UNDERGROUND AND ABOVE GROUND STORAGE TANK REMOVAL AND SAMPLING REPORT

461 McGraw Avenue Livermore, California

Prepared For:

Call Mac Transportation Company, Inc. 461 McGraw Avenue Livermore, CA

Prepared By:

Remediation Risk Management, Inc. P.O. Box 1362 Aptos, California 95001

17 October 1995

APPROVALS:

Katherine M. Howard

Project Coordinator

Christopher J. Peoples

Project Manager

170595

Date

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1.0 INTRODUCTION

Remediation Risk Management, Inc. (RRM) was retained by Call Mac Transportation Company, Inc. to remove one underground storage tank (UST), remove one above ground storage tank and conduct soil, sludge and water sampling at the subject site. The site is the location of an operating transportation company at 461 McGraw Avenue in Livermore, Alameda County, California (Figure 1, Site Location Map). The following report summarizes the tank removal and sampling activities which took place on 25 July 1995.

2.0 SITE DESCRIPTION

The subject site is a transportation service facility, Call Mac Transportation, Inc. The nearest cross street to the subject site is South Front Road (Figure 1, Site Location Map). The property is approximately 120,000 square feet in size. Much of the site has trucks and truck trailers parked over the site. Thirty-nine 55-gallon drums containing polyester resin are located in one section of the site. Formerly one pump island was located along the northern portion of the site near the underground storage tank (UST-1). Figure 2 presents the location of the underground storage tank and above ground storage tanks (T-1 through T-5).

3.0 WORK OBJECTIVES

- 1. Notification of USAlert for the location of underground utilities at the subject property.
- 2. Empty product from tanks (T-1 and UST-1) and dispose of properly.
- 3. Uncover UST-1, and inert and remove above ground storage tank T-1 and underground storage tank UST-1 for appropriate disposal.
- 4. Perform soil sampling beneath UST-1 and related piping, and collect soil samples from beneath above ground storage tanks T-2 and T-3 in areas with apparent spillage and have soil samples analyzed for petroleum hydrocarbons at a state-certified laboratory.
- 5. Sample sludge inside tanks T-2 and T-3 and analyze for PCBs and VOCs.
- 6. Sample stock-piled soils and backfill with native soils and import fill to grade.

4.0 WORKSCOPE

Remediation Risk Management addressed the above mentioned Work Objectives with the following activities: 1) Pre-Field Activities, 2) Tank Removal and Related Soil Sampling Activities, 3) Soil Sampling in areas of spillage below T-2 and T-3, 4) Backfilling Tank Pits and 5) Sample contents of T-2 and T-3.

4.1 PRE-FIELD ACTIVITIES

USAlert was notified regarding subsurface excavating on the subject property at least 3 days prior to starting work.

4.2 TANK REMOVAL AND SAMPLING ACTIVITIES

4.2.1 Underground and Above Ground Storage Tank Removal

One 12,000-gallon diesel underground storage tank (UST-1) and one 5,000-gallon diesel above ground tank (T-1) was removed. Under the supervision of a representative of Remediation Risk Management, Inc. (RRM), John's Excavating (Santa Rosa, CA) performed the excavation, tank removal and soil sampling activities. UST-1 was pumped by North Valley Oil into their truck tank. Prior to removal of each tank, dry ice was introduced to inert the tank. An O₂ meter was used to verify oxygen levels inside the tank were less than 10% LEL. Kurt Hayes of the Livermore Fire Prevention Department oversaw the inerting of T-1 and Danielle Stefani oversaw the inerting of the UST-1. H & H Ship Service Company hauled the tanks to their China Basin Facility located at 220 Terry Francois in San Francisco, CA. The Uniform Hazardous Waste Manifest forms for the product and two tanks are included in Appendix A.

The floor of the tank excavation varied from 12 to 14 feet below ground surface.

Groundwater was observed in the base of the tank excavation. Soils and fill excavated from around the tank were stockpiled on visqueen near the excavation. Stained soils were noted at around the pipe leading to the dispenser.

Tank Conditions

The tanks were examined following excavation. The 12,000-gallon diesel UST-1 measured approximately 8 feet in diameter and 34 feet in length. No penetrating holes were observed in the single-walled steel tank. The tank was installed in approximately 1974. The fill and vent piping was removed along with the tank. The 5,000-gallon diesel tank measured approximately 8 feet in diameter and 15 feet in length. No penetrating holes were observed in the single-walled steel tank.

4.2.2 Sampling

Soil sampling locations are indicated on Figure 3.

UST-1 and Associated Piping

Three soil samples, designated S-1 through S-3 were collected from beneath the underground storage tank. The general location of the former tank and soil sample locations are presented in the attached Figure 2. Generally the soil samples were collected at a depth of approximately 1 foot below the floor of the tank excavation, one below the fill end, one in the middle, and the other below the non-fill end of the tank. At each sampling location, the backhoe operator was instructed to retrieve a load of soils. The top three inches of soil were scraped away prior to sample collection. A laboratory-supplied pre-cleaned brass sleeve of 2-inch diameter and 3-inch length was driven into each load of soils and then the soil-packed sleeve sample was sealed with aluminum foil and plastic caps. A fourth soil sample, designated S-4, was collected from approximately 2 feet bgs below the former dispenser island (Figure 3).

Approximately 1 foot of groundwater pooled in the base of the excavation. The backhoe operator was instructed to retrieve a load of soils and water. A laboratory supplied sterilized 1-liter glass jar and one 40 ml glass VOA was used to collect the water sample, designated sample UST.

