



**Chevron**

February 5, 1999

**Chevron Products Company**  
6001 Bollinger Canyon Road  
Building L, Room 1110  
PO Box 6004  
San Ramon, CA 94583-0904

Ms. Susan Hugo  
Alameda County Health Care Services  
Department of Environmental health  
1130 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Philip R. Briggs**  
Project Manager  
Site Assessment & Remediation  
Phone 925 842-9136  
Fax 925 842-8370

99FEB-8 PH L: 12  
EPA REGIONAL  
PROTECTION

**Re: Chevron Service Station #9-1583**  
**5509 Martin Luther King Jr. Way**  
**Oakland, California**

Dear Ms. Hugo:

Enclosed is the Hoist/Clarifier Removal and Sampling Report, dated January 19, 1999, that was prepared by our consultant Touchstone Developments for the above noted facility. This report summarizes the removal of the hoists and clarifier along with the sampling activities performed at this site.

Two single post semi-hydraulic hoists and one dual post hydraulic hoist with clarifier (oil/water separator) were removed from inside the service station building and soil samples collected at a depth of approximately 8 feet and 7.5 feet below grade respectively. The soil sample for the clarifier was analyzed for TOG (total oil/grease), TPH-g, TPH-d (hydraulic oil), BTEX, MtBE, VOC's (8010), SVOC's (8270), while the soil samples for the single post hoists were only analyzed for TPH-d/hydraulic oil.

The analytical results for the single post hoists and the dual post hoist/clarifier were below method detection limits for all constituents. Refer to Table A for the results. Metals by EPA Method 6010 were analyzed for in the sample taken from under the dual hoist/clarifier. Refer to Appendix A, analytical reports-page 4 of 19.

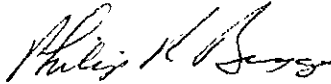
**Note that the analytical results shown in Table A are in ug/Kg (ppb) unless noted otherwise. The analytical results as reported by the lab are in ug/Kg, refer to Appendix A.**

No soils were generated during the hoists/clarifier removal.

February 5, 1999  
Ms. Susan Hugo  
Chevron Service Station #9-1583  
Page 2

Based on these results no further remedial activities are proposed. If you have any questions or comments, call me at (925) 842-9136.

Sincerely,  
**CHEVRON PRODUCTS COMPANY**



Philip R. Briggs  
Site Assessment and Remediation Project Manager

Enclosure

CC. Mr. Bill Scudder, Chevron

Petroleum Sales, Inc.  
505 South Van Ness  
San Francisco, CA 94110  
Attn: Ben Shimek



**Touchstone  
Developments**  
Environmental Management

## Hoist/Clarifier Removal and Sampling Report

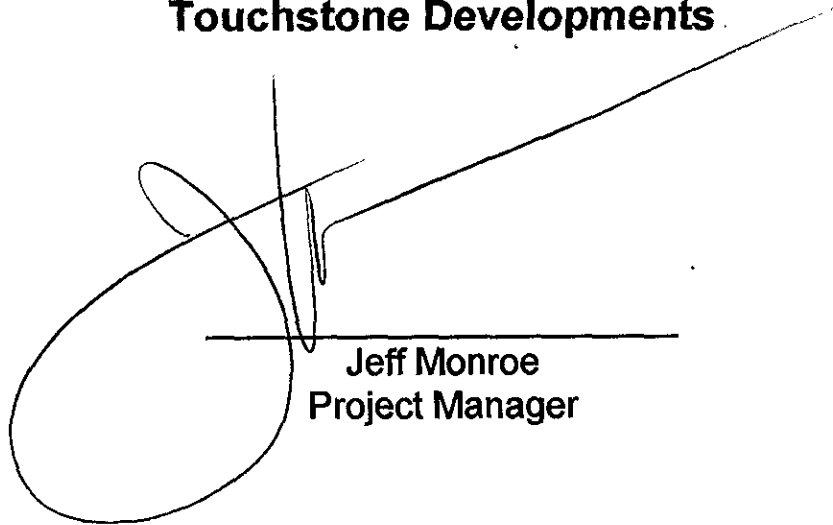
**Chevron Station No. 9-1583  
5509 Martin Luther King Jr. Way  
Oakland, California**

prepared for

**Chevron Products Company  
6001 Bollinger Canyon Road  
San Ramon, California 94583**

prepared by

**Touchstone Developments**



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**Jeff Monroe  
Project Manager**

09FEB-8 PM 4:12  
PROFESSIONAL  
NOTARIZATION

**January 19, 1999**

## **INTRODUCTION**

This report summarizes the field activities performed at Chevron Station No. 9-1583 located at 5509 Martin Luther King Jr. Way, Oakland, California, after the removal of two single post semi-hydraulic hoists and one dual post hydraulic hoist with clarifier on November 5, 1998. Hoist removal was performed by Musco Excavators of Santa Rosa, California. A Touchstone Developments' representative obtained soil samples from under each hydraulic hoist. The soil sampling described in this letter report was performed November 5, 1998 to comply with the current State of California Regional Water Quality Control Board and City of Oakland guidelines.

## **SITE DESCRIPTION**

The site is occupied by a Chevron service station with an auto service department on the northwest corner of Martin Luther King Jr. Way and 55th Street (Figure 1). The single post hydraulic hoists were located in the southern service bays of the existing building and the oil/water separator (clarifier) was located next to the dual post hoist in the northern bay.

## **SOIL SAMPLING**

A soil sample was collected from the beneath each of the single post hoists at approximately 8 feet below grade and designated HT2-8' and H3-8'. The sample under the clarifier/dual post hoist was collected at 7.5 feet below grade and designated H/CLR-7.5'. Sample locations are shown on Figure 2 and an analytical summary can be found in Table A.

The samples were collected from the backhoe bucket by removing the top few inches of soil, then pushing a tube into the soil until completely full. The end of the tube was covered with aluminum foil and sealed with plastic end caps. The sample was then labeled, placed in a cooler with ice, recorded on a Chain-of-Custody form, and transported to Sequoia Analytical, a State-certified analytical laboratory located in Petaluma, California.

