

**NOVEMBER 1991 QUARTERLY MONITORING REPORT
FOR
HERTZ SERVICE CENTER
#1 AIRPORT DRIVE
OAKLAND
ALAMEDA COUNTY
CALIFORNIA**

Prepared For:

**THE HERTZ CORPORATION
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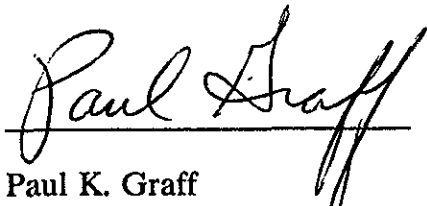
**ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
4090 NELSON AVENUE, SUITE J
CONCORD, CALIFORNIA 94520**

PROJECT NO. 6-91-5228

December 11, 1991


This report has been prepared by Environmental Science & Engineering, Inc. for the exclusive use of The Hertz Corporation as it pertains to their site located at #1 Airport Drive, Oakland, California. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists and engineers practicing in this field. No other warranty, express or implied, is made as to professional advice in this report.

REPORT PREPARED BY:


Paul K. Graff
Senior Project Geologist

12/19/91
DATE

UNDER THE PRIMARY REVIEW OF:


Susan S. Wickham, RG 3851
Senior Geologist

12/19/91
DATE

PROJECT NO. 6-91-5228

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1.0 INTRODUCTION

This Quarterly Monitoring Report describes ground-water measurement and sampling activities for November 1991 at the Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California. The site is an active rental car service and fueling facility located at the Oakland Airport.

1.1 Background

Figure 1 - Site Plan shows the former locations of underground fuel tanks (gasoline tanks of 10,000 and one 5,000 gallon capacity, and a waste oil tank of 500 gallon capacity) and piping removed in November 1988 by Paradiso Construction (Woodward-Clyde, 1990). Six soil samples (A1 - A6) and one ground-water sample (A5) were collected from the excavation by Paradiso at the time of tank removal. Soil samples B1 and B2 were collected from the piping trenches and dispenser area, and a composite sample (C1, C2, and C3) was collected from stockpiled soil from the excavation. The soil and ground-water samples were analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX). Table 1 - Summary of Soil and Ground Water Sampling Analytical Results shows that soil sample B2 from the dispenser area contained 1,300 ppm (parts per million) TPHg and BTEX concentrations ranging from 19 to 200 ppm. None of the other soil samples contained detectable concentrations of TPHg or BTEX. Soil sample A1 was also analyzed for Halogenated Volatile Organics (HVO, using EPA Method 8010), however, none were detected. The ground-water sample contained 7,400 ppb (parts per billion) TPHg, and BTEX concentrations ranging from 63 to 1,900 ppb (results are presented in Table 1).

Because ground water had been impacted by hydrocarbons, Woodward-Clyde Consultants installed three ground-water monitoring wells in December 1989. Ground water was found at a depth of approximately five feet in these wells. Soil types found were poorly-graded to well-graded sand fill to a depth of approximately 13 feet, and sand and clay to total depth (16.5 feet). Soil samples collected during well drilling did not contain detectable

concentrations of Semivolatile Organics (EPA 8270), TPHg, TPH as diesel (TPHd), or BTEX. The soil samples were also analyzed for metals; none were detected at concentrations above state-defined hazardous waste levels (TTLC or Total Threshold Limit Concentrations).

The ground-water flow direction was estimated to be to the southwest, towards San Francisco Bay. None of the ground-water samples from the three wells contained detectable concentrations of TPHg, TPHd, BTEX, HVO, or Semivolatile Organics, although several tentatively identified compounds from this latter group were noted (Woodward-Clyde, 1990).

Based upon these results, Hertz requested case closure of the site in 1991 from the lead regulatory agency, Alameda County Department of Environmental Health (ACDEH). In his March 21, 1991 letter to Hertz, Mr. Barney Chan of the ACDEH denied the request; replying instead that one year of quarterly monitoring and sampling at the site would be necessary before closure could be considered (ACDEH, 1991).

Environmental Science & Engineering, Inc. (ESE) was contracted by Hertz to perform the quarterly sampling and reporting. The first quarterly report in August 1991 (ESE, 1991) showed that none of the ground-water samples from the three wells contained detectable concentrations of TPHd, TPHg, HVO, Semivolatile Organics, or the metals Cd (Cadmium), Cr (Chromium), Pb (Lead), Ni (Nickel), and Zi (Zinc).

In his March 1991 letter, Mr. Chan of the ACDEH indicated that after two quarters of sampling ACDEH would consider modifying the list of analytical parameters if nondetectable concentrations were noted.

This report presents the results of the second quarter of monitoring and sampling (November 1991).