Now stay

Above Ground Storage Tanks T-2 and T-3

There were two areas of surface spillage beneath above ground tanks T-2 and T-3. One soil sample was collected approximately 1.5 feet bgs at each location (designated ST-2 and ST-3). A hand auger was used to advance the shallow borings. The samples were collected in 2-inch diameter and 3-inch long stainless steel sleeves through the use of a slide sampler. In addition, there was a sludge-like petroleum substance in both tanks. Samples, designated T-2 and T-3, from each tank were collected in 40 ml VOAs.

Stockpile

Three soil samples, designated SD-1 through SD-3, were collected from the stockpile in 2-inch diameter and 3-inch long stainless steel sleeves.

Sample Storage and Analytical

The soil, water and sludge samples were labeled and placed in a cooler with ice for transport to Hull Developmental Labs (San Jose, California). Samples S-1 through S-3 and SD-1 through SD-3 were analyzed for TPHd, MO, and BTEX. Sample S-4, ST-2 and ST-3 were analyzed for TPHd, MO, TPHg and BTEX. The water sample was analyzed for TPHd, TPHg and BTEX. Sludge samples, T-2 and T-3, were analyzed for volatile organic compounds (VOCs) and polychlorinated biphenyls (PCBs). Hull Developmental Labs utilized Modified Method 8015 for the analyses of MO, TPHd and TPHg for soil and water. EPA Methods 8020, 8010,

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and 8080 were used for the analysis of BTEX, VOCs and PCBs, respectively. A chain of custody record was initiated in the field and accompanied the samples to the laboratory. Results of the laboratory analyses are presented in Table 1. The laboratory analyses report and chain of custody forms are included in Appendix B.

4.2.2 Stockpiled Soils

The excavated soils were stockpiled near the excavation. Three soil samples were collected from the stockpile (SD-1 through SD-3) and submitted for laboratory analyses to be analyzed for TPHd, Motor Oil and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Results are presented in Table 1. On 25 July 1995, the tank excavation was backfilled with the native soils and compacted in 3-foot lifts to 4 feet below grade. Clean import fill was backfilled and No for Part compacted to grade.

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5.0 TANK REMOVAL & SAMPLING RESULTS AND CONCLUSIONS

Upon removal of the UST and the above ground storage tank, they appeared in good condition with no visible holes. The field observations combined with the analytical results (S-1 through S-3 were non-detect for all constituents tested for) indicate the area around the UST was not impacted with petroleum hydrocarbons. The soil sample collected from near the dispenser piping (S-4) was found to contain 17,000 parts per million (ppm) TPHd. This sample was collected from an area of obvious over-spillage. Table 1 and Figure 4 presents sampling locations, depths, and concentrations of TPHd. The stockpile soil samples analyses indicated MO concentrations ranging from non-detect to 100 ppm. BTEX and TPHd were not detected in these soil samples. The stockpiled soils were returned to the excavation. The water sample collected from the base of the excavation did not have detectable concentrations of any of the constituents analyzed.

Samples ST-2 and ST-3 collected from stained areas beneath aboveground storage tanks T-2 and T-3 showed TPHd concentrations of 840 ppm and 210 ppm, respectively. Table 1 and Figure 4 presents sampling locations, depths, and concentrations of TPHd.

The sludge samples collected from within T-2 and T-3 did not have detectable concentrations of PCBs or VOCs. The sludge has been pumped by North Valley Oil. Results are presented in Table 1.

