

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

ALEX BRISCOE, Agency Director



DEPARTMENT OF ENVIRONMENTAL HEALTH  
OFFICE OF THE DIRECTOR  
1131 HARBOR BAY PARKWAY  
ALAMEDA, CA 94502  
(510) 567-6777  
FAX (510) 337-9135

**REMEDIAL ACTION COMPLETION CERTIFICATION**

February 24, 2014

Anthony Pettiti, Executor  
Anthony's Auto Service  
15539 Usher Street  
San Lorenzo, CA 94580

Anil and Jason Singh  
19592 Center Street  
Castro Valley, CA 94546

Anil and Jason Singh  
4970 Kathleen Avenue  
Castro Valley, CA 94546

Subject: Case Closure for Fuel Leak Case Fuel Leak Case No. RO0000478 and Geotracker Global ID T0600100076, Anthony's Auto Service, 19592 Center Street, Castro Valley, CA 94546

Dear Anthony Pettiti and Anil and Jason Singh:

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Please be aware that claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

Ariu Levi  
Director

ALAMEDA COUNTY  
HEALTH CARE SERVICES  
AGENCY

ALEX BRISCOE, Agency Director



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

February 24, 2014

Anthony Pettiti, Executor  
Anthony's Auto Service  
15539 Usher Street  
San Lorenzo, CA 94580

Anil and Jason Singh  
19592 Center Street  
Castro Valley, CA 94546

(sent via electronic mail to [asinghjr@hotmail.com](mailto:asinghjr@hotmail.com))

Anil and Jason Singh  
4970 Kathleen Avenue  
Castro Valley, CA 94546

Subject: Closure Transmittal; Fuel Leak Case No. RO0000478 and Geotracker Global ID T0600100076, Anthony's Auto Service, 19592 Center Street, Castro Valley, CA 94546

Dear Anthony Pettiti and Anil and Jason Singh:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

#### SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- All required analysis for the waste oil UST were not performed.
- Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.

If you have any questions, please call Mark Detterman at (510) 567-6876. Thank you.

Sincerely,

Donna L. Drogos, P.E.  
Division Chief

Enclosures: 1. Remedial Action Completion Certificate  
2. Case Closure Summary

cc: Scott Neville, sent via electronic mail to [sneville44@yahoo.com](mailto:sneville44@yahoo.com)

Ms. Cherie McCaulou (w/o enc.), SF- Regional Water Quality Control Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612, (sent via electronic mail to [CMacaulou@waterboards.ca.gov](mailto:CMacaulou@waterboards.ca.gov))

Donna Drogos, (sent via electronic mail to [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))

Dilan Roe (Sent via electronic mail to [dilan.roe@acgov.org](mailto:dilan.roe@acgov.org))

Mark Detterman (sent via electronic mail to [mark.detterman@acgov.org](mailto:mark.detterman@acgov.org))

Electronic File, GeoTracker

**Alameda County Environmental Health**

**CASE CLOSURE SUMMARY  
LEAKING UNDERGROUND FUEL STORAGE TANK - LOCAL OVERSIGHT PROGRAM**

**I. AGENCY INFORMATION**

Date: April 7, 2011

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 777-2478
Responsible Staff Person: Paresh Khatri	Title: Hazardous Materials Specialist

**II. CASE INFORMATION**

Site Facility Name: Anthony's Auto Service		
Site Facility Address: 19592 Center Street, Castro Valley, California 94546		
RB Case No.: 01-0083	StID No.: 2517	LOP Case No.: RO0000478
URF Filing Date: 8/8/1990	Global ID No.: T0600100076	APN: 84G-1062-24
<b>Responsible Parties</b>	<b>Addresses</b>	<b>Phone Numbers</b>
Anthony Pettiti	15539 Usher Street San Lorenzo, CA 94580	---
Anil Singh Auto Analyst	19592 Center Street Castro Valley, CA 94546	(510) 582-0201

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
1	1 x 4,000-gallon	Gasoline	Removed	7/12/1990
2	1 x 3,000-gallon	Gasoline	Removed	7/12/1990
3	1 x 3,000-gallon	Gasoline	Removed	7/12/1990
4	1 x 250-gallon	Waste oil	Removed	7/12/1990
Piping			Removed	7/12/1990

**III. RELEASE AND SITE CHARACTERIZATION INFORMATION**

Cause and Type of Release: Several holes were noted in waste oil UST		
Site characterization complete? Yes	Date Approved By Oversight Agency: ---	
Monitoring wells installed? Yes	Number: 3	Proper screened interval? Yes
Highest GW Depth Below Ground Surface: 30.29	Lowest Depth: 35.09 ft bgs	Flow Direction: southwest to west southwest
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: A quarter mile well survey conducted for the site identified two irrigation wells, one at 4589 James Street in Castro Valley (approx ½ up-gradient of the subject site) and the other at 9263 Edward Lane in San Leandro, located over a mile down-gradient of the subject site. These wells do not appear to be receptors due to their location and distance from the subject site.

Are drinking water wells affected? No	Aquifer Name: East Bay Plain Groundwater Basin
Is surface water affected? No	Nearest SW Name: Crow Canyon Creek, located approximately 1,200 feet to the northeast.
Off-Site Beneficial Use Impacts (Addresses/Locations): Identified	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	One 4,000-gallon Two 3,000-gallon One 250-gallon	Disposal, Erickson Facility, Richmond, CA	7/12/1990
Piping	Not Reported	Disposal, Erickson Facility, Richmond, CA	7/12/1990
Free Product	None reported	---	---
Soil	450 cubic yards	On-site Treatment, returned to UST excavation	11/1990-1/1991
Groundwater	None reported	---	---

<b>MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP</b> (Please see Attachments for additional information on contaminant locations and concentrations)				
Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	3,200 (S2E, 7/12/1990)	15 (SB-3, 8/16/1990)	220 (MW-1, 3/3/1991)	220 (MW-1, 3/3/1991)
TPH (Diesel)	<1.0 (WOS, 7/12/1990)	<1.0 (WOS, 7/12/1990)	NA	NA
TPH (Motor Oil)	<30 (WOS, 7/12/1990)	<30 (WOS, 7/12/1990)	NA	NA
Benzene	12 (S3E, 7/12/1990)	0.0092 (VSW-2, 11/9/1990)	<0.30 (2/18/1991)	<0.5 (3/3/1992)
Toluene	140 (S3E, 7/12/1990)	0.042 (SB-4, 8/16/1990)	<0.30 (2/18/1991)	<0.5 (3/3/1992)
Ethylbenzene	74 (S3E, 7/12/1990)	0.027 (SB-3, 8/16/1990)	<0.30 (2/18/1991)	<0.5 (3/3/1992)
Xylenes	470 (S3E, 7/12/1990)	0.11 (SB-4, 8/16/1990)	<0.30 (2/18/1991)	<0.5 (3/3/1992)
MTBE	NA <sup>3</sup>	NA <sup>3</sup>	750 <sup>2</sup> (2/18/1991)	140 <sup>1</sup> (MW-1, 3/3/1991)
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	3.8 <sup>4</sup> (WOS, 7/12/1990)	18 <sup>4</sup> (SB-4, 8/16/1990)	<5 <sup>4</sup> (2/18/1991)	<5 <sup>4</sup> (2/18/1991)
Other 8240/8260	ND <sup>5</sup>	ND <sup>5</sup>	4.2 <sup>6</sup> (11/20/1991)	4.2 <sup>6</sup> (11/20/1991)

<sup>1</sup> Other VOCs analyzed (groundwater µg/L after cleanup): <140 µg/L MtBE, TBA, DIPE, ETBE, TAME, EDB, and 1,2-DCA not analyzed  
<sup>2</sup> Other VOCs analyzed (groundwater ppb before cleanup): 750 µg/L MtBE, 4.2 µg/L 1,2-DCA; TBA, DIPE, ETBE, TAME, EDB, and EtOH not analyzed  
<sup>3</sup> Other VOCs analyzed: MtBE, TBA, DIPE, ETBE, TAME, EDB, 1,2-DCA, EtOH not analyzed  
<sup>4</sup> Pb concentrations, Cd, Cr, Ni, Zn not analyzed  
<sup>5</sup> EPA 8010 compounds all less than laboratory detection limits  
<sup>6</sup> 1,2-Dichloroethane  
NA - Not Analyzed

**Site History and Description of Corrective Actions:**

Anthony's Auto Service is located at 19592 Center Street, Castro Valley, California (Figure 1), Land use in the immediate vicinity of the site is mixed commercial and residential. The site is a former gasoline station, which is reported to have been constructed and in operation from 1956 to 1986, and dispensed Shell and Texaco gasoline products. When John Pettiti purchased the property in 1986, he leased the property to his son Anthony who has since operated an automotive repair business at the site known as Anthony's Auto Service.

