
**WORK PLAN
SOIL AND GROUNDWATER INVESTIGATION
FORMER CASTRO VALLEY UNIFIED SCHOOL
DISTRICT CORPORATION YARD
21000 WILBEAM AVENUE
CASTRO VALLEY, CALIFORNIA**

**Job No. 03715-051-043
January 5, 1993**

 **DAMES & MOORE**

 **DAMES & MOORE**

221 MAIN STREET, SUITE 600, SAN FRANCISCO, CALIFORNIA 94105-1917
(415) 896-5858 FAX: (415) 882-9261

January 5, 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

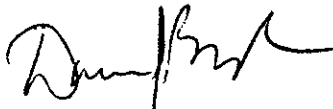
Work Plan
Subsurface Investigation for Unauthorized Release
Former School District Corporation Yard
21000 Wilbeam Avenue
Castro Valley Station


Dames & Moore is pleased to present this work plan for a subsurface investigation to address the unauthorized release of fuel hydrocarbon products from underground storage tanks that were removed from 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 work plan please do not hesitate to contact us.

Very truly yours,

DAMES & MOORE


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


Erik Skov
Project Geologist

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1.0 INTRODUCTION

This Work Plan presents Dames & Moore's technical approach for a soil and groundwater investigation to evaluate the extent of petroleum hydrocarbon contamination associated with the unauthorized release of fuel hydrocarbons from underground storage tank(s) (USTs) located at the former Castro Valley Unified School District (CVUSD) Corporation Yard (the site) at 21,000 Wilbeam Avenue in Castro Valley, California (Figure 1). The site will be used for 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 (Figure 2). In order to support the service and maintenance activities for district vehicles and landscape equipment, the school district operated 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 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 the report has been included as an attachment to this Work Plan.

1.2 TANK REMOVAL

During June 1992, the exact locations of the USTs were determined 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 ~~Serry~~^{SEERY} of the Alameda County Department of Environmental Health, Hazardous Materials Division (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. Copies of the manifests are included in Appendix B of this Work Plan.

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. Copies of the special waste manifests are included in Appendix B of this Work Plan.

Prior to backfilling of the excavations, groundwater encountered during removal of the tanks was pumped from the excavations into a holding tank. The Ora Loma Sanitary District approved the request for discharge of the water to their sewer system. A copy of the "Special Discharge Permit Application" submitted to the Ora Loma Sanitary District and the letter from the district authorizing the discharge are included in Appendix B.

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. A copy of the report filed is included in Appendix C of this Work Plan.

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, all structures located on the site were demolished and removed, and it is currently an empty lot. Prior to demolition, the site contained six buildings, a pump island, and three underground storage tanks (Figure 2).

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 (surface displacement within the last 11,000 years) faults 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 (10.1 miles southeast) faults. 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 are 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 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.

2.3 CONFIRMATORY SOIL SAMPLING

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.

Soil samples were collected by manually driving clean 3-inch diameter stainless steel sample rings into the freshly excavated soil at the tooth end of the excavator bucket. Samples were not collected from the floor of the excavation, as originally proposed, because of the presence of groundwater in the base of the excavations. The groundwater in the excavation was not required to be sampled, as would normally be required, because groundwater samples were previously collected and analyzed as, described in Section 1.1. Soil samples were immediately covered with teflon end sheets and plastic end caps, labeled with owner, location, date, time, collector's

initials, and analyses required. Samples were stored in individual plastic bags and placed in a cooler with ice for transport to the laboratory. Proper chain-of-custody documentation accompanied all samples to the laboratory. The 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 (Table 1), 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. The confirmatory sample locations are shown in Figure 3.

Table 2 of the report (Appendix A) summarizes the results of the soil and grab groundwater sampling conducted previously in borings drilled around the USTs. Table 1 of this work plan summarizes the results of the confirmatory soil samples collected from the tank excavations, fuel dispensers and regular tank vent line. Laboratory reports for data presented in Table 1 and 2, referenced above, are included in the previous investigation report.

2.4 WASTE DISPOSAL

2.4.1 Soil

Soil generated during the excavation of the USTs was segregated by excavation and placed on, and covered with, visqueen sheeting. All excavated material was stored on-site. To characterize the stockpiled soil for disposal purposes, a total of five (5) four-point composite samples were collected and analyzed. The soil was sampled by manually driving clean stainless steel sample rings into the stockpiled soil approximately 18 inches below the pile surface. Samples were sealed, labeled, and transported under proper chain-of-custody procedures. Soil samples were analyzed for TPH as gasoline, TPH as diesel, BTEX, Toxicity Characteristic Leaching Procedure (TCLP), BTEX, reactivity, conductivity and ignitability (RCI), as required by the landfill. Table 2 summarizes the results of the soil waste characterization analyses. ~~The results of the characterization analyses were presented to the landfill for approval.~~ The landfill

approved the material for disposal, which was then loaded into trucks and hauled to the landfill. Copies of the special waste manifests are included in Appendix B. Copies of the soil waste characterization laboratory reports are included in Appendix D.

2.4.2 Groundwater

Prior to backfilling, approximately 15,000 gallons of groundwater were pumped from the UST excavations into a holding tank. Samples of the groundwater were collected from the tank using a dedicated polyethylene bailer. Samples were transferred directly into laboratory supplied glassware using a bottom discharge device on the bailer to minimize the potential for volatilization. Samples were labeled and stored with ice in a cooler for transport to the laboratory. Samples were analyzed for TPH as gasoline, BTEX, TPH as diesel, cyanide, phenols, metals and pH as required by the Ora Loma Sanitary District. Table 3 summarizes the results of the groundwater waste characterization analyses. When results of the analyses were received they were presented to the Ora Loma Sanitary District. After reviewing the results, the sanitary district approved the discharge of the water to their sewer system. ~~The water was pumped from the tank into an on-site cleanout confirmed by the sanitary district to connect with the sewer system.~~ A copy of the "Special Discharge Permit Application" and a letter approving the discharge of the water to the sewer system is included in Appendix B. Copies of the groundwater waste characterization laboratory reports are included in Appendix D.

2.5 PERMITS

Prior to beginning field activities for soil borings and removal of the USTs, all necessary permits were obtained and all applicable local agencies were notified of the work at the site including: ACDEHHMD, Bay Area Air Quality Management District (BAAQMD), the Castro Valley Fire Department (CVFD), and the Alameda County Flood Control and Water Conservation District (Zone 7).

3.0 FIELD INVESTIGATION

In order to further evaluate the extent of hydrocarbon contamination and site hydrogeologic conditions, Dames & Moore intends to drill a minimum of ~~6 soil borings~~ as part of this investigation in the vicinity of the former UST locations. ~~Each~~ of these borings will be

converted to groundwater monitoring wells. Soil and groundwater samples will be collected for chemical analyses. A description of the field procedures is included in the following sections.

3.1 MONITORING WELL BORINGS

Monitoring well borings will be drilled using hollow-stem auger drilling methods. The drill rig will be fitted with 8-inch diameter hollow stem augers. Based upon previously observed depth to groundwater, it is anticipated these borings will be advanced to a maximum depth of 15 feet bgs. During drilling, soil samples will be collected at five foot intervals and at changes in lithology in the unsaturated zone using a Dames & Moore "U" type sampler, or equivalent, lined with 3-inch stainless steel sample rings. Soil samples will be described and classified by a Dames & Moore geologist according to the Unified Soil Classification System and screened for the presence of petroleum hydrocarbons using an organic vapor meter (OVM). ?

A minimum of two soil samples from above the water table in each boring will be submitted for chemical analyses. These samples will be analyzed for TPH as gasoline, TPH as diesel, BTEX, and total lead. Upon removal from the sampler, these samples will be covered with teflon end seals and plastic end caps, labeled with owner, location, date, time, samplers initials, and stored in individual plastic bags in a cooler of ice. Proper chain-of-custody documentation will accompany all samples to the laboratory.

All downhole drilling and sampling equipment will be steam cleaned after the installation of each well. After each soil sample is collected, the sampler will be disassembled and washed in a dilute solution of trisodium phosphate (TSP) oralconox and double rinsed with distilled water. All fluids generated during decontamination of drilling and sampling equipment will be contained and stored on-site in DOT approved 55-gallon drums.

3.2 GROUNDWATER MONITORING WELL INSTALLATION AND DEVELOPMENT

Dames & Moore anticipates installing a minimum of ~~6 groundwater monitoring wells~~. These wells will be installed in a phased approach. The initial phase will consist of installation of 3 wells in the vicinity of the former USTs. Figure 3 shows the locations of the proposed initial 3 monitoring wells. The site specific hydraulic gradient and groundwater flow directions will be evaluated utilizing these wells. Additionally, groundwater samples collected from these wells will be submitted for chemical analyses. The location and number of additional wells will then 6 wells?

be decided upon based on the data collected from the first 3 wells. Proposed locations of the additional wells are not shown in Figure 3 because they are contingent upon data collected from the initial 3 wells. We anticipate that at least 3 additional wells will be required in order to characterize the extent of fuel hydrocarbon contamination in the groundwater.

The monitoring wells will be constructed of 2-inch diameter, schedule 40 PVC. Well screens will be 10 feet in length, and because of the presence of fine materials expected to be encountered in the borings, will be constructed with 0.010-inch slot size. The filter pack for the well will consist of Lonestar 2/16, or equivalent, kiln-dried, graded sand. The filter pack will extend approximately 1-foot above the screened interval. A minimum one-foot bentonite seal will be placed above the filter pack. The remainder of the annular space of the well borehole will be sealed with a 5% to 7% bentonite cement-grout mixture. A typical well installation diagram is presented in Figure 4. The well will be completed with a traffic-rated vault box and a water-tight locking cap to secure the well head. After the well installations are completed, the location of the well casing will be surveyed with reference to an established benchmark and the elevation of the top of the casing will recorded to the nearest 0.01 foot.

*relative to
MSL -
yes!*

Each well will be developed a minimum of 48 hours subsequent to completion of the well seals. Development of the well will consist of a combination of surging, bailing, and pumping, if the well can sustain constant pumping. During well development the groundwater temperature, pH, and conductivity will be measured and recorded. Well development will continue until the well produces clean, relatively sediment-free water, or until the physical parameters of temperature, pH, and conductivity have stabilized. After well development has been completed the wells will be allowed to sit for 24 hours prior to purging sampling.

yes!

3.3 GROUNDWATER SAMPLING

Groundwater samples will be collected from the new wells and submitted for chemical analyses. Samples will be analyzed for TPH as gasoline, TPH as diesel, BTEX, and total lead by EPA Methods 8015M as gasoline, 8015M as diesel, 8020, and 6010, respectively. Prior to preparation for sampling, each well will be checked for the presence of free-product and the depth to the water table using an electronic interface probe. Wells that contain free-product will not be sampled. Each well to be sampled will be purged of approximately three to five casing volumes of water prior to sampling. The casing volume for each well will be calculated from the depth to water, total depth of the well and the diameter of the well. Purging of the

monitoring wells will be performed by bailing or pumping. During purging the groundwater temperature, pH, and conductivity will be measured. Once the purging is complete the water level will be allowed to recover to 80% of its original static level prior to sampling.

Groundwater samples will be collected using a dedicated polyethylene bailer and transferred directly into laboratory supplied sample containers. Samples will be transferred using a bottom discharge device on the dedicated bailer to minimize agitation and potential volatilization of the sample during transfer. Sample containers will be labeled with the following information: job number, owner, location, date, time, and sampler's initials. Once properly labeled the samples will be stored in a cooler with ice for transport to the laboratory. Proper chain-of-custody documentation will accompany the samples to the laboratory. One travel blank will accompany each shipment of groundwater samples to the laboratory. The travel blank will be analyzed for TPH as gasoline and BTEX.

3.4 WASTE DISPOSAL

All soil, development, purge and decontamination water generated during drilling, development, and sampling activities will be stored on-site in DOT approved 55-gallon drums. Material for disposal will be properly characterized and disposed of at an appropriate facility.

4.0 HEALTH & SAFETY

All environmental work at the site will be conducted in accordance with a site specific Health and Safety Plan. The Health and Safety Plan will conform to all standards set forth under OSHA 1910.120.

**TABLE 1
SUMMARY OF CONFIRMATORY SOIL SAMPLE ANALYTICAL RESULTS¹**

Sample Date	Sample No. ⁽²⁾	Analytes						Total Lead
		TPH Gas ⁽³⁾	TPH Diesel	B	T	E	X	
6/25/92	RTCS-1	ND	ND	ND	ND	ND	ND	27
	RTCS-2	ND	ND	ND	0.010	0.010	0.030	31
	DTCS-1	ND	ND	ND	ND	ND	ND	27
	DTCS-2	ND	ND	0.010	ND	ND	0.017	30
6/26/92	UTCS-1	1,100	0.14	7.3	2.8	44.0	20.0	0.04
	UTCS-2	81	80	4.8	1.4	37.0	16.0	45
	DDCS-1	7.5	ND	0.70	0.31	0.31	0.96	52
	RDCS-1	5.5	ND	0.44	1.0	0.20	1.2	60
	RTVCS-1	ND	ND	ND	ND	ND	ND	26
6/30/92 (After additional excavation)	UTCS-3	ND	ND	ND	ND	ND	ND	31
	UTCS-4	ND	ND	ND	ND	ND	ND	39
	UTCS-5	ND	ND	ND	ND	ND	ND	26
	UTCS-6	ND	ND	ND	ND	ND	ND	46
	DDCS-2	ND	ND	ND	ND	ND	ND	45

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Notes:

- 1) All results reported in mg/kg. All samples were analyzed by CKY Environmental Services of Pleasanton, California.
- 2) Sample locations are shown on Plate 3.
- 3) ND = not detected above laboratory reporting limits.

**TABLE 2
SUMMARY OF WASTE CHARACTERIZATION ANALYTICAL RESULTS⁽¹⁾ (WASTE SOIL)**

ANALYSES	DATE	SAMPLE NO. AND RESULTS				
WASTE SOIL	8/4/92	C1	C2	C3	C4	C5
BTEX Benzene		ND ⁽²⁾	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND
Xylenes		ND	ND	ND	ND	ND
TPH Gasoline		ND	ND	ND	ND	ND
TPH Diesel		16	7.2	45	150	28
TCLP BTEX Benzene		ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND
Xylenes		ND	ND	ND	ND	ND
STLC Lead		0.13 mg/L	0.11 mg/L	0.20 mg/L	0.30 mg/L	0.13 mg/L
Reactive Sulfide		ND	ND	ND	ND	ND
Reactive Cyanide		ND	ND	ND	ND	ND
Electric Conductivity		260 μ homs/cm	300 μ homs/cm	240 μ homs/cm	270 μ homs/cm	150 μ homs/cm
Ignitability		65°C	61°C	72°C	62°C	62°C

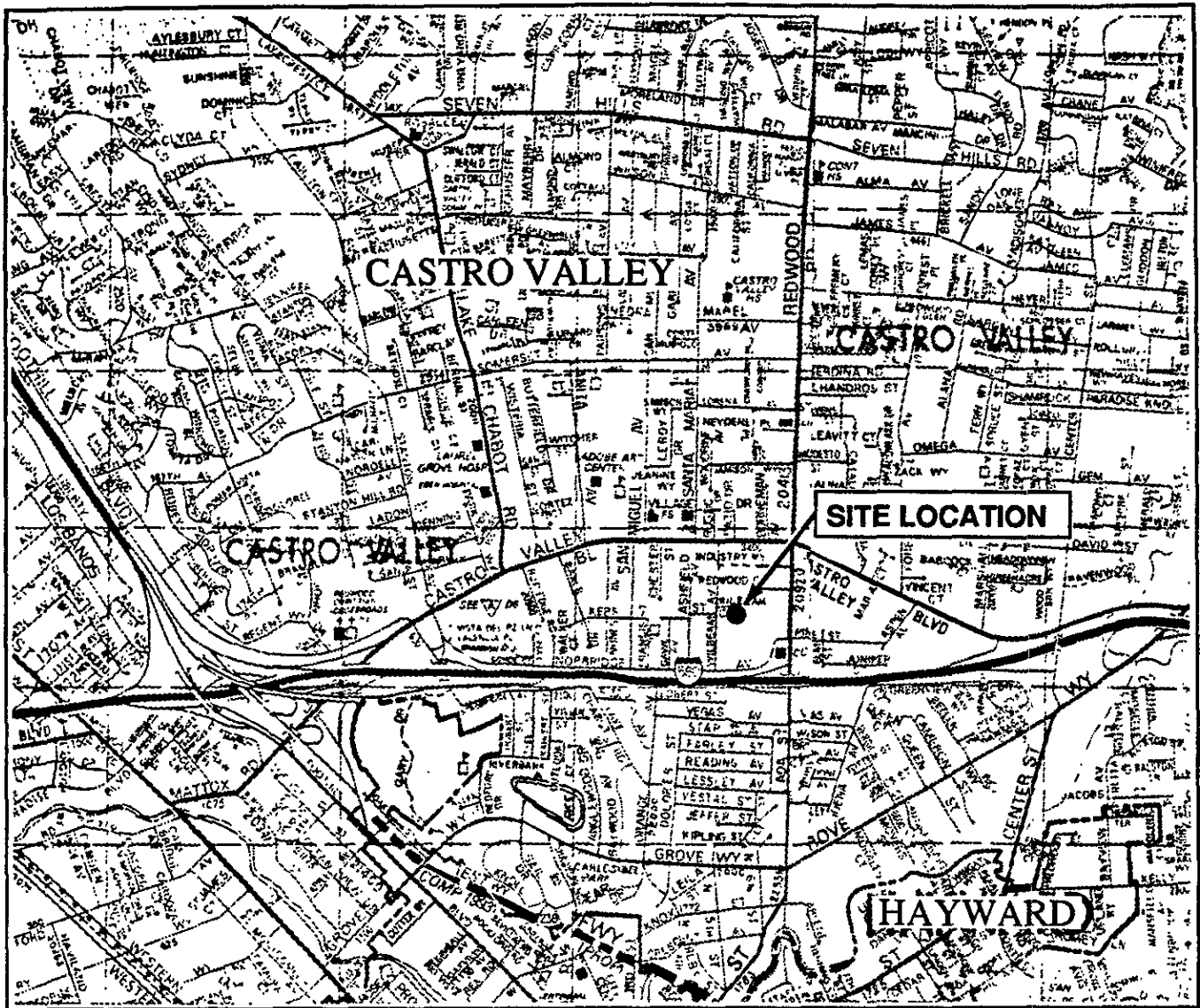
Notes:

- 1) All results reported in mg/kg (ppm) unless otherwise stated. All samples were analyzed by CKY Environmental Services of Pleasanton, California.
- 2) ND = not detected above laboratory reporting limits.

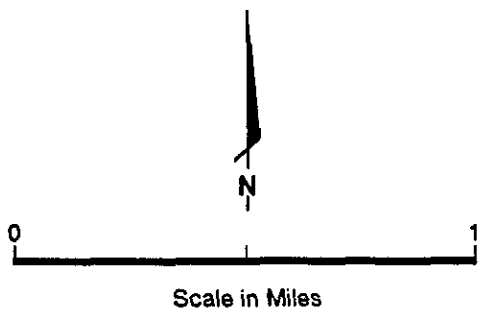
TABLE 3 SUMMARY OF WASTE CHARACTERIZATION ANALYTICAL RESULTS ⁽¹⁾ (WASTEWATER)		
ANALYSES	DATE	SAMPLE NO. AND RESULTS
WASTEWATER	8/4/92	WW1
BTEX Benzene		ND ⁽²⁾
Toluene		ND
Ethylbenzene		ND
Xylenes		ND
TPH Gasoline		ND
TPH Diesel		ND
	8/18/92	WT1
Cyanide		ND
Phenols		ND
TTLIC Metals		
Arsenic		ND
Cadmium		ND
Total Chromium		ND
Copper		0.01
Lead		ND
Mercury		ND
Nickel		0.06
Silver		ND
Zinc		0.06
pH		8.7

Notes:

- 1) All results except pH reported in mg/L. All samples were analyzed by CKY Environmental Services of Pleasanton, California.
- 2) ND = not detected above laboratory reporting limits.

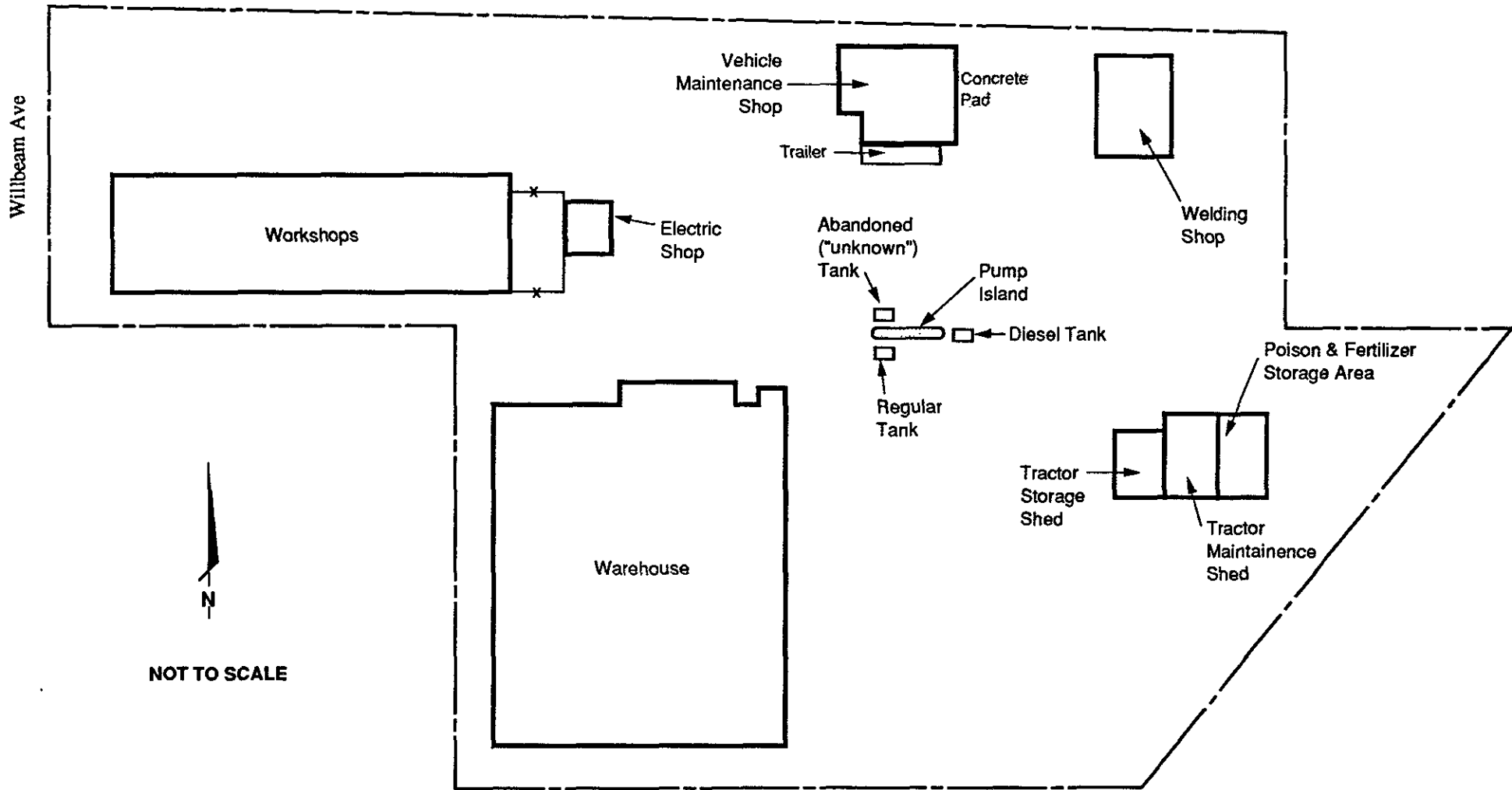


NOTE:
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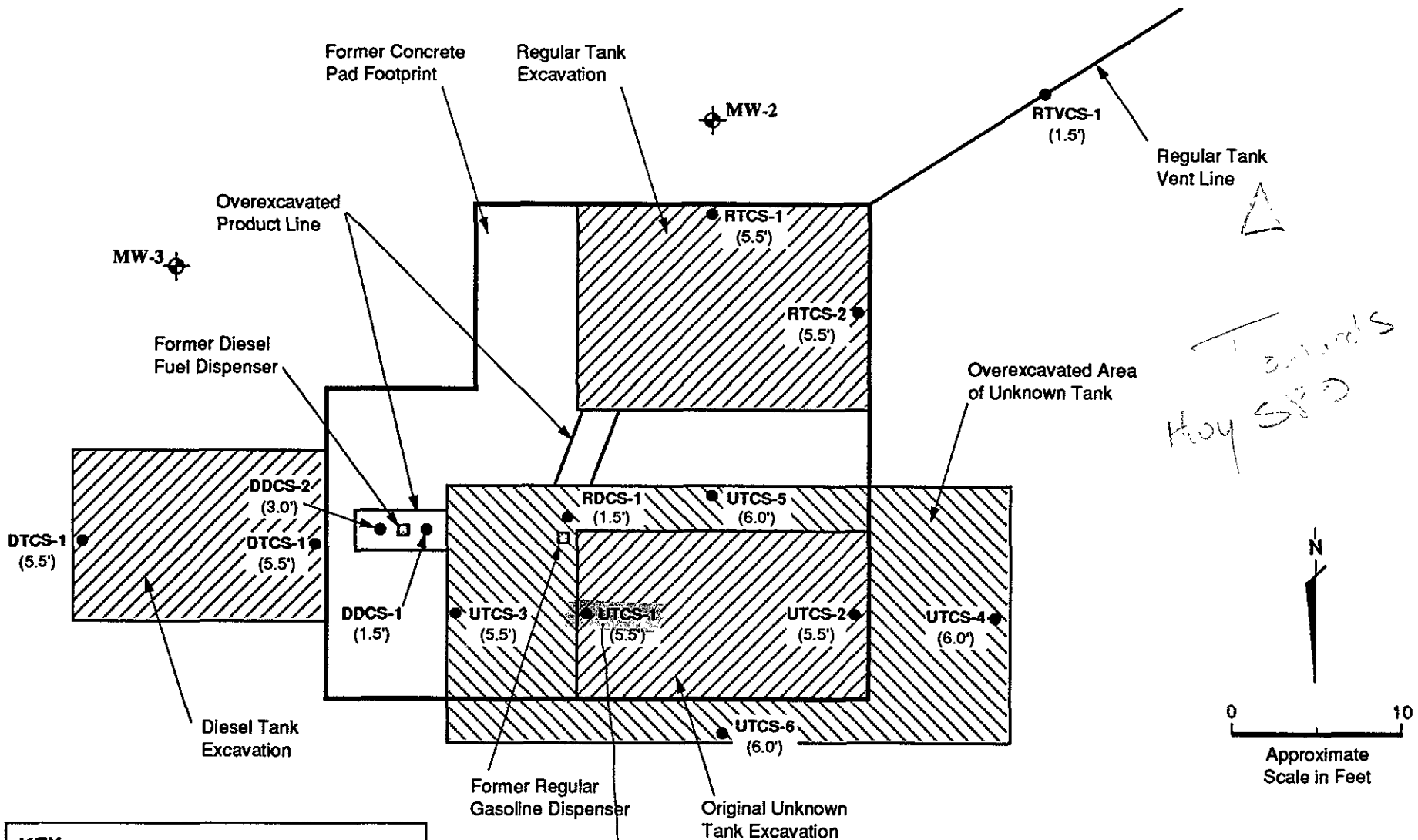
LOCATION MAP

