:
DATE:	APPROVED BY:
SITE LOCATION MAP - Williamson	
3635 13th Avenue, Oakland	FIGURE 1

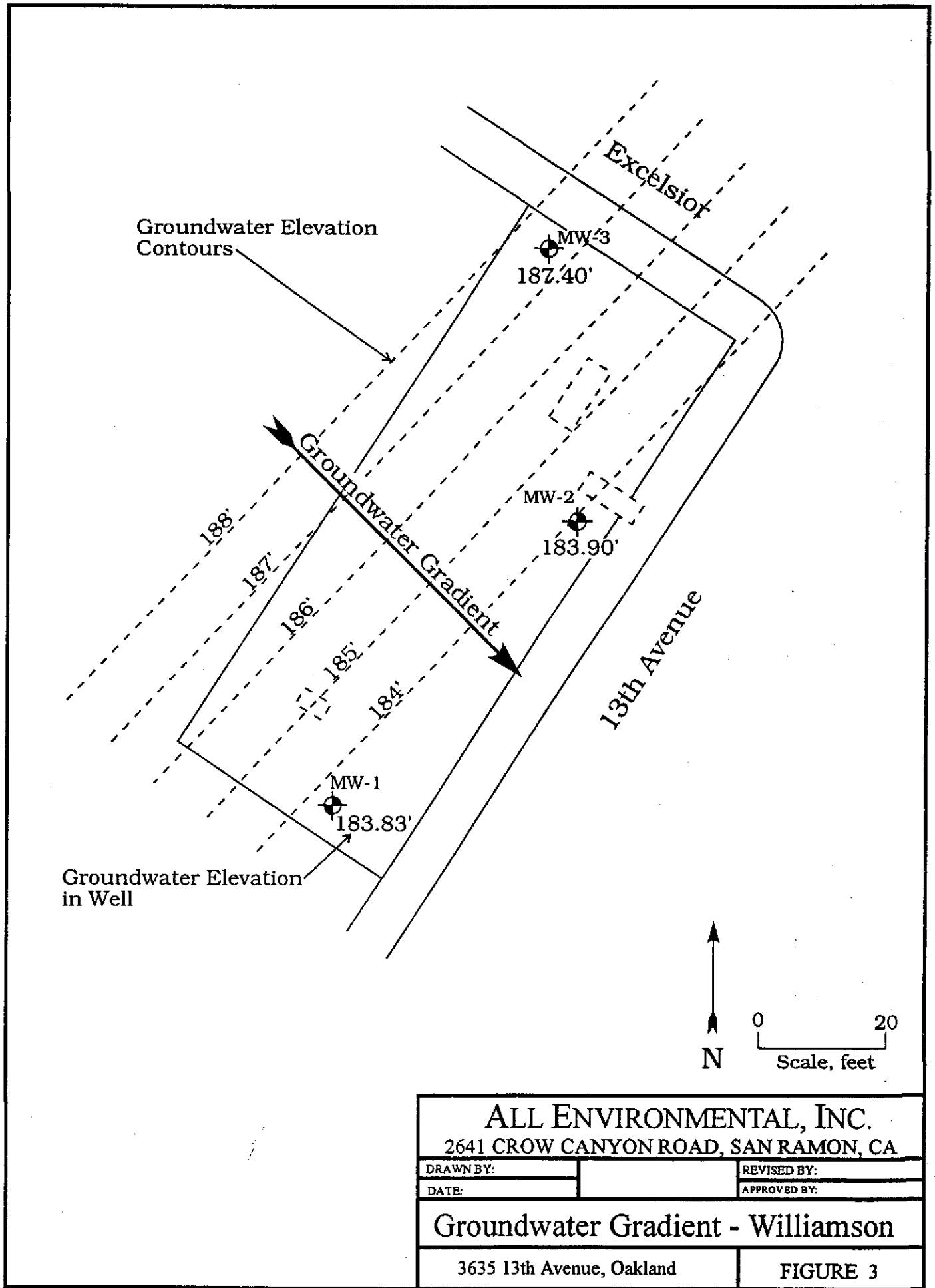


Explanation

⊕ Monitoring Well, Installed by AEI on 3/24/94.

