

ALL ENVIRONMENTAL, INC.

Environmental Engineering & Construction

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August 29, 1995
Job No. 1031

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

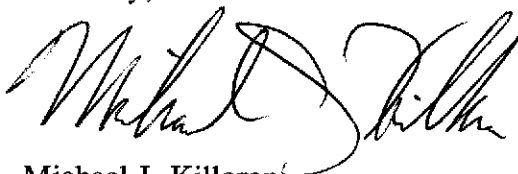
STEP 1121
JE

Subject: Fourth Quarterly Groundwater Sampling at 3635 13th Avenue, Oakland, CA.

Dear Ms. Eberle:

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

Sincerely,



Michael J. Killoran
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

8-29-95

**FOURTH QUARTERLY
GROUNDWATER MONITORING REPORT
3635 13th Avenue
Oakland, CA**

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**

August 29, 1995

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WITH CHAIN OF CUSTODY DOCUMENTATION
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WITH CHAIN OF CUSTODY DOCUMENTATION
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1.0 INTRODUCTION

This report presents the results of the quarterly groundwater sampling activities conducted at 3635 13th Avenue in Oakland, California on August 18, 1995. The purpose of this activity is to monitor groundwater quality in the vicinity of previous underground storage tanks for a period of at least one year. This quarterly monitoring program is being conducted at the request of the Alameda County Health Care Services Agency (ACHCSA). The monitoring was accomplished using three monitoring wells which were installed by All Environmental Inc. (AEI) on March 24, 1994, as reported by AEI (Ref. 3). AEI was contracted by John Williamson to conduct these sampling activities on a quarterly basis for one year. This report summarizes results of the third quarter of groundwater monitoring and sampling.

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 Avenue and Excelsior, as shown in Figure 1, Site Location Map. The property slopes gently toward the southeast, is currently paved with asphalt, and is surrounded by a cyclone fence. The nearest significant surface water is Lake Merritt, located approximately one mile to the west.

3.0 BACKGROUND

All Environmental, Inc. (AEI) was contracted by John Williamson to conduct a soil and groundwater investigation at 3635 13th Avenue in Oakland, California. Two underground gasoline tanks, with capacities of 500 and 1000 gallons, and one 250-gallon waste oil tank were removed from the site by Aqua Science Engineers, Inc. in December, 1992. Excavation and removal of an additional 360 cubic yards of soil was performed by AEI in September, 1993. The initial levels of contamination found in the soils during the tank removal and subsequent excavation led to the requirement of performing this groundwater investigation, as per the orders of the ACHCSA. Three monitoring wells, MW-1 through MW-3, were installed on the site for the purpose of monitoring groundwater contamination.

AEI prepared a Work Plan, dated December 9, 1993 to outline the soil and groundwater investigation. This was approved by the ACHCSA prior to initiation of the work. The three monitoring wells were installed on March 24, 1994 at the locations shown in Figure 2, Site Plan. Because of funding delays, the wells were not developed and sampled until November, 1994.

4.0 GEOLOGY AND HYDROGEOLOGY

The geology at the site consists of early Pleistocene older alluvium deposits of mostly silty and sandy clay. Based on the borings drilled at the site, the subsurface materials consist mostly of silty and sandy clays of relatively low permeability, with discontinuous layers of silty sand, up to 4 feet thick.

The direction of the groundwater flow direction, based on the most recent measurements, is toward the southeast, as shown in Figure 3, Groundwater Gradient. The flow direction has remained essentially the same in all three quarterly groundwater episodes. Groundwater level measurements are tabulated in Table 1 below.

Table 1 - Groundwater Elevations

Well Number	Groundwater Elevations (Feet Above Mean Sea Level)			
	November 1994	February 1995	May 1995	August 1995
MW-1	183.83	184.17	183.81	180.23
MW-2	183.90	184.09	184.33	178.19
MW-3	187.40	187.04	181.22	182.79

5.0 GROUNDWATER SAMPLE ANALYSES

Groundwater samples were collected from the three wells on August, 1995. A log detailing the well sampling is included in Appendix A, Current Laboratory Analyses and Chain of Custody Documentation. The groundwater samples were analyzed by Priority Environmental Labs (State Certification #1708) in Milpitas, California. Samples from all three wells were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) (EPA Method 5030/8015); Total Petroleum Hydrocarbons as diesel (TPHd) (EPA Method 3510/8015); benzene, toluene, ethylbenzene, and total xylenes (BTEX) (EPA Method 8020/602); and Total Oil & Grease (TOG) (EPA Method 5520 C&F).

