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**REPORT
QUARTERLY GROUNDWATER QUALITY
MONITORING
FORMER CASTRO VALLEY UNIFIED SCHOOL
DISTRICT CORPORATION YARD
21000 WILBEAM AVENUE
CASTRO VALLEY, CALIFORNIA**

**Job No. 03715-051-043
November 1993**



DAMES & MOORE

 **DAMES & MOORE**

221 MAIN STREET, SUITE 600, SAN FRANCISCO, CALIFORNIA 94105-1917
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November 23, 1993
Job No. 03715-051-043

Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

Attention: Mr. Scott Seery
Senior Hazardous Materials Specialist

Dear Mr. Seery:

Report
Quarterly Groundwater Quality Monitoring
Former School District Corporation Yard
21000 Wilbeam Avenue
Castro Valley Station

Dames & Moore is pleased to present this report for the Quarterly Groundwater Monitoring being conducted at the former Castro Valley Unified School District Corporation Yard located at 21000 Wilbeam Avenue in Castro Valley, California.

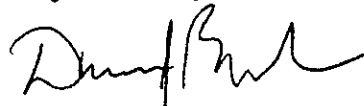
If you have any questions or comments regarding this report please contact us.

Very truly yours,

DAMES & MOORE



Erik Skov
Project Geologist



Dana Brock, P.E., C.E.G.
Senior Geologist



**REPORT
QUARTERLY GROUNDWATER QUALITY MONITORING
FORMER CASTRO VALLEY UNIFIED SCHOOL
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1.0 INTRODUCTION

This report presents the results of the quarterly groundwater monitoring conducted to evaluate the extent of petroleum hydrocarbon contamination associated with the unauthorized release of fuel hydrocarbons from underground storage tanks (USTs) located at the former Castro Valley Unified School District (CVUSD) Corporation Yard (the site) at 21000 Wilbeam Avenue in Castro Valley, California (Figure 1). The site is currently under construction for use as part of the parking lot at the proposed Castro Valley BART station.

1.1 SITE HISTORY

The site is owned by the Bay Area Rapid Transit District (BART) and was leased to the CVUSD for the past 30+ years. The former corporation yard occupies approximately 60,000 square feet and is accessed from Wilbeam Avenue. It was used as the school district's maintenance/service yard. The school district utilized the site for several different purposes including: district vehicle service, maintenance, and storage; landscape equipment service, maintenance, and storage; storage of school supplies and food; and workshops to support maintenance activities at other school district locations. In order to support the service and maintenance activities for district vehicles and landscape equipment, the school district was known to operate two small (approximately 2,000 gallon) USTs at the site.

A Preliminary Site Assessment (PSA) was conducted for the Dublin/ Pleasanton BART extension during December 1990 (PHASE A) and April 1991 (PHASE 2A). The PSA identified two small USTs reported to contain gasoline and diesel fuel and a fuel dispensing island. According to the CVUSD maintenance supervisor, the two USTs were installed around 1957 and used for the storage of gasoline and diesel fuel for school district vehicles and equipment. Fuel was dispensed through two product dispensers located in the center of a concrete slab overlying the USTs.

Prior to removal of these tanks in 1992 (described in Section 1.2) a preliminary environmental investigation was conducted at the site. Part of this investigation included drilling three soil borings in the vicinity of the tanks to evaluate subsurface conditions prior to excavation and removal of the tanks. Both soil and grab groundwater samples were collected from the borings and analyzed. The results of the environmental investigation are presented in our report entitled "Underground Storage Tank Removal, Asbestos Removal and Environmental Investigation, Former School District Corporation Yard, Castro Valley Station" dated August 26, 1992 (Dames & Moore). A copy of this report was submitted to the Alameda County Department of Environmental Health, Hazardous Materials Division (ACDEHHMD).

1.2 TANK REMOVAL

During June 1992, the USTs were located and they were prepared for removal and disposal. During excavation of the soil overlying the tanks, an abandoned product line was discovered near the former regular gasoline dispenser. At the request of Mr. Scott Seery of the ACDEHHMD, the line was excavated. The line terminated near a small patched area in a part of the concrete slab that had not been removed in order to take out the tanks. Upon excavation of the concrete and soil under the patched area another pipe was discovered. The new pipe was oriented vertically and upon closer examination was determined to be the fill pipe for a third tank. The presence of the third tank was not previously documented. The concrete and soil overlying the third, previously unknown tank, was excavated to confirm the presence of the tank. The tank was then prepared for removal subsequent to approval from BART and modification of the closure permit by the ACDEHHMD.