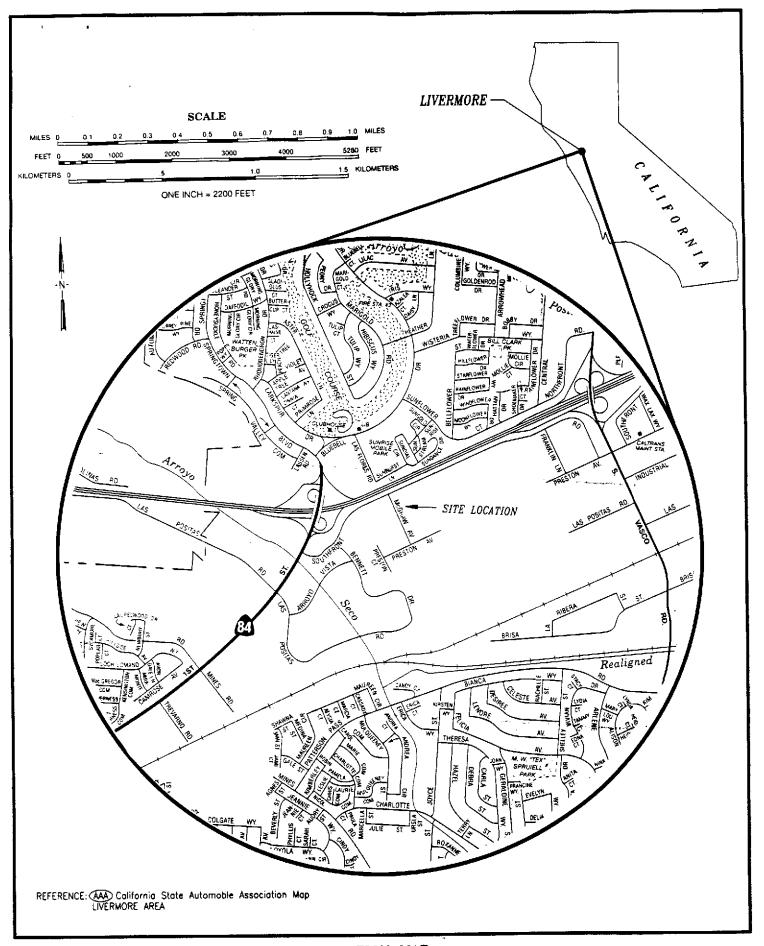
6.0 RECOMMENDATIONS

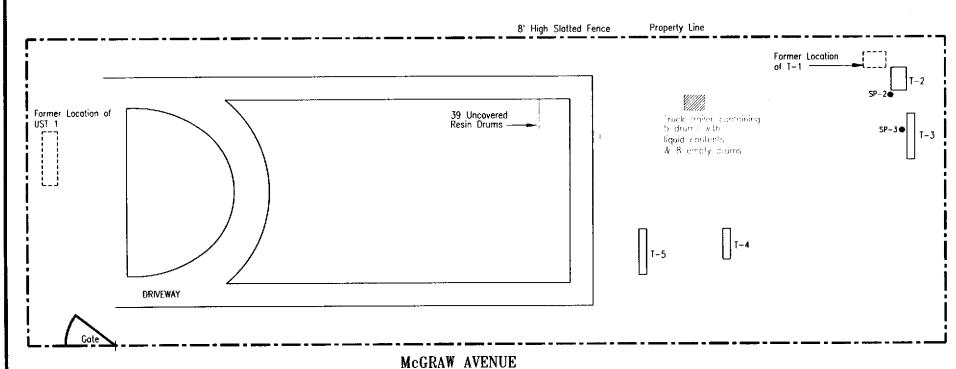
It is recommended that additional site characterization be performed including: 1) characterization of the contents of the 39 55-gallon drums, 2) additional surface sampling in areas suspect of being impacted with petroleum hydrocarbons, and 3) removal of the remaining above ground tanks (tanker truck trailers).

7.0 LIMITATIONS FOR SUBSURFACE SAMPLING AND INVESTIGATIONS

Evaluations of the geological conditions at the site for the purpose of this investigation are inherently limited due to the limited number of observation points. There may be variations in subsurface conditions in areas away from the sample points. There are no representations, warranties, or guarantees that the points selected for sampling are representative of the entire site. Data from this report reflects the sample conditions at specific locations at a specific point in time. No other interpretations, representations, warranties, guarantees, express or implied, are included or intended in the report findings. Additional work, including further subsurface investigation, might reduce the inherent uncertainties associated with this type of investigation.

FIGURES







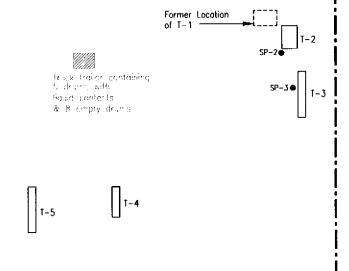
NOTE: UST - Underground Storage Tanks

T - Above Ground Storage Tanks

SITE PLAN 461 McGraw Avenue Livermore, California 20 40

Scale in feet

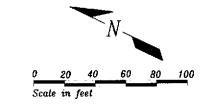
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LEGEND

DRIVEWAY

NOTE: UST — Underground Storage Tanks T — Above Ground Storage Tanks



Remediation Risk Management, Inc.

Farmer Location of

UST 1 **●**S-3

●S-2

SAMPLE LOCATIONS 461 McGraw Avenue Livermore, California

8' High Slatted Fence

39 Uncovered Resin Drums —

McGRAW AVENUE

Property Line

ND(13-14) 8' High Slatted Fence Property Line Former Location Former Location of 39 Uncovered Resin Drums truck trailer containing 5 drams with UST 1 ●S+3 ND (13-14) PRESTON AVENUE liquid contents & 8 empty drums DRIVEWAY McGRAW AVENUE LEGEND SOIL SAMPLES --- FORMER ASSOCIATED DISPENSER PIPING XXX TPHO CONCENTRATIONS (ppm) IN SOIL SAMPLES (SAMPLING DEPTH-feet) (x-x') DEPTH OF SAMPLE NOTE: UST - Underground Storage Tanks T - Above Ground Storage Tanks TPHd - Total Petroleum Hydrocarbons-as-deisel Scale in feet ppm - parts per million (mg/Kg)



TABLE 1
Remediation Risk Management, Inc.
SUMMARY OF ANALYSES

461 McGraw Avenue, Livermore, California

SAMPLING LD. (Matrix)	SAMPLING DATE	Sampling Depth (feet)	TPHg (ppm)	TPHd (ppm)	Motor Oil (ppm)	VOCs (8010 Compounds) (ppm)	BTEX (ppm)
S-1 (soil)	25 July 95	13-14	NA	<1.0	<1.0	NA	<0.005
S-2 (soil)	25 July 95	13-14	NA	<1.0	<1.0	NA	< 0.005
S-3 (soil)	25 July 95	13-14	NA	<1.0	<1.0	NA	<0.005
S-4 (soil)	25 July 95	2-3	8.4*	17,000	<1.0	NA	<0.005
SD-1 (soil)	25 July 95	Stockpile	NA	<1.0	60	NA	< 0.005
SD-2 (soil)	25 July 95	Stockpile	NA	<1.0	100	NA	<0.005
SD-3 (soil)	25 July 95	Stockpile	NA	<1.0	<1.0	NA	<0.005
ST-2 (soil)	25 July 95	1.5-2	13*	840	<1.0	NA	< 0.005
ST-3 (soil)	25 July 95	1.5-2	14*	210	<1.0	NA	< 0.005
SAMPLING I.D. (Matrix)	SAMPLING DATE	TPHg (ppb	TPHd (ppb)	PCBs (ppb)	VOCs (8010 C (ppb		
UST (water)	25 July 95	<50.0	<50.0	NA	NA	<0.5	
T-2 (sludge)	25 July 95	NA	NA	ND	ND	NA	
T-3 (sludge)	25 July 95	NA	NA	ND	ND	NA	

