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**Chevron**

January 30, 1998

**Chevron Products Company**  
P.O. Box 6004  
San Ramon, CA 94583

PE  
STO 3644

Mr. Thomas Peacock  
Alameda County Health Care Services  
Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

**Re: Chevron Service Station #9-4800  
1700 Castro Street  
Oakland, California**

Dear Mr. Peacock:

Enclosed is the Fourth Quarter Groundwater Monitoring and Sampling Report for 1997 that was prepared by our consultant Gettler-Ryan Inc. for the above noted facility. The groundwater samples were analyzed for the presence of TPH-g, TPH-d, BTEX and MtBE. All wells are sampled quarterly.

Monitoring wells MW-1 and MW-3 showed a decrease in the benzene constituent while well MW-2 showed an increase from the previous sampling event. The TPH-d constituent detected in wells MW1 and MW-2 indicated the presence of an unidentified hydrocarbon.

Depth to ground water varied from 24.82 feet to 26.10 feet below grade with a direction of flow westerly.

Chevron will continue monitor the site quarterly. If you have any questions call me at (510) 842-9136.

Sincerely,  
**CHEVRON PRODUCTS COMPANY**

Philip R. Briggs  
Site Assessment and Remediation Project Manager

Enclosure



January 30, 1998  
Mr. Thomas Peacock  
Chevron Service Station # 9-4800  
Page 2

cc. Mr. Bill Scudder, Chevron



# GETTLER-RYAN INC.

---

January 22, 1998

Job #6383.80

Mr. Phill Briggs  
Chevron Products Company  
P.O. Box 6004  
San Ramon, CA 94583

Re: Fourth Quarter 1997 Groundwater Monitoring & Sampling Report  
Chevron Service Station #9-4800  
1700 Castro Street  
Oakland, California

Dear Mr. Briggs:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On December 17, 1997, field personnel were on-site to monitor and sample three wells (MW-1, MW-2 and MW-3) at Chevron Service Station #9-4800 located at 1700 Castro Street in Oakland, California.

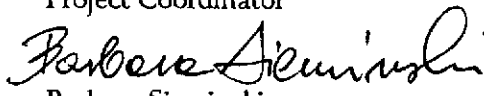
Static groundwater levels were measured on December 17, 1997. All wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in any of the wells. Static water level data and groundwater elevations are presented in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets for this event are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are presented in Table 1. The chain of custody document and laboratory analytical reports are attached.

Thank you for allowing Gettler-Ryan Inc. to provide environmental services to Chevron. Please call if you have any questions or comments regarding this report.