On July 12, 1990, Tank Protect Engineering (TPE) removed one 4,000-gallon, two 3,000-gallon steel gasoline underground storage tanks (USTs), and one 250-gallon waste oil tank. Approximately 250 cubic yards of soil was excavated and stockpiled as a result of the UST removals. During the tank removals, TPE observed that native soil in the excavation pit was discolored and emitted a hydrocarbons odor indicating that an unauthorized release had occurred. An Unauthorized Release Report was filed on August 8, 1990. Seven soil samples were collected following the UST removals. Soil sample analytical results detected TPH-g and benzene at concentrations as high as 3,200 mg/kg and 12 mg/kg, respectively. Soil sample analytical results are summarized on Table 1 and sample locations are illustrated on Figure 2.

To characterize the site, TPE conducted an onsite subsurface utility survey, installed seven borings of which three were converted to groundwater monitoring wells, over-excavated the UST pit and collected 11 confirmation soil samples, remediated approximately 450 cubic yards of stockpiled soil, backfilled two excavation pits, and sampled three groundwater monitoring wells.

In August 16, 1990, four borings (SB-1 through SB-4) were installed to a depth of 35 feet bgs. Soil sample analytical results detected TPH-g and benzene at maximum concentrations of 15 mg/kg and 0.0073 mg/kg, respectively. Soil sample analytical results are summarized on Table 2 and sample locations are illustrated on Figure 3.

During the week of November 5, 1990, TPE over-excavated the tank excavation pit until field screening indicated that

all contaminated soil had been excavated from the sidewalls and base. Soil sample analytical results did not detect TPH-g above the laboratory detection limit of <1.0 mg/kg and detected benzene at maximum concentrations of 0.0092 mg/kg. Soil sample analytical results are summarized on **Table 3** and sample locations are illustrated on **Figure 4**.

TPE remediated the stockpiled soil by oxidizing the hydrocarbons with a hydrogen peroxide solution. The contaminated soil was spread 8 to 16-inches thick over a layer of plastic. The soil was treated by applying several doses of the hydrogen peroxide solution with a sprayer while the soil was being turned with a backhoe. The stockpiled remediation confirmation soil samples did not detect TPH-g above the laboratory detection limit of <1.0 mg/kg and detected benzene at maximum concentrations of 0.17 mg/kg. Based on the analytical results, ACEH verbally approved backfilling the fuel and waste oil excavations during the week of January 21, 1991. Approximately 50 cubic yards of aggregate base was placed in the excavation followed by approximately 440 cubic yards of compacted, remediated stockpiled soil, to the ground surface. Approximately 10 cubic yards of compacted, remediated stockpiled soil was placed in the waste oil excavation.

The exploratory borings for the three groundwater monitoring wells were drilled to total depths ranging from 39.5 to 49.5 feet bgs. Groundwater sample analytical results detected TPH-g at a maximum concentration of 160 µg/L and did not detect benzene above the laboratory detection limit of <0.30 µg/L. Interference was detected in the gasoline analysis. A scan conducted by Sequoia Analytical identified the compound as iso-Octane, a hydrocarbon that may be used in motor fuel as a solvent and thinner. Five quarters of consecutive groundwater sampling was conducted at the site. Groundwater sample analytical results are summarized on **Table 4** and monitoring well locations are illustrated on **Figure 5**.

#### Geology & Hydrogeology:

The site is located in Castro Valley, an intermontane valley of the Diablo Range located in the Coast Range Physiographic Province. The Diablo Range is composed mainly of nonwater-bearing, consolidated rock and is separated by the Hayward Fault from the unconsolidated water-bearing rocks of the East Bay Plain. The valley is underlain by Late Pliocene alluvial deposits of interbedded clay, silt, sand, and gravel

According to TPE, from the ground surface to approximately 15 feet bgs silty sand is encountered. This is underlain by approximately 2 to 5 feet of clayey silt, which is in turn underlain by approximately 20 feet of gravelly, clayey sand or gravelly, clayey, silty sand. Bedrock was encountered in the onsite borings consisted predominantly of weathered sandstone bedrock at depths ranging from approximately 32 feet (in MW-2) to 39 feet (MW-3). Groundwater was not encountered until the borings penetrated the weathered bedrock.

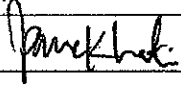
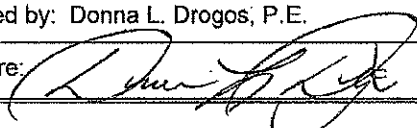
**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a significant risk to human health based upon current land use and conditions.		
<p>Site Management Requirements: Case closure for this fuel leak site is granted for the current commercial land use only. If a change in land use to any other commercial, residential or other conservative land use scenario is proposed at this site, Alameda County Environmental Health (ACEH) must be notified as required by Government Code Section 65850.2.2. ACEH will re-evaluate the case upon receipt of approved development/construction plans.</p> <p>Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party (or current property owner/developer) prior to and during excavation and construction activities.</p>		
Should corrective action be reviewed if land use changes? Yes.		
Was a deed restriction or deed notification filed? No		Date Recorded: --
Monitoring Wells Decommissioned: No	Number Decommissioned: 0	Number Retained: 3
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: ---		

**V. ADDITIONAL COMMENTS, DATA, ETC.**

<p>Considerations and/or Variances:</p> <ul style="list-style-type: none"> <li>• Residual hydrocarbons in soil at concentrations of 15 mg/kg TPH-g remain at the site.</li> <li>• Fuel oxygenates other than MTBE were not analyzed.</li> <li>• All required analysis for waste oil UST were not performed.</li> </ul> <p>Conclusion:</p> <p>Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significantly threat to water resources, public health and safety, and the environment under the current commercial land use based upon the information available in our files to date. No further investigation or cleanup for the fuel leak case is necessary unless a change in land use to any residential or other conservative land use scenario occurs at the site. ACEH staff recommend closure for the site.</p>
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**VI. LOCAL AGENCY REPRESENTATIVE DATA**

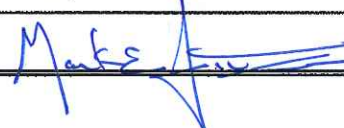
Prepared by: Paresh Khatri	Title: Hazardous Materials Specialist
Signature: 	Date: April 7, 2011
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature: 	Date: 04/07/11