The two tanks known to be on site were removed on June 25, 1992. The tank containing regular gasoline was of single wall steel construction and measured 8.75 feet long by 6.0 feet in diameter, corresponding to a volume of approximately 1,850 gallons. Upon removal from the excavation, the tank was inspected and found to have a large hole (greater than one-half inch diameter) in the end of the tank near the top of the rim.

The diesel tank was constructed of thick gauge single wall steel and measured 12.0 feet long by 6.0 feet in diameter, corresponding to a volume of approximately 2,500 gallons. Upon removal it was found to be slightly corroded and pitted in some areas. No holes were observed.

The third, previously undocumented tank, was removed on June 26, 1992. It was of single wall steel construction and measured 12.0 feet long by 4.0 feet in diameter corresponding to a volume

of approximately 1,150 gallons. Upon removal it was inspected and found to have numerous holes in the bottom, top, and ends.

Prior to removal of the tanks from the excavations, all residual product remaining in the tanks was pumped out. Approximately 13.0 inches of product were pumped from the diesel tank and 19.0 inches of residual product were pumped out of the gasoline tank. Upon removal of the overlying soil from the third tank it was observed that the tank was filled with water and contained no residual product. The water in the third tank was pumped out prior to tank removal. All fluids pumped from the tanks and generated during rinsing of the tanks were collected and disposed of by Erickson, Inc. of Richmond, California at Refinery Services Company in Patterson, California.

After the tanks were removed from the excavations and their conditions documented, confirmatory soil samples were collected from the side walls of the excavations in areas approved by the ACDEHHMD inspector. Confirmatory samples were collected, using the bucket of the excavator, from just above the standing water line in the excavations. Groundwater was encountered in the bottoms of the excavations, at approximately 10.0 feet bgs and rose to approximately 5.5 to 6.0 feet bgs when allowed to equilibrate in the open excavations. In addition confirmatory samples were also collected from beneath the two product dispensers and along the vent tube line for the regular gas tank.

The soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, benzene, toluene, ethylbenzene, and xylenes (BTEX), and total lead by EPA Methods 8015M as gasoline, 8015M as diesel, 8020, and 6010 respectively.

Based on the results of the confirmatory sampling from the third tank excavation and beneath the fuel dispensers, additional excavation was needed in these areas to reduce concentrations of fuel hydrocarbons in soil to acceptable levels in order to obtain approval from the ACDEHHMD to backfill the excavations. Approximately 100 cubic yards of additional soil were removed from these areas. After over-excavation was complete there were no detectable levels of TPH as gasoline or TPH as diesel in the confirmatory samples from the three excavations.

Approximately 250 cubic yards of soil were generated during excavation and removal of the tanks. After proper waste characterization analyses were conducted, the soil was disposed of at the Browning Ferris Industries Class III landfill in Livermore, California.

Prior to backfilling of the excavations, approximately 15,000 gallons of groundwater encountered during removal of the tanks was pumped from the excavations into a holding tank. After appropriate analytical testing was conducted, the Ora Loma Sanitary District approved the request for discharge of the water to their sewer system.

At the time the tanks were removed there were no data available regarding prior tank testing or results of any testing. In addition there was no documentation indicating that any product was ever lost from the tanks, and, therefore, the volume of product discharged is unknown. After the tanks were removed from the excavations and it became apparent that release of fuel hydrocarbons had occurred, an Unauthorized Release Report was filed with the ACDEHHMD.

1.3 SOIL AND GROUNDWATER INVESTIGATION

To evaluate the impact of the release of hydrocarbons from the USTs on the soil and groundwater at the site Dames and Moore conducted a soil and groundwater investigation in the immediate vicinity of the former tanks during February 1993. The technical scope of work for this investigation was presented in our workplan dated January 5, 1993 and approved by ACDEHHMD on January 25, 1993. The scope of work included the following:

- Drilling three soil borings and chemically analyzing two soil samples from above the water table from each boring;
- Completing the three soil borings as monitoring wells and chemically analyzing groundwater samples from each;
- Monitoring water levels in the wells over a two and one-half month period; and
- Preparing a summary report detailing the results of our investigation.

The results of analyses performed on the soil samples from the site indicated that petroleum hydrocarbons were not detected in any the six samples. Total lead was detected in five of the samples at levels considered to be within the range of normal background lead levels for this area.

The results of analyses performed on the groundwater samples indicated that petroleum hydrocarbons were not detected in any of the samples. Total lead was detected in each of the

samples in the concentrations of 0.094 mg/kg, 0.076 mg/kg, and 0.037 mg/kg in MW-1, MW-2, and MW-3 respectively.