## **ANALYTICAL RESULTS**

The samples from under the single post hoists were analyzed for Total Petroleum Hydrocarbons (TPH) calculated as Hydraulic Oil by EPA Method 8015 modified. Sample designated H/CLR collected beneath the hoist and clarifier was additionally analyzed for TPH calculated as gasoline and

diesel by EPA Method 8015, Total Oil and Grease (TOG) by EPA Method 5520E&F, Volatile Organic Compounds by EPA Method 8010, Semi-volatile Organic Compounds by EPA 8270 and Metals by EPA Method 6010. Copies of the Certified Laboratory Reports are attached.

**LIST OF ATTACHMENTS**

Figure 1: Site Plan

Figure 2: Site Plan with Sample Locations

Table A: Analytical Summary

Appendix A: Laboratory Analytical Reports and Chain-of-Custody Form

**TABLE A**

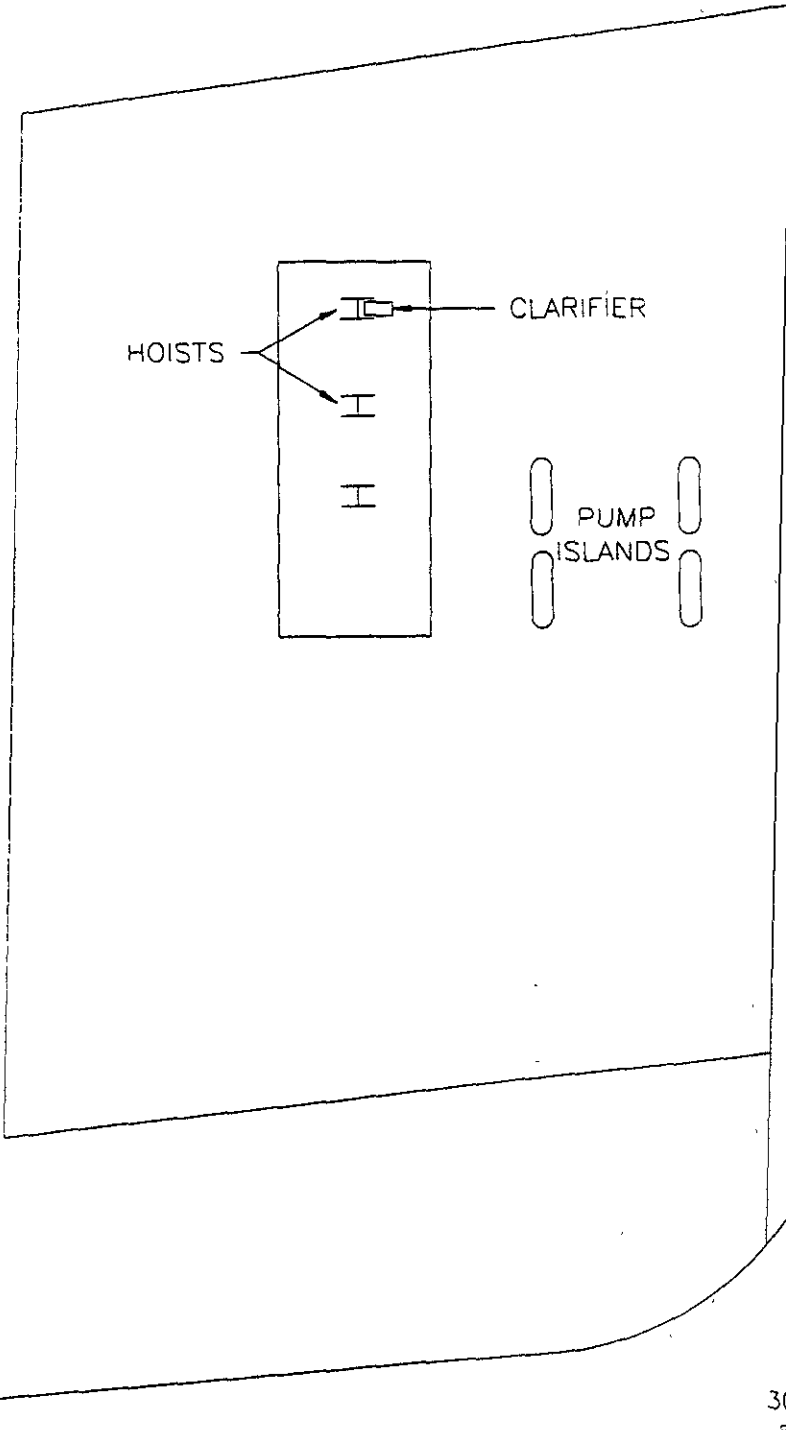
**TABLE A**  
**Sample Analytical Summary**  
**Results in  $\mu\text{g}/\text{Kg}$  (ppb) unless noted**

Hoists & Clarifier Samples (Date Sampled 11/05/98)												
Sample ID	Depth in Feet	TPH as Hydraulic Oil	TPH as Gasoline	B	T	E	X	MTBE	TOG 5520	8010	8270	8270
H/CLR	7.5	ND < 10	ND < 1000	ND < 5	ND < 5	ND < 5	ND < 10	ND < 25	ND	ND	ND	ND
H2	8	ND < 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
H3	8	ND < 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA = Not analyzed ND = Not detected at or above laboratory detection limits TPH = Total petroleum hydrocarbons B = Benzene T = Toluene E = Ethylbenzene X = Xylenes CAR = Certified Analytical Reports ppb = parts per billion or $\mu\text{g}/\text{Kg}$ ppm = parts per million mg/Kg TOG = total oil and grease MTBE = methyl tert butyl ether Note = See CAR's in Appendix A for Metal results												

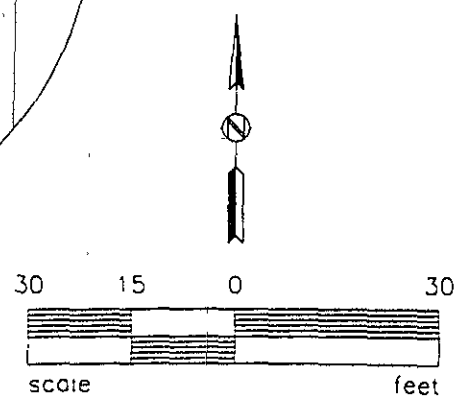
**FIGURES**



Martin Lurthur King Jr. Way



55th Street



Source: RRM.



