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HAZMAT
94 FEB 16 AM 11:50

**CET Environmental
Services, Inc.**

5845 Doyle Street, Suite 104
Emeryville, California 94608
Telephone: (510) 652-7001
Fax: (510) 652-7002

February 15, 1994

Ms. Juliet Shin
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

**Subject: Fourth Quarter Monitoring Report - 1993
and Underground Storage Tank Case Closure Report
for Alameda Collision Repair
1911 Park Street, Alameda, California
Project No. 3547**

Dear Ms. Shin:

The following letter report summarizes groundwater monitoring activities conducted by CET Environmental Services, Inc. (CET) during the fourth quarter 1993. The existing groundwater monitoring well was installed in accordance with the November 18, 1992 Aqua Terra Technologies, Inc., (ATT) Workplan approved by the Alameda County Health Care Services Agency (ACHCSA). The groundwater monitoring program at Alameda Collision Repair was conducted in accordance with the San Francisco Bay Region of the Regional Water Quality Control Board (RWQCB) Staff Recommendations for Initial Evaluation and Initial Evaluation and Investigation of Underground Fuel Storage Tanks, California leaking Underground Fuel Tank (LUFT) Task Force LUFT Field Manual (October, 1989) guidelines, California Department of Health Services (DHS) regulations as outlined in Title 22 and Title 23 of the California Code of Regulations (CCR), the requirements of the Alameda Health Care Services Agency (ACHCSA) letter dated June 19, 1992, and the guidelines of the Alameda County Flood Control District - Zone 7.

INTRODUCTION

Alameda Collision Repair is an auto body repair shop located in the City of Alameda, California, approximately 0.5 miles west of Highway 880 (Plate 1, Attachment A). A site plan showing the former fuel underground storage tanks (USTs), and the monitoring well is presented on Plate 2 (Attachment A).

3547/ATHQTR93.RPT



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BACKGROUND

The subject property is currently occupied by Alameda Collision Repair. There is one building at the site which serves as an autobody and fender repair shop. The area is covered with asphaltic pavement. There are no above or underground fuel storage tanks currently on the subject property.

On June 20, 1988, Uriah, Inc. (report dated July 19, 1988) removed one 200 gallon UST and one 750 gallon gasoline UST from the western edge of the facility. The larger UST is known to have been used to store gasoline. A total of three soil samples were collected from the tank excavation on June 20, 1988 by Uriah, Inc. In addition, three water samples were collected from the tank pit. All samples were submitted to HAZCAT Mobile Organics Lab, San Carlos, California for analysis.

Soil sample analyses by HAZCAT Labs collected from the bottom of the removed gasoline tank excavation indicated that total petroleum hydrocarbons as gasoline (TPH/g) were below analytical detection levels (1.0 mg/Kg). Water samples collected from the excavation detected levels of TPH/g ranging to 1,700 $\mu\text{g/L}$, and levels of benzene, toluene, ethyl benzene, and xylene (BTEX) ranging to 4.3 $\mu\text{g/L}$, 300 $\mu\text{g/L}$, 500 $\mu\text{g/L}$, and less than detection (100 $\mu\text{g/L}$), respectively. Lead concentrations detected in the soil samples ranged from 3.2 mg/Kg to 4.8 mg/Kg and lead concentrations detected in a single water sample was 27.4 $\mu\text{g/L}$.

Drilling and monitoring well installation activities began and were completed on December 17, 1992. Monitoring well MW1 was installed to a completed depth of 20 feet below surface grade (bsg), using four inch inside diameter (I.D.) PVC casing and screen. The completed monitoring well was developed by ATT field personnel on December 29, 1992. Copies of the drilling log, diagram of monitoring well construction details, water well drillers report, and well development record are in ATT's Groundwater Monitoring Well Installation Report dated January 20, 1993.



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QUARTERLY GROUNDWATER MONITORING

Groundwater Level Measurements and Flow Direction

On October 11, 1993, CET field personnel measured the depth to groundwater in MW1 to be 4.56 feet bsg. The depth to water at the site has been approximately 4 to 5 feet bsg over the last four quarters.

Groundwater elevation data was acquired through file review of the Alameda County Health Care Services Agency, Hazardous Materials Division, Department of Environmental Health (ACHCSA) to ascertain the direction of groundwater flow near the subject site. The groundwater elevation data covers the same time period as the groundwater sampling program (1993). Four local sites with determined groundwater elevation data and directions of groundwater flow were found: Exxon, Ron Goode Toyota, Cavanaugh Motors and Good Chevrolet, all located on Park Street in Alameda, California. A summary of groundwater flow directions from these sites are presented in Table 2 (Attachment B). Local directions of groundwater flow are presented on Plate 3 (Attachment A). Three of these sites (Ron Goode Toyota, Cavanaugh Motors and Good Chevrolet) have directions of groundwater flow that are slightly northeast to slightly northwest and average approximately due north. An exception to this flow direction trend is reported for the Exxon service station as slightly north of due east as shown on Table 2, (Attachment B) and Plate 3 (Attachment A). Copies of the original groundwater elevation contours and groundwater flow direction maps are presented in Attachment D. Given these directions of groundwater flow, the monitoring well at the subject site (MW1) is located down gradient of the former USTs (Plates 2 and 3, Attachment A).

Groundwater Sample Collection & Analytical Methods

On October 11, 1993, CET field personnel collected a set of groundwater samples from monitoring well MW1. Groundwater samples were submitted for analysis to Chromolab of San Ramon, a California Environmental Protection Agency certified laboratory in accordance with chain-of-custody protocol.

Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH/g) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX). U. S. Environmental Protection Agency (EPA) analytical methods 5030/8015 and 602, respectively were utilized



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for the analyses. Copies of the signed laboratory analytical reports, chain-of-custody documentation, and sample collection records are included in Attachment C.

Groundwater Sample Analytical Results

No analytes were detected in the groundwater samples at or above the method detection limits. A summary of groundwater analytical results for 1993 is presented in Table 1 (Attachment B).

CONCLUSIONS & RECOMMENDATIONS

This report presents the analytical results from groundwater sampling at the subject site. All of the groundwater results have been below the method detection limits for TPH/g and BTEX (Table 1, Attachment B). The analytical results for the soil sample collected during drilling of the monitoring well was below the method detection limits for TPH/g, TPH/d and BTEX (Attachment C).

The groundwater flow directions acquired from investigation reports of local sites over the sampling collection period shows that the location of the monitoring well is downgradient of the former gasoline UST. Analytical results from the groundwater monitoring well have not indicated petroleum constituents above the method detection limit for the four quarters of 1993. CET is therefore requesting environmental closure of the site.



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Please contact us at (510) 652-7001 if you have any questions or comments regarding the contents of this report.

Sincerely,

CET ENVIRONMENTAL SERVICES, INC.