2.0 METHODS AND PROCEDURES

On November 12, 1991, depth to ground water was measured in the three wells before each was purged of 10 gallons of water (approximately 5 casing volumes) with a hand operated positive displacement pump. Water samples were collected from each well with clean disposable bailers and stored on ice in labeled 40-ml glass vials and 1-liter amber bottles for transport to Curtis & Tompkins, a State-certified analytical laboratory. The samples were analyzed for TPHg, using EPA Method 5030/8015-modified, TPHd, using EPA Method 3550/8015-modified, BTEX, using EPA Method 5030/8020, Oil & Grease, using SMWW 5520, the metals Cd, Cr, Pb, Ni, and Zi, Semivolatile Organics, using EPA Method 8270, and Halogenated Volatile Organics, using EPA Method 8010.

Purge water was stored on site in a drum pending analytical results and disposal arrangements.

3.0 RESULTS

3.1 Ground-Water Elevations

Depth to ground water in the wells on November 12, 1991 ranged from 4.23 to 4.74 below top of well casing. The ground-water level in well MW-1 rose by 0.76 feet since August 1991, while declining by 0.23 feet and 0.14 feet, respectively, in wells MW-2 and MW-3. Figure 2 - Ground-Water Elevation Contours shows that the ground-water gradient is approximately 0.015 ft/ft towards the south-southwest. The flow direction is slightly more southerly and the gradient approximately half that measured in August 1991.

3.2 Ground-Water Sampling Results

Table 1 shows the results of ground-water analyses for all wells in November 1991. None of the ground-water samples contained detectable concentrations of the analytes, except for the sample from well MW-2, which contained 52 ppb TPHd. Because this concentration was so close to the laboratory reporting limit of 50 ppb, a duplicate sample was analyzed. The duplicate sample did not contain detectable concentrations of TPHd.

Laboratory reports and chain of custody documents for the November 1991 sampling are included in Appendix A.

4.0 CONCLUSIONS

- Other than 52 ppb TPHd (detection limit 50 ppb) detected in well MW-2, no hydrocarbons or metals were detected in the November 1991 ground-water samples. A duplicate analysis of the ground-water sample from well MW-2 did not show detectable concentrations of TPHd.
- The ground-water gradient estimated in November 1991 was 0.015 ft/ft towards the south-southwest, slightly more southerly and less steep than that measured in August 1991.
- Two more quarters of ground-water sampling and monitoring are scheduled. In view of the analytical results from the first two quarters of sampling, ESE recommends that subsequent ground-water sample analyses be limited to TPH as gasoline, TPH as diesel, and BTEX. In their March 1991 letter to Hertz, ACDEH indicated that modifying the list of analytical parameters would be considered if nondetectable concentrations were noted in analytical results from the first two quarters of ground-water sampling.

5.0 REFERENCES

Alameda County Department of Environmental Health, 1991, Letter to Jane Woodwell of Hertz concerning Request to Close Monitoring Wells.

Environmental Science & Engineering (ESE), 1991, August 1991 Quarterly Monitoring Report for Hertz Service Center, #1 Airport Drive, Oakland, Alameda County, California, September 16, 1991.

Woodward-Clyde Consultants, 1990, Preliminary Soil and Groundwater Contamination Assessment, Hertz Service Center, #1 Airport Drive, Oakland, California., February 1990.

TABLE 1 - SUMMARY OF SOIL AND GROUND-WATER SAMPLING ANALYTICAL RESULTS AT
HERTZ/OAKLAND AIRPORT, OAKLAND, CALIFORNIA

GROUND WATER		Ground- Water Depth (feet)	Metals (ppb)					Oil & Grease (ppb)	Total Petroleum Hydrocarbons (ppb)							Purgeable Halocarbons (EPA 8010) (ppb)	Semi-Volatile Organics (EPA 8270) (ppb)
Date	Well		Cd	Cr	Pb	Ni	Zn		as Gasoline	as Kerosene	as Diesel	B	T	E	X		
11/12/91	MW-1	4.39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND		
	MW-2	4.23	ND	ND	ND	ND	ND	ND	52†	ND	ND	ND	ND	all ND	all ND		
	MW-3	4.74	7.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	all ND	all ND		
08/20/91	MW-1	5.15	all ND					ND	ND	ND	ND	ND	ND	ND	all ND	all ND	
	MW-2	4.00	all ND					ND	ND	ND	ND	ND	ND	ND	all ND	all ND	
	MW-3	4.60	all ND					ND	ND	ND	ND	ND	ND	ND	all ND	all ND	
12/22/89	MW-1	4.5 est.	--					--	ND	--	ND	ND	ND	ND	all ND	all ND*	
	MW-2	4.5 est.	--					--	ND	--	ND	ND	ND	ND	all ND	all ND*	
	MW-3	5.0 est.	--					--	ND	--	ND	ND	ND	ND	all ND	all ND*	
11/25/88	Water Sample A5 from excavation						--	7,400	--	--	63	570	250	1900	--	--	

† Detection limit for TPH as Diesel is 50 ppb. Duplicate sample analyzed contained ND<50 ppb.