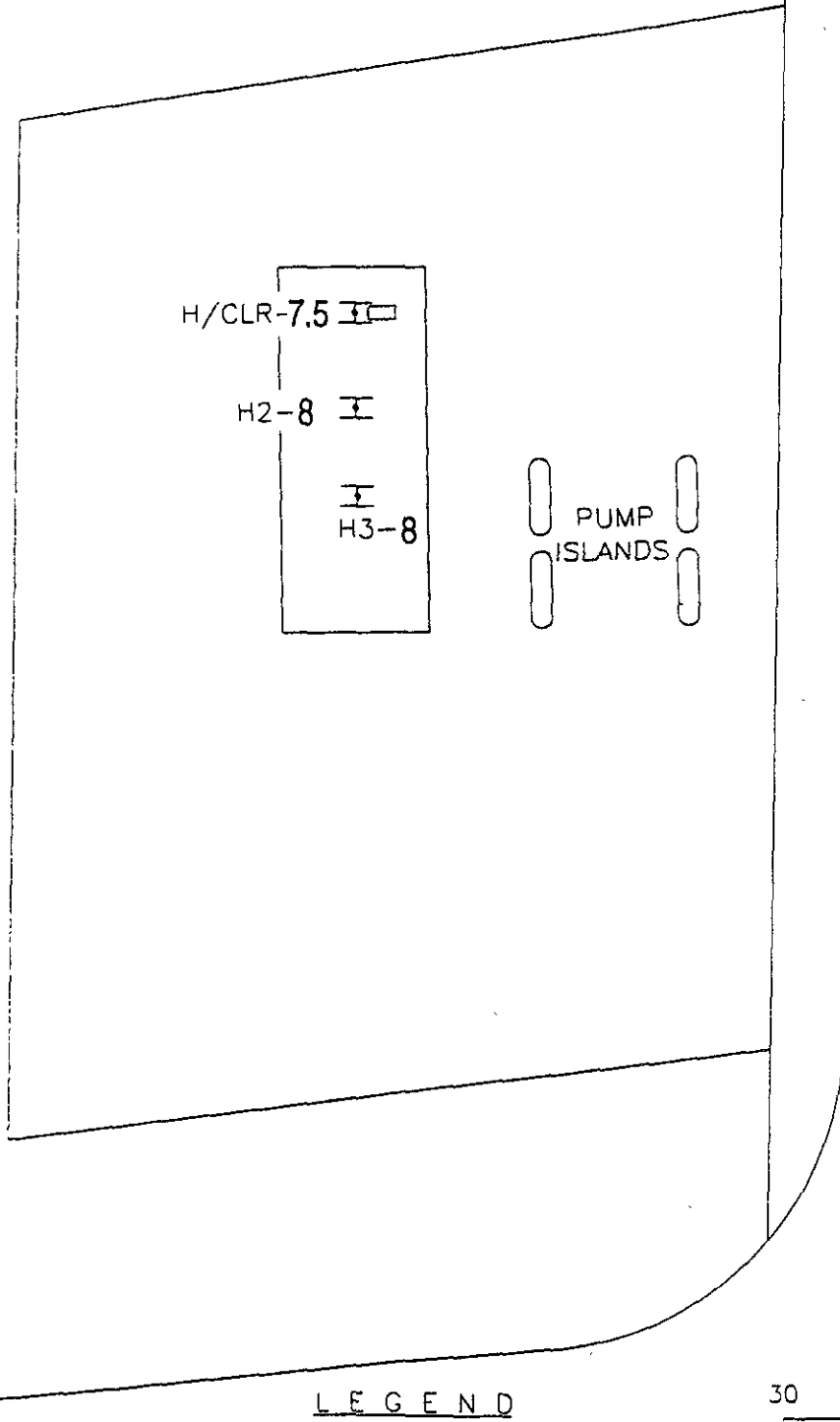
Touchstone  
Developments  
Environmental Management

Job No:  
Appr:  
Drwn: *John*  
Date: *11-11-99*

SITE PLAN  
Chevron SS# 9-1583  
5509 Martin Lurthur King Jr. Way  
Oakland, California

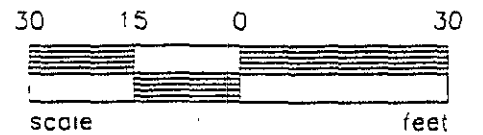
FIGURE  
1

Martin Lurthur King Jr. Way



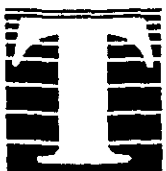
LEGEND

• H1 Sample ID & Location



55th Street

Source: RRM.



Touchstone  
Developments  
Environmental Management

Job. No:  
Appr: *[Signature]*  
Drwn: *[Signature]*  
Date: *1-11-99*

SITE PLAN W/SAMPLE  
LOCATIONS  
Chevron SS# 9-1583  
5509 Martin Lurthur King Jr. Way  
Oakland, California

FIGURE  
2

## **APPENDIX A**

**Chemical Analytical Reports and COC Form**



Sequoia  
Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8  
1455 McDowell Blvd North, Ste D

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834  
Petaluma, CA 94954

(650) 364-9600  
(925) 988-9600  
(916) 921-9600  
(707) 792-1865

FAX (650) 364-9233  
FAX (925) 988-9673  
FAX (916) 921-0100  
FAX (707) 792-0342

November 20, 1998

Mr. Jeff Monroe  
Touchstone Developments  
PO Box 2554  
Santa Rosa, CA 95405

RE: Chevron/General/P811130

Dear Mr. Jeff Monroe

Enclosed are the results of analyses for sample(s) received by the laboratory on November 11, 1998. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Debbie Leibensberger  
Project Manager

CA ELAP Certificate Number 2245





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**ANALYTICAL REPORT FOR P811130**