John A. McHugh
Hydrogeologist

Grover S. Buhr
California Registered Geologist No. 5596

Terrance E. Carter
Senior Environmental Engineer
Project Manager

JAM/GSB/TEC:kaa

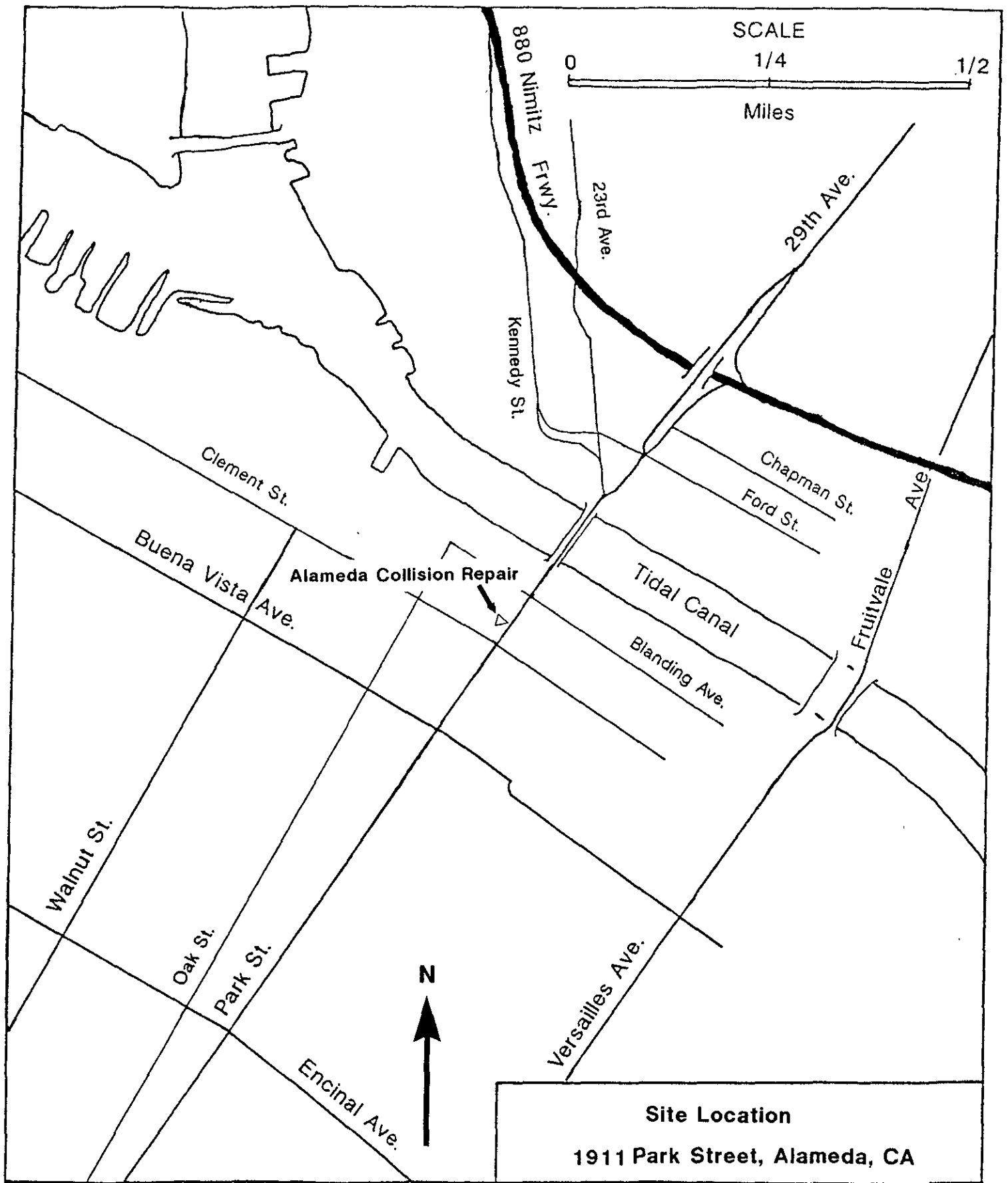
Attachments

cc: Jeff Thompson, Alameda Collision Repair



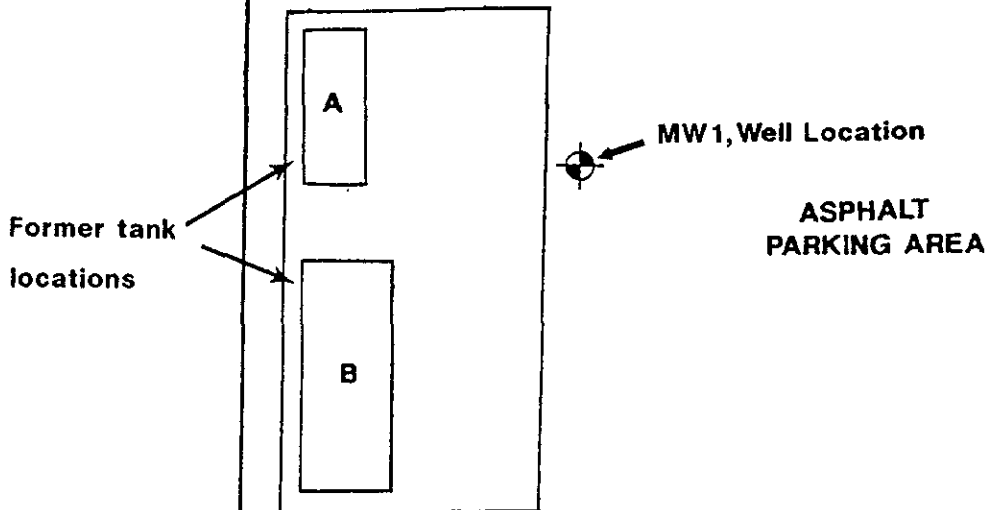
ATTACHMENT A

Plates



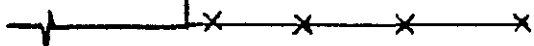
Site Location		
1911 Park Street, Alameda, CA		
ALAMEDA COLLISION REPAIR		PLATE
JOB NUMBER	DATE	1
3547	1/94	

CET Environmental Services, Inc.



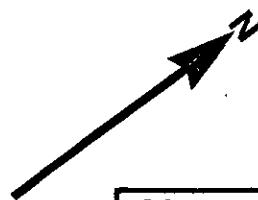
1911 PARK ST.

1919 PARK ST.



0 5 10 15 20

SCALE (feet)



PARK STREET

Monitoring Well & Former Tank Locations

1911 Park Street, Alameda, CA

CET Environmental Services, Inc.