Sample analyses indicated moderate levels of TPHg and elevated levels of BTEX in all wells. BTEX was detected at elevated levels in these wells. Benzene was detected at levels of up to 43 ppb. TPHd and TOG were not detected in samples from any of the wells. Current groundwater sample analyses with chain of custody documentation are included in Appendix A. Analytical data and chain of custody documentation for the previous sampling are included in Appendix B.

Table 2 - Water Sample Analysis Results, Well No. MW-1

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPHg (ug/L)	210	140	ND	2800
TPHd (ug/L)	ND	ND	ND	ND
Benzene (ug/L)	ND	ND	ND	25
Toluene (ug/L)	ND	ND	ND	6.2
Et. Benz. (ug/L)	ND	0.6	ND	22
Xylene (ug/L)	2.3	1.5	ND	30
Oil & Grease (mg/L)	ND	1.2	ND	ND

ug/L = ppb;

mg/L = ppm;

ND = not detected

Table 3 - Water Sample Analysis Results, Well No. MW-2

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPH-G (ug/L)	11,000	4400	8600	7200
TPH-D (ug/L)	ND	ND	ND	ND
Benzene (ug/L)	35	ND	95	43
Toluene (ug/L)	21	ND	37	21
Et. Benz. (ug/L)	7.2	2.5	37	21
Xylene (ug/L)	50	5.7	70	71
Oil & Grease (mg/L)	ND	1.6	ND	ND

highest hits

ug/L = ppb;

mg/L = ppm;

ND = not detected

Table 4 - Water Sample Analysis Results, Well No. MW-3

Compound	Nov. 1994	Feb. 1995	May 1995	Aug. 1995
TPH-G (ug/L)	200	1500	710	310
TPH-D (ug/L)	ND	ND	ND	ND
Benzene (ug/L)	ND	6.6	2.5	3.1
Toluene (ug/L)	ND	6.4	3.2	2.1
Et. Benz. (ug/L)	ND	4.2	3.1	2.2
Xylene (ug/L)	2.0	13	16	11
Oil & Grease (mg/L)	3.0	0.9	ND	ND

ug/L = ppb;

mg/L = ppm;

ND = not detected

6.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater samples taken on August 18, 1995, as part of this, the fourth quarter of the quarterly sampling program, showed nondetectable to moderate levels of TPHg, only nondetectable levels of TOG and TPHd, and elevated levels of BTEX. The Maximum Contaminant Level for benzene in drinking water according to Title 22 of the California Code of Regulations is 1 ppb. However, the groundwater below the site is not potable.

The next monitoring episode should be conducted in August of 1995, as per the requirements of the ACHCSA.

7.0 REFERENCES

1. Soil Boring and Monitoring Well Installation Final Report - dated December 14, 1994, prepared by All Environmental, Inc.
2. Soil Boring and Monitoring Well Installation Work Plan - dated December 9, 1993, prepared by All Environmental, Inc.
3. Contaminated Soil Over-Excavation Final Report - dated November 18, 1993, prepared by All Environmental, Inc.
4. Underground Storage Tanks Removal Final Report - dated January 20, 1993, prepared by Aqua Science Engineers, Inc.

8.0 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.



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

August 22, 1995

PEL # 9508061

ALL ENVIRONMENTAL, INC.

Attn: Mike Killoran

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

Project name: Williamson

Project number: 1031

Date sampled: Aug 18, 1995

Date submitted: Aug 19, 1995

Date extracted: Aug 19-21, 1995

Date analyzed: Aug 19-21, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
MW-1	2800	N.D.	25	6.2	22	30	N.D.
MW-2	7200	N.D.	43	21	21	71	N.D.
MW-3	310	N.D.	3.1	2.1	2.2	11	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	109.4%	83.2%	105.7%	97.0%	97.9%	91.1%	---
Detection limit	50	50	0.5	0.5	0.5	0.5	10
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

PEL # 9505077

May 26, 1995

ALL ENVIRONMENTAL, INC.

