SECOND QUARTER 1994
GROUNDWATER MONITORING
REPORT
CARNATION DAIRY FACILITY
OAKLAND, CALIFORNIA

8-94



HAZMAT 94 SEP -7 AM 8: 21

August 31, 1994

5008.J1

Ms. Jennifer Eberle Department of Environmental Health Hazardous Materials Division 80 Sway Way, Room 200 Oakland, CA 94601

Re: Second Quarter 1994 Groundwater Monitoring Report

Carnation Company 1310 14th Street Oakland, California

Dear Ms. Eberle:

Park Environmental Corporation (**Park**) is pleased to provide this Second Quarter Groundwater Monitoring Report on behalf of Nestle USA, Inc. The report documents the work performed for the three month period of March, April and May, 1994.

Please call **Park's** Rocklin office at 916.652.3861 if you have any questions concerning this transmittal.

Sincerely,

Park Environmental Corporation

Peter Frank, R.E.A. Project Geologist

PF:laa

cc: Mr. Binayak Acharya Mr. Richard Hiett

Nestle USA, Inc. CRWQCB

800 Brand Boulevard 2101 Webster Street, Suite 500

Glendale, CA 91203 Oakland, CA 94612

5008J12

SECOND QUARTER 1994
GROUNDWATER MONITORING
REPORT
CARNATION DAIRY FACILITY
1310 14TH STREET
OAKLAND, CALIFORNIA

PRESENTED TO:

ALAMEDA COUNTY HEALTH AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
DIVISION OF CLEAN WATER PROGRAM
UST LOCAL OVERSIGHT PROGRAM
80 SWAN WAY, ROOM 200
OAKLAND, CALIFORNIA 94621

ON BEHALF OF:

NESTLE USA, INC. 800 NORTH BRAND BOULEVARD GLENDALE, CALIFORNIA 91203

PREPARED BY:

PARK ENVIRONMENTAL CORPORATION
4231 PACIFIC STREET
SUITE 7
ROCKLIN, CALIFORNIA 95677

AUGUST 8, 1994

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1.0 INTRODUCTION

Nestle USA, Inc., (Nestle) has retained Park Environmental Corporation (**Park**) to provide environmental services at the former Carnation facility in Oakland, California. A site location map and plot plan are included as Figures 1 and 2 in Appendix A. Nestle has authorized **Park** to prepare this Quarterly Groundwater Monitoring Report, which includes brief groundwater sampling methodology and findings sections.

The Alameda County Health Agency (ACHA) is the lead environmental agency. This work was requested by Ms. Susan Hugo and Ms. Jennifer Eberle with the ACHA in accordance with the meeting between ACHA, Mr. Richard Hiett of the California Regional Water Quality Control Board, Mr. Walter Carey with Nestle, USA, and Mr. Richard Zipp with Park, on September 17, 1992. This site is referenced by the ACHA as 1310 14th Street.

1.1 Scope of Services

Specific tasks completed during this investigation included the following:

- Measure depth to water and/or free product thicknesses in 71 monitoring wells;
- Calculate groundwater flow direction in the vicinity of the free product plume and in the vicinity of the property boundaries;
- Purge, sample and analyze ten monitoring wells (MW-2, MW-3, MW-6, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30 and MW-32) for total petroleum hydrocarbons as gasoline and diesel, benzene, toluene, ethylbenzene, and total xylenes (BTEX) and two samples (MW-26 and MW-32) for chlorinated volatile organic compounds using EPA Method 8015, 8020 and 601, respectively. In addition to the above mentioned analyses, modified EPA 8015 for gasoline tests were performed on an equipment blank and field duplicate sample for QA/QC purposes; and
- Prepare this Quarterly Monitoring Report documenting the findings.

2.0 GROUNDWATER MONITORING WELL SAMPLING METHODOLOGY

2.1 Groundwater Measurements

Prior to obtaining depth to groundwater measurements in the sampled wells, the wells were checked for the presence of free product utilizing a new disposable bailer for each well. Depth to groundwater measurements in the sampled wells and unsampled wells were made using a YSI model 3000 T-L-C Meter or Slope Indicator. Free product thicknesses were measured using a Free Product Interface Probe (manufactured by MMC). The depths to water or product were measured from the top of the well casing. Groundwater elevations were calculated using

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measurements from surveyed monitoring wells not containing free product. Results of these measurements are included in Table I in Appendix B.

2.2 Monitoring Well Purging

Each monitoring well was purged with a submersible pump until at least three well volumes of water had been removed. All of the wells which were purged and sampled were constructed of 4-inch diameter PVC well casing (except MW-6 which is 2-inches in diameter). All purging and sampling equipment was washed in a solution of trisodium phosphate and rinsed in distilled water prior to each usage to reduce the potential for cross contamination between wells.

As groundwater was removed from the wells, pH, temperature and conductivity were monitored and recorded on a field data sheet. These field documents are kept in a permanent project file. A summary of the data obtained during the purging of the wells is presented in Table II in Appendix B.

The wells were allowed to stand for a period of time to regain equilibrium prior to sampling. Groundwater purged from the wells was placed in DOT-approved 55 gallon drums, pending receipt of analytical results to select the appropriate disposition.

2.3 Groundwater Analyses

Analyses of the groundwater were performed by a California certified laboratory in accordance with State guidelines and EPA protocols. Groundwater samples from the ten monitoring wells were analyzed for TPH as gasoline and diesel and BTEX using EPA methods 8015 and 8020, respectively. The ten wells sampled were MW-2, MW-3, MW-6, MW-25, MW-26, MW-27, MW-28, MW-29, MW-30 and MW-32. In addition, groundwater from monitoring wells MW-26 and MW-32 was analyzed for chlorinated volatile organics using EPA method 601.

2.4 Groundwater Sampling

Proper sampling collection and handling are essential to assure the quality of the data obtained from the given sample. Each groundwater sample therefore was collected using a new sterile disposable bailer. The sampled water was placed in laboratory prepared 40 millimeter glass containers. The sample containers were filled with water to the top to expel air space and were sealed with teflon-lined caps. Water sample containers were labeled with the name of the sampler, the date, the job number, the preservative, and an identifying well number. The samples were then transported to Sierra Laboratories, in Anaheim, California. Full chain of custody protocol was followed during sample handling and delivery.

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3.0 FINDINGS

3.1 Groundwater Conditions

3.1.1 Groundwater Flow Direction and Hydraulic Gradient

Groundwater monitoring wells containing free product were not used for the calculations of groundwater flow direction or hydraulic gradient. Groundwater measurements taken by Park on June 2, 1994 indicate that groundwater flow beneath the site continues to be in a northerly direction. The hydraulic gradient was calculated to be approximately 0.0028 or 0.28 feet per 100 feet beneath the site. Figure 3 in Appendix A shows graphically the flow direction of the groundwater. The measurements taken during this sampling event show the groundwater elevation ranging from about 5.00 to 5.50 feet above mean sea level (msl), which is consistent with the previous years sampling event. All data collected pertaining to the groundwater measurements is summarized in Table I in Appendix B.