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

**VII. REGIONAL BOARD NOTIFICATION**

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: <u>November 18, 2010</u>	

**VIII. MONITORING WELL DECOMMISSIONING**

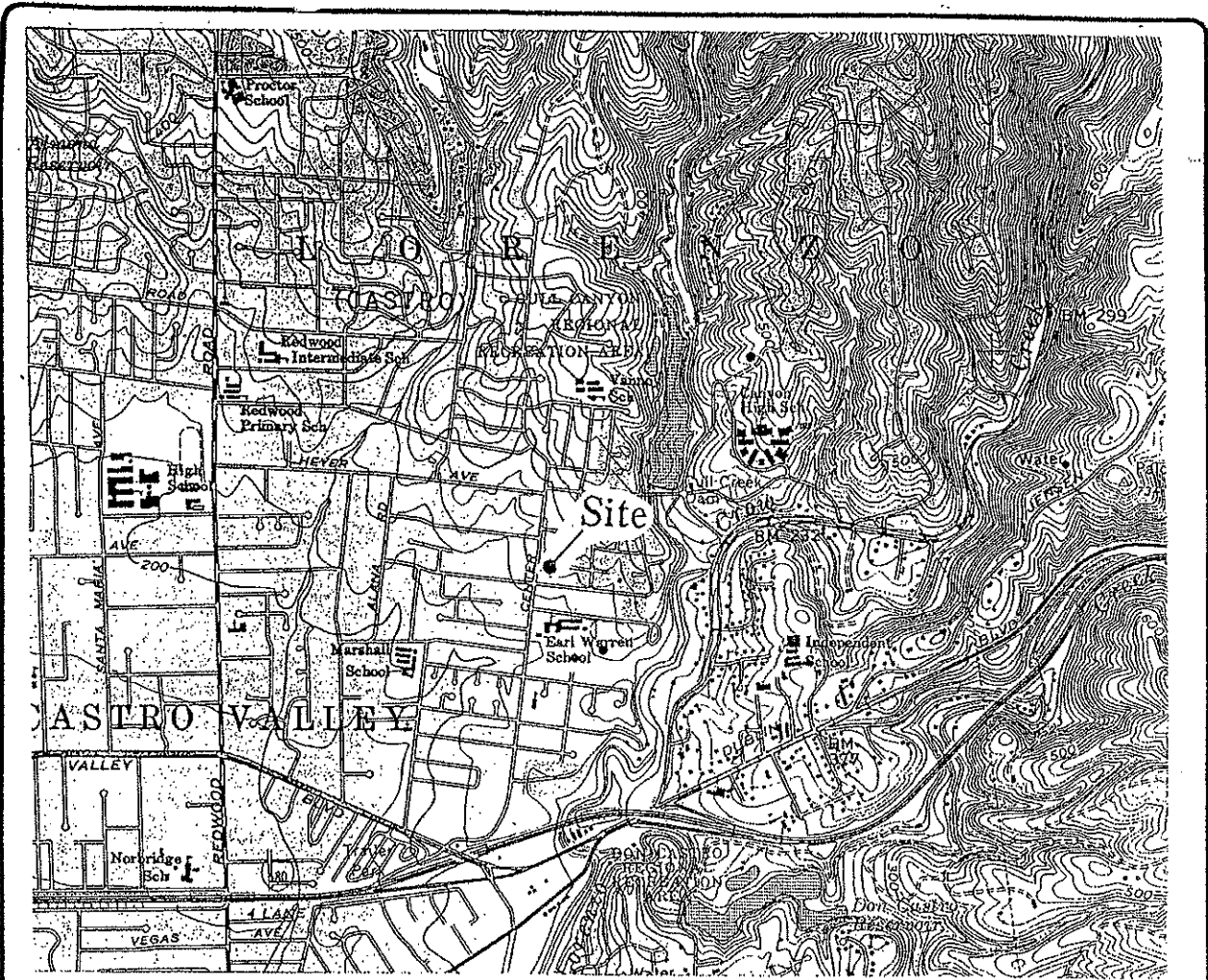
Date Requested by ACEH: <u>10/7/2008</u>	Date of Well Decommissioning Report: <u>1/7/2014</u>	
All Monitoring Wells Decommissioned: <u>yes</u>	Number Decommissioned: <u>3</u>	Number Retained: <u>0</u>
Reason Wells Retained: <u>NA</u>		
Additional requirements for submittal of groundwater data from retained wells: None		
ACEH Concurrence - Signature: 	Date: <u>2/24/2014</u>	

**Attachments:**

1. Site Figures 1 through 5
2. Analytical Tables 1 through 7
3. Boring Logs (7 pp)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.