NOTES: TPHg - Total Petroleum Hydrocarbons-as-gasoline

TPHd - Total Petroleum Hydrocarbons-as-diesel

ppm = parts per million (mg/kg)

ppb = parts per billion (mg/L)

PCBs - Polychlorinated biphenyls

BTEX - benzene, toluene, ethylbenzene and total xylenes

VOCs - Volatile organic compounds

Bold - Samples with constituents detected above the analytical detection method.

resimpest

^{* -} Chromatogram indicates concentration not indicative of gasoline

APPENDIX A MANIFESTS

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Department of Toxic Substances Guide

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See Instructions on back of page 6.

Department of Toxic Substances Con Sacramento, California

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	-	7. Transporter 2 Company Name		8. US EPA ID Number	7 7 1	11618		Transporter's ID	(415)	643-4835	
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APPENDIX B LABORATORY REPORTS

Organic Analysis Worksheet: EPA Method #8010

Client:	RRM
Sample Matrix:	Waste Oil
Lab#:	B7453
Sample ID:	T2

Date:	8/21/95
Date Received:	7/25/95
Date Analyzed	8/18/95

	Concentration			Concentration	
Compound	Found	MDL	Compound	Found	MDL
Bromodichloromethane	ND	1 ppm	trans-1,2-Dichloroethene	ND	1 ppm
Bromoform	ND	1 ppm	1,2-Dichloropropane	ND	I ppm
Bromomethane	ND	1 ppm	cis-1,3-Dichloropropene	ND	1 ppm
Carbon Tetrachloride	ND	1 ppm	trans-1,3-Dichloropropene	ND	1 ppm
Chlorobenzene	ND	l ppm	Methylene Chloride	ND	1 ppm
Chloroethane	ND	1 ppm	1,1,2,2-Tetrachloroethane	ND	1 ppm
Chloroform	ND	1 ppm	Tetrachloroethene	ND	1 ppm
Chloromethane	ND	l ppm	1,1,1-Trichloroethane	ND	1 ppm
Dibromochloromethane	ND	1 ppm	1,1,2-Trichloroethane	ND	1 pp m
Dichlorodifluoromethane	ND	l ppm	Trichloroethene	ND	1 ppm
1,2-Dichlorobenzene	ND	1 ppm	Trichlorofluoromethane	ND	1 pp m
1,3-Dichlorobenzene	ND	1 ppm	Vinyl Chloride	ND	1 ppm
1,4-Dichlorobenzene	ND	1 ppm			•
1,1-Dichloroethane	ND	1 ppm			
1,2-Dichloroethane	ND	1 ppm			
1,1-Dichloroethene (cis)	ND	1 ppm			

Surrogate	Recovery (%)
4-Bromofluorobenzene	60

- 1. PQL= Detection Limit x Dilution Factor
- 2. Reporting Units: mg/kg
- 3. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)
- 4. This worksheet is an integral part of the Certified Analytical Report for Lab #B7453 and should not be reproduced except in full without the written consent of Hull Development Labs, Inc.

Michael N. Golden, Lab Director

DF=Dilution Factor

MDL=Method Detection Limit

PQL=Practical Quantitation Limit ND=None Detected at or above PQL

Organic Analysis Worksheet: EPA Method #8010

Client:	RRM
Sample Matrix:	Waste Oil
Lab #:	B7454
Sample ID:	Т3

Date:	8/21/95
Date Received:	7/25/95
Date Analyzed	8/18/95

Compound	Concentration Found	MDL	Compound	Concentration Found	MDL
Bromodichloromethane	ND	1 ppm	trans-1,2-Dichloroethene	ND	1 ppm
Bromoform	ND	1 ppm	1,2-Dichloropropane	ND	1 ppm
Bromomethane	ND	l ppm	cis-1,3-Dichloropropene	ND	1 ppm
Carbon Tetrachloride	ND	1 ppm	trans-1,3-Dichloropropene	ND	1 ppm
Chlorobenzene	ND	l ppm	Methylene Chloride	ND	l ppm
Chloroethane	ND	1 ppm	1,1,2,2-Tetrachloroethane	ND	1 ppm
Chloroform	ND	1 ppm	Tetrachloroethene	ND	1 ppm
Chloromethane	ND	1 ppm	1,1,1-Trichloroethane	ND	1 ppm
Dibromochloromethane	ND	1 ppm	1,1,2-Trichloroethane	ND	1 ppm
Dichlorodifluoromethane	ND	1 ppm	Trichloroethene	ND	I ppm
1,2-Dichlorobenzene	ND	1 ppm	Trichlorofluoromethane	ND	l ppm
1,3-Dichlorobenzene	ND	1 ppm	Vinyl Chloride	ND	l ppm
1,4-Dichlorobenzene	ND	1 ppm			
1,1-Dichloroethane	ND	1 ppm			
1,2-Dichloroethane	ND	1 ppm			
1,1-Dichloroethene (cis)	ND	1 ppm			

Surrogate	Recovery (%)
4-Bromofluorobenzene	60

- 1. PQL= Detection Limit x Dilution Factor
- 2. Reporting Units: mg/kg
- 3. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)
- 4. This worksheet is an integral part of the Certified Analytical Report for Lab #B7453 and should not be reproduced except in full without the written consent of Hull Development Labs, Inc.