3.1.2 Occurrence of Free Product

Free product was identified in 29 of the 71 monitoring wells that Park monitored for this investigation. The thickness of free product ranged from 0.01 feet to 2.81 feet, with an average thickness of 0.86 feet in the free product measured wells.

Measurements collected during the previous quarter's investigation showed an average free product thickness of 1.85 feet. The reduction of the average free product thickness suggests that the on-going vapor extraction remediation system is removing free phase petroleum hydrocarbons from the subsurface.

As reported by Park (July 12, 1994 "Vapor Extraction Remediation Update May and June, 1994"), approximately 2,462 gallons of petroleum hydrocarbons had been removed from the subsurface by July 1, 1994, which further explains the significant reduction of the free product thickness below the site. Figure 4 in Appendix A graphically presents the occurrence of free product and the relative thicknesses.

3.1.3 Results of Laboratory Analyses

Laboratory test results for groundwater samples collected on June 3, 1994 for this investigation as well as one year's previous quarterly sampling events are summarized in Table III in Appendix B. Results are also presented graphically on Figure 5 in Appendix A. Laboratory reports and chain of custody documents are included as Appendix C.

4.0 LIMITATIONS

The monitoring services performed by Park were performed in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing

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in the same locality under similar conditions.

The findings presented in this report are based on present conditions and past written and/or oral information provided by regulatory agencies or Nestle USA. Park will not be responsible for any use by or interpretation or subsequent damages by any third party. Conditional changes may occur through time by natural or man-made processes on this or adjacent properties.

5.0 SIGNATURES

This report was prepared by:

Park Environmental Corporation

Peter Frank, R.E.A. Project Geologist

This report was reviewed for technical content by:

J ZIPP

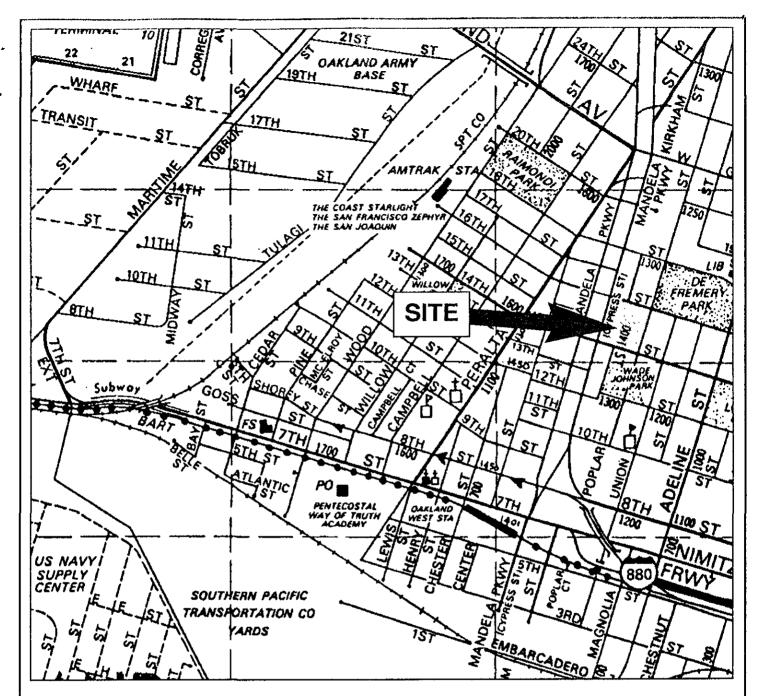
No. 1096

CERTIFIED ENGINEERING GEOLOGIST OF CALIFORNIA

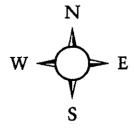
Richard J. Zipp R.G., C.E.G.