The results of the monitoring of water levels at the site indicated that groundwater elevations, groundwater flow direction, and hydraulic gradient fluctuated during the monitoring period.

The August 1993 summary report concluded that the groundwater in the immediate vicinity of the removed USTs did not appear to have been affected by releases from the tanks at the site. Although the lead concentration in groundwater from MW-1 was found to be above the EPA Maximum Contaminant Level (MCL), the lack of petroleum hydrocarbon detections in the same water sample would seem to indicate that the source of the lead in the groundwater was background-level lead in the soil.

2.0 SITE DESCRIPTION

2.1 PHYSICAL CHARACTERISTICS

The project site is a relatively flat area that was formerly the Castro Valley School District Corporation Yard. In preparing the site for the proposed parking lot construction, all structures located on the site including all concrete and asphalt surfaces were demolished and removed. The site is currently being graded for parking lot construction. Prior to demolition, the site contained six buildings, a pump island, and three underground storage tanks.

2.2 HYDROGEOLOGIC SETTING

2.2.1 Physiography

The site is located along Dublin Canyon in Castro Valley. Castro Valley is an intermountain alluvial basin within the East Bay Hills. Dublin Canyon trends east-west across the East Bay Hills. The valley floor has an average elevation of 175 feet above mean sea level (msl), while Dublin Canyon reaches to 740 feet above msl.

2.2.2 Regional Geology

The site is located in the Sunol structural block (Hall, 1958), which is an uplifted fault block. The Sunol block is separated from the Bay block to the west by the Hayward fault zone and from the Livermore block to the east by the Calaveras fault zone. Significant active faults

(surface displacement within the last 11,000 years) in the vicinity of the site are the Calaveras (8.1 miles east), Hayward (1.5 miles west), San Andreas (18.4 miles southwest), and Pleasanton faults (10.1 miles southeast). Northwest trending inactive faults and folds are common within the Sunol block. The closest fault to the site is the inactive Chabot fault, which is buried beneath Castro Valley alluvial deposits.

Castro Valley is underlain by fill, alluvium and bedrock. The fill is thickest close to Interstate 580 (up to 20 feet thick) and consists of variable proportions of clay, silt, sand, gravel, and cobbles with occasional boulders. Alluvium in the site vicinity is believed to be up to 80 feet thick consisting of discontinuous lenses of clayey, medium dense sand, silt, and gravel. Bedrock beneath the alluvium consists of the Cretaceous Niles Canyon Formation, which is a sandy shale, siltstone, and interbedded sandstone and claystone.

2.2.3 Site Stratigraphy

The stratigraphy of the soils underlying the site is known from observations made in soil borings previously drilled at the site and from the walls of the tank excavations. The upper 1.0 to 2.5 feet of soil consists of brownish yellow sand fill with occasional silt and gravel. The interval from approximately 2.5 to 8.0 feet bgs consists of a dark grey to olive grey clay grading with sands and gravels. The lithology from 8.0 to 9.5 feet bgs consists of brown to yellowish brown silty sand/sandy clay.

2.2.4 Hydrogeology

Previous investigations performed at the site during June 1992 included soil borings drilled to depths below the water table. First encountered groundwater was found within the unconsolidated alluvial deposits at depths ranging from 10.0 to 12.0 feet bgs. When allowed to equilibrate in the open boreholes the water level rose within 5.0 feet of the ground surface indicating locally confined groundwater conditions.

3.0 OBJECTIVE AND SCOPE OF SERVICES

The objective of this ongoing quarterly monitoring is to evaluate any potential impact from the release of hydrocarbons from the USTs on groundwater beneath the site in order to fulfill the policy of the San Francisco Bay Regional Water Quality Control Board (RWQCB) for a minimum well sampling program. In order to obtain the objective, the following services were performed:

- Collected and analyzed groundwater samples from the three monitoring wells;
- Collected water level measurements from the wells; and
- Prepared this report detailing the results of the quarterly monitoring.

4.0 GROUNDWATER QUALITY MONITORING PROGRAM

4.1 GROUNDWATER SAMPLING

Groundwater samples were collected from each well on August 27, 1993. Prior to measuring the initial water levels in each well, the locking expanding caps were removed and the wells were allowed to stabilize for 10 to 15 minutes prior to measuring the water levels. Water levels were measured to the nearest 0.01 foot using an electronic water level indicator. The wells were purged by bailing until a minimum of three casing volumes were removed from each well and the physical parameters of pH, conductivity and temperature had stabilized. Once purging was completed, the water level was allowed to recover to at least 80% of its original static level prior to sampling.