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
H/CLR-7.5	P811130-01	Soil	11/5 98
H2-8	P811130-02	Soil	11/5 98
H3-8	P811130-03	Soil	11/5 98





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b><u>H/CLR-7.5</u></b>				<b><u>P811130-01</u></b>			<b><u>Soil</u></b>	
Gasoline	8110192	11/12/98	11/12/98		1000	ND	ug/kg	
Benzene	"	"	"		5.00	ND	"	
Toluene	"	"	"		5.00	ND	"	
Ethylbenzene	"	"	"		5.00	ND	"	
Xylenes (total)	"	"	"		10.0	ND	"	
Methyl tert-butyl ether	"	"	"		25.0	ND	"	
Surrogate <i>a,a,a</i> -Trifluorotoluene	"	"	"			95.3	%	
Surrogate <i>4</i> -Bromofluorobenzene	"	"	"			86.0	"	





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Total Petroleum Hydrocarbons as Diesel & others by EPA 8015M  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b><u>H/CLR-7.5</u></b>				<b><u>P811130-01</u></b>		<b><u>Soil</u></b>		
Diesel	8110206	11/12/98	11/13/98		5.00	ND	mg/kg	
Hydraulic Fluid	"	"	"		10.0	ND	"	
Surrogate: <i>o</i> -Terphenyl	"	"	"			91.3	%	
<b><u>H2-8</u></b>				<b><u>P811130-02</u></b>		<b><u>Soil</u></b>		
Hydraulic Fluid	8110206	11/12/98	11/13/98		10.0	ND	mg/kg	
Surrogate: <i>o</i> -Terphenyl	"	"	"			94.9	%	
<b><u>H3-8</u></b>				<b><u>P811130-03</u></b>		<b><u>Soil</u></b>		
Hydraulic Fluid	8110206	11/12/98	11/13/98		10.0	ND	mg/kg	
Surrogate: <i>o</i> -Terphenyl	"	"	"			86.8	%	





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Total Metals by EPA 6000/7000 Series Methods  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>H/CLR-7.5</u>				<u>P811130-01</u>			<u>Soil</u>	
Cadmium	8110184	11/12/98	11/14/98	EPA 6010A	1.00	ND	mg/kg	
Chromium	"	"	"	EPA 6010A	1.00	32.1	"	
Lead	"	"	"	EPA 6010A	7.50	ND	"	
Nickel	"	"	"	EPA 6010A	3.00	40.8	"	
Zinc	"	"	"	EPA 6010A	2.00	44.0	"	







Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Volatile Organic Compounds by EPA Method 8010B  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>H/CLR-7.5</b>				<b>P811130-01</b>			<b>Soil</b>	
Bromodichloromethane	8110266	11/12/98	11/18/98		50.0	ND	ug/kg	
Bromoform	"	"	"		50.0	ND	"	
Bromomethane	"	"	"		50.0	ND	"	
Carbon tetrachloride	"	"	"		50.0	ND	"	
Chlorobenzene	"	"	"		50.0	ND	"	
Chloroethane	"	"	"		50.0	ND	"	
2-Chloroethylvinyl ether	"	"	"		500	ND	"	
Chloroform	"	"	"		50.0	ND	"	
Chloromethane	"	"	"		50.0	ND	"	
Dibromochloromethane	"	"	"		50.0	ND	"	
1,2-Dibromoethane (EDB)	"	"	"		50.0	ND	"	
1,2-Dichlorobenzene	"	"	"		50.0	ND	"	
1,3-Dichlorobenzene	"	"	"		50.0	ND	"	
1,4-Dichlorobenzene	"	"	"		50.0	ND	"	
Dichlorodifluoromethane	"	"	"		50.0	ND	"	
1,1-Dichloroethane	"	"	"		50.0	ND	"	
1,2-Dichloroethane	"	"	"		50.0	ND	"	
1,1-Dichloroethene	"	"	"		50.0	ND	"	
cis-1,2-Dichloroethene	"	"	"		50.0	ND	"	
trans-1,2-Dichloroethene	"	"	"		50.0	ND	"	
1,2-Dichloropropane	"	"	"		50.0	ND	"	
cis-1,3-Dichloropropene	"	"	"		50.0	ND	"	
trans-1,3-Dichloropropene	"	"	"		50.0	ND	"	
Freon 113	"	"	"		50.0	ND	"	
Methylene chloride	"	"	"		50.0	ND	"	
1,1,2,2-Tetrachloroethane	"	"	"		50.0	ND	"	
Tetrachloroethene	"	"	"		50.0	ND	"	
1,1,2-Trichloroethane	"	"	"		50.0	ND	"	
1,1,1-Trichloroethane	"	"	"		50.0	ND	"	
Trichloroethene	"	"	"		50.0	ND	"	
Trichlorofluoromethane	"	"	"		50.0	ND	"	
Vinyl chloride	"	"	"		50.0	ND	"	
Surrogate: Bromochloromethane	"	"	"	-		96.7	%	
Surrogate: 1,4-Dichlorobutane	"	"	"	-		106	"	