Attn: Mike Killoren

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

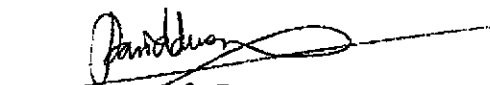
Project name: Williamson
Project number: 1031

Date sampled: May 23-24, 1995
Date extracted: May 24-25, 1995

Date submitted: May 24, 1995
Date analyzed: May 24-25, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2	8600	N.D.	95	37	37	70	N.D.
MW-3	710	N.D.	2.5	3.2	3.1	16	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	83.7%	94.0%	86.4%	94.2%	88.4%	102.9%	---
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

February 27, 1995

PEL # 9502084

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: Feb 22-23, 1995
Date extracted: Feb 24-25, 1995

Date submitted: Feb 24, 1995
Date analyzed: Feb 24-25, 1995

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)	Oil & Grease (mg/L)
MW-1	140	N.D.	N.D.	N.D.	0.6	1.5	1.2
MW-2	4400	N.D.	N.D.	N.D.	2.5	5.7	1.6
MW-3	1500	N.D.	6.6	6.4	4.2	13	0.9
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	106.2%	91.7%	82.0%	103.2%	92.3%	103.1%	---
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

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

ALL ENVIRONMENTAL INC. -- GROUNDWATER MONITORING WELL FIELD SAMPLING FORM	
Monitoring Well Number: MW-1	
Project Name	Williamson
Job Number	1031
Project Address	3635 13th Avenue, Oakland, CA
Date of Sampling	08/18/95
Name of Sampler	Michael Killoran
MONITORING WELL DATA	
Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	194.75
Depth of Well	23.10
Depth to Water	14.52
Water Elevation	180.23
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.1
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	5
Appearance of Purge Water	Clear
GROUNDWATER SAMPLES	
Number of Samples/Container Size	
Groundwater Temp/pH/Conductivity #1:	76°/7.01/1690
Groundwater Temp/pH/Conductivity #2:	72°/7.00/1690
Groundwater Temp/pH/Conductivity #3:	72°/7.00/1680
Appearance of Groundwater Samples	Clear
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)	
No odor, rapid well recharge.	