Groundwater samples were collected using disposable polyethylene bailers and discharged with bottom emptying devices to minimize the potential for volatilization of contaminants from the sample during transfer to laboratory containers. Samples were transferred directly to laboratory-supplied containers and labeled with the following information: job number, client name, location, date, time, and sampler's initials. Samples were then sealed in plastic bags and placed in a cooler of ice for preservation. The samples were delivered to CKY Incorporated Environmental Services in Pleasanton, California, and were analyzed for: total petroleum hydrocarbons (TPH) as gasoline; TPH as diesel; benzene, toluene, ethylbenzene, and xylenes (BTEX); and total lead by EPA Methods 8015M (gasoline), 8015M (diesel), 8020 and 7421, respectively. Proper chain-of-Custody documentation was maintained and accompanied the samples to the laboratory.

4.2 WATER LEVEL MONITORING

A clean electronic water level indicator was used to measure the depth to water to the nearest 0.01 foot in the three monitoring wells on August 30, 1993. The depths to groundwater were subtracted from the well casing elevations to calculate the groundwater elevations in the

monitoring wells. Table 1 summarizes these measurements and the corresponding groundwater elevations and those data from previous measurements at the site.

5.0 MONITORING RESULTS

5.1 GROUNDWATER ANALYTICAL RESULTS

Table 2 summarizes the analytical results for the groundwater samples collected from the monitoring wells. TPH as gasoline, TPH as diesel, BTEX, and lead were not detected in the three groundwater samples. Copies of the analytical reports and chain-of-custody documents for the groundwater samples are included in Appendix A.

5.2 GROUNDWATER GRADIENT AND FLOW DIRECTION

As shown on Table 1, the groundwater elevations have fluctuated over the six month period that water levels have been monitored. A groundwater elevation contour map (Figure 2) was generated using the groundwater elevation data collected on August 30, 1993. As shown on Figure 2, the groundwater flow direction in August 1993, was to the northeast at a gradient of approximately 0.081 feet per foot. As presented in our previous report August 23, 1993 (Soil and Groundwater Investigation, Former Castro Valley Unified School District Yard), during March 1993 the groundwater flow direction was to the south at an average gradient of approximately 0.011 feet per foot. Groundwater flow direction during April 1993 was to the southwest at an average gradient of approximately 0.020 feet per foot. Groundwater flow direction during May 1993 was slightly to the southwest at an average gradient of approximately 0.010 feet per foot.

6.0 DISCUSSION OF RESULTS

The results of the analyses performed on the groundwater samples were below the laboratory reporting limits for TPH as gasoline, TPH as diesel, BTEX, and total lead. The lack of lead detections in the most recently analyzed samples may be the result of the water samples having been filtered in the field prior to analyses. The detection of metals including lead in groundwater samples is commonly considered to be closely associated with the presence of fine-grained sediments in the samples. Samples analyzed for total lead during the February 1993 sampling were not filtered prior to analysis.

Groundwater elevations in the monitoring wells have varied greatly over the six-month period they have been monitored at the site. These fluctuations likely represent normal seasonal patterns caused by a period of recharge to the groundwater table from the heavy rains of the winter and spring of 1993 which were followed by an extended period of virtually no precipitation during the summer. The groundwater flow direction has shifted up to 225 degrees during the period of monitoring. In addition, hydraulic gradient has also been inconsistent over the same period.

7.0 CONCLUSIONS

Based on the results of soil and groundwater sampling and work conducted during tank removal activities, overexcavation of approximately 100 yd³ of contaminated soil and dewatering of tank excavation pits prior to backfilling, it does not appear that the groundwater in the immediate vicinity of the former tank locations has been affected by releases of hydrocarbons from the tanks at the site.

8.0 RECOMMENDATIONS

In accordance with the November 1, 1993 letter from the ACDEHHMD, Dames & Moore recommends that the groundwater quality monitoring be conducted for two more quarters, which will complete one full year of monitoring. The RWQCB will typically consider a site for groundwater case closure if it can be demonstrated the groundwater is free of contaminants for four consecutive quarters of groundwater monitoring. If the results of the next two rounds of sampling and analysis indicate that petroleum hydrocarbons are not present in the groundwater in the immediate vicinity of the removed USTs we will request case closure and recommend abandonment of the monitoring wells at the site.