Note: Well locations and property boundaries surveyed accurately, tank locations approximate.

ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA	
DRAWN BY:	REVISED BY:
DATE:	APPROVED BY:
SITE PLAN - Williamson	
3635 13th Avenue, Oakland	FIGURE 2



ALL ENVIRONMENTAL, INC. 2641 CROW CANYON ROAD, SAN RAMON, CA	
DRAWN BY:	REVISED BY:
DATE:	APPROVED BY:
Groundwater Gradient - Williamson	
3635 13th Avenue, Oakland	FIGURE 3

Results of analytical testing of soils taken from the monitoring well borings showed low to moderate levels of gasoline, with the highest concentration (15 ppm) coming from MW-1, which is adjacent to the waste oil tank location.

Water sample analyses showed a significant amount of gasoline, with up to 11,000 ppb (11 ppm) found in MW-2. This well exhibited a strong fuel odor when sampling. This high level does not agree with results of analytical testing performed on soil samples from the tank excavation and the boring. Further, the tank was reported to be in good condition, which suggests that gasoline may have been introduced to the groundwater due to a leak in the piping, or may have originated off site.

All other compounds for which tests were performed showed low to moderate concentrations. No oil & grease was found in the groundwater near the former waste oil tank location, although some was found in the water from MW-3.

Based on the results of the analytical testing, the site shows moderate to high levels of contamination from gasoline. Despite the fairly steep gradient of groundwater flow, MW-3, which is "upstream" of on-site sources of contamination, showed unexpectedly high levels of gasoline and oil & grease in the groundwater. This may be an indication of an off site source of contamination.

We recommend that the site groundwater be monitored on a quarterly basis for a period of one year. During this time, a better understanding of the groundwater contamination and how the contamination is changing with time will be gained. Also, we will be topping off the grout seal on Wells MW-1 and MW-2. As the well sampling field logs indicate, the grout seals in these wells have settled over a foot, and surface runoff tends to collect in the well boxes.

10.0 REFERENCES

The following reports provide additional details regarding this site:

1. Soil Boring and Monitoring Well Installation Work Plan - dated December 9, 1993, prepared by All Environmental, Inc.
2. Contaminated Soil Over-Excavation Final Report - dated November 18, 1993, prepared by All Environmental, Inc.
3. Underground Storage Tanks Removal Final Report - dated January 20, 1993, prepared by Aqua Science Engineers