TD - Total Depth of Well
DTW - Depth To Water

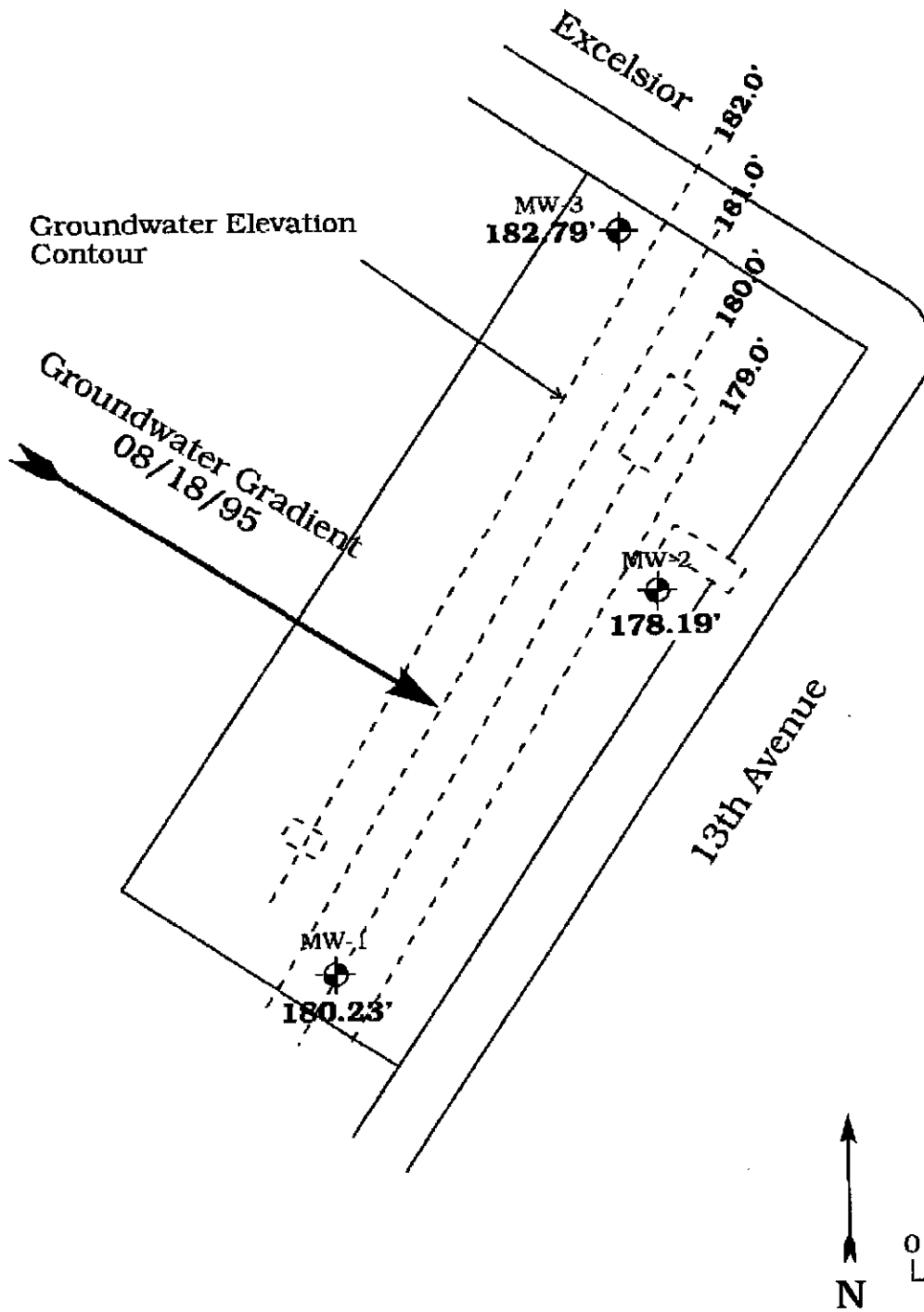
ALL ENVIRONMENTAL INC. -- GROUNDWATER MONITORING WELL FIELD SAMPLING FORM	
Monitoring Well Number: MW-2	
Project Name	Williamson
Job Number	1031
Project Address	3635 13th Avenue, Oakland, CA
Date of Sampling	08/18/95
Name of Sampler	Michael Killoran
MONITORING WELL DATA	
Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	194.44
Depth of Well	36.03
Depth to Water	16.25
Water Elevation	178.19
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	9.5
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	10
Appearance of Purge Water	Clear
GROUNDWATER SAMPLES	
Number of Samples/Container Size	
Groundwater Temp/pH/Conductivity #1:	70°/6.90/1280
Groundwater Temp/pH/Conductivity #2:	69°/6.90/1280
Groundwater Temp/pH/Conductivity #3:	68°/6.90/1280
Appearance of Groundwater Samples	Clear
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)	
When opening well cap, air with strong hydrocarbon odor escaped from well under pressure. Rapid well recharge.	

TD - Total Depth of Well
DTW - Depth To Water

ALL ENVIRONMENTAL INC. -- GROUNDWATER MONITORING WELL FIELD SAMPLING FORM	
Monitoring Well Number: MW-3	
Project Name	Williamson
Job Number	1031
Project Address	3635 13th Avenue, Oakland, CA
Date of Sampling	08/18/95
Name of Sampler	Michael Killoran
MONITORING WELL DATA	
Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	Good
Well Cap & Lock -- OK/Replace	OK
Elevation of Top of Casing	198.93
Depth of Well	35.51
Depth to Water	16.14
Water Elevation	182.79
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	9.3
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	10
Appearance of Purge Water	Clear
GROUNDWATER SAMPLES	
Number of Samples/Container Size	
Groundwater Temp/pH/Conductivity #1:	69°/7.50/1000
Groundwater Temp/pH/Conductivity #2:	68°/7.61/1100
Groundwater Temp/pH/Conductivity #3:	67°/7.55/1100
Appearance of Groundwater Samples	Clear
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)	
No odor. Slow well recharge rate.	