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
QUARTERLY GROUNDWATER QUALITY MONITORING
BART, CASTRO VALLEY UNIFIED SCHOOL DISTRICT YARD
AUGUST 1993

Well No.	Date Collected	Depth to Water (feet)	TOC ⁽¹⁾ Elevation (feet)	Groundwater Surface Elevation (feet)
MW-1	2/25/93	2.44	164.68	162.24
	3/25/93	2.41		162.27
	4/22/93	2.99		161.69
	5/10/93	3.47		161.21
	8/30/93	4.57	162.48*	157.97
MW-2	2/25/93	2.47	164.64	162.17
	3/25/93	2.86		161.78
	4/22/93	3.52		161.12
	5/10/93	3.50		161.14
	8/30/93	3.22	163.01*	159.79
MW-3	2/25/93	2.54	165.58	163.04
	3/25/93	3.73		161.85
	4/22/93	3.93		161.65
	5/10/93	4.10		161.48
	8/30/93	5.32	162.65*	157.33

Notes: ⁽¹⁾ TOC = Top of casing. Elevations referenced to Mean Sea Level.
 * Wells cut down and resurveyed to facilitate construction activities at the site.

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
QUARTERLY GROUNDWATER QUALITY MONITORING
BART, CASTRO VALLEY UNIFIED SCHOOL DISTRICT YARD
AUGUST 1993

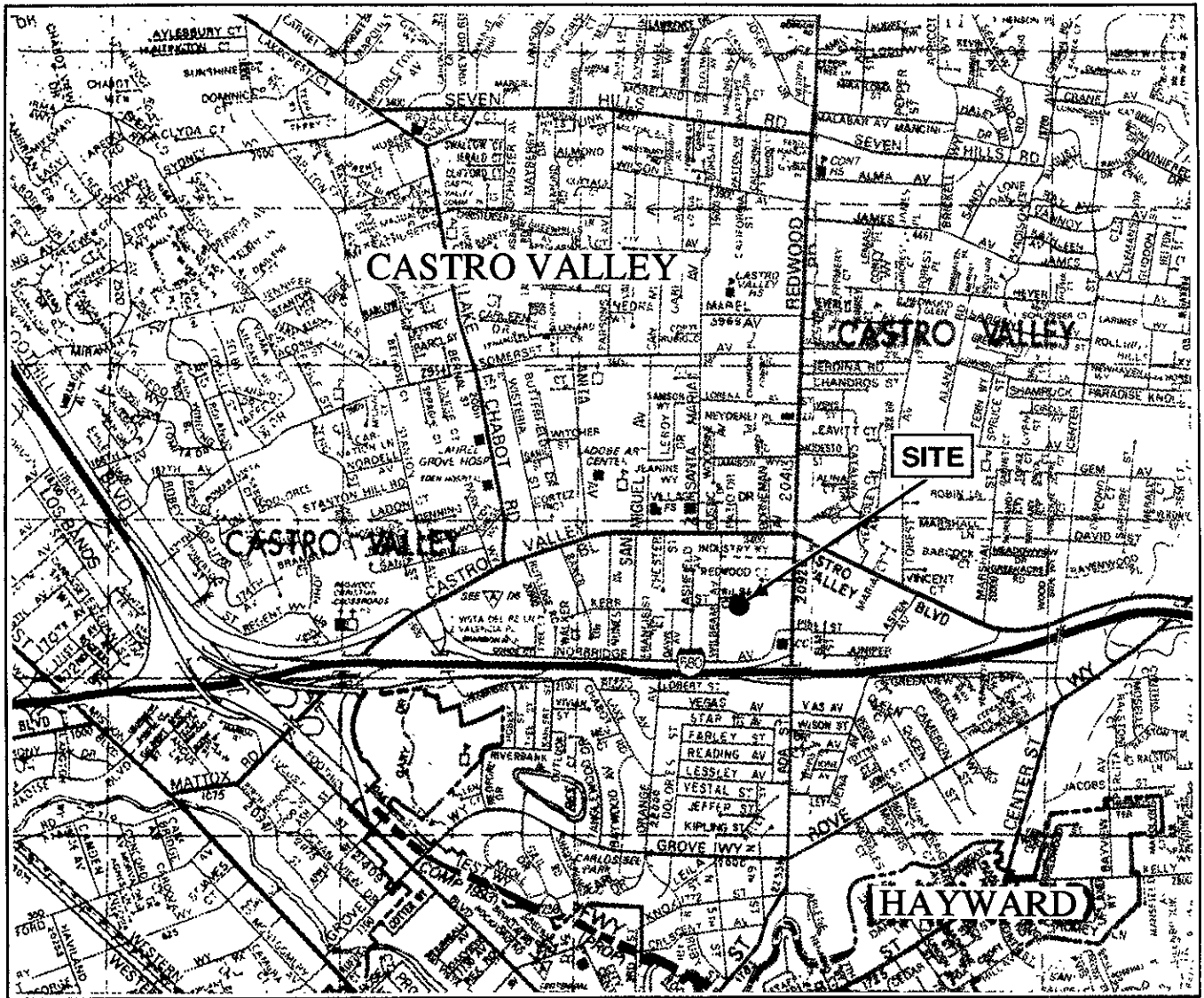
Monitoring Well No.	Analytes						
	TPH as Gasoline	TPH as Diesel	B ⁽²⁾	T ⁽²⁾	E ⁽²⁾	X ⁽²⁾	Total Lead ⁽⁴⁾
MW-1	ND ⁽³⁾	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND	ND
Detection Limit	1.0 mg/L	1.0 mg/L	1.0 µg/L	1.0 µg/L	1.0 µg/L	1.0 µg/L	10.0 µg/L