BART
 December 1992 Castro Valley District Corporation Yard
 3715-051-043 Castro Valley, California



**SITE MAP SHOWING FORMER BUILDING
AND TANK LOCATIONS**

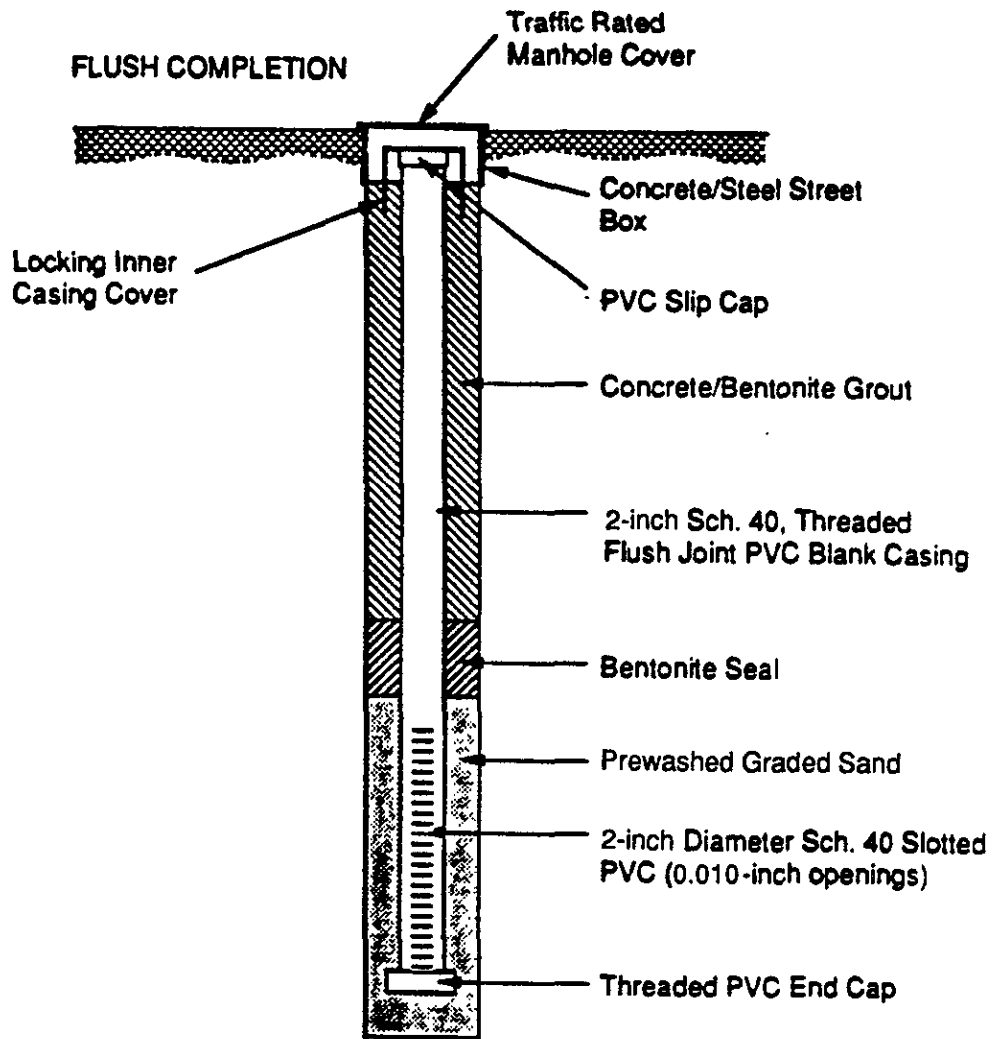
BART
 December 1992 Castro Valley District Corporation Yard
 3715-051-043 Castro Valley, California



KEY	
	Approximate Areas of Excavation
	Area of Overexcavation
● RTCS-1 (5.5')	Confirmatory Sample Location Sample Depth in Feet
⊕ MW-2	Proposed Monitoring Well Location

**TANK EXCAVATIONS AND CONFIRMATORY
SAMPLE LOCATIONS AND DEPTHS**

BART
December 1992 Castro Valley District Corporation Yard
3715-051-043 Castro Valley, California



TYPICAL MONITORING WELL DESIGN

BART
 December 1992 Castro Valley District Corporation Yard
 3715-051-043 Castro Valley, California

APPENDIX A
PREVIOUS INVESTIGATION REPORT

**REPORT
UNDERGROUND STORAGE TANK REMOVAL
ASBESTOS ABATEMENT AND
ENVIRONMENTAL INVESTIGATION
FORMER SCHOOL DISTRICT CORPORATION YARD
CASTRO VALLEY STATION**

 **DAMES & MOORE**

Job No. 03715-051-043
August 26, 1992
BART WD-07

 **DAMES & MOORE**

2101 WEBSTER STREET, SUITE 300, OAKLAND, CALIFORNIA 94612
(510) 839-3600 FAX: (510) 839-4461

August 28, 1992
Job No. 03715-051-043

Bay Area Rapid Transit District
P.O. Box 12688
Oakland, California 94604-2688

Attention: Mr. Gary Jensen
System Safety Department

Dear Gary:

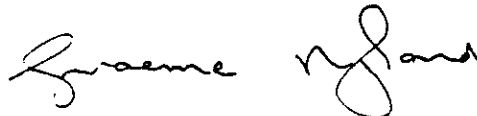
**Work Directive No. WD-07
Report Underground Storage Tank Removal
Asbestos Abatement and Environmental Investigation
Former School District Corporation Yard
Castro Valley Station
For Bay Area Rapid Transit District**

Dames & Moore is pleased to submit this report detailing the results of the environmental investigation and underground storage tank and asbestos removal conducted at the former Castro Valley Unified School District Corporation Yard located at 21000 Wilbeam Avenue in Castro Valley. This report is submitted in partial fulfillment of Work Directive WD-07.

We are currently making preparations for installation of monitoring wells at the site, and for disposal of soil and water from excavations. A Tank Closure Report is being prepared for submission to Alameda County. Please contact us if you have any questions regarding this report or ongoing activities under WD-07.

Very truly yours,

DAMES & MOORE



Graeme W. Nyland, C.E.G.
GES Program Manager

**REPORT
UNDERGROUND STORAGE TANK REMOVAL
ASBESTOS ABATEMENT AND
ENVIRONMENTAL INVESTIGATION
FORMER SCHOOL DISTRICT CORPORATION YARD
CASTRO VALLEY STATION**

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**REPORT
UNDERGROUND STORAGE TANK REMOVAL
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FORMER SCHOOL DISTRICT CORPORATION YARD
CASTRO VALLEY STATION**

1.0 INTRODUCTION

This report presents the results of the underground storage tank (UST) removal, asbestos abatement, and environmental investigation conducted at the former Castro Valley Unified School District (CVUSD) Corporation Yard (the site) located at 21000 Wilbeam Avenue in Castro Valley (Figure 1). The site will be used as part of the parking lot at the proposed Castro Valley Station.

2.0 BACKGROUND

The site is owned by BART and has been 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 has been used as the school district's maintenance/service yard. A two-phase Preliminary Site Assessment (PSA) was conducted for the Dublin/Pleasanton BART extension during December 1990 (PHASE A) and April 1991 (PHASE 2A). Activities conducted for the PSA included a walk-through of the site which consisted of inspecting several small sheds used for painting, carpentry, and plumbing work, a large warehouse, three small storage sheds and two work shop/garages (Bechtel Environmental, 1990 and 1991).

Results of the PSA indicated that the site was identified on the RCRA List as storing small quantities of hazardous materials. Two 2,000-gallon USTs, reported to contain gasoline and diesel fuel, and a fuel dispensing island were identified on-site. A site visit was conducted by a Dames & Moore engineer on March 24, 1992 to gather information necessary for UST removal. According to the CVUSD maintenance supervisor, George Moniz, the two USTs were installed around 1957 and are of single-walled steel construction. Fuel was dispensed through two product dispensers located in the center of a concrete slab overlying the USTs. During the time of the site visit 13 inches of residual product were measured in the diesel tank and 19 inches in the regular tank.

The PSA concluded that the potential for subsurface contamination to be present was likely. Because of the age of the buildings, asbestos-containing materials were also likely to be present in the linoleum, wall, roofing material, and possibly in the insulation in a few of the buildings. Based on the findings of the PSA, an asbestos survey was recommended prior to demolition of the buildings. The walk-through conducted as part of the PSA also identified several areas of the maintenance yard, based on visual observations and previous usage, that warranted surface and subsurface investigation. These included the following:

- The area near the USTs;
- Three small sheds, two of which were reported to contain or have contained poisonous products and one where oil changes were done on the vehicles;
- A small oil shed associated with the two garages;
- The former excavation area (behind the two garages) possibly from a small waste oil type tank; and
- The unpaved portion of the bus yard area where the buses were washed and stored.

3.0 OBJECTIVES AND SCOPE OF WORK

The objectives of WD-07 were to:

- Remove the existing USTs at the site;
- Remove any asbestos within the buildings prior to their demolition; and
- Assess any potential environmental problems at the site which might impact construction activities, worker health and safety, and long-term liability at the site.

To achieve the objectives, the scope of services performed included the following tasks:

- Task 1: Initial activities, including: review of documents provided by BART, preparation of a site-specific health and safety plan in accordance with 29 CFR 1910.120, acquisition of necessary permits, subcontractor procurement, marking of boring locations, and clearance of underground utilities;

- **Task 2:** Limited surface and subsurface soil sampling and grab groundwater sampling of areas described in Section 2.0, at the locations shown on Figure 2, including:

A. Six soil borings:

- i. three situated near the USTs,
- ii. one by the oil shed associated with the vehicle maintenance shop, and
- iii. two adjacent to the sloped concrete slab behind the vehicle maintenance shop.

The soil boring originally proposed near the former excavation area behind the vehicle maintenance shop was moved adjacent to the concrete slab behind the maintenance shop. In discussions with the CVUSD maintenance and operations supervisor, it was revealed that waste oil from maintenance operations was stored above ground, in 55-gallon drums, in a shed adjacent to the maintenance shop. Waste oil was not stored in an underground waste oil tank.

- B. Surface and shallow subsurface sampling in the unpaved area where the buses were washed, and near the poison storage area on the east end of the site.**

Originally it was proposed to sample soil near two small sheds reported to contain poison. Upon inspection of the site, it was noted that the second location was a storage building sitting on an asphalt surface with sloped drainage. It was concluded that the potential for released or spilled poisons to impact the soil beneath the asphalt was minimal and the sampling location abandoned.

- C. Collection of grab groundwater samples collected from the borings around the USTs.**

The samples collected under A, B, and C above were analyzed according to the analysis program listed in Table 1.

- Task 3: Asbestos abatement activities including: preparation of an inspection report, abatement of asbestos containing materials, disposal of the removed material, and preparation of a Final Abatement Report;
- Task 4: Removal of the USTs including: excavation, removal and disposal of the USTs, associated dispensers and piping, soil generated during excavation activities, and groundwater from dewatering of the excavations. Collection of confirmatory samples, approval from Alameda County Department of Environmental Health, Hazardous Waste Division(ACDEHHMD), for backfilling of the excavations and preparation of a Tank Closure Report;
- Task 5: Preparation of this report documenting the results and conclusions from the environmental investigation and recommendations for future work.

4.0 FIELD AND LABORATORY PROCEDURES

4.1 FIELD PROCEDURES

4.1.1 Soil Boring and Grab Groundwater Sampling

Six soil borings, 051WB01 through 051WB03 and 051SB01 through 051SB03 (Figure 2), were continuously cored to depths ranging from 13.0 to 18.0 feet on May 20 and 21, 1992. Prior to drilling, all borehole locations were checked by an underground utility locator. Drilling and sampling activities were conducted by HEW Drilling of Palo Alto, California using a truck mounted CME-75 drill rig equipped with 8-inch diameter hollow-stem augers. Continuous soil cores were collected using the CME continuous core system. Soil samples for chemical analysis were collected in 3-inch stainless steel rings and sealed with teflon liners and plastic lids. Samples were labeled with the following information: job number, client, boring location, date, depth, soil classification, and sampler's initials.

Six hand auger holes, SS02 through SS05 (Figure 2) were advanced to collect near-surface and shallow subsurface samples for chemical analysis. Soil samples from hand-auger holes were collected in stainless steel rings and packaged and labeled as described above.

All soils were logged according to the Unified Soil Classification System (USCS). Logs are presented in Appendix A. Soil cores not submitted for chemical analysis were stored in labeled core boxes.

Between sampling intervals, soil samplers were cleaned using a dilute solution of Alconox and double rinsed with distilled water. Between each boring location, all downhole drilling and sampling equipment was steam cleaned. All soil and wastewater generated during drilling and steam cleaning activities was placed in 55-gallon DOT approved drums and labeled as to the contents and date. All drums were stored on-site.

Grab groundwater samples were collected from soil borings 051WB01 through 051WB03 and 051SB01 through 051SB03. When groundwater was encountered, the augers were pulled back 1 to 2 feet and the water was allowed to rise up into the hollow stem of the augers. Prior to sampling, the water inside the auger was purged using a stainless steel bailer. Typically, 20 gallons were removed prior to sampling. The water was sampled using a dedicated polyethylene bailer and transferred directly into laboratory-supplied sample containers. Samples were transferred from the bailer using a bottom discharge device on the dedicated bailer to minimize agitation of the sample during transfer. Sample jars were labeled with the following information: job number, client, sample identification, date, and sampler's initials. All soil and groundwater samples were stored on ice in coolers and shipped following proper chain-of-custody protocol.

4.1.2 Asbestos Abatement

An asbestos inspection was conducted by Lee Engineering Enterprises, Inc. (Lee) in order to develop specifications for abatement. A walk-through inspection of all interior and exterior areas of buildings on the site was conducted. All plenum and crawlspace areas were observed. Wall cavities were directly inspected only if there was external evidence of potential asbestos-containing materials (ACM) within. Sampling which would have caused damage to structural building components was not performed in any of the structures.

Suspect asbestos-containing construction materials (SACM) identified during the inspection walk-through were sampled and divided into "Homogenous Applications," materials determined by the inspector to be homogenous based upon their color, texture and age. SACM were additionally classified by degree of friability, location and condition. Condition assessment of ACM followed criteria set forth in Federal AHERA legislation.

Samples were analyzed by EPA Method 600/M4-82-020 using Polarized-Light-Microscopy (PLM) with dispersion staining. All samples were analyzed by Analytical Laboratories of San Francisco, California. Once analytical results were received, specifications for the asbestos abatement were developed and sent to selected contractors for a pre-bid job walk. Three contractors attended the pre-bid job walk. All areas containing asbestos were viewed by the contractors, and bids for the abatement were submitted. Marcor of California, Inc. was the low bidder and was selected for the abatement.

All abatement activities were conducted in accordance with the specifications for asbestos abatement prepared by Lee. A detailed description of the abatement specifications and activities is included in Lee (1992).

4.1.3 Underground Storage Tank Removal

Prior to beginning field activities for removal of the USTs, all necessary permits were obtained and all applicable local agencies were notified of the work at the site including: Alameda County Department of Environmental Health, Hazardous Material Division (ACDEHHMD), Bay Area Air Quality Management District (BAAQMD), and the Castro Valley Fire Department (CVFD). The exact tank locations and orientations as well as other utility locations, including water and electricity, were marked by an underground utility locator, prior to beginning field activities. Tank removal activities were conducted by Lee.

Before beginning the tank removal the fuel dispensing island and concrete slab overlying the tanks were demolished. The soil overlying the tanks was excavated to expose the tops of the tanks to aid in the removal of residual product and rinsing of the tanks. Residual product remaining in the tanks and supply lines was removed and the tanks and lines were rinsed three times with a high-pressure steam cleaner. Rinsate from the cleaning activities was removed and disposed of with the residual product. Disposal of the residual product and rinsate was handled

by Erikson Inc., of Richmond, California. Proper classification and manifesting procedures were followed.

During excavation of the soil overlying the tanks, an abandoned 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 truncated near a small patched area in part of the concrete slab that had not been excavated to remove the other two tanks. When the patched area was excavated, 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, not documented to be present at the site. The overlying concrete and soil were excavated to confirm the presence of the tank. Upon approval from BART, the tank was prepared for removal in the same fashion as the other two tanks.

Once the tanks had been emptied, dry ice was introduced into the tank to displace the oxygen in the tank, rendering them inert. When the oxygen content of the tank was sufficient to cause the atmosphere inside the tank to be below the Lower Explosive Limit (LEL), approval was given by the ACDEHHMD inspector to remove the tanks from the excavations. Upon removal from the excavation, the tanks were visually inspected for the presence of corrosion, pitting, and holes. Once the condition of the tanks was documented, they were loaded onto a truck and removed from the site. The tanks were taken to a hazardous waste disposal facility under proper manifest.

After the tanks were removed from the excavations, confirmatory samples were collected from the sidewalls of the excavations in areas approved by the ACDEHHMD inspector. In addition, confirmatory samples were also collected from beneath the two fuel dispensers and along the vent line for the regular tank. Samples were not collected from the floor of the excavation, as originally proposed, because groundwater was encountered toward the base of the excavation. Confirmatory samples from the excavation walls were collected from just above the standing water line in the excavations. The results from the confirmatory sampling are discussed in Section 5.3.4.

After the confirmatory sample results were received and accepted by the ACDEHHMD, the excavations were backfilled. Prior to backfilling, all standing water was pumped out of the excavations into a holding tank onsite.

Four-point composite samples were collected for each 50 cubic yards of excavated and stockpiled soil and submitted for chemical analysis. The water in the tank was also sampled and tested. Disposal of the soil and water, to a Class III landfill and into the sanitary sewer respectively, will be documented in the Tank Closure Report.

4.2 LABORATORY PROCEDURES

All soil and groundwater samples were analyzed by CKY Analytical Laboratory of Pleasanton, California, a hazardous waste laboratory certified by the Department of Toxic Substances Control. Analytical laboratory reports and chain-of-custody records are included in Appendix B.

5.0 RESULTS

5.1 STRATIGRAPHY

Based on the data from the borings drilled for this investigation, the upper 1 to 2.5 feet consists of sand fill with occasional silt and gravel. The interval from approximately 2.5 to 8.0 feet consists of a dark grey to olive grey clay grading with sands and gravels. The lithology from 8.0 to 18.0 feet consists of a brown to yellowish brown silty sand/sandy clay. No soil sampling was conducted deeper than 18.0 feet. Lithologic logs of soil borings are presented in Appendix A.

Groundwater was encountered in all six soil borings at depths ranging from 11.0 feet in 051WB01 to 13.0 feet in 051WB02. When allowed to sit in the borehole, water levels typically would rise within 5 feet of the ground surface.

5.2 ASBESTOS SURVEY RESULTS AND ABATEMENT

Results of the asbestos survey identified ACM in the Workshop Building, Warehouse Building and Tractor Storage Shed (Figure 2). The Workshop Building was found to contain approximately 650 square feet of asbestos-containing vinyl floor tile (VFT) in offices 1, 2 and 3 (Figure 3). The roof of the Workshop Building had asphaltic roof sealant, which contained asbestos, at forty sites as follows: fourteen ventilation ducts, twenty skylight curbs, three (3)

flue pipes, and three small vents. The Plumbing Shop section of the Workshop (Figure 3) had one 8-inch diameter transite (transite is automatically assumed to contain asbestos) flue pipe for the heater.

The Warehouse Building was found to contain approximately 415 square feet of asbestos containing VFT in offices 1, 2 and 3 (Figure 4). In addition, two transite pipes and some 3-inch duct tape were identified in the Warehouse in the area between the office ceilings and main ceiling.

The Tractor Storage Shed was found to contain asbestos in the asphaltic roof sealant on the metal edging around the roof (Figure 5). No other SACM were observed in the Tractor Storage Shed.

The material identified to contain asbestos was removed by Marcor of California, in accordance with the abatement specifications prepared by Lee. The material was properly manifested and disposed of at a facility designed to accept asbestos waste (Lee, 1992).

5.3 SOIL AND GRAB GROUNDWATER ANALYTICAL RESULTS

5.3.1 Soil Boring Sample Results

A total of twelve soil samples was submitted for chemical analysis from the three soil borings drilled near the USTs. Table 2 summarizes the results of the surface soil analyses. As shown in Table 2, TPH as gasoline was detected in the 2.5-foot sample from boring 51WB01 at a concentration of 7.9 mg/kg (ppm) and in the 2.5- and 7.5-foot samples from boring 051WB03 at concentrations of 20.0 mg/kg and 0.82 mg/kg, respectively. BTEX were detected in the 2.5-foot sample from boring 051WB01 at a total concentration (sum of BTEX concentrations) of 0.74 mg/kg and in the 2.5- and 7.5-foot samples from boring 051WB03 at total concentrations of 1.57 mg/kg and 0.18 mg/kg, respectively. No TPH as diesel nor any organic lead were detected in borings 051WB01 and 051WB03.

A total of eight soil samples was submitted for chemical analysis from the three soil borings drilled near the vehicle maintenance shop. As shown in Table 2, Total Recoverable Petroleum Hydrocarbons (TRPH) were detected in all five samples from borings 051SB02 and

051SB03. No TRPH was detected in boring 051SB01. Concentrations of TRPH ranged from 7.0 to 14.0 mg/kg in 051SB02 and were detected at 6.0 mg/kg in both samples from 051SB03. No volatile organic compounds were detected in any of the eight soil samples submitted for chemical analysis.

5.3.2 Surface and Shallow Subsurface Soil Sample Results

Four borings, SS02 through SS05, were advanced with a hand auger to sample surface and shallow subsurface soils. Three sampling locations were selected in the unpaved area where the buses were washed (SS02 through SS04) and one near the poison storage area on the east end of the site (SS05) (Figure 2). Table 3 summarizes the results of the surface and shallow subsurface soil analyses. TRPH was detected in all three samples collected from 0.2 feet in the unpaved buswash area. Concentrations ranged from 70 mg/kg in SS02 to 780 mg/kg in SS04. Concentrations of TRPH at 3.0 feet ranged from non-detectable levels in SS02 to 6.0 mg/kg in SS04 and SS05. No volatile organic compounds were detected in any of the samples analyzed.

The sampling location near the area labeled to contain poisons was selected by pouring approximately 2 gallons of water on the floor in front of the poison storage locker. The direction of the runoff was observed, and the sample was collected at the area outside the shed where it appeared the water would pool. Two samples were collected from location SS05 (Figure 2), one at 0.2 feet and one at 2.5 feet. As shown on Table 3, beta-BHC, 4,4' DDE, and heptachlor were detected in the 0.2 foot sample at concentrations of 0.36, 0.17 and 0.09 mg/kg, respectively. No analytes were detected in the sample from 2.5 feet.

5.3.3 Grab Groundwater Samples

Four grab groundwater samples were collected as described in Section 4.1.1. Samples were collected from borings 051WB01, 051WB02, 051WB03, and 051SB02. ^{missing!} Table 4 summarizes the results of the groundwater sample analyses. As shown in Table 4, TPH as gasoline was detected in all three of the samples collected from the borings around the tanks. Concentrations ranged from 0.08 mg/L in 051WB02 to 1.9 mg/L (ppm) in 051WB03. TPH as diesel was detected in the samples from 051WB01 and 051WB03 at concentrations of 0.53 mg/L and 0.36 mg/L, respectively. However, these results are likely due to interference from heavy fraction gasoline constituents. BTEX were detected in the samples from borings 051WB01 and

051WB03. Concentrations of benzene ranged from 0.001 mg/L to 0.44 mg/L. Toluene ranged from 0.0012 mg/L to 0.09 mg/L. Ethylbenzene concentrations ranged from non-detected to 0.038 mg/L. Xylenes ranged from non-detected to 0.0055 mg/L. No organic lead was detected in any of the samples analyzed. The water sample from 051SB02 was analyzed for TRPH, based on concentrations of TRPH detected in the overlying soils. TRPH was not detected in the sample from 051WB02.

5.3.4 Confirmatory Sample Results

A total of 14 confirmatory soil samples was collected from the three excavations, the vent line for the regular tank, and beneath the two product dispensers (Figure 2). All samples were analyzed for TPH as gasoline, diesel, BTEX, and total lead. Table 6 summarizes the results of the confirmatory sampling. Figure 6 shows a map view of the excavations and sample locations.