11.0 REPORT LIMITATIONS

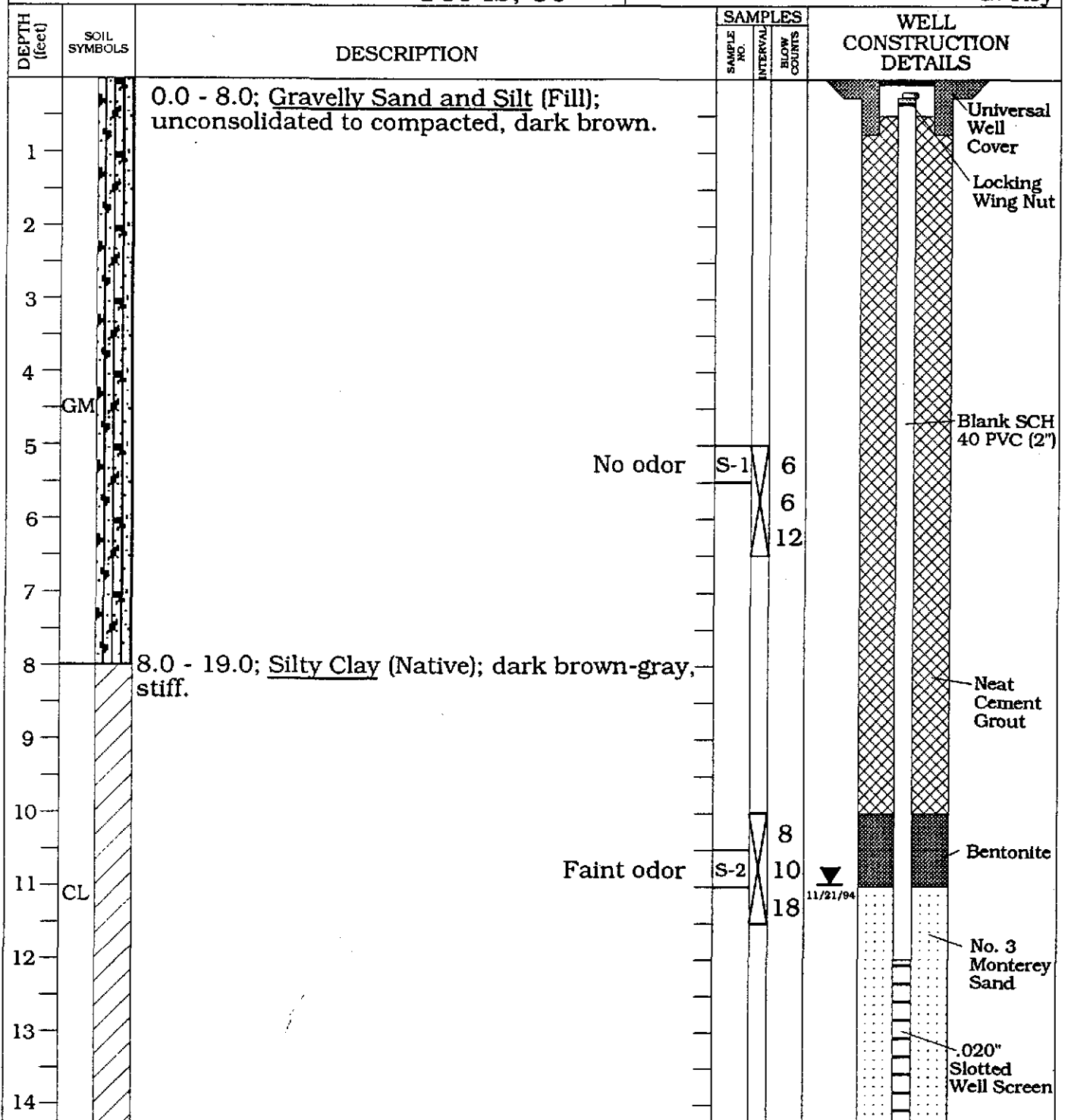
This report presents a summary of work completed by All Environmental, Inc., including observations and descriptions of site conditions. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide required information, but it cannot be assumed that they are entirely representative of all areas not sampled. All conclusions and recommendations are based on these analyses, observations, and governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

AEI warrants that all services were performed in accordance with the generally accepted practices in the environmental engineering and construction field which existed at the time and location of the work.

APPENDIX A

BORING AND WELL LOGS,
AND
WELL SAMPLING FIELD LOGS

PROJECT: Williamson #1031	LOG OF WELL NUMBER: MW-1	
BORING LOC.: SW corner of property	ELEVATION, TOC: 194.75'	
DRILLING CONTRACTOR: West Hazmat Drilling	START DATE: 3/24/94	END DATE: 3/24/94
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH: 25'	SCREEN INT: 12-25'
DRILLING EQUIPMENT: Mobile B-57	DEPTH TO WATER: 10.92'	CASING: 2" PVC
SAMPLING METHOD: drive sampler w/ 2" liner	LOGGED BY: J. Wiegand	
HAMMER WEIGHT and FALL: 140 lb, 30"	RESPONSIBLE PROFESSIONAL: G. Roy	