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit ND=None Detected at or above PQL

Attn: Chris Peoples Remediation Risk Management P.O. Box 1362 Aptos, CA 95001

Date:	8/21/95
Date Received:	7/25/95
Date Analyzed:	See Attached
Project:	CE 82
Sampled By:	Client

Certified Analytical Report

Waste Oil Analysis:

Test	T2	T2 T3		MDL	EPA Method#
Sample Matrix	Waste Oil	Waste Oil			
Sample Date	7/25/95	7/25/95			
Sample Time	1005	1000			
Lab#	B7453	B7454			
Volatile Organics	ND	ND	mg/kg	See Worksheet	8010
PCB's	ND	ND	mg/kg	See Worksheet	8080

- 1. PQL=DF x MDL
- 2. See Organic Analysis Worksheet for individual compounds, detection limits, and analysis date
- 3. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor

MDL=Method Detection Limit

PQL=Practical Quantitation Limit ND=None Detected at or above PQL

QUALITY CONTROL RESULTS SUMMARY FOR DIESEL ANALYSIS

DIESEL

QC sample No.: BLANK SPIKE & DUP

Date analyzed:

.08-01-95

Date extracted:

08-01-95

QC batch:

DW089501

Matrix: WATER

Units: ug/L

Dilution factor:

1.

COMPOUND	; ; SA ;ug/L	¦ ¦ SR ¦ug/L	¦ ¦ MS ¦ug/L	MS PR	¦ ¦ MSD ¦ug/L	¦ ¦MSD ¦PR	RPD	¦QC L ¦(ADV ¦RPD	IMITS ISORY)
DIESEL	950	0	800	84	 835 	88	5	25	 50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

QUALITY CONTROL RESULTS SUMMARY FOR GASOLINE ANALYSIS

GASOLINE

QC sample No.: BLANK SPIKE & DUP Date analyzed: 07-31-95

Matrix: WATER

Dilution factor: 1 Units: ug/L

COMPOUND	¦ SA ¦ug/L	¦ SR ug/L	¦ ¦ MS ¦ug/L	 MS PR	¦ ¦ MSD ¦ug/L	MSD PR	 RPD		IMITS ISORY) PR
GASOLINE	245	¦ 0	255	104	246	100	4	25	50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

QUALITY CONTROL RESULTS SUMMARY BTEX

QC sample No.: BLANK SPIKE & DUP Date analyzed: 07-31-95

Matrix: WATER

Units: ug/L

Dilution factor:

1

COMPOUND	¦ ¦ SA ¦ug/L	SR ug/L	¦ ¦ MS ¦ug/L	 MS PR	¦ MSD ¦ug/L	 MSD PR	RPD	QC L (ADV RPD	IMITS ISORY) ; PR
BENZENE	20	. 0	22	110	22	110	0	25	50150
TOLUENE	20	0	22	1.10	21	105	; 5	25	50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

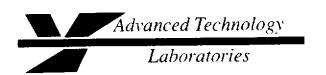
 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Subcontract Chain of Custody

Subcontract Lab:	l.	Date Sent:	Project Name:		Due Date:			
Administ Technology	whs	7/31/95	7	F (E82	8/8/95			
Advanced Technology (Sample ID and Source	Matrix	Required Analysis	Date Taken	Time Taken	Containers	Pres'		
137453	wastp 0.1	Required Analysis GOOD PCBONLY GOOD PCBONLY	7/25/45		1x40ml VOA			
B7454	UASTO 1	SUSO PCBONLY	7/25/45		1×40ml VOA			
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August 3, 1995

ELAP No.: 1838

Hull Development Labs 525 Del Rey Ave. Ste. E Sunnyvale, CA 94086

ATTN: Mr. Mike Golden

Client's Project #:

CE 82

Lab No.:

7481-001/002

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero Laboratory Director

EPC/kk

Enclosures

This cover letter is an integral part of this analytical report.

This report pertains only to the samples investigated and does not necessarily apply to other apparently identical or similar materials. This report is submitted for the exclusive use of the client to whom it is addressed. Any reproduction of this report or use of this Laboratory's name for advertising or publicity purposes without authorization is prohibited.

Client: Hull Development Attn: Mr. Mike Golden

Client's Project: CE 82
Date Received: 08/01/95
Extraction Method: 3580
Matrix: Oil
Units: mg/kg

EPA Method 8080 (PCB)