Sincerely,

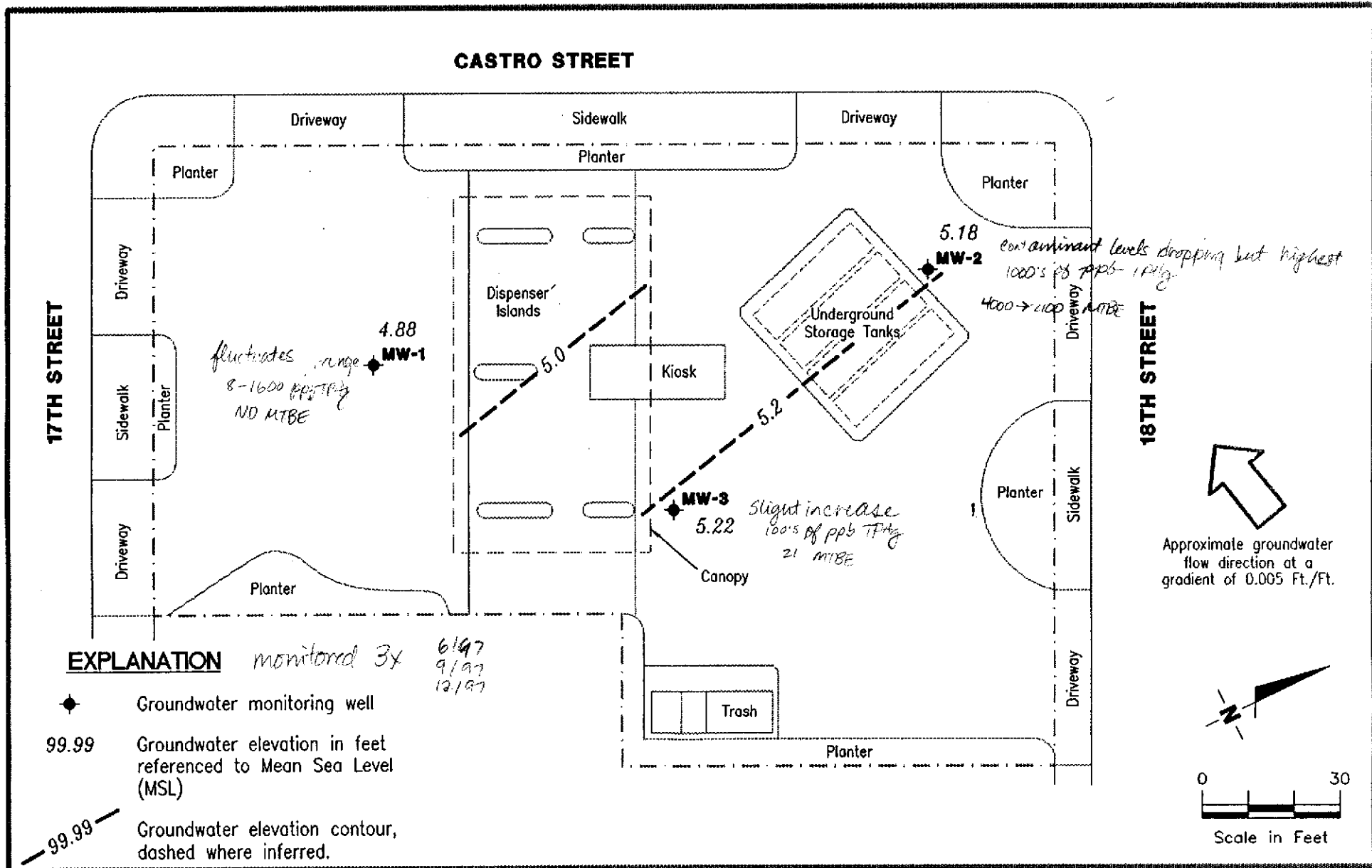
  
Deanna L. Harding  
Project Coordinator

  
Barbara Sieminski  
Registered Geologist, R.G. No. 6676



DLH/bs/dlh  
6383.QML

Figure 1: Potentiometric Map  
Table 1: Water Level Data and Groundwater Analytical Results  
Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets  
Chain of Custody Document and Laboratory Analytical Reports



**EXPLANATION**

*monitored 3x  
6/97  
9/97  
12/97*

- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99--- Groundwater elevation contour, dashed where inferred.



**Gettler - Ryan Inc.**

6747 Sierra Ct., Suite J (510) 551-7555  
Dublin, CA 94568

**POTENTIOMETRIC MAP**  
Chevron Service Station No. 9-4800  
1700 Castro Street  
Oakland, California

FIGURE

**1**

JOB NUMBER  
6383

REVIEWED BY

DATE  
December 17, 1997

REVISED DATE



Table 1. Water Level Data & Groundwater Analytical Results - Chevron Service Station #9-4800, 1700 Castro Street, Oakland, California

Well ID/ TOC	Date Sampled	Depth to Water (ft)	GWE (msl)	Product Thickness (ft)	-----ppb-----						
					TPH(D)	TPH(G)	B	T	E	X	MTBE
MW-1 30.75 <sup>1</sup>	06/04/97	25.82	4.39	0.00	71 <sup>2</sup>	890	100	110	29	150	<10
	09/16/97	25.90	4.85	0.00	75 <sup>2</sup>	1,600	210	210	60	250	<10
	12/17/97	25.87	4.88	0.00	65 <sup>2</sup>	940	120	100	41	160	<25
MW-2 30.00 <sup>1</sup>	06/04/97	24.87	5.13	0.00	4,000 <sup>2</sup>	13,000	790	30	420	1,700	4,000
	09/16/97	24.94	5.06	0.00	2,200 <sup>2</sup>	4,000	360	9.7	210	460	1,500
	12/17/97	24.82	5.18	0.00	2,100 <sup>2</sup>	4,100	380	<10	200	460	2,100
MW-3 31.32 <sup>1</sup>	06/04/97	26.05	5.27	0.00	<50	190	26	20	1.5	16	8.2
	09/16/97	26.15	5.17	0.00	<50	270	58	53	6.1	30	21
	12/17/97	26.10	5.22	0.00	<50	290	50	54	8.1	37	21
Trip Blank	06/04/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	09/16/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5
	12/17/97	---	---	---	---	<50	<0.50	<0.50	<0.50	<0.50	<2.5