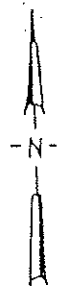


LEGEND

REFERENCE: USGS 7.5 MINUTE  
 SERIES QUADRANGLE MAP,  
 HAYWARD, CALIFORNIA,  
 PHOTO REVISED 1980



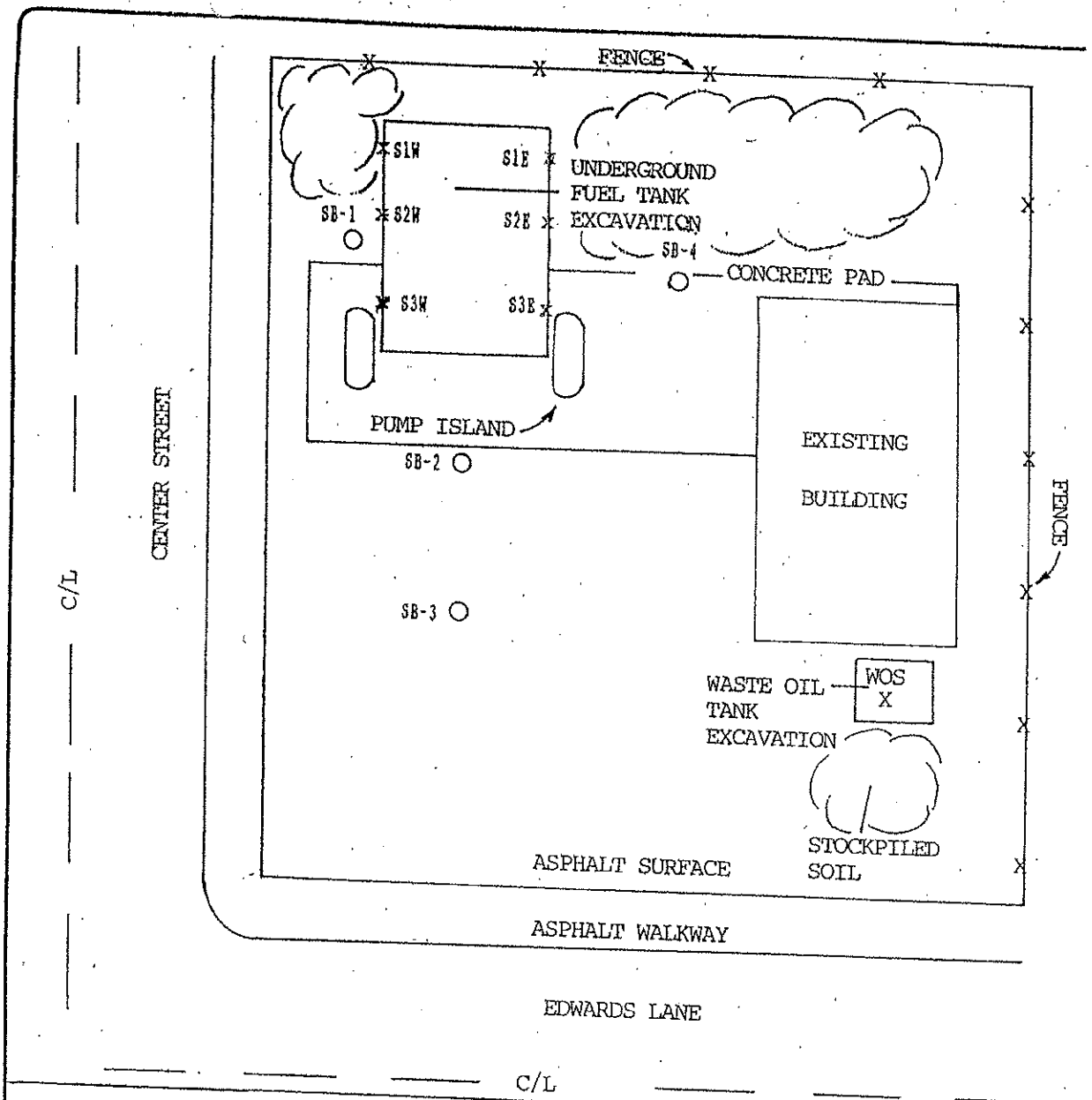
SCALE IN FEET



SITE VICINITY MAP  
 ANTHONY'S AUTO SERVICE  
 1952 CENTER STREET  
 CASTRO VALLEY, CALIFORNIA

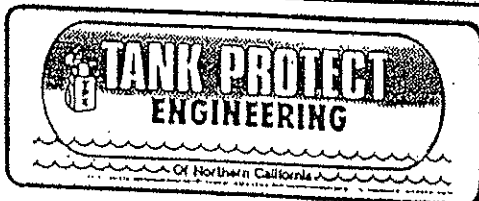
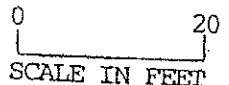
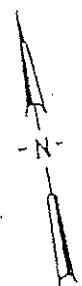
FIGURE

FIGURE 1



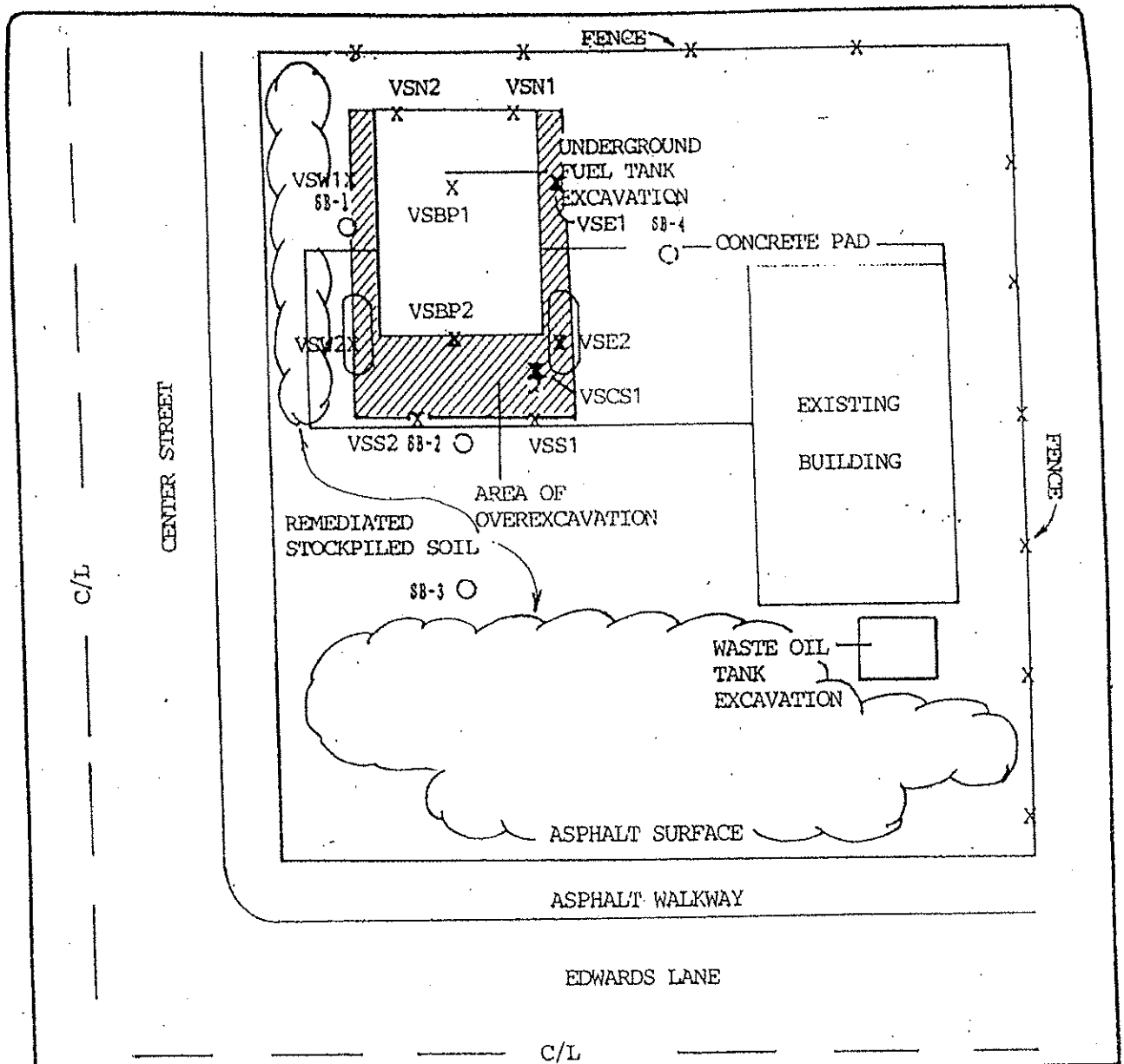
LEGEND

- SB-1 NAME AND LOCATION OF SOIL BORING
- 
- S1W NAME AND LOCATION OF SOIL SAMPLING
- X



SITE PLAN  
 ANTHONY'S AUTO SERVICE  
 19592 CENTER STREET  
 CASTRO VALLEY, CALIFORNIA

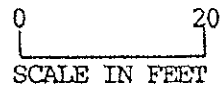
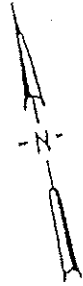
FIGURE  
**FIGURE 2**