Two confirmatory samples were collected from both the diesel and regular tank excavations. As shown on Table 5, the confirmatory samples from the regular tank, RTCS-1 and RTCS-2, were non-detect for TPH as gasoline and diesel. Toluene, ethylbenzene and xylenes were detected in RTCS-2 at concentrations of 0.01, 0.01 and 0.03 mg/kg, respectively. The confirmatory samples from the diesel tank excavations, DTCS-1 and DTCS-2 were non-detect for TPH as gasoline and diesel. Benzene and xylenes were detected in DTCS-2 at concentrations of 0.01 and 0.017 mg/kg, respectively. Total lead was detected in all four samples from the regular and diesel tank excavation at concentrations ranging from 27 mg/kg in RTCS-1 and DTCS-1 to 31 mg/kg in RTCS-2.

Two confirmatory samples were collected from the sidewalls of the third (unknown) tank excavation. As shown in Table 5, TPH as gasoline, diesel, and BTEX were detected in both samples, UTCS-1 and UTCS-2. TPH as gasoline was detected at 1,100 mg/kg in UTCS-1 and 810 mg/kg in UTCS-2, diesel at 140 and 80 mg/kg, benzene at 7.3 and 4.8 mg/kg, toluene at 2.18 and 1.4 mg/kg, ethylbenzene at 44 and 37 mg/kg and xylenes at 20 and 16 mg/kg, respectively. Total lead was detected at 40 mg/kg in UTCS-1 and 45 mg/kg in UTCS-2. The detections of diesel in the soil are likely due to interference from heavy fraction gasoline constituents.

Due to the elevated concentrations of TPH as gasoline, diesel and BTEX in the third tank, additional excavation work was conducted in an effort to remove the fuel hydrocarbon impacted soil. After the additional excavation was completed, four additional confirmatory samples, UTCS-3 through UTCS-6, were collected. As shown in Table 5, no TPH as gasoline, diesel or BTEX were detected in any of the samples. Total lead concentrations ranged from 26 mg/kg in UTCS-5 to 46 mg/kg in UTCS-6.

Two confirmatory samples, RDCS-1 and DDCS-1, were collected from beneath each of the fuel dispenser locations. As shown on Table 5, TPH as gasoline and BTEX were detected in both samples. TPH as gasoline was detected at 7.5 mg/kg in DDCS-1 and 5.5 mg/kg in RDCS-1, benzene at 0.7 and 0.44 mg/kg, toluene at 0.31 and 1.0 mg/kg, ethylbenzene at 0.31 and 0.20 mg/kg and xylenes at 0.96 and 1.2 mg/kg, respectively. Total lead was detected at 52 mg/kg in DDCS-1 and 60 mg/kg in RDCS-1. Because of the elevated concentrations of hydrocarbons, additional excavation work was also conducted beneath the diesel dispenser to the depth of the third tank excavation.

Additional excavation from the third tank removed the soil from beneath the regular fuel dispenser. Results from the second confirmatory sample from beneath the diesel fuel dispenser, DDCS-2, showed non-detected concentrations of TPH as gasoline, diesel, and BTEX. Total lead was detected at a concentration of 45 mg/kg.

One confirmatory sample was collected from beneath the regular tank vent line, RTVCS-1. As shown on Table 5, TPH as gasoline, diesel, and BTEX were not detected. The total lead concentration was 26 mg/kg.

6.0 DISCUSSION OF RESULTS

6.1 UNDERGROUND STORAGE TANKS

Soil analytical results from the two borings drilled adjacent to the regular gasoline UST indicated that the highest concentrations of TPH as gasoline and BTEX were detected in the shallow soils. Concentrations attenuated sharply between 2.5 and 5.0 feet, indicating these concentrations are probably the result of surface release, possibly from overfilling of the tank or a vehicle or leakage from supply lines.

Grab groundwater samples collected from the three borings around the USTs indicated the presence of TPH as gasoline and BTEX. Concentrations of benzene were detected above the Maximum Contaminant Level (MCL) for benzene of 0.001 mg/L. The MCL is a primary drinking water standard which is sometimes used as a clean up goal for remediation. Benzene was detected at concentrations up to 0.44 mg/L. Though the soil results did not indicate there had been a subsurface release, the results of the grab groundwater sampling did indicate that there had been a release from the tanks.

The condition of the diesel tank when removed was determined to be good. Though slightly corroded and pitted in some areas, no holes were observed in the tank. Some hydrocarbon odors were detected in overlying soil during excavation of the tank but no visible staining was observed. During excavation of soil overlying the regular tank, strong hydrocarbon odors were detected. After removal from the excavation, the regular UST was observed to have a large (greater than 0.5 inch) hole in the end of the tank near the top of the rim. There was no visible evidence of soil staining in the excavation; however, there was a dark product-like material, noted floating on the groundwater in the excavation. This may have been from the tar material the tank was wrapped in to protect it.

During excavation of the third (previously unknown) tank, very strong hydrocarbon odors were noted. When removed from the excavation, the tank was noted to have many holes in the ends and bottom. Heavy staining of the soil underlying the tank was noted in the excavation, though no floating product was detected on the groundwater in the excavation. Based on visual observations made during the tank removals, it appears that the third tank, abandoned in-place, was responsible for the majority of hydrocarbon contamination in the subsurface near the tanks.

Total lead concentrations from the two samples collected from beneath the fuel dispensers were below the Total Threshold Limit Concentration (TTLC), but were above 10 times the Soluble Threshold Limit Concentration (STLC), a criterion often used to determine if a soil sample has the potential to be above the STLC (a hazardous waste threshold criteria) if a waste extraction test is conducted.

Based on the results of the confirmatory sampling from the third tank excavation and beneath the fuel dispensers, it was determined that additional excavation was needed in these areas to reduce concentrations of fuel hydrocarbons in soil to acceptable levels in order to get

approval from the ACDEHHMD to backfill the excavations. In addition, overexcavations of impacted soil helped in removing potential source material to groundwater. Approximately 100 cubic yards of additional soil was removed from the third tank excavation and beneath the product dispensers. Material from these areas was removed until no more visible evidence (based on color and odor) of contamination was apparent. Four additional confirmatory samples from the third tank excavation and one from beneath the diesel dispenser were analyzed and had no detectable levels of TPH as gasoline, diesel, or BTEX. In addition, the total lead levels were below 10 times STLC. Approval to backfill the excavations was obtained from the ACDEHHMD.

All standing water was pumped from the excavations into a holding tank prior to backfilling. The pits were backfilled with crushed rock to just above where standing water was measured prior to removal. After the crushed rock was placed, the remainder of the excavation was filled and compacted, to the surface, with clean imported fill material.

Because it was apparent the tanks had leaked, an Unauthorized Release Report was filed with the ACDEHHMD. This will likely prompt the ACDEHHMD or the Regional Water Quality Control Board to impose an order on BART to conduct a subsurface investigation to determine the extent of hydrocarbon contamination in the soil and groundwater at the site.

6.2 OTHER SOURCES

Soil analytical results from two borings drilled adjacent to the sloped concrete pad behind the vehicle maintenance shop indicated the presence of TRPH in subsurface soils up to 10.0 feet bgs. There are no numerical threshold standards for TRPH. Oil and grease, which are usually the two main components detected in the TRPH analysis, are a composite of unspciated compounds and their toxicity cannot be evaluated without speciation of components. It is usually the presence of other components in association with oil and grease, such as volatile aromatic compounds and chlorinated organic compounds, that cause it to be toxic. In addition to the TRPH analyses, volatile aromatic compounds and chlorinated organic compounds were evaluated; neither were detected in the analysis. Based on these results, it appears reasonable to assume that the TRPH is composed primarily of non-toxic aliphatic or other long-chain organic compounds. Because TRPH was detected as deep as 10.0 feet bgs in one boring, a grab

groundwater sample was analyzed to determine if TRPH was present in the groundwater. No TRPH was detected.

Access to the vehicle maintenance shop was not gained prior to completion of soil boring and grab groundwater sampling activities. When entry to the building was made during the asbestos walk-through, it was discovered that the building contained a hydraulic lift. No reference to the hydraulic lift was made in the PSA reports. Hydrocarbon contamination may be associated with hydraulic lifts due to fluid leakage from the system.

Surface and shallow subsurface samples collected in the unpaved area where the buses were washed indicated the presence of elevated concentrations of TRPH in the surface samples collected at 0.2 feet. Concentrations dropped sharply in the samples at 3.0 feet. In addition to the TRPH, soil samples from this area were analyzed for volatile aromatic compounds and chlorinated organic compounds; neither were detected in any of the samples. Based on these results, it appears reasonable to assume that the TRPH is composed primarily of non-toxic compounds and confined to the near surface soils.

The near surface (0.2 feet) soil sample collected from near the poison storage area had detections of organochlorine pesticides. The levels of 4,4' DDE and heptachlor detected were well below their respective TTLC values and less than 10 times their STLC values. The sample collected at 3.0 feet was non-detect for all compounds analyzed. The pesticides appear to be confined to the surface soils.

When the inside of the tractor storage area was observed during the asbestos walk-through, it was noted that the surface (unpaved) had extensive staining of what appeared to be some type of light oil, though the exact type of compound could not be determined from field observations.

7.0 RECOMMENDATIONS

Based on the results of work conducted at the site, we recommend the following:

1. Preparation of a work plan and installation of a series of soil borings and monitoring wells at the site to evaluate the extent of fuel hydrocarbon impact to soil and groundwater. This action has already been instigated by BART.
2. Remove the hydraulic lift from the vehicle maintenance shop after demolition of the building. Excavate and stockpile any contaminated soil from beneath the lift, if it is determined a leak has occurred.
3. During site grading for construction of the parking lot, no material from around the open area where the buses were washed, the UST excavation area, the vehicle maintenance shop area, or any other stained soils should be removed from the site for disposal or used as engineered fill on another site without appropriate analytical testing.
4. The health and safety plan prepared by BART should include appropriate language to address potential worker exposure to oil and grease from areas where contaminated surface soils have been identified. Language should be included to cover the potential for encountering contaminated soil during the removal of the hydraulic lift from the vehicle maintenance shop.

8:0 REFERENCES

- Bay Area Transit Consultants, May 1992, Final Materials and Foundation Report for Castro Valley Station, Parking Lot, and Trackway, Alameda County, California.
- Bechtel Environmental, Inc., December 1990, Dublin/Pleasanton Extension, Preliminary Site Assessment, Phase A -- Prior Use Report.
- Bechtel Environmental, Inc., April 1991, Dublin/Pleasanton Extension, Preliminary Site Assessment, Phase 2A and Field Investigation Work Plan (Phase B).
- Lee Engineering Enterprises, Inc., July 1992, Final Report of Asbestos Removal Activities. BART WD-07 School District Corporation Yard, 21000 Wilbeam Avenue, Castro Valley, California.
- Woodward-Clyde Consultants. September 1989, Geology/Seismology and Hazardous Materials, Bay Area Rapid Transit District, Dublin/Pleasanton Extension Project.

* * * * *

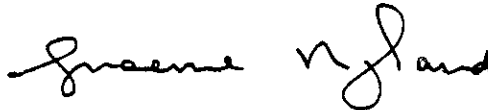
Tables 1 through 5, Figures 1 through 6, and Appendices A and B are attached and complete this report.

Respectfully submitted,

DAMES & MOORE



Erik Skov
Project Geologist



Graeme Nyland, C.E.G.
Senior Engineering Geologist

**TABLE 1
INVESTIGATION SAMPLING AND ANALYSIS PROGRAM**

SOIL			
Location of Sampling	Number of Borings or Sample Locations	Nominal Sample Collection Depth (ft.)	Analyses
Area Near USTs	3 soil borings 051WB01-051WB03	2.5 5.0 7.5 10.0 12.5 15.0	EPA 8015(M) Gasoline/8020, 8015(M) Diesel, DOHS Organic Lead
Concrete slab behind vehicle maintenance shop	2 borings 051WB02-051WB03	2.5 5.0 7.5 10.0 12.5 15.0 17.5	EPA 418.1, 8240
Oil Shed Associated with vehicle maintenance shop	1 boring 051WB01	2.0 5.0 7.5 10.0 12.5 15.0 17.5	EPA 418.1, 8240
Unpaved Bus Storage and Washing Area	3 near surface and shallow subsurface locations SS02-SS04	Near surface 3.0	EPA 418.1, 8240
Two Small Sheds Noted to Contain Poisons on East side of site	1 near surface and shallow subsurface at each location SS05	Near surface 3.0	EPA 8080, 8140
GROUNDWATER			
Sample Location	No. of Samples	Analyses	
Boring Near USTs	3	EPA 8015(M) Gasoline/8020, 8015 (M) Diesel, DOHS Organic Lead	

TABLE 2
SUMMARY OF SUBSURFACE SOIL ANALYTICAL DATA¹

Boring No.	Sample Depth (ft.)	Analytes								
		TPH Gasoline	TPH Diesel	B ^{1,2}	T ²	E ²	X ²	Organic Lead	Volatile Organics ³	TRPH ⁴
051WB01-01	2.5	7.9	ND ⁵	0.31	0.038	0.18	0.21	ND	- ³	-
051WB01-02	5.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB01-03	10.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB01-04	7.5	ND	ND	ND	ND	ND	ND	ND	-	-
051WB02-01	2.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB02-02	5.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB02-03	7.5	ND	ND	ND	ND	ND	ND	ND	-	-
051WB02-04	10.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB03-01	2.5	20.0	ND	0.81	0.13	0.25	0.38	ND	-	-
051WB03-02	5.0	ND	ND	ND	ND	ND	ND	ND	-	-
051WB03-03	7.5	0.820	ND	0.15	.0058	0.015	0.005	ND	-	-
051WB03-04	9.5	ND	ND	ND	ND	ND	ND	ND	-	-
051SB01-01	2.5	-	-	-	-	-	-	-	ND	ND
051SB01-02	5.0	-	-	-	-	-	-	-	ND	ND
051SB02-01	2.5	-	-	-	-	-	-	-	ND	14.0
051SB02-02	5.0	-	-	-	-	-	-	-	ND	8.0
051SB02-03	10.0	-	-	-	-	-	-	-	ND	7.0
051SB03-01	2.5	-	-	-	-	-	-	-	ND	6.0
051SB03-02	5.0	-	-	-	-	-	-	-	ND	6.0

1) All results in mg/kg (ppm). All samples analyzed by CKY Environmental Services of Pleasanton, California.

2) BTEX = Benzene, Toluene, Ethylbenzene, Xylenes

3) Volatile organic compounds by EPA Method 8240

4) TRPH = Total Recoverable Petroleum Hydrocarbons

5) ND = Not detected

6) - = Not analyzed

**TABLE 3
SUMMARY OF SURFACE AND SHALLOW SUBSURFACE SOIL ANALYTICAL DATA¹**

Sample No.	Sample Depth (feet)	Analytes					
		Volatile Organic Compounds	TRPH ²	Organochlorine Pesticides and PCBs ³			Organophosphorus Pesticides
				beta-BHC	4,4' DDE	Heptachlor	
SS02-01	0.2	ND	70	NA	NA	NA	NA
SS02-02	2.5	ND	ND	NA	NA	NA	NA
SS03-01	0.2	ND	560	NA	NA	NA	NA
SS03-02	3.0	ND	6	NA	NA	NA	NA
SS04-01	0.2	ND	780	NA	NA	NA	NA
SS04-02	3.0	ND	6	NA	NA	NA	NA
SS05-01	0.2	NA	NA	0.36	0.17	0.09	ND
SS05-02	2.5	NA	NA	ND	ND	ND	ND

- 1) All results in mg/kg (ppm). All samples analyzed by CKY Environmental Services of Pleasanton, California.
- 2) TRPH = Total Recoverable Petroleum Hydrocarbons.
- 3) Only detected analytes are reported.
 - = Not analyzed
 ND = Not detected

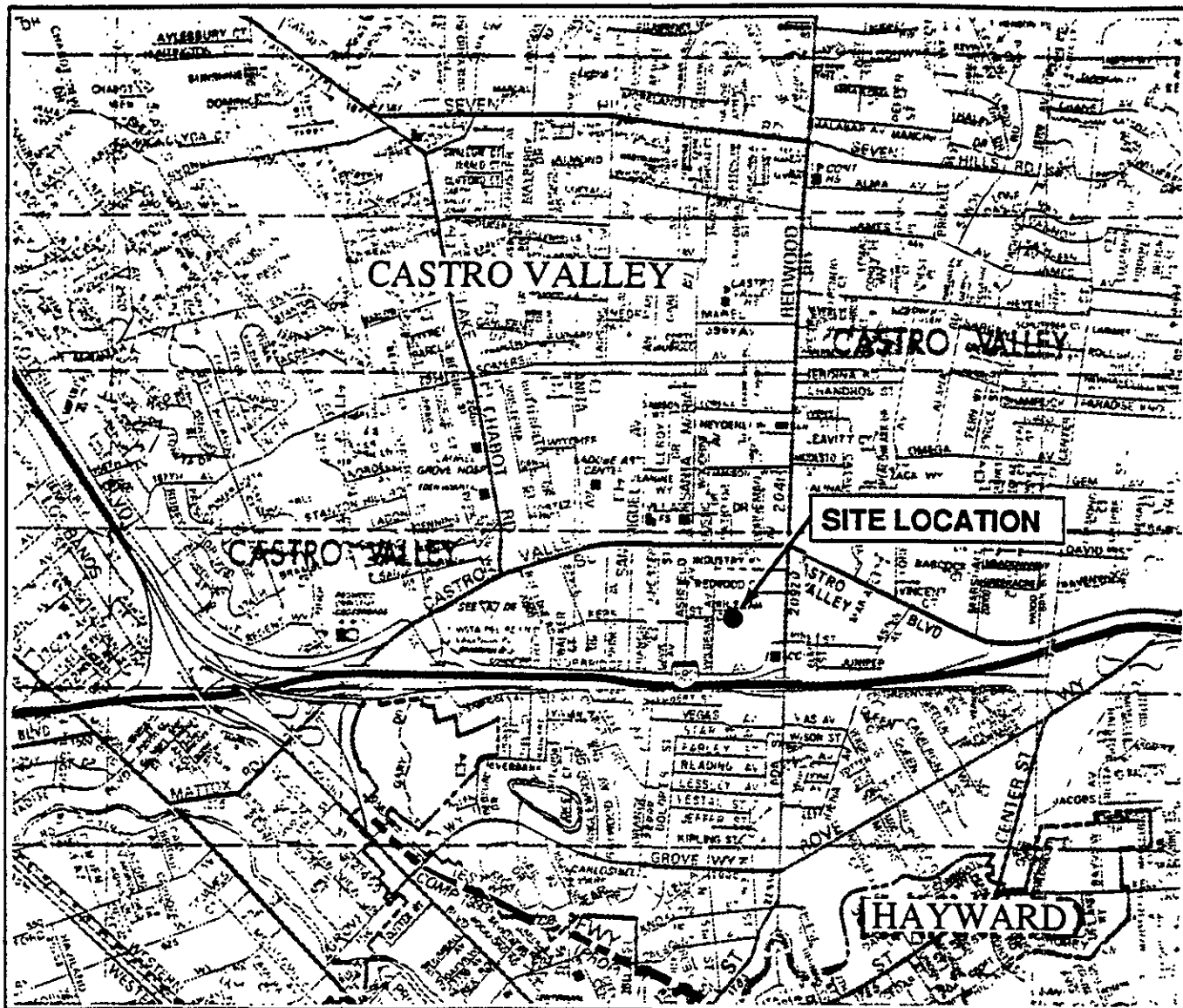
**TABLE 5
SUMMARY CONFIRMATORY SOIL SAMPLES ANALYTICAL RESULTS'**

Sample No.	Analytes						Total Lead
	TPH Gasoline	TPH Diesel	B	T	E	X	
RTCS-1	ND	ND	ND	ND	ND	ND	27
RTCS-2	ND	ND	ND	0.010	0.010	0.030	31
DTCS-1	ND	ND	ND	ND	ND	ND	27
DTCS-2	ND	ND	0.010	ND	ND	0.017	30
UTCS-1	1.100	0.14	7.3	2.8	44.0	20.0	0.04
UTCS-2	81	80	4.8	1.4	37.0	16.0	45
DDCS-1	7.5	ND	0.70	0.31	0.31	0.96	52
RDCS-1	5.5	ND	0.44	1.0	0.20	1.2	60
UTCS-3	ND	ND	ND	ND	ND	ND	31
UTCS-4	ND	ND	ND	ND	ND	ND	39
UTCS-5	ND	ND	ND	ND	ND	ND	26
UTCS-6	ND	ND	ND	ND	ND	ND	46
DDCS-2	ND	ND	ND	ND	ND	ND	45
RTVCS-1	ND	ND	ND	ND	ND	ND	26

Notes:

ND = not detected.

- 1) All results reported in mg/kg (ppm). All samples analyzed by CKY Environmental Services of Pleasanton, California.



NOTE:

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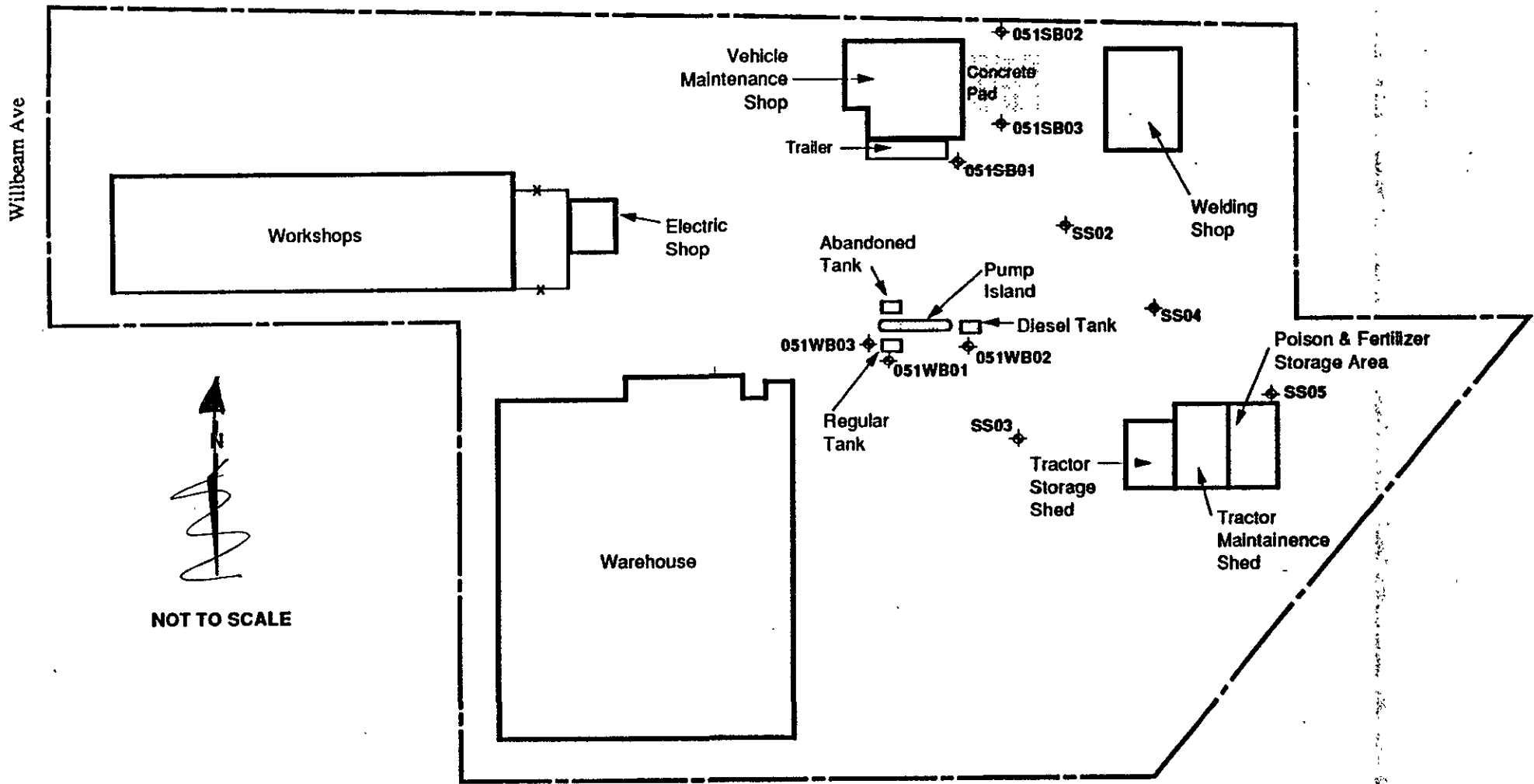
Scale in Miles

LOCATION MAP

BART
 August 1992
 3715-051-043
 Castro Valley District Coporation Yard
 Castro Valley, California

 DAMES & MOORE

FIGURE 1



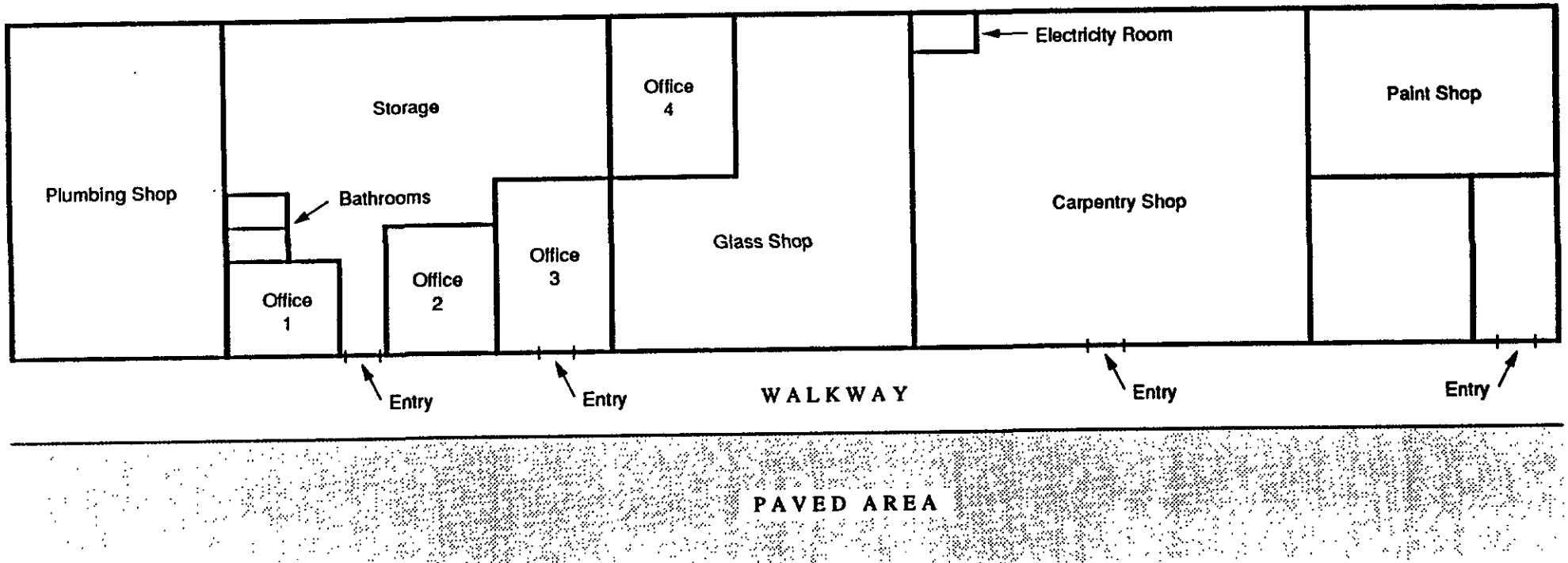
KEY

- ◆ SS Surface Sample
- ◆ SS/WB Soil Boring with Water Sample

SITE MAP SHOWING BORING LOCATIONS

August 1992
 3715-051-043

BART
 Castro Valley District Corporation Yard
 Castro Valley, California



NOT TO SCALE

WORKSHOP FLOORPLAN

BART
 August 1992 Castro Valley District Coporation Yard
 3715-051-043 Castro Valley, California