Principal Hydrogeologist

PF:laa



REFERENCE 1992, ALAMEDA COUNTY, THOMAS GUIDE MAP, PAGE 7

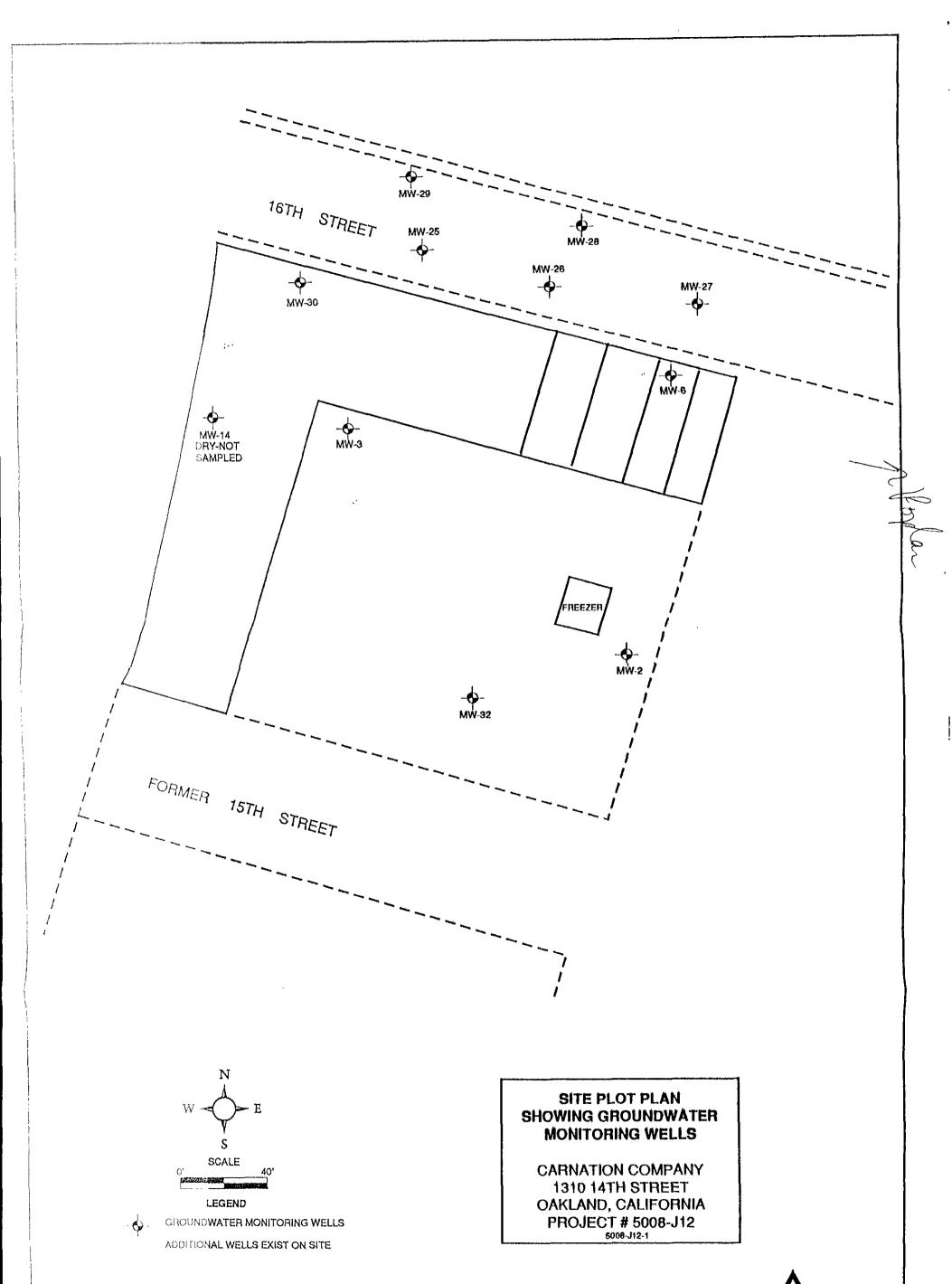


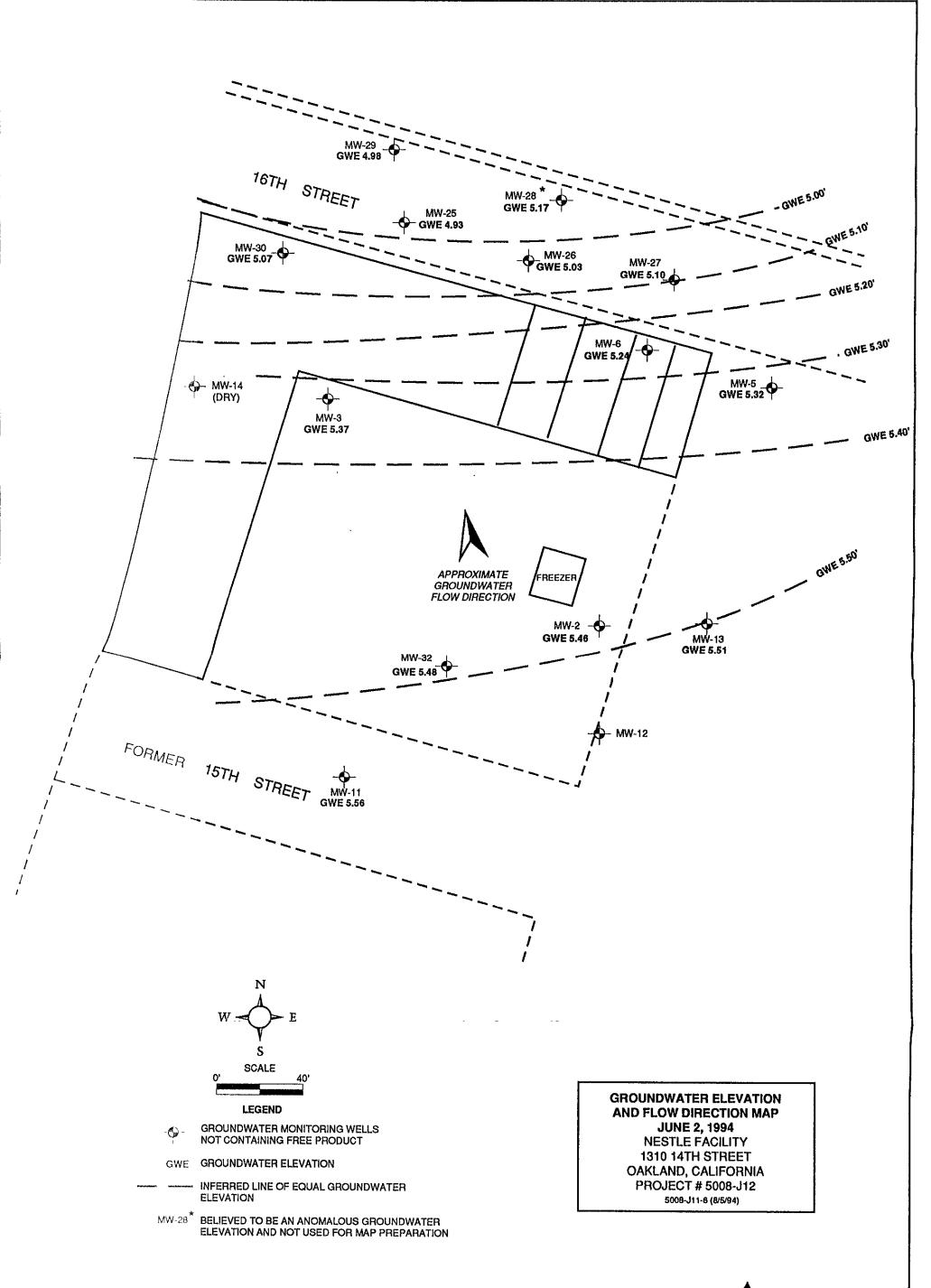
SCALE: 1INCH EQUALS APPROXIMATELY 1,200 FEET