ALAMEDA COLLISION REPAIR

PLATE

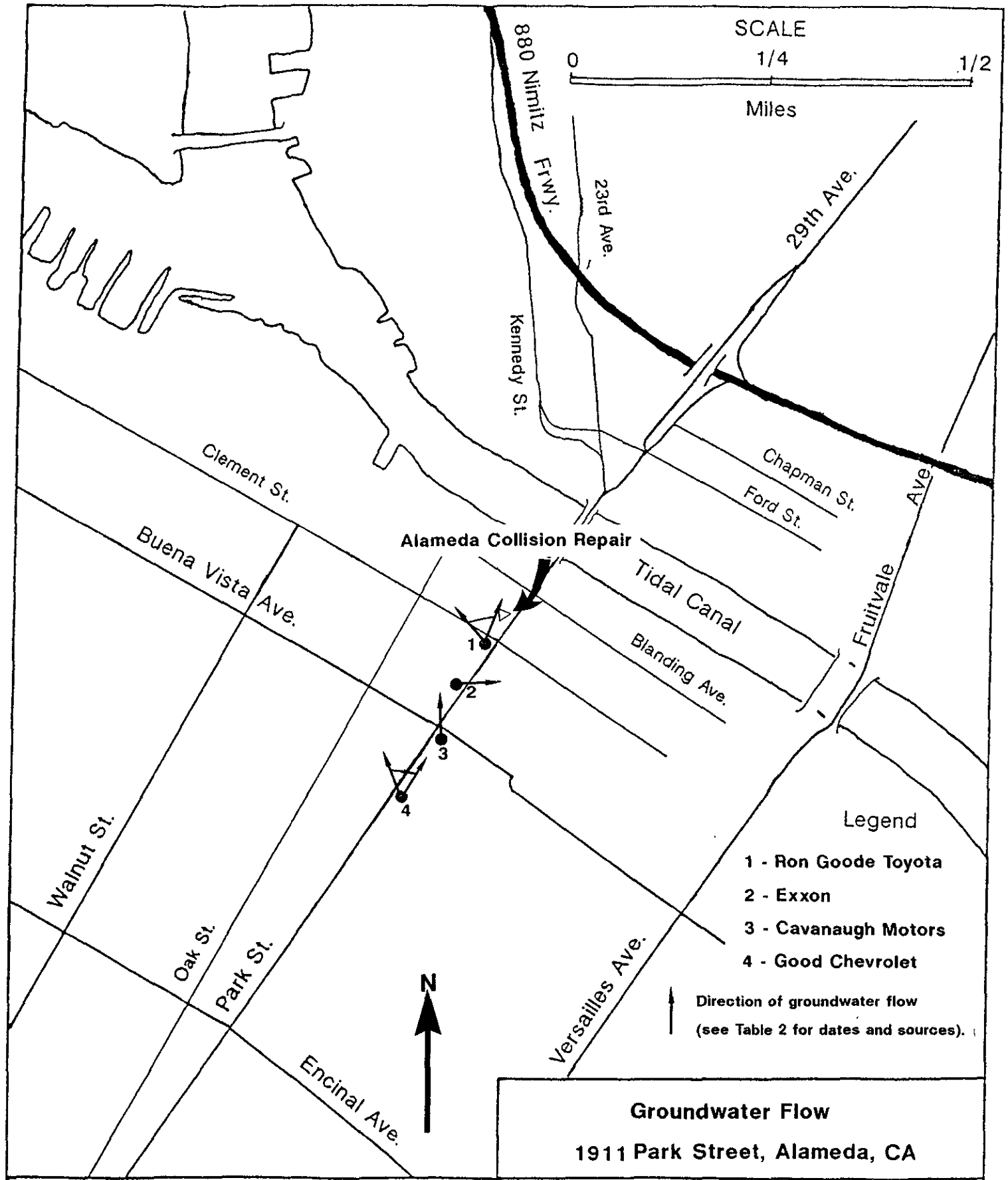
JOB NUMBER

DATE

2

3547

1/94



Alameda Collision Repair

Legend

- 1 - Ron Goode Toyota
- 2 - Exxon
- 3 - Cavanaugh Motors
- 4 - Good Chevrolet

↑ Direction of groundwater flow
(see Table 2 for dates and sources).

Groundwater Flow		
1911 Park Street, Alameda, CA		
ALAMEDA COLLISION REPAIR		PLATE
JOB NUMBER	DATE	3
3547	1/94	

CET Environmental Services, Inc.



ATTACHMENT B

Tables



Table 1

Summary of Laboratory Analytical Results
for Groundwater Samples Collected from Well MW1
1911 Park Street, Alameda, California

Sample/ Well I.D.	Sample Collection Date	Concentration ($\mu\text{g/L}$)					
		TPH-D ^a	TPH-G ^b	B ^c	T ^c	E ^c	X ^c
MW1	01/05/93	<50	<50	<0.5	<0.5	<0.5	<0.5
	03/30/93	NC ^e	<50	<0.5	<0.5	<0.5	<0.5
	06/09/93	NC	<50	<0.5	<0.5	<0.5	<0.5
	10/11/93	NC	<50	<0.5	<0.5	<0.5	<0.5

- a. TPH-D = total petroleum hydrocarbons as diesel
- b. TPH-G = total petroleum hydrocarbons as gasoline
- c. BTEX = benzene, toluene, ethylbenzene, total xylenes
- d. <50 and <0.5 = not detected at or above the test method detection limit
- e. NC = sample not collected



Table 2

Summary of Local Groundwater Flow Data
1911 Park Street, Alameda, California

Site Name	Address	Direction of Groundwater Flow	Source
Exxon	1725 Park Street Alameda, California	Northeast (N85E)	Harding Lawson - June 14, 1990 Quarterly Report
		Northeast (N85E)	Resna - July 15, 1993 Water Level Data
Ron Goode Toyota	1825 Park Street Alameda, California	Northeast to Northwest Average of 10 Measurements May 30, 1992 to May 4, 1993 is Due North \pm 20° Standard Deviation	ACC Environmental Consultants, Inc. Second Quarter 1993 Report.
Cavanaugh Motors	1700 Park Street Alameda, California	Due North	TMC Environmental, Inc. September 23, 1993 Report. August 11, 1993 Water Level Data.
Good Chevrolet	1630 Park Street Alameda, California	Northeast to Northwest October 15, 1993 Flow was N20E	Geo Plexus Inc. October 28, 1993 Quarterly Report



ATTACHMENT C

**Sample Collection Record
Laboratory Report
Chain-of-Custody**

Aqua Terra Technologies, Inc.
 2950 Buskirk Avenue, Ste. 120
 Walnut Creek, CA 94598
 Tel. (510) 934-4884
 Fax. (510) 934-0418

PEL # 129211

INV # 201177

ATT

CHAIN OF SAMPLE
 (original document, please return)

Page 1 of 1

Sampled By: Benjamin Berman

Date Sampled: 12-17-92

Signature: B. Be

ATT Job #: 929393

Lab Name: Priority Env.

Results To Be Sent To: Benjamin Berman

Contact: David Downa

Results Needed By: standard turnaround (3-day)

Phone #: 408-946-9036

Fax Results ASAP

Lab Job #:

Sample Collection				Sample Preservation			Sample Containers		Analysis/EPA Method No.					Remarks
Sample I.D.	Time (24 hr)	Matrix (e.g. Water, Soil)	Number of Containers	Ice	HCL	Dry Ice	brass tube		TPH-Diesel	TPH-Gas	BTEX			
MW1-5	9:50	Soil	1			✓	X							Hold
MW1-10	10:10	"	1			✓	X		X	X	X			see notes.

Notes: Please analyze sample MW1-10 as indicated, hold sample MW1-5 until further notice.

Relinquished by/ Company Affiliation	Date	Time	Received by: Company Affiliation	Date	Time
<u>B. Be</u>	<u>12/18/92</u>	<u>8:16</u>	<u>David Downa</u>	<u>12/18/92</u>	<u>8:16</u>



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

December 19, 1992

PEL # 129211

AQUA TERRA TECHNOLOGIES, INC.

Attn: Benjamin Berman

Re: One soil sample for Gasoline/BTEX and Diesel analyses.