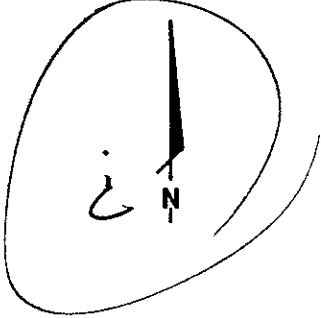
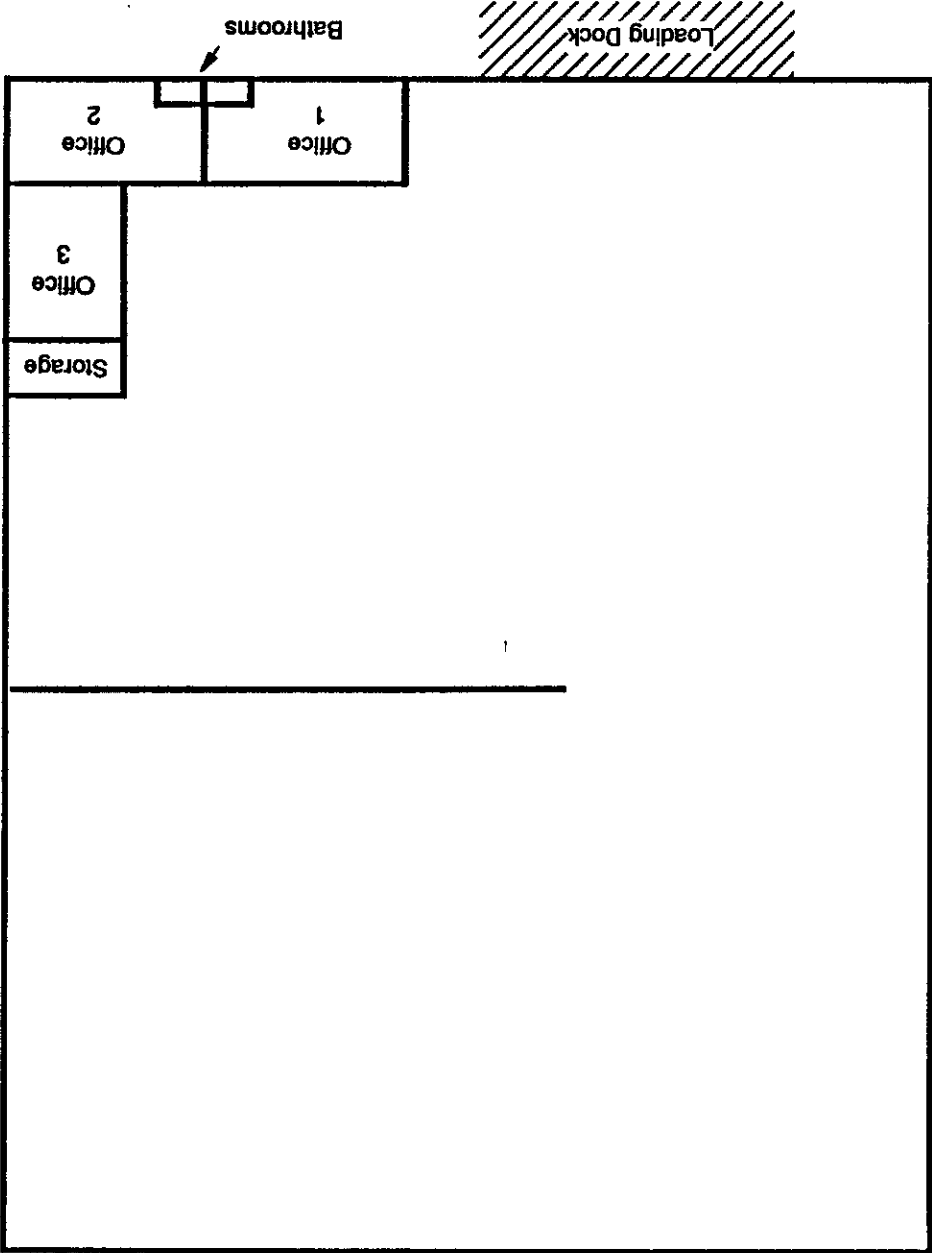
 DAMES & MOORE

FIGURE 3



NOT TO SCALE

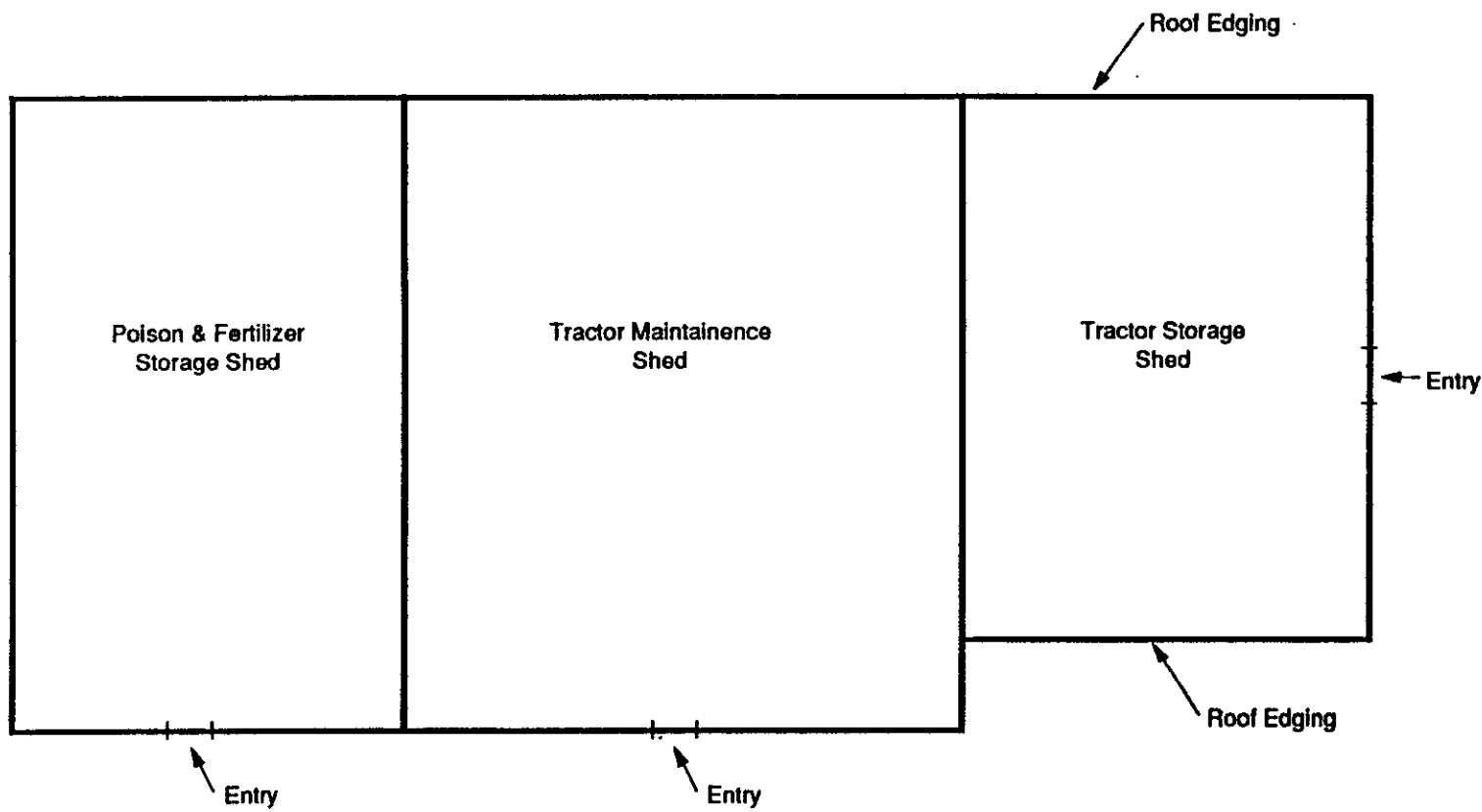
WAREHOUSE FLOORPLAN

BART

August 1992
 Castro Valley District Coporation Yard
 Castro Valley, California

3715-051-043
DAMES & MOORE

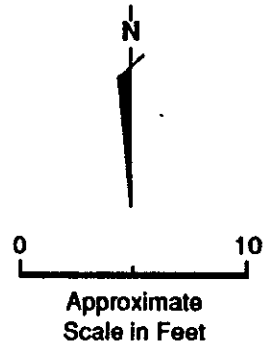
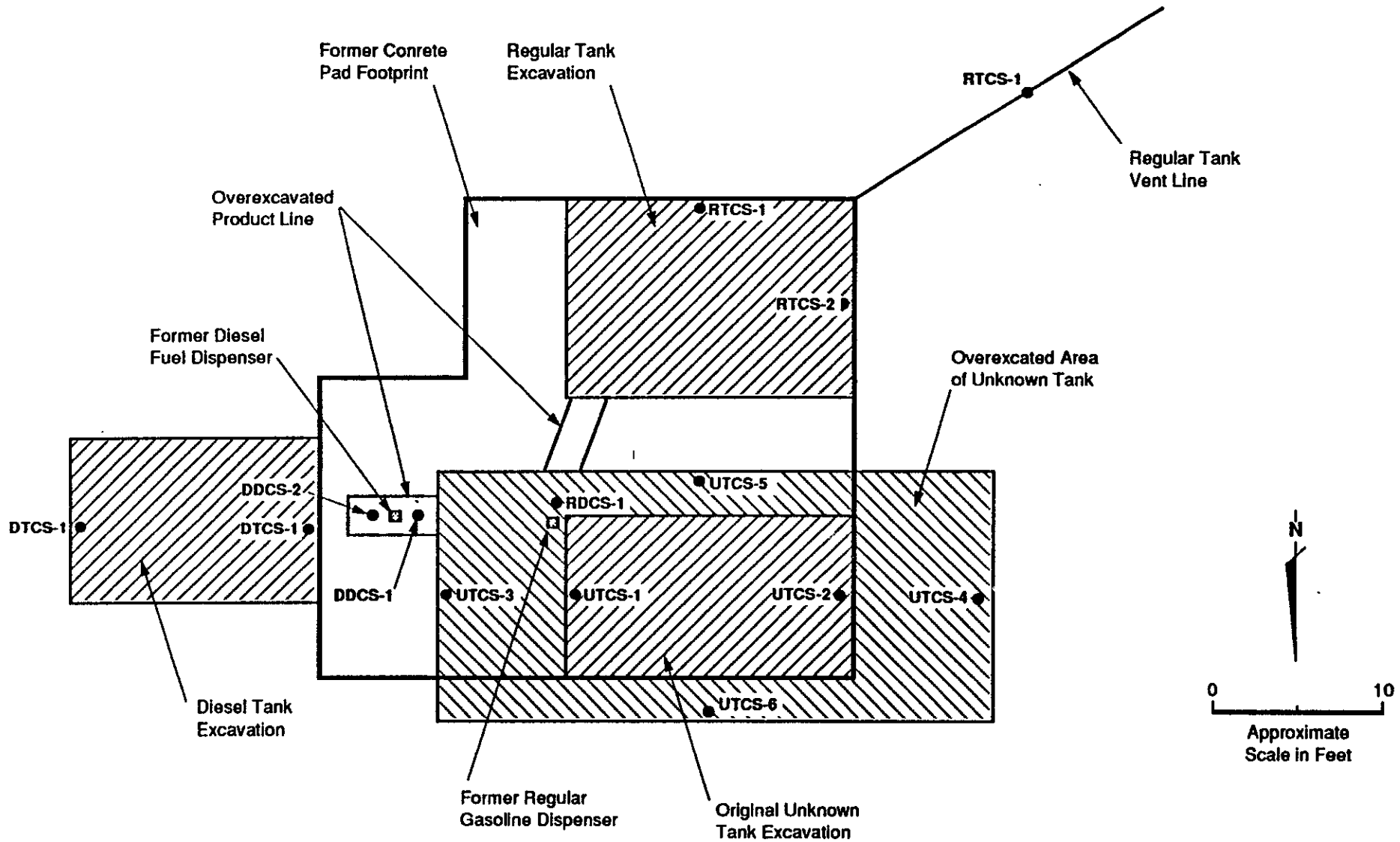
FIGURE 4



TRACTOR STORAGE SHED

August 1992
 3715-051-043

BART
 Castro Valley District Coporation Yard
 Castro Valley, California



KEY

- Approximate Areas of Excavation
- Area of Overexcavation
- Confirmatory Sample Location

TANK EXCAVATIONS

BART
 August 1992 Castro Valley District Corporation Yard
 3715-051-043 Castro Valley, California

DAMES & MOORE **FIGURE 6**

APPENDIX A
BORING LOGS

GES1.052

BORING 051SB01

Depth In Feet	Sampler Type		Sample Number / Sample Depth
	Inches Sampled / Inches Recovered		
0			
	C.C.	30/30	1/2.5
		60/60	
5	C.C.		2/5.0
	C.C.	60/60	3/7.5
10	C.C.		4/10.0
	C.C.	60/60	5/12.5
15	C.C.		6/15.0
	C.C.		7/17.5
20			
25			
30			
35			



Symbols

Description

Symbols	Description
SC	Asphalt 3 inches
CL	LIGHT BROWN CLAYEY SAND, moist, loose [FILL]
	DARK GREY CLAY, moist, medium stiff Grades with fine sand, trace coarse sand and fine gravel
	Grades light brown with fine sand
SM	Grades to LIGHT BROWN SILTY SAND, trace clay, moist, wet Mottled brown / yellowish brown Decreasing silt Trace fine gravel Grades without gravel Grades with coarse sand

NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

BORING 051SB02

Depth in Feet	Sampler Type	Inches Sampled / Inches Recovered	Sample Number / Sample Depth
0	C.C.	30/30	1/2.5
	C.C.	60/60	2/5.0
5			3/7.5
	C.C.	60/60	4/10.0
10			5/12.5
	C.C.	60/60	6/15.0
15			7/17.5
20			
25			
30			
35			



Symbols

Description

SM	BROWN GRAVELLY CLAYEY SAND, loose, dry [FILL]
CL	DARK GREY CLAY, medium stiff, moist. Sand and gravel layer at 18.0 inches.
SW	LIGHT BROWN SAND AND GRAVEL, trace silt and clay, wet. Strong reaction with hydrochloric acid.
CL	GREY CLAY with fine to coarse angular gravel, stiff, moist Decreasing gravel. Grades brown with silty sand. Grades with brownish yellow mottling Increasing mottling
SM	BROWN SILTY SAND, trace clay, dense
CL	DARK BROWN CLAY with silt, hard, moist Grades olive brown, increasing moisture
SM	BROWN SILTY SAND, medium dense, wet, light brown mottling

NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

BORING 051SB03

Depth in Feet	Sampler Type	Inches Sampled / Inches Recovered	Sample Number / Sample Depth
0			
	C.C.	30/30	1/2.5
		60/60	
5	C.C.		2/5.0
	C.C.	60/60	3/7.5
10	C.C.		4/10.0
	C.C.	60/60	5/12.5
15	C.C.		6/15.0
	C.C.		7/17.5
20			
25			
30			
35			



Symbols	Description
SP	Asphalt 5 inches
CL	GREENISH GREY SAND, fine grained, moist, trace gravel, slight hydrocarbon odor [FILL]
	DARK GREY SILTY CLAY, trace fine sand, moist, medium stiff
	Grades olive grey, trace gravel, angular to rounded
SM	Grades to BROWN SILTY SAND, medium dense, moist
CL	BROWN SILTY CLAY with sand, medium stiff, moist, brownish yellow mottling
SM	Silty sand with clay layer from 12.0 to 13.0 feet
	Decreasing silt, increasing fine sand

NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

BORING 051WB01

Depth in Feet	Sampler Type	Inches Sampled / Inches Recovered	Sample Number / Sample Depth
0			
	C.C.		1/2.5
5	C.C.		2/5.0
	C.C.		3/7.5
10	C.C.		4/10.0
	C.C.		5/12.5
15	C.C.		6/15.0
	C.C.		7/17.5
20			
25			
30			
35			

Symbols

Description

SP	Asphalt 4 inches
CL	BROWNISH YELLOW SAND, fine grained, moist, trace gravel, hydrocarbon odor, [FILL]
	DARK GREY CLAY, medium stiff, moist, hydrocarbon odor
	Grades olive grey
	Grades brown with silt and sand
	Brownish mottling
SM	BROWN TO LIGHT BROWN SILTY SAND with trace clay, medium dense, moist, manganese nodules up to 0.25 inches
CL	BROWN CLAY with sand and silt, medium stiff, manganese nodules



NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

BORING 051WB02

Depth in Feet	Sampler Type	Inches Sampled / Inches Recovered	Sample Number / Sample Depth
0			
	C.C.	30/30	1/2.0
	C.C.	60/60	3/7.5
5			2/5.0
	C.C.	60/60	3/7.5
10			4/10.0
15			
20			
25			
30			
35			

Symbols

Description

	Asphalt 3 inches
SC/ CL	LIGHT BROWN SANDY CLAYEY / CLAYEY SAND, trace gravel [FILL]
CL	DARK GREY CLAY, moist, medium stiff GRADES OLIVE GREY, carbonate rich, moist, trace fine gravel Grades light brown Mottled brown / yellowish brown, some fine gravel Grades with black staining



NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

BORING 051WB03

Depth in Feet	Sampler Type	Inches Sampled / Inches Recovered	Sample Number / Sample Depth
0	C.C.	30/30	
	C.C.	60/60	1/2.5
5	C.C.		2/5.0
	C.C.	60/60	3/7.5
	C.C.		4/9.5
10	C.C.		5/12.5
		24/24	
15			
20			
25			
30			
35			

Symbols

Description

SP	Asphalt 3 inches
CL	BROWNISH YELLOW SAND, fine grained, moist, trace gravel, hydrocarbon odor. [FILL]
	DARK GREY CLAY, very moist, stiff, hydrocarbon odor.
	Trace coarse sand
	Trace fine gravel, subrounded
	Grades grey with trace brownish yellow coarse sand
	Light brown / yellowish brown mottling
	Increasing moisture
	Increasing sand
	Grades with gravel, angular to rounded



NOTES

1. Boring completed at a depth of 18.0 feet on 5/21/92.
2. Boring log indicates interpreted subsurface conditions only at the location and the time the boring was drilled.
3. For an explanation of terms used see the Soil Classification Chart and Key to Sampling, Plate A-7

UNIFIED SOIL CLASSIFICATION CHART

LETTER	DESCRIPTION	MAJOR DIVISIONS			
GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	CLEAN GRAVELS (LITTLE OR NO FINES)	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	COARSE-GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE FOR VISUAL CLASSIFICATION, THE 1/4" SIZE MAY BE USED AS EQUIVALENT TO THE NO. 4 SIEVE SIZE	
GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES				
GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES				
GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES				
SW	WELL-GRADED SAND OR GRAVELLY SANDS, LITTLE OR NO FINES	CLEAN SANDS (LITTLE OR NO FINES)	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE		
SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES				
SM	SILTY SANDS, SAND-SILT MIXTURES				
SC	CLAYEY SANDS, SAND-CLAY MIXTURES	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)			
ML	INORGANIC SILTS, VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	SILTS & CLAYS LIQUID LIMIT LESS THAN 50			FINE-GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE THE NO. 200 U.S. STANDARD SIEVE IS ABOUT THE SMALLEST PARTICLE VISIBLE TO THE NAKED EYE
CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS				
OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY				
MH	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY	SILTS & CLAYS LIQUID LIMIT GREATER THAN 50			
CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS				
OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS				
PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS			



INDICATES DEPTH WATER ENCOUNTERED. WATER TYPICALLY ROSE IN THE BOREHOLE ABOUT 5 FEET BELOW GROUND SURFACE.

TYPES OF SOIL SAMPLERS

- U - DAMES & MOORE TYPE "U" SAMPLER
- P - PISTON-TUBE SAMPLER 3" DIAMETER
- CA - MODIFIED CALIFORNIA SAMPLER
- A - HAND AUGER

SOIL CLASSIFICATION CHART AND KEY TO SAMPLING

Dames & Moore

APPENDIX B
ANALYTICAL RESULTS



CKY incorporated Environmental Services

Date: 05/28/92
N9205-17

Dames & Moore
2101 Webster St. #300
Oakland, CA 94612

Attn: Mr. Eric Skov

Subject: Laboratory Report
Project: BART-Castro Valley


Enclosed is the laboratory report for samples received on 05/20/92. 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>
M8015/Gas/Diesel	3 Water
M8015/Gas/Diesel	12 Soil
EPA 8020	3 Water
EPA 8020	12 Soil
Organo lead	3 Water
Organo lead	12 Soil

The results are summarized on fifteen pages.

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

Sincerely,



Danny Hoang
Laboratory Director

*Subsurface soil & water
WB01, WB02, WB03*

EPA METHOD Mod. 8015
TOTAL PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	BART-CV	DATE EXTRACTED:	05/21/92
CONTROL NO:	N9205-17	DATE ANALYZED:	05/22/92
MATRIX:	Water		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>H-C RANGE</u>
051WB01-01	N9205-17-14	.53	C6-C14
051WB02-01	N9205-17-15	ND	N.A.
051WB03-01	N9205-17-16	.36	C6-C14

DETECTION LIMIT: 0.1 ppm

=====

CKY

EPA METHOD Mod. 8015
TOTAL PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	BART-CV	DATE EXTRACTED:	05/21/92
CONTROL NO:	N9205-17	DATE ANALYZED:	05/22/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>H-C RANGE</u>
051WB01-01-2.5	N9205-17-1	ND	N.A.
051WB01-02-5	N9205-17-2	ND	N.A.
051WB01-03-10	N9205-17-3	ND	N.A.
051WB01-04-7.5	N9205-17-4	ND	N.A.
051WB02-01-2	N9205-17-5	ND	N.A.
051WB02-02-5	N9205-17-6	ND	N.A.
051WB02-03-7.5	N9205-17-7	ND	N.A.
051WB02-04-10	N9205-17-8	ND	N.A.
051WB03-01-2.5	N9205-17-9	ND	N.A.
051WB03-02-5	N9205-17-10	ND	N.A.
051WB03-03-7.5	N9205-17-11	ND	N.A.
051WB03-04-9.5	N9205-17-12	ND	N.A.