SOIL		Sample Depth (feet)	Metals (ppm)					Oil & Grease (ppm)	Total Petroleum Hydrocarbons (ppb)							Purgeable Halocarbons (EPA 8010) (ppb)	Semi- Volatile Organics (EPA 8270) (ppb)
Date	Sample ID		Cd	Cr	Pb	Ni	Zn		as Gasoline	as Kerosene	as Diesel	B	T	E	X		
12/20/89	MW 1-2	2	--	19.7	2.5	23.5	--	ND	--	ND	ND	ND	ND	ND	all ND	all ND	
	MW 1-5	5	--	--	--	--	--	ND	--	ND	ND	ND	ND	all ND	all ND		
	MW 2-2	2	--	18.1	1.5	12.3	--	ND	--	ND	ND	ND	ND	all ND	all ND		
	MW 2-5	5	--	--	--	--	--	ND	--	ND	ND	ND	ND	all ND	all ND		
	MW 3-2	2	--	19.8	1.5	11.0	--	ND	--	ND	ND	ND	ND	all ND	all ND		
	MW 3-5	5	--	--	--	--	--	ND	--	ND	ND	ND	ND	all ND	all ND		

TABLE 1 (Continued. . .) - SUMMARY OF SOIL AND GROUND-WATER SAMPLING ANALYTICAL RESULTS AT
HERTZ/OAKLAND AIRPORT, OAKLAND, CALIFORNIA

SOIL		Sample Depth (feet)	Metals (ppm)	Oil & Grease (ppm)	Total Petroleum Hydrocarbons (ppb)								Purgeable Halocarbons (EPA 8010) (ppb)	Semi- Volatile Organics (EPA 8270) (ppb)
Date	Sample ID				Gasoline	Kerosene	Diesel	B	T	E	X			
11/25/88	A1	From	--	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	--
	A2	Tank	--	--	ND	--	--	ND	ND	ND	ND	ND	--	--
	A3	Exca- vation	--	--	ND	--	--	ND	ND	ND	ND	ND	--	--
	A4		--	--	ND	--	--	ND	ND	ND	ND	ND	--	--
	A5		--	--	ND	--	--	ND	ND	ND	ND	ND	--	--
	A6		--	--	ND	--	--	ND	ND	ND	ND	ND	--	--
11/25/89	B-1	Piping	--	--	ND	--	--	ND	ND	ND	ND	ND	all ND	all ND
	B-2	Exca- vation	--	--	1,300	--	--	55	51	19	200	ND	--	--
	C1,C2, C3	Composite from soil stockpiled from exca- vation	--	--	ND	--	--	ND	ND	ND	ND	ND	all ND	all ND

ND = Not detected. For detection limits see Appendix A - Laboratory Reports and Chain of Custody Documents.

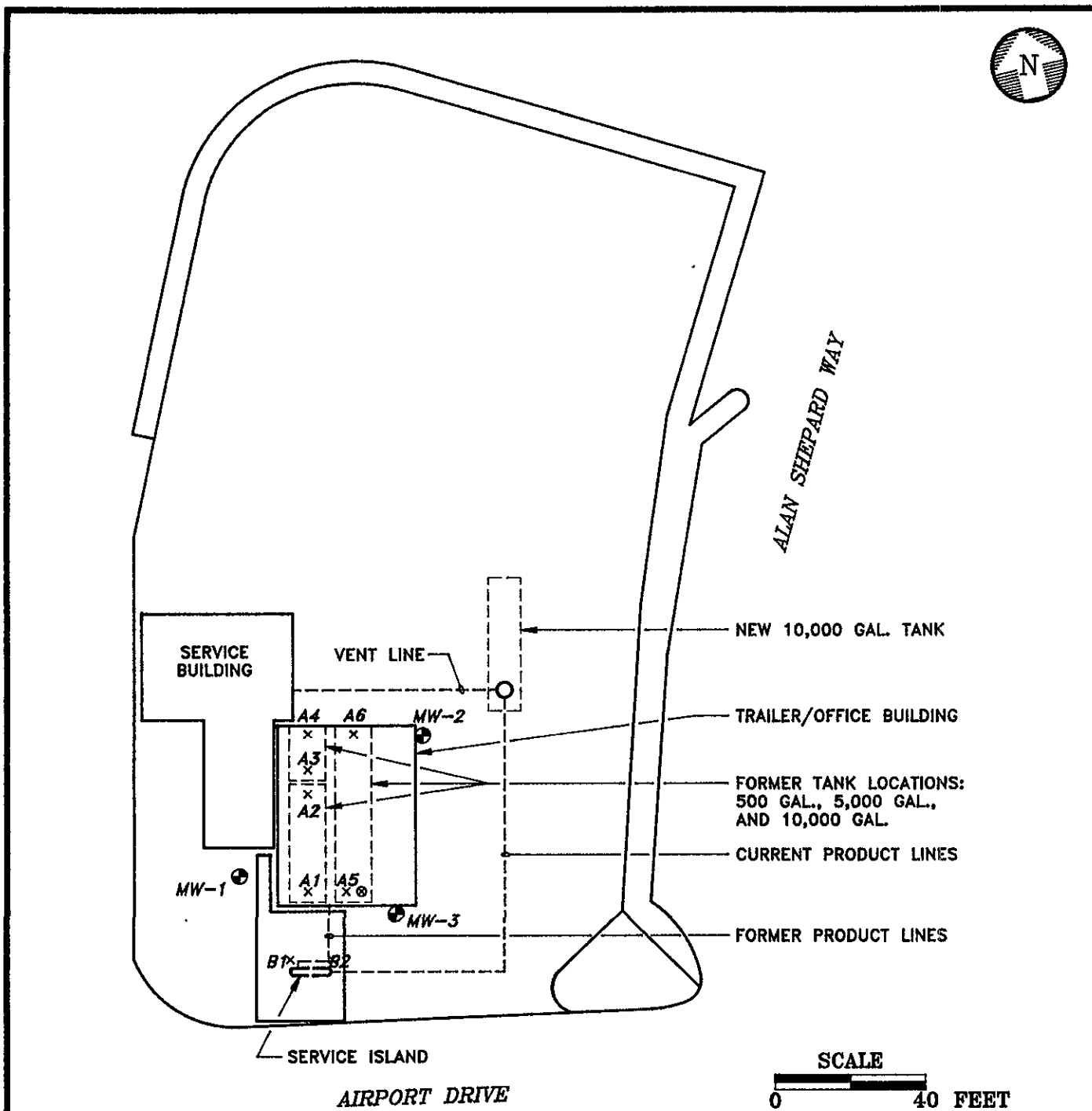
-- = Not Analyzed or reported.