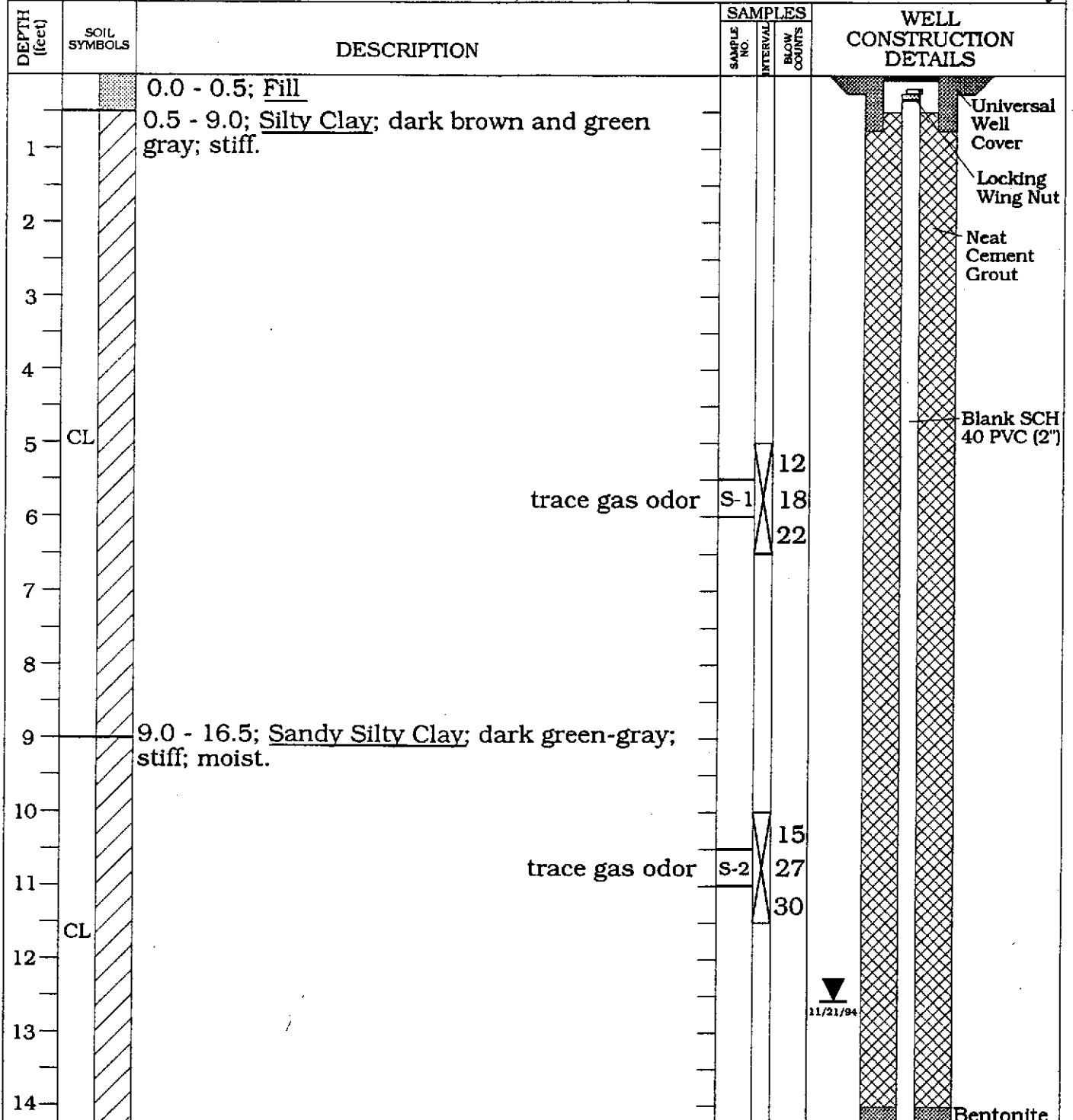


PROJECT: Williamson #1031

LOG OF BOREHOLE: MW-1

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES		WELL CONSTRUCTION DETAILS
			SAMPLE NO.	BLOW COUNTS	
15	CL	8.0 - 19.0; <u>Silty Clay</u> (cont.)	S-3	10	
15				15	
16				20	
17					
18					
19	SM	19.0 - 21.0; <u>Silty Sand</u> ; brown-gray; very dense; wet.	S-4	18	
20				30	
21		21.0 - 25.0; <u>Silty Clay</u> ; light brown; stiff; moist.	S-5	35	
22					
23	CL				
24		Grades to very hard.		35	
25			S-6	50	
26		Bottom of hole at 25.0'			Depth to water 10.92' on 11/21/94.
27					
28					
29					
30					
31					