1 91	h No :	Metho	d Blank	7481-0		7481-0	02	 				
Client Sample				B7453		B7454	V.					
Date San				07/25/		07/25/9	5	 			-	
				958080		958080O055		 				· · · · · · · · · · · · · · · · · · ·
			08/01/		08/01/95							
Date Anal				08/02/		08/02/9		 				
Analyst In				YZ		YZ		 <u> </u>				
Dilution F		1		1		1						······································
ANALYTE	MDL	DLR		DLR		DLR				-	<u> </u>	
Alpha-BHC	0.06	0.06	NA	0.06	NA	0.06	NA					
Gamma-BHC (Lindane)	0.06	0.06	NA	0.06	NA	0.06	NA	 				
Beta-BHC	0.06	0.06	NA		NA		NA					
Heptachlor	0.06	0.06	NA	0.06	NA	0.06	NA					
Delta-BHC	0.06	0.06	NA	0.06	NA	0.06	NA					
Aldrin	0.06	0.06	NA	0.06	NA	0.06	NA					
Heptachlor Epoxide	0.06	0.06	NA	0.06	NA	0.06	NA					
Endosulfan I	0.06	0.06	NA	0.06	NA	0.06	NA					
4.4'-DDE	0.12	0.12	NA	0.12	NA	0.12	NA					
Dieldrin	0.12	0.12	NA	0.12	NA	0.12	NA					
Endrin	0.12	0.12	NA	0.12	NA	0.12	NA					
4,4'-DDD	0.12	0.12	NA	0.12	NA	0.12	NA.					
Endosulfan II	0.12	0.12		0.12	NA		NA					
4.4'-DDT	0.12	0.12	NA	0.12	NA	0.12	NA					
Endrin Aldehyde	0.12	0.12	NA	0.12	NA	0.12	NA	- 1	<u> </u>			
Endosulfan Sulfate	0.12	0.12	NA	0.12	NA		NA					
Methoxychlor	0.51	0.51	NA	0.51	NA	0.51	NA					
Chlordane	0.51	0.51	NA	0.51	NA		NA			:		
Toxaphene	5.1	5.1	NA		NA	5.1	NA			<u> </u>		·
Aroclor-1016	1	1	ND	1	ND	1	ND					
Aroclor-1221	2	2	ND		ND		ND		<u> </u>	:		
Aroclor-1232	i	1	ND		ND		ND					
Aroclor-1242	i	1	ND		ND		ND					
Aroclor-1248	1	1	ND		ND		ND					
Aroclor-1254	1	1	ND		ND		ND			1		er (
Aroclor-1260	1	1	ND		ND	1	ND					
Aroclor-1262	1	1	ND	1	ND	1	ND		<u> </u>			

MDL	=	Method Detection Limit
ND	=	Not Detected (Below DLR)
DLR	=	MDL X Dilution Factor

NA = Not Analyzed

Reviewed/Approved By: _		Date: 8/3/95
	Yun Pan	
	Department Supervisor	

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report - OIL (mg/kg)

Method : C:\HPCHEM\5\METHODS\PCB54A.M
Title : 8080/608 Pesticides/PCB's
Last Update : Thu Aug 03 15:50:37 1995

Response via : Initial Calibration

Non-Spiked Sample: PB6612.D

Spike Spike

Sample Duplicate Sample

File ID: PS6614.D | PS6615.D

Sample : BLK-MS E-8/1/95 BLK-MSD E-8/1/95 Acq Time: 02 Aug 95 11:40 AM 02 Aug 95 12:16 PM

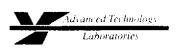
Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC RPD	Limits % Rec
AROCLOR 1254 AROCLOR 1254 {1} AROCLOR 1254 {2} AROCLOR 1254 {3} AROCLOR 1254 {4} AROCLOR 1254 {5}	0.0 0.0 0.0 0.0 0.0	200 200 200 200 200 200 200	183 202 194 169 174 174	194 201 193 170 175 174	91 101 97 85 87	97 100 97 85 87	6 0 0 0	50 50 50 50 50	50-150 50-150 50-150 50-150 50-150 50-150

QC Batch #: 9580800055

Reviewed/Approved By:

Organics Supervisor

Date: 8/3/95



QUALITY CONTROL RESULTS SUMMARY VOLATILE ORGANICS ANALYSIS

BLANK SPIKE & DUP Date analyzed: 08-10-95 QC sample No.:

Matrix: WATER

Dilution factor: 1 Units: ug/L

COMPOUND	 SA ug/L	SR ug/L	,	 MS PR	====== MSD ug/L	===== ; ;MSD ;PR			IMITS ISORY) PR
BENZENE	! ! 20	: : 0	21	; ; 105	: : 21	 105	. 0	25	50-150
	20	. 0	16	80	1.6	80	0	25	 50-150
CHLOROBENZENE	į	, - ! !	! !	į	ì	i	i		50-150
1,1-DCA	20	0	20	100	22	110	10		į
TOLUENE	20	0	19	95	20	1.00	5	25	¦50-150 ¦
TCE	20	; o	21	105	; 22	1110	; 5	; 25	50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

Hull Development Labs

1149 Minnesota Ave., San Jose, CA 95125 Tel: (408) 287-1777 Fax: (408) 287-1786

Client: RRM

Address: 195 RUBIL RUN TO

Project ID: CE 87

LAB USE ONLY

Samples arrived chilled and intact:

Chain of Custody/Analysis Work Order

Purchase Order #:

Sampler/Company:

Tele	Contact: cH phone #: bb eceived: Around: r	7-9411			Special Instru	ctions/C	omments			Ves Notes:	No		
			Sample I	nformation				3.5		Requested A	nalysis		<u> </u>
Lab#	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	Bostown Basis /m	i				
	51	₩ 6	SOIL	7/25	1310		743" shows	×				B74	144
	52				1315		4	×				B71	145
	23				1120		١,	λ				B74	1460
	501				1325		11	χ				1374	147
	502	:			1330		Ì1	Х				B74	148
	503				1535		10 .	*				B74	149
Reling By:	11-1)		Received	d By Alla	1fe	,,,,,	<u> </u>	Date 7/2	5/45	Time ()	3004	1
Reling By:	•			Received	d By:				Date		Time		
Reling/ Bv:		· · · · · · · · · · · · · · · · · · ·		Received	d By:				Date		Time		