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Semivolatile Organic Compounds by EPA Method 8270B  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b>H/CLR-7.5</b>				<b>P811130-01</b>			<b>Soil</b>	
Acenaphthene	8110276	11/17/98	11/18/98		330	ND	ug/kg	
Acenaphthylene	"	"	"		330	ND	"	
Anthracene	"	"	"		330	ND	"	
Benzoic acid	"	"	"		1670	ND	"	
Benzo (a) anthracene	"	"	"		330	ND	"	
Benzo (b) fluoranthene	"	"	"		330	ND	"	
Benzo (k) fluoranthene	"	"	"		330	ND	"	
Benzo (g,h,i) perylene	"	"	"		330	ND	"	
Benzo (a) pyrene	"	"	"		330	ND	"	
Benzyl alcohol	"	"	"		660	ND	"	
Bis(2-chloroethoxy)methane	"	"	"		330	ND	"	
Bis(2-chloroethyl)ether	"	"	"		330	ND	"	
Bis(2-chloroisopropyl)ether	"	"	"		330	ND	"	
Bis(2-ethylhexyl)phthalate	"	"	"		330	ND	"	
4-Bromophenyl phenyl ether	"	"	"		330	ND	"	
Butyl benzyl phthalate	"	"	"		330	ND	"	
4-Chloroaniline	"	"	"		660	ND	"	
4-Chloro-3-methylphenol	"	"	"		660	ND	"	
2-Chloronaphthalene	"	"	"		330	ND	"	
2-Chlorophenol	"	"	"		330	ND	"	
4-Chlorophenyl phenyl ether	"	"	"		330	ND	"	
Chrysene	"	"	"		330	ND	"	
Dibenz (a,h) anthracene	"	"	"		330	ND	"	
Dibenzofuran	"	"	"		330	ND	"	
Di-n-butyl phthalate	"	"	"		330	ND	"	
1,2-Dichlorobenzene	"	"	"		330	ND	"	
1,3-Dichlorobenzene	"	"	"		330	ND	"	
1,4-Dichlorobenzene	"	"	"		330	ND	"	
3,3'-Dichlorobenzidine	"	"	"		660	ND	"	
2,4-Dichlorophenol	"	"	"		330	ND	"	
Diethyl phthalate	"	"	"		330	ND	"	
2,4-Dimethylphenol	"	"	"		330	ND	"	
Dimethyl phthalate	"	"	"		330	ND	"	
4,6-Dinitro-2-methylphenol	"	"	"		1670	ND	"	
2,4-Dinitrophenol	"	"	"		1670	ND	"	
2,4-Dinitrotoluene	"	"	"		330	ND	"	
2,6-Dinitrotoluene	"	"	"		330	ND	"	
Di-n-octyl phthalate	"	"	"		330	ND	"	
Fluoranthene	"	"	"		330	ND	"	
Fluorene	"	"	"		330	ND	"	
Hexachlorobenzene	"	"	"		330	ND	"	





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Semivolatile Organic Compounds by EPA Method 8270B  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<b><u>H/CLR-7.5 (continued)</u></b>				<b><u>P811130-01</u></b>			<b><u>Soil</u></b>	
Hexachlorobutadiene	8110276	11/17/98	11/18/98		330	ND	ug/kg	
Hexachlorocyclopentadiene	"	"	"		330	ND	"	
Hexachloroethane	"	"	"		330	ND	"	
Indeno (1,2,3-cd) pyrene	"	"	"		330	ND	"	
Isophorone	"	"	"		330	ND	"	
2-Methylnaphthalene	"	"	"		330	ND	"	
2-Methylphenol	"	"	"		330	ND	"	
4-Methylphenol	"	"	"		330	ND	"	
Naphthalene	"	"	"		330	ND	"	
2-Nitroaniline	"	"	"		1670	ND	"	
3-Nitroaniline	"	"	"		1670	ND	"	
4-Nitroaniline	"	"	"		1670	ND	"	
Nitrobenzene	"	"	"		330	ND	"	
2-Nitrophenol	"	"	"		330	ND	"	
4-Nitrophenol	"	"	"		1670	ND	"	
N-Nitrosodiphenylamine	"	"	"		330	ND	"	
N-Nitrosodi-n-propylamine	"	"	"		330	ND	"	
Pentachlorophenol	"	"	"		1670	ND	"	
Phenanthrene	"	"	"		330	ND	"	
Phenol	"	"	"		330	ND	"	
Pyrene	"	"	"		330	ND	"	
1,2,4-Trichlorobenzene	"	"	"		330	ND	"	
2,4,5-Trichlorophenol	"	"	"		330	ND	"	
2,4,6-Trichlorophenol	"	"	"		330	ND	"	
Surrogate: 2-Fluorophenol	"	"	"	-		73.6	%	
Surrogate: Phenol-d6	"	"	"	-		82.6	"	
Surrogate: Nitrobenzene-d5	"	"	"	-		76.3	"	
Surrogate: 2-Fluorobiphenyl	"	"	"	-		80.2	"	
Surrogate: 2,4,6-Tribromophenol	"	"	"	-		62.6	"	
Surrogate: Terphenyl-d14	"	"	"	-		118	"	





Touchstone Developments	Project: Chevron/General	Sampled: 11/5/98
PO Box 2554	Project Number: 1583-3	Received: 11/11/98
Santa Rosa, CA 95405	Project Manager: Mr. Jeff Monroe	Reported: 11/20/98

**Conventional Chemistry Parameters by APHA/EPA Methods  
Sequoia Analytical - Petaluma**

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>H/CLR-7.5</u> TRPH	8110263	11/16/98	11/18/98	<u>P811130-01</u> SM 5520C&F	33.3	ND	<u>Soil</u> mg/kg	





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: Chevron/General Project Number: 1583-3 Project Manager: Mr. Jeff Monroe	Sampled: 11/5 98 Received: 11/11 98 Reported: 11/20 98
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**Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 8110192</b>			<b>Date Prepared: 11/12/98</b>			<b>Extraction Method: EPA 5030 soils</b>				
<b>Blank</b>			<b>8110192-BLK1</b>							
Gasoline	11/12/98			ND	ug/kg	200				
Benzene	"			ND	"	1.00				
Toluene	"			ND	"	1.00				
Ethylbenzene	"			ND	"	1.00				
Xylenes (total)	"			ND	"	2.00				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	300		285	"		95.0			
Surrogate: 4-Bromofluorobenzene	"	300		284	"		94.7			
<b>LCS</b>			<b>8110192-BS1</b>							
Benzene	11/12/98	100		95.8	ug/kg		95.8			
Toluene	"	100		94.7	"		94.7			
Ethylbenzene	"	100		93.9	"		93.9			
Xylenes (total)	"	300		285	"		95.0			
Surrogate: a,a,a-Trifluorotoluene	"	300		299	"		99.7			
<b>Matrix Spike</b>			<b>8110192-MS1</b>		<b>P811006-01</b>					
Benzene	11/12/98	500	ND	487	ug/kg		97.4			
Toluene	"	500	ND	479	"		95.8			
Ethylbenzene	"	500	ND	475	"		95.0			
Xylenes (total)	"	1500	ND	1440	"		96.0			
Surrogate: a,a,a-Trifluorotoluene	"	300		317	"		106			
<b>Matrix Spike Dup</b>			<b>8110192-MSD1</b>		<b>P811006-01</b>					
Benzene	11/12/98	500	ND	477	ug/kg		95.4		2.07	
Toluene	"	500	ND	471	"		94.2		1.68	
Ethylbenzene	"	500	ND	468	"		93.6		1.48	
Xylenes (total)	"	1500	ND	1420	"		94.7		1.36	
Surrogate: a,a,a-Trifluorotoluene	"	300		313	"		104			