SITE LOCATION MAP

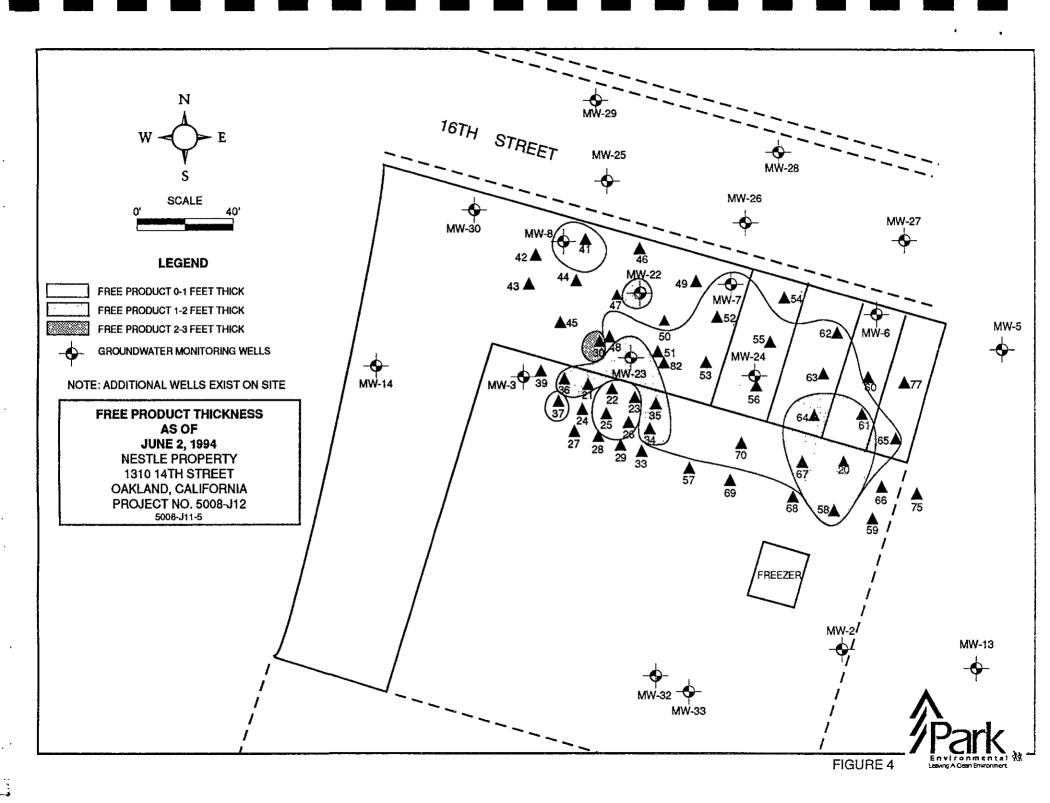
NESTLE/CARNATION COMPANY 1310 14TH STREET OAKLAND, CALIFORNIA PROJECT # 5008











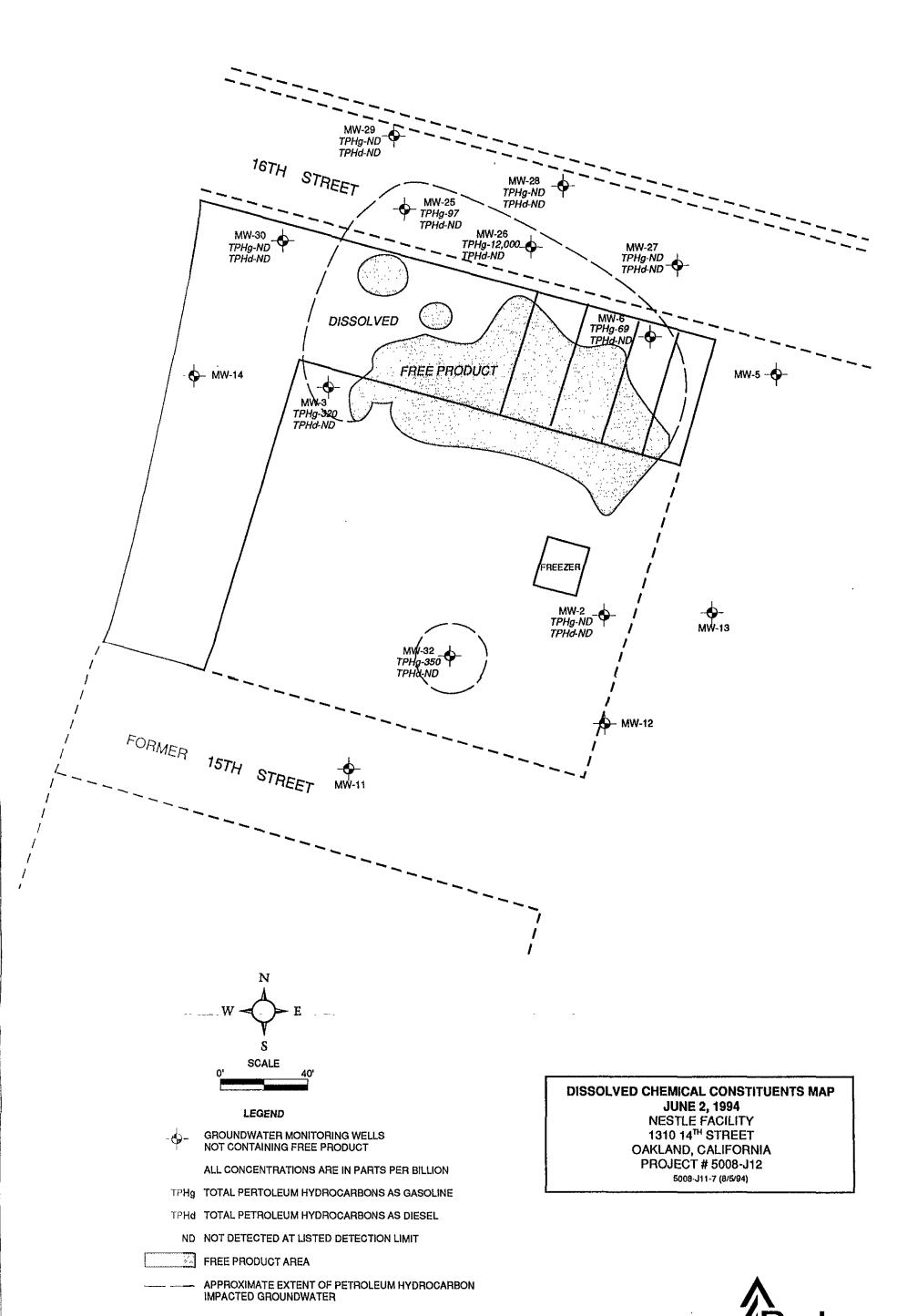


TABLE I GROUNDWATER MEASUREMENTS JUNE 2, 1994

Well No.	Depth to Product (FT)(TOC)	Depth to Water (FT)(TOC)	Casing Elevation (FT)	Product Thickness (FT)	Well Diameter (IN)	GWE (FT)
MW-1	_	10.83	16.49	-	4	5.66
MW-2*	-	9.65	-	-	4	-
MW-3*	-	8.93	14.30	-	4	5.37
MW-5	-	9.09	14.41	<u>.</u>	4	5.32
MW-6*	-	8.88	14.12	-	2	5.24
MW-7	9.12	9.38	14.29	0.26	4	NC
MW-8	8.93	9.24	14.20	0.31	-	NC
MW-9	-	9.46	-	-	4	-
MW-10	-	10.17	15.73	-	4	5.56
MW-11	-	8.99	-	-	4	-
MW-13	-	9.34	14.85	-	4	5.51
MW-22	9.02	10.16	14.44	1.14	2	NC
MW-23	8.21	10.00	-	1.79	4	NC
MW-24	9.11	10.08	14.67	0.97	2	NC
MW-25*	-	7.93	12.86	-	4	4.93
MW-26*	•	7.68	12.71	-	4	5.03
MW-27*	-	8.94	14.04	-	4	5.10
MW-28*	-	8.28	13.45	-	4	5.17
MW-29*	-	7.62	12.60	-	4	4.98
MW-30*	-	9.47	14.54	_	4	5.07
MW-31	-	9.42	-	-	4	-
MW-32*	-	9.28	14.76	<u>.</u>	4	5.48
PR-20	8.46	9.91	14.36	1.45	2	NC

TOC Top of Casing

GWE Groundwater Elevation

^{*} Groundwater Samples Obtained For This Investigation

TABLE I Continued GROUNDWATER MEASUREMENTS JUNE 2, 1994

Well No.	Depth to Product (FT)(TOC)	Depth to Water (FT)(TOC)	Casing Elevation (FT)	Product Thickness (FT)	Weil Diameter (IN)	GWE (FŢ)
PR-21	9.17	10.56	14.37	1.39	2	NC
PR-22	8.71	9.61	14.43	0.90	2	NC
PR-23	8.71	9.09	14.47	0.38	2	NC
PR-24	-	9.02	-	-		-
PR-26	9.02	9.41	14.38	0.39	2	NC
PR-27	-	8.87	-	-	2	1
PR-28	-	8.82	-	-	2	-
PR-30	7.88	10.69	_	2.81	-	NC
PR-33	-	8.78	14.36	-	2	5.58
PR-34	8.96	10.03	14.49	1.07	2	NC
PR-35	7.50	9.20	14.55	1.70	2	NC
PR-36	8.63	9.76	-	1.13		NC
PR-37	8.64	9.60	-	0.96	-	NC
PR-39	_	9.11	-	-	1	-
PR-41	8.93	9.06	-	0.13	2	NC
PR-42	_	9.21	=	-	-	1
PR-43	-	9.33	-	_	-	-
PR-44	-	8.71	-	-	2	-
PR-45	-	9.19	-		2	-
PR-46	Pel	9.31	_	-	2	-
PR-47	-	7.61	-	<u>.</u>	2	-
PR-48	8.95	9.78	-	0.83	2	_
PR-49	-	9.00	-	-	2	-