Notes: ⁽¹⁾ All analyses performed by CKY Environmental Services of Pleasanton, California. All results reported in mg/L (ppm) unless otherwise stated. See Appendix A for copies of Laboratory Reports.

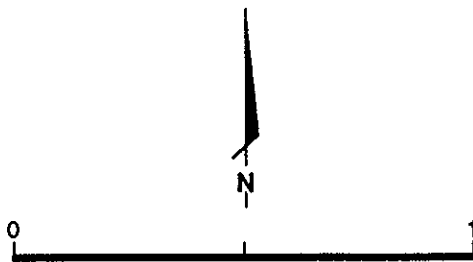
⁽²⁾ BTEX = Benzene, Toluene, Ethylbenzene and Xylenes reported in µg/L.

⁽³⁾ ND = Not Detected

⁽⁴⁾ Total lead in µg/L



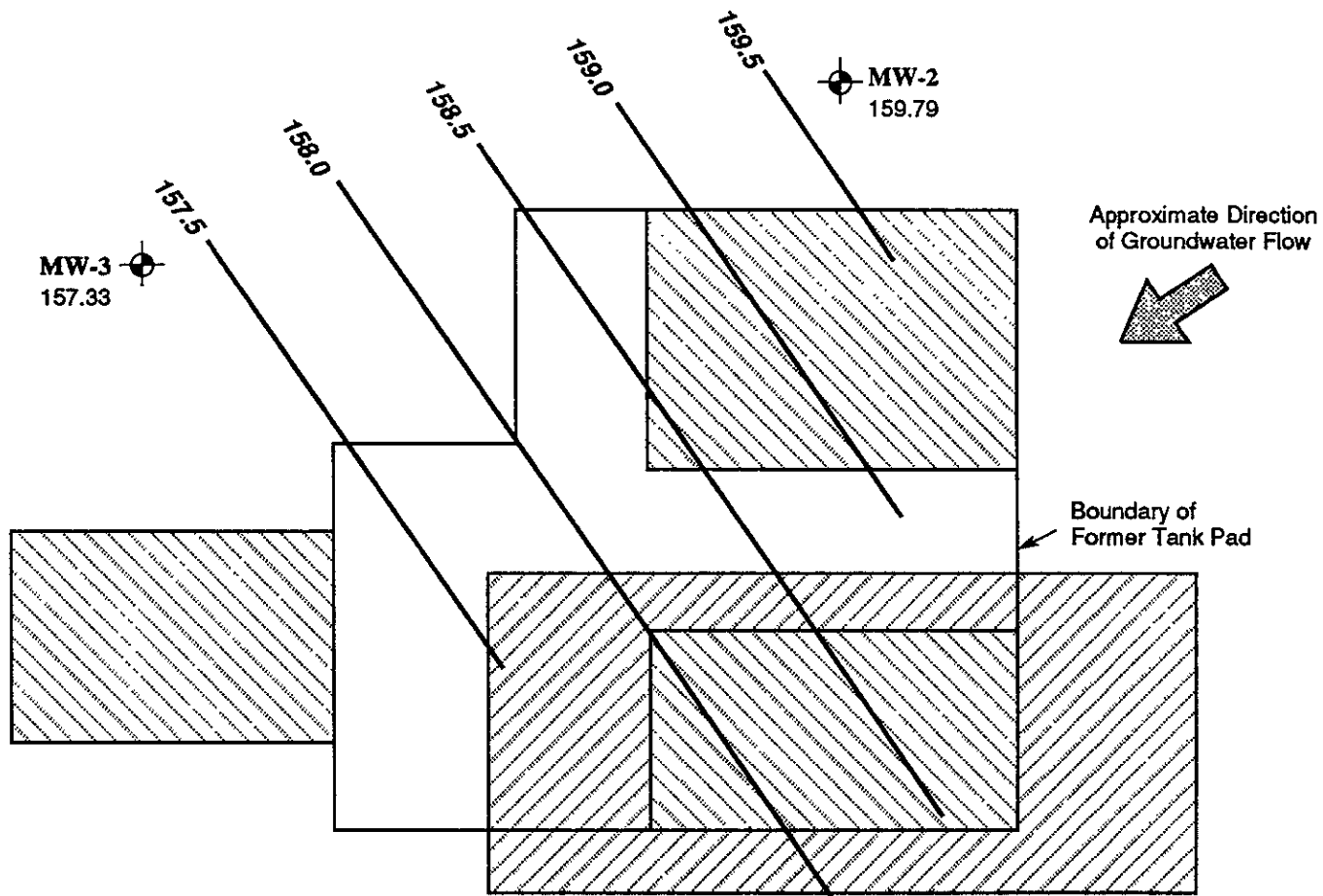
NOTE:
 "Reproduced with permission granted by THOMAS BROS. MAPS. This map is copyrighted by THOMAS BROS. MAPS. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission."