Touchstone Developments PO Box 2554 Santa Rosa, CA 95405	Project: <i>Chevron/General</i> Project Number: 1583-3 Project Manager: <i>Mr. Jeff Monroc</i>	Sampled: 11/5/98 Received: 11/11/98 Reported: 11/20/98
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**Total Petroleum Hydrocarbons as Diesel & others by EPA 8015M/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 8110206</b>			<b>Date Prepared: 11/12/98</b>			<b>Extraction Method: CA LUFT - orb shaker</b>				
<b>Blank</b>										
Diesel	11/17/98			ND	mg/kg	5.00				
Motor Oil	"			ND	"	10.0				
Mineral Spirits	"			ND	"	10.0				
Kerosene	"			ND	"	10.0				
JP-4	"			ND	"	10.0				
Hydraulic Fluid	"			ND	"	10.0				
Surrogate: <i>o-Terphenyl</i>	"	3.33		3.64	"		109			
<b>LCS</b>										
<b>8110206-BS1</b>										
Diesel	11/17/98	33.3		27.6	mg/kg		82.9			
Surrogate: <i>o-Terphenyl</i>	"	3.33		3.43	"		103			
<b>Matrix Spike</b>										
<b>8110206-MS1      P811132-03</b>										
Diesel	11/17/98	33.3	121	88.0	mg/kg					1,2
Surrogate: <i>o-Terphenyl</i>	"	3.33		3.72	"		112			
<b>Matrix Spike Dup</b>										
<b>8110206-MSD1      P811132-03</b>										
Diesel	11/17/98	33.3	121	85.7	mg/kg		-106			1,2
Surrogate: <i>o-Terphenyl</i>	"	3.33		3.76	"		113			





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**Total Metals by EPA 6000/7000 Series Methods/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
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**Batch: 8110184**

**Date Prepared: 11/12/98**

**Extraction Method: EPA 3050B**

**Blank**

**8110184-BLK1**

Cadmium	11/14/98			ND	mg/kg	1.00				
Chromium	"			ND	"	1.00				
Lead	"			ND	"	7.50				
Nickel	"			ND	"	3.00				
Zinc	"			ND	"	2.00				

**LCS**

**8110184-BS1**

Cadmium	11/14/98	5.00		4.86	mg/kg	80.0-120	97.2			
Chromium	"	50.0		45.6	"	80.0-120	91.2			
Lead	"	50.0		45.3	"	80.0-120	90.6			
Nickel	"	50.0		46.3	"	80.0-120	92.6			
Zinc	"	50.0		45.3	"	80.0-120	90.6			

**Matrix Spike**

**8110184-MS1**

**P811130-01**

Cadmium	11/14/98	5.00	ND	4.37	mg/kg	75.0-125	87.4			
Chromium	"	50.0	32.1	75.8	"	75.0-125	87.4			
Lead	"	50.0	ND	46.3	"	75.0-125	92.6			
Nickel	"	50.0	40.8	77.5	"	75.0-125	73.4			2
Zinc	"	50.0	44.0	84.0	"	75.0-125	80.0			

**Matrix Spike Dup**

**8110184-MSD1**

**P811130-01**

Cadmium	11/14/98	4.90	ND	4.53	mg/kg	75.0-125	92.4	20.0	5.56	
Chromium	"	49.0	32.1	73.5	"	75.0-125	84.5	20.0	3.37	
Lead	"	49.0	ND	44.5	"	75.0-125	90.8	20.0	1.96	
Nickel	"	49.0	40.8	78.8	"	75.0-125	77.6	20.0	5.56	2
Zinc	"	49.0	44.0	83.4	"	75.0-125	80.4	20.0	0.499	





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**Volatile Organic Compounds by EPA Method 8010B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
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**Batch: 8110266**

**Date Prepared: 11/12/98**

**Extraction Method: EPA 5030 soils MeOH**

**Blank**

**8110266-BLK1**

Bromodichloromethane	11/18/98			ND	ug/kg	50.0				
Bromoform	"			ND	"	50.0				
Bromomethane	"			ND	"	50.0				
Carbon tetrachloride	"			ND	"	50.0				
Chlorobenzene	"			ND	"	50.0				
Chloroethane	"			ND	"	50.0				
2-Chloroethylvinyl ether	"			ND	"	500				
Chloroform	"			ND	"	50.0				
Chloromethane	"			ND	"	50.0				
Dibromochloromethane	"			ND	"	50.0				
1,2-Dibromoethane (EDB)	"			ND	"	50.0				
1,2-Dichlorobenzene	"			ND	"	50.0				
1,3-Dichlorobenzene	"			ND	"	50.0				
1,4-Dichlorobenzene	"			ND	"	50.0				
Dichlorodifluoromethane	"			ND	"	50.0				
1,1-Dichloroethane	"			ND	"	50.0				
1,2-Dichloroethane	"			ND	"	50.0				
1,1-Dichloroethene	"			ND	"	50.0				
cis-1,2-Dichloroethene	"			ND	"	50.0				
trans-1,2-Dichloroethene	"			ND	"	50.0				
1,2-Dichloropropane	"			ND	"	50.0				
cis-1,3-Dichloropropene	"			ND	"	50.0				
trans-1,3-Dichloropropene	"			ND	"	50.0				
Freon 113	"			ND	"	50.0				
Methylene chloride	"			ND	"	50.0				
1,1,2,2-Tetrachloroethane	"			ND	"	50.0				
Tetrachloroethene	"			ND	"	50.0				
1,1,2-Trichloroethane	"			ND	"	50.0				
1,1,1-Trichloroethane	"			ND	"	50.0				
Trichloroethene	"			ND	"	50.0				
Trichlorofluoromethane	"			ND	"	50.0				
Vinyl chloride	"			ND	"	50.0				
Surrogate: Bromochloromethane	"	3000		2380	"		79.3			
Surrogate: 1,4-Dichlorobutane	"	3000		2350	"		78.3			