TOC Top of Casing

GWE Groundwater Elevation

* Groundwater Samples Obtained For This Investigation

TABLE I Continued GROUNDWATER MEASURMENTS JUNE 2, 1994

Well No.	Depth to Product (FT)(TOC)	Depth to Water (FT)(TOC)	Casing Elevation (FT)	Product Thickness (FT)	Well Diameter (IN)	GWE (FT)
PR-50	_	8.98	-	-	2	•
PR-51	8.10	8.11	-	0.01	2	NC
PR-52	9.00	9.45	-	0.45	2	NC
PR-53	9.02	*9.63	<u>.</u>	0.61	2	NC
PR-54	<u>-</u>	8.89	_	-	2	-
PR-55	8.62	9,49	-	0.87	2	NC
PR-56	8.61	9.50	-	0.89	2	NC
PR-57	_	8.47		-	2	-
PR-58	8.45	9.93	-	1.48	2	NC
PR-59	-	8.71	-	-	2	
PR-60	<u>-</u>	9.39	-	-	2	-
PR-61	9.01	10.04		1.03	2	NC
PR-62	9.19	9.28	-	0.09	2	NC
PR-65	9.21	9.29	_	0.08	2	NC
PR-66	-	8.89	-	-	2	-
PR-68	_	8.92	<u>-</u>	-	2	-
PR-69	_	8.62	-	-	2	- -
PR-74	-	9.14	-	-	2	•
PR-75	_	9.16	-	-	2	-
PR-76	_	9.21	_	-	2	-
PR-77	-	8.94	-	-	2	-
V-78	9.67	9.90	_	0.23	4	NC
V-89	_	9.03	-	<u>.</u>	4	ı
V-90	8.76	9.70	-	0.94	4	NC

TOC Top of Casing

GWE Groundwater Elevation

^{*} Groundwater Samples Obtained For This Investigation

TABLE II GROUNDWATER PURGING DATA JUNE 3, 1994

Well Number	Total Gallons Removed	pΗ	Specife Conductance x 1000	Temperature in Fahrenheit
MW-2-P	5	7.4	.78	69.2
	10	7.1	.83	70.1
	15	6.8	.86	70.4
	20	6.8	.88	70.6
	25	6.7	.86	70.2
	30	6.7	.89	70.4
	35	6.7	.85	70.3
MW-3	5	7.0	1.07	65.4
	10	6.5	1.11	67.8
	15	6.8	1.13	68.0
	20	6.7	1.07	68.0
	25	6.7	1.08	68.3
	35	6.7	1.05	68.0
MW-6*	1	7.6	.87	60.6
	2 3	7.4	.51	61.9
		6.9	.49	62.0
	4	7.1	.50	62.0
	5	6.9	.49	62.3
	7	6.9	.49	62.1
MW-25**	1	7.9	.92	70.8
	5	7.3	.91	69.8
	7	7.0	.91	69.0
	10	7.1	.94	69.7
	12	6.9	.89	69.5
	15	7.2	.90	70.5
MW-26	5	7.2	.81	70.3
	15	7.2	.83	69.9
	20	7.1	.82	68.8
	25	7.0	.83	68.7
	30	7.0	.83	68.6
	35	6.9	.83	68.3

^{* 2-}inch well hand bailed using a new disposable bailer

^{**} Well was pumped dry at approximately 15 gallons

^{***} Well was pumped dry at approximately 25 gallons

TABLE II GROUNDWATER PURGING DATA JUNE 3, 1994

Well Number	Total Gallons Removed	pH.	Specific Conductance x 1000	Temperature in Fahrenheit
MW-27	5	7.9	.63	69.9
	10	7.3	.64	68.7
	15	7.4	.61	68.9
	20	7.1	.63	68.5
	25	7.0	.63	68.6
	30	6.8	.69	68.4
	35 35	6.7	.69	68.7
MW-28	5	8.1	.62	74.7
	10	8.0	.29	71.7
	15	7.8	.41	70.8
	20	7.6	.31	69.9
	25	7.5	.33	69.6
	30	7.4	.38	69.2
	35	7.3	.41	69.3
MW-29	5 10 15 20 25 30 35	7.9 7.6 7.4 7.3 7.2 7.3 7.2	.39 .47 .43 .44 .42 .41	71.5 71.4 71.5 70.3 69.5 69.7
MW-30	5	7.9	.53	64.0
	10	7.5	.53	64.2
	15	7.3	.50	64.3
	20	7.0	.54	64.2
	25	7.1	.63	64.5
MW-32***	5	7.1	.76	67.7
	10	6.9	.81	69.0
	15	6.8	.79	69.4
	20	6.8	.79	69.3
	25	6.9	.78	69.4

^{* 2-}inch well hand bailed using a new disposable bailer

^{**} Well was pumped dry at approximately 15 gallons

^{***} Well was pumped dry at approximately 25 gallons

MONITORING WELL MW-2

Sample		EPA METHOD									
Date	80	8015			020	8010					
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/l	T ug/l	E ug/l	X ug/l	Chlorinated Compounds ug/I				
3-23-93	ND	ND	ND	ND	ND	ND	man from data data				
7-27-93	ND	ND	ND	ND	ND	ND					
11-5-93	4000						20 to 10 to 10				
2-25-94	ND	ND	ND	ND	ND	ND					
6-3-94	ND	ND	ND	ND	ND	ND					

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-3

Sample	EPA METHOD								
Date	80	15		25 de la 180 de 180 Establisha de 180 d	8010				
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/l	=T ug/l	E s ug/l	X ug/l	Chlorinated Compounds ug/l		
3-23-93	300	ND	35	2.9	2.0	3.2			
7-27-93	220	ND	97	1.0	4.0	1.1			
11-5-93	170	ND	4.9	ND	ND	1.2	64444		
2-25-94	100	ND	42	ND	ND	ND			
6-3-94	320	ND	120	8.2	8.4	4.5			

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-6

Sample	DPA MCTHOD									
Date	80	15		8(8010					
, ,	TPH as Gasoline ug/l	TPH as Diesel mg/l	Bugg	Tug/l	E ug/l	X ug/l	Chlorinated Compounds ug/l			
3-23-93	ND	ND	ND	ND	ND	ND				
7-27-93	ND	ND	ND	ND	ND	ND				
11-5-93	ND	ND	ND	ND	ND	3.5				
2-25-94	ND	ND	ND	ND	ND	ND	N 27 17 17 18			
6-3-94	69	ND	2.7	8.7	1.6	3.5				

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-25

Sample		EPAMETHOD									
Date	80	15		nguniat o'n Armandan Kindistir (Kadasah)	020		8010				
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/l	ug/l	E. ug/l	X ug/l	Chlorinated Compounds ug/I				
3-23-93	ND	ND	ND	ND	ND	ND					
7-27-93	ND	ND	ND	ND	ND	ND					
11-5-93	170	ND	4.2	4.4	2.5	20	en se en se so				
2-25-94	ND	ND	2.1	ND	ND	ND					
6-3-94	97	ND	2.4	14	ND	3.4					