Attn: Chris Peoples

Remediation Risk Management

P.O. Box 1362 Aptos, CA 95001

Date:	8/7/95
Date Received:	7/25/95
Date Analyzed:	8/3/95
Project:	CE82
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	SI	S2	S3	Units	MDL	EPA Method#
Sample Matrix	Soil	Soil	Soil			
Sample Date	7/25/95	7/25/95	7/25/95			
Sample Time	1310	1315	1320	- 1		
Lab #	B7444	B 7445	B7446			
DF-Motor Oil	1	1	1			
Motor Oil	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-Diesel	1	1	1			
TPH-Diesel	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1	1			
Benzene	ND	ND	ND	mg/kg	0,005 mg/kg	8020
Toluene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	mg/kg	0.005 mg/kg	8020

1. PQL=DF x MDL

2. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor

MDL=Method Detection Limit

PQL=Practical Quantitation Limit ND=None Detected at or above PQL

Attn: Chris Peoples Remediation Risk Management P.O. Box 1362 Aptos, CA 95001

Date:	8/7/95
Date Received:	7/25/95
Date Analyzed:	8/3/95
Project:	CE82
Sampled By:	Client

Certified Analytical Report

Soil Sample Analysis:

Test	SD1	SD2	SD3	Units	MDL	EPA Method#
Sample Matrix	Soil	Soil	Soil			
Sample Date	7/25/95	7/25/95	7/25/95			
Sample Time	1325	1330	1335			
Lab #	B7447	B7448	B7449			
DF-Motor Oil	1	1	1			
Motor Oil	60	100	ND	mg/kg	1.0 mg/kg	8015M
DF-Diesel	1	1	1			
TPH-Diesel	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-BTEX	1	1	1			
Benzene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	mg/kg	0.005 mg/kg	8020

- 1. PQL=DF x MDL
- 2. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit ND=None Detected at or above PQL

QUALITY CONTROL RESULTS SUMMARY FOR DIESEL ANALYSIS

DIESEL

QC sample No.: BLANK SPIKE & DUP Date analyzed: 07-25-95

Date extracted: 07-24-95

QC batch: DS079508

Matrix: SOIL

Units: mg/Kg Dilution factor: 1

COMPOUND	 SA mg/Kg	-	MS mg/Kg	MS PR	¦ MSD mg/Kg	MSD PR	 RPD	;QC LIMI ;(ADVISC ;RPD ;	
DIESEL	25	¦ ¦ 0	20	80	18	72	11	25 50)-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

QUALITY CONTROL RESULTS SUMMARY BTEX

QC sample No.; BLANK SPIKE & DUP Date analyzed: 07-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	SA ug/L	SR ug/L	•	===== MS PR	; MSD ug/L	MSD PR	•	QC L QC L (ADV RPD	IMITS ISORY) PR
BENZENE	20	 : :	22	110	22	110	0	25	56-150
TOLUENE	20	0	22	110	21	105	5	25	50- 1 50

MS = Spike sample NC = Not calculated

MSD = Spike sample duplicate

RPD = $100 \times (MS-MSD)/((MS+MSD)/2)$ PR = $100 \times ((MS \text{ or } MSD) - SR)/SA$

Hull Development Labs

1149 Minnesota Ave., San Jose, CA 95125 Tel: (408) 287-1777 Fax: (408) 287-1786

Man

195 QUAIL RUN RD

Client:

Address:

Project ID: LE & 7

Telephone #:

LAB USE ONLY

Chain of Custody/Analysis Work Order

Purchase Order #:

Sampler/Company:

Tele Date R	Contact: C phone #: C lecceived: C Around: C	7/25	(E)	S	pecial Instru reass ve analyses	ctions/C	STZ AND				Yes otes:		No	nd intact	:
			Sample l	Information				23.1		R	equeste	d Anal	ysis		
Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	8.5 8.5 5.48.66.							
	STZ	,	Soil	7/25	1415		273" 565616	X		:				B74	150
	5T3				1430		ų	1						B74	151
	5:4				1500	-	tı .	X						B7'	152
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Relinq By	Pala			Received	MUC	7	Ja		Date	7/25	145	7	ime C.	30 1/7	
Reling By	:			Received	HBy:				Date			7	Гіте		
Reling/ By				Received	LBy:				Date			1	l'ime		

Hull Development Labs

1149 Minnesota Ave., San Jose, CA 95125 Tel: (408) 287-1777

Fax: (408) 287-1786

Chain of Custody/Analysis Work Order

Client:	mm	Project ID:	CE82	LAB USE ONLY
Address:	195 Rume our Ro	Purchase Order #:		
	APTOS CA 3500 3	Sampler/Company:	Telephone #:	Samples arrived chilled and intact:
Contact:	CHAIL PROPLES	_		Yes No
Telephone #:	408 662 9411	Special Instructions/Comment		Notes:
Date Received:	7/25	- OVERIEY ANALYSES	WIIT	
Turn Around:	Mormal		*	

			Sample l	nformation						Re	queste	d Anal	ysis		
	,	_	1	_	· · · · · · · · · · · · · · · · · · ·	.,		3	0 % %	27.3	3.5	103			
Lab #	Sample ID	Grab/ Composite	Matrix	Date Collected	Time Collected	Pres.	Sample Container	à	25.55 25.55 25.55	1015/10 0,163 EL	PNA	אר זפיבע מציפים מיז			
	TZ		WASTE	7/25	1005		WA	X	×			0		B74	53
	T3		11	11	1000		LLITER	X	X			0		B74	54
	UST!		t120	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1302		1 21780/1004			×	*			B74	155
								•							
Reling By		-		Received	iBy: iU	Ru 19	L		Date	7125	145	1	ime 6 3	POPM	
Reling By	:			Received	By:				Date			ī	ime	· · ·	
Reling/ By	:			Received	By:				Date			1	ìme		