**EXPLANATION:**

TOC = Top of casing elevation  
 (ft) = feet  
 GWE = Groundwater elevation  
 (msl) = Mean Sea Level  
 TPH(D) = Total Petroleum Hydrocarbons as diesel  
 TPH(G) = Total Petroleum Hydrocarbons as gasoline  
 B = Benzene  
 T = Toluene  
 E = Ethylbenzene  
 X = Xylenes  
 MTBE = Methyl tertiary-butyl ether  
 ppb = Parts per billion  
 --- = Not analyzed, not measured

**ANALYTICAL METHODS:**

EPA Method 8015 Modified for TPH as Diesel  
 EPA Method 8015 for TPH as Gasoline  
 EPA Method 8020 for BTEX & MTBE

**NOTES:**

- <sup>1</sup> MW-1 through MW-3 were surveyed on June 18, 1997, by Virgil Chavez Land Surveying (PLS #6323). Benchmark used for TOC is the back of sidewalk on 18th Street as reference line. Benchmark Elevation = 29.65' (msl).
- <sup>2</sup> Laboratory report indicates unidentified hydrocarbons C9-C24.



## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using Chevron-designated disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Chevron Products Company, the purge water and decontamination water generated during sampling activities is transported by IWM to McKittrick Waste Management located in McKittrick, California.

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Chevron Facility # 9-4800  
 Address: 1700 Castro Street  
 City: Oakland, CA

Job#: 6383.80  
 Date: 12-17-97  
 Sampler: F.Cline

Well ID MW-1

Well Condition: OK

Well Diameter 2 in.

Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)

Total Depth 30.3 ft.

Depth to Water 25.87 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

4.43 X VF 0.17 0.175 X 3 (case volume) = Estimated Purge Volume: 2.26 (gal.)

Purge Equipment: Disposable Bailer  
~~Bailer~~  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
~~Bailer~~  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 11:54  
 Sampling Time: \_\_\_\_\_  
 Purging Flow Rate: N/A gpm.  
 Did well de-water? N/C

Weather Conditions: cloudy cool  
 Water Color: clear Odor: N/A  
 Sediment Description: None  
 If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:56</u>	<u>0.175</u>	<u>6.97</u>	<u>1092</u>	<u>20.1</u>			
<u>11:58</u>	<u>1.5</u>	<u>7.03</u>	<u>1080</u>	<u>20.3</u>			
<u>12:05</u>	<u>2.25</u>	<u>7.02</u>	<u>1087</u>	<u>20.2</u>			
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	3 x 40m/VOA	Y	HCL	SEQUOIA	TPH-Gas/BTEX/MTBE
MW-1	2 X Liter	Y	NONE	SEQUOIA	TPH-Diesel

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Chevron Facility # 9-4800

Job#: 6383.80

Address: 1700 Castro Street

Date: 12-17-97

City: Oakland, CA

Sampler: E.Cline

Well ID MW- 2

Well Condition: okay

Well Diameter 2" in.

Hydrocarbon  Amount Bailed   
Thickness: \_\_\_\_\_ in. (product/water): \_\_\_\_\_ (gal.)

Total Depth 30.5 ft.

Depth to Water 29.82 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

5.08 X VF 0.17 0.97 X 3 (case volume) = Estimated Purge Volume: 2.9 (gal.)

Purge Equipment: Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 12:05

Weather Conditions: cloudy cool

Sampling Time: 12:16

Water Color: \_\_\_\_\_ Odor: \_\_\_\_\_

Purging Flow Rate: N/A gpm.

Sediment Description: \_\_\_\_\_

Did well de-water? no

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>12:11</u>	<u>1</u>	<u>6.97</u>	<u>1412</u>	<u>20.9</u>			
<u>12:13</u>	<u>2</u>	<u>6.93</u>	<u>1152</u>	<u>20.7</u>			
<u>12:16</u>	<u>3</u>	<u>6.97</u>	<u>1136</u>	<u>20.8</u>			
_____	_____	_____	_____	_____	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- <u>2</u>	<u>3 x 40m/VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH-Gas/BTEX/MTBE</u>
MW- <u>2</u>	<u>2 X Liter</u>	<u>Y</u>	<u>NONE</u>	<u>SEQUOIA</u>	<u>TPH-Diesel</u>

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Chevron Facility # 9-4800

Job#: 6383.80

Address: 1700 Castro Street

Date: 12-17-97

City: Oakland, CA

Sampler: E.Cline

Well ID MW-3

Well Condition: okay

Well Diameter 2" in.

Hydrocarbon Thickness: \_\_\_\_\_ in. Amount Bailed (product/water): \_\_\_\_\_ (gal.)

Total Depth 30.2 ft.