DETECTION LIMIT: 0.1 ppm

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-17

METHOD: EPA M8015D
MATRIX: Soil

SAMPLE ID: N9205-17-3

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	ND	500	96	100	4

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-17

=====

METHOD: EPA M8015D
MATRIX: Water

SAMPLE ID: D.I.Water

<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	10	89	75	16

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	BART-CV	DATE ANALYZED:	05/22/92
CONTROL NO:	N9205-17	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>
051WB01-01	N9205-17-14	320	50
051WB02-01	N9205-17-15	80	50
051WB03-01	N9205-17-16	1900	50

=====

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	BART-CV	DATE ANALYZED:	05/22/92
CONTROL NO:	N9205-17	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
051WB01-01-2.5	N9205-17-1	7.9	.05
051WB01-02-5	N9205-17-2	ND	.05
051WB01-03-10	N9205-17-3	ND	.05
051WB01-04-7.5	N9205-17-4	ND	.05
051WB02-01-2	N9205-17-5	ND	.05
051WB02-02-5	N9205-17-6	ND	.05
051WB02-03-7.5	N9205-17-7	ND	.05
051WB02-04-10	N9205-17-8	ND	.05
051WB03-01-2.5	N9205-17-9	20	.05
051WB03-02-5	N9205-17-10	ND	.05
051WB03-03-7.5	N9205-17-11	.82	.05
051WB03-04-9.5	N9205-17-12	ND	.05

=====

EPA METHOD - 602
BTEX

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/92/92
PROJECT:	BART-CV	DATE EXTRACTED:	N/A
CONTROL NO:	N9205-17	DATE ANALYZED:	05/22/92
MATRIX:	Water		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS (ug/L)</u>			
		<u>Benz</u>	<u>Tol</u>	<u>Et Benz</u>	<u>Xyls</u>
051WB01-01	N9205-17-14	1.5	1.2	ND	ND
051WB02-01	N9205-17-15	ND	ND	ND	ND
051WB03-01	N9205-17-16	440	90	38	5.5
<u>DETECTION LIMIT</u>		0.5	0.5	0.5	0.5

=====

EPA METHOD - 8020
BTEX

```
=====
CLIENT:      Dames & Moore          DATE REC'D:   05/20/92
PROJECT:     BART-CV                DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-17              MATRIX TYPE:  Soil
=====
```

SAMPLE ID:	CONTROL NO:	RESULTS (ug/kg)			
		Benz	Tol	Et Benz	Xyls
051WB01-01-2.5	N9205-17-1	310	38	180	210
051WB01-02-5	N9205-17-2	ND	ND	ND	ND
051WB01-03-10	N9205-17-3	ND	ND	ND	ND
051WB01-04-7.5	N9205-17-4	ND	ND	ND	ND
051WB02-01-2	N9205-17-5	ND	ND	ND	ND
051WB02-02-5	N9205-17-6	ND	ND	ND	ND
051WB02-03-7.5	N9205-17-7	ND	ND	ND	ND
051WB02-04-10	N9205-17-8	ND	ND	ND	ND
051WB03-01-2.5	N9205-17-9	810	130	250	380
051WB03-02-5	N9205-17-10	ND	ND	ND	ND
051WB03-03-7.5	N9205-17-11	150	5.8	15	5.0
051WB03-04-9.5	N9205-17-12	ND	ND	ND	ND
DETECTION LIMIT		5	5	5	5

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-17

=====

METHOD EPA M8015G
MATRIX: Water

SAMPLE ID: Blank

<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>
Gasoline	ND	2	90	90	0

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QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9205-17

METHOD: EPA M8015G
 MATRIX: Soil

SAMPLE ID: N9205-17-3

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gasoline	ND	2	85	100	17



QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9205-17

METHOD: EPA 8020
 MATRIX: Water

SAMPLE ID: Blank

<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	10	99	97	2
Toluene	ND	10	84	84	0
Ethyl Benzene	ND	10	73	34	1
Xylene	ND	10	86	89	3

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9205-17

=====
 METHOD: EPA 8020
 MATRIX: Soil

SAMPLE ID: N9205-17-3

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	10	82	81	1
Toluene	ND	10	94	90	4
Ethyl Benzene	ND	10	66	68	2
Xylene	ND	10	92	96	4

=====

CKY

EPA METHOD 7420
ORGANIC LEAD

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	Bart-Castro Valley	DATE EXTRACTED:	05/27/92
CONTROL NO:	N920517	DATE ANALYZED:	05/28/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
051WB01-01-2 1/2'	N920517-1	ND	1.0
051WB01-02-5'	N920517-2	ND	1.0
051WB01-03-10'	N920517-3	ND	1.0
051WB01-04-7 1/2'	N920517-4	ND	1.0
051WB02-01-2'	N920517-5	ND	1.0
051WB02-02-5'	N920517-6	ND	1.0
051WB02-03-7 1/2'	N920517-7	ND	1.0
051WB02-04-10'	N920517-8	ND	1.0
051WB03-01-2 1/2'	N920517-9	ND	1.0
051WB03-02-5'	N920517-10	ND	1.0
051WB03-03-7 1/2'	N920517-11	ND	1.0
051WB03-04-9 1/2'	N920517-12	ND	1.0
Method Blank	N920517	ND	1.0

=====

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EPA METHOD 7420
ORGANIC LEAD

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/20/92
PROJECT:	Bart-Castro Valley	DATE EXTRACTED:	05/27/92
CONTROL NO:	N920517	DATE ANALYZED:	05/28/92
MATRIX:	Water		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
051WB01-01	N920517-14	ND	0.50
051WB02-01	N920517-15	ND	0.50
051WB-03-01	N920517-16	ND	0.50
Method Blank	N920517	ND	0.50

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: Bart-Castro Valley
CONTROL NO: N920517

=====

METHOD EPA 7420
MATRIX: Water

SAMPLE ID: Method Blank

<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>
Organo Lead	ND	2.5	104	104	0

CKY

CLIENT NAME: DAMES + MOORE
 ADDRESS: 2101 WEBSTER
CAK LAND T4612
 PHONE NO. 839-3600 FAX NO. _____
 PROJECT NAME: BART-CASTRO VALLEY
 SEND REPORT TO: ERIK STAV

**CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS**

DATE: 5/20/92
 PAGE 1 OF 2

N9205-17



CKY Incorporated
 Environmental Services
 3942 Valley Avenue, Suite F
 Pleasanton, CA 94566
 Tel: 510-846-3198
 Fax: 510-846-1236

SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	TURN AROUND TIME			ANALYSES REQUIRED										
				NORMAL	RUSH		418.1	8010/801	8020/802	8080/808	8240/824	8270/825	CAM Metals	M.B.V.F. (D.V.F.C.)	ORGANIC Pb		
				<input checked="" type="checkbox"/>	<input type="checkbox"/>		WATER	SOIL	OTHER								
1	051WB01-01-2 1/2'	—	3" RWB		GEAR OIL		X						X	X			
2	051WB01-02-5'	—					X						X	X			
3	051WB01-03-10'	—					X						X	X			
4	051WB01-04-7 1/2'	—					X						X	X			
5	051WB02-01-2'	—					X						X	X			
6	051WB02-02-5'	—					X						X	X			
7	051WB02-03-7 1/2'	—					X						X	X			
8	051WB02-04-10'	—					X						X	X			
9	051WB03-01-2 1/2'	—					X						X	X			
10	051WB03-02-5'	—					X						X	X			
11	051WB03-03-7 1/2'	—					X						X	X			
12	051WB03-04-9 1/2'	—					X						X	X			
13	051WB03-05-12 1/2' (HOLD)	—					X						X	X			

COMMENTS:

Relinquished by: (Signature) <u>Peter Davis</u>	Date: <u>5/20/92</u>	Received by: (Signature) <u>Erik Stav</u>	Date: <u>5/24/92</u>	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:
Company: <u>Dames + Moore</u>	Time: <u>1:10</u>	Company: <u>CKY</u>	Time: <u>16:15</u>	Company:	Time:	Company:	Time:

Storage/Disposal of Samples: Sample will be stored at CKY for 30 days at no charge and at \$10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.

JUN 01 '92 17:01 CKY INC.

P. 3

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

CLIENT NAME: DAMES + MOORE
 ADDRESS: 2101 WEBSTER ST.
OKLAND 94612
 PHONE NO. 939-3600 FAX NO. _____
 PROJECT NAME: BART-CASTRO VALLEY
 SEND REPORT TO: CRK SLOV

DATE: 5/20/92
 PAGE 2 OF 2

N9205-17



CKY Incorporated
 Environmental Services
 3942 Valley Avenue, Suite F
 Pleasanton, CA 94566
 Tel: 510-846-3188
 Fax: 510-846-1236

SAMPLER NAME/SIGNATURE					TURN AROUND TIME			ANALYSES REQUIRED										
					NORMAL	FLUSH		418.1	M901 (diesel)	8010/801	8020/802	8080/808	8340/834	8270/825	CAM Metals	CR6A/K P2	M8015/802	
SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION														
				WATER	SOIL	OTHER												
4) CS1WB01-01	5/20/92	10:15	2 AMBER(2)				X										X	
CS1WB01-01		10:50	VON'S(3)															X
5) CS1WB02-01		1:20	2 AMBER(2)				X										X	
CS1WB02-01		1:25	1:00's(3)															X
6) CS1WB-03-01		3:20	2 AMBER(2)				X										X	
CS1WB-03-01		3:25	VON'S(3)															X

COMMENTS:

Relinquished by: (Signature) <u>Peter Dan</u>	Date: <u>5/20/92</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5/20/92</u>	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:
Company: <u>DAMES + MOORE</u>	Time: <u>A:10</u>	Company: <u>CRK</u>	Time: <u>16-11</u>	Company:	Time:	Company:	Time:

Storage/Disposal of Samples: Sample will be stored at CKY for 30 days at no charge and at \$10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.

JUN 01 '92 17:02 CKY INC.



**CKY incorporated
Environmental Services**

Date: 06/11/92
N9205-19

Dames & Moore
2101 Webster St., #300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART- Castro Valley

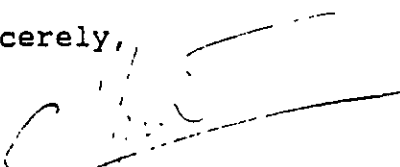
Enclosed is the laboratory report for samples received on 05/21/92. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The data reported includes:

<u>Method</u>	<u>No. of Analysis</u>
EPA 418.1	1 Water

The results are summarized on one page.

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

Sincerely,



Danny Hoang
Laboratory Director

Water from boring SBO1

EPA METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/21/92
PROJECT:	BART-CV	DATE EXTRACTED:	05/29/92
CONTROL NO:	N9205-19	DATE ANALYZED:	05/29/92
MATRIX:	Water		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
051SB01-01	N9205-19-23	ND	1.0

=====

ANALYSIS REQUEST FORM

Client: DAMES & MOORE
 Project: BART-CASTROVALLEY
 Date Due: _____

Requested by: ERIK SKOGL
 Date: 5/29
 Time: 1400
 (Called) Written/Walk in

Page ____ of ____

CKY CONTROL NOS.	CLIENT SAMPLE IDS.	LOCATION	ANALYSIS NEEDED	CONTAINER
<u>117205-19-25</u>	<u>051SB02-01</u>	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Requested -in by: _____



CKY incorporated Environmental Services

Date: 05/28/92
N9205-19

Dames & Moore
2101 Webster St., #300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART-Castro Valley

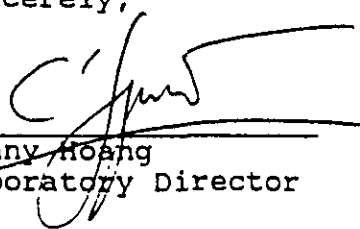
Enclosed is the laboratory report for samples received on 05/21/92. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The data reported includes:

<u>Method</u>	<u>No. of Analysis</u>
EPA 418.1	7 Soil
EPA 8240	7 Soil

The results are summarized on ten pages.

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

Sincerely,



Danny Hoang
Laboratory Director

Subsurface soil

SB01, SB02, SB03

EPA METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/21/92
PROJECT:	BART-CV	DATE EXTRACTED:	05/22/92
CONTROL NO:	N9205-19	DATE ANALYZED:	05/28/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
051SB01-01-2.5	N9205-19-1	ND	5
051SB01-02-5	N9205-19-2	ND	5
051SB02-01-2.5	N9205-19-8	14	5
051SB02-02-5	N9205-19-9	8	5
051SB02-04-10	N9205-19-11	7	5
051SB03-01-2.5	N9205-19-15	6	5
051SB03-02-5	N9205-19-16	6	5

=====

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB01-01-2.5        DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-1            MATRIX TYPE:   Soil
=====

```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> <u>(ug/kg)</u>	<u>DETECTION LIMIT</u> <u>(ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	80	70-121
Toluene -d ₈	92	81-117
Bromofluorobenzene	77	74-121

ND = Not Detected

CKY

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB01-02-5         DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-2          MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> <u>(ug/kg)</u>	<u>DETECTION LIMIT</u> <u>(ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
% <u>SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	101	70-121
Toluene -d ₈	95	81-117
Bromofluorobenzene	92	74-121

ND = Not Detected

CKY

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB02-01-2.5        DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-8            MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	77	70-121
Toluene -d ₈	86	81-117
Bromofluorobenzene	82	74-121

ND = Not Detected

CKY

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB02-02-5          DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-9            MATRIX TYPE:   Soil
=====

```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	86	70-121
Toluene -d ₈	92	81-117
Bromofluorobenzene	76	74-121

ND = Not Detected

64

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

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=====
CLIENT:      Dames & Moore          DATE REC'D:   05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB02-04-10         DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-11          MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> <u>(ug/kg)</u>	<u>DETECTION LIMIT</u> <u>(ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodiflouromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	109	70-121
Toluene -d ₈	97	81-117
Bromofluorobenzene	103	74-121

ND = Not Detected

**EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS**

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=====
CLIENT:      Dames & Moore          DATE REC'D:   05/21/92
PROJECT:     BART-CV                DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB03-01-2.5        DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-15          MATRIX TYPE:   Soil
=====

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<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	.5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	79	70-121
Toluene -d ₈	79	81-117
Bromofluorobenzene	83	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

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=====
CLIENT:      Dames & Moore                DATE REC'D:   05/21/92
PROJECT:     BART-CV                      DATE EXTRACTED: 05/22/92
SAMPLE ID:   051SB03-02-5                DATE ANALYZED: 05/22/92
CONTROL NO:  N9205-19-16                 MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> <u>(ug/kg)</u>	<u>DETECTION LIMIT</u> <u>(ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodiflouromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	99	70-121
Toluene -d ₈	87	81-117
Bromofluorobenzene	82	74-121

ND = Not Detected

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-19

=====

METHOD EPA 418.1
MATRIX: Soil

SAMPLE ID: N9205-20-2

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
IR. REF. STD	2	150	94	96	2

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9205-19

=====
 METHOD: EPA 8240
 MATRIX: Soil

SAMPLE ID: N9205-19-8

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
1,2 DCE	ND	10	72	70	2
Benzene	ND	10	87	84	3
TCE	ND	10	81	80	1
Toluene	ND	10	92	92	0

CKY

CLIENT NAME: DANES & NICOLE
 ADDRESS: 101 WEAVER ST.
CALHOUN 94612
 PHONE NO. 837-3600 FAX NO. _____
 PROJECT NAME: BART-CASTRO VALLEY
 SEND REPORT TO: ERIK SKOV

CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS

DATE: 5/21/92
 PAGE 1 OF 2

N9205-19



GY Environmental Services
 1942 Cedar Avenue
 Pleasanton, CA 94566
 Tel: 510-446-1188
 Fax: 510-846-1236

SAMPLER NAME/SIGNATURE	TURN AROUND TIME			ANALYSES REQUIRED										
	NORMAL	RUSH		M8015	8010/601	8020/602	8030/603	8210/624	8270/625	CAM Metals				
SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION										
				WATER	SOIL	OTHER								
CS15BC1-01-2 1/2'	5/21/92	None	3" SS RWG		CA		X			X				
CS15BC1-02-5'		HOLD												
CS15BC1-03-7 1/2'														
CS15BC1-04-10'														
CS15BC1-05-12 1/2'														
CS15BC1-06-15'														
CS15BC1-07-17 1/2'														
CS15BC2-01-2 1/2'							X			X				
CS15BC2-02-5'		HOLD												
CS15BC2-03-7 1/2'														
CS15BC2-04-10'														
CS15BC2-05-12 1/2'														
CS15BC2-06-15'														
CS15BC2-07-17 1/2'														

COMMENTS

Relinquished by: [Signature] Date: 5/21/92
 Received by: [Signature] Date: 5/21/92
 Company: DANES & NICOLE Company: CKI

Storage: Samples will be held by GY for 30 days. If not analyzed, samples will be disposed of as hazardous waste.

CLIENT NAME: DAMES + MOORE
 ADDRESS: 2101 WEBSTER ST.
CALLAND 94612
 PHONE NO. 837-3600 FAX NO. _____
 PROJECT NAME: PORT - CASTRO VALLEY
 SEND REPORT TO: ERIK SKOV

CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS

DATE: 5/21/92
 PAGE 2 OF 2

N9205-19



GY Incorporated
 Environmental Services
 3942 Valley Avenue, Suite F
 Pleasanton, CA 94566
 Tel: 510-846-3198
 Fax: 510-846-1236

SAMPLER NAME/SIGNATURE				TURN AROUND TIME			ANALYSES REQUIRED							
				NORMAL	<input checked="" type="checkbox"/>									
				RUSH	<input type="checkbox"/>									
SAMPLE NUMBER	SAMPLING DATE/TIME	PRESEPARATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION			118.1	M9015	8010/601	8020/802	8080/808	6240/624	8270/825	CMM Metals
				WATER	SOIL	OTHER								
5	5/21/92	NONE	3" S PINE		GRAV									
6		HOLD												
7														
8														
9														
10														
11														
12	5/21/92	HOLD	2 AMBER (1)		GRAV									
13		HOLD												
14		HOLD												

COMMENTS: HOLD WATER SAMPLES FOR POSSIBLE 118.1 ANALYSIS.

Relinquished by Signature: <u>[Signature]</u>	Date: <u>5/21/92</u>	Received by Signature: <u>[Signature]</u>	Date: <u>5/21/92</u>	Relinquished by Signature: _____	Date: _____	Received by Signature: _____	Date: _____
Company: <u>Dames + Moore</u>	Time: <u>11:10</u>	Company: <u>CKI</u>	Time: <u>16:10</u>	Company: _____	Time: _____	Company: _____	Time: _____

Storage/Disposal of Samples: Sample will be stored at GYM for 30 days at no charge and at \$10/sample month thereafter. Disposal of sample by the contractor will be charged if not stored.



**CKY incorporated
Environmental Services**

Date: 06/12/92
N9205-25

Dames & Moore
2101 Webster Street # 300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: Bart-Castro Valley


Enclosed is the laboratory report for samples received on 05/29/92. 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 418.1	6 Soil
EPA 8240	6 Soil
EPA 8080	2 Soil
EPA 8140	2 Soil

The results are summarized on eighteen pages.

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

Sincerely,



Danny Heang
Laboratory Director

Surface & shallow subsurface soils

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

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=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   Blank                  DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25              MATRIX TYPE:  Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> (ug/kg)	<u>DETECTION LIMIT</u> (ug/kg)
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	80	70-121
Toluene -d ₈	92	81-117
Bromofluorobenzene	86	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

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=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   051SS02-01-2         DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-3          MATRIX TYPE:  Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> (ug/kg)	<u>DETECTION LIMIT</u> (ug/kg)
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
% <u>SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	86	70-121
Toluene -d ₈	88	81-117
Bromofluorobenzene	79	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                 DATE EXTRACTED: N/A
SAMPLE ID:   051SS02-02-3          DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-4           MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodiflouromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	79	70-121
Toluene -d ₈	83	81-117
Bromofluorobenzene	84	74-121

ND = Not Detected

GK

**EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS**

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=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   051SS03-01-2         DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-5          MATRIX TYPE:  Soil
=====

```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	73	70-121
Toluene -d ₈	82	81-117
Bromofluorobenzene	79	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   051SS03-02-3          DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-6            MATRIX TYPE:   Soil
=====

```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	89	70-121
Toluene -d ₈	100	81-117
Bromofluorobenzene	93	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   051SS04-01-2         DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-7          MATRIX TYPE:   Soil
=====
  
```

<u>PARAMETERS (8240)</u>	<u>RESULTS (ug/kg)</u>	<u>DETECTION LIMIT (ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodifluoromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
% <u>SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	99	70-121
Toluene -d ₈	105	81-117
Bromofluorobenzene	110	74-121

ND = Not Detected

EPA METHOD - 8240
VOLATILE ORGANICS BY GC/MS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: N/A
SAMPLE ID:   051SS04-02-3          DATE ANALYZED: 06/01/92
CONTROL NO:  N9205-25-8            MATRIX TYPE:   Soil
=====

```

<u>PARAMETERS (8240)</u>	<u>RESULTS</u> <u>(ug/kg)</u>	<u>DETECTION LIMIT</u> <u>(ug/kg)</u>
Acetone	ND	100
Benzene	ND	5
Bromodichloromethane	ND	5
Bromoform	ND	10
Bromomethane	ND	50
2-Butanone (MEK)	ND	100
Carbon Disulfide	ND	5
Carbon Tetrachloride	ND	5
Chlorobenzene	ND	5
Chlorodibromomethane	ND	50
Chloroethane	ND	50
2-Chloroethyl vinyl ether	ND	50
Chloroform	ND	5
Chloromethane	ND	50
Dibromoethane	ND	5
Dichlorodiflouromethane	ND	50
1,1-Dichloroethane	ND	5
1,2-Dichloroethane	ND	5
1,1-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
cis-1,2-Dichloroethene	ND	5
trans-1,2-Dichloroethene	ND	5
1,2-Dichloropropane	ND	5
cis-1,3-Dichloropropene	ND	5
trans-1,3-Dichloropropene	ND	5
Ethylbenzene	ND	5
2-Hexanone	ND	50
Methylene chloride	ND	50
4-Methyl-2-pentanone (MIBK)	ND	10
Styrene	ND	5
1,1,2,2-Tetrachloroethane	ND	5
Tetrachloroethene	ND	5
Toluene	ND	5
1,1,1-Trichloroethane	ND	5
1,1,2-Trichloroethane	ND	5
Trichloroethene	ND	5
Trichlorofluoromethane	ND	10
Vinyl Acetate	ND	50
Vinyl Chloride	ND	50
Xylene (total)	ND	5
<u>% SURROGATE RECOVERY</u>		
1,2 Dichloroethane-d ₄	87	70-121
Toluene -d ₈	95	81-117
Bromofluorobenzene	93	74-121

ND = Not Detected

OKY

EPA METHOD 418.1
TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/29/92
PROJECT:	BART-CV	DATE EXTRACTED:	06/01/92
CONTROL NO:	N9205-25	DATE ANALYZED:	06/01/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mq/kg)</u>	<u>DETECTION LIMIT</u> <u>(mq/kg)</u>
051SS02-01-2	N9205-25-3	70	5
051SS02-02-3	N9205-25-4	ND	5
051SS03-01-2	N9205-25-5	560	15
051SS03-02-3	N9205-25-6	6	5
051SS04-01-2	N9205-25-7	780	25
051SS04-02-3	N9205-25-8	6	5

=====

EPA METHOD 8080 - PESTICIDES & PCBs

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: 06/02/92
SAMPLE ID:   051SS-5-01-2         DATE ANALYZED: 06/07/92
CONTROL NO:  N9205-25-9          MATRIX:       Soil
=====
  
```

<u>PARAMETERS (8080)</u>	<u>RESULTS (mg/kg)</u>	<u>DETECTION LIMIT (mg/kg)</u>
Aldrin	ND	0.02
Alpha-BHC	ND	0.01
Beta-BHC	.36	0.02
Delta-BHC	ND	0.02
Gamma-BHC (Lindane)	ND	0.01
Chlordane	ND	.05
4,4'-DDD	ND	.02
4,4'-DDE	.17	.02
4,4'-DDT	ND	.02
Dieldrin	ND	.02
Endosulfan I	ND	.02
Endosulfan II	ND	.05
Endosulfan Sulfate	ND	.05
Endrin	ND	.02
Endrin Aldehyde	ND	.05
Heptachlor	.09	.02
Heptachlor Epoxide	ND	.02
Methyachlor	ND	.1
Toxaphene	ND	.1
Aroclor - 1016	ND	.1
Aroclor - 1221	ND	.1
Aroclor - 1232	ND	.1
Aroclor - 1242	ND	.1
Aroclor - 1248	ND	.1
Aroclor - 1254	ND	.1
Aroclor - 1260	ND	.1

% Recovery:

```

Dibutylchorendate          100
2,4,5,6-Tetrachloro-m-xylene  50
  
```

CKY

EPA METHOD 8080 - PESTICIDES & PCBS

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/92/92
PROJECT:     BART-CV                DATE EXTRACTED: 06/01/92
SAMPLE ID:   051SS05-02-2.5        DATE ANALYZED: 06/07/92
CONTROL NO:  N9205-25-10           MATRIX:        Soil
=====
  
```

<u>PARAMETERS (8080)</u>	<u>RESULTS (mg/kg)</u>	<u>DETECTION LIMIT (mg/kg)</u>
Aldrin	ND	0.02
Alpha-BHC	ND	0.01
Beta-BHC	ND	0.02
Delta-BHC	ND	0.02
Gamma-BHC (Lindane)	ND	0.01
Chlordane	ND	.05
4,4'-DDD	ND	.02
4,4'-DDE	ND	.02
4,4'-DDT	ND	.02
Dieldrin	ND	.02
Endosulfan I	ND	.02
Endosulfan II	ND	.05
Endosulfan Sulfate	ND	.05
Endrin	ND	.02
Endrin Aldehyde	ND	.05
Heptachlor	ND	.02
Heptachlor Epoxide	ND	.02
Methoxychlor	ND	.1
Toxaphene	ND	.1
Aroclor - 1016	ND	.1
Aroclor - 1221	ND	.1
Aroclor - 1232	ND	.1
Aroclor - 1242	ND	.1
Aroclor - 1248	ND	.1
Aroclor - 1254	ND	.1
Aroclor - 1260	ND	.1

% Recovery:

Dibutylchorendate
 2,4,5,6-Tetrachloro-m-xylene 54

CKY

EPA METHOD 8080 - PESTICIDES & PCBs

```

=====
CLIENT:      Dames & Moore          DATE REC'D:    05/29/92
PROJECT:     BART-CV                DATE EXTRACTED: 06/01/92
SAMPLE ID:   Blank                  DATE ANALYZED: 06/07/92
CONTROL NO:  N9205-25              MATRIX:        Soil
=====
  
```

<u>PARAMETERS (8080)</u>	<u>RESULTS (mg/kg)</u>	<u>DETECTION LIMIT (mg/kg)</u>
Aldrin	ND	0.02
Alpha-BHC	ND	0.01
Beta-BHC	ND	0.02
Delta-BHC	ND	0.02
Gamma-BHC (Lindane)	ND	0.01
Chlordane	ND	.05
4,4'-DDD	ND	.02
4,4'-DDE	ND	.02
4,4'-DDT	ND	.02
Dieldrin	ND	.02
Endosulfan I	ND	.02
Endosulfan II	ND	.05
Endosulfan Sulfate	ND	.05
Endrin	ND	.02
Endrin Aldehyde	ND	.05
Heptachlor	ND	.02
Heptachlor Epoxide	ND	.02
Methxychlor	ND	.1
Toxaphene	ND	.1
Aroclor - 1016	ND	.1
Aroclor - 1221	ND	.1
Aroclor - 1232	ND	.1
Aroclor - 1242	ND	.1
Aroclor - 1248	ND	.1
Aroclor - 1254	ND	.1
Aroclor - 1260	ND	.1

% Recovery:

Dibutylchorendate
 2,4,5,6-Tetrachloro-m-xylene 75

CKY

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9205-25

METHOD: EPA 8080
 MATRIX: Soil

SAMPLE ID: Blank

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
gamma-BHC	ND	.083	91	95	4
Heptachlor	ND	.83	94	100	6
Aldrin	ND	.83	84	88	5
Dieldrin	ND	.165	85	86	1
Endrin	ND	.165	92	64	35
DDT	ND	.165	193	260	30