Project number: 929393

Date sampled: Dec 17, 1992

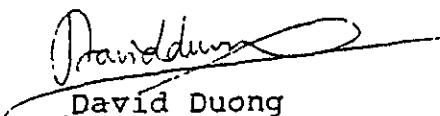
Date submitted: Dec 18, 1992

Date extracted: Dec 18, 1992

Date analyzed: Dec 18, 1992

RESULTS:

SAMPLE I.D.	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)
MW 1-10	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.
Spiked Recovery	89.1%	104.3%	82.4%	87.6%	92.0%	90.9%
Detection limit	1.0	1.0	5.0	5.0	5.0	5.0
Method of Analysis	5030 / 8015	3550 / 8015	8020	8020	8020	8020


David Duong
Laboratory Director

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 1-5-93 Sample I.D.: MW1 Job No.: 929393

Site Location: ALAMEDA COLLESTON

No. of Containers : 5 / (check one): Well Samples;

Duplicates from well _____; Travel Blanks;

Field Blanks; Other (explain) / _____

W.L. (1/100'): 3.71 Time : 10:35 B.O.W. (1/2'): 19.5

Method: Electric Well Sounder; Other / _____

Meters calibrated: / N Well Loc. Map: / N

Calculated Purge Volume (4 casing volumes): 40 gallons

Purging Method: Disposable Bailer; Teflon Bailer;

Other / _____

Time Start Purging (24 hr): 10:41, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: ~~700~~ 5, Color: CLEAR

Time Stop Purging (24 hr): 11:00, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: 4400, Color: BROWN

Time (24 hr)	Temp. (C)	pH	Cond. (uS)	H2O (Gal)	Turbid. (NTU)
<u>10:45</u>	<u>17°</u>	<u>7.45</u>	<u>0450</u>	<u>13</u>	<u>720</u>
<u>10:52</u>	<u>17°</u>	<u>7.48</u>	<u>0440</u>	<u>26</u>	<u>1200</u>
<u>11:00</u>	<u>17°</u>	<u>7.48</u>	<u>0420</u>	<u>40</u>	<u>4400</u>
<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>
<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>	<u>:</u>

Sample Collection Time (24 hr): 11:05

Notes: 4" WELL 7 BAILERS USED

Collected By (signature): [Signature]



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

January 07, 1993

PEL # 9301004

AQUA TERRA TECHNOLOGIES, INC.

Attn: Benjamin Berman

Re: One water sample for Gasoline/BTEX and Diesel analyses.

Project number: 929393

Date sampled: Jan 05 1993

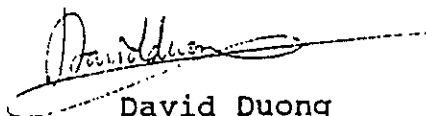
Date submitted: Jan 06, 1993

Date extracted: Jan 06-07, 1993

Date analyzed: Jan 06-07, 1993

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
MW 1	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.
Spiked Recovery	102.1%	87.8%	101.3%	104.2%	98.2%	105.4%
Detection limit	50	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	3510 / 8015	602	602	602	602


David Duong
Laboratory Director

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 3-30-93 Sample I.D.: MW1 Job No.: 929393

Site Location: ALAMEDA COLLECTION CENTER

No. of Containers : 3 / (check one): Well Samples;

Duplicates from well _____; Travel Blanks;

Field Blanks; Other (explain) / _____

W.L. (1/100'): 3.35 Time : 12:05 B.O.W. (1/2'): 19.5

Method: Electric Well Sounder; Other / _____

Meters calibrated: / N . Well Loc. Map: Y / N

Calculated Purge Volume (4 casing volumes): 41 gallons

Purging Method: Disposable Bailer; Teflon Bailer;

Other / _____

Time Start Purging (24 hr): 12:15, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: 3, Color: NONE

Time Stop Purging (24 hr): 12:50, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: 2680, Color: Reddish

Time (24 hr)	Temp. (C)	pH	Cond. (uS)	H2O (Gal)	Turbid. (NTU)
<u>12:20</u>	<u>17°</u>	<u>6.61</u>	<u>0570</u>	<u>5</u>	<u>8</u>
<u>12:35</u>	<u>17°</u>	<u>6.58</u>	<u>0590</u>	<u>20</u>	<u>1230</u>
<u>12:50</u>	<u>17°</u>	<u>6.46</u>	<u>0590</u>	<u>41</u>	<u>2680</u>
<u>:</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
<u>:</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>

Sample Collection Time (24 hr): 12:55

Notes: _____

Collected By (signature): [Signature]



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

April 01, 1993

PEL # 9304004

AQUA TERRA TECHNOLOGIES, INC.

Attn: Benjamin Berman
Re: One water sample for Gasoline/BTEX analysis.

Project number: 929393

Date sampled: Mar 30, 1993
Date extracted: Apr 01, 1993

Date submitted: Apr 01, 1993
Date analyzed: Apr 01, 1993

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	101.2%	102.0%	97.6%	103.7%	107.1%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602

David Duong
Laboratory Director

SAMPLE COLLECTION RECORD - MONITOR WELL

ATT

Date: 6-9-93 Sample I.D.: MWL Job No.: 929393

Site Location: ALAMEDA COLLISION ALAMEDA

No. of Containers : 2 / (check one): Well Samples;
 Duplicates from well _____; Travel Blanks;
 Field Blanks; Other (explain) / _____

W.L. (1/100'): 4.02 Time : 13:02 B.O.W. (1/2'): 19.5

Method: Electric Well Sounder; Other / _____

Meters calibrated: Y / N Well Loc. Map: Y / N

Calculated Purge Volume (4 casing volumes): 15 gallons

Purging Method: Disposable Bailer; Teflon Bailer;
 Other / _____

Time Start Purging (24 hr): 13:03, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: 3, Color: CLEAR

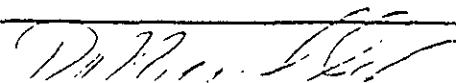
Time Stop Purging (24 hr): 13:26, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: 98, Color: CLOUDY BROWN

Time (24 hr)	Temp. (C)	pH	Cond. (uS)	H2O (Gal)	Turbid. (NTU)
<u>13:11</u>	<u>19°</u>	<u>7.32</u>	<u>0460</u>	<u>5</u>	<u>155</u>
<u>13:18</u>	<u>19°</u>	<u>7.46</u>	<u>0480</u>	<u>10</u>	<u>174</u>
<u>13:26</u>	<u>19°</u>	<u>7.48</u>	<u>0510</u>	<u>15</u>	<u>98</u>
<u>:</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
<u>:</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>

Sample Collection Time (24 hr): 13:30

Notes: _____

Collected By (signature):





PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

June 11, 1993

PEL # 9306026

AQUA TERRA TECHNOLOGIES, INC.

Attn: Terry Carter
Re: One water sample for Gasoline/BTEX analysis.

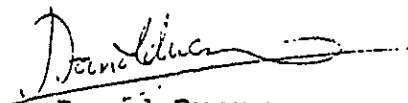
Project number: 929393

Date sampled: Jun 09, 1993
Date extracted: June 10, 1993

Date submitted: Jun 10, 1993
Date analyzed: Jun 10, 1993

RESULTS:

SAMPLE I.D.	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
MW 1	N.D.	N.D.	N.D.	N.D.	N.D.
Blank	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	92.1%	93.5%	91.4%	92.8%	102.0%
Detection limit	50	0.5	0.5	0.5	0.5
Method of Analysis	5030 / 8015	602	602	602	602


David Duong
Laboratory Director

SAMPLE COLLECTION RECORD - MONITOR WELL

Date: 10-11-93 Sample I.D.: MW1 Job No.: 3547-209

Site Location: Alameda Collision Repair

No. of Containers : 4 / (check one): Well Samples;
 Duplicates from well _____; Travel Blanks;
 Field Blanks; Other (explain)/ _____

W.L. (1/100'): 4.56 Time : 14:22 B.O.W. (1/2'): 19

Method: Electric Well Sounder; Other/ _____

Meters calibrated: Y / N Well Loc. Map: Y / N

Calculated Purge Volume (4 casing volumes): 35 gallons

Purging Method: Disposable Bailer; Teflon Bailer;
 Other/ _____

Time Start Purging (24 hr): 14:32, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: very slight, Color: brown

Time Stop Purging (24 hr): 14:42, Product: Y / N
 Sheen: Y / N, Odor: Y / N, Vapor: _____ ppm / %LEL
 Turbidity: slight, Color: brown

Time (24 hr)	Temp. (C)	pH	Cond. (uS)	H2O (Gal)	Turbid. (NTU)
:	_____	_____	_____	_____	_____
:	_____	_____	_____	_____	_____
:	_____	_____	_____	_____	_____
:	_____	_____	_____	_____	_____
:	_____	_____	_____	<u>10 gal total</u>	_____

Sample Collection Time (24 hr): 14:50

Notes: _____

Collected By (signature): J. Long

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

October 26, 1993

ChromaLab File#: 9310129

CET ENVIRONMENTAL SERVICES, INC

Atten: Terry Carter

Project: ALAMEDA COLLISION
Submitted: October 12, 1993

Project#: 3547-209

re: 1 sample for Gasoline and BTEX analysis.