* An open scan reported two "tentatively identified compounds": (iodomethyl) benzene at 30 ppb in MW-1 and 40 ppb in MW-3; and 4-4' butylidenebis [2- (1,1-dimethyl - ethyl) 5-methyl] phenol at 20 ppb in MW-2 and MW-3. The identity and concentrations of these compounds are not considered reliable.

ppm = parts per million (mg/L)


ppb = parts per billion (ug/L)

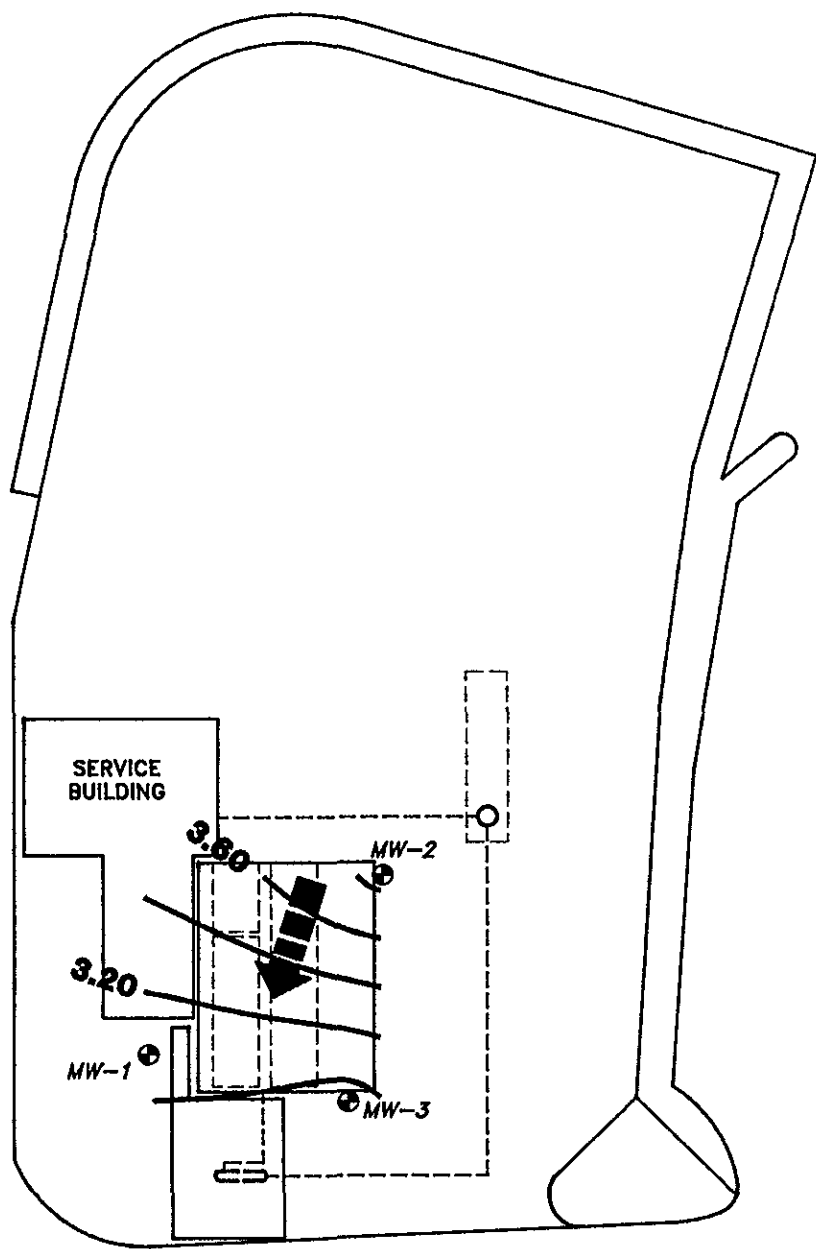
B = Benzene T = Toluene E = Ethylbenzene X = Xylenes