PROJECT: Williamson #1031	LOG OF WELL NUMBER: MW-2	
BORING LOC.: south, middle portion of lot	ELEVATION, TOC: 196.44'	
DRILLING CONTRACTOR: West Hazmat Drilling	START DATE: 3/24/94	END DATE: 3/24/94
DRILLING METHOD: Hollow Stem Auger	TOTAL DEPTH: 36'	SCREEN INT: 16-36'
DRILLING EQUIPMENT: Mobile B-57	DEPTH TO WATER: 12.54'	CASING: 2" PVC
SAMPLING METHOD: drive sampler w/ 2" liner	LOGGED BY: J. Wiegand	
HAMMER WEIGHT and FALL: 140 lb, 30"	RESPONSIBLE PROFESSIONAL: G. Roy	



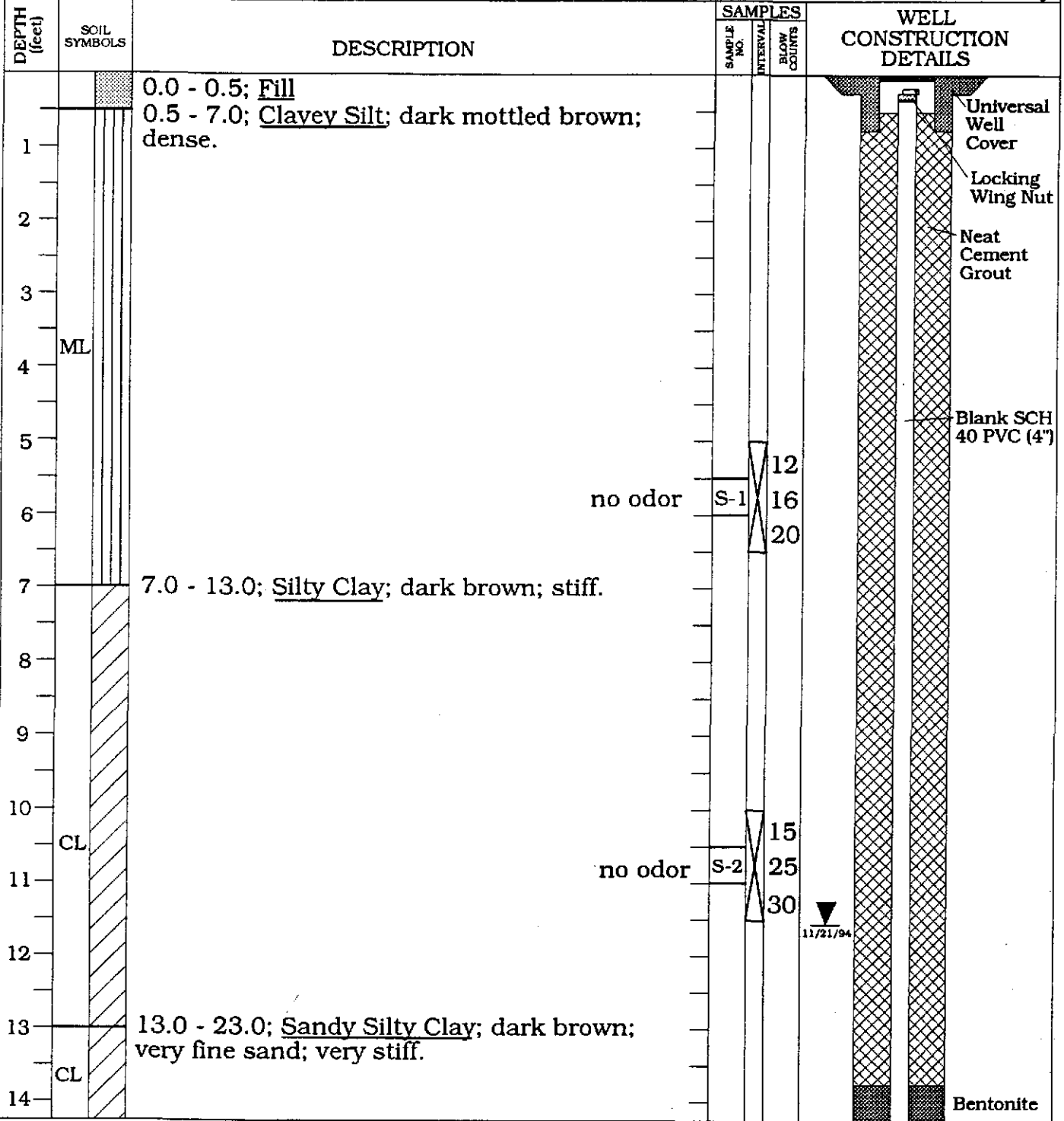
DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES			WELL CONSTRUCTION DETAILS
			SAMPLE NO.	INTERVAL	BLOW COUNTS	
15	CL	9.0 - 16.5; <u>Sandy Silty Clay</u> (cont.)				<p>Bentonite</p> <p>No. 3 Monterey Sand</p> <p>.020" Slotted Well Screen</p>
16		trace gas odor	S-3			
17		16.5 - 19.0; <u>Sand</u> ; dark green-gray; very fine; dense.				
18	SW					
19		19.0 - 23.0; very fine <u>Sandy Clay</u> ; brown; stiff; moist.				
20					23	
21	CL	trace gas odor	S-3		32	
22					35	
23		23.0 - 36.0; <u>Silty Clay</u> ; brown; stiff; saturated.				
24						
25					18	
26		no odor	S-5		25	
27					27	
28	CL					
29					15	
30		no odor	S-6		20	
31					25	