Attn: Chris Peoples

Remediation Risk Management

P.O. Box 1362 Aptos, CA 95001

Date:	8/9/95	
Date Received:	7/25/95	
Date Analyzed:	8/7/95	
Project:	CE 82	
Sampled By:	Client	

Certified Analytical Report

Soil Sample Analysis:

Test	ST2	ST3	S4	Units	MDL	EPA Method#
Sample Matrix	Soil	Soil	Soil			
Sample Date	7/25/95	7/25/95	7/25/95			
Sample Time	1415	1430	1500			
Lab #	B7450	B7451	B7452			
DF-Diesel	100	1	20			·
TPH-Diesel	840	210	17,000	mg/kg	1.0 mg/kg	8015M
DF-Motor Oil	100	1	20			
Motor Oil	ND	ND	ND	mg/kg	1.0 mg/kg	8015M
DF-Gas/BTEX	1	1	I			
TPH-Gas	13*	14*	8.4*	mg/kg	1.0 mg/kg	8015M
Benzene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Toluene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Ethyl Benzene	ND	ND	ND	mg/kg	0.005 mg/kg	8020
Xylenes	ND	ND	ND	mg/kg	0.005 mg/kg	8020

- 1. PQL=DF x MDL
- 2. *TPH-Gas chromatogram for lab #B7450, B7451 & B7452, although within the reporting range, does not match the typical Gas pattern.
- 3. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor MDL=Method Detection Limit PQL=Practical Quantitation Limit ND=None Detected at or above PQL

525 Del Rey Avenue, Suite E Sunnyvale, CA 94086

QUALITY CONTROL RESULTS SUMMARY FOR DIESEL ANALYSIS

DIESEL

QC sample No.: BLANK SPIKE & DUP

Date analyzed:

07-25-95

Date extracted:

07-24-95

QC batch:

DS079508

Matrix: SOIL

Units: mg/Kg

Dilution factor:

COMPOUND	 SA mg/Kg mg	,		MS PR	 MSD mg/Kg	•	RPD		IMITS ISORY) PR
DIESEL	======= 25 1	0	20	80	18	72	11 	25 =====	 50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

NC = Not calculated

** = Out of limits

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

NC = Not calculated

** = Out of limits

QUALITY CONTROL RESULTS SUMMARY FOR GASOLINE ANALYSIS

GASOLINE

QC sample No.: BLANK SPIKE & DUP Date analyzed: 07-31-95

Matrix: WATER

Dilution factor: 1 Units: ug/L

COMPOUND	SA ug/L	SR ug/L	 MS ug/L	MS PR	¦ ¦ MSD ¦ug/L	¦ ¦MSD ¦PR	RPD		IMITS ISORY) PR
GASOLINE	; ; 245	, 0	255	104	246	100	4	25	50-150

MS = Spike sample

MSD = Spike sample duplicate

SR = Sample result

SA = Spike added

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

QUALITY CONTROL RESULTS SUMMARY BTEX

QC sample No.; BLANK SPIKE & DUP Date analyzed: 07-31-95

Matrix: WATER

Units: ug/L Dilution factor: 1

COMPOUND	¦ ¦ SA ¦ug/L	; SR ug/L	 MS ug/L	 MS PR	¦ ¦ MSD ¦ug/L	¦ ¦MSD ¦PR	RPD		IMITS ISORY) PR
BENZENE	20	0	22	110	22	110	0	25	56-150
TOLUENE	20	0	22	110	21	105	5	25	 50-150

MS = Spike sample NC = Not calculated

MSD = Spike sample duplicate

SA = Spike added

 $RPD = 100 \times (MS-MSD)/((MS+MSD)/2)$

 $PR = 100 \times ((MS \text{ or } MSD) - SR)/SA$

Hull Development Labs, Inc.

525 Del Rey Avenue, Suite E • Sunnyvale, CA 94086 • (408) 735-1550 • Fax (408) 735-1554

Attn: Chris Peoples

Remediation Risk Management

P.O. Box 1362 Aptos, CA 95001

Date:	8/21/95
Date Received:	7/25/95
Date Analyzed:	8/8/95
Project:	CE 82
Sampled By:	Client

Certified Analytical Report

Water Sample Analysis:

Test	UST	Units	MDL	EPA Method#
Sample Matrix	Water			
Sample Date	7/25/95			
Sample Time	1302			
Lab#	B7455			
DF-Diesel	1			
TPH-Diesel	ND	μg/liter	50.0 μg/l	8015M
DF-Gas/BTEX	1			
TPH-Gas	ND	μg/liter	50.0 μg/l	8015M
Benzene	ND	μg/liter	0.5 μ g/l	8020
Toluene	ND	μg/liter	0.5 μ g/l	8020
Ethyl Benzene	ND	μg/liter	0.5 μg/l	8020
Xylenes	ND	μg/liter	0.5 μg/l	8020

- 1. PQL=DF x MDL
- 2. Analysis performed by Hull Development Labs, Inc. (CAELAP #1369)

Michael N. Golden, Lab Director

DF=Dilution Factor
MDL=Method Detection Limit

PQL=Practical Quantitation Limit
ND=None Detected at or above PQL