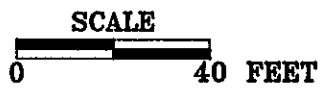
LEGEND

- ⊕ APPROXIMATE LOCATION OF MONITORING WELLS
- × SOIL SAMPLING LOCATION FROM 11/88 UNDERGROUND TANK AND PIPING EXCAVATION
- ⊙ GROUND-WATER SAMPLE FROM 11/88 UNDERGROUND TANK EXCAVATION

		Environmental Science & Engineering, Inc.
HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA		
FIGURE 1 SITE PLAN		
DRAWN BY CVS	APPROVED BY <i>CVS</i>	REVISED
DATE 8/91	FILE NAME F1SP40	PROJ. NO. 6-91-5228



ALAN SHEPARD WAY




AIRPORT DRIVE

WELL	WELL ELEV(ft)	GW DEPTH(ft)	GW ELEV(ft)
MW-1	7.45	4.39	3.06
MW-2	8.09	4.23	3.86
MW-3	7.66	4.74	2.92

LEGEND

- ⊕ APPROXIMATE LOCATION OF MONITORING WELLS
- 3.20 ——— GROUND-WATER ELEVATION CONTOUR (IN FEET ABOVE MSL)
- ←■■■■ GROUND-WATER FLOW DIRECTION

CONTOUR INTERVAL: 0.20 FEET

		Environmental Science & Engineering, Inc.
HERTZ/OAKLAND AIRPORT OAKLAND, CALIFORNIA		
FIGURE 2 GROUND-WATER ELEVATION CONTOURS, 11/12/91		
DRAWN BY CVS	APPROVED BY <i>JSR</i>	REVISED CVS 11/91
DATE 9/91	FILE NAME F2GWE40	PROJ. NO. 6-91-5228

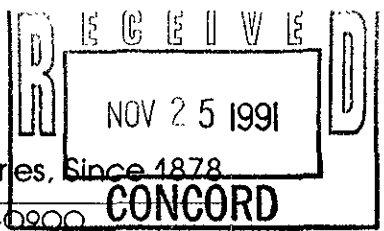
APPENDIX A

LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTS



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900



DATE RECEIVED: 11/12/91
DATE REPORTED: 11/21/91

LABORATORY NUMBER: 105772

CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING

PROJECT ID: 6-91-5228

LOCATION: HERTZ

RESULTS: SEE ATTACHED

DLG

QA/QC Approval
[Signature]

Final Approval

LABORATORY NUMBER: 105772-1
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 CLIENT ID: MW-1

DATE RECEIVED: 11/12/91
 DATE EXTRACTED: 11/15/91
 DATE ANALYZED: 11/20/91
 DATE REPORTED: 11/21/91

EPA 8270: Base/Neutral and Acid Extractables in Water
 Extraction Method: EPA 3520 Continuous Liquid/Liquid

ACID COMPOUNDS	RESULT ug/L	REPORTING LIMIT ug/L
Phenol	ND	5.0
2-Chlorophenol	ND	5.0
Benzyl Alcohol	ND	5.0
2-Methylphenol	ND	5.0
4-Methylphenol	ND	5.0
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5.0
Benzoic Acid	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	5.0
2,4,6-Trichlorophenol	ND	5.0
2,4,5-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
4,6-Dinitro-2-methylphenol	ND	25
Pentachlorophenol	ND	25
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	5.0
Aniline	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
N-Nitroso-di-n-propylamine	ND	5.0
Hexachloroethane	ND	5.0
Nitrobenzene	ND	5.0
Isophorone	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Naphthalene	ND	5.0
4-Chloroaniline	ND	5.0
Hexachlorobutadiene	ND	5.0
2-Methylnaphthalene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Nitroaniline	ND	25