Matrix: WATER

Sampled on: October 11, 1993

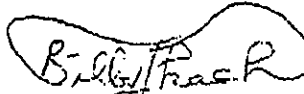
Analyzed on: October 13, 1993

Method: EPA 5030/8015/602

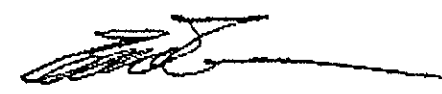
Run#: 1110

Lab #	SAMPLE ID	Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)
26775	MW1	N.D.	N.D.	N.D.	N.D.	N.D.
DETECTION LIMITS		50	0.5	0.5	0.5	0.5
BLANK		N.D.	N.D.	N.D.	N.D.	N.D.
BLANK SPIKE RECOVERY(%)		106	94	99	102	103

ChromaLab, Inc.



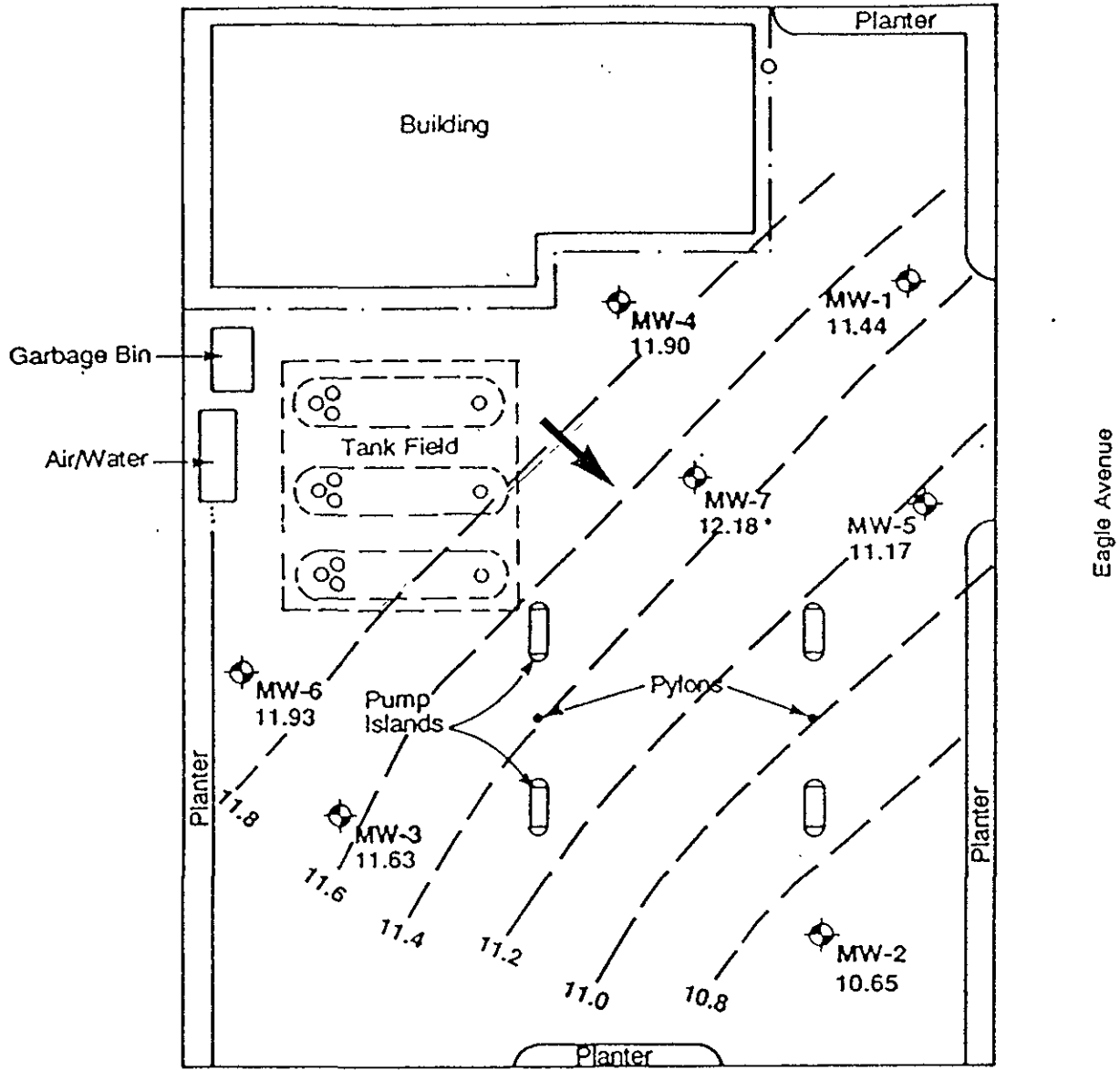
Billy Thach
Chemist



Eric Tam
Laboratory Director

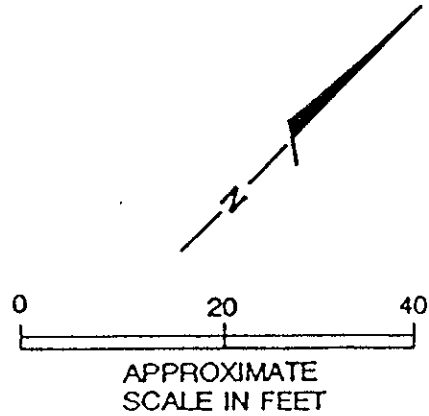


ATTACHMENT D
Groundwater Elevation Contour Maps



EXPLANATION

- MW-1 Monitoring Well Location
- 11.65 Potentiometric Surface Elevation in Feet Above Mean Sea Level
- 11.6 Potentiometric Surface Elevation Contour
- Approximate Direction of Local Ground-Water Flow
- * Elevation not used for contouring (see text)