CKY

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-25

METHOD EPA 418.1
MATRIX: Soil

SAMPLE ID: N9205-25-3

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
IR REF STD	70	150	88	87	1

CKY

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-25

=====

METHOD: EPA 8240
MATRIX: Soil

SAMPLE ID: N9205-25-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
1,1 DCE	ND	10	79	77	2
Benzene	ND	10	90	93	3
TCE	ND	10	84	84	0
Toluene	ND	10	91	90	1

CKY

EPA METHOD 8140
ORGANOPHOSPHOROUS PESTICIDES

=====

CLIENT:	Dames & Moore	DATE REC'D:	05/29/92
PROJECT:	BART-CV	DATE ANALYZED:	06/12/92
SAMPLE ID:	Method Blank	MATRIX:	Soil
CONTROL NO:	N9205-25		

=====

<u>PARAMETERS (8140)</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
Azinphos methyl (Guthion)	ND	0.5
Sulprofos	ND	0.5
Chlorpyrifos	ND	0.5
Coumaphos	ND	0.5
Demeton-S	ND	0.5
Diazinon	ND	0.5
Dichlorvos	ND	0.5
Disulfoton	ND	0.5
Fensulfothion	ND	0.5
Fenthion	ND	0.5
Phosdrin	ND	0.5
Parathion methyl	ND	0.5
Phorate	ND	0.5
Tetrachlorvinphos	ND	0.5
Malathion	ND	0.5
<u>% Surrogate Recovery</u>		
Triphenol Phosphate	55	

=====

EPA METHOD 8140
ORGANOPHOSPHOROUS PESTICIDES

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   05/29/92
PROJECT:     BART-CV                DATE ANALYZED: 06/12/92
SAMPLE ID:   051SS05-01-2         MATRIX:       Soil
CONTROL NO:  N9205-25-9
=====
  
```

<u>PARAMETERS (8140)</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
Azinphos methyl (Guthion)	ND	0.5
Sulprofos	ND	0.5
Chlorpyrifos	ND	0.5
Coumaphos	ND	0.5
Demeton-S	ND	0.5
Diazinon	ND	0.5
Dichlorvos	ND	0.5
Disulfoton	ND	0.5
Fensulfothion	ND	0.5
Fenthion	ND	0.5
Phosdrin	ND	0.5
Parathion methyl	ND	0.5
Phorate	ND	0.5
Tetrachlorvinphos	ND	0.5
Malathion	ND	0.5
<u>& Surrogate Recovery</u>		
Triphenol Phosphate	115	

EPA METHOD 8140
ORGANOPHOSPHOROUS PESTICIDES