LABORATORY NUMBER: 105772-1
 CLIENT ID: MW-1

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug/L	REPORTING LIMIT ug/L
Dimethylphthalate	ND	5.0
Acenaphthylene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
3-Nitroaniline	ND	25
Acenaphthene	ND	5.0
Dibenzofuran	ND	5.0
2,4-Dinitrotoluene	ND	5.0
Diethylphthalate	ND	5.0
4-Chlorophenyl-phenylether	ND	5.0
Fluorene	ND	5.0
4-Nitroaniline	ND	25
N-Nitrosodiphenylamine	ND	5.0
Azobenzene	ND	5.0
4-Bromophenyl-phenylether	ND	5.0
Hexachlorobenzene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Di-n-butylphthalate	ND	5.0
Fluoranthene	ND	5.0
Benzidine	ND	5.0
Pyrene	ND	5.0
Butylbenzylphthalate	ND	5.0
3,3'-Dichlorobenzidine	ND	25
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Di-n-octylphthalate	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenzo(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	71 %	Nitrobenzene-d5	83 %
Phenol-d6	68 %	2-Fluorobiphenyl	82 %
2,4,6-Tribromophenol	71 %	Terphenyl-d14	48 %

LABORATORY NUMBER: 105772-2
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 CLIENT ID: MW-2

DATE RECEIVED: 11/12/91
 DATE EXTRACTED: 11/15/91
 DATE ANALYZED: 11/21/91
 DATE REPORTED: 11/21/91

EPA 8270: Base/Neutral and Acid Extractables in Water
 Extraction Method: EPA 3520 Continuous Liquid/Liquid

ACID COMPOUNDS	RESULT ug/L	REPORTING LIMIT ug/L
Phenol	ND	5.0
2-Chlorophenol	ND	5.0
Benzyl Alcohol	ND	5.0
2-Methylphenol	ND	5.0
4-Methylphenol	ND	5.0
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5.0
Benzoic Acid	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	5.0
2,4,6-Trichlorophenol	ND	5.0
2,4,5-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
4,6-Dinitro-2-methylphenol	ND	25
Pentachlorophenol	ND	25
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	5.0
Aniline	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
N-Nitroso-di-n-propylamine	ND	5.0
Hexachloroethane	ND	5.0
Nitrobenzene	ND	5.0
Isophorone	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Naphthalene	ND	5.0
4-Chloroaniline	ND	5.0
Hexachlorobutadiene	ND	5.0
2-Methylnaphthalene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Nitroaniline	ND	25

LABORATORY NUMBER: 105772-2
 CLIENT ID: MW-2

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug/L	REPORTING LIMIT ug/L
Dimethylphthalate	ND	5.0
Acenaphthylene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
3-Nitroaniline	ND	25
Acenaphthene	ND	5.0
Dibenzofuran	ND	5.0
2,4-Dinitrotoluene	ND	5.0
Diethylphthalate	ND	5.0
4-Chlorophenyl-phenylether	ND	5.0
Fluorene	ND	5.0
4-Nitroaniline	ND	25
N-Nitrosodiphenylamine	ND	5.0
Azobenzene	ND	5.0
4-Bromophenyl-phenylether	ND	5.0
Hexachlorobenzene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Di-n-butylphthalate	ND	5.0
Fluoranthene	ND	5.0
Benzidine	ND	5.0
Pyrene	ND	5.0
Butylbenzylphthalate	ND	5.0
3,3'-Dichlorobenzidine	ND	25
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Di-n-octylphthalate	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenzo(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	50 %	Nitrobenzene-d5	65 %
Phenol-d6	40 %	2-Fluorobiphenyl	75 %
2,4,6-Tribromophenol	54 %	Terphenyl-d14	68 %

LABORATORY NUMBER: 105772-3
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 CLIENT ID: MW-3

DATE RECEIVED: 11/12/91
 DATE EXTRACTED: 11/15/91
 DATE ANALYZED: 11/20/91
 DATE REPORTED: 11/21/91

EPA 8270: Base/Neutral and Acid Extractables in Water
 Extraction Method: EPA 3520 Continuous Liquid/Liquid

ACID COMPOUNDS	RESULT ug/L	REPORTING LIMIT ug/L
Phenol	ND	5.0
2-Chlorophenol	ND	5.0
Benzyl Alcohol	ND	5.0
2-Methylphenol	ND	5.0
4-Methylphenol	ND	5.0
2-Nitrophenol	ND	25
2,4-Dimethylphenol	ND	5.0
Benzoic Acid	ND	25
2,4-Dichlorophenol	ND	25
4-Chloro-3-methylphenol	ND	5.0
2,4,6-Trichlorophenol	ND	5.0
2,4,5-Trichlorophenol	ND	25
2,4-Dinitrophenol	ND	25
4-Nitrophenol	ND	25
4,6-Dinitro-2-methylphenol	ND	25
Pentachlorophenol	ND	25
BASE/NEUTRAL COMPOUNDS		
N-Nitrosodimethylamine	ND	5.0
Aniline	ND	5.0
Bis(2-chloroethyl)ether	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
Bis(2-chloroisopropyl)ether	ND	5.0
N-Nitroso-di-n-propylamine	ND	5.0
Hexachloroethane	ND	5.0
Nitrobenzene	ND	5.0
Isophorone	ND	5.0
Bis(2-chloroethoxy)methane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Naphthalene	ND	5.0
4-Chloroaniline	ND	5.0
Hexachlorobutadiene	ND	5.0
2-Methylnaphthalene	ND	5.0
Hexachlorocyclopentadiene	ND	5.0
2-Chloronaphthalene	ND	5.0
2-Nitroaniline	ND	25