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-26

Sample		EPA METHOD								
Date	80	15		80	20		8010			
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/t	T. ug/l	E ug/l	X ug/l	Chlorinated Compounds ug/l			
3-23-93	7,000	1,300	180	190	55	330	ND			
7-27-93	1,800	ND	470	96	30	80	140 1,2-DCA			
11-5-93	19,000	ND	4700	1300	9.0	1400	120 1,2 -DCA			
2-25-94	14,000	ND	4800	570	200	860	28 1,2-DCA			
6-3-94	12,000	ND	4100	300	120	230	1.7 1,1-DCA 140 1,2-DCA 0.84 Dibromo- chloromethane			

Micrograms Per Liter Or Parts Per Billion
Milligrams Per Liter Or Parts Per Million
not analyzed
Not Detected at method detection limits. See specific laboratory reports for
method detection limits.
Total Petroleum Hydrocarbons
Benzene, Toluene, Ethylbenzene, Total Xylenes
1,2 Dichloroethane

1,1 DCA 1,1 Dichloroethane

MONITORING WELL MW-27

Sample		, , ,		EPA MI	ETHOD		
Date	80	15	5 8020			8010	
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/l	T ug/l	E ug/l	X ug/l	Chlorinated Compounds ug/l
3-23-93	ND	ND	ND	ND	ND	ND	all fact for the state
7-27-93	ND	ND	ND	ND	ND	ND	
11-5-93	ND	ND	ND	ND	ND	2.6	
2-25-94	ND	ND	ND	ND	ND	ND	
6-3-94	ND	ND	0.85	ND	ND	ND	

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-28

Sample		•		EPA ME	гнор	linder Herrick Eingerick	
Date	80	8015		8020			8010
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/l	T ug/l	B ug/l	X ug/i	Chlorinated Compounds ug/l
3-23-93	110	ND	ND	ND	ND	ND	
7-27-93	ND	ND	ND	ND	ND	ND	
11-5-93	ND	ND	ND	ND	ND	2.1	
2-25-94	ND	ND	ND	ND	ND	ND	
6-3-94	ND	ND	3.1	ND	ND	ND	

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-29

Sample	EPA-METHOD							
Date	801	8015		8020			8010	
	TPH as Gasoline ug/l	TPH as Diesel mg/l	B ug/I	T ug/l	E ug/l	X ug/l	Chlorinated Compounds ug/l	
3-23-93	ND	ND	ND	ND	ND	ND		
7-27-93	ND	ND	ND	ND	ND	ND	11 to 41 to 41	
11-5-93	ND	ND	ND	ND	2.1	11		
2-25-94	ND	ND	ND	ND	ND	ND		
6-3-94	ND	ND	ND	ND	ND	ND		

ug/l Micrograms Per Liter Or Parts Per Billion
mg/l Milligrams Per Liter Or Parts Per Million
not analyzed
ND Not Detected at method detection limits. See specific laboratory reports for method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-30

Sample		4,		EPA METE	IOD		ilografia i poja ilografia da la Polariza da la
Date	80	8015		80	8010		
· · · · · · · · · · · · · · · · · · ·	TPH as Gasoline ug/l	TPH as Diesel mg/l	Bugh	T ug/l	E ug/l	X ug/l	Chlorinated Compounds ug/l
3-23-93	ND	ND	ND	ND	ND	ND	
7-27-93	ND	ND	ND	ND	ND	ND	
11-5-93	ND	ND	ND	ND	ND	2.8	
2-25-94	ND	ND	1.3	ND	ND	ND	per sen tall call
6-3-94	ND	ND	1.1	ND	ND	ND	

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

MONITORING WELL MW-32

Sample							
Date	80	15		80	20		8010
	TPH as Gasoline ug/l	TPH as Diesel mg/l	ng/l	T Tug/I	E ug/l	X ug/l	Chlorinated Compounds ug/l
3-23-93	440	ND	39	6.2	3.1	9.0	60 1,2-DCA
7-27-93	ND	ND	ND	ND	ND	ND	14 1,2-DCA
11-5-93	170	ND	20	ND	1.8	2.1	7.9 1,2-DCA
2-25-94	ND	ND	5.6	ND	ND	ND	ND
6-3-94	350	ND	120	1.3	ND	1.4	11 1,2-DCA

ug/l Micrograms Per Liter Or Parts Per Billion mg/l Milligrams Per Liter Or Parts Per Million

---- not analyzed

ND Not Detected at method detection limits. See specific laboratory reports for

method detection limits.

TPH Total Petroleum Hydrocarbons

BTEX Benzene, Toluene, Ethylbenzene, Total Xylenes

1,2 DCA 1,2 Dichloroethane



Date: June 23,1994

Park Environmental Corporation 4231 Pacific Street, Suite 7 Rocklin, California 95677

Attention: Mr. Peter Frank

Client Project Number:

5008-J12

Client Project Name.

N/A

Date Sampled:

.06/03/94

Date Samples Received.

06/07/94

Sierra Project Number:

9406-034

Enclosed with this letter is the report on the chemo-physical analysis of samples from the project references shown above.

The samples were received by Sierra in a chilled state, intact, and with the chain of custody record attached.

Note that N.D. means not detected at the appropriate reporting limit. The reporting limit is adjusted to reflect the dilution factor of the sample. The reporting limit is expressed in such cases in parentheses to the right of reported value. The detection limit for values without such a designation appears to the right of or at the bottom of the same page.

Reviewed

Lukaras I Turytt

The contents of this report pertain only to the samples investigated and do 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. Unauthorized reproduction of this report or use of this laboratory's name for advertising or publicity purposes is strictly prohibited.

9406-034 Sierra Project No. Client Project No. 5008-J12 Client Project Name:

N/A

Date Sampled: .06/03/94 Date Received: Date Prepared:

.06/07/94 .06/15-.06/16/94

Analyst:

Date Analyzed: .06/15-.06/16/94 SM

Sample Preparation: EPA Method 5030

Sample Analysis: EPA 8010 (Halogenated Volatiles)

Report Date:

.06/23/94

Sample Type: Liquid

Sample I.D.

MW-26

Sumple Liet		
	Sample Result	Method Detection
Compound	(μg/L)	Limit (µg/L)
Chloromethane		0.5
Vinyl chloride		0.5
Bromomethane	ND	0.5
Chloroethan e	ND	0.5
Trichtorofluoromethane	ND	0.5
1,1-Dichloroethene (1,1-DCE)	ND	0.5
Methylene chloride	ND	0.5
trans-1,2-Dichloroethene (t-1,2-DCE)	ND	0.5
1,1-Dichloroethane (1,1-DCA)	1.7	0.5
cis-1,2-Dichloroethene (c-1,2-DCE)	ND	0.5
Chloroform	ND.	0.5
1,1,1-Trichloroethane (1,1,1-TCA)	ND.	0.5
Carbon tetrachloride	ND	0.5
1,2-Dichloroethane (1,2-DCA)	140	0.5
Trichloroethene (TCE)	ND	0.5
1,2-Dichloropropane (1,2-DCP)	ND.	0.5
Bromodichioromethane	,ND	0.5
2-Chloroethylvinyl ether	ND	0.5
cis-1,3-Dichtoropropene	ND	0.5
trans-1,3-Dichloropropene	. ND	0.5
1,1,2-Trichloroethane (1,1,2-TCA)	ND	0.5
Tetrachioroethene (PCE)	ND	0.5
Dibromochloromethane	. 0.84	0.5
Chlorobenzene	. ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachioroethaue (1,1,2,2-PCA)	ND	0.5
1,3-Dichtorobenzene		0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Sierra Project No. 9406-034 Client Project No. 5008-J12 Client Project Name:

N/A

Date Received: .06/07/94

Date Prepared: .06/15-.06/16/94

Date Analyzed: .06/15-.06/16/94

llyzed: .06/15-.06/16/94 SM

.06/03/94

Sample Preparation: EPA Method 5030

Sample Analysis: EPA 8010 (Halogenated Volatiles)

Report Date:

Analyst:

Date Sampled:

.06/23/94

Sample Type: Liquid .