**LCS**

**8110266-BS1**

Chlorobenzene	11/12/98	1000		1020	ug/kg		102			
1,1-Dichloroethene	"	1000		1040	"		104			
Trichloroethene	"	1000		1030	"		103			
Surrogate: Bromochloromethane	"	3000		2760	"		92.0			







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**Volatile Organic Compounds by EPA Method 8010B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b><u>LCS (continued)</u></b>										
<b><u>8110266-BS1</u></b>										
<i>Surrogate: 1,4-Dichlorobutane</i>	11/12/98	3000		2830	ug/kg		94.3			
<b><u>Matrix Spike</u></b>										
<b><u>8110266-MS1</u>      <u>P811130-01</u></b>										
Chlorobenzene	11/12/98	1000	ND	1020	ug/kg		102			
1,1-Dichloroethene	"	1000	ND	990	"		99.0			
Trichloroethene	"	1000	ND	1070	"		107			
<i>Surrogate: Bromochloromethane</i>	"	3000		2860	"		95.3			
<i>Surrogate: 1,4-Dichlorobutane</i>	"	3000		2960	"		98.7			
<b><u>Matrix Spike Dup</u></b>										
<b><u>8110266-MSD1</u>      <u>P811130-01</u></b>										
Chlorobenzene	11/12/98	1000	ND	1010	ug/kg		101		0.985	
1,1-Dichloroethene	"	1000	ND	987	"		98.7		0.303	
Trichloroethene	"	1000	ND	1050	"		105		1.89	
<i>Surrogate: Bromochloromethane</i>	"	3000		2710	"		90.3			
<i>Surrogate: 1,4-Dichlorobutane</i>	"	3000		2880	"		96.0			





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**Semivolatile Organic Compounds by EPA Method 8270B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 8110276</b>	<b>Date Prepared: 11/17/98</b>				<b>Extraction Method: EPA 3550A</b>					
<b>Blank</b>	<b>8110276-BLK1</b>									
Acenaphthene	11/18/98			ND	ug/kg	330				
Acenaphthylene	"			ND	"	330				
Anthracene	"			ND	"	330				
Benzoic acid	"			ND	"	1670				
Benzo (a) anthracene	"			ND	"	330				
Benzo (b) fluoranthene	"			ND	"	330				
Benzo (k) fluoranthene	"			ND	"	330				
Benzo (g,h,i) perylene	"			ND	"	330				
Benzo (a) pyrene	"			ND	"	330				
Benzyl alcohol	"			ND	"	660				
Bis(2-chloroethoxy)methane	"			ND	"	330				
Bis(2-chloroethyl)ether	"			ND	"	330				
Bis(2-chloroisopropyl)ether	"			ND	"	330				
Bis(2-ethylhexyl)phthalate	"			ND	"	330				
4-Bromophenyl phenyl ether	"			ND	"	330				
Butyl benzyl phthalate	"			ND	"	330				
4-Chloroaniline	"			ND	"	660				
4-Chloro-3-methylphenol	"			ND	"	660				
2-Chloronaphthalene	"			ND	"	330				
2-Chlorophenol	"			ND	"	330				
4-Chlorophenyl phenyl ether	"			ND	"	330				
Chrysene	"			ND	"	330				
Dibenz (a,h) anthracene	"			ND	"	330				
Dibenzofuran	"			ND	"	330				
Di-n-butyl phthalate	"			ND	"	330				
1,2-Dichlorobenzene	"			ND	"	330				
1,3-Dichlorobenzene	"			ND	"	330				
1,4-Dichlorobenzene	"			ND	"	330				
3,3'-Dichlorobenzidine	"			ND	"	660				
2,4-Dichlorophenol	"			ND	"	330				
Diethyl phthalate	"			ND	"	330				
2,4-Dimethylphenol	"			ND	"	330				
Dimethyl phthalate	"			ND	"	330				
4,6-Dinitro-2-methylphenol	"			ND	"	1670				
2,4-Dinitrophenol	"			ND	"	1670				
2,4-Dinitrotoluene	"			ND	"	330				
2,6-Dinitrotoluene	"			ND	"	330				
Di-n-octyl phthalate	"			ND	"	330				
Fluoranthene	"			ND	"	330				
Fluorene	"			ND	"	330				





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**Semivolatile Organic Compounds by EPA Method 8270B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Blank (continued)</b>	<b>8110276-BLK1</b>									
Hexachlorobenzene	11/18/98			ND	ug/kg	330				
Hexachlorobutadiene	"			ND	"	330				
Hexachlorocyclopentadiene	"			ND	"	330				
Hexachloroethane	"			ND	"	330				
Indeno (1,2,3-cd) pyrene	"			ND	"	330				
Isophorone	"			ND	"	330				
2-Methylnaphthalene	"			ND	"	330				
2-Methylphenol	"			ND	"	330				
4-Methylphenol	"			ND	"	330				
Naphthalene	"			ND	"	330				
2-Nitroaniline	"			ND	"	1670				
3-Nitroaniline	"			ND	"	1670				
4-Nitroaniline	"			ND	"	1670				
Nitrobenzene	"			ND	"	330				
2-Nitrophenol	"			ND	"	330				
4-Nitrophenol	"			ND	"	1670				
N-Nitrosodiphenylamine	"			ND	"	330				
N-Nitrosodi-n-propylamine	"			ND	"	330				
Pentachlorophenol	"			ND	"	1670				
Phenanthrene	"			ND	"	330				
Phenol	"			ND	"	330				
Pyrene	"			ND	"	330				
1,2,4-Trichlorobenzene	"			ND	"	330				
2,4,5-Trichlorophenol	"			ND	"	330				
2,4,6-Trichlorophenol	"			ND	"	330				
Surrogate: 2-Fluorophenol	"	5000		4480	"		89.6			
Surrogate: Phenol-d6	"	5000		5070	"		101			
Surrogate: Nitrobenzene-d5	"	3330		2950	"		88.6			
Surrogate: 2-Fluorobiphenyl	"	3330		3210	"		96.4			
Surrogate: 2,4,6-Tribromophenol	"	5000		3550	"		71.0			
Surrogate: Terphenyl-d14	"	3330		4490	"		135			
<b>LCS</b>	<b>8110276-BS1</b>									
Acenaphthene	11/18/98			2790	ug/kg					
4-Chloro-3-methylphenol	"			5120	"					
2-Chlorophenol	"			3850	"					
1,4-Dichlorobenzene	"			2310	"					
2,4-Dinitrotoluene	"			2280	"					
4-Nitrophenol	"			3220	"					
N-Nitrosodi-n-propylamine	"			2450	"					
Pentachlorophenol	"			3740	"					