LEGEND

SB-1 NAME AND LOCATION  
 ○ OF SOIL BORING

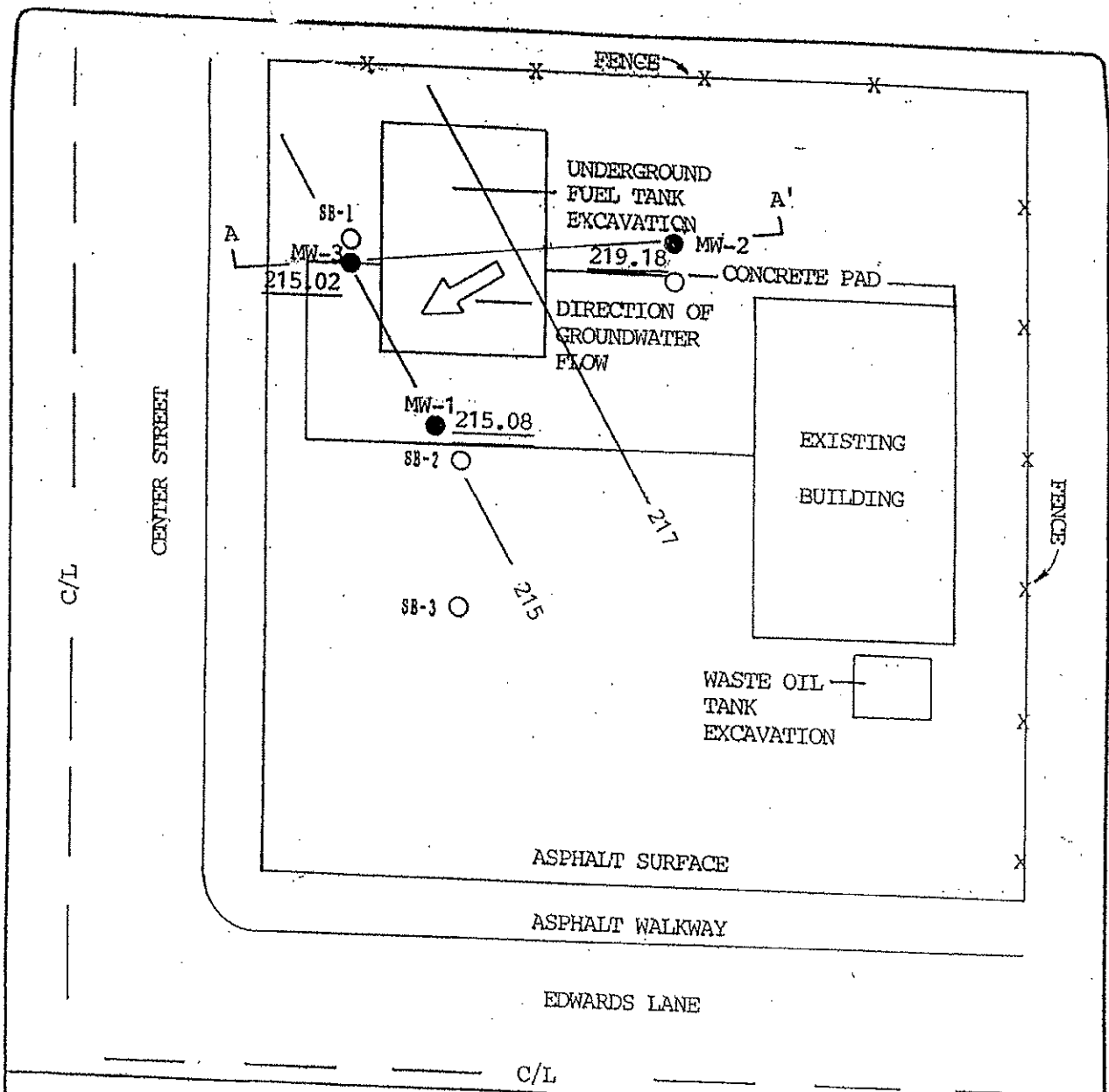
VSNT  
 X NAME AND LOCATION  
 OF SOIL SAMPLING



OVEREXCAVATION  
 ANTHONY'S AUTO SERVICE  
 1592 CENTER STREET  
 CASTRO VALLEY, CALIFORNIA

FIGURE

**FIGURE 3**

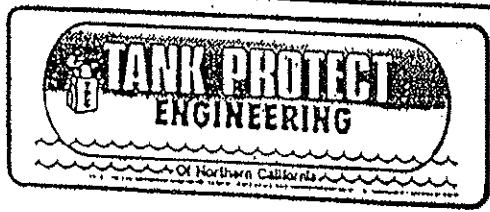
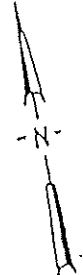


**LEGEND**

- SB-1 NAME AND LOCATION OF SOIL BORING
- 
- MW-1 NAME AND LOCATION OF GROUNDWATER MONITORING WELL
- 

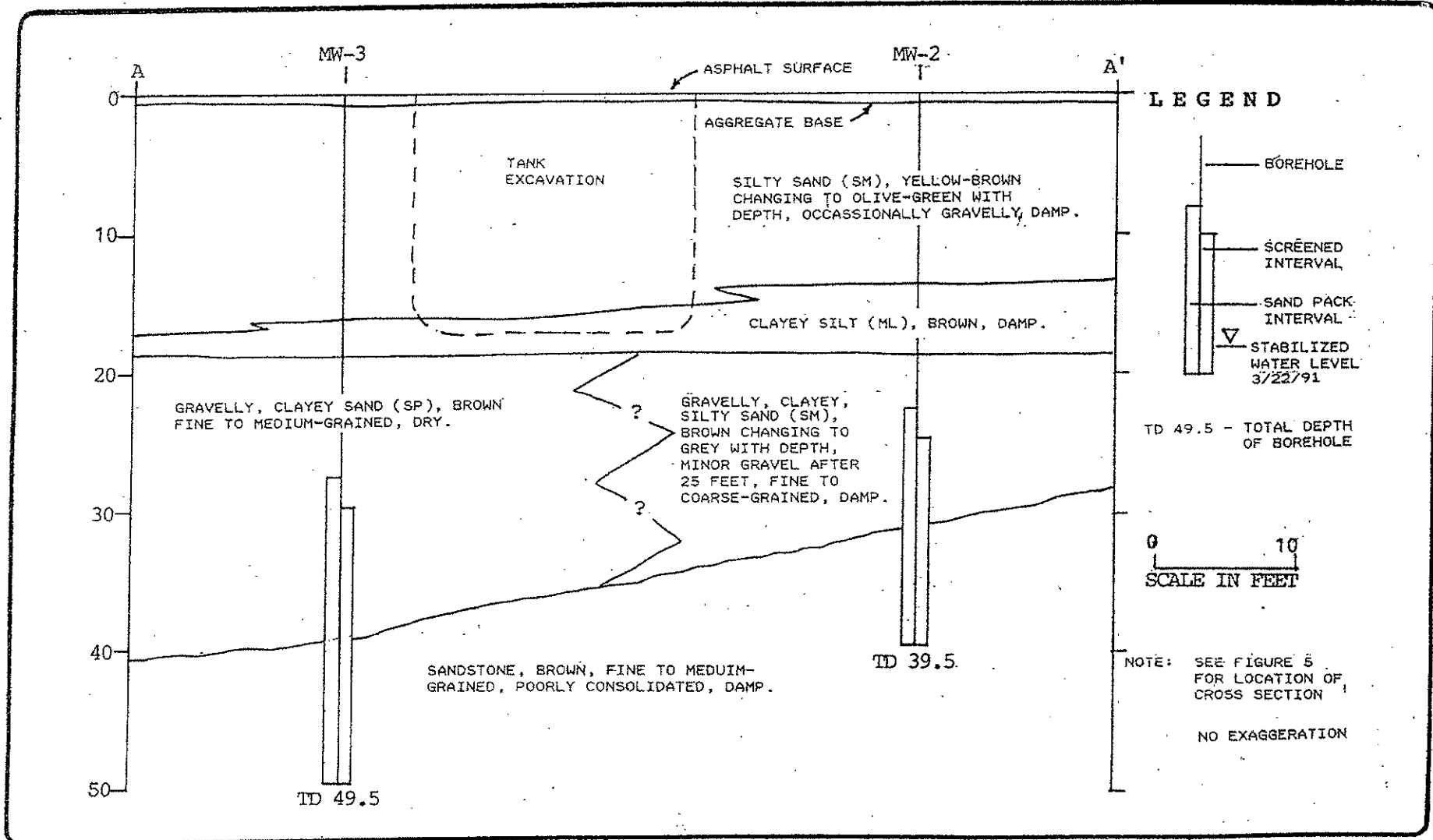
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— POTENTIOMETRIC CONTOUR  
A A' GEOLOGIC CROSS SECTION