```

=====
CLIENT:      Dames & Moore           DATE REC'D:    05/29/92
PROJECT:     BART-CV                 DATE ANALYZED: 06/12/92
SAMPLE ID:   051SS05-02-2.5        MATRIX:        Soil
CONTROL NO:  N9205-25-10
=====
  
```

<u>PARAMETERS (8140)</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
Azinphos methyl (Guthion)	ND	0.5
Sulprofos	ND	0.5
Chlorpyrifos	ND	0.5
Coumaphos	ND	0.5
Demeton-S	ND	0.5
Diazinon	ND	0.5
Dichlorvos	ND	0.5
Disulfoton	ND	0.5
Fensulfothion	ND	0.5
Fenthion	ND	0.5
Phosdrin	ND	0.5
Parathion methyl	ND	0.5
Phorate	ND	0.5
Tetrachlorvinphos	ND	0.5
Malathion	ND	0.5
 <u>§ Surrogate Recovery</u>		
Triphenol Phosphate	57	

GK

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9205-25

METHOD: EPA 8140
MATRIX: Soil

SAMPLE ID: Blank

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Phorate	ND	.66	57	63	10

CKY

CLIENT NAME: DAMES + MOORE
 ADDRESS: 219 WESSSTEIN
OAKLAND 94612
 PHONE NO. 834-3600 FAX NO. 834-4461
 PROJECT NAME: BART-CASTRO VALLEY
 SEND REPORT TO: ERLE SKOV

CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS

DATE: 5/29/92
 PAGE: 1

N9205-25



Environmental Services
 3942 Sutter Avenue, Suite 1
 Pleasanton, CA 94566
 Tel: 510-446-3138
 Fax: 510-846-1236

SAMPLER NAME/SIGNATURE

TURN AROUND TIME

NORMAL
 RUSH

ANALYSES REQUIRED

SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION			4181	M8016	8010/801	8020/602	8090/608	8240/824	8270/625	CAM Metals	8110	
				WATER	SOIL	OTHER										
1	0515501-01-1 1/2'	5/28/92	11:40	LCE	2"x2" S.S Ring											
2	0515501-02-3'		12:00													
3	0515502-01-2"		12:50				X					X				
4	0515502-02-3'		12:45				X					X				
5	0515503-01-2"		1:06				X					X				
6	0515503-02-3'		1:15				X					X				
7	0515504-01-2"		1:40				X					X				
8	0515504-02-3'		1:55				X					X				
9	0515505-01-2"		2:15													
10	0515505-02-2 1/2'		2:30								X				X	
11	0515506-01-3"		3:10													
12	0515506-02-2'		3:15													

COMMENTS:

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>5/29/92</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>5/29</u>	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:
Company <u>DAMES + MOORE</u>	Time: <u>10:00</u>	Company <u>CKY</u>	Time: <u>13:26</u>	Company	Time:	Company:	Time:

Storage & disposal of samples: Sample will be stored at CKY for 30 days at no charge and at \$10/sample thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.



CKY incorporated Environmental Services

Date: 06/29/92
N9206-22

Dames & Moore
2101 Webster St., #300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART Castro Valley

Enclosed is the laboratory report for samples received on 06/25/92. 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>
M8015 Gas/Diesel	4 Soil
EPA 8020	4 Soil
Total Lead	4 Soil

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

Confirmatory soil samples

EPA METHOD - 8020
BTEX

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/25/92
PROJECT:	BART CV	DATE ANALYZED:	06/26/92
CONTROL NO:	N9206-22	MATRIX TYPE:	Soil

=====

SAMPLE ID:	CONTROL NO:	RESULTS (ug/kg)				% SURRO RECOVERY
		Benz	Tol	Et	Benz Xyls	
DTCS-1	N9206-22-1	ND	ND	ND	ND	85
DTCS-2	N9206-22-2	10	ND	ND	17	78
RTCS-1	N9206-22-3	ND	ND	ND	ND	108
RTCS-2	N9206-22-4	ND	10	10	30	112

DETECTION LIMIT 5 5 5 5

=====

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/25/92
PROJECT:	BART-CV	DATE ANALYZED:	06/26/92
CONTROL NO:	N9206-22	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DET. LIMIT</u> <u>(mg/kg)</u>	<u>% SURRO</u> <u>RECOVERY</u>
DTCS-1	N9206-22-1	ND	5.0	85
DTCS-2	N9206-22-2	ND	5.0	78
RTCS-1	N9206-22-3	ND	5.0	108
RTCS-2	N9206-22-4	ND	5.0	112

=====

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/25/92
PROJECT:	BART-CV	DATE EXTRACTED:	06/26/92
CONTROL NO:	N9206-22	DATE ANALYZED:	06/26/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>H-C RANGE</u>
DTCS-1	N9206-22-1	ND	N.A.
DTCS-2	N9206-22-2	ND	N.A.
RTCS-1	N9206-22-3	ND	N.A.
RTCS-2	N9206-22-4	ND	N.A.

DETECTION LIMIT: 5 mg/kg

=====

EPA METHOD 3050/6010
TOTAL LEAD

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/25/92
PROJECT:	BART-CV	DATE ANALYZED:	06/29/92
CONTROL NO:	N9206-22	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
Method Blank	N9206-22	ND	5.0
DTCS-1	N9206-22-1	27	5.0
DTCS-2	N9206-22-2	30	5.0
RTCS-1	N9206-22-3	27	5.0
RTCS-2	N9206-22-4	31	5.0

=====

OK

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9206-22

METHOD: EPA 8020
 MATRIX: Soil

SAMPLE ID: N9206-22-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	20	85	80	6
Toluene	ND	20	90	90	0
Ethyl Benzene	ND	20	110	115	4
Xylene	ND	20	133	118	12

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-22

=====

METHOD EPA M8015G
MATRIX: Soil

SAMPLE ID: N9206-22-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gas	ND	2	90	80	12

GH

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9206-22

METHOD: EPA M8015D
 MATRIX: Soil

SAMPLE ID: N9206-22-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	ND	500	109	108	1

GN

LABORATORY CONTROL SAMPLE

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-22

=====

METHOD EPA 3050/6010
MATRIX: Soil
LOT NO:: 212

<u>COMPOUND</u>	<u>FOUND</u> (mg/kg)	<u>TRUE</u> <u>VALUE</u> (mg/kg)	<u>% REC</u>
Lead	76	74	103

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-22

=====

METHOD EPA 3050/6010
MATRIX: Soil

SAMPLE ID: 9206104-4

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Lead	410	100	110	130	17

OK

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

CLIENT NAME: James & Moore
 ADDRESS: 2171 W. Usher St
Oakland, CA
 PHONE NO. 510-839-3600 FAX NO. _____
 PROJECT NAME: East Castro Valley
 SEND REPORT TO: Erin Skov

DATE: 6/25
 PAGE 1 OF 1



CKY Incorporated
 Environmental Services
 3942 Valley Avenue, Suite F
 Pleasanton, CA 94566
 Tel 510-846-3188
 Fax 510-846-1236

TURN AROUND TIME

NORMAL
 RUSH

ANALYSES REQUIRED

SAMPLER NAME/SIGNATURE

SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION			418.1	M8015 Gas + BTEX	M8015 Diesel	Total Lead	8080/608	8240/624	8270/625	CANN Metals
				WATER	SOIL	OTHER								

01
02
03
04

DTC5-1	6/25/92		3" 54 Ring				X	X	X					
DTC5-2	6/25/92		3" 54 Ring				X	X	X					
RTCS-1	6/25/92		3" 54 Ring				X	X	X					
RTCS-2	6/25/92		3" 54 Ring				X	X	X					

COMMENTS: Run for 8015 Gas + BTEX, 8015 Diesel, Total Lead RUSH 24 Hr. Turnaround
Erin Skov 6/25/92

Relinquished by (Signature)	Date	Received by (Signature)	Date	Relinquished by (Signature)	Date	Received by (Signature)	Date
<u>[Signature]</u>	<u>6/25/92</u>	<u>[Signature]</u>	<u>6/25/92</u>				
Company <u>James & Moore</u>	Time <u>1:05</u>	Company <u>CKY</u>	Time <u>15:00</u>				

Additional sample by the Laboratory will be charged at \$10/sample

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-34

METHOD: EPA Lead
MATRIX: Soil

SAMPLE ID: N9206-34-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>
Lead	44	100	92

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/30/92
PROJECT:	BART-CV	DATE ANALYZED:	06/30/92
CONTROL NO:	N9206-34	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DET. LIMIT</u> <u>(mg/kg)</u>	<u>% SURRO</u> <u>RECOVERY</u>
DDCS-2	N9206-34-1	ND	5.0	91
UTCS-3	N9206-34-2	ND	5.0	96
UTCS-4	N9206-34-3	ND	5.0	80
UTCS-5	N9206-34-4	ND	5.0	65
UTCS-6	N9206-34-5	ND	5.0	92

=====

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/30/92
PROJECT:	BART-CV	DATE EXTRACTED:	06/30/92
CONTROL NO:	N9206-34	DATE ANALYZED:	06/30/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>H-C RANGE</u>
DDCS-2	N9206-34-1	ND	N.A.
UTCS-3	N9206-34-2	ND	N.A.
UTCS-4	N9206-34-3	ND	N.A.
UTCS-5	N9206-34-4	ND	N.A.
UTCS-6	N9206-34-5	ND	N.A.

DETECTION LIMIT: 5.0 mg/kg

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-34

METHOD: EPA M8015G
MATRIX: Soil

SAMPLE ID: N9206-29-10

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gasoline	ND	2	110	120	9

CKY

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-34

=====
METHOD: EPA 8020
MATRIX: Soil

SAMPLE ID: N9206-29-10

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	20	120	110	9
Toluene	ND	20	80	85	6
Ethyl Benzene	ND	20	80	80	0
Xylene	ND	40	103	93	10

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-34

METHOD: EPA M8015D
MATRIX: Soil

SAMPLE ID: N9206-29-15

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	ND	500	124	128	3

CKY



CKY incorporated Environmental Services

Date: 06/29/92
N9206-30

Dames & Moore
2101 Webster St., Suite 300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART-Castro Valley

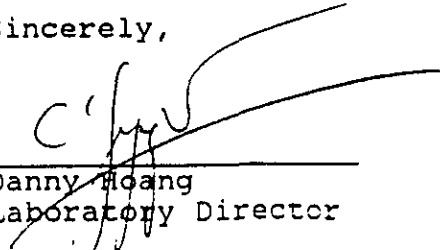
Enclosed is the laboratory report for samples received on 06/26/92. The samples were received in coolers with ice and intact; the chain-of-custody forms were properly filled out. The data reported includes:

<u>Method</u>	<u>No. of Analysis</u>
M8015 Gas/Diesel	5 Soil
EPA 8020	5 Soil
Lead	5 Soil

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

Confirmatory soil samples

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/26/92
PROJECT:	BART-CV	DATE EXTRACTED:	06/28/92
CONTROL NO:	N9206-30	DATE ANALYZED:	06/28/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>H-C RANGE</u>
UTCS-1	N9206-30-1	140	C6-C14
UTCS-2	N9206-30-2	80	C6-C14
DDCS-1	N9206-30-3	ND	N.A.
RDCS-1	N9206-30-4	ND	N.A.
RTVLCS-1	N9206-30-5	ND	N.A.

DETECTION LIMIT: 5.0 mg/kg

=====

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/26/92
PROJECT:	BART-CV	DATE ANALYZED:	06/28/92
CONTROL NO:	N9206-30	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
UTCS-1	N9206-30-1	*1100	1.0
UTCS-2	N9206-30-2	*810	1.0
DDCS-1	N9206-30-3	7.5	1.0
RDCS-1	N9206-30-4	5.5	1.0
RTVLCS-1	N9206-30-5	ND	1.0

=====

* Dilution of 1:100

EPA METHOD - 8020
BTEX

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/23/92
PROJECT:	BART-CV	DATE ANALYZED:	06/28/92
CONTROL NO:	N9206-30	MATRIX TYPE:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS (ug/kg)</u>			
		<u>Benz</u>	<u>Tol</u>	<u>Et Benz</u>	<u>Xyls</u>
UTCS-1	N9206-30-1	7300	2800	44000	20000
UTCS-2	N9206-30-2	4800	1400	37000	16000
DDCS-1	N9206-30-3	700	310	310	960
RDCS-1	N9206-30-4	440	1000	200	1200
RTVLCS-1	N9206-30-5	ND	ND	ND	ND

DETECTION LIMIT

5 5 5 5

* Dilution of 1:100

** Dilution of 1:10

=====

CKY

EPA METHOD 7421
TOTAL LEAD

=====

CLIENT:	Dames & Moore	DATE REC'D:	06/26/92
PROJECT:	BART-CV	DATE ANALYZED:	06/29/92
CONTROL NO:	N9206-30	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
UTCS-1	N9206-30-1	40	5.0
UTCS-2	N9206-30-2	45	5.0
DDCS-1	N9206-30-3	52	5.0
RDCS-1	N9206-30-4	60	5.0
RTVLCS-1	N9206-30-5	26	5.0
Method Blank	N9206-30	ND	5.0

=====

GW

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-30

METHOD EPA M8015G
MATRIX: Soil

SAMPLE ID: N9206-30-5

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gasoline	ND	2	85	85	0

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-30

=====

METHOD EPA M8015D
MATRIX: Soil

SAMPLE ID: N9206-30-5

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	ND	500	82	90	9

GV

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9206-30

METHOD: EPA Lead
MATRIX: Soil

SAMPLE ID: N9206-30-5

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Lead	26	100	86	90	4

GV

APPENDIX B
WASTE DISPOSAL DOCUMENTATION

b:BART/GES2.018

Please print or type. Form designed for use on elite (12-pitch typewriter).

78933

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-9802; WITHIN CALIFORNIA, CALL 1-800-852-7550

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. C1A1D00686784000021	Manifest Document No. 021 of 1	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
3. Generator's Name and Mailing Address P.O. Box 12688 - BAY AREA RAPID TRANSIT Oakland California 94604			A. State Manifest Document Number 9148904C		
4. Generator's Phone (510) 464-6192			B. State Generator ID		
6. Transporter 1 Company Name TRIDENT TRUCK LINE, INC.		6. US EPA ID Number C1A1D982484370	C. State Transporter ID 704357		D. Transporter's Phone (510) 783-2881
7. Transporter 2 Company Name		8. US EPA ID Number	E. State Transporter ID		F. Transporter's Phone
9. Designated Facility Name and Site Address ERICKSON INCORPORATED 255 PARR BLVD. RICHMOND, CA 94801		10. US EPA ID Number C1A1D009466392		G. State Facility ID C1A1D009466392	
				H. Facility's Phone (510) 235-1393	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) WASTE EMPTY TANK NON-RCRA HAZARDOUS WASTE SOLID		12. Containers No. Type 002 T, P 04090	13. Total Quantity P	14. Unit Wt/Vol	L. Waste Number State 512 EPA/Other NONE
J. Additional Descriptions for Materials Listed Above QUANTITY 2 EMPTY STORAGE TANK(S) 7016 9017 HAVE BEEN INERTED WITH 15 LBS. DRY ICE PER 1000 GAL. CAPACITY		K. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information KEEP AWAY FROM SOURCES OF IGNITION. ALWAYS WEAR HARDHATS AND GLASSES WHEN WORKING AROUND UNDERGROUND STORAGE TANKS. 24 HR. CONTACT NAME: GARY JENSEN AND PHONE: 510-464-6192					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/typed Name FOR: BAY AREA RAPID TRANSIT DIST GARY JENSEN		Signature Gary Jensen		Month Day Year 06 12 59 2	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/typed Name FLOYD AVILLA		Signature Floyd Avilla		Month Day Year 06 12 59 2	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/typed Name		Signature		Month Day Year	
19. Discrepancy Indication Space					
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. Printed/typed Name Donald H. Larson					
		Signature Donald H. Larson		Month Day Year 06 12 59 2	

DO NOT WRITE BELOW THIS LINE.

Please print or type. Form designed for use on 8 1/2" x 11" (12-pitch typewriter).

578933
Information in the shaded areas is not required by Federal law.

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. CA C 0100061816784		Manifest Document No. 0100010		2. Page 1 of 6	
3. Generator's Name and Mailing Address BAY AREA RAPID TRANSIT DIST P.O. Box 12688, OAKLAND, CA 94604				A. State Manifest Document Number 9148901			
4. Generator's Phone (510) 464-6192				B. State Generator's ID HVA0361043647			
5. Transporter 1 Company Name TRIDENT TRUCK LINE, INC.		6. US EPA ID Number CA D 982484370		C. State Transporter's ID 204352			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (510) 783-2881			
9. Designated Facility Name and Site Address ERICKSON INCORPORATED 255 PARR BLVD. RICHMOND, CA 94801				10. US EPA ID Number CA D 010194613192			
				E. State Transporter's ID			
				F. Transporter's Phone			
				G. State Facility's ID CAID 010194613192			
				H. Facility's Phone (510) 235-1393			
11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)						12. Containers	
a. EMPTY STORAGE TANK NON-RCRA HAZARDOUS WASTE SOLID						No. Type	
						13. Total Quantity	
						14. Unit Wt/Vol	
						15. Waste Number	
						State 512	
						EPA/Other NONE	
						State	
						EPA/Other	
						State	
						EPA/Other	
						State	
						EPA/Other	
16. Additional Descriptions for Materials Listed Above						17. Handling Codes for Wastes Listed Above	
QUANTITY / EMPTY STORAGE TANK(S) 7028						a. b. c. d.	
HAVE BEEN INERTED WITH 15 TBS. DRY ICE PER 1,000 GAL. CAPACITY							
18. Special Handling Instructions and Additional Information							
KEEP AWAY FROM SOURCES OF IGNITION. ALWAYS WEAR HARDHATS AND GLASSES WHEN WORKING AROUND UNDERGROUND STORAGE TANKS. 24 HR. CONTACT NAME: GARY JENSEN AND PHONE: (510) 464-7060							
19. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name GARY C. JENSEN FOR BART				Signature <i>Gary C. Jensen</i>		Month Day Year 06/26/92	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name MIKE VERNAZZA				Signature <i>Mike Verrazza</i>		Month Day Year 96/26/92	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name DONALD A. RUSSELL				Signature <i>Donald A. Russell</i>		Month Day Year 06/26/92	

91489019
IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550
GENERATOR
TRANSPORTER
FACILITY

DO NOT WRITE BELOW THIS LINE.

DAY OR NIGHT
TELEPHONE
(510) 235-1393

CERTIFICATE CERTIFIED SERVICES COMPANY

255 Parr Boulevard • Richmond, California 94801

NO. 10621

CUSTOMER LEE ENG
JOB NO. 78933

FOR: Erickson, Inc. TANK NO. 9016

LOCATION: Richmond DATE: 07/02/92 TIME: 12:59:36

TEST METHOD Visual Gastech/1314 SMPN LAST PRODUCT D

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 2000 Gallon Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9%
LOWER EXPLOSIVE LIMIT LESS THAN 0.1%

"ERICKSON INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN
CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS
WASTE FACILITY."

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissible concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

K. DeGuer REPRESENTATIVE TITLE INSPECTOR DR

DAY OR NIGHT
TELEPHONE
(510) 235-1393

CERTIFICATE
CERTIFIED SERVICES COMPANY
255 Parr Boulevard • Richmond, California 94801

NO. 10750

CUSTOMER
LEE ENG
JOB NO. 78933

FOR: Erickson, Inc. TANK NO. 9017

LOCATION: Richmond DATE: 06/30/92 TIME: 09:11:30

TEST METHOD Visual Gastech/1314 SMPN LAST PRODUCT LG

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 2000 Gallon Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9%
LOWER EXPLOSIVE LIMIT LESS THAN 0.1%

"ERICKSON INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN
CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS
WASTE FACILITY."

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissible concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

[Signature] REPRESENTATIVE TITLE [Signature] INSPECTOR

DAY OR NIGHT
TELEPHONE
(510) 235-1393

CERTIFICATE
CERTIFIED SERVICES COMPANY
255 Parr Boulevard • Richmond, California 94801

NO. 1077

CUSTOMER
LEE ENG
JOB NO. 78933

FOR: Erickson, Inc. TANK NO. 9028

LOCATION: Richmond DATE: 06/30/92 TIME: 12:00:58

TEST METHOD Visual Gastech/1314 SMPN LAST PRODUCT LG

This is to certify that I have personally determined that this tank is in accordance with the American Petroleum Institute and have found the condition to be in accordance with its assigned designation. This certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

TANK SIZE 1000 Gallon Tank CONDITION SAFE FOR FIRE

REMARKS: OXYGEN 20.9%
LOWER EXPLOSIVE LIMIT LESS THAN 0.1%

"ERICKSON INC. HEREBY CERTIFIES THAT THE ABOVE NUMBERED TANK HAS BEEN CUT OPEN, PROCESSED, AND THEREFORE DESTROYED AT OUR PERMITTED HAZARDOUS WASTE FACILITY."

In the event of any physical or atmospheric changes affecting the gas-free conditions of the above tanks, or if in any doubt, immediately stop all hot work and contact the undersigned. This permit is valid for 24 hours if no physical or atmospheric changes occur.

STANDARD SAFETY DESIGNATION

SAFE FOR MEN: Means that in the compartment or space so designated (a) The oxygen content of the atmosphere is at least 19.5 percent by volume; and that (b) Toxic materials in the atmosphere are within permissible concentrations; and (c) In the judgment of the Inspector, the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Inspector's certificate.

SAFE FOR FIRE: Means that in the compartment so designated (a) The concentration of flammable materials in the atmosphere is below 10 percent of the lower explosive limit; and that (b) In the judgment of the Inspector, the residues are not capable of producing a higher concentration that permitted under existing atmospheric conditions in the presence of fire and while maintained as directed on the Inspector's certificate, and further, (c) All adjacent spaces have either been cleaned sufficiently to prevent the spread of fire, are satisfactorily inerted, or in the case of fuel tanks, have been treated as deemed necessary by the Inspector.

The undersigned representative acknowledges receipt of this certificate and understands the conditions and limitations under which it was issued.

REPRESENTATIVE [Signature] TITLE INSPECTOR [Signature]

From: Erickson, Inc. at #235-1393
To: DICK at #9,1408-734-9820

09-10-92 02:41 pm
001 of 001

September 10, 1992

IRVINE LIVIANU
LEE ENGINEERING
1153 BORDEAUX DRIVE
SUITE 103
SUNNYVALE, CA 94089

Dear IRVINE:

THIS LETTER IS TO VERIFY THAT, THE PIPING ASSOCIATED WITH THE TANKS THAT WERE REMOVED FROM THE BAY AREA RAPID TRANSIT SITE LOCATED AT 21000 WILBEAM, CASTRO VALLEY, CA, WAS BROUGHT IN TO OUR FACILITY FOR PROCESSING AND DISPOSAL. AFTER THE PIPING WAS CLEANED IT WAS TAKEN TO LMC METAL RECYCLERS. IF YOU HAVE ANY QUESTIONS, PLEASE FEEL FREE TO CALL.

Sincerely,

KAREN RUFFIN
ERICKSON, INC.
TSDF OPERATIONS ASSISTANT

ORO LOMA SANITARY DISTRICT
SPECIAL DISCHARGE PERMIT APPLICATION

SECTION I: General Condition

1. Applicant Business Name: Bay Area Rapid Transit District

2. Applicant Address: 1330 Broadway, Suite 1800

City/State/Zip: Oakland, CA 94604-2688

3. Name of Environmental/Engineering Firm Representing Applicant

DAMES & MOORE

4. Environmental/Engineering Firm Address

Street: 2101 Webster Street, Suite 300

City/State/Zip: Oakland, CA 94612

5. Person to Contact About this Application

Name George Chiu Title Staff Engineer Date: August 13, 1992

6. Person to Contact in case of Emergency

Name Erik Skov Title Project Manager

Day Phone 510-839-3600 Night Phone _____

7. *Certification*

I certify that the information contained in this application is familiar to me and to the best of knowledge, such information is true, complete and accurate.

Signature

August 13, 1992

Date

George Chiu

Print Name

**ORO LOMA SANITARY DISTRICT
SPECIAL DISCHARGE PERMIT APPLICATION**

SECTION 2 SITE INFORMATION

1. Name and Address of Remediation Site

Name Former Castro Valley Unified School District Corporation Yard

Street 21,000 Wilbeam Avenue, CA 94546

City/State/Zip Castro Valley, CA 94546

2. Discuss the nature of the problem and state the reason(s) why there is no reasonable alternative but to discharge into the wastewater system. (Attach additional pages as necessary).

Groundwater were found in the excavation pits during excavation. The water
were pumped out and stored in a baker tank. Water samples were taken and
tested for hydrocarbon content. As the results show that the concentration is
non-detectable, it is more cost effective to discharge the water to a nearby
cleanout and subsequently treated by the waste water system. (This is a one
time batch discharge, approximately 15,000 gallons)

3. Site Description

- a) Provide a map showing the location of the site.
- b) Provide a diagram showing location of all monitoring wells, treatment unit and connection point to the District sewer system. N.A.
- c) Provide copies of laboratory analysis of pollutant concentration.

4. Wastewater Flow Information N.A. - This is a one time batch discharge.

Estimated Discharge Flow Rate _____ (gal/min)
Peak Hourly Flow Rate _____ (gal/min)
Maximum Daily Flow Rate _____ (gal/min)

Estimated Duration of Discharge _____

**ORO LOMA SANITARY DISTRICT
SPECIAL DISCHARGE PERMIT APPLICATION**

SECTION 3 TREATMENT SYSTEM INFORMATION

1) Provide a narrative description of treatment system. Be sure to include the following information. (Use additional sheets if necessary)

a) Describe how the groundwater will be treated; (best available technology is required. N.A.)

b) Describe the efficiency of the treatment unit. N.A.

c) Describe where and how it will connect to the District's sewer system.

d) Emergency procedures/security provisions.

Groundwater from the excavation pits were pumped out and stored in a baker tank.

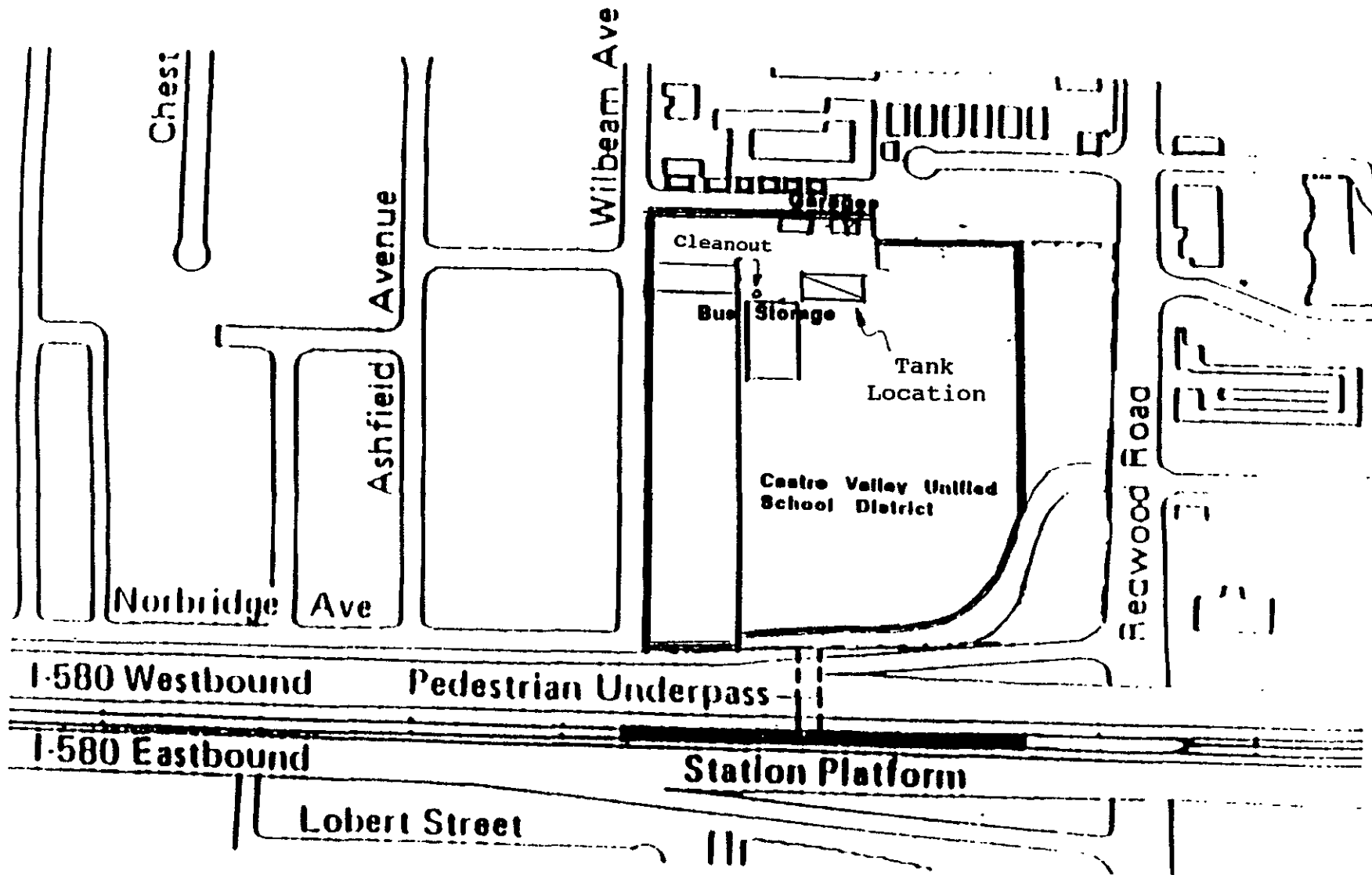
Water samples were tested for BTEX and for Total Petroleum Hydrocarbons (Both

were non-detectable). Water from the baker tank will be pumped out and discharge into a nearby cleanout.

NOTE : This is a one time batch discharge, approximate 15,000 gallon.

2) Please attached a detailed drawing of the treatment system.

N.A.



LOCATION PLAN

FORMER CASTRO VALLEY UNIFIED SCHOOL DISTRICT CORPORATION YARD

PERMIT CONDITIONS

PART 5

Special Discharge - Groundwater Discharges

3(B) SAMPLING REQUIREMENTS

Parameter

O.L.S.D. Limit

Metals

Arsenic	0.1 mg/L
Cadmium	0.2 mg/L
Copper	2.0 mg/L
Lead	1.0 mg/L
Mercury	0.01 mg/L
Nickel	1.0 mg/L
Silver	0.2 mg/L
Total Chromium	0.5 mg/l
Zinc	3.0 mg/L

Additional Testing

Total Petroleum Hydrocarbons (EPA 8015)	15 mg/L
B.T.E.X. (EPA 8020)	Non-detectable
Phenols	1.0 mg/L
Cyanide	1.0 mg/L

General Analysis

COD	N/A
Suspended Solids	N/A
pH	No lower than 5.5 units

03715-051-093

Post-It™ brand fax transmittal memo 7671 # of pages ▶ 1

To	From	Co.	Dept.	Phone #	Fax #
HAKKY	G. CHU	DTM		510-208-1368	510-246-1336
Co.					
Dept.					
Fax #					

CASTRO VALLEY SANITARY DISTRICT

DONALD H. STROOT, PRESIDENT
JAMES S. MARTIN, SECRETARY
THUR L. VARGAS
ANTHONY MORSILLI
JAMES A. LAYTON

21040 MARSHALL STREET • CASTRO VALLEY, CALIFORNIA 94546-6098 • TELEPHONE (510) 537-0757
FAX (510) 537-1312

MARY E. FREDETTE, DISTRICT MANAGER

September 1, 1992

Mr. George Chiu
Dames & Moore
2101 Webster Street
Suite 300
Oakland, CA 94612

Subject: Special Discharge Permit
Castro Valley Unified School District
Corporation Yard
21000 Wilbeam Avenue
Castro Valley, CA

Dear Mr. Chiu:

This will advise that this letter will be the permit for the discharge of 15,000 gallons of water from a portable holding tank at the Castro Valley Unified School District Corporation Yard at 21000 Wilbeam Avenue, Castro Valley, CA, into the sewer system.

This permit will be valid on receipt of the following:

Inspection	\$200.00
Treatment of 15,000 Gallons	<u>31.12</u>
Total	\$231.12

Very truly yours,


DELMER J. HERRERA
District Inspector

DJH:eg

specdis2.ltr



printed on recycled paper

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 5 1 0 - 4 6 4 6 1 9 2 Phone No. -

BFI Waste Code C A 4 0 5 0 9 0 8 9 2 4 3 5 9 6 Containers

Description of Waste	Quantity		Units	No.	Type
	<u>NON-HAZARDOUS SOIL</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>8</u>

- Type
- D - Drum
 - C - Carton
 - B - Bag
 - T - Truck
 - P - Pounds
 - Y - Yards
 - O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law; has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 09 11 92

TRANSPORTER

Truck No. 65 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) STEVE LEONARDO
308 218/2
 Address P. O. Box 218 Vehicle License No./State 439573
Byron, California 94544 Vehicle Certification _____

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 09 11 92 Driver Signature [Signature] Delivery Date 09 11 92

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 5 1 0 - 4 4 7 0 4 9 1
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent _____ Signature [Signature] Receipt Date 09 11 92

PASS CODE _____

TRANSPORTER RETAIN

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1800 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 3 4 0 - 2 6 4 8 1 9 2 Phone No.

BFI Waste Code	<u>C A</u>	<u>4 3 5</u>	<u>0 9 0 8 9 2</u>	<u>4 3 5 9 6</u>	Containers	Type
Description of Waste				Quantity	Units	No.
<u>NON HAZARDOUS SOLID</u>				<u>0 0 0 1 8</u>	<u>Y</u>	<u>0 /</u>
				<u> </u>	<u> </u>	<u> </u>
				<u> </u>	<u> </u>	<u> </u>
<p>D - Drum C - Carton B - Bag T - Truck P - Pounds Y - Yards O - Other</p>						

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name Gregory C. Johnson Signature Gregory C. Johnson Shipment Date 09 11 92

TRANSPORTER

Truck No. J31 Phone No. 510-634-6650
 Transporter Name Allied Trucking, Inc. Driver Name (Print) JIM BURNETT
21372 Vehicle License No./State 3A74359
 Address 1500 216 Vehicle Certification _____
Castro Valley, California 94512

I hereby certify that the above named material was picked up at the generator site noted above.
 I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature Jim Burnett Shipment Date 09 11 92 Driver Signature Jim Burnett Delivery Date 09 11 92

DESTINATION

Site Name D.F.W. Vasco Road Landfill Phone No. 5 1 0 - 4 2 7 0 2 9 1
 Address 4331 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent _____ Signature _____ Receipt Date _____

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

FI Waste Code CA 405 090892 43596
 Description of Waste NON HAZARDOUS SOIL
 Containers: Quantity 00018 Units Y No. 0 Type T
 Type: D - Drum, C - Carton, B - Bag, T - Truck, P - Pounds, Y - Yards, O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 198D Super Trucking Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) CURTIS COLLINS
Job # 218/2
 Address P. O. Box 218 Vehicle License No./State BP 86553
Byron, California 94544 Vehicle Certification

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Carrier Signature [Signature] Shipment Date 911892 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Name B.F.I. Vasco Road Landfill Phone No. 510-4470491
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 091192

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

BFI Waste Code CA 405 090892 43596

Description of Waste	Quantity		Containers		Type
		Units	No.	Type	
NON HAZARDOUS SOIL	00018	Y	0	T	D - Drum
					C - Carton
					B - Bag
					T - Truck
					P - Pounds
					Y - Yards
					O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 3 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Job # 213/2 Driver Name (Print) LARRY MCGUIRE
 Address P. O. Box 218 Vehicle License No./State 2X61336
Byron, California 94544 Vehicle Certification 300811

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.
 Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-4470491
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.
 Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 91192

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

BFI Waste Code CA 405 090892 43596

Description of Waste	Quantity	Units	Containers		Type
			No.	Type	
NON HAZARDOUS SOIL	00018	Y	01	T	D - Drum C - Carton B - Bag T - Truck P - Pounds Y - Yards O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 39 Phone No. 510-634-6350
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) JIM FERREIRA
Job # 218/2
 Address P. O. Box 218 Vehicle License No./State 4C08284
Byron, California 94544 Vehicle Certification 300810

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-4470491
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 9/1/92

PASS CODE _____



NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 5 1 0 - 4 6 4 6 1 9 2 Phone No. -

EPA Waste Code	Description of Waste	Quantity	Units	Containers		Type
				No.	Type	
<u>C A 4 0 5 0 9 0 8 9 2</u>	<u>NON HAZARDOUS SOIL</u>	<u>0 0 0 1 8</u>	<u>Y</u>	<u>0 /</u>	<u>T</u>	<u>D - Drum</u> <u>C - Carton</u> <u>B - Bag</u> <u>T - Truck</u> <u>P - Pounds</u> <u>Y - Yards</u> <u>O - Other</u>

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 09/11/92

TRANSPORTER

Truck No. J831 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) JIM BURNETT
335 # 218/2
 Address P. O. Box 218 Vehicle License No./State 3X74359
Byron, California 94544 Vehicle Certification _____

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 09/11/92 Driver Signature [Signature] Delivery Date 09/11/92

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 5 1 0 - 4 4 7 0 4 9 1
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent _____ Signature [Signature] Receipt Date 9/11/92

PASS CODE _____

No. 907357

MS- NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

BART

Generating Location BART

1330 Broadway, Suite 1702

Address 21000 Wilbeam Ave.

Oakland, CA 94612

Castro Valley, CA

5 1 0 - 4 6 4 6 1 9 2

Phone No. [] [] [] [] [] [] [] [] [] []

Waste Code

C A

4 0 5

0 9 0 8 9 2

4 3 5 9 6

Description of Waste

Quantity

Units

Containers No. Type

- D - Drum
- C - Carton
- B - Bag
- T - Truck
- P - Pounds
- Y - Yards
- O - Other

NON HAZARDOUS SOIL

0 0 0 1 8 Y 0 2 T

[] [] [] [] [] [] [] [] [] []

[] [] [] [] [] [] [] [] [] []

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

GARY C. JENSEN

Mary Chen

09 11 92

Generator Authorized Agent Name

Signature

Shipment Date

TRANSPORTER

Truck No. 65

Phone No. 510-634-6850

Transporter Name Dillard Trucking, Inc.
Job # 218/2

Driver Name (Print) STEVE LEONARD

Address P. O. Box 218
Byron, California 94544

Vehicle License No./State Y39573

Vehicle Certification

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

[Signature]

09 11 92

[Signature]

09 11 92

Driver Signature

Shipment Date

Driver Signature

Delivery Date

DESTINATION

Site Name B.F.I. Vasco Road Landfill

Phone No. 5 1 0 - 4 4 7 0 4 9 1

Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Signature

[Signature]

9 11 92

Receipt Date

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

3FI Waste Code CA 405 090892 43596 Containers: Type
 Description of Waste: NON HAZARDOUS SOIL
 Quantity: 00018 Units: Y No.: 0 Type: T
 D - Drum
 C - Carton
 B - Bag
 T - Truck
 P - Pounds
 Y - Yards
 O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. B Lippin Trucking Phone No. (510) 510-634-6850
 Transporter Name Dillard Trucking, Inc. Job # 218/2 Driver Name (Print) Curtis O Collins
 Address P. O. Box 218 Vehicle License No./State PP86553
Byron, California 94544 Vehicle Certification

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-4470491
4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 091192

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1830 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

BFI Waste Code	<u>CA</u>	<u>405</u>	<u>090892</u>	<u>43596</u>	Containers	Type
Description of Waste				Quantity	Units	No.
<u>NON HAZARDOUS SOIL</u>				<u>00018</u>	<u>Y</u>	<u>0</u>

- D - Drum
- C - Carton
- B - Bag
- T - Truck
- P - Pounds
- Y - Yards
- O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

GARY C. JENSEN [Signature] 091192
 Generator Authorized Agent Name Signature Shipment Date

TRANSPORTER

Truck No. 3 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) LARRY MCGUIRE
Job # 218/2 Address P. O. Box 218 Vehicle License No./State 2X61336
Byron, California 94544 Vehicle Certification 300811

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

[Signature] 091192 [Signature] 091192
 Driver Signature Shipment Date Driver Signature Delivery Date

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-4470491
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[Signature] 091192
 Name of Authorized Agent Signature Receipt Date

PASS CODE _____

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name B A R T Generating Location B A R T

Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 5 1 0 - 4 6 4 6 1 9 2 Phone No. -

BFI Waste Code C A 4 0 5 0 9 0 8 9 2 4 3 5 9 6

Description of Waste	Quantity	Units	No.	Type
<u>NON HAZARDOUS SOIL</u>	<u>0 0 0 1 8</u>	<u>Y</u>	<u>0 /</u>	<u>T</u>

- Containers
- D - Drum
 - C - Carton
 - B - Bag
 - T - Truck
 - P - Pounds
 - Y - Yards
 - O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

GARY C. JENSEN [Signature] 091192
Generator Authorized Agent Name Signature Shipment Date

TRANSPORTER

Truck No. 3131 Phone No. 510-634-6850

Transporter Name Dillard Trucking, Inc. Driver Name (Print) JIM BURNETT
Job # 218/2

Address P. O. Box 218 Vehicle License No./State 3X74359
Byron, California 94544

Vehicle Certification _____

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

[Signature] 091192 [Signature] 091192
Driver Signature Shipment Date Driver Signature Delivery Date

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 5 1 0 - 4 4 7 0 4 9 1

Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[Signature] 091192
Name of Authorized Agent Signature Receipt Date

PASS CODE _____



NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

BART

Generating Location BART

1330 Broadway, Suite 1702

Address 21000 Wilbeam Ave.

Oakland, CA 94612

Castro Valley, CA

Phone No. 510-464-6192

Phone No. [] [] [] [] [] [] [] [] [] []

BFI Waste Code CA 405 090892

Quantity 43596

Containers

- Type
- D - Drum
- C - Carton
- B - Bag
- T - Truck
- P - Pounds
- Y - Yards
- O - Other

NON HAZARDOUS SOIL

Quantity	Units	No.	Type
00018	Y	02	T
[] [] [] [] []	[]	[] []	[]
[] [] [] [] []	[]	[] []	[]

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

GARY JENSEN
Generator Authorized Agent Name

Mary C Jensen
Signature

091192
Shipment Date

TRANSPORTER

Truck No. 65

Phone No. 510-634-6850

Transporter Name Dillard Trucking, Inc.
Job # 218/2

Driver Name (Print) STEVE LEONARD

Address P. O. Box 218
Byron, California 94544

Vehicle License No./State Y39573

Vehicle Certification

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192

Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill

Phone No. 510-447-0491

Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent

Signature [Signature]

Receipt Date 9/11/92

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-4646192 Phone No.

BFI Waste Code C.A Description of Waste NON HAZARDOUS SOIL Containers 090892 Quantity 43596 Units Y No. 0 Type T

0	0	0	1	8	Y	0		T

Type
 D - Drum
 C - Carton
 B - Bag
 T - Truck
 P - Pounds
 Y - Yards
 O - Other

I hereby certify that the above-named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

GARY C. JENKEN Signature [Signature] Shipment Date 091192
 Generator Authorized Agent Name

TRANSPORTER

Truck No. B Super Trucking Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) Curtis O Pollins
Job # 218/2 Vehicle License No./State BP86553
 Address P. O. Box 218 Vehicle Certification
Byron, California 94544

I hereby certify that the above named material was picked up at the generator site listed above. I hereby certify that the above named material was delivered without incident to the destination listed below.

Curtis O Pollins Driver Signature 091192 Shipment Date Curtis O Pollins Driver Signature 091192 Delivery Date

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-4470494
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

[Signature] Name of Authorized Agent Signature 091192 Receipt Date

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilkeam Ave
Oakland, CA 94612 Castro Valley, CA
 Phone No. 510-4646192 Phone No.
 3FI Waste Code CA 4DF 09089Z 43596 Containers
 Description of Waste Non Hazardous Soil Quantity Units No. Type

- Type
- D - Drum
- C - Carton
- B - Bag
- T - Truck
- P - Pounds
- Y - Yards
- O - Other

Quantity	Units	No.	Type
03018	Y	51	T

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name Gary C. Johnson Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 3 Phone No. 510-634-6850
 Transporter Name DILLARD TRUCKING, INC Driver Name (Print) LARRY MCGUIRE
 Address P.O. Box 218 BYRON CA 94544 Vehicle License No./State 2X61736
 Vehicle Certification 32081

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name BFT VASCO ROAD LANDFILL Phone No. 510-4470491
 Address 4001 NORTH VASCO RD., LIVERMORE, CA 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 9/11/92

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 510-464-0102 Phone No.

BFI Waste Code CA 405 090892 43596 Containers Type
 Description of Waste NON HAZARDOUS SOIL Quantity 00018 Units Y No. 0 Type T
 D - Drum
 C - Carton
 B - Bag
 T - Truck
 P - Pounds
 Y - Yards
 O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 3 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) LARRY R. GUNTER
218/2 Vehicle License No./State 2XG1335
 Address P. O. Box 218 Vehicle Certification 300811
Byron, California 94544

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 510-447-0491
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 091192

PASS CODE

NON-HAZARDOUS SPECIAL WASTE MANIFEST

GENERATOR

Generator Name BART Generating Location BART
 Address 1330 Broadway, Suite 1702 Address 21000 Wilbeam Ave.
Oakland, CA 94612 Castro Valley, CA

Phone No. 5 1 0 - 4 3 4 6 1 9 2 Phone No. -

BFI Waste Code	<u>C</u> <u>A</u>	<u>4</u> <u>0</u> <u>5</u>	<u>0</u> <u>9</u> <u>0</u> <u>3</u> <u>9</u> <u>2</u>	<u>4</u> <u>3</u> <u>5</u> <u>9</u> <u>6</u>	Containers	Type		
Description of Waste					Quantity	Units	No.	Type
<u>NON HAZARDOUS SOIL</u>					<u>0</u> <u>0</u> <u>0</u> <u>1</u> <u>8</u>	<u>Y</u>	<u>0</u>	<u>T</u>

- D - Drum
- C - Carton
- B - Bag
- T - Truck
- P - Pounds
- Y - Yards
- O - Other

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent Name GARY C. JENSEN Signature [Signature] Shipment Date 091192

TRANSPORTER

Truck No. 39 Phone No. 510-634-6850
 Transporter Name Dillard Trucking, Inc. Driver Name (Print) JIM FERRELL
Job # 218/2 Address P. O. Box 218 Vehicle License No./State 4C08284
Byron, California 94544 Vehicle Certification 300810

I hereby certify that the above named material was picked up at the generator site listed above.

I hereby certify that the above named material was delivered without incident to the destination listed below.

Driver Signature [Signature] Shipment Date 091192 Driver Signature [Signature] Delivery Date 091192

DESTINATION

Site Name B.F.I. Vasco Road Landfill Phone No. 5 1 0 - 4 4 7 0 4 9 1
 Address 4001 North Vasco Rd., Livermore, Ca. 94550

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

Name of Authorized Agent [Signature] Signature [Signature] Receipt Date 091192

PASS CODE _____

APPENDIX C

**UNDERGROUND STORAGE TANK
UNAUTHORIZED RELEASE REPORT**

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	FOR LOCAL AGENCY USE ONLY I HEREBY CERTIFY THAT I HAVE DISTRIBUTED THIS INFORMATION ACCORDING TO THE DISTRIBUTION SHOWN ON THE INSTRUCTION SHEET ON THE BACK PAGE OF THIS FORM. SIGNED _____ DATE _____
REPORT DATE 6/25/92	CASE #	

REPORTED BY	NAME OF INDIVIDUAL FILING REPORT GEORGE CHIU	PHONE (510) 208 1368	SIGNATURE
	REPRESENTING <input checked="" type="checkbox"/> OWNERS/OPERATOR <input type="checkbox"/> REGIONAL BOARD <input type="checkbox"/> LOCAL AGENCY <input type="checkbox"/> OTHER	COMPANY OR AGENCY NAME DAMES & MOORE	
ADDRESS 2101 WESTER ST., SUIT #300 OAKLAND CA 94612			

RESPONSIBLE PARTY	NAME B.A.R.T.D. <input type="checkbox"/> UNKNOWN	CONTACT PERSON GARY JENSEN	PHONE ()
	ADDRESS P.O. BOX 12688 OAKLAND CA 94604		

SITE LOCATION	FACILITY NAME (IF APPLICABLE) CASTRO VALLEY UNIPRO SCHOOL DISTRICT CORPORATION YARD	OPERATOR	PHONE (510) 537 3000
	ADDRESS 2100 W DREAM AVENUE CASTRO VALLEY CA 94546 CROSS STREET NORBRIDGE		

IMPLEMENTING AGENCIES	LOCAL AGENCY ALAMEDA COUNTY HEALTH AGENCY	AGENCY NAME	CONTACT PERSON SCOTT O ROBY	PHONE (510) 271 4530
	REGIONAL BOARD PHONE ()			

SUBSTANCES INVOLVED	(1) NAME GASOLINE	QUANTITY LOST (GALLONS) <input checked="" type="checkbox"/> UNKNOWN
	(2) <input type="checkbox"/> UNKNOWN	

DISCOVERY/ABATEMENT	DATE DISCOVERED 6/25/92	HOW DISCOVERED <input type="checkbox"/> INVENTORY CONTROL <input type="checkbox"/> SUBSURFACE MONITORING <input type="checkbox"/> NUISANCE CONDITIONS <input type="checkbox"/> TANK TEST <input checked="" type="checkbox"/> TANK REMOVAL <input type="checkbox"/> OTHER
	DATE DISCHARGE BEGAN UNKNOWN	METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY) <input type="checkbox"/> REMOVE CONTENTS <input checked="" type="checkbox"/> CLOSE TANK & REMOVE <input type="checkbox"/> REPAIR PIPING <input type="checkbox"/> REPAIR TANK <input type="checkbox"/> CLOSE TANK & FILL IN PLACE <input type="checkbox"/> CHANGE PROCEDURE <input type="checkbox"/> REPLACE TANK <input type="checkbox"/> OTHER
	HAS DISCHARGE BEEN STOPPED? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, DATE 6/25/92	

SOURCE/CAUSE	SOURCE OF DISCHARGE <input checked="" type="checkbox"/> TANK LEAK <input checked="" type="checkbox"/> UNKNOWN <input type="checkbox"/> PIPING LEAK <input type="checkbox"/> OTHER	CAUSE(S) <input type="checkbox"/> OVERFILL <input type="checkbox"/> RUPTURE/FAILURE <input type="checkbox"/> SPILL <input type="checkbox"/> CORROSION <input checked="" type="checkbox"/> UNKNOWN <input checked="" type="checkbox"/> OTHER <u>Hole</u>
--------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

CASE TYPE	CHECK ONE ONLY <input type="checkbox"/> UNDETERMINED <input type="checkbox"/> SOL ONLY <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)
-----------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

CURRENT STATUS	CHECK ONE ONLY <input type="checkbox"/> NO ACTION TAKEN <input type="checkbox"/> PRELIMINARY SITE ASSESSMENT WORKPLAN SUBMITTED <input type="checkbox"/> POLLUTION CHARACTERIZATION <input type="checkbox"/> LEAK BEING CONFIRMED <input type="checkbox"/> PRELIMINARY SITE ASSESSMENT UNDERWAY <input type="checkbox"/> POST CLEANUP MONITORING IN PROGRESS <input type="checkbox"/> REMEDIATION PLAN <input type="checkbox"/> CASE CLOSED (CLEANUP COMPLETED OR UNNECESSARY) <input checked="" type="checkbox"/> CLEANUP UNDERWAY
----------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

REMEDIAL ACTION	CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)	<input checked="" type="checkbox"/> EXCAVATE & DISPOSE (ED) <input checked="" type="checkbox"/> REMOVE FREE PRODUCT (FP) <input type="checkbox"/> ENHANCED BIO DEGRADATION (IT) <input type="checkbox"/> CAP SITE (CD) <input type="checkbox"/> EXCAVATE & TREAT (ET) <input type="checkbox"/> PUMP & TREAT GROUNDWATER (GT) <input type="checkbox"/> REPLACE SUPPLY (RS) <input type="checkbox"/> CONTAINMENT BARRIER (CB) <input type="checkbox"/> NO ACTION REQUIRED (NA) <input type="checkbox"/> TREATMENT AT HOOKUP (HU) <input type="checkbox"/> VENT SOIL (VS) <input checked="" type="checkbox"/> VACUUM EXTRACT (VE) <input type="checkbox"/> OTHER (OT)
-----------------	-------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

COMMENTS
 Leak was found upon tank closure. Tank removed and remediation underway.

APPENDIX D

**SOIL AND GROUNDWATER WASTE
CHARACTERIZATION LABORATORY REPORTS**



CKY incorporated Environmental Services

Date: 08/17/92
N9208-01

Dames & Moore
2101 Webster Street, #300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART-Castro Valley

Enclosed is the laboratory report for samples received on 08/04/92. 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>
M8015 (Gas/Diesel)	5 Comp. Soil/1 Water
EPA 8020	5 Comp. Soil/1 Water
RCI	5 Comp. Soil
STLC Lead	5 Comp. Soil
TCLP BTEX	5 Comp. Soil

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 - 8020
BTEX

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   08/04/92
PROJECT:     BART-CV                DATE ANALYZED: 08/04/92
CONTROL NO:  N9208-01              MATRIX TYPE:  Soil
=====
  