PROJECT: Williamson #1031

LOG OF BOREHOLE: MW-2

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES			WELL CONSTRUCTION DETAILS	
			SAMPLE NO.	INTERVAL	BLOW COUNTS		
32	CL	23.0 - 36.0; <u>Silty Clay</u> (cont.)				<p>End Cap</p>	
33							
34				no odor	S-7		17 20 37
35							
36		Bottom of hole at 36.0'				Depth to water 12.54' on 11/21/94.	
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							

PROJECT: Williamson #1031		LOG OF WELL NUMBER: MW-3	
BORING LOC.: NE corner of property		ELEVATION, TOC: 198.93'	
DRILLING CONTRACTOR: West Hazmat Drilling		START DATE: 3/24/94	END DATE: 3/24/94
DRILLING METHOD: Hollow Stem Auger		TOTAL DEPTH: 36.5'	SCREEN INT: 15.5-36'
DRILLING EQUIPMENT: Mobile B-57		DEPTH TO WATER: 11.53'	CASING: 2" PVC
SAMPLING METHOD: drive sampler w/ 2" liner		LOGGED BY: J. Wiegand	
HAMMER WEIGHT and FALL: 140 lb, 30"		RESPONSIBLE PROFESSIONAL: G. Roy	



DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES		WELL CONSTRUCTION DETAILS
			SAMPLE NO.	BLOW COUNTS	
13.0 - 23.0	CL	Sandy Silty Clay (cont.)	S-3	15, 22, 25	Bentonite
15					
16		no odor			
17					
18					No. 3 Monterey Sand
19	CL				
20					
21		no odor	S-4	17, 20, 24	
22					.020" Slotted Well Screen
23		23.0 - 28.0; Clayey Sand; dark brown; very fine sand; very dense.			
24					
25	SC				
26		no odor	S-5	20, 35, 38	
27					
28		28.0 - 36.5; Silty Clay; dark brown; stiff.			
29					
30	CL				
31		no odor	S-6	20, 25, 30	

PROJECT: Williamson #1031

LOG OF BOREHOLE: MW-3

DEPTH (feet)	SOIL SYMBOLS	DESCRIPTION	SAMPLES			WELL CONSTRUCTION DETAILS
			SAMPLE NO.	INTERVAL	BLOW COUNTS	
32	CL	28.0 - 36.5; <u>Silty Clay</u> (cont.)				
33						
34						
35						
36						
			no odor	S-7	20 27 32	
37		Bottom of hole at 36.5'				
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						