GROUNDWATER GRADIENT  
ANTHONY'S AUTO SERVICE  
1952 CENTER STREET  
CASTRO VALLEY, CALIFORNIA

FIGURE  
**FIGURE 4**



GEOLOGIC CROSS SECTION  
ANTHONY'S AUTO SERVICE  
19592 CENTER STREET  
CASTRO VALLEY, CALIFORNIA

FIGURE  
**FIGURE 5**

**TABLE 1**

**SUMMARY OF SOIL ANALYTICAL RESULTS  
FOR SAMPLES COLLECTED DURING TANK REMOVAL\*  
(ppm)**

Sample Identification	TOG	TPHD	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes
WOS	<30	<1.0	<1.0	.0055	.0094	<.0050	.0086
S1W	NA**	NA	<1.0	.0050	.0140	.0076	.0110
S2W	NA	NA	2,500	1.5000	57	54	310
S3W	NA	NA	990	7.3000	150	1.8000	34
S1E	NA	NA	1.9	.0090	.2000	.0260	.2400
S2E	NA	NA	3,200	2.2000	87	74	470
S3E	NA	NA	720	12	140	3.1000	54

\* No halogenated volatile organics (EPA 8010) were present above their detection limits (see Appendix B)

\*\* Not Analyzed

**TABLE 2**

**SUMMARY OF SOIL ANALYTICAL RESULTS  
FOR SAMPLES COLLECTED FROM SOIL BORINGS  
(ppm)**

Sample Identification	Depth (feet)	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes
SB-1	06.0-06.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-1	11.0-11.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-1	16.0-16.5	<1.0	.0070	.0050	<.1000	<.1000
SB-1	20.5-21.0	<1.0	<.0500	<.1000	<.1000	<.1000
SB-1	26.0-26.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-1	31.0-31.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-1	36.0-36.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	06.0-06.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	11.0-11.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	16.0-16.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	21.0-21.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	26.0-26.5	1.2	<.0500	.0280	.0220	.0460
SB-2	31.0-31.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-2	36.0-36.5	<1.0	<.0500	<.1000	.0087	.0410
SB-3	06.0-06.5	<1.0	<.0500	.0079	.0068	.0160
SB-3	11.0-11.5	2.7	<.0500	.0067	.0270	.0650
SB-3	16.0-16.5	<1.0	.0063	.0063	<.1000	<.1000
SB-3	21.0-21.5	<1.0	.0065	.0017	<.1000	<.1000
SB-3	26.0-26.5	15.0	<.0500	<.1000	<.1000	.0270
SB-3	31.0-31.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-3	36.0-36.5	<1.0	.0051	.0250	.0230	.0570
SB-4	06.0-06.5	<1.0	.0050	.0058	<.1000	.1100
SB-4	11.0-11.5	<1.0	.0069	.0420	.0250	.1000
SB-4	16.0-16.5	<1.0	<.0500	.0068	<.1000	.0063
SB-4	21.0-21.5	<1.0	.0073	.0100	<.1000	.0190
SB-4	26.0-26.5	<1.0	<.0500	<.1000	<.1000	<.1000
SB-4	31.0-31.5	<1.0	<.0500	<.1000	<.1000	<.1000

**TABLE 3**

**SUMMARY OF ANALYTICAL RESULTS  
FOR VERIFICATION SOIL SAMPLES  
COLLECTED DURING OVEREXCAVATION  
(PPM)**

Sample Identification	Depth (in feet)	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes
VSN-2	15.0-15.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSE-2	16.0-16.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSS-1	16.0-16.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSS-2	16.0-16.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSBP-2	17.5-18.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSE-1	17.0-17.5	<1.0	<0.0050	<0.0050	<0.0050	0.0053
VSW-1	15.0-15.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSW-2	16.0-16.5	<1.0	0.0092	0.0190	<0.0050	0.0180
VSBP-1	17.5-18.0	<1.0	<0.0050	0.0070	<0.0050	0.0071
VSN-1	15.0-15.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050
VSCS-1	03.0-03.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050



**TABLE 4**

**SUMMARY OF GROUNDWATER ANALYTICAL RESULTS  
(ppb)**

Sample ID Name	Date Sampled	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes	Organic Lead
MW-1	02/18/91	160 <sup>1</sup>	<0.30	<0.30	<0.30	<0.30	<5
	05/17/91 <sup>4</sup>	<30	<0.30	<0.30	<0.30	<0.30	NA <sup>3</sup>
	08/19/91	<30	<0.30	<0.30	<0.30	<0.30	NA
	11/20/91	220 <sup>5</sup>	0.33	0.90	<0.30	<0.30	NA
MW-2	02/18/91	<30	<0.30	<0.30	<0.30	<0.30	<5
	05/17/91	<30	<0.30	<0.30	<0.30	<0.30	NA
	08/19/91	280 <sup>2</sup>	<0.30	<0.30	<0.30	<0.30	NA
	09/09/91	<50	<0.50	<0.50	<0.50	<1.5	NA
	11/20/91	<30	<0.30	<0.30	<0.30	<0.30	NA
MW-3	02/18/91	120 <sup>1</sup>	<0.30	<0.30	<0.30	<0.30	<5
	05/17/91	<30	<0.30	<0.30	<0.30	<0.30	NA
	08/19/91	320 <sup>2</sup>	<0.30	<0.30	<0.30	<0.30	NA
	09/09/91	<50	<0.50	<0.50	<0.50	<1.5	NA
	11/20/91	140 <sup>5</sup>	<0.30	<0.30	<0.30	<0.30	NA

<sup>1</sup> ACCORDING TO SEQUOIA ANALYTICAL THESE SAMPLES DO NOT APPEAR TO CONTAIN GASOLINE. AN INDUSTRIAL SOLVENTS SCAN BY EPA MODIFIED METHOD 3810/8015 DETECTED ISO-OCTANE AT A CONCENTRATION OF 150 ppb. SEE CERTIFIED ANALYTICAL REPORT IN APPENDIX B OF TPE'S MARCH 29, 1991 SITE ASSESSMENT REPORT.

<sup>2</sup> ACCORDING TO SEQUOIA ANALYTICAL, THESE SAMPLES DO NOT APPEAR TO CONTAIN GASOLINE. SEE ATTACHED CERTIFIED ANALYTICAL REPORT IN TPE'S OCT. 22, 1991 THIRD QUARTERLY REPORT. TPE BELIEVES THE SOURCE OF CONTAMINATION IS MOISTURE SENSITIVE PASTE USED FOR MEASURING DEPTH-TO-WATER; SEE DISCUSSION UNDER "GROUNDWATER SAMPLING AND ANALYTICAL RESULTS".

<sup>3</sup> NA = NOT ANALYZED

<sup>4</sup> CHAIN-OF-CUSTODY AND ANALYTICAL REPORTS ARE MISTAKENLY DATED 5/20/91.

<sup>5</sup> ACCORDING TO SEQUOIA ANALYTICAL, THESE SAMPLES DO NOT APPEAR TO CONTAIN GASOLINE. AN EPA METHOD 8240 AND 8240 & "OPEN SCAN" OF THE GROUNDWATER SAMPLE FROM WELL MW-3 DETECTED 4.2 ppb 1,2-DICHLOROETHANE; 750 ppb PROPANE,2-METHOXY-2-METHYL; 110 ppb BUTANE,2,2,3,3-TETRAMETHYL; AND 9.6 ppb HEXANE,2,3,4-TETRAMETHYL. SEE ATTACHED CERTIFIED ANALYTICAL REPORTS.