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**Semivolatile Organic Compounds by EPA Method 8270B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>LCS (continued)</b>										
<b>8110276-BS1</b>										
Phenol	11/18/98			3930	ug/kg					
Pyrene	"			2190	"					
1,2,4-Trichlorobenzene	"			2400	"					
Surrogate: 2-Fluorophenol	"	5000		3600	"		72.0			
Surrogate: Phenol-d6	"	5000		4390	"		87.8			
Surrogate: Nitrobenzene-d5	"	3330		2510	"		75.4			
Surrogate: 2-Fluorobiphenyl	"	3330		2600	"		78.1			
Surrogate: 2,4,6-Tribromophenol	"	5000		3340	"		66.8			
Surrogate: Terphenyl-d14	"	3330		3800	"		114			
<b>Matrix Spike</b>										
<b>8110276-MS1      P811206-05</b>										
Acenaphthene	11/18/98	3330	ND	2280	ug/kg		68.5			
4-Chloro-3-methylphenol	"	5000	ND	3450	"		69.0			
2-Chlorophenol	"	5000	ND	3020	"		60.4			
1,4-Dichlorobenzene	"	3330	ND	1930	"		58.0			
2,4-Dinitrotoluene	"	3330	ND	ND	"		0			
4-Nitrophenol	"	5000	ND	1690	"		33.8			
N-Nitrosodi-n-propylamine	"	3330	ND	1990	"		59.8			
Pentachlorophenol	"	5000	ND	2040	"		40.8			
Phenol	"	5000	ND	2870	"		57.4			
Pyrene	"	3330	ND	1320	"		39.6			
1,2,4-Trichlorobenzene	"	3330	ND	2170	"		65.2			
Surrogate: 2-Fluorophenol	"	5000		2480	"		49.6			
Surrogate: Phenol-d6	"	5000		2910	"		58.2			
Surrogate: Nitrobenzene-d5	"	3330		1940	"		58.3			
Surrogate: 2-Fluorobiphenyl	"	3330		2110	"		63.4			
Surrogate: 2,4,6-Tribromophenol	"	5000		5700	"		114			
Surrogate: Terphenyl-d14	"	3330		2230	"		67.0			
<b>Matrix Spike Dup</b>										
<b>8110276-MSD1      P811206-05</b>										
Acenaphthene	11/18/98	3330	ND	2470	ug/kg		74.2		7.99	
4-Chloro-3-methylphenol	"	5000	ND	4120	"		82.4		17.7	
2-Chlorophenol	"	5000	ND	3410	"		68.2		12.1	
1,4-Dichlorobenzene	"	3330	ND	2220	"		66.7		14.0	
2,4-Dinitrotoluene	"	3330	ND	2740	"		82.3		200	3
4-Nitrophenol	"	5000	ND	2320	"		46.4		31.4	3
N-Nitrosodi-n-propylamine	"	3330	ND	2390	"		71.8		18.2	
Pentachlorophenol	"	5000	ND	2520	"		50.4		21.1	
Phenol	"	5000	ND	3220	"		64.4		11.5	
Pyrene	"	3330	ND	1360	"		40.8		2.99	
1,2,4-Trichlorobenzene	"	3330	ND	2150	"		64.6		0.924	



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**Semivolatile Organic Compounds by EPA Method 8270B/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Matrix Spike Dup (continued)</b>	<b>8110276-MSD1</b>	<b>P811206-05</b>								
Surrogate: 2-Fluorophenol	11/18/98	5000		2810	ug/kg		56.2			
Surrogate: Phenol-d6	"	5000		3520	"		70.4			
Surrogate: Nitrobenzene-d5	"	3330		2130	"		64.0			
Surrogate: 2-Fluorobiphenyl	"	3330		2160	"		64.9			
Surrogate: 2,4,6-Tribromophenol	"	5000		4090	"		81.8			
Surrogate: Terphenyl-d14	"	3330		2260	"		67.9			





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**Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control  
Sequoia Analytical - Petaluma**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
<b>Batch: 8110263</b>	<b>Date Prepared: 11/16/98</b>			<b>Extraction Method: 418.1 / 5520C&amp;F Mod.</b>						
<b>Blank</b>	<b>8110263-BLK1</b>									
TRPH	11/18/98			ND	mg/kg	33.3				
<b>LCS</b>	<b>8110263-BS1</b>									
TRPH	11/18/98	667		593	mg/kg	80.0-120	88.9			
<b>LCS Dup</b>	<b>8110263-BSD1</b>									
TRPH	11/18/98	667		624	mg/kg	80.0-120	93.6	20.0	5.15	
<b>Duplicate</b>	<b>8110263-DUP1</b>		<b>P811207-01</b>							
TRPH	11/18/98		77200	84200	mg/kg			20.0	8.67	
<b>Matrix Spike</b>	<b>8110263-MS1</b>		<b>P811207-01</b>							
TRPH	11/18/98	1330	77200	95400	mg/kg	75.0-125	1370			





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**Notes and Definitions**

#	Note
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- 1 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
  - 2 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
  - 3 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