Depth to water
11.53' on 11/21/94

End Cap

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	MW-1
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Avenue Oakland, CA
Date of Sampling and Name of Sampler	11/21/94 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement grout - settled >1 foot
Well Cap - Type and Condition	locking expanding - good condition
Top of Casing Elev - Ft. Above Sea Level	194.75
Depth of Well - feet	23.10
Depth to Water - feet	10.92
Groundwater Elevation - feet	183.83 ✓
Required GW Purge Before Sampling - gal.	10 (5 volumes)
Actual GW Purge Before Sampling - gal.	10
Appearance of Purge Water	slightly turbid 1st gallon, then clear
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	2 liters, 2 40-ml vov's
GW Temp. and pH	not measured
GW Conductivity	not measured
Appearance of GW Samples	clear
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	No odor.
	Fast recharge.
	Sampled the day of purging.

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	MW-2
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Avenue Oakland, CA
Date of Sampling and Name of Sampler	11/21-22/94 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement grout - settled >1 foot, under water
Well Cap - Type and Condition	locking expanding - good condition
Top of Casing Elev - Ft. Above Sea Level	196.44
Depth of Well - feet	36.03
Depth to Water - feet	12.54
Groundwater Elevation - feet	183.9
Required GW Purge Before Sampling - gal.	19 (5 volumes)
Actual GW Purge Before Sampling - gal.	18
Appearance of Purge Water	slightly turbid 1st gallon, then clear
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	2 liters, 2 40-ml vov's
GW Temp. and pH	not measured
GW Conductivity	not measured
Appearance of GW Samples	clear
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	Strong gasoline odor.
	Well pumped dry at 18 gallons, very slow recharge.
	Sampled the day after purging.

ALL ENVIRONMENTAL, INC., GW WELL SAMPLING FIELD LOG	
Well Number:	MW-3
PROJECT	
Project Name and Job Number	Williamson #1031
Project Address	3635 13th Avenue Oakland, CA
Date of Sampling and Name of Sampler	11/21-22/94 CMK
GW MONITORING WELL	
Well Diameter	2"
Seal at Grade - Type and Condition	cement grout - good condition
Well Cap - Type and Condition	locking expanding - good condition
Top of Casing Elev - Ft. Above Sea Level	198.93
Depth of Well - feet	35.57
Depth to Water - feet	11.53
Groundwater Elevation - feet	187.40
Required GW Purge Before Sampling - gal.	19 (5 volumes)
Actual GW Purge Before Sampling - gal.	17
Appearance of Purge Water	clear
GW MONITORING SAMPLES	
No. of Samples and Type of Containers	2 liters, 2 40-ml voa's
GW Temp. and pH	not measured
GW Conductivity	not measured
Appearance of GW Samples	clear
Samples Iced and Chain of Custody?	yes
Sampling Equipment	submersible pump for purge, disposable bailer for sample
Equipment Cleaned Between Samples?	yes
COMMENTS	
ie., sample odor, well recharge, etc.	No odor.
	Pumped dry at 17 gallons, slow recharge.
	Sampled the day after purging.

APPENDIX B
ANALYTICAL RESULTS



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

November 26, 1994

PEL # 9411068

ALL ENVIRONMENTAL, INC.

Attn: Charles Kissick

Re: Three water samples for Gasoline/BTEX, Diesel, and Oil & Grease analyses.

Project name: Williamson

Project number: 1031

Date sampled: Nov 22, 1994

Date submitted: Nov 22, 1994

Date extracted: Nov 22-25, 1994

Date analyzed: Nov 22-25, 1994

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Oil & Grease (mg/L)
MW-1	210	N.D.	N.D.	N.D.	N.D.	2.3	N.D.
MW-2	11000	N.D.	35	21	7.2	50	N.D.
MW-3	200	N.D.	N.D.	N.D.	N.D.	2.0	3.0
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	88.5%	101.2%	88.3%	90.2%	91.0%	100.5%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F

David Duong
Laboratory Director



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

March 30, 1994

PEL # 9403095

ALL ENVIRONMENTAL, INC.

Attn: Guy Roy

Re: Sic soil samples for Gasoline/BTEX, Hydraulic Fluid, and Oil & Grease analyses.