**TABLE 5**

**GROUNDWATER ELEVATION**

Well Name	Elevation TOC <sup>1</sup> (feet MSL <sup>2</sup> )	Date	Depth to Water from TOC	Groundwater Elevation (feet MSL)
MW-1	249.72	03/22/91	34.64	215.08
		05/17/91	33.77	215.95
		06/14/91	33.63	216.09
		07/15/91	33.68	216.04
		08/23/91	33.82	215.90
		09/16/91	33.95	215.77
		10/14/91	34.16	215.56
		11/20/91	34.41	215.31
		12/17/91	34.42	215.30
		MW-2	250.18	03/22/91
05/17/91	30.29			219.89
06/14/91	30.31			219.87
07/15/91	30.41			219.77
08/23/91	30.50			219.68
09/16/91	30.60			219.58
10/14/91	30.76			219.42
11/20/91	30.87			219.31
12/17/91	30.86			219.32
MW-3	250.11			03/22/91
		05/17/91	34.22	215.89
		06/14/91	34.11	216.00
		07/15/91	34.12	215.99
		08/23/91	34.27	215.84
		09/16/91	34.40	215.71
		10/14/91	34.63	215.48
		11/20/91	34.83	215.28
		12/17/91	34.88	215.23

<sup>1</sup> TOC = TOP OF CASING

<sup>2</sup> MSL = MEAN SEA LEVEL

## TABLE 6

### Introduction

This report presents the procedures and findings of ACC Environmental Consultants' ("ACC") groundwater investigation at Anthony's Auto Service located at 19592 Center Street in Castro Valley, California (Figure 1). The objectives of this project is to evaluate the presence or absence of petroleum hydrocarbons and/or other volatile organic compounds (VOC's) in the groundwater by obtaining samples from existing monitoring wells.

Removal of three underground gasoline tanks and one waste oil tank was performed on July 20, 1990. Subsequent to the tank removals, monitoring well installation and groundwater sampling was performed by Tank Protect Engineering in 1990 through 1991. Elevated levels of fuel-related and solvent compounds were detected in groundwater during the November 20, 1991 sampling event. In a letter dated February 13, 1992, Mr. Scott Seery of the Alameda County Department of Health Services (ACDHS) - Hazardous Materials Division required that further investigation be performed by installing additional monitoring wells on-site to identify the limit of the dissolved contaminant plume. ACC performed the sampling of the wells to determine whether the additional investigation is required.

### Background

According to previous studies performed by Tank Protect Engineering, soil contamination was discovered during the removal of three underground gasoline tanks and one waste oil tank. The contaminated soil was removed and remediated on-site by chemical oxidation method. The remediated soil was returned to the excavation when analytical results indicated levels below action limits. Three groundwater monitoring wells were installed around the excavation limits. Quarterly monitoring indicated elevated levels of non-gasoline components in monitoring wells MW-1 and MW-3 for three of the four quarters sampled.

During the November 20, 1991 sampling event performed by Tank Protect Engineering, EPA Test Method 8240 & "Open Scan" was run on samples from monitoring well MW-3 when test results indicated non-gasoline components. The following non-gasoline components and levels were reported:

2-Methoxy-2-Methyl Propane (MTBE)	750 ppb*
2,2,3,3-Tetramethyl Butane	110 ppb
1,2-Dichloroethane	4.2 ppb
2,3,4-Tetramethyl Hexane	9.6 ppb

\* Parts Per Billion (ppb)

Of the four constituents discovered, only 1,2-Dichloroethane was listed as being above the Department of Health Services (DHS) and Environmental Protection Agency's (EPA) California Maximum Contaminant Levels (MCL) for drinking water (MCL = 0.5 ppb). This chemical is described in the Merck Index, as being mainly used as a solvent for fats, oils, waxes, gums, resins, and rubber; also used in manufacturing acetyl cellulose, as a

## TABLE 7

that indicated non-gasoline components. The results of the groundwater analysis indicated elevated non-gasoline components in monitoring wells MW-1 and MW-3. Results of subsequent analysis of 624/8240 & "Open Scan" run on samples from monitoring wells MW-1 and MW-3 indicated the following:

	<u>MW-1</u>	<u>MW-3</u>
2-Methoxy-2-Methyl Propane	140 ppb	120 ppb
2,2,3,3-Tetramethyl Butane	81 ppb	68 ppb
1,1-Dichlorocyclohexane	62 ppb	55 ppb
1-(2-Methoxypropoxy)-2-Propane	150 ppb	130 ppb

Analytical results from 2/26/92 sampling are provided in Appendix A.

### Groundwater Gradient

The groundwater gradient at the site was evaluated by triangulation using the elevations of the tops of the well casings measured with respect to Mean Sea Level datum. As shown on Figure 2, the estimated groundwater gradient direction at the time of measurement was to the west/southwest.

### Conclusion

Due to the elevated levels of fuel-related and "solvent" compounds found in the November 20, 1991 sampling event, a letter dated February 13, 1992 from Mr. Scott Seery of the Department of Environmental Health - Hazardous Materials Division required that further investigation be performed by installing additional monitoring wells on-site to identify the limit of the dissolved contaminant plume. The sample results obtained by ACC support the need for additional investigation.

The data and observations provided herein allow the technical evaluation that an impact to groundwater has occurred from the unauthorized release of hydrocarbons. The corrective action work performed by Tank Protect Engineering, consisting of removal and on-site remediation of 450 cubic yards of contaminated soil, is likely to have minimized the impact to groundwater, as evidenced by the general declining level of contamination.

Groundwater monitoring wells installed in February of 1991 detected "non-gasoline" hydrocarbons in monitoring well MW-3 during the sampling events on November 20, 1991 and in monitoring wells MW-1 and MW-3 in February 26, 1992. Only constituents 2-Methoxy-2-Methyl Propane (MTBE) and 2,2,3,3-Tetramethyl Butane were found in both sampling events. A reduction in levels of these two constituents was observed in the more recent sampling. However, levels of MTBE are still above DHS verbal interim levels of 35 ppb.

As required by Mr. Seery, Material Safety Data Sheets (MSDS) were acquired from VP Racing Fuels and Phillips Petroleum Company for the three types of racing fuel used on site. These were C-12 Leaded from VP Racing Fuel and B35 and B32 from Phillips Petroleum Company. A copy of these MSDS are included in Appendix A.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. SB-1

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 8/16/90

SURFACE ELEV. 260 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
1.5/1.5	0	69		5		ASPHALT	ASPHALT
						AGGREGATE SUBBASE; GRAVELLY SILTY SAND (SM)	AGGREGATE SUBBASE; GRAVELLY SILTY SAND (SM), yellow-brown, 50% gravel, dry, no odor.
						GRAVELLY SILTY SAND (SM)	GRAVELLY SILTY SAND (SM), yellow-brown, 10% gravel, damp, possible slight odor.
						As above	As above, brown, no gravel, clayey, fine to medium-grained, clay balls, damp, no odor.
1.0/1.0	0	50 for 6 in.		10		As above	As above, very dense, no odor.
						As above	As above, olive-green, medium-grained, no odor.
						As above	As above, gravelly, slight odor.
1.3/1.3	0	85 for 10 in.		15		As above	As above, very green, damp, no odor.
						CLAYEY SILT (ML)	CLAYEY SILT (ML), brown, damp, no odor.
.83/.83	0	50 for 4 in.		20		GRAVELLY CLAYEY SAND (SP)	GRAVELLY CLAYEY SAND (SP), mottled brown and red-brown, some rock fragments, damp, very dense, no odor.
						As above	As above, silty, light green-brown, very fine-grained, damp, no odor.
1.4/1.4	0	75 for 11 in.		25		As above	As above, brown, fine to medium-grained, dry, no odor.
						As above	As above, driller reports gravel and cobbles.
1.5/1.5	0	88		30		As above	As above, dry, no odor.
.5/.5	-	70 for 6 in.		35		Boring terminated at 35'; sampled to 36.5'	Boring terminated at 35'; sampled to 36.5'.