Depth to Water 26.10 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

4.10 X VF 0.17 = 0.7 X 3 (case volume) = Estimated Purge Volume: 2.09 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 11:37

Weather Conditions: Cloudy cool

Sampling Time: 11:45

Water Color: \_\_\_\_\_ Odor: \_\_\_\_\_

Purging Flow Rate: N/A gpm.

Sediment Description: \_\_\_\_\_

Did well de-water? NO

If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:39</u>	<u>0.7</u>	<u>7.25</u>	<u>1179</u>	<u>19.7</u>	_____	_____	_____
<u>11:41</u>	<u>1.4</u>	<u>7.13</u>	<u>1178</u>	<u>20.0</u>	_____	_____	_____
<u>11:45</u>	<u>2.1</u>	<u>7.09</u>	<u>1196</u>	<u>19.4</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW- <u>3</u>	<u>3 x 40m/VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH-Gas/BTEX/MTBE</u>
MW- <u>3</u>	<u>2 X Liter</u>	<u>Y</u>	<u>NONE</u>	<u>SEQUOIA</u>	<u>TPH-Diesel</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Chevron U.S.A. Inc.  
P.O. BOX 5004  
San Ramon, CA 94583  
FAX (415)842-9591

Chevron Facility Number #9-4800  
Facility Address 1700 CASTRO STREET, OAKLAND, CA  
Consultant Project Number 6383  
Consultant Name Gettler-Ryan  
Address 6747 Sierra Ct, Ste J, Dublin 94568  
Project Contact (Name) Deanna Harding  
(Phone) 551-7555 (Fax Number) 551-7888

Chevron Contact (Name) MR. PHIL BRIGGS  
(Phone) (510) 842-9136  
Laboratory Name SEQUOIA Service Code: 7202790  
Laboratory Service Order # 9051783  
Samples Collected by (Name) F. Cline  
Collection Date 12-17-97  
Signature \_\_\_\_\_

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Lead (Yes or No)	Analysis To Be Performed <i>9712048</i>										Remarks				
								TPH Gas + BTEX w/MIB (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (CAP or AA)							
TB-LB	1	2	W	TB	11/95	H/C	Y	X														
MW-3	2	5		G	1202	None		X	X													
MW-1	3	5			1202			X	X													
MW-2	4	5			1202			X	X													

DO NOT BILL  
TB-LB ANALYSIS  
~~Confirm highest~~  
~~list of (8020)~~  
~~MIB by 8268~~  
  
DE 19 12 49

Relinquished By (Signature) _____ Organization G-R Inc. Date/Time <u>12/18/97/0800</u>	Received By (Signature) <u>D. Harding</u> Organization G-R Inc. Date/Time <u>12/18/97</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>D. Harding</u> Organization <u>G-R</u> Date/Time <u>12/18/97</u>	Received By (Signature) <u>D. [unclear]</u> Organization <u>SEA</u> Date/Time <u>12/19/97/1115</u>	
Relinquished By (Signature) _____ Organization <u>SEA</u> Date/Time <u>12/19/97</u>	Received For Laboratory By (Signature) <u>Jeri Downs</u> Date/Time <u>12/19 1209</u>	

COC-3106703 8/1/98



Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: TB-LB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712D48-01	Sampled: 12/17/97 Received: 12/19/97 Analyzed: 12/30/97 Reported: 01/07/98
Attention: Deanna Harding		


QC Batch Number: GC123097802002A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	116

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1271**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9712D48-03	Sampled: 12/17/97 Received: 12/19/97 Extracted: 12/29/97 Analyzed: 12/31/97 Reported: 01/07/98
--	--	--


QC Batch Number: GC122997OHBPEXZ  
Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50 C9-C24	65 Unid.-HC
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

  
 \_\_\_\_\_  
 Mike Gregory  
 Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712D48-03	Sampled: 12/17/97 Received: 12/19/97  Analyzed: 12/31/97 Reported: 01/07/98
---	--	---

QC Batch Number: GC123197802002A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	940
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	120
Toluene	5.0	100
Ethyl Benzene	5.0	41
Xylenes (Total)	5.0	160
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	111

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1271**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-2 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9712D48-04	Sampled: 12/17/97 Received: 12/19/97 Extracted: 12/29/97 Analyzed: 12/31/97 Reported: 01/07/98
---	--	--

QC Batch Number: GC122997OHBPEXZ  
Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50 C9-C24	2100 Unid.-HC
Surrogates n-Pentacosane (C25)	Control Limits % 50                      150	% Recovery 91

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712D48-04	Sampled: 12/17/97 Received: 12/19/97  Analyzed: 12/30/97 Reported: 01/07/98
---	--	---

QC Batch Number: GC123097802002A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	4100
Methyl t-Butyl Ether	50	2100
Benzene	10	380
Toluene	10	N.D.
Ethyl Benzene	10	200
Xylenes (Total)	10	460
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	115

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1271**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-3 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9712D48-02	Sampled: 12/17/97 Received: 12/19/97 Extracted: 12/29/97 Analyzed: 12/31/97 Reported: 01/07/98
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QC Batch Number: GC122997OHBPEXZ  
Instrument ID: GCHP5A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	87

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1210**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager







Gettler Ryan/Geostrategies 6747 Sierra Court Suite G Dublin, CA 94568	Client Proj. ID: Chevron 9-4800, Oakland Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712D48-02	Sampled: 12/17/97 Received: 12/19/97  Analyzed: 12/30/97 Reported: 01/07/98
Attention: Deanna Harding		

QC Batch Number: GC123097802002A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**


Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	290
Methyl t-Butyl Ether	2.5	21
Benzene	0.50	50
Toluene	0.50	54
Ethyl Benzene	0.50	8.1
Xylenes (Total)	0.50	37
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70                      130	122

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL - ELAP #1271**

  
\_\_\_\_\_  
Mike Gregory  
Project Manager





**Sequoia  
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Gettler Ryan/Geostrategies  
6747 Sierra Court Suite G  
Dublin, CA 94568  
Attention: Deanna Harding

Client Proj. ID: Chevron 9-4800, Oakland  
Lab Proj. ID: 9712D48

Received: 12/19/97  
Reported: 01/07/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 17 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

**SEQUOIA ANALYTICAL**

Mike Gregory  
Project Manager

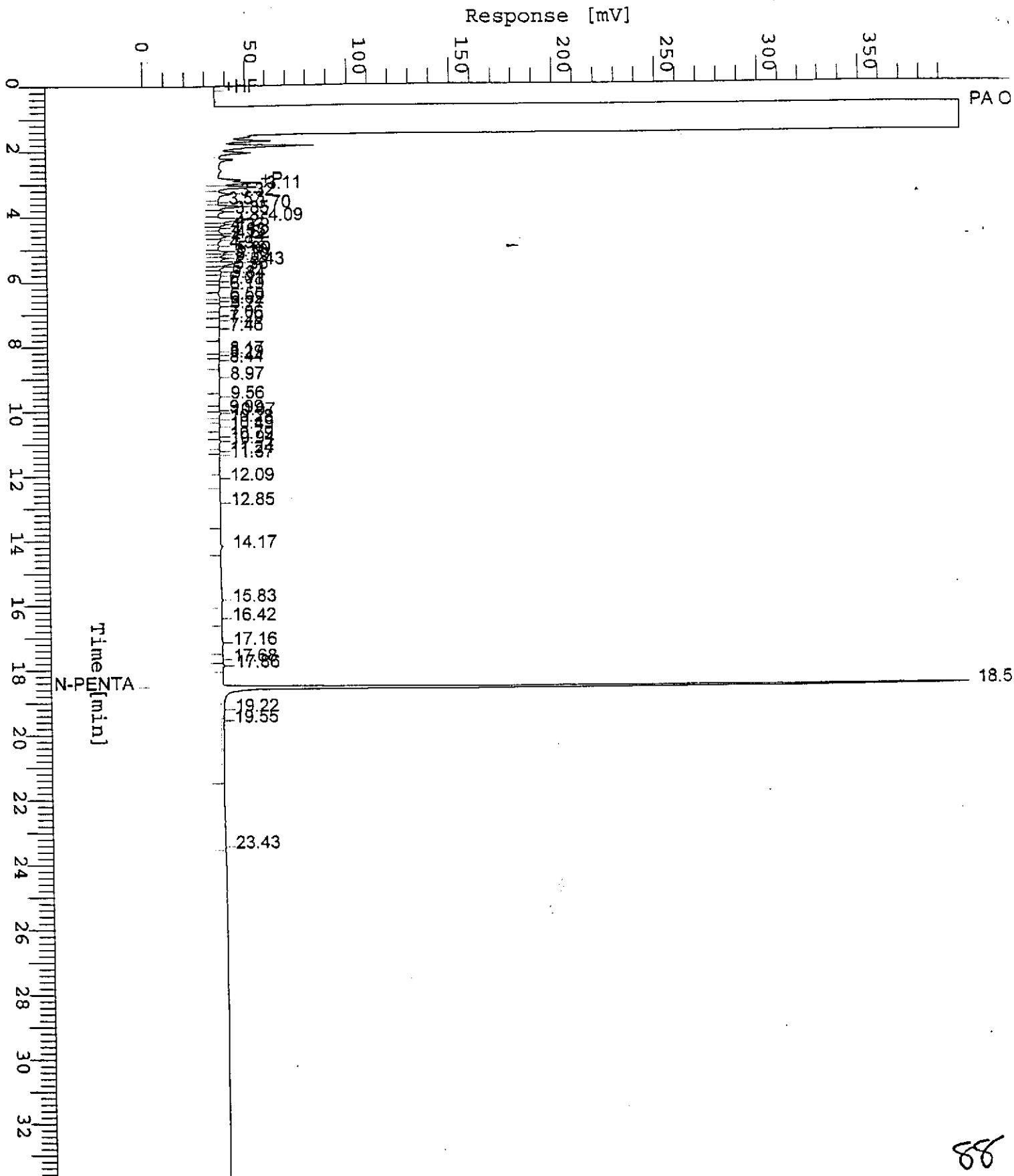


# Chromatogram

Sample Name : DW9712D48-3 (500:1)  
FileName : S:\GHP\_05\0104\DJ1A015.raw  
Method : TPH05A  
Start Time : 0.00 min  
Scale Factor: 0.0

End Time : 33.65 min  
Plot Offset: 0 mV

Sample #: MW-1  
Date : 12/31/97 18:54  
Time of Injection: 12/31/97 18:21  
Low Point : 0.00 mV  
High Point : 400.00 mV  
Plot Scale: 400.0 mV



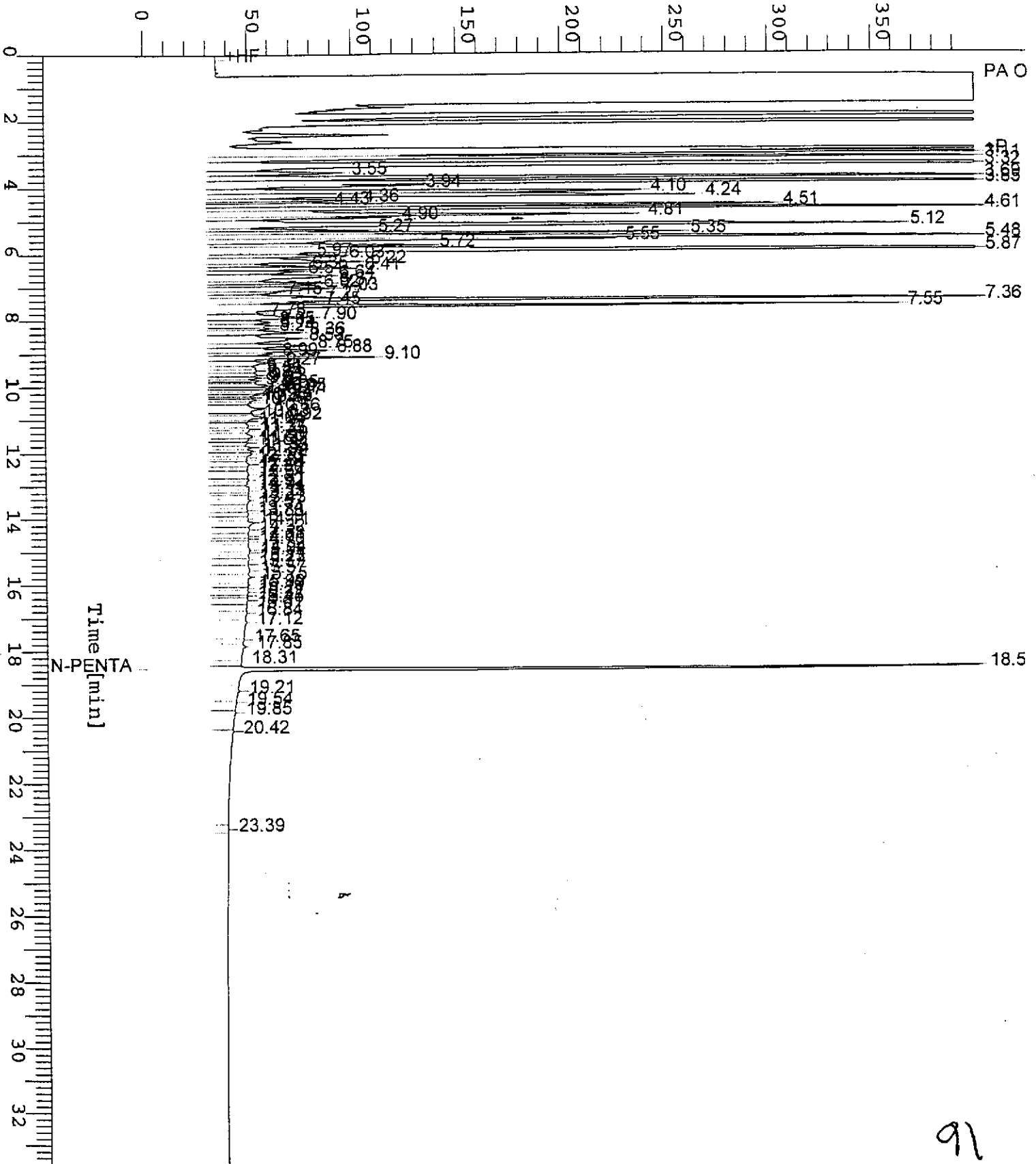
88

Sample Name : DW9712D48-4 (500:1)  
 FileName : S:\GHP\_05\0104\D31A016.raw  
 Method : TPH05A  
 Start Time : 0.00 min  
 Scale Factor: 0.0

End Time : 33.65 min  
 Plot Offset: 0 mV

Sample #: MW-2  
 Date : 12/31/97 19:35  
 Time of Injection: 12/31/97 19:02  
 Low Point : 0.00 mV  
 Plot Scale: 400.0 mV  
 High Point : 400.00 mV

Response [mV]



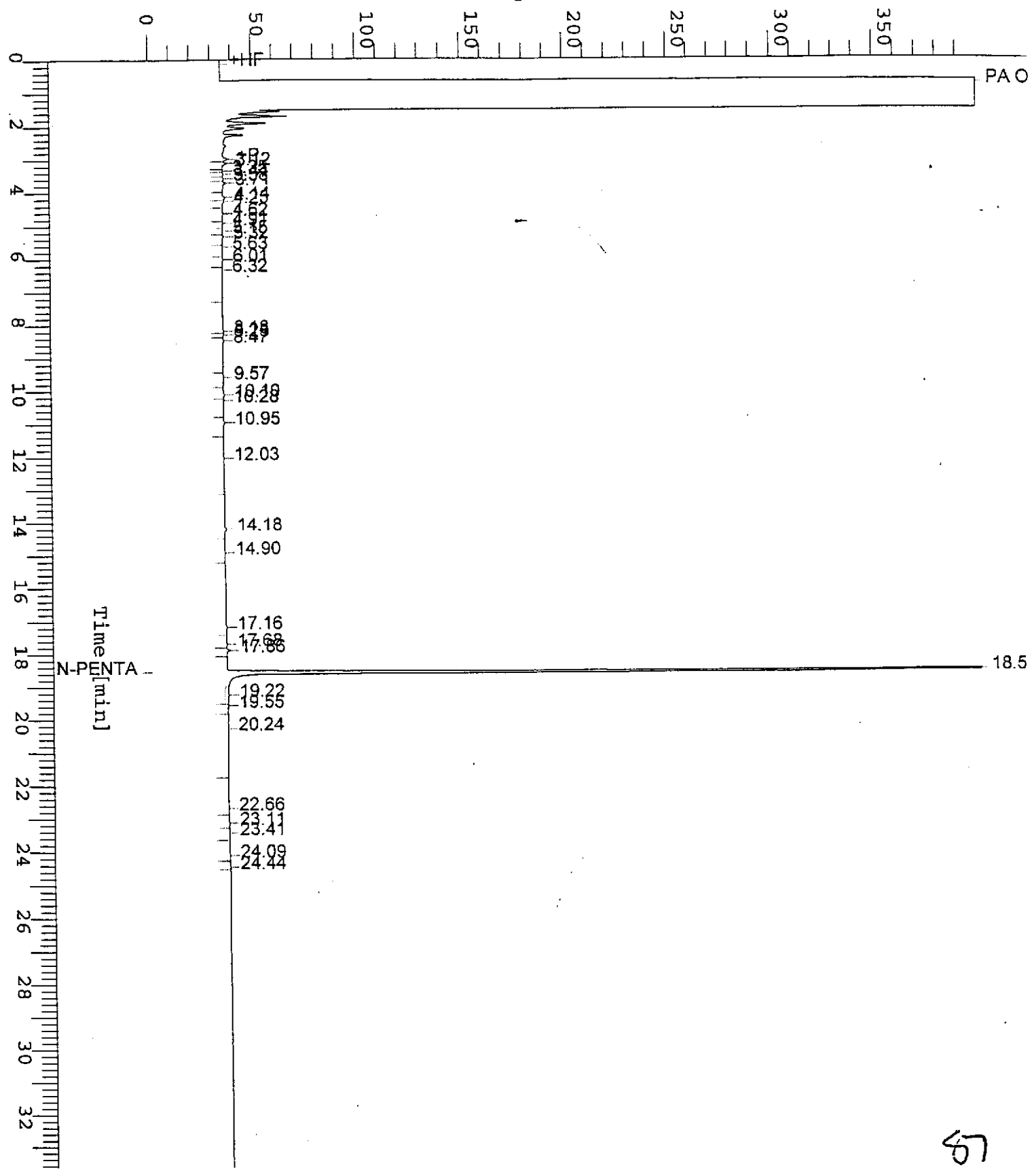
91

Chromatogram

Sample Name : DW9712D48-2 (500:1)  
FileName : S:\GHP\_05\0104\D31A014.raw  
Method : TPH05A  
Start Time : 0.00 min  
Scale Factor: 0.0

Sample #: MW-3  
Date : 12/31/97 18:13  
Time of Injection: 12/31/97 17:40  
Low Point : 0.00 mV  
High Point : 400.00 mV  
Plot Scale: 400.0 mV

Response [mV]





Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Chevron 9-4800, Oakland  
Matrix: Liquid

Work Order #: 9712D48 -01, 02, 04

Reported: Jan 9, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC123097802002A	GC123097802002A	GC123097802002A	GC123097802002A	GC123097802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	7122006	7122006	7122006	7122006	7122006
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97
Analyzed Date:	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	20	21	21	66	310
MS % Recovery:	100	105	105	110	100
Dup. Result:	20	20	21	64	310
MSD % Recov.:	100	100	105	107	100
RPD:	0.0	4.9	0.0	3.1	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	LCS123097	LCS123097	LCS123097	LCS123097	LCS123097
Prepared Date:	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97
Analyzed Date:	12/30/97	12/30/97	12/30/97	12/30/97	12/30/97
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	19	19	19	60	310
LCS % Recov.:	95	95	95	100	100

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**SEQUOIA ANALYTICAL**  
Elap #1271

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Project Manager

**Please Note:**

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

\*\* MS= Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Chevron 9-4800, Oakland  
Matrix: Liquid

Work Order #: 9712D48-03

Reported: Jan 9, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC123197802002A	GC123197802002A	GC123197802002A	GC123197802002A	GC123197802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	K. Nill	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	7122054	7122054	7122054	7122054	7122054
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/31/97	12/31/97	12/31/97	12/31/97	12/31/97
Analyzed Date:	12/31/97	12/31/97	12/31/97	12/31/97	12/31/97
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L

Result:	20	21	22	66	320
MS % Recovery:	100	105	110	110	103

Dup. Result:	20	20	21	64	320
MSD % Recov.:	100	100	105	107	103

RPD:	0.0	4.9	4.7	3.1	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	LCS123197	LCS123197	LCS123197	LCS123197	LCS123197
Prepared Date:	12/31/97	12/31/97	12/31/97	12/31/97	12/31/97
Analyzed Date:	12/31/97	12/31/97	12/31/97	12/31/97	12/31/97
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	19	20	20	63	290
LCS % Recov.:	95	100	100	105	94

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

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Elap #1271

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\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9712D48.GET <2>





Gettler Ryan/Geostrategies 6747 Sierra Court, Ste J Dublin, CA 94568 Attention: Deanna Harding	Client Project ID: Chevron 9-4800, Oakland Matrix: Liquid Work Order #: 9712D48-02-04	Reported: Jan 9, 1998
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**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b> Diesel
<b>QC Batch#:</b> GC1229970HBPEXZ
<b>Analy. Method:</b> EPA 8015M
<b>Prep. Method:</b> EPA 3520

**Analyst:** G. Fish  
**MS/MSD #:** 9712F7405  
**Sample Conc.:** 1000  
**Prepared Date:** 12/29/97  
**Analyzed Date:** 12/31/97  
**Instrument I.D.#:** GCHP5  
**Conc. Spiked:** 1000 µg/L

**Result:** 1800\*  
**MS % Recovery:** 80

**Dup. Result:** 900\*  
**MSD % Recov.:** -10

**RPD:** 67\*  
**RPD Limit:** 0-50

\*Matrix interference

**LCS #:** BLK122997

**Prepared Date:** 12/29/97  
**Analyzed Date:** 12/31/97  
**Instrument I.D.#:** GCHP5  
**Conc. Spiked:** 1000 µg/L

**LCS Result:** 770  
**LCS % Recov.:** 77

<b>MS/MSD</b>	50-150
<b>LCS</b>	60-140
<b>Control Limits</b>	

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\*\* MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9712D48.GET <3>