Sample LD.

MW-32

·	Sample Result	Method Detection
Compound	(μg/L)	Limit (µg/L)
Chloromethane	ND	0.5
Vinyl chloride	ND	0.5
Bromomethane	ND	0.5
Chloroethane	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene (1,1-DCE)	ND	0.5
Methylene chloride	ND	0.5
trans-1,2-Dichloroethene (t-1,2-DCE)	ND	0.5
1,1-Dichloroethane (1,1-DCA)	ND	0.5
cis-1,2-Dichloroethene (c-1,2-DCE)	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane (1,1,1-TCA)	ND	0.5
Carbon tetrachloride	ND.	0.5
1,2-Dichloroethane (1,2-DCA)	11	0.5
Trichloroethene (TCE)	ND	0.5
1,2-Dichloropropane (1,2-DCP)	ND	0.5
Bromodichloromethane	ND	0.5
2-Chloroethylvinyl ether	ND	0.5
cis-1,3-Dichlaropropene	ND	0.5
trans-1,3-Dichioropropene	ND	0.5
1.1.2-Trichloroethane (1.1.2-TCA)	ND	0.5
Tetrachloroethene (PCE)	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane (1,1,2,2-PCA)	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	. ND	0.5

Sierra Project No.: 9406-034 Client Project No.: 5008-J12 Client Project Name: Date Sampled: .06/03/94

Date Received: .06/07/94

Date Prepared: .06/15-.06/16/94

Date Analyzed: .06/15-.06/16/94

Analyst:

SM

Sample Preparation:

EPA Method 5030

Sample Analysis:

8015-Modified (TPH as Diesel-CADHS LUFT)

N/A

Report Date:

.06/23/94

Sample Type: Liquid

TPH Client Sample I.D. mg/l

MW-2 ND MW-3 ND MW-6 ND MW-25 ND MW-26 ND ND MW-27 ND MW-28 ND MW-29 ND MW-30 ND MW-32 Duplicate ND ND Equipment

> TPH mg/l

Detection Limit:

20

Park Environmental Corporation 4231 Pacific Street, Suite 7

Sierra Project No.: 9406-034 Client Project No.: 5008-J12 Date Sampled: Date Received:

.06/03/94 .06/07/94

Rocklin, CA 95677

Client Project Name:

Date Prepared:

.06/15-.06/16/94

N/A

Date Analyzed:

06/15-06/16/94

•

Analyst:

SM

Sample Preparation: Sample Analysis:

EPA Method 5030

8015-Modified (TPH as Gasoline-CADHS LUFT)

Report Date: .

.06/23/94

and EPA 8020 (BTEX) in series

Sample Type: Liquid

Client Sample I.D.	TPH ug/L	Benzene <u>ug/L</u>	Toluene <u>μg/L</u>	Ethylbenzene µg/L	Xylenes, Total ug/L
MW-2	ND	ND	ND	ND	ND
MW-3	320	120	8.2	8.4	4.5
MW-6	69	2.7	8.7	1.6	3.5
MW-25	97	2.4	14	ND	3.4
MW-26	12000	4100	300	120	230
MW-27	DN.	0.85	ND	ND	ND
MW-28	ND	3.1	ND	ND	ND
MW-29	ND	ND	ND	ND	ND
MW-30	ND	1.1	ND	ND	ND
MW-32	350	120	1.3	ND	1.4
Duplicate	300	120	0.87	5.9	2.1
Equipment	ND	2.3	2.9	ND	0.68

	TPH	Benzene	Toluene	Ethylbenzene	Xylenes, Total
	uwl	ug/L	ug/L	<u>ug/L</u>	ug/L
Detection Limit:	50	0.5	0.5	0.5	0.5

Park Environmental Corporation 4231 Pacific Street, Suite 7

Rocklin, CA 95677

Sierra Project No. Client Project No.

Client Project Name: . -

9406-034 5008-J12 Date Sampled:

06/03/94

Date Received: Date Prepared: .06/07/94

Date Analyzed:

.06/15-.06/16/94

Analyst:

SM

Sample Preparation: EPA Method 5030

Sample Analysis: EPA 8010 (Halogenated Volatiles)

Report Date:

.06/23/94

Matrix/Spike Duplicate Report

Sample Type: Liquid

,	1,1-DCA (Range)	T-1,3-DCP (Range)	Carbon Tet (Range)	Bromoform (Range)
Matrix Spike	97	98	96	101
Recovery (%)	(47-132)	(43-143)	(22-178)	(13-159)
Matrix Spike Duplicate	103	115	107	128
Recovery (%)	(47-132)	(43-143)	(22-178)	(13-159)
Relative Per-cent	6	15	11	24
Difference	(0-30)	(0-30)	(0-30)	(0-30)

Quality Control Reference Number:

9405-107-6058

Park Environmental Corporation 4231 Pacific Street, Suite 7

Sierra Project No.: Client Project No.:

9406-034 5008-J12

Date Sampled; Date Received:

.06/03/94 .06/07/94

Rocklin, CA 95677

Client Project Name:

Date Prepared:

.06/15-.06/16/94 06/15-.06/16/94

Date Analyzed: Analyst:

SM

Sample Preparation: EPA Method 5030 Sample Analysis: 8015-M as Diesel

Report Date:

.06/23/94

Matrix/Spike Duplicate Report

Sample Type: Solid

TPH-Diesel

(Range)

N/A

Matrix Spike

77

(50-150)

Recovery (%)

Matrix Spike Duplicate

76

(50-150)

Recovery (%)

Relative Per-cent

1

(0-30)

Difference

Quality Control Reference Number:

9405-107-6058

Sierra Project No.: Date Sampled: .06/03/94 Park Environmental Corporation 9406-034 Date Received: .06/07/94 Client Project No.: 5008-J12 4231 Pacific Street, Suite 7 Client Project Name: Date Prepared: .06/15-.06/16/94 Rocklin, CA 95677 06/15-06/16/94 N/A Date Analyzed: Analyst: SM Sample Preparation: EPA Method 5030 Sample Analysis: EPA 8015-Modified (TPH as Gasoline-CADHS LUFT) Report Date: .06/23/94 and EPA 8020 (BTEX) in series