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O. D. augers. Samples collected in a 2.5-inch O. D. California Sampler. Boring sealed with cement.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. SB-2

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 8/16/90

SURFACE ELEV. 260 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
						ASPHALT	
1.5/1.5	0	75		5	■	CLAY (CL), brown, soft to stiff, damp, no odor.	
						SILTY GRAVELLY SAND (SM), orange-brown, fine to medium-grained, 10% gravel, damp, no odor.	
						As above, very dense, no odor.	
1.5/1.5	0	80		10	■	As above, light-brown, no gravel, no odor.	
						As above, green, gravelly with coarse sand, damp, no odor.	
						As above, red-brown, medium to coarse-grained, damp, no odor.	
1.0/1.0	20	50 for 6 in.		15	■	As above, green, possible slight odor.	
.83/.83	73	50 for 4 in.		20	■	As above, mottled green and brown, rock fragments to 1-inch diameter, clayey, damp, no odor.	
1.5/1.5	52	64		25	■	As above, no gravel, green, medium to coarse sand, no clay or silt, damp, slight odor.	
1.5/1.5	0	95		30	■	As above, very gravelly, damp, no odor.	
						As above, brown, no gravel, very fine to fine-grained, silt, dry, no odor.	
.5/.5	0	75 for 8 in.		35	■	Boring terminated at 35'; sampled to 36.5'.	

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch, augers. Samples collected in a 2.5-inch O. D. California Sampler. Boring sealed with cement.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. SB-3

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 8/16/90

SURFACE ELEV. 260 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLDWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
1.5/1.5	0	62		5			ASPHALT AGGREGATE SUBBASE: GRAVELLY SILTY SAND (SM), red-brown, fine to medium-grained, damp, no odor.
							SILTY CLAY (CL), mottled red and black, soft, damp, no odor.
1.3/1.5	0	87		10			CLAYEY GRAVELLY SAND (SP), light brown, fine to medium-grained, 10% gravel, clay balls, damp, no odor. As above, no gravel, red-brown, little clay, very dense, damp, no odor. As above, light grey, damp, no odor.
1.5/1.5	0	83		15			As above, red-brown, medium to coarse-grained, gravelly, gravel fragments to 1-inch diameter, damp, no odor.
1.5/1.5	0	71 for 11.5 in.		20			SANDY SILT (ML), olive-brown, very dense, damp, no odor.
.5/.5	0	69 for 6 in.		25			GRAVELLY SAND (SP), red-brown, medium to coarse-grained, gravel fragments to 1-inch diameter, 15% gravel, very dense, moist, no odor.
1.0/1.0	0	78		30			SANDSTONE, brown, medium-grained, dry, no odor.
							Boring terminated at 35'; sampled to 36.5'.
.42/.5	0	60 for 6 in.		35			

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O. D. augers. Samples collected in a 2.5-inch O. D. California Sampler. Boring sealed with cement.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. SB-4

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 8/16/90

SURFACE ELEV. 260 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLOKS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
				0		CONCRETE	
1.5/1.5	0	70		5		AGGREGATE SUBBASE: GRAVELLY SILTY SAND (SM), brown, fine to medium-grained, damp, no odor.	
				10		SILTY SAND (SM), brown, 10% gravel, fine to medium-grained, damp, no odor.	
1.0/1.0	0	97		10		As above, orange-brown, medium to coarse-grained, very dense, fine-grained gravel, damp, no odor.	
				15		As above, very gravelly, gravel fragments to 1-inch diameter, damp, no odor.	
1.5/1.5	0	66		15		SANDY SILT (ML), olive-light brown, very dense, pockets of quartz gravel, damp, no odor.	
1.5/1.5	0	82		20		GRAVELLY CLAYEY SILTY SAND (SM), orange-brown, fine to medium-grained, 50% gravel, damp, no odor.	
1.5/1.5	25	63		25		CLAYEY SILTY SAND (SM), olive-grey, no gravel, fine-grained, damp, no odor.	
				30		As above, mottled yellow-grey, medium to coarse-grained, damp, no odor.	
.83/.83	5	74 for 10 in.		30		SANDSTONE, brown, fine to medium-grained, poorly consolidated, damp, no odor.	
				35		Boring terminated at 35'; sampled to 36.5'.	
.33/.33	0	80 for 4 in.		35			

REMARKS: Boring drilled with continuous-flight, hollow-stem 8-inch O. D. augers. Samples collected in a 2.5-inch O. D. California Sampler. Boring sealed with cement.



# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. MW-1

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 1/31/91

SURFACE ELEV. 250 FT

RECOVERY (FT/FT)	QVA (PPM)	PENETRA- TION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
				5			ASPHALT
				10			FILL: CLAYEY, GRAVELLY, SAND (SP), olive-brown, fine to medium-grained, 30% gravel, damp.
				15			FILL: CLAYEY, SILTY, SAND (SM), light brown, fine-grained, damp.
				20			FILL: SANDY, GRAVELLY, AGGREGATE (GP), orange-brown, 50% gravel, damp.
				25			
				30			
				35			SEE LOG OF BORING SB-2 LOCATED 5 FEET SOUTH-SOUTHEAST FOR LITHOLOGY FROM 17 FEET TO 36.1 FEET.
				40			SANDSTONE, brown, medium-grained, dry, weathered, no odor.
0/.06	-	50/.06		45			Boring terminated at 49.5'.
0/0	-	50/.17					

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch, augers. Samples collected in a 2.5-inch O. D. California Sampler.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. MW-2

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 1/31/91

SURFACE ELEV. 250 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
				5			<p>ASPHALT</p> <p>SEE LOG OF BORING SB-4 LOCATED 5 FEET SOUTH-SOUTHWEST FOR LITHOLOGY FROM 2 FEET TO 19.5 FEET.</p>
				10			
				15			<p>SEE LOG OF BORING SB-4 LOCATED 5 FEET SOUTH-SOUTHWEST FOR LITHOLOGY FROM 13.5 FEET TO 18.5 FEET.</p>
				20			<p>SEE LOG OF BORING SB-4 LOCATED 5 FEET SOUTH-SOUTHWEST FOR LITHOLOGY FROM 18.5 FEET TO 32.0 FEET.</p>
				25			
				30			<p>SANDSTONE, brown, fine to medium-grained, poorly consolidated, apparent fractured or weathered zone from 36.5 to 38.5 feet, damp, no odor.</p>
				35			<p>Boring terminated at 39.5'.</p>

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch O. D. augers. Samples collected in a 2.5-inch O. D. California Sampler.

# LOG OF EXPLORATORY BORING

PROJECT NUMBER 121

BORING NO. MW-3

PROJECT NAME 19592 Center Street, Castro Valley, CA

BY J. V. Mrakovich

DATE 1/31/91

SURFACE ELEV. 250 FT

RECOVERY (FT/FT)	OVA (PPM)	PENETRA- TION (BLOWS/FT)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
				5			ASPHALT
				10			SEE LOG OF BORING SB-1 LOCATED 2 FEET NORTH-NORTHEAST FOR LITHOLOGY FROM 2 FEET TO 16 FEET.
				15			
				20			SEE LOG OF BORING SB-1 LOCATED 2 FEET NORTH-NORTHEAST FOR LITHOLOGY FROM 16 FEET TO 18.5 FEET.
				25			
				30			SEE LOG OF BORING SB-1 LOCATED 2 FEET NORTH-NORTHEAST FOR LITHOLOGY FROM 18.5 FEET TO 39 FEET.
				35			
				40			SANDSTONE, yellow-brown, medium-grained, interlayered with dark brown to black mudstone laminae, poorly consolidated, very dense, damp, no odor.
.33/.33		50 for 4 in.		45			
.17/.25		50 for 3 in.					

REMARKS: Boring drilled with continuous-flight, hollow-stem, 8-inch, O. D. augers. Samples collected in a 2.5-inch, O. D. California Sampler.