Project name: Williamson

Project number: 1031

Date sampled: Mar 24, 1994

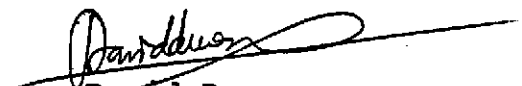
Date submitted: Mar 28, 1994

Date extracted: Mar 28-30, 1994

Date analyzed: Mar 28-30, 1994

RESULTS:

SAMPLE I.D.	Gasoline (mg/Kg)	Hydraulic Fluid (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)	Oil & Grease (mg/Kg)
MW-1 S-2	N.D. ✓	N.D.	N.D. ✓	N.D.	N.D.	N.D.	N.D.
MW-1 S-3	15 ✓	N.D.	40 ✓	28	26	67	N.D.
MW-2 S-2	5.9 ✓	N.D.	140 ✓	84	52	160	N.D.
MW-2 S-3	7.7 ✓	N.D.	36 ✓	58	11	240	N.D.
MW-3 S-2	N.D. ✓	N.D.	N.D. ✓	N.D.	N.D.	9.4	N.D.
MW-3 S-6	N.D. ✓	N.D.	N.D. ✓	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	91.5%	---	90.6%	74.8%	---	107.2%	---
Duplicate Spiked Recovery	98.7%	---	79.9%	88.4%	91.7%	84.5%	---
Detection limit	1.0	1.0	5.0	5.0	5.0	5.0	10
Method of Analysis	5030/ 8015	3550 / 8015	8020	8020	8020	8020	5520 D & F


David Duong
Laboratory Director

PROJECT MOR: <u>Guy Roy</u>				ANALYSIS REPORT													NUMBER OF CONTAINERS							
COMPANY: <u>ALL ENVIRONMENTAL INC</u>				TPH-Casoline (EPA 5030.8015)	TPH-Casoline (5030.8015) w/ BTEX (EPA 602.8020)	TPH-Direct HYDRAVIC (EPA 3510/3550.8015) PLUD	PURGEABLE AROMATICS BTEX (EPA 602.8020)	TOTAL OIL & GREASE (EPA 5520 BAF)	PESTICIDES/PCB (EPA 608.8080)	TOTAL RECOVERABLE HYDROCARBONS EPA 418.1														
ADDRESS: <u>2641 Crow Canyon Rd Suite 5</u> <u>San Ramon 94583</u>																								
PHONE: <u>510-820-3224</u> FAX: _____																								
SIGNATURE: <u>Jeffery Wiegand</u>																								
SAMPLE ID DATE TIME MATRIX LABEL																								
13TH AVE MW-1 S-2	3.24.94	1145	Soil TUBE		X	X		X																
13TH AVE MW-1 S-3	3.24.94	1155	"		X	X		X																
13TH AVE MW-2 S-2	3.24.94	1320	"		X	X		X																
13TH AVE MW-2 S-3	3.24.94	1335	"		X	X		X																
13TH AVE MW-3 S-2	3.24.94	1525	"		X	X		X																
13TH AVE MW-3 S-B	3.24.94	1540	"		X	X		X																
PROJECT INFORMATION				SAMPLE RECEIPT				RELINQUISHED BY: 1				RECEIVED BY: 1				RELINQUISHED BY: 2				RECEIVED BY: 2				
PROJECT NAME: <u>WILLIAMSON</u>				TOTAL # OF CONTAINERS: <u>6</u>				SIGNATURE: <u>Jeffery Wiegand</u> Date: <u>10.28.94</u>				SIGNATURE: <u>[Signature]</u> Date: <u>3/28/94</u>				SIGNATURE: _____ Date: _____				SIGNATURE: _____ Date: _____				
PROJECT NUMBER: <u>1031</u>				RECD. GOOD COND./COLD				NAME: _____ Time: _____				NAME: <u>1490</u> Time: _____				NAME: _____ Time: _____				NAME: _____ Time: _____				
INSTRUCTIONS & COMMENTS:								COMPANY: _____				COMPANY: <u>PFL</u>				COMPANY: _____				COMPANY: _____				