Scale in Miles

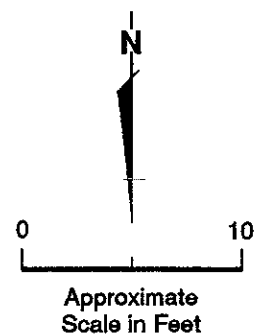
LOCATION MAP

BART
 Castro Valley Unified School District
 Corporation Yard
 Castro Valley, California



KEY:

-  **MW-1** 157.97 Monitoring Well Location and Groundwater Elevation in feet
-  Groundwater Contour Elevations in feet
-  Area Excavated to Remove Tanks
-  Area Overexcavated to Remove Contaminated Soil



GROUNDWATER ELEVATION CONTOUR MAP

BART
 Castro Valley Unified School District
 Corporation Yard
 Castro Valley, California

November 1993
 03715-051-043

Note: Groundwater measurements taken on August 30, 1993

APPENDIX A

**LABORATORY REPORTS AND
CHAIN-OF-CUSTODY RECORDS**



CKY incorporated Environmental Services

Date: 09/08/93
N9308-29

Dames & Moore
221 Main Street, Ste. 600
San Francisco, CA 94105-1907

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART

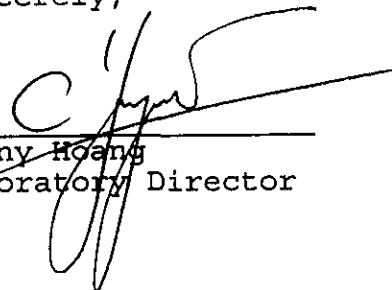
Enclosed is the laboratory report for samples received on 08/27/93. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The data reported includes:

<u>Method</u>	<u>No. of Analysis</u>
EPA 8020	3 Water
M8015 (Diesel/Gas)	3 Water
Total Pb	3 Water

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely,



Danny Hoang
Laboratory Director

EPA METHOD 5030/Mod. 8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

=====

CLIENT:	D&M	DATE REC'D:	08/27/93
PROJECT:	Bart	DATE ANALYZED:	09/02/93
CONTROL NO:	N9308-29	MATRIX:	Water

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DET. LIMIT</u> <u>(mg/L)</u>	<u>% SURRO</u> <u>RECOVERY</u>
Blank	N9308-29	ND	1.0	84
MW-1	N9308-29-1	ND	1.0	91
MW-2	N9308-29-2	ND	1.0	105
MW-3	N9308-29-3	ND	1.0	105

=====

CKY

EPA METHOD - 602
BTEX

```

=====
CLIENT:      D&M                      DATE REC'D:   08/27/93
PROJECT:     Bart                      DATE ANALYZED: 09/02/93
CONTROL NO:  N9308-29                 MATRIX TYPE:  Water
=====
  
```

RESULTS (ug/L)

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>Benz</u>	<u>Tol</u>	<u>Et Benz</u>	<u>Xyls</u>	<u>1,3-DCB</u>	<u>1,4-DCB</u>	<u>1,2-DCB</u>	<u>% SURRO RECOVERY</u>
Blank	N9308-29	ND	ND	ND	ND	ND	ND	ND	84
MW-1	N9308-29-1	ND	ND	ND	ND	ND	ND	ND	91
MW-2	N9308-29-2	ND	ND	ND	ND	ND	ND	ND	105
MW-3	N9308-29-3	ND	ND	ND	ND	ND	ND	ND	105
DETECTION LIMIT		1	1	1	1	1	1	1	