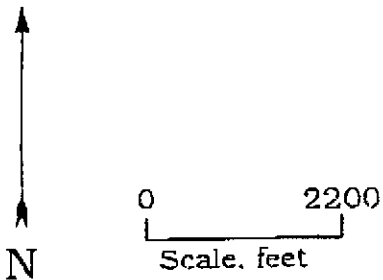
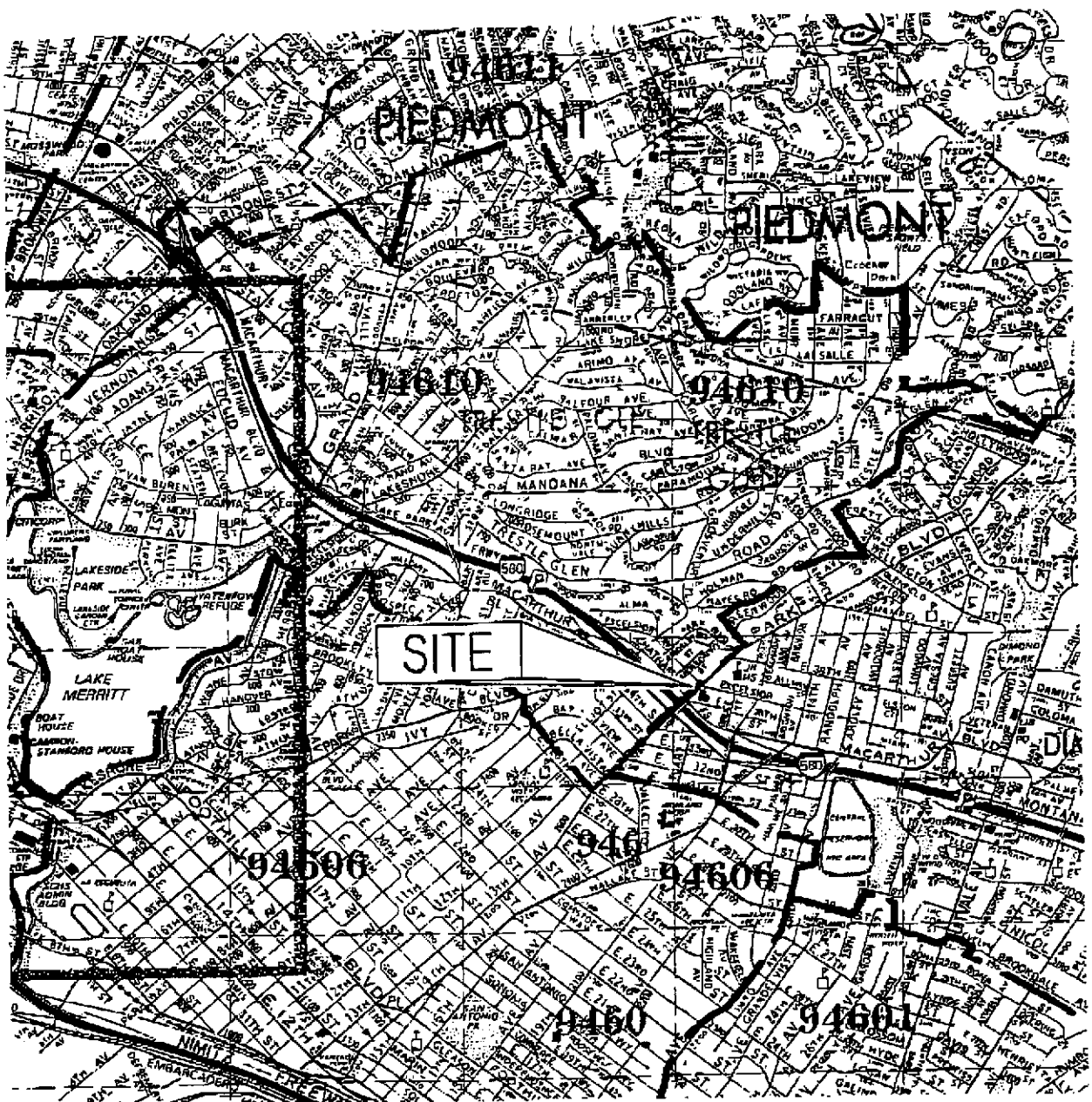
TD - Total Depth of Well