Matrix/Spike Duplicate Report

Sample Type: Liquid				
	ТРН	Benzene	Toluene	Ethylbenzene
	(Range)	(Range)	(Range)	(Range)
Matrix Spike	80	97	97	98
•	(50-150)	(39-150)	(46-148)	(32-160)
Recovery (%)	(30-130)	(5)-100)	(10-110)	(52-100)
Matrix Spike Duplicate	85	108	108	109
Recovery (%)	(50-150)	(39-150)	(46-148)	(32-160)
Relative Per-cent	6	11	11	11
Difference	(0-30)	(0-30)	(0-30)	(0-30)

Quality Control Reference Number:

9406-50-6492

Sierra Project No.: Client Project No.:

Client Project Name:

N/A

9406-034 5008-J12 Date Sampled: Date Received: .06/03/94

Date Prepared:

.06/07/94 .06/15-.06/16/94

Date Analyzed:

.06/15-.06/16/94

Analyst:

SM

Report Date:

.06/23/94

Surrogate Summary Report

Client Sample LD.	Analysis Type	Per-cent Recovery S1 (Range)
MW-2	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	100 (50-130)
MW-3	8015 Modulied (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	92 (50-130)
MW-6	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	95 (50-130)
MW-25	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	93 (50-130)
MW-26	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	94 (50-130)
MW-27	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	110 (50-130)
MW-28	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	100 (50-130)
MW-29	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	99 (50-130)
MW-30	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	100 (50-130)
MW-32	8015 Modufied (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	110 (50-130)
Duplicate	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	98 (50-130)
Equipment	8015 Modified (TPH as Gasoline/Diesel CADHS-LUFT)/EPA 8020 (BTEX)	110 (50-130)
MW-26	EPA 8010 Haiogenated Volattles	100 (60-130)
MW-32	EPA 8010 Halogenated Volatiles	89 (60-130)

Analysis Type

Sierra Project No.:

.9406-034

Date Sampled: Date Received: .06/03/94

Client Project No.: Client Project Name: 5008-J12

Date Received:
Date Prepared:

.06/07/94 .06/15-.06/16/94

Date Analyzed:

.06/15-.06/16/94

Analyst:

SM

Report Date:

Per-cent Recovery

%

Range

.06/23/94

Laboratory Control Sample Report

Sample Type: Solid

Compound

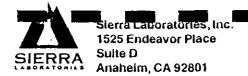
			,			
TPH as Gasoline	8015 Modified (CADHS-LUFT)	84	(80-120)			
	Quality Control Reference Number:	9406-50-6492				
TPH as Diesei	8015 Modified (CADHS-LUFT)	89	(80-120)			
	Quality Control Reference Number:	9406-50)-6492			
Parameter	Analysis Type	Per-cent Recovery				
		<u>70.</u>	Range			
1,1- DCA	EPA 8010 (halogenated Volatiles)	95	(80-120)			
Carbon Tet	EPA 8010 (halogenated Volatiles)	9 7	(80-120)			
T-1, 3- DCP	EPA 8010 (halogenated Volatiles)	91	(80-120)			
Bromoform	EPA 8010 (halogenated Volatiles)	94	(80-120)			
	Quality Control Reference Number:	9406~50-6492				
Benzene	EPA 8020 (BTEX)	110	(80-120)			
Toluene	EPA 8020 (BTEX)	118	(80-120)			
Ethylbenzene	EPA 8020 (BTEX)	112	(80-120)			
	Quality Control Reference Number:	9406-50-6492				



Sierra Laboratories, Inc. 1525 Endeavor Place Suite D Anaheim, CA 92801

714 - 758-9988 FAX: 714 - 758-9692 CHAIN OF CUSTODY RECORD Date: 6/3/14 Page _ of ___

Client: Auk Env Address: 4231 Paci Rocklyn Client Tel. No.: 916 Client Proj. Mgr.: Pe		Clien Clien For Clien Turn ar	715	مي		1 (0) (0) (0) (0) (0) (0) (0) (0) (0) (0)			Analyses Requested Remarks 6392						
Client Sample No.	Date	Time	Sample	Matrix	Preservatives		Container	No. of Con-	,	90 h	200	, '} '}	"/	//	
			Liquid	Solid	Yes	No	Туре	lainers	\display in the control of the	7	\$\sqrt{\center}{\center}	<u> </u>			Remarks
MW-2	4/3/94		Liq		HCI		Aov	4	Χ	X					6392
MW-3			Liq		HCI			4	Χ	Χ					6393
MW - 6			L19		HCI			4	X	Х					6394
MW-25			Lig		HUI			4	X	X					6395
Mw-26			Lin		HU			6	χ	X	Χ				6396
MW-27			Lia		HCI			4	X	X					6397
MW-28			lia		HU			4	X	X					6398
MW-29		· , · • •	Lia		HUI			¥	χ	X					6399
MW/30			Lia		HUI			4	X	х					6400
MW-32	V		Lia	-	HU		1	6	人	X	ኢ				6401
Sampler's Signature:					Rece	eivedto	9/					Date		Time	Total No. of Containers
Howard Fold					La	41 L		Sie	Ma	La6	J	4-	7 /	1015	
Relinquished by:			Date	Time	Rec	eived b	y:	_ =				Date	∍	Time	chain of custody form constitutes authorization to perform the analysis specified above under
Howard Hold			6/6/44	2:00P	1										Sierra's Terms and Conditions, unless otherwise agreed upon in writing between Sierra and Client.
Relinquished by:			Date	Time	Rec	eived a	t Laboratory	by:		•		Date	9 -	Time	Total No. of Containers Recd.:
Special Instructions:			1	l	1			EQE	. Chi . Inta	lled act					ondition samples received: Appropriate Sample Container Properly Labeled



714 - 758-9988 FAX: 714-758-9692 Date: 6/3/44 Page 2 of 2

Client: Park Envi	Client Proj. Name:									Analyses Requested					
Address: 4231 Pac			hite 7		Clien	t Proj	. No.:5	W8-	15			<u> </u>			
Rocklin, Ca 95677 E					For Client Use: Furn around requested: Immediate Attention Rush 24-48 hours Rush 72-96 hours Mobile Lab Normal						165/	(g)			
Client Sample No.	Date	Time	Sample Liquid	e Matrix Solid	Presen Yes	vatives No	Container Type	No. of Con- tainers	1	38) V	WE)	//			Remarks
Duplicate	6/3/44		V		HCI		VoA	Э	+						6402
Equipment Blank	W3/94	·····	~		HCI		VOA	а	7						6403
					·							-	-		
											-				
Sampler's Signature: Advanced Abold												Time 10 ¹⁵	The delivery of samples and the signature on this chain of custody form constitutes authorization		
Relinquished by: Date Time Abward Hold 6/6/94 2:00PM													Time	to perform the analysis specified above und Sierra's Terms and Conditions, unless otherwis agreed upon in writing between Sierra and Client	
Relinquished by: Date Time					Received at Laboratory by: Date Time									Time	Total No. of Containers Recd.:
Special Instructions:								EQE	Chi Inta	lled act	TOR				Condition samples received: Appropriate Sample Container Properly Labeled Other