CKY

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	D&M	DATE REC'D:	08/27/93
PROJECT:	Bart	DATE EXTRACTED:	09/01/93
CONTROL NO:	N9308-29	DATE ANALYZED:	09/01/93
MATRIX:	Water		

=====

SAMPLE ID:	CONTROL NO:	RESULTS (mg/L)	H-C RANGE	%SURROGATE	
				1-4DCB	Di-n-Octo
Blank	N9308-29	ND	N.A.	118	140
MW-1	N9308-29-1	ND	N.A.	99	116
MW-2	N9308-29-2	ND	N.A.	102	124
MW-3	N9308-29-3	ND	N.A.	97	121

DETECTION LIMIT: 1.0 mg/L

=====



EPA METHOD 7421
TOTAL LEAD

=====
CLIENT: D&M DATE REC'D: 08/27/93
PROJECT: Bart DATE EXTRACTED: 09/01/93
CONTROL NO: N9308-29 DATE ANALYZED: 09/07/93
MATRIX: Water
=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(ug/L)</u>	<u>DETECTION LIMIT</u> <u>(ug/L)</u>
Blank	N9308-29	ND	10
MW-1	N9308-29-1	ND	10
MW-2	N9308-29-2	ND	10
MW-3	N9308-29-3	ND	10

=====

CKY

QUALITY CONTROL DATA

CLIENT: D&M DATE EXTRACTED: 09/01/93
PROJECT: Bart DATE ANALYZED: 09/07/93
CONTROL NO: N9308-29

=====

METHOD EPA 7421
MATRIX: Water

SAMPLE ID: N9308-29-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>
Lead	ND	25	120

CKY

QUALITY CONTROL DATA

CLIENT: D&M
PROJECT: Bart
CONTROL NO: N9308-29
DATE EXTRACTED: 08/27/93
DATE ANALYZED: 09/01/93

METHOD: EPA M8015D
MATRIX: Water

SAMPLE ID: N9308-30-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/L)	<u>AMOUNT SPIKED</u> (mg/L)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	ND	100	127	126	1

CKY

QUALITY CONTROL DATA

CLIENT: D&M DATE EXTC'D: N/A
 PROJECT: Bart DATE ANALYZED: 09/02/93
 CONTROL NO: N9308-29

=====
 METHOD EPA 8020
 MATRIX: Water

SAMPLE ID: N9308-30-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/L)	<u>AMOUNT SPIKED</u> (ug/L)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	50	102	102	0
Toluene	ND	50	102	102	0
Ethyl Benzene	ND	50	104	106	2
Xylene	ND	100	104	104	0

QUALITY CONTROL DATA

CLIENT: D&M
PROJECT: Bart
CONTROL NO: N9308-29
DATE EXTRACTED: N/A
DATE ANALYZED: 09/02/93

METHOD EPA M8015G
MATRIX: Water

SAMPLE ID: N9308-30-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/L)	<u>AMOUNT SPIKED</u> (mg/L)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gas	ND	2.0	115	120	4

CKY

C. CHAIN-OF-CUSTODY RECORD

WHIT Original (Accompanying Samples) YELLOW COPY - Collector PINK COPY - Project Manager

Boring or Well Number	Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES														FIELD NOTES:	Total Number Of Containers	Laboratory Note Number		
						VOA 601/6010	VOA 602/6020	VOA 624/6240	Semi Vol 625/6250	TPH 4-10.1	TPH 801 (M) DIESEL	WET Test	PNA 610/6100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TCLP	PH	ASBESTOS				VOI/L	HS/BTEX
1	MW-1			SPR 100	VOA'S																X	NO PRES	3	
	↓				2 PLASTIC																X	w/HNO3	1	
2	MW-2				2 AMBER				X													NO PRES	3	
	↓				VOA'S																X	w/HNO3	1	
3	MW-3				2 PLASTIC				X													NO PRES	3	
	↓				2 AMBER				X												X	w/HNO3	1	

NA308-29
R-4

RELINQUISHED BY: (Signature) Peter Davis DATE/TIME 8/27/93
 RECEIVED BY: (Signature) Sam DATE/TIME 8/27/93 4:20 PM

RELINQUISHED BY: (Signature) _____ DATE/TIME _____
 RECEIVED BY: (Signature) _____

RELINQUISHED BY: (Signature) _____ DATE/TIME _____
 RECEIVED BY: (Signature) _____

LABORATORY NOTES:

JOB NO.: 3715-051-043 SHEET 1 OF 1
 PROJECT: BART
 LOCATION: CV USD
 COLLECTOR: P. DAVIS DATE OF COLLECTION: 8/27/93

 **DAMES & MOORE**
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