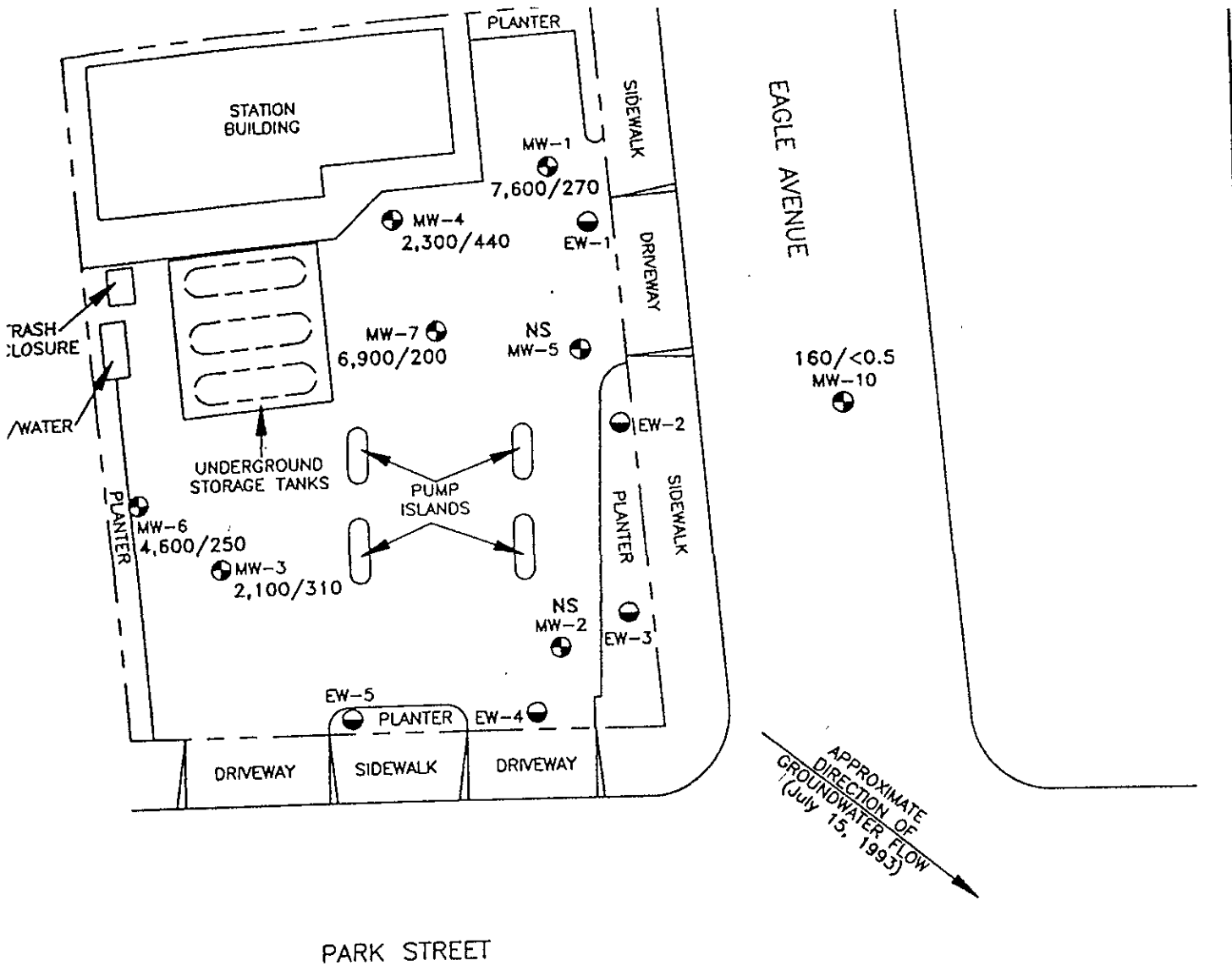


Harding Lawson Associates
Engineering and Environmental Services

Generalized Potentiometric Surface Contour Map - March 13, 1990
Phase III Evaluation of Petroleum Hydrocarbons
Exxon Station #7-0104
Alameda, California

PLATE

1



PARK STREET

<50/<0.5
MW-8

<50/<0.5
MW-9

EXPLANATION

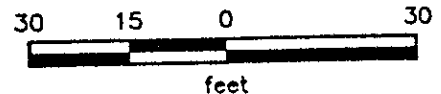
MW-10 = Groundwater monitoring well

EW-5 = Groundwater extraction well

7,600/270 = Concentrations of TPHg/Benzene in groundwater in parts per billion, July 15, 1993

NS = Not sampled

Approximate Scale



Source: Modified from map supplied by Harding Lawson Associates, 1992; survey by Ron Archer, Civil Engineer, Inc., 1993



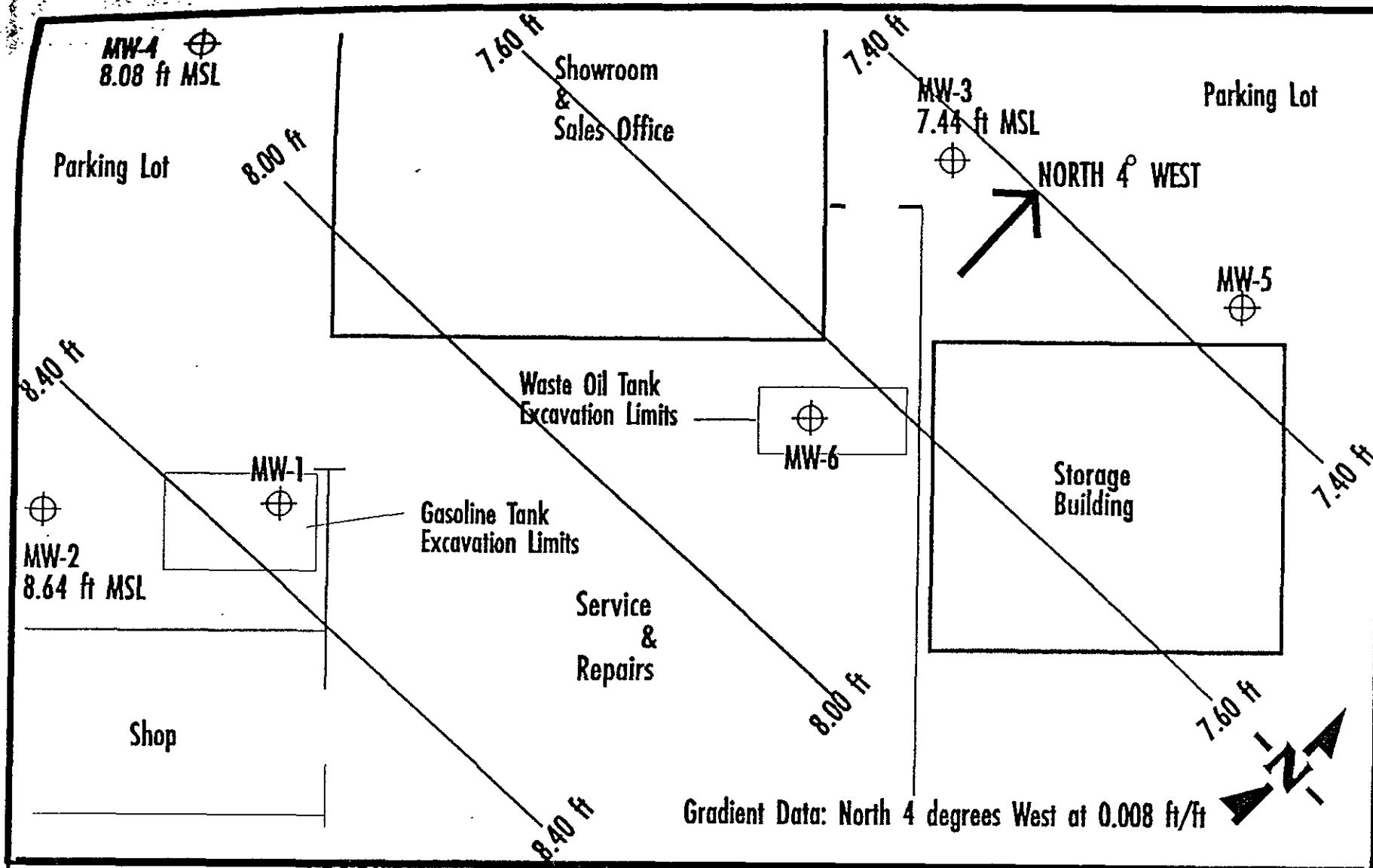
PROJECT

170077.06

GENERALIZED SITE PLAN
Exxon Service Station 7-0104
1725 Park Street
Alameda, California

PLATE

1



LEGEND

MW-0
1.00 ft
⊕ Monitoring Well with elevation of groundwater in feet MSL.