```

SAMPLE ID:	CONTROL NO:	RESULTS (ug/kg)				% SURRO RECOVERY
		Benz	Tol	Et	Benz Xyls	
C1-1,2,3,4	N9208-01-1:4	ND	ND	ND	ND	96
C2-1,2,3,4	N9208-01-5:8	ND	ND	ND	ND	88
C3-1,2,3,4	N9208-01-9:12	ND	ND	ND	ND	75
C4-1,2,3,4	N9208-01-13:16	ND	ND	ND	ND	70
C5-1,2,3,4	N9208-01-17:20	ND	ND	ND	ND	76

```

=====
DETECTION LIMIT                5      5      5      5
=====
  
```

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE ANALYZED:	08/05/92
CONTROL NO:	N9208-01	MATRIX:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DET. LIMIT</u> <u>(mg/kg)</u>	<u>% SURRO</u> <u>RECOVERY</u>
C1-1,2,3,4	N9208-01-1:4	ND	5.0	96
C2-1,2,3,4	N9208-01-5:8	ND	5.0	88
C3-1,2,3,4	N9208-02-9:12	ND	5.0	75
C4-1,2,3,4	N9208-02-13:16	ND	5.0	70
C5-1,2,3,4	N9208-02-17:20	ND	5.0	76

=====

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE EXTRACTED:	08/05/92
CONTROL NO:	N9208-01	DATE ANALYZED:	08/05/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>H-C RANGE</u>
C1-1,2,3,4	N9208-01-1:4	16	C12-C24
C2-1,2,3,4	N9208-01-5:8	7.2	C12-C24
C3-1,2,3,4	N9208-01-9:12	45	C12-C24
C4-1,2,2,4	N9208-01-13:16	150	C12-C24
C5-1,2,3,4	N9208-01-17:20	28	C12-C24

DETECTION LIMIT: 5 mg/kg

=====

24

EPA METHOD - TCLP 8020
BTEX

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   08/04/92
PROJECT:     BART-CV                DATE ANALYZED: 08/14/92
CONTROL NO:  N920801              MATRIX TYPE:  Soil
=====
  
```

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS (ug/kg)</u>				<u>% SURRO</u>
		<u>Benz</u>	<u>Tol</u>	<u>Et Benz</u>	<u>Xyls</u>	
C1-1,2,3,4	n920801-1:4	ND	ND	ND	ND	77
C2-1,2,3,4	n920801-5:8	ND	ND	ND	ND	77
C3-1,2,3,4	n920801-9:12	ND	ND	ND	ND	73
C4-1,2,3,4	n920801-13:16	ND	ND	ND	ND	67
C5-1,2,3,4	n920801-17:20	ND	ND	ND	ND	89
TCLP Blank	n920801 Blk	ND	ND	ND	ND	97

```

=====
DETECTION LIMIT          5          5          5          5
=====
  
```

WET EPA 3010/6010
STLC LEAD by ICP

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE ANALYZED:	08/11/92
CONTROL NO:	N920801	MATRIX:	Water

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
C1-1,2,3,4	n920804-1:4	0.13	0.10
C2-1,2,3,4	n920804-5:8	0.11	0.10
C3-1,2,3,4	n920804-9:12	0.20	0.10
C4-1,2,3,4	n920804-13:16	0.30	0.10
C5-1,2,3,4	n920804-17:20	0.13	0.10

=====

EPA 376.1
REACTIVE SULFIDE

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE EXTRACTED:	08/06/92
CONTROL NO:	N9208-01	DATE ANALYZED:	08/06/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
C1-1,2,3,4	N9208-01-1:4	ND	50
C2-1,2,3,4	N9208-01-5:8	ND	50
C3-1,2,3,4	N9208-01-9:12	ND	50
C4-1,2,3,4	N9208-01-13:16	ND	50
C5-1,2,3,4	N9208-01-17:20	ND	50

=====

EPA 335.2
REACTIVE CYANIDE

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE EXTRACTED:	08/06/92
CONTROL NO:	N9208-01	DATE ANALYZED:	08/07/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/kg)</u>	<u>DETECTION LIMIT</u> <u>(mg/kg)</u>
C1-1,2,3,4	N9208-01-1:4	ND	50
C2-1,2,3,4	N9208-01-5:8	ND	50
C3-1,2,3,4	N9208-01-9:12	ND	50
C4-1,2,3,4	N9208-01-13:16	ND	50
C5-1,2,3,4	N9208-01-17:20	ND	50

=====

EPA 120.1
ELECTRICAL CONDUCTIVITY

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE EXTRACTED:	08/06/92
CONTROL NO:	N9208-01	DATE ANALYZED:	08/06/92
MATRIX:	Soil		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(uhoms/cm)</u>	<u>DET. LIMIT</u> <u>(uhoms/cm)</u>
C1-1,2,3,4	N9208-01-1:4	260	1.0
C2-1,2,3,4	N9208-01-5:8	300	1.0
C3-1,2,3,4	N9208-01-9:12	240	1.0
C4-1,2,3,4	N9208-01-13:16	270	1.0
C5-1,2,3,4	N9208-01-17:20	150	1.0

=====

EPA 1010
IGNITABILITY

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE ANALYZED:	08/07/92
CONTROL NO:	N9208-01	MATRIX TYPE:	Soil

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(°C)</u>	<u>DETECTION LIMIT</u> <u>(°C)</u>
C1-1,2,3,4	N9208-01-1:4	65	20
C2-1,2,3,4	N9208-01-5:8	61	20
C3-1,2,3,4	N9208-01-9:12	72	20
C4-1,2,3,4	N9208-01-13:16	62	20
C5-1,2,3,4	N9208-01-17:20	62	20

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9208-01

METHOD: EPA 8020
 MATRIX: Soil

SAMPLE ID: N9208-01-1:4

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (ug/kg)	<u>AMOUNT SPIKED</u> (ug/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	20	105	120	13
Toluene	ND	20	115	110	4
Ethyl Benzene	ND	20	100	90	11
Xylene	ND	40	95	98	3

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA M8015G
MATRIX: Soil

SAMPLE ID: N9208-01-13:16

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Gasoline	ND	2	105	85	21

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA M8015D
MATRIX: Soil

SAMPLE ID: N9208-01-5:8

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Diesel	7.2	500	83	86	3

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N920801

METHOD: EPA TCLP 8020
MATRIX: Soil

SAMPLE ID: 920836-1

<u>COMPOUND</u>	<u>SAMPLE RESULTS</u> (mg/kg)	<u>AMOUNT SPIKED</u> (mg/kg)	<u>% REC.</u>	<u>DUP. % REC.</u>	<u>RPD</u>
Benzene	ND	12	108	92	16
Toluene	ND	14	121	100	19
Chlorobenzene	ND	15	113	100	12

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N920801

METHOD: EPA WET 3010/6010
 MATRIX: Soil

SAMPLE ID: Blank Spike/Duplicate

<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>
Lead	ND	1.0	81	72	12

QUALITY CONTROL FORM

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA 376.1
MATRIX Soil

SAMPLE ID N9208-01-17:20

<u>COMPOUND</u>	<u>SAMPLE RESULT</u> (mg/kg)	<u>DUP. SAMPLE RESULT</u> (mg/kg)	<u>% RPD</u>
Sulfide	ND	ND	0

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA 1010
MATRIX Soil

SAMPLE ID N9208-01-1:4

<u>COMPOUND</u>	<u>SAMPLE RESULT</u> (°C)	<u>DUP. SAMPLE RESULT</u> (°C)	<u>% RPD</u>
Ignitability	65	65	0

QUALITY CONTROL FORM

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

METHOD EPA 335.2
MATRIX Soil

SAMPLE ID N9208-01-17:20

<u>COMPOUND</u>	<u>SAMPLE RESULT</u> (mg/kg)	<u>DUP. SAMPLE RESULT</u> (mg/kg)	<u>% RPD</u>
Cyanide	ND	ND	0

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA 120.1
MATRIX Soil

SAMPLE ID N9208-01-1:4

<u>COMPOUND</u>	<u>SAMPLE RESULT</u> (mg/kg)	<u>DUP. SAMPLE RESULT</u> (mg/kg)	<u>% RPD</u>
EC	260	260	0

CLIENT NAME: JAMES F MOORE

ADDRESS: 2101 WEBSTER

OAK 94612

PHONE NO. 939-3600 FAX NO. _____

PROJECT NAME: BART - CASTRO VALLEY

SEND REPORT TO: ESKOV

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

DATE: 8/3/92
PAGE: 1 OF 2

03715-051 Field



CXY Incorporated
Environmental Services
1942 Valley Avenue Suite F
Pleasanton, CA 94566
Tel: 910 846 3188
Fax: 910 846-1236

SAMPLER NAME/SIGNATURE

PETER DAVIS / Peter Davis

TIME AROUND TIME

WATER: _____
SOIL: _____
SILT/SAND: _____

ANALYSES REQUESTED

SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE
C1-1	8/3/92	NONE	5 STEEL RING
C1-2	↓	↓	↓
C1-3			
C1-4			
C2-1	↓	↓	↓
C2-2			
C2-3			
C2-4			
C3-1	↓	↓	↓
C3-2			
C3-3			
C3-4			

BRAD

COMMENTS:

HOLD

PENDING INSTRUCTIONS fm. ERIC SKOV.

Limit Recipient
8/4/92
10.000

Relinquished by (Signature)

Peter Davis

Date

8/3/92

Received by (Signature)

Eric Skov

Date

8/4/92

Company

Davis + Moore

Time

5:00

Company

CXY

Time

11:00

Relinquished by (Signature)

Company

Date

Time

Received by (Signature)

Company

Date

Time

Storage/Disposal of Samples: Sample will be stored at CXY for 30 days at no charge and a \$10.00 per month thereafter. Disposal of sample by the laboratory will be charged at \$10/sample.

CLIENT NAME: DAMES & MOORE
 ADDRESS: 2101 WEBSTER
CA 94612
 PHONE NO: 839-3600 FAX NO:
 PROJECT NAME: BART-CASTRO VALLEY
 SEND REPORT TO: ERIK SKOV

CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS

DATE: 8/3/92
 PAGE: 2 of 2



Environmental Services
 of California, Inc.
 Pleasanton, CA 94566
 Tel: 510 816-1188
 Fax: 510 816-1236

SAMPLER NAME/SIGNATURE				TURN AROUND TIME			ANALYSES REQUESTED											
<u>PETER DAVIS / Peter Davis</u>				NORMAL			SAMPLE	DESCRIPTION			413	MSD	8010/601	8020/602	8090/606	5240/624	5071/607	SAR Metals
				RUSH				WATER	SOIL	OTHER								
C4-1	8/3/92	NONE	5-STEEL				GRAB											
C4-2																		
C4-3																		
C4-4																		
C5-1																		
C5-2																		
C5-3																		
C5-4																		
WW 1																		
WW 1				(5) NOA'S			GRAB											
				(2) R AMBER														

COMMENTS: HOLD

Relinquished by: (Signature) <u>Peter Davis</u>	Date: <u>8/3/92</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>8/4/92</u>	Relinquished by: (Signature)	Date:	Received by (Signature)	Date
Company: <u>Dames & Moore</u>	Time: <u>5:00</u>	Company: <u>CEI</u>	Time: <u>11:00</u>	Company:	Time	Company:	Time

Storage/Disposal of Samples: Sample will be stored at C&K for 30 days at no charge and at \$10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.



CKY incorporated Environmental Services

Date: 08/17/92
N9208-01

Dames & Moore
2101 Webster Street, #300
Oakland, CA 94612

Attn: Mr. Erik Skov

Subject: Laboratory Report
Project: BART-Castro Valley

Enclosed is the laboratory report for samples received on 08/04/92. 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>
M8015 (Gas/Diesel)	5 Comp. Soil/1 Water
EPA 8020	5 Comp. Soil/1 Water
RCI	5 Comp. Soil
STLC Lead	5 Comp. Soil
TCLP BTEX	5 Comp. Soil

The results are summarized on the following pages.

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

Sincerely,

Dammy Hoang
Laboratory Director

EPA METHOD - 8020
BTEX

```

=====
CLIENT:      Dames & Moore          DATE REC'D:   08/04/92
PROJECT:     BART-CV                 DATE ANALYZED: 08/04/92
CONTROL NO:  N9208-01               MATRIX TYPE:  Water
=====

```

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS (ug/L)</u>				<u>% SURRO</u>
		<u>Benz</u>	<u>Tol</u>	<u>Et Benz</u>	<u>Xyls</u>	<u>RECOVERY</u>
WW1	N9208-01-21	ND	ND	ND	ND	82
<u>DETECTION LIMIT</u>		1	1	1	1	

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

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE ANALYZED:	08/04/92
CONTROL NO:	N9208-01	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>
WW-1	N9208-01-21	ND	1.0	82

=====

EPA METHOD Mod. 8015
TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/04/92
PROJECT:	BART-CV	DATE EXTRACTED:	08/06/92
CONTROL NO:	N9208-01	DATE ANALYZED:	08/06/92
MATRIX:	Water		

=====

<u>SAMPLE ID:</u>	<u>CONTROL NO:</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>H-C RANGE</u>
WW1	N9208-01-21	ND	N.A.

DETECTION LIMIT: 5 mg/L

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: BART-CV
 CONTROL NO: N9208-01

METHOD: EPA 8020
 MATRIX: Water

SAMPLE ID: Blank

<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	20	95	120	23
Toluene	ND	20	110	110	0
Ethyl Benzene	ND	20	110	90	20
Xylene	ND	40	103	98	5

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD: EPA M8015G
MATRIX: Water

SAMPLE ID: Blank

<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>
Gasoline	ND	2	100	85	16

QUALITY CONTROL DATA

CLIENT: Dames & Moore
PROJECT: BART-CV
CONTROL NO: N9208-01

=====

METHOD EPA M8015D
MATRIX: Water

SAMPLE ID: N9208-01-21

<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	500	101	106	5

CLIENT

NAME: DAMES F. MOORE

ADDRESS: 2101 WEBSTER

CAV 94612

PHONE NO 839-3600 (FAX NO.)

PROJECT NAME: BART-CASTRO VALLEY

SEND REPORT TO: ERIK SKOV

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

DATE 8/3/92
PAGE 2 OF 2



Environmental Sciences
4100 California Avenue, Suite 200
Chasoma, CA 94506
Tel: 916 846 4188
Fax: 916 846 4236

SAMPLER NAME/SIGNATURE

PETER DAVIS / Peter Davis

TURN AROUND TIME

NORMAL
RUSH

ANALYSIS TO GOVERN

SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYP	SAMPLE DESCRIPTION			ANALYSIS TO GOVERN											
				WATER	SOIL	OTHER	MS: 5	8110 6	8025 60c	8080 60c	5240 52-	5270 50c	5270 50c	5270 50c				
C4-1	8/3/92	NONE	S-STEEL		GRAB													
C4-2																		
C4-3																		
C4-4																		
C5-1																		
C5-2																		
C5-3																		
C5-4																		
WW1																		
WW1				(5) VOA'S (2) R AMBER	GRAB													

COMMENTS

HOLD

Relinquished by (Signature) <u>Peter Davis</u>	Date <u>8/3/92</u>	Received by (Signature) <u>[Signature]</u>	Date <u>8/4/92</u>	Relinquished by (Signature)	Date	Received by (Signature)	Date
Company <u>Dames & Moore</u>	Time <u>5:00</u>	Company <u>CKY</u>	Time <u>11:00</u>	Company	Time	Company	Time

Storage/Disposal of Samples: Sample will be stored at CKY for 30 days at no charge and at \$10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.



CKY incorporated Analytical Laboratories

Date: 08/25/92
920851

Dames & Moore
2101 Webster St. # 300
Oakland CA 94612

Attn: Graeme Nyland

Subject: Laboratory Report
Project: Bart Castro Valley

Enclosed is the laboratory report for samples received on 08/18/92. 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 335.2 (Cyanide)	1 Water
EPA 9065 (Phenols)	1 Water
EPA 3005/6010	1 Water
EPA 150.1 (pH)	1 Water

The results are summarized on seven pages.

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

Sincerely,

Wasfi Attalla, Ph.D.
Laboratory Director

EPA 335.2
CYANIDE

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/18/92
PROJECT:	Bart Castro Valley	DATE EXTRACTED:	08/20/92
CONTROL NO:	920851	DATE ANALYZED:	08/21/92
MATRIX:	Soil		

=====

SAMPLE ID:	CONTROL NO:	RESULTS (mg/L)	DETECTION LIMIT (mg/L)
WT 1	920851-2	ND	0.02
Method Blank	920851	ND	0.02

=====

EPA 9065
PHENOLS

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/18/92
PROJECT:	Bart Castro Valley	DATE EXTRACTED:	08/20/92
CONTROL NO:	920851	DATE ANALYZED:	08/21/92
MATRIX:	Soil		

=====

SAMPLE ID:	CONTROL NO:	RESULTS (mg/L)	DETECTION LIMIT (mg/L)
WT 1	920851-1	ND	0.05
Method Blank	920851	ND	0.05

=====

EPA 3005/6010/7000
TTLIC METALS BY ICP/AAS

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/18/92
PROJECT:	Bart Castro Valley	DATE EXTRACTED:	08/19/92
SAMPLE ID:	WT 1	DATE ANALYZED:	08/19/92
CONTROL NO:	920851-3	MATRIX TYPE:	Water

=====

<u>PARAMETERS</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
Arsenic	ND	0.01
Cadmium	ND	0.01
Chromium - Total	ND	0.01
Copper	0.01	0.01
Lead	ND	0.10
Mercury	ND	0.0002
Nickel	0.06	0.05
Silver	ND	0.01
Zinc	0.06	0.01

=====

EPA 3005/6010/7000
TTLC METALS BY ICP/AAS

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/18/92
PROJECT:	Bart Castro Valley	DATE EXTRACTED:	08/19/92
SAMPLE ID:	Method Blank	DATE ANALYZED:	08/19/92
CONTROL NO:	920851	MATRIX TYPE:	Water

=====

<u>PARAMETERS</u>	<u>RESULTS</u> <u>(mg/L)</u>	<u>DETECTION LIMIT</u> <u>(mg/L)</u>
Arsenic	ND	0.01
Cadmium	ND	0.01
Chromium - Total	ND	0.01
Copper	ND	0.01
Lead	ND	0.10
Mercury	ND	0.0002
Nickel	ND	0.05
Silver	ND	0.01
Zinc	0.05	0.01

=====

EPA 150.1
pH

=====

CLIENT:	Dames & Moore	DATE REC'D:	08/18/92
PROJECT:	Bart Castro Valley	DATE ANALYZED:	07/18/92
CONTROL NO:	920851	MATRIX:	Water

=====

=====

SAMPLE ID:	CONTROL NO:	RESULTS (pH Units)	DETECTION LIMIT (pH Units)
WT 1	920851-4	8.7	0.1

=====

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: Bart Castro Valley
 CONTROL NO: 920851

METHOD EPA 150.1
 MATRIX: Water

SAMPLE ID: 920851-4

<u>COMPOUND</u>	<u>SAMPLE RESULT</u> (pH units)	<u>DUP. SAMPLE RESULT</u> (pH units)	<u>RPD %</u>
pH	8.7	8.7	0

METHOD EPA 3005/6010
 MATRIX: Water

SAMPLE ID: 920851-3

<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>
Arsenic	ND	1.0	104	115	10
Cadmium	ND	1.0	103	99	4
Chromium	ND	1.0	102	95	7
Lead	ND	1.0	98	96	2
Silver	ND	1.0	102	90	12
Nickel	ND	1.0	108	103	5
Mercury	ND	0.005	80	100	20

QUALITY CONTROL DATA

CLIENT: Dames & Moore
 PROJECT: Bart Castro Valley
 CONTROL NO: 920851

METHOD: EPA 9065
 MATRIX: Water

SAMPLE ID: 920851-1

<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>
Phenols	ND	0.50	92	88	4

METHOD: EPA 335.2
 MATRIX: Water

SAMPLE ID: Method Blank

<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>
Cyanide	ND	0.20	90	90	0

GW

920851

CLIENT NAME: DAMES & MOORE
 ADDRESS: 2101 WEBSTER ST. #300
OAKLAND, CA 94612
 PHONE NO. _____ FAX NO. _____
 PROJECT NAME: BART CASTRO VALLEY
 SEND REPORT TO: GRAEME NYLAND

CHAIN OF CUSTODY RECORD
 REQUEST FOR ANALYSIS

DATE: 8/17/92
 PAGE _____ OF _____

due 8/28
 R3B



CKY Incorporated
 Environmental Services
 3942 Valley Avenue, Suite F
 Pleasanton, CA 94566
 Tel: 510-846-3188
 Fax: 510-846-1236

SAMPLER NAME/SIGNATURE				TURN AROUND TIME			ANALYSES REQUIRED										
<i>Edison</i>				NORMAL	<input checked="" type="checkbox"/>		418.1	M8015	8010/601	8020/602	8080/608	8240/624	8270/625	SAM Metals	Phenols	Cyanide	PK
				RUSH	<input type="checkbox"/>												
SAMPLE NUMBER	SAMPLING DATE/TIME	PRESERVATIVE	CONTAINER SIZE/TYPE	SAMPLE DESCRIPTION													
				WATER	SOIL	OTHER											
WT 1	8/17/92 11:00AM	H ₂ SO ₄	1 liter glass	X											X		
		NaOH	500ml plastic	X												X	
		Nitric Acid	1 liter plastic	X										X			
		NONE	500 ml glass	X													X

COMMENTS: SEE LIST OF METALS ON ATTACHED LIST

Relinquished by: (Signature) <i>[Signature]</i>	Date: <u>8/17/92</u>	Received by: (Signature) <i>[Signature]</i>	Date:	Relinquished by: (Signature)	Date:	Received by: (Signature) <i>[Signature]</i>	Date: <u>8/18</u>
Company: <u>CKY</u>	Time:	Company:	Time:	Company:	Time:	Company: <u>CKY</u>	Time: <u>10am</u>

Storage/Disposal of Samples: Sample will be stored at CKY for 30 days at no charge and at \$10/sample/month thereafter. Disposal of sample by the Laboratory will be charged at \$10/sample.