LABORATORY NUMBER: 105772-3
 CLIENT ID: MW-3

EPA 8270

BASE/NEUTRAL COMPOUNDS

	RESULT ug/L	REPORTING LIMIT ug/L
Dimethylphthalate	ND	5.0
Acenaphthylene	ND	5.0
2,6-Dinitrotoluene	ND	5.0
3-Nitroaniline	ND	25
Acenaphthene	ND	5.0
Dibenzofuran	ND	5.0
2,4-Dinitrotoluene	ND	5.0
Diethylphthalate	ND	5.0
4-Chlorophenyl-phenylether	ND	5.0
Fluorene	ND	5.0
4-Nitroaniline	ND	25
N-Nitrosodiphenylamine	ND	5.0
Azobenzene	ND	5.0
4-Bromophenyl-phenylether	ND	5.0
Hexachlorobenzene	ND	5.0
Phenanthrene	ND	5.0
Anthracene	ND	5.0
Di-n-butylphthalate	ND	5.0
Fluoranthene	ND	5.0
Benzidine	ND	5.0
Pyrene	ND	5.0
Butylbenzylphthalate	ND	5.0
3,3'-Dichlorobenzidine	ND	25
Benzo(a)anthracene	ND	5.0
Chrysene	ND	5.0
Bis(2-ethylhexyl)phthalate	ND	5.0
Di-n-octylphthalate	ND	5.0
Benzo(b)fluoranthene	ND	5.0
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Indeno(1,2,3-cd)pyrene	ND	5.0
Dibenzo(a,h)anthracene	ND	5.0
Benzo(g,h,i)perylene	ND	5.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: SURROGATE RECOVERIES

2-Fluorophenol	85 %	Nitrobenzene-d5	77 %
Phenol-d6	82 %	2-Fluorobiphenyl	88 %
2,4,6-Tribromophenol	95 %	Terphenyl-d14	78 %

LABORATORY NUMBER: 105772-1
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-1

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14, 18/91
 DATE REPORTED: 11/19/91

PARAMETER	RESULT	UNITS	REPORTING LIMIT	METHOD
CADMIUM	ND	ug/L	5.0	EPA 6010
CHROMIUM	ND	ug/L	10.0	EPA 6010
LEAD	ND	ug/L	3.0	EPA 7421
NICKEL	ND	ug/L	32.0	EPA 6010
ZINC	ND	ug/L	20.0	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY	RPD, %	Recovery, %
CADMIUM	3	112
CHROMIUM	5	104
LEAD	11	86
NICKEL	4	102
ZINC	<1	102

LABORATORY NUMBER: 105772-2
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-2

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14,18/91
 DATE REPORTED: 11/19/91

PARAMETER	RESULT	UNITS	REPORTING LIMIT	METHOD
CADMIUM	ND	ug/L	5.0	EPA 6010
CHROMIUM	ND	ug/L	10.0	EPA 6010
LEAD	ND	ug/L	3.0	EPA 7421
NICKEL	ND	ug/L	32.0	EPA 6010
ZINC	ND	ug/L	20.0	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY	RPD, %	Recovery, %
CADMIUM	3	112
CHROMIUM	5	104
LEAD	11	86
NICKEL	4	102
ZINC	<1	102

LABORATORY NUMBER: 105772-3
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-3

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14,18/91
 DATE REPORTED: 11/19/91

PARAMETER	RESULT	UNITS	REPORTING LIMIT	METHOD
CADMIUM	7.2	ug/L	5.0	EPA 6010
CHROMIUM	ND	ug/L	10.0	EPA 6010
LEAD	ND	ug/L	3.0	EPA 7421
NICKEL	ND	ug/L	32.0	EPA 6010
ZINC	ND	ug/L	20.0	EPA 6010

ND = Not detected at or above reporting limit.