Project No. 109001
August, 1993
Scale 1 inch = 20 feet

GROUNDWATER GRADIENT MAP

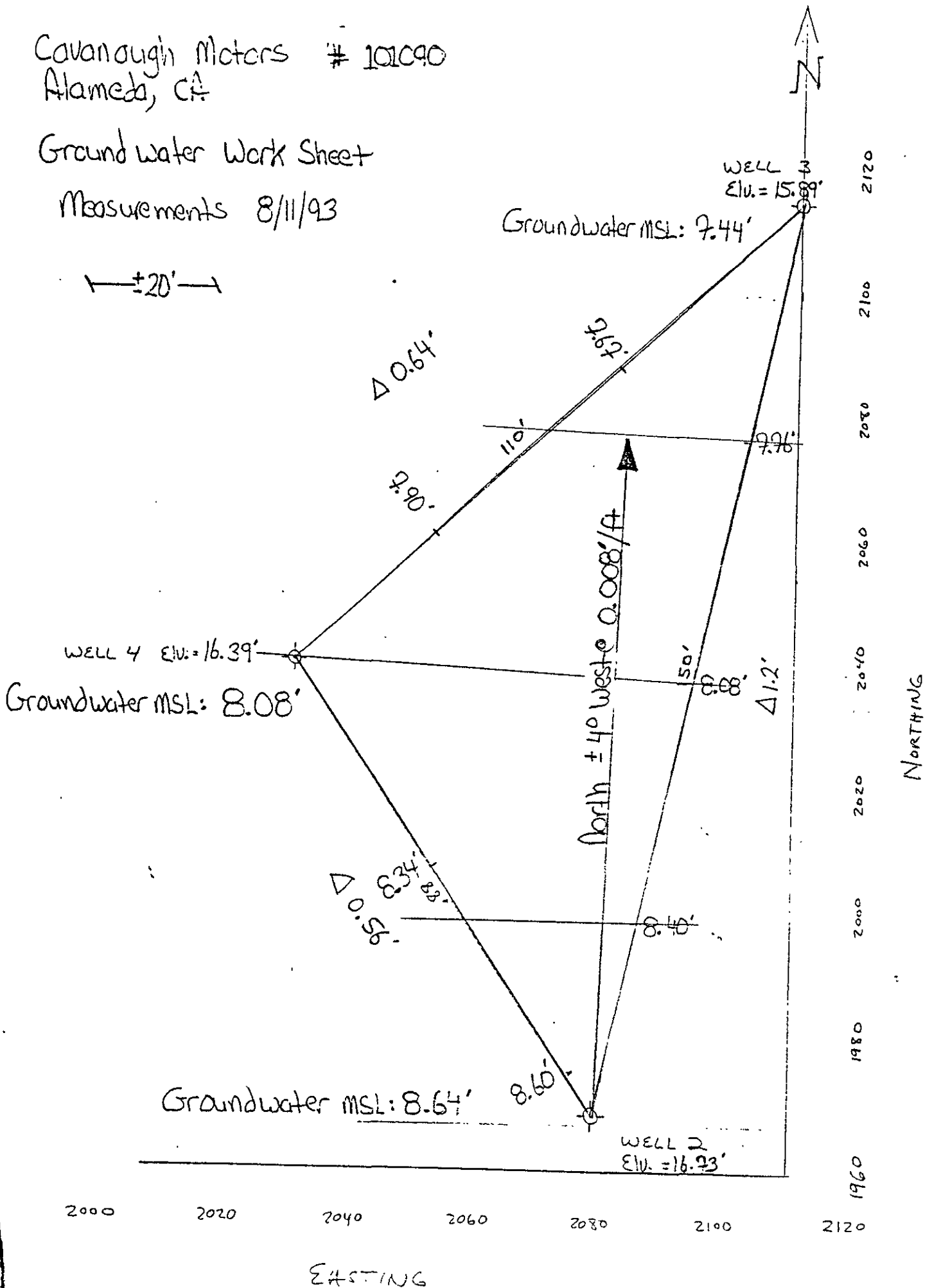
Cavanaugh Motors
1700 Park Street, Alameda California

Cavanaugh Meters # 101090
Alameda, CA

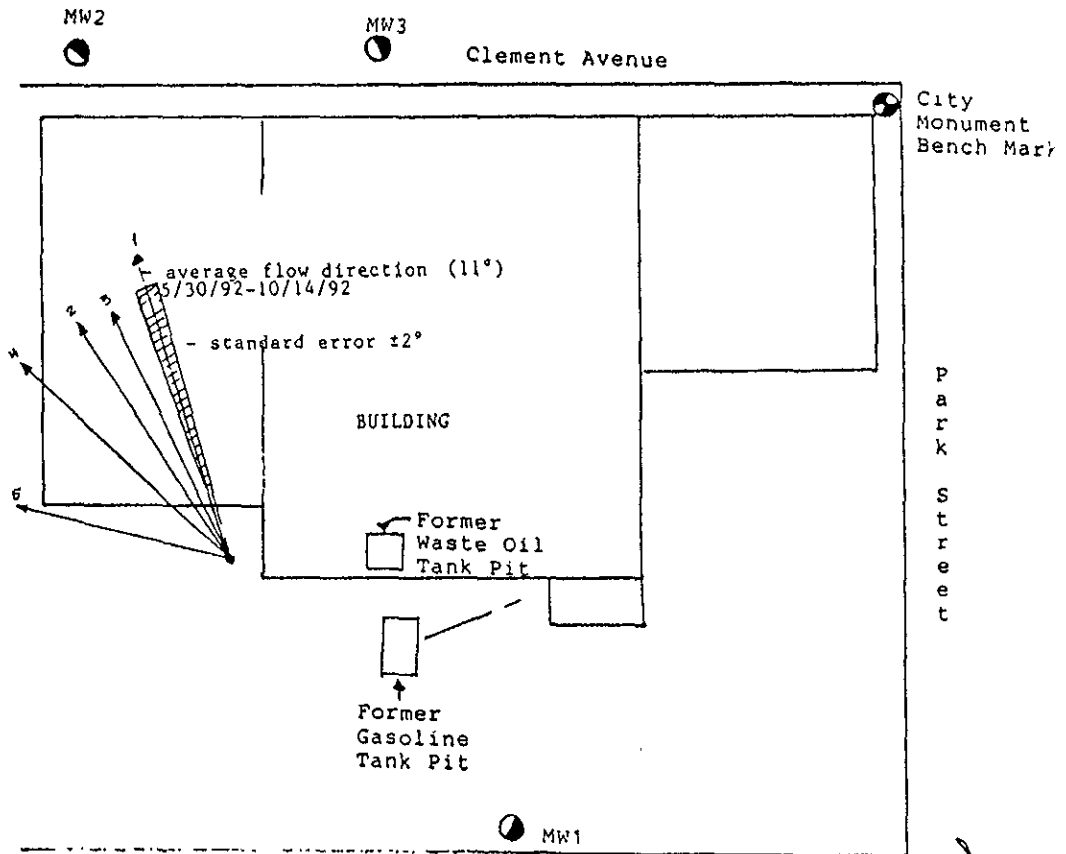
Groundwater Work Sheet

Measurements 8/11/93

1" = 20'