DTW - Depth To Water



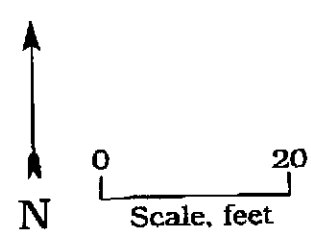
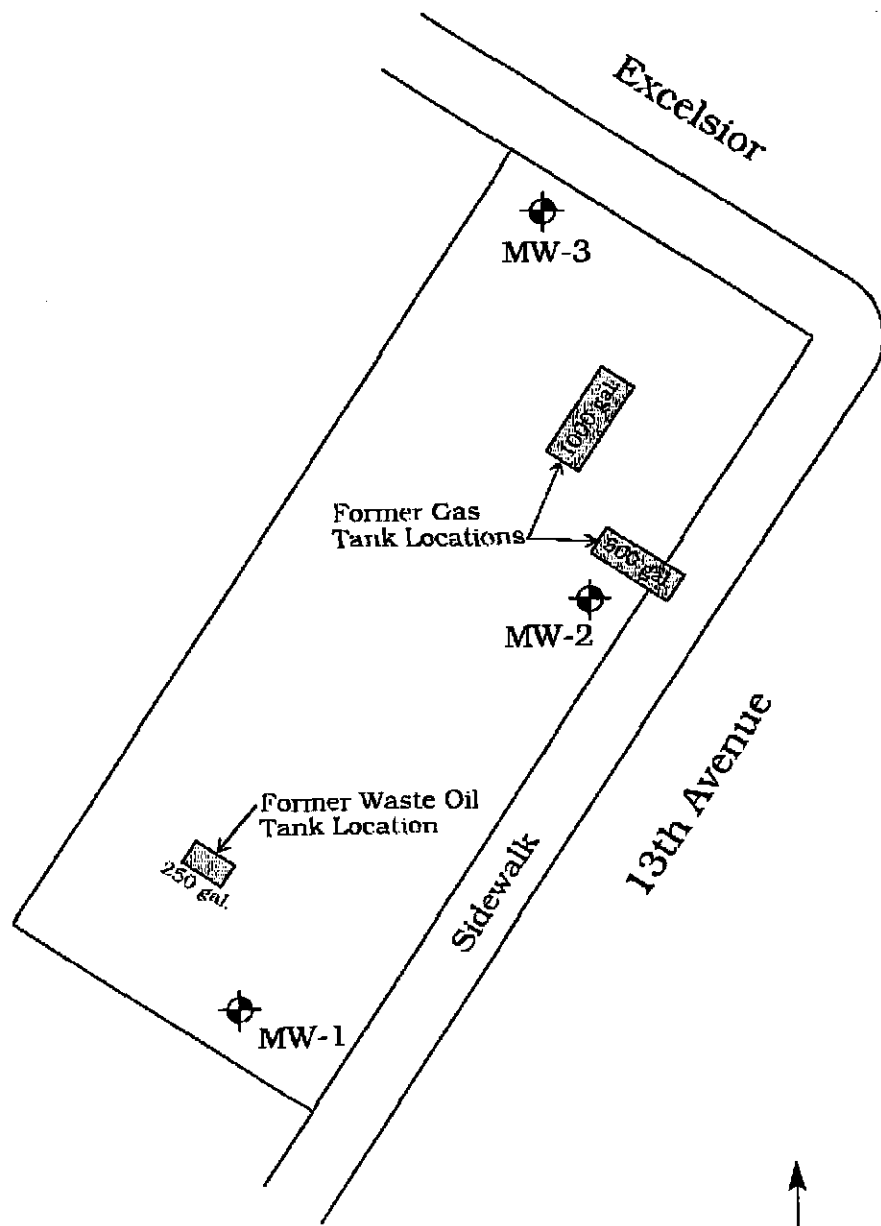
180.23' = Groundwater Elevation
 = Monitoring Well
 MW-1 = Monitoring Well Number

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




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