QA/QC SUMMARY	RPD, %	Recovery, %
CADMIUM	3	112
CHROMIUM	5	104
LEAD	11	86
NICKEL	4	102
ZINC	<1	102

LABORATORY NUMBER: 105772
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/16/91
 DATE REPORTED: 11/19/91

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
 TVH by California DOHS Method/LUFT Manual October 1989
 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
105772-1	MW-1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105772-2	MW-2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
105772-3	MW-3	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit
 indicated in parentheses.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	90

LABORATORY NUMBER: 105772
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ

DATE RECEIVED: 11/12/91
 DATE EXTRACTED: 11/18/91
 DATE ANALYZED: 11/19/91
 DATE REPORTED: 11/19/91

Extractable Petroleum Hydrocarbons in Aqueous Solutions
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
105772-1	MW-1	ND	ND	50
105772-2	MW-2	ND	52	50
105772-3	MW-3	ND	ND	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	5
RECOVERY, %	92

LABORATORY NUMBER: 105859
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ

DATE RECEIVED: 11/12/91
 DATE REQUESTED: 11/22/91
 DATE EXTRACTED: 12/03/91
 DATE ANALYZED: 12/09/91
 DATE REPORTED: 12/10/91

Extractable Petroleum Hydrocarbons in Aqueous Solutions
 California DOHS Method
 LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
105859-1	MW-2	ND	ND	50

ND = Not detected at or above reporting limit.

*Reporting limit applies to all analytes.

QA/QC SUMMARY

RPD, %	7
RECOVERY, %	103

LABORATORY NUMBER: 105772-1
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-1

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14/91
 DATE REPORTED: 11/19/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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109

LABORATORY NUMBER: 105772-2
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-2

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14/91
 DATE REPORTED: 11/19/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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Surrogate Recovery, %

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108

LABORATORY NUMBER: 105772-3
 CLIENT: ENVIRONMENTAL SCIENCE & ENGINEERING
 PROJECT ID: 6-91-5228
 LOCATION: HERTZ
 SAMPLE ID: MW-3

DATE RECEIVED: 11/12/91
 DATE ANALYZED: 11/14/91
 DATE REPORTED: 11/19/91

EPA 8010
 Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	112
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BS/BSD SUMMARY SHEET FOR EPA 8010\8020

 Operator: AV
 Analysis date: 11/13/91
 Sample type: WATER

 Spike file: 317W/X008
 Spike dup file: 317W/X009
 Instrument: GC12
 Sequence Name NOV 13

8010 BS/BSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
1,1-Dichloroethene	20.91	105 %	OK	61 - 145
Trichloroethene	20.41	102 %	OK	71 - 120
Chlorobenzene	22.53	113 %	OK	75 - 130
SPIKE DUP COMPOUNDS				
1,1-Dichloroethene	20.18	101 %	OK	61 - 145
Trichloroethene	19.84	99 %	OK	71 - 120
Chlorobenzene	21.26	106 %	OK	75 - 130
SURROGATES				
BROMOBENZENE (BS)	106.00	106 %	OK	75 - 120
BROMOBENZENE (BSD)	109.00	109 %	OK	75 - 120

8020 BS/BSD DATA (spiked at 20 ppb)

SPIKE COMPOUNDS	READING	RECOVERY	STATUS	LIMITS
Benzene	17.02	85 %	OK	76 - 127
Toluene	16.86	84 %	OK	76 - 125
Chlorobenzene	20.30	102 %	OK	75 - 130
SPIKE DUP COMPOUNDS				
Benzene	17.12	86 %	OK	76 - 127
Toluene	16.97	85 %	OK	76 - 125
Chlorobenzene	20.35	102 %	OK	75 - 130
SURROGATES				
BROMOBENZENE (BS)	100.00	100 %	OK	75 - 120
BROMOBENZENE (BSD)	100.00	100 %	OK	75 - 120

RPD DATA

8010 COMPOUNDS	SPIKE	SPIKE DUP	RPD	STATUS	LIMITS
1,1-Dichloroethene	20.91	20.18	4 %	OK	< 14
Trichloroethene	20.41	19.84	3 %	OK	< 14
Chlorobenzene	22.53	21.26	6 %	OK	< 13
8020 COMPOUNDS					
Benzene	17.02	17.12	1 %	OK	< 11
Toluene	16.86	16.97	1 %	OK	< 13
Chlorobenzene	20.30	20.35	0 %	OK	< 13

 REVIEWED BY: 

Client: Environmental Science & Engineering

Laboratory Login Number: 105772

Project Name: Hertz

Report Date: 20 November 91

Project Number: 6-91-5228

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric)

METHOD: SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
105772-001	MW-1	Water	12-NOV-91	12-NOV-91	14-NOV-91	ND	mg/L	5	TR	3356
105772-002	MW-2	Water	12-NOV-91	12-NOV-91	14-NOV-91	ND	mg/L	5	TR	3356
105772-003	MW-3	Water	12-NOV-91	12-NOV-91	14-NOV-91	ND	mg/L	5	TR	3356

ND = Not Detected at or above Reporting Limit (RL).

Q C B a t c h R e p o r t

Client: Environmental Science & Engineering Laboratory Login Number: 105772
 Project Name: Hertz Report Date: 20 November 91
 Project Number: 6-91-5228

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) QC Batch Number: 3356

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	14-NOV-91

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	96%	SMWW 17:5520BF	14-NOV-91
BSD	89%	SMWW 17:5520BF	14-NOV-91

		Control Limits
Average Spike Recovery	92%	80% - 120%
Relative Percent Difference	8.0%	< 20%