4.4 Groundwater Gradient



GROUNDWATER GRADIENT DATA

<u>Map No.</u>	<u>Date</u>	<u>Flow Azimuth</u>	<u>Grad. (ft/ft)</u>	<u>H1* (ft.)</u>
1	05/30/92	9	.0074	5.33
	06/28/92	10	.0075	5.39
	07/28/92	12	.0059	4.36
	08/17/92	11	.0059	4.38
	09/11/92	11	.0059	4.34
	10/14/92	14	.0059	4.18
2	11/10/92	355	.0058	4.10
3	12/11/92	2	.0061	3.02
4	01/11/93	341	.0067	3.22
5	05/04/93	311	.011	5.68

*H1 = water elevation in MW1

ACC ENVIRONMENTAL CONSULTANTS, INC. RON GOODE TOYOTA

John McHugh

00

PARK STREET

SIDEWALK

GOOD CHEVROLET SHOW ROOM

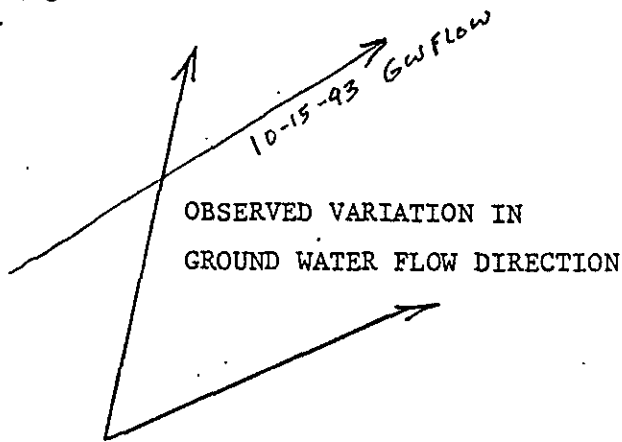
SERVICE AREA

APPROXIMATE LOCATION OF FORMER STORAGE TANKS

MW-3

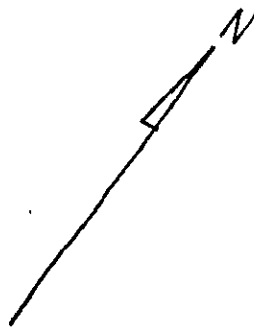
MW-2

MW-1



FENCE

PROPERTY FENCE LINE



GOOD CHEVROLET		
DATE 7-20-93	SCALE 1"=10'	DRAWN BY DCG
GROUND WATER FLOW DIRECTION		



ATTACHMENT E

**Soil & Groundwater Sample
Collection & Handling Protocol**



SOIL & GROUNDWATER SAMPLE COLLECTION & HANDLING PROTOCOL

INTRODUCTION & PURPOSE

Because reliable and representative test results must be generated from soil and groundwater samples, it is essential to establish a sampling procedure which assures that all samples are:

- o Collected by approved and repeatable methods
- o Representative of the materials(s) at the desired location and depth
- o Uncontaminated by container and sampling equipment

The following sampling protocol was designed to be a guide to the sampling and handling procedures for soil and groundwater samples. Based on conditions which may be encountered in the field, some modifications to this protocol may be required to fit the needs of an individual site.

SAMPLING PROCEDURES

Groundwater Sampling

Prior to collecting groundwater samples, monitoring wells were purged by bailing until pH, conductivity, and temperature levels stabilize. A minimum of four well casing volumes was purged from each well. Wells were purged and groundwater samples were obtained using a teflon bailer, or disposable polyethelene bailer, and nylon rope. New nylon rope is used for each well.

The appropriate number of sample containers and type were used for each sample collected, in accordance with the analytical laboratory requirements and EPA protocol. The bottles were filled using the bailer. All sample bottles were pre-cleaned by the supplier according to EPA protocols.

To prevent cross contamination of groundwater samples by the sampling equipment, all reusable equipment used in sampling was washed with a trisodium phosphate solution (TSP), triple rinsed with purified water, and allowed to air dry prior to each use. A sample of the purified water was retained for analysis as part of sample quality assurance.

Soil Sampling

After the soil sampler was driven to the desired depth and the samples were retrieved, each end of the tube containing the soil sample retained for laboratory analysis was sealed with teflon sheeting, covered with plastic end caps, and sealed with PVC tape. All sample containers (tubes) were steamed cleaned (or washed with TSP, as above) and air dried prior to use. The soil sample recovered in the tube just above the sample retained for chemical analysis was examined in the field for visual and olfactory indications of chemical contamination and used for lithologic description.



The Unified Soil Classification System (USCS) was used to log and describe the soil by the onsite geologist. These logs also include details of the sampling process such as depth, apparent odors, discoloration, and any other factors which may be required to evaluate the presence of contamination at the site.

POST SAMPLING PROCEDURES

One field/travel blank consisting of one sample bottle filled with purified water accompanied soil and groundwater sample containers at all times, including during transport to and from the site. Purified water field/travel blanks were analyzed according to the appropriate EPA Methods corresponding to the soil/groundwater sample analyses.

Sample containers were labeled with sample number, project number, date, and the initials of the person collecting the sample. A separate sample collection record was maintained for each groundwater sample collected.

Soil and groundwater samples collected were analyzed by an analytical laboratory certified by the California Department of Health Services (DHS). Quality assurance documentation accompanied all analytical reports generated by the laboratory.

The samples were placed in a cooler with dry ice (for soil samples) or bagged ice (for water samples) immediately following collection, and remained in the cooler until refrigerated at the analytical laboratory. The samples were delivered to the laboratory direct by courier or overnight freight within 48 hours of time of collection. Appropriate chain of custody forms were used for all samples.



ATTACHMENT F
Limitations and Uncertainty



LIMITATIONS AND UNCERTAINTY

This report was prepared in general accordance with the accepted standard of practice which exists in northern California at the time the investigation was conducted and within the scope of services outlined in our proposal. It should be recognized that the definition and evaluation of surface and subsurface environmental conditions is a difficult and inexact science. Judgements leading to conclusions and recommendations generally are made with an incomplete knowledge of the conditions present. It is possible that variations in the soil and/or groundwater conditions could exist beyond the points explored for this investigation. Also changes in groundwater conditions could exist beyond the points explored for this investigation. Also changes in groundwater conditions could occur sometime in the future due to variations in tides, rainfall, temperature, local or regional water use or other factors. If the client wishes to reduce the uncertainty beyond the level associated with this study, CET Environmental Services, Inc. should be notified for additional consultation.

The discussion and recommendations presented in this report are based on: 1) information and data provided by third party consultants, 2) the exploratory test borings drilled at the site, 3) the observations of field personnel, 4) the results of laboratory analysis by a California Department of Health Services (DHS) accredited laboratory, and 5) interpretations of federal, state, and local regulations and/or ordinances.

Chemical analytical data included in this report have been obtained from state certified laboratories. The analytical methods employed by the laboratories were in accordance with procedures suggested by the U. S. Environmental Protection Agency and State of California. CET Environmental Services, Inc. is not responsible for laboratory errors in procedures or reporting.

CET has conducted this investigation in a manner consistent with the level of care and skill ordinarily exercised by members of the environmental consulting profession currently practicing under similar conditions in northern California. CET has prepared this report for the client's (and assigned parties) exclusive use for this particular project. No other warranties, expressed or implied, as to the professional advice provided are made.