

October 19, 2000

Mr. Scott O. Seery – Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health, Hazardous Materials Division
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

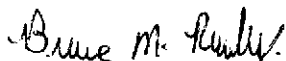
Subject: Site Monitoring Report for Redwood Regional Park Service Yard Site
Oakland, California

Dear Mr. Seery:

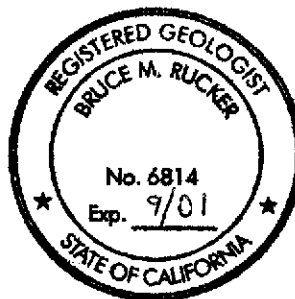
Enclosed is the Stellar Environmental Solutions (SES) Site Monitoring Report for the underground fuel storage tank (UFST) site at the Redwood Regional Park Service Yard, located at 7867 Redwood Road, Oakland, California. This project is being conducted for the East Bay Regional Park District (District), and follows previous site investigation and remediation activities associated with former leaking underground fuel storage tanks, conducted since 1993. The key regulatory agencies for this investigation are the Alameda County Health Care Services Agency (ACHCSA), the California Regional Water Quality Control Board (Regional Board) and the California Department of Fish and Game.

This report summarizes the September 2000 site monitoring event that included groundwater and creek surface water sampling and analysis. In accordance with the ACHCSA August 22, 2000 letter, we are in the process of completing a Feasibility Study for corrective actions; attached to this report is a workplan for the installation of two additional site monitoring wells. If you have any questions regarding this report, please contact Mr. Ken Burger of the District or contact us directly at (510) 644-3123.

Sincerely,



Bruce M. Rucker, R.G., R.E.A
Project Manager



cc: Michael Rugg, California Department of Fish and Game
Chuck Headlee, Regional Board
Ken Burger, East Bay Regional Park District

SITE MONITORING REPORT

**REDWOOD REGIONAL PARK SERVICE YARD
OAKLAND, CALIFORNIA**

Prepared For:

**EAST BAY REGIONAL PARK DISTRICT
OAKLAND, CALIFORNIA**

Prepared By:

**STELLAR ENVIRONMENTAL SOLUTIONS
2198 SIXTH STREET
BERKELEY, CALIFORNIA 94710**

October 19, 2000

Project No. 2000-46

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EXECUTIVE SUMMARY

Groundwater sampling conducted on an approximately quarterly frequency since November 1994 (16 events) has shown an overall decreasing concentration trend in groundwater contaminants—which include gasoline, diesel, and BTEX. MTBE was detected in both the source area and the downgradient monitoring wells when it was analyzed for the first time in September 1998.

Near-maximum historical groundwater contaminant concentrations were detected in February 1998, coinciding with unusually heavy rains and correspondingly high groundwater elevations, which likely desorbed capillary fringe soil contamination into groundwater. The most recent groundwater analytical data showed results consistent with previous analyses, with maximum concentrations of most analytes detected in downgradient well MW-4, confirming previous investigation findings that the center of mass of the contaminant groundwater plume has moved from the UFST source area and beyond well MW-2.

Current event concentrations of petroleum hydrocarbons in Redwood Creek downgradient of the former UFST source area were comparable to historical events during low-flow periods.

In accordance with an ACHCSA request, SES is completing a Feasibility Study to determine the most appropriate and cost-effective remedial strategy, and enclosed with this report is the ACHCSA-requested workplan for installation and sampling of two additional groundwater monitoring wells.

*actually
submitted
as a
"stand-alone"
document*

PROPOSED ACTIONS

The District proposes to implement the following actions to address regulatory concerns:

- Submit a Feasibility Study Report to ACHCSA and the Board for their concurrence, and implement the approved remedial strategy.
- Install and include in future monitoring events the ACHCSA-requested two additional groundwater monitoring wells.
- Continue the established program of quarterly groundwater elevation monitoring (all site wells) and sampling (including existing site wells MW-2 and MW-4 plus the two not-yet-installed additional wells).
- Continue the established program of quarterly creek surface water sampling at locations SW-2 and SW-3.

1.0 INTRODUCTION

PROJECT BACKGROUND

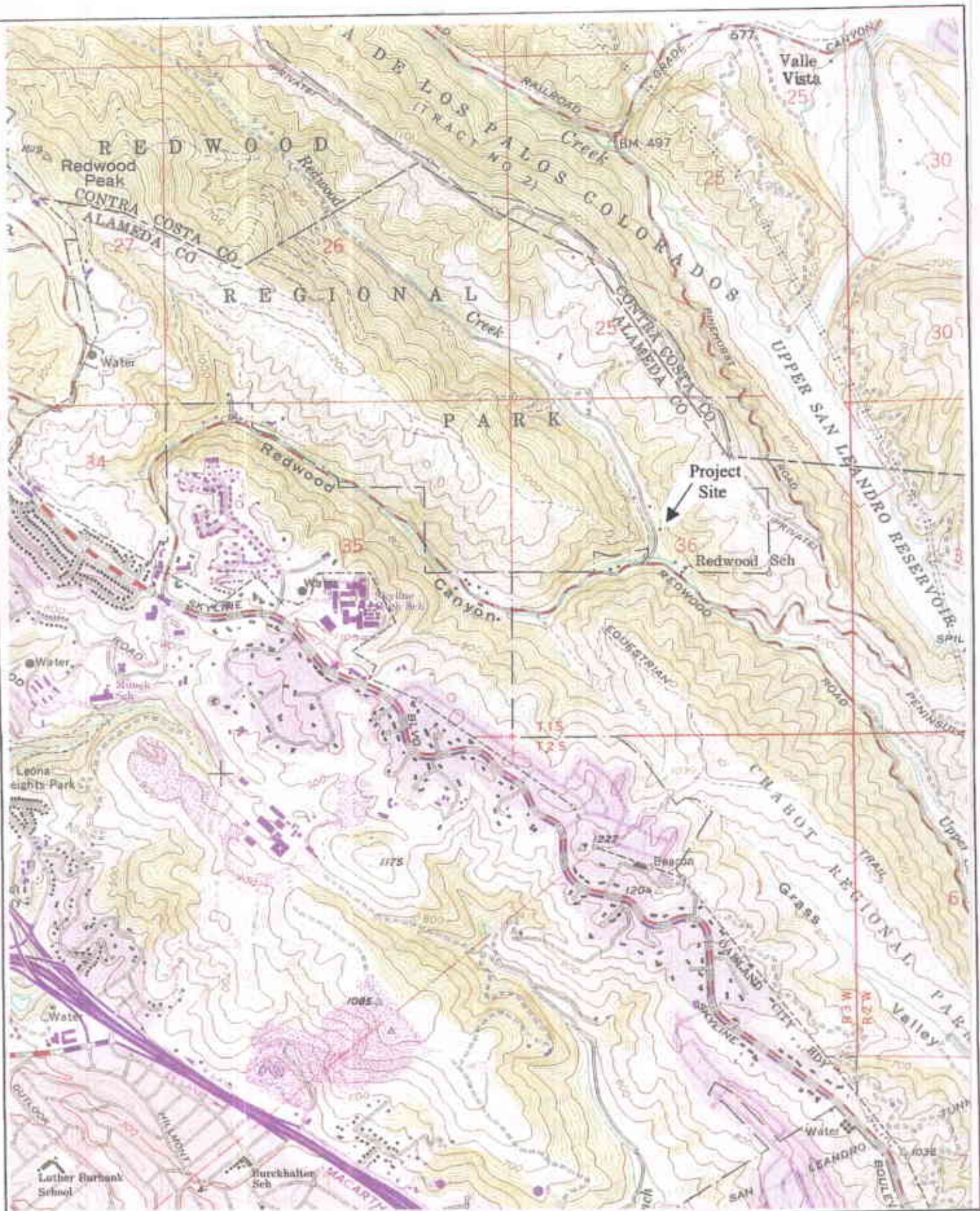
The subject property is the East Bay Regional Park District (District) Redwood Regional Park Service Yard located at 7867 Redwood Road in Oakland, Alameda County, California. The site has undergone site investigations and remediation since 1993 to address subsurface contamination caused by leakage from one or more of two former underground fuel storage tanks (UFSTs) that contained gasoline and diesel fuel. The Alameda County Health Care Services Agency (ACHCSA) has provided regulatory oversight of the investigation since its inception. Other involved regulatory agencies include the California Regional Water Quality Control Board (Board) and the California Department of Fish and Game (CDFG).

OBJECTIVES AND SCOPE OF WORK

This report presents the results from the September 2000 surface water and groundwater monitoring event. The objective of this recent monitoring event was to continue the evaluation of groundwater flow direction and groundwater and surface water contamination over time. Previous Stellar Environmental Solutions (SES) reports submitted in June 1999 and April 2000 provided a full discussion of previous site remediation and investigations, site geology and hydrogeology, residual site contamination, conceptual model for contaminant fate and transport, and evaluation of hydrochemical trends and plume stability. **A Feasibility Study report for the site, to be submitted October 2000,** will provide more detailed analyses of the regulatory implications of the site contamination and well as an assessment of remedial remedies.

SITE DESCRIPTION

The project site is located at 7867 Redwood Road in Oakland, Alameda County, California. Figure 1 shows the location of the project site. The site slopes to the west, from an elevation of approximately 564 feet above mean sea level (amsl) at the eastern edge of the service yard to approximately 545 feet amsl at Redwood Creek, which approximately defines the western edge of the project site as regards this investigation. Figure 2 is a site plan.



U.S.G.S. TOPOGRAPHIC MAP SHOWING SITE LOCATION



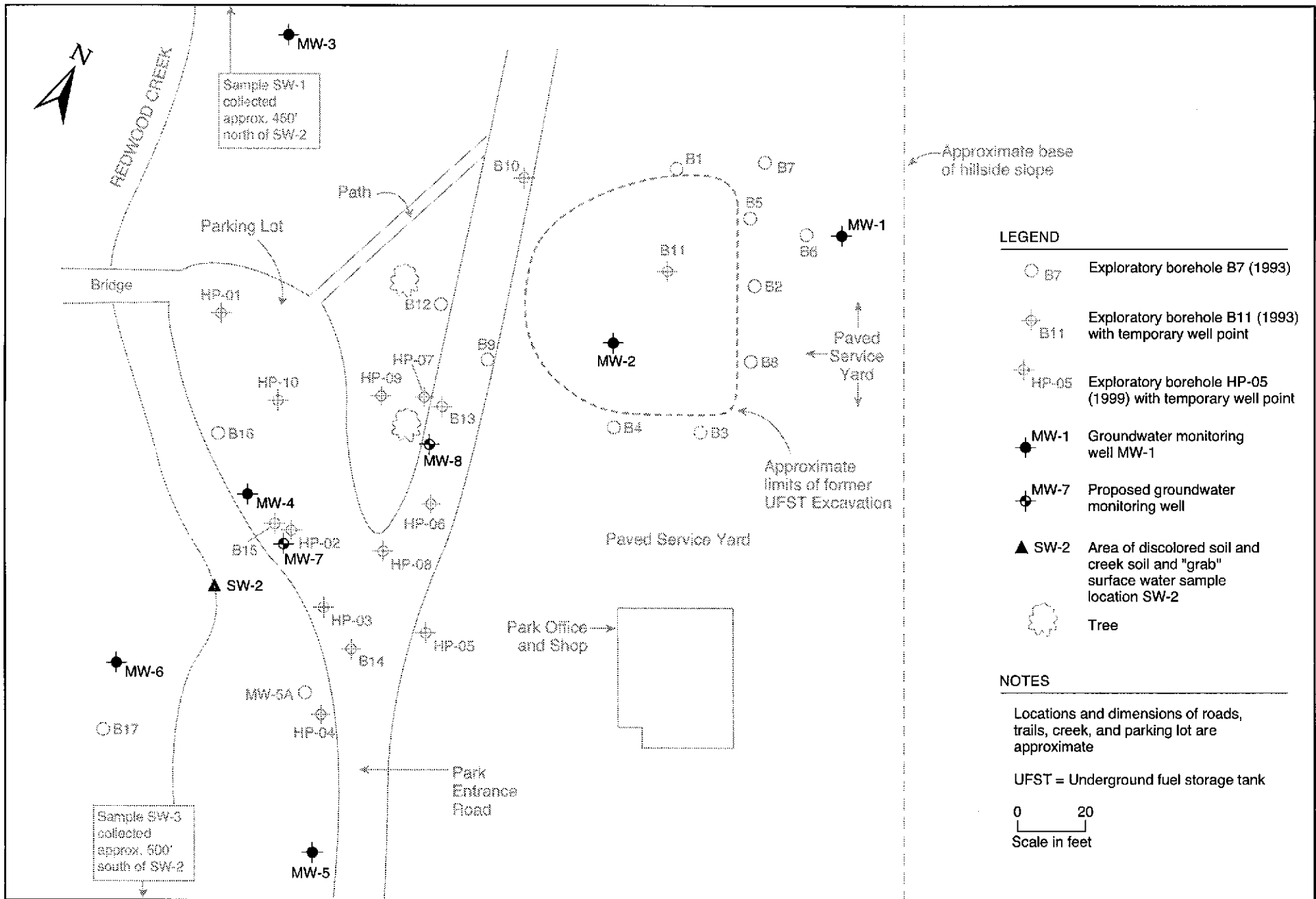
Redwood Regional Park Service Yard
Oakland, Alameda County, California

By: MJC

NOVEMBER 1997

★ Stellar Environmental Solutions
Geoscience & Engineering Consulting

Figure 1



LEGEND

- B7 Exploratory borehole B7 (1993)
- ⊕ B11 Exploratory borehole B11 (1993) with temporary well point
- ⊕ HP-05 Exploratory borehole HP-05 (1999) with temporary well point
- MW-1 Groundwater monitoring well MW-1
- MW-7 Proposed groundwater monitoring well
- ▲ SW-2 Area of discolored soil and creek soil and "grab" surface water sample location SW-2
- 🌳 Tree

NOTES

Locations and dimensions of roads, trails, creek, and parking lot are approximate

UFST = Underground fuel storage tank

0 20
Scale in feet

2000-16-04

REGULATORY OVERSIGHT

Historical ACHCSA-approved revisions to the groundwater sampling program have included: 1) discontinuing hydrochemical sampling and analysis in wells MW-1, MW-3, MW-5, and MW-6; 2) discontinuing creek surface water sampling at upstream location SW-1; and 3) reducing the frequency of creek surface water sampling from quarterly to semi-annually (ACHCSA, 1996). The latter recommendation has not yet been implemented due to continued concern over potential impacts to Redwood Creek.

2.0 PHYSICAL SETTING

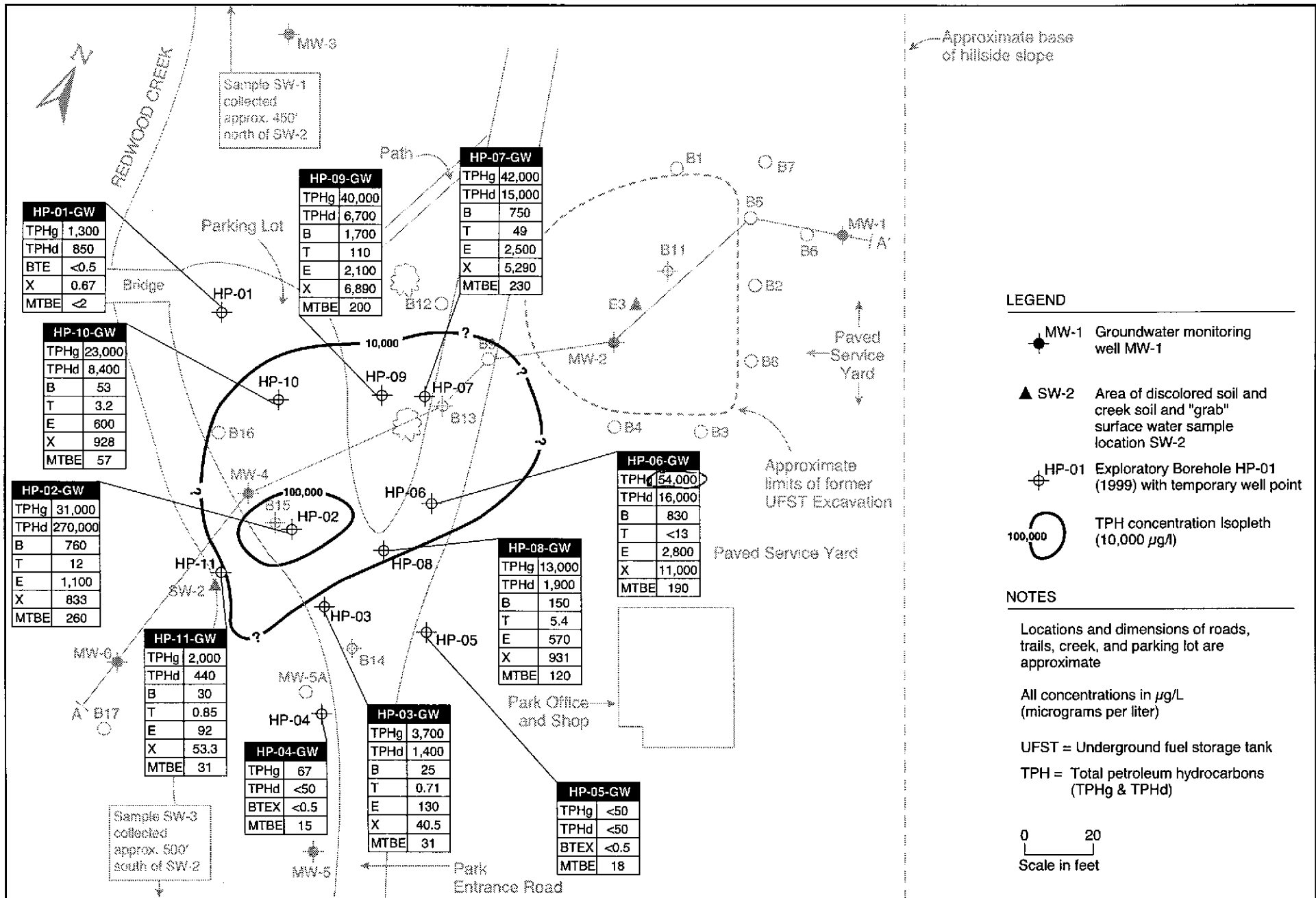
The following is a brief summary of the site hydrogeologic conditions based on geologic logging and water level measurements collected at the site since September 1993. A full discussion is presented in the SES June 1999 report.

Shallow soil stratigraphy consists of a surficial 3- to 10-foot thick clayey silt unit underlain by a 5- to 15-foot thick silty clay unit. In all monitoring well boreholes, a 5- to 10-foot thick clayey coarse-grained sand and clayey gravel unit was encountered that laterally grades to a clay or silty clay. This unit overlies a weathered siltstone at the base of the observed soil profile. Soils in the vicinity of MW-1 are inferred to be landslide debris.

Groundwater at the site occurs under unconfined and semi-confined conditions at a depth between 12.5 and 19 feet bgs, corresponding to the top of the clayey, silty sand-gravel zone. Local perched water zones have been observed well above the top of the capillary fringe. Local groundwater flow direction has been consistently measured as northeast to southwest. Figure 3 is a groundwater elevation map constructed from the September 2000 monitoring well static water levels, and Table 1 summarizes current event groundwater elevation data. The groundwater gradient is relatively steep—approximately 2 feet per foot—between well MW-1 and the former UFST source area, resulting from the topography and the highly disturbed nature of sediments in the landslide debris. Downgradient from (west of) the UFST source area (between MW-2 and Redwood Creek), the groundwater gradient is approximately 0.1 feet per foot.

From site-specific empirical data (using the estimated time for UFST-sourced contamination to reach Redwood Creek) a conservative estimate of groundwater velocity within the aquifer material is at 7 to 10 feet per year, with the rate of movement within the clay rich zones being substantially less.

Redwood Creek borders the site to the west, and is a seasonal creek known for the occurrence of rainbow trout. Creek flow in the vicinity of the site shows significant seasonal variation with little to no flow during the summer and fall dry season, and vigorous flow with depths to 1 foot during the winter and spring wet season. The creek is a gaining stream (i.e., it is recharged by groundwater) in the vicinity of the site and discharges into Upper San Leandro Reservoir, located approximately 1 mile southeast of the site.



LEGEND

- MW-1 Groundwater monitoring well MW-1
- SW-2 Area of discolored soil and creek soil and "grab" surface water sample location SW-2
- HP-01 Exploratory Borehole HP-01 (1999) with temporary well point
- 100,000 TPH concentration isopleth (10,000 µg/l)

NOTES

Locations and dimensions of roads, trails, creek, and parking lot are approximate

All concentrations in µg/L (micrograms per liter)

UFST = Underground fuel storage tank

TPH = Total petroleum hydrocarbons (TPHg & TPHd)

0 20
Scale in feet

3.0 SEPTEMBER 2000 CREEK AND GROUNDWATER SAMPLING

This section presents the creek surface water and groundwater sampling and analytical methods. Groundwater and surface water analytical results are summarized in Section 4.0.

Monitoring and sampling protocols were in accordance with the ACHCSA-approved SES technical workplan (SES 1998a). Activities conducted include:

- Measuring static water levels and field analyzing groundwater samples for indicators of natural attenuation in all six site wells;
- Collecting groundwater samples for laboratory analysis (including site contaminants and the natural attenuation indicators nitrate and sulfate) from selected site wells (MW-2, MW-3 and MW-4); and
- Collecting one creek surface water sample (SW-2) for laboratory analysis (there was no surface water to sample at the downstream location (SW-3).

The current monitoring and sampling event was conducted on September 28, 2000. Surface water sampling was conducted by SES. Groundwater monitoring well water level measurements, purging, sampling and field analyses were conducted by Blaine Tech Services under the direct supervision of SES personnel. The locations of all site monitoring wells and creek water sampling locations are shown on Figure 2. Well construction information is summarized in Table 1. Appendix A contains the groundwater monitoring field record. Appendix B contains the sample chain-of-custody records.

GROUNDWATER LEVEL MONITORING AND SAMPLING

Groundwater sampling of MW-2 and MW-4 was conducted on September 28, 2000 in accordance with State of California guidelines for sampling dissolved analytes in groundwater associated with leaking UFSTs (State Water Resources Control Board, 1989), and followed the methods and protocols approved by the ACHCSA in the SES 1998 workplan (SES 1998a).

Table 1
Groundwater Monitoring Well Construction and Groundwater Elevation Data

Well	Well Depth	Screened Interval	Depth to TOC	Ground Surface Elevation	TOC Elevation	Groundwater Elevation (9/28/00)
MW-1	18	7-17	-2.3	563.6	565.9	562.80
MW-2	36	20-35	-2.4	564.1	566.5	542.74
MW-3	42	7-41	-2.8	558.1	560.9	538.34
MW-4	26	10-25	-2.1	546.0	548.1	532.21
MW-5	26	10-25	-2.3	545.2	547.5	530.90
MW-6	26	10-25	-2.3	543.3	545.6	531.95

Notes:

- 1) TOC = Top of Casing
- 2) All depths are feet below ground surface unless otherwise specified. Negative values for "Depth to TOC" indicate that the TOC is above ground surface.
- 3) All elevations are feet above USGS mean sea level (MSL). Elevations were surveyed by EBRPD relative to USGS Benchmark No. JHF-49. All wells are 4-inch inside diameter.

Static water levels were measured in all six site wells on September 28, 2000 (see Appendix A). All water level measurements were made using an electric water level indicator. **Pre-purge groundwater samples from all wells were field analyzed for indicators of natural attenuation including ferrous iron, dissolved oxygen, and oxygen reduction potential (ORP, or redox potential).** In addition, pre-purge groundwater samples were collected from wells MW-3 and MW-4 for the natural attenuation indicators nitrate and sulfate. **The groundwater sample collected from well MW-4 had a noticeable petroleum odor and sheen.**

A total of approximately 50 gallons of purge water and decontamination rinseate from the current groundwater sampling event was containerized in the onsite plastic tank. The purge water will continue to be accumulated in the onsite tank until it is full, at which time it will be transported offsite for proper disposal.

CREEK SURFACE WATER SAMPLING

A surface water sample was collected on September 28, 2000 from Redwood Creek location SW-2 (immediately downgradient of the former UFST source area and within the area of documented creek bank soil contamination). **There was no surface water present at downstream sampling location SW-3 (approximately 500 feet downstream from SW-2) (see Figure 2 for locations).** In accordance with a previous ACHCSA-approved SES recommendation, upstream sample location SW-1 was not sampled.

At the time of sampling, there was no creek flow; the only water present between locations SW-1 and SW-3 was a pool of water approximately 6 inches deep in the immediate vicinity of location SW-2. At the SW-2 location, where contaminated groundwater discharge to the creek has historically been observed, petroleum sheen was noted, as was orange algae growing on the saturated portion of the creek bank. It is inferred that this algae is utilizing the petroleum as a carbon source, and is therefore a good indicator of the presence of petroleum contamination.

4.0 FIELD AND LABORATORY ANALYTICAL RESULTS

This section presents the field and laboratory analytical results of the most recent (September 2000) investigation, including surface water and groundwater well sampling results. Table 2 and Figure 4 summarize the contaminant analytical results of the current monitoring event samples. Table 3 summarizes natural attenuation indicator results from the current event. A detailed discussion of hydrochemical and surface water trends will be included in the upcoming Feasibility Study report and subsequent site monitoring reports.

GROUNDWATER SAMPLE RESULTS

As shown in Table 2, the only contaminants detected in source area well MW-2 were benzene and MTBE. All site contaminants of concern, except benzene and toluene, were detected in downgradient well MW-4. With the exception of benzene and MTBE, detected concentrations in MW-4 were significantly greater than those in MW-2. As discussed in previous reports, these data indicate that the groundwater contaminant plume has migrated beyond the former source area (represented by well MW-2) toward Redwood Creek.

NATURAL ATTENUATION PARAMETERS MEASURED

Dissolved oxygen, ferrous iron, and redox potential were field-measured in all six wells with electronic meters. Nitrogen and sulfate from wells MW-3 (outside the contaminant plume) and MW-4 (inside the contaminant plume) were analyzed in the laboratory. Table 3 shows the results indicating a wide range of values. The contrast shown between well MW-4, with the highest concentrations, and background well MW-3 is not definitive enough to demonstrate that biodegradation is taking place at MW-4.

CREEK SURFACE WATER SAMPLE RESULTS

Contaminants detected at the SW-2 location (area of historical contaminated groundwater discharge) included TPHd, TPHg, MTBE, benzene, ethylbenzene, and total xylenes. Current event contaminant concentrations were generally in the same range as previous samples collected at this location during low flow periods.

Table 2
Groundwater and Surface Water Sample Analytical Results
September 28, 2000
Redwood Regional Park Corporation Yard - Oakland, California

Compound	Concentrations in µg/L						
	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
GROUNDWATER SAMPLES							
MW-2	< 50	< 50	0.72	< 0.5	< 0.5	< 0.5	7.9
MW-4	570	380	< 0.5	< 0.5	16	4.1	2.4
REDWOOD CREEK SURFACE WATER SAMPLES							
SW-2	160	100	2.1	< 0.5	5.2	1.9	3.4

Notes:

MTBE = Methyl *tertiary*-butyl ether.

TPHg = Total petroleum hydrocarbons - gasoline range (equivalent to total volatile hydrocarbons - gasoline range).

TPHd = Total petroleum hydrocarbons - diesel ranges (equivalent to total extractable hydrocarbons - diesel range).

µg/L = Micrograms per liter, equivalent to parts per billion (ppb).

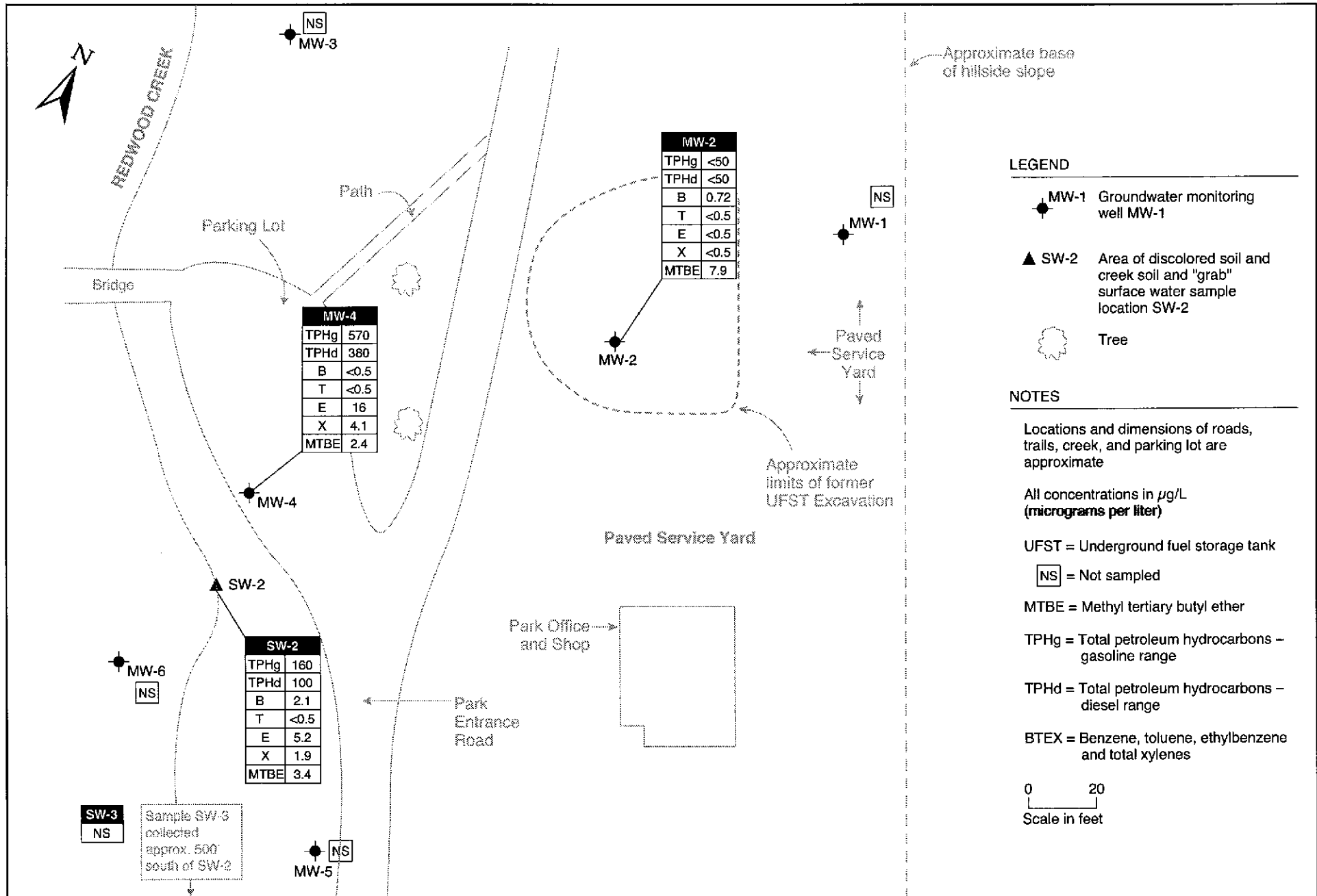
Table 3
Groundwater Sample Analytical Results:
Natural Attenuation Indicators, September 28, 2000
Redwood Regional Park Corporation Yard - Oakland, California

Sample I.D.	Nitrogen (as Nitrate) (mg/L)	Sulfate (mg/L)	Dissolved Oxygen (mg/L)	Fe ²⁺ Ferrous Iron (mg/L)	Redox Potential (millivolts)
MW-1	NA	NA	4.4	0.0	146
MW-2	NA	NA	1.6	0.1	146
MW-3	0.07	38	1.0	0.04	150
MW-4	< 0.05	44	1.0	2.68	152
MW-5	NA	NA	1.4	0.06	148
MW-6	NA	NA	1.6	0.06	166

Notes:

mg/L = Milligrams per liter, equivalent to parts per million (ppm).

NA = Not Analyzed.



QUALITY CONTROL SAMPLE ANALYTICAL RESULTS

Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were all within the acceptance limits of the methods (Appendix C).

5.0 SUMMARY, CONCLUSIONS AND PROPOSED ACTIONS

SUMMARY AND CONCLUSIONS

The following conclusions and proposed actions presented are focused on the September 2000 surface water and groundwater monitoring report as well as some salient historical findings.

- Groundwater sampling conducted on an approximately quarterly frequency since November 1994 (16 events) has shown an overall decreasing concentration trend in groundwater contaminants—which include gasoline, diesel, and BTEX. MTBE was detected in both the source area and the downgradient monitoring wells when it was analyzed for the first time in September 1998.
- Near-maximum historical groundwater contaminant concentrations were detected in February 1998, coinciding with unusually heavy rains and correspondingly high groundwater elevations, which likely desorbed capillary fringe soil contamination into groundwater. The most recent groundwater analytical data showed results consistent with previous analyses, with maximum concentrations of most analytes detected in downgradient well MW-4, suggesting that the center of mass of the contaminant groundwater plume has moved from the UFST source area and beyond well MW-2.
- Current event concentrations of petroleum hydrocarbons in Redwood Creek downgradient of the former UFST source area were comparable to historical events during low-flow periods.
- In accordance with an ACHCSA request, SES is completing a Feasibility Study to determine the most appropriate and cost-effective remedial strategy.
- In accordance with an ACHCSA request, a workplan for installation and sampling of two additional groundwater monitoring wells is enclosed with this report.

PROPOSED ACTIONS

The District proposes to implement the following actions to address regulatory concerns:

- Submit to ACHCSA and the Board a Feasibility Study report for their concurrence, and implement the approved remedial strategy.

- Install and include in future monitoring events the ACHCSA-requested two additional groundwater monitoring wells.
- Continue the established program of quarterly groundwater elevation monitoring (all site wells) and sampling (including existing site wells MW-2 and MW-4 plus the two not-yet-installed additional wells).
- Continue the established program of quarterly surface water sampling at locations SW-2 and SW-3.

6.0 REFERENCES AND BIBLIOGRAPHY

- Alameda County Health Care Services (ACHCSA), 2000. Letter to Mr. Ken Burger of EBRPD. August 22.
- Parsons Engineering Science (Parsons), 1998. Quarterly Progress Report 11, Redwood Regional Park Service Yard, Oakland, California. January 28
- Parsons, 1997a. Quarterly Progress Report 7, Redwood Regional Park Service Yard, Oakland, California. January 31
- Parsons, 1997b. Quarterly Progress Report 8 and Annual Summary Assessment, Redwood Regional Park Service Yard, Oakland, California. April 4
- Parsons, 1997c. Quarterly Progress Report 9, Redwood Regional Park Service Yard, Oakland, California. June 30
- Parsons, 1997d. Quarterly Progress Report 10, Redwood Regional Park Service Yard, Oakland, California. September 22
- Parsons, 1996a. Quarterly Progress Report 5, Redwood Regional Park Service Yard, Oakland, California. June 6
- Parsons, 1996b. Quarterly Progress Report 6, Redwood Regional Park Service Yard, Oakland, California. September 24
- Parsons, 1995a. Quarterly Progress Report 2, Redwood Regional Park Service Yard, Oakland, California. March 8
- Parsons, 1995b. Quarterly Progress Report 3, Redwood Regional Park Service Yard, Oakland, California. June 23
- Parsons, 1995c. Quarterly Progress Report 4 and Annual Summary Assessment (November 1994 - August 1995), Redwood Regional Park Service Yard, Oakland, California. November 13

- Parsons, 1994a. Creek and Soil Sampling at Redwood Regional Park, Oakland, California. March 2
- Parsons, 1994b. Creek Surface Water at Redwood Regional Park, Oakland, California. May 13
- Parsons, 1994c. Workplan for Groundwater Characterization Program at East Bay Regional Park Service Yard, Oakland, California. August 17
- Parsons, 1994d. Quarterly Progress Report 1, Redwood Regional Park Service Yard, Oakland, California. December 28
- Parsons, 1993a. Closure of Underground Fuel Storage Tanks and Initial Site Characterization at Redwood Regional Park Service Yard, Oakland, California. December 16
- Parsons, 1993b. Workplan for Site Characterization at East Bay Regional Park District, Redwood Regional Park Corporation Yard, Oakland, Alameda County, California. September 3
- Stellar Environmental Solutions (SES), 2000a. Site Monitoring Report, Redwood Regional Park Service Yard, Oakland, California. April 21
- SES, 1999a. Workplan for Subsurface Investigation, Redwood Regional Park Service Yard, Oakland, California. April 8
- SES, 1999b. Residual Contamination Investigation and Remedial Action Assessment Report, Redwood Regional Park Service Yard, Oakland, California. June 9
- SES, 1998a. Workplan for Continued Site Investigation and Closure Assessment, Redwood Regional Park Service Yard, Oakland, California. October 9
- SES, 1998b. Site Investigation and Closure Assessment Report, Redwood Regional Park Service Yard, Oakland, California. December 4

7.0 LIMITATIONS

This report has been prepared for the exclusive use of East Bay Regional Park District and their authorized representatives and the Regulators. No reliance on this report shall be made by anyone other than the client and regulators for whom it was prepared.

The findings and conclusions presented in this report are based on the review of previous investigators' findings at the site as well as site activities conducted by SES since September 1998. This report provides neither a certification nor guarantee that the property is free of hazardous substance contamination. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The SES personnel who performed this limited remedial investigation are qualified to perform such investigations and have accurately reported the information available but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions and recommendations included in the report.

The findings of this report are valid as of the present. Site conditions may change with the passage of time, natural processes or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the investigation and remediation completed.

WELL MONITORING DATA SHEET

Project #: <u>000928-41</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>19.28</u>	Depth to Water: <u>3.10</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Purge Method:

- | | |
|----------------------|-----------------|
| Bailer | Waterra |
| Disposable Bailer | Peristaltic |
| Middleburg | Extraction Pump |
| Electric Submersible | Other _____ |

Sampling Method:

Bailer

- Disposable Bailer
 Extraction Port
 Dedicated Tubing

Other: _____

	(Gals.) X _____ = _____ Gals.	
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
						<u>GRAB SAMPLE</u>
<u>10:12</u>	<u>62.0</u>	<u>7.4</u>	<u>855</u>	—	—	<u>Ferrous Iron</u> <u>0.00 mg/L</u>

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: 10:12 Sampling Date: 9-28-00

Sample I.D.: MW-1 Laboratory: CURTIS + TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd):	<u>Pre-purge</u>	<u>4.4</u> mg/L	Post-purge:	_____ mg/L
ORP (if req'd):	<u>Pre-purge</u>	<u>146</u> mV	Post-purge:	_____ mV

WELL MONITORING DATA SHEET

Project #: <u>000928-41</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>mw-2</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>39.64</u>	Depth to Water: <u>23.76</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method:

- Bailer
 Disposable Bailer
 Middleburg
 Electric Submersible
- Waterra
 Peristaltic
 Extraction Pump
 Other _____

Sampling Method:

- Bailer
 Disposable Bailer
 Extraction Port
 Dedicated Tubing
 Other: _____

<u>9.6</u> (Gals.) X	<u>3</u>	= <u>29</u> Gals.
I Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>1106</u>	<u>59.8</u>	<u>7.04</u>	<u>883</u>	<u>71</u>	<u>10</u>	
<u>1108</u>	<u>60.5</u>	<u>7.00</u>	<u>976</u>	<u>117</u>	<u>20</u>	
<u>1110</u>	<u>60.8</u>	<u>7.07</u>	<u>865</u>	<u>7200</u>	<u>30</u>	
<u>PRE-PURGE READINGS</u>						<u>Ferrous Iron</u>
<u>1052</u>	<u>58.8</u>	<u>7.08</u>	<u>928</u>			<u>0.10 mg/L</u>

Did well dewater? Yes No Gallons actually evacuated: 30

Sampling Time: 1113 Sampling Date: 9-28-00

Sample I.D.: mw-2 Laboratory: CURTIS & TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd): Pre-purge: 1.4 mg/L Post-purge: _____ mg/L

ORP (if req'd): Pre-purge: 146 mV Post-purge: _____ mV

WELL MONITORING DATA SHEET

Project #: <u>000928-41</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>nw-3</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>46.00</u>	Depth to Water: <u>22.56</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Purge Method:

- | | |
|----------------------|-----------------|
| Bailer | Waterra |
| Disposable Bailer | Peristaltic |
| Middleburg | Extraction Pump |
| Electric Submersible | Other _____ |

Sampling Method: Bailer

- | |
|--------------------------|
| <u>Disposable Bailer</u> |
| Extraction Port |
| Dedicated Tubing |
| Other: _____ |

	(Gals.) X		=		Gals.
1 Case Volume	Specified Volumes	Calculated Volume			

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>Grab</u>	<u>sample</u>					<u>Ferrous Iron</u>
<u>10:23</u>	<u>58.1</u>	<u>6.97</u>	<u>625</u>	<u>—</u>	<u>—</u>	<u>0.04 MG/L</u>

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: 10:23 Sampling Date: 9-28-00

Sample I.D.: nw-3 Laboratory: CURTIS + TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SULFATE + NITRATE

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd): 1 Pre-purge: 1.0 mg/L Post-purge: _____ mg/L

ORP (if req'd): _____ Pre-purge: 150 mV Post-purge: _____ mV

WELL MONITORING DATA SHEET

Project #: <u>000928-41</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>MW-4</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>26.50</u>	Depth to Water: <u>15.89</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Purge Method:

- Bailer
- Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other _____

Sampling Method:

- Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other _____

<u>6.9</u>	(Gals.) X	<u>3</u>	=	<u>20.7</u>	Gals.
1 Case Volume		Specified Volumes		Calculated Volume	

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1148	58.5	6.67	729	68	7	
1149	58.9	6.57	665	36	14	
1150	58.7	6.66	711	71	21	
PRE-PURGE READINGS						FERROUS IRON
1128	57.4	6.4	647	—	—	COND. / pH

Did well dewater? Yes No Gallons actually evacuated: 21

Sampling Time: 1154 Sampling Date: 9-28-00

Sample I.D.: MW-4 Laboratory: CURTIS + TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: NITRATE, SULFATE

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd): Pre-purge: 1.0 mg/L Post-purge: _____ mg/L

ORP (if req'd): Pre-purge: 152 mV Post-purge: _____ mV

WELL MONITORING DATA SHEET

Project #: <u>000928-Y1</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>MW-5</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>27.00</u>	Depth to Water: <u>16.60</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method:

- Bailer
- Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other _____

Sampling Method:

- Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: _____

	(Gals.) X		=		Gals.
I Case Volume	Specified Volumes	Calculated Volume			

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>Grab Sample</u>						<u>Ferrous Iron</u>
<u>1126</u>	<u>57.7</u>	<u>7.4</u>	<u>603</u>	<u>---</u>	<u>---</u>	<u>0.06 mg/L</u>

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: _____ Sampling Date: 9-28-00

Sample I.D.: MW-5 Laboratory: CURTIS + TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd): Pre-purge: 1.4 mg/L Post-purge: _____ mg/L

ORP (if req'd): Pre-purge: 148 mV Post-purge: _____ mV

WELL MONITORING DATA SHEET

Project #: <u>000928-41</u>	Client: <u>STELLAR ENVIRONMENTAL SOLUTIONS</u>
Sampler: <u>LEON G.</u>	Start Date: <u>9-28-00</u>
Well I.D.: <u>mw-6</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>27.40</u>	Depth to Water: <u>13.65</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> <u>HACH</u>

Purge Method:

- | | |
|----------------------|-----------------|
| Bailer | Waterra |
| Disposable Bailer | Peristaltic |
| Middleburg | Extraction Pump |
| Electric Submersible | Other _____ |

Sampling Method:

- | |
|--------------------------|
| Bailer |
| <u>Disposable Bailer</u> |
| Extraction Port |
| Dedicated Tubing |
| Other: _____ |

	(Gals.) X _____ = _____ Gals.	
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius ² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
<u>Grab Sample</u>						
<u>10:38</u>	<u>57.7</u>	<u>6.3</u>	<u>571</u>	—	—	<u>Ferrous Iron</u> <u>0.06 mg/l</u>

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Time: _____ Sampling Date: 9-28-00

Sample I.D.: mw-6 Laboratory: CURTIS + TOMPKINS

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

Equipment Blank I.D.: _____ @ _____ Time Duplicate I.D.: _____

Analyzed for: TPH-G BTEX MTBE TPH-D Other: _____

D.O. (if req'd): Pre-purge: 1.6 mg/L Post-purge: _____ mg/L

ORP (if req'd): Pre-purge: 166 mV Post-purge: _____ mV



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

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T


Prepared for:

Stellar Environmental Solutions
2198 6th Street
Suite 201
Berkeley, CA 94710

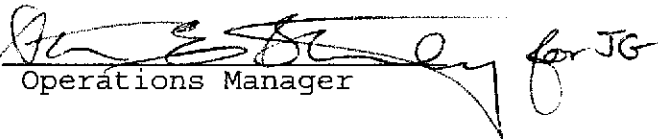
Date: 05-OCT-00
Lab Job Number: 147762
Project ID: N/A
Location: Redwood Regional Park

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:


Project Manager

Reviewed by:

 for JG
Operations Manager

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CHAIN OF CUSTODY FORM

Analyses

Curtis & Tompkins, Ltd.
 Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

C&T
 LOGIN # 147762

Project No: _____
 Project Name: REDWOOD REGIONAL PARK
 Project P.O.: _____
 Turnaround Time: 5 DAY TAT

Sampler: LEON HOYT
 Report To: BRUCE RUCKER
 Company: STELLAR ENVIRONMENTAL
 Telephone: _____
 Fax: _____

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	TVH + BTEX + MIRE	TEH-D	NITRATE	SULFATE
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE					
	MW-1	9/24/00													
	MW-2	11/3		X		4						X	X		
	MW-3	10/23		X		1							X	X	
	MW-4	11/3/11/54		X		5						X	X	X	X
	MW-5			X											
	MW-6			X											
For Use	SU-2	9/15				3						X	X		
Laboratory															

Notes:
 Received via courier
 on new chilled
 (LB)

RELINQUISHED BY: _____
 DATE/TIME: 9/29/00 12:45
 RECEIVED BY: _____
 DATE/TIME: 9/28/00 12:45

Signature

Curtis & Tompkins Laboratories Analytical Report

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030
Project#:	STANDARD		
Matrix:	Water	Batch#:	58591
Units:	ug/L	Sampled:	09/28/00
Diln Fac:	1.000	Received:	09/28/00

Field ID:	MW-2	Lab ID:	147762-001
Type:	SAMPLE	Analyzed:	09/29/00

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015M
MTBE	7.9	2.0	EPA 8021B
Benzene	0.72	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	73	59-135	EPA 8015M
Bromofluorobenzene (FID)	77	60-140	EPA 8015M
Trifluorotoluene (PID)	66	56-142	EPA 8021B
Bromofluorobenzene (PID)	71	55-149	EPA 8021B

Field ID:	MW-4	Lab ID:	147762-003
Type:	SAMPLE	Analyzed:	09/30/00

Analyte	Result	RL	Analysis
Gasoline C7-C12	570	50	EPA 8015M
MTBE	2.4	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	16	0.50	EPA 8021B
m,p-Xylenes	4.1	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	101	59-135	EPA 8015M
Bromofluorobenzene (FID)	96	60-140	EPA 8015M
Trifluorotoluene (PID)	88	56-142	EPA 8021B
Bromofluorobenzene (PID)	89	55-149	EPA 8021B

Curtis & Tompkins Laboratories Analytical Report

Lab #: 147762	Location: Redwood Regional Park
Client: Stellar Environmental Solutions	Prep: EPA 5030
Project#: STANDARD	
Matrix: Water	Batch#: 58591
Units: ug/L	Sampled: 09/28/00
Diln Fac: 1.000	Received: 09/28/00

Field ID: SW-2	Lab ID: 147762-004
Type: SAMPLE	Analyzed: 09/30/00

Analyte	Result	RL	Analysis
Gasoline C7-C12	160	50	EPA 8015M
MTBE	3.4	2.0	EPA 8021B
Benzene	2.1	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	5.2	0.50	EPA 8021B
m,p-Xylenes	1.9	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	59-135	EPA 8015M
Bromofluorobenzene (FID)	94	60-140	EPA 8015M
Trifluorotoluene (PID)	88	56-142	EPA 8021B
Bromofluorobenzene (PID)	87	55-149	EPA 8021B

Type: BLANK	Analyzed: 09/29/00
Lab ID: QC126306	

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015M
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

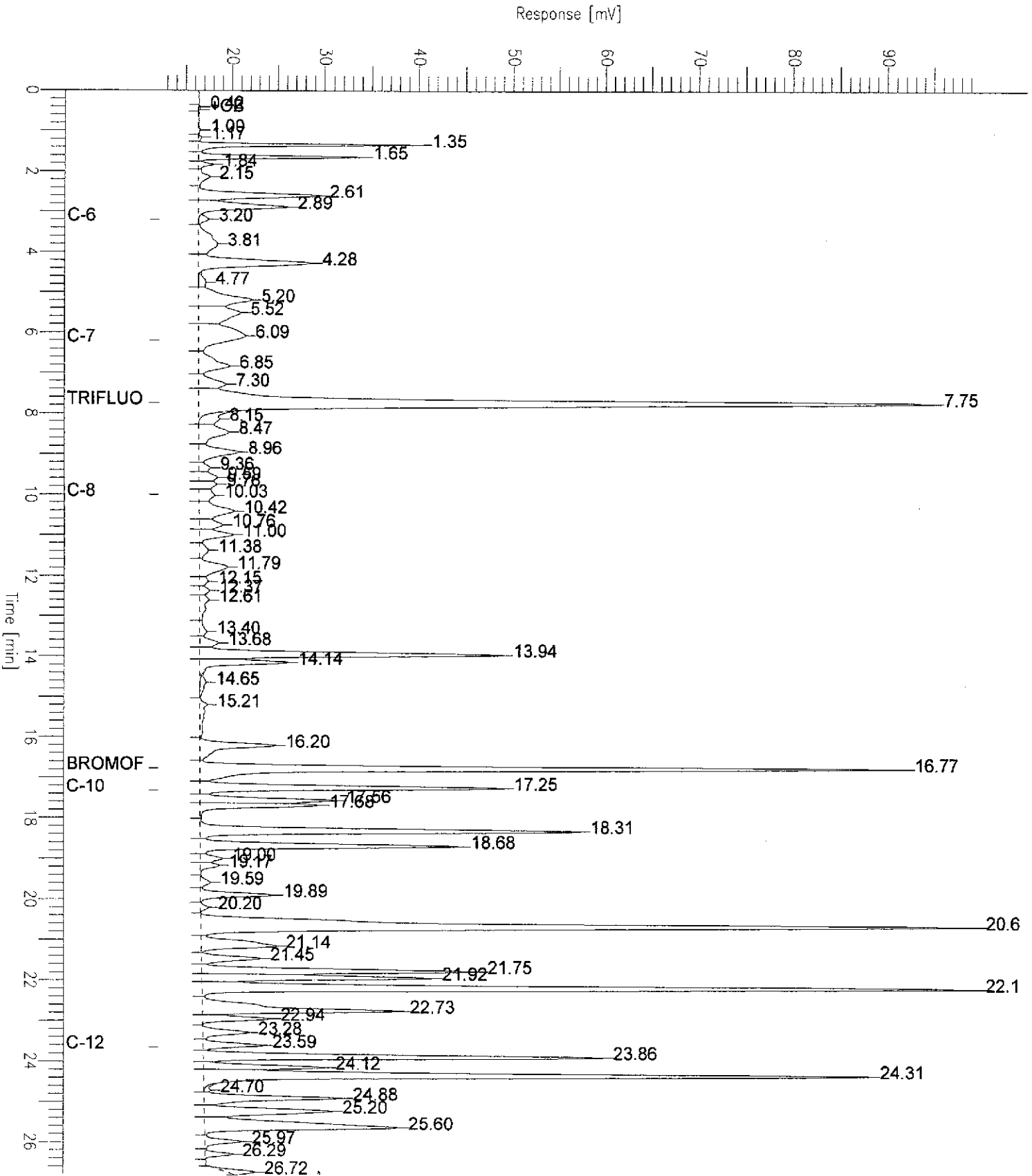
Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	59-135	EPA 8015M
Bromofluorobenzene (FID)	95	60-140	EPA 8015M
Trifluorotoluene (PID)	81	56-142	EPA 8021B
Bromofluorobenzene (PID)	86	55-149	EPA 8021B

Chromatogram

Sample Name : 147762-003,58591
FileName : G:\GC05\DATA\273G013.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor: 1.0 Plot Offset: 12 mV

Sample #:
Date : 10/1/00 03:15 PM
Time of Injection: 9/30/00 12:08 AM
Low Point : 12.19 mV High Point : 99.64 mV
Plot Scale: 87.5 mV

Page 1 of 1

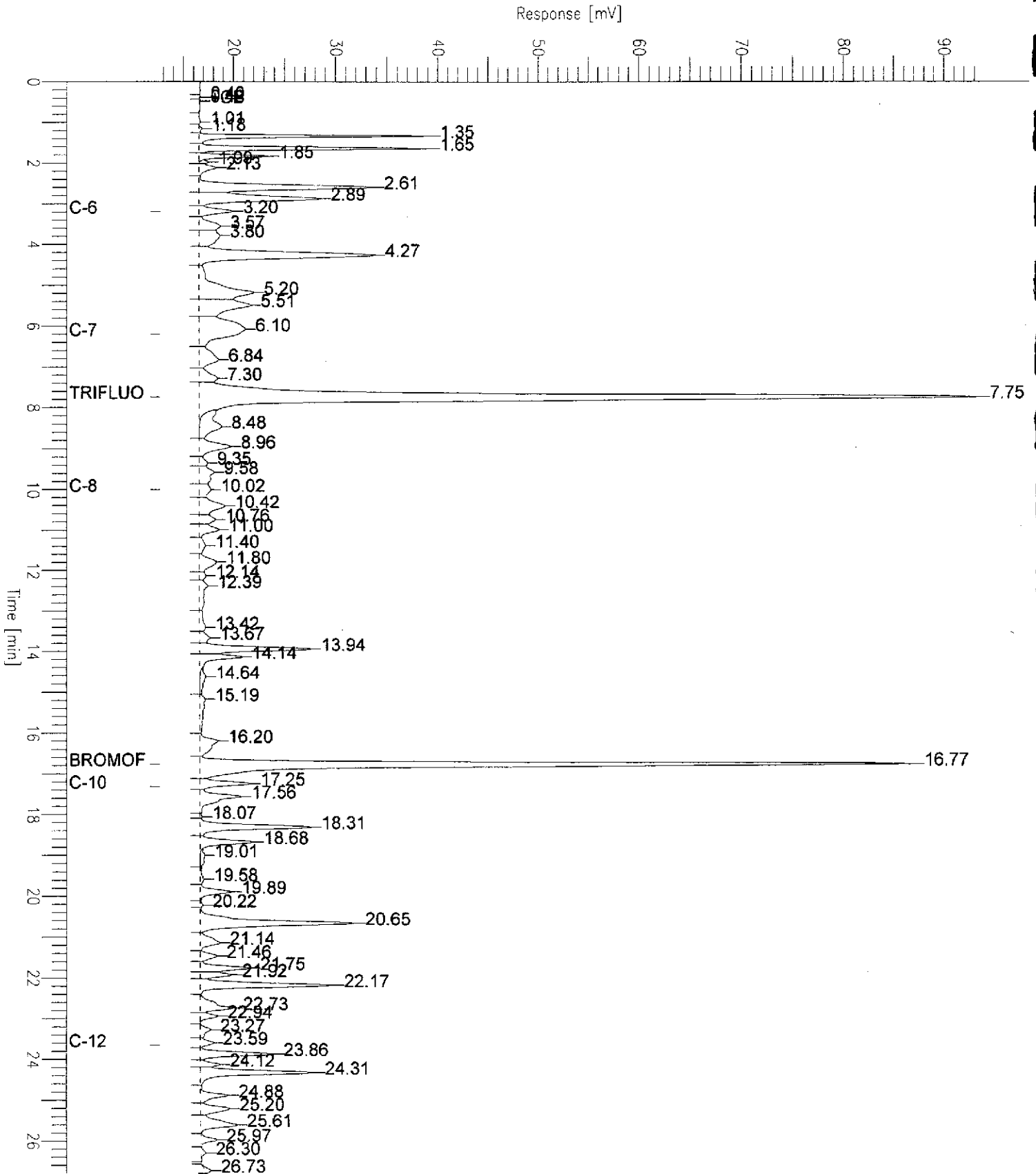


Chromatogram

Sample Name : MSS,147762-004,58591
FileName : G:\GC05\DATA\273G015.raw
Method : TVHBTXE
Start Time : 0.00 min
Scale Factor: 1.0

Sample #:
Date : 10/1/00 03:16 PM
Time of Injection: 9/30/00 01:21 AM
Low Point : 12.72 mV
Plot Scale: 80.8 mV

Page 1 of 1



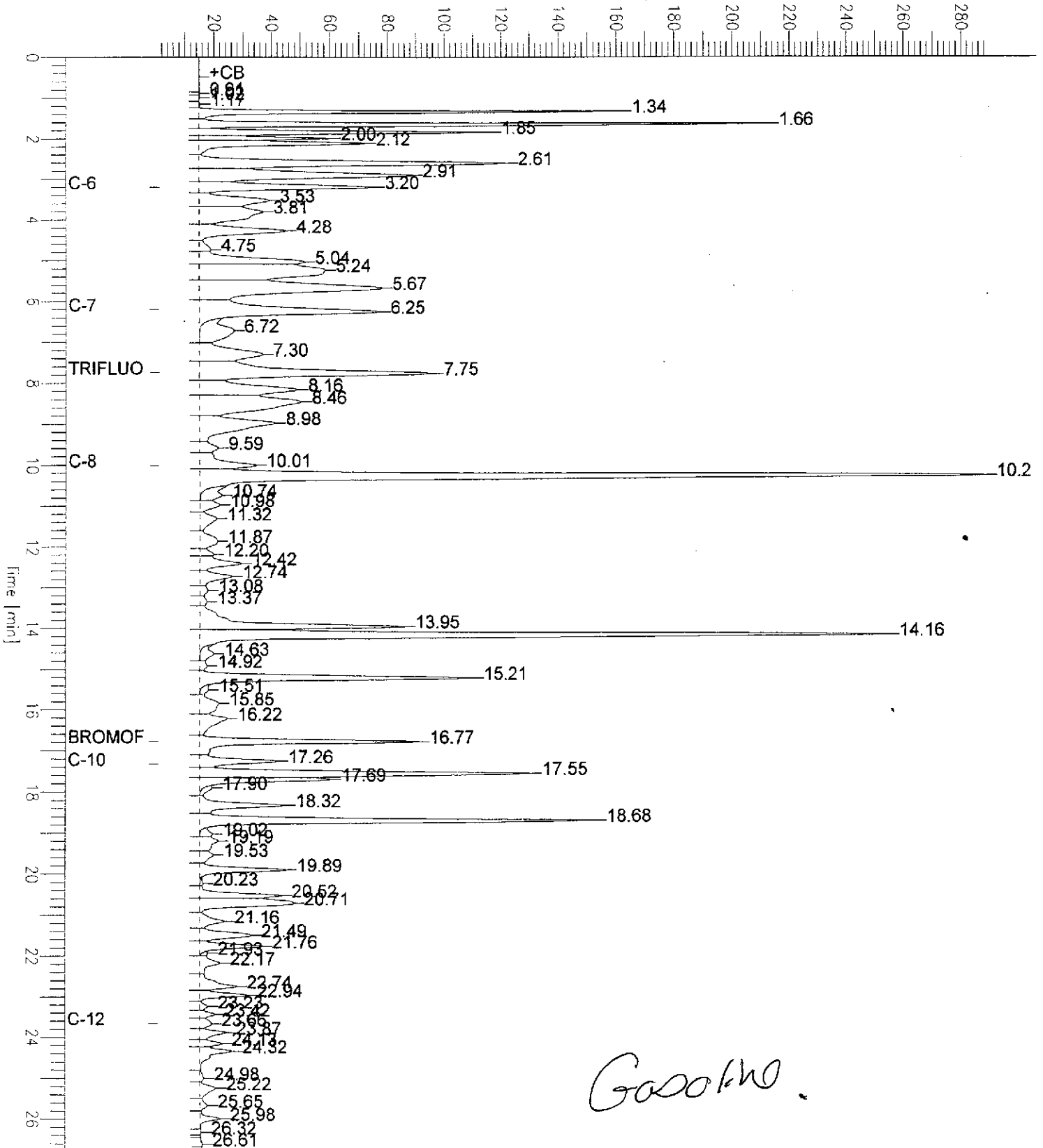
Chromatogram

Sample Name : CCV/LCS, QCL26304, 58591, DWS9736, 5/5000
FileName : G:\GC05\DATA\273G003.raw
Method : TVHBTXE
Start Time : 0.00 min End Time : 26.80 min
Scale Factor : 1.0 Plot Offset : 1 mV

Sample # :
Date : 9/29/00 05:39 PM
Time of Injection: 9/29/00 05:12 PM
Low Point : 1.06 mV High Point : 288.71 mV
Plot Scale: 287.6 mV

Page 1 of 1

Response [mV]



Curtis & Tompkins Laboratories Analytical Report

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030
Project#:	STANDARD		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC126304	Batch#:	58591
Matrix:	Water	Analyzed:	09/29/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12	2,000	1,949	97	73-121	EPA 8015M
MTBE		NA			
Benzene		NA			
Toluene		NA			
Ethylbenzene		NA			
m, p-Xylenes		NA			
o-Xylene		NA			

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	118	59-135	EPA 8015M
Bromofluorobenzene (FID)	99	60-140	EPA 8015M
Trifluorotoluene (PID)	100	56-142	EPA 8021B
Bromofluorobenzene (PID)	89	55-149	EPA 8021B

Curtis & Tompkins Laboratories Analytical Report

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030
Project#:	STANDARD		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC126305	Batch#:	58591
Matrix:	Water	Analyzed:	09/29/00
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12		NA			
MTBE	20.00	21.54	108	66-126	EPA 8021B
Benzene	20.00	17.93	90	67-117	EPA 8021B
Toluene	20.00	20.97	105	69-117	EPA 8021B
Ethylbenzene	20.00	17.72	89	68-124	EPA 8021B
m,p-Xylenes	40.00	37.86	95	70-125	EPA 8021B
o-Xylene	20.00	18.10	91	65-129	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	87	59-135	EPA 8015M
Bromofluorobenzene (FID)	90	60-140	EPA 8015M
Trifluorotoluene (PID)	80	56-142	EPA 8021B
Bromofluorobenzene (PID)	83	55-149	EPA 8021B

Curtis & Tompkins Laboratories Analytical Report

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030
Project#:	STANDARD		
Field ID:	SW-2	Batch#:	58591
MSS Lab ID:	147762-004	Sampled:	09/28/00
Matrix:	Water	Received:	09/28/00
Units:	ug/L	Analyzed:	09/30/00
Diln Fac:	1.000		

Type: MS Lab ID: QC126307

Analyte	MSS Result	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12			NA			
MTBE	3.370	20.00	25.57	111	49-136	EPA 8021B
Benzene	2.050	20.00	19.42	87	65-123	EPA 8021B
Toluene	<0.05100	20.00	19.66	98	73-122	EPA 8021B
Ethylbenzene	5.237	20.00	22.37	86	59-137	EPA 8021B
m,p-Xylenes	1.934	40.00	38.18	91	68-132	EPA 8021B
o-Xylene	<0.1300	20.00	18.03	90	61-140	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	94	59-135	EPA 8015M
Bromofluorobenzene (FID)	88	60-140	EPA 8015M
Trifluorotoluene (PID)	81	56-142	EPA 8021B
Bromofluorobenzene (PID)	82	55-149	EPA 8021B

Type: MSD Lab ID: QC126308

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
Gasoline C7-C12		NA					
MTBE	20.00	26.00	113	49-136	2	11	EPA 8021B
Benzene	20.00	19.90	89	65-123	2	20	EPA 8021B
Toluene	20.00	20.31	102	73-122	3	20	EPA 8021B
Ethylbenzene	20.00	22.63	87	59-137	1	20	EPA 8021B
m,p-Xylenes	40.00	39.51	94	68-132	3	20	EPA 8021B
o-Xylene	20.00	18.55	93	61-140	3	20	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	90	59-135	EPA 8015M
Bromofluorobenzene (FID)	85	60-140	EPA 8015M
Trifluorotoluene (PID)	78	56-142	EPA 8021B
Bromofluorobenzene (PID)	79	55-149	EPA 8021B

NA= Not Analyzed

RPD= Relative Percent Difference



Total Extractable Hydrocarbons

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520
Project#:	STANDARD	Analysis:	EPA 8015M
Matrix:	Water	Sampled:	09/28/00
Units:	ug/L	Received:	09/28/00
Diln Fac:	1.000	Prepared:	09/29/00
Batch#:	58597	Analyzed:	10/02/00

Field ID: MW-2 Lab ID: 147762-001
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	85	44-121

Field ID: MW-4 Lab ID: 147762-003
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	380 L Y	50

Surrogate	%REC	Limits
Hexacosane	90	44-121

Field ID: SW-2 Lab ID: 147762-004
 Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	100 L Y	50

Surrogate	%REC	Limits
Hexacosane	93	44-121

Type: BLANK Lab ID: QC126329

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	103	44-121

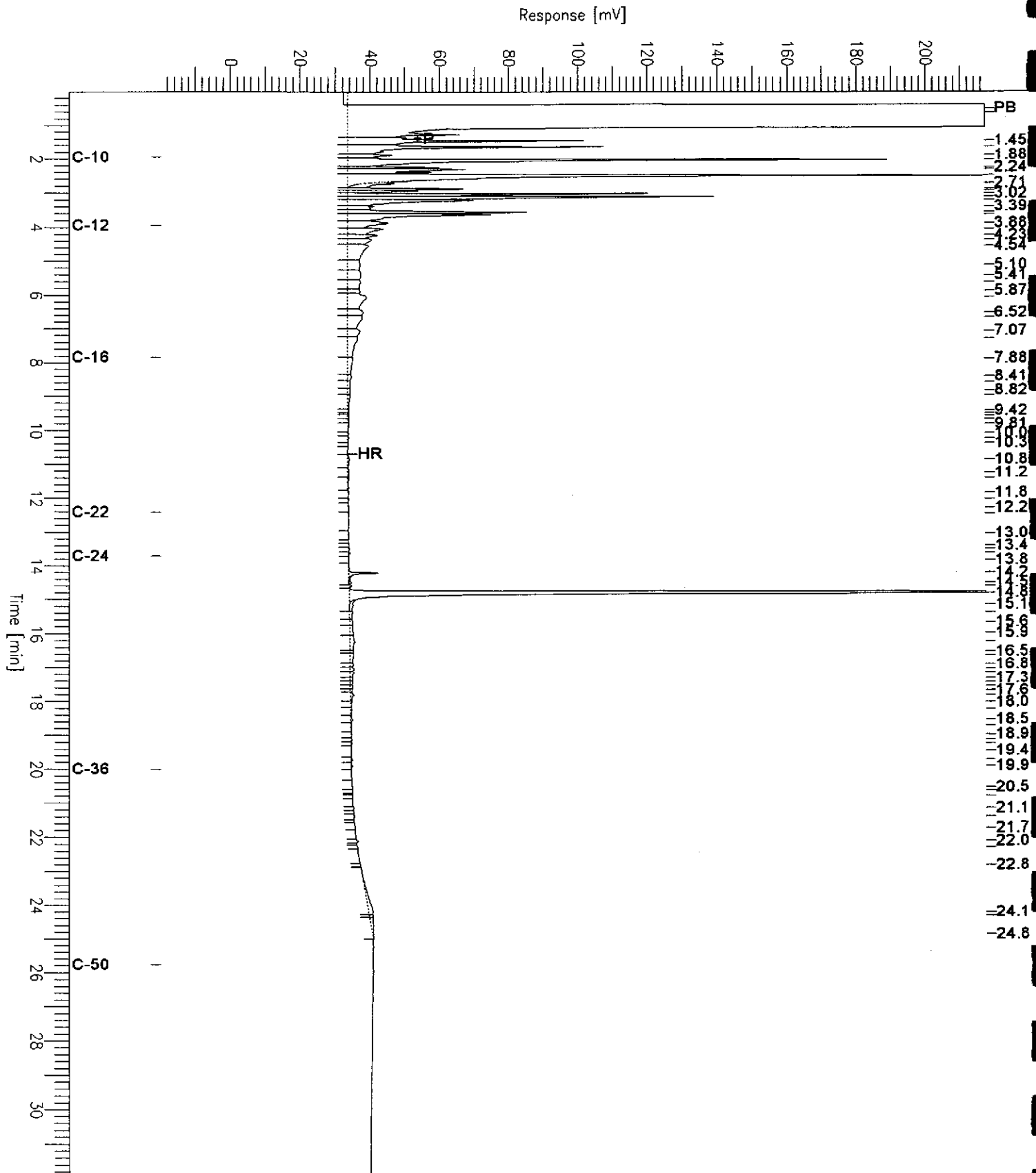
L = Lighter hydrocarbons contributed to the quantitation
 Y = Sample exhibits fuel pattern which does not resemble standard
 ND = Not Detected
 RL = Reporting Limit
 Page 1 of 1

Chromatogram

Sample Name : 147762-003,58597
FileName : G:\GC15\CHB\276B008.RAW
Method : BTEH265.MTH
Start Time : 0.01 min
Scale Factor: 0.0

End Time : 31.91 min
Plot Offset: -20 mV

Sample #: Page 1 of 1
Date : 10/02/2000 06:23 PM
Time of Injection: 10/02/2000 04:47 PM
Low Point : -19.91 mV
Plot Scale: 237.1 mV
High Point : 217.15 mV



Chromatogram

Sample Name : 147762-004,58597

FileName : G:\GC15\CHB\276B009.RAW

Method : BTEH265.MTH

Start Time : 0.01 min

Scale Factor: 0.0

End Time : 31.91 min

Plot Offset: 16 mV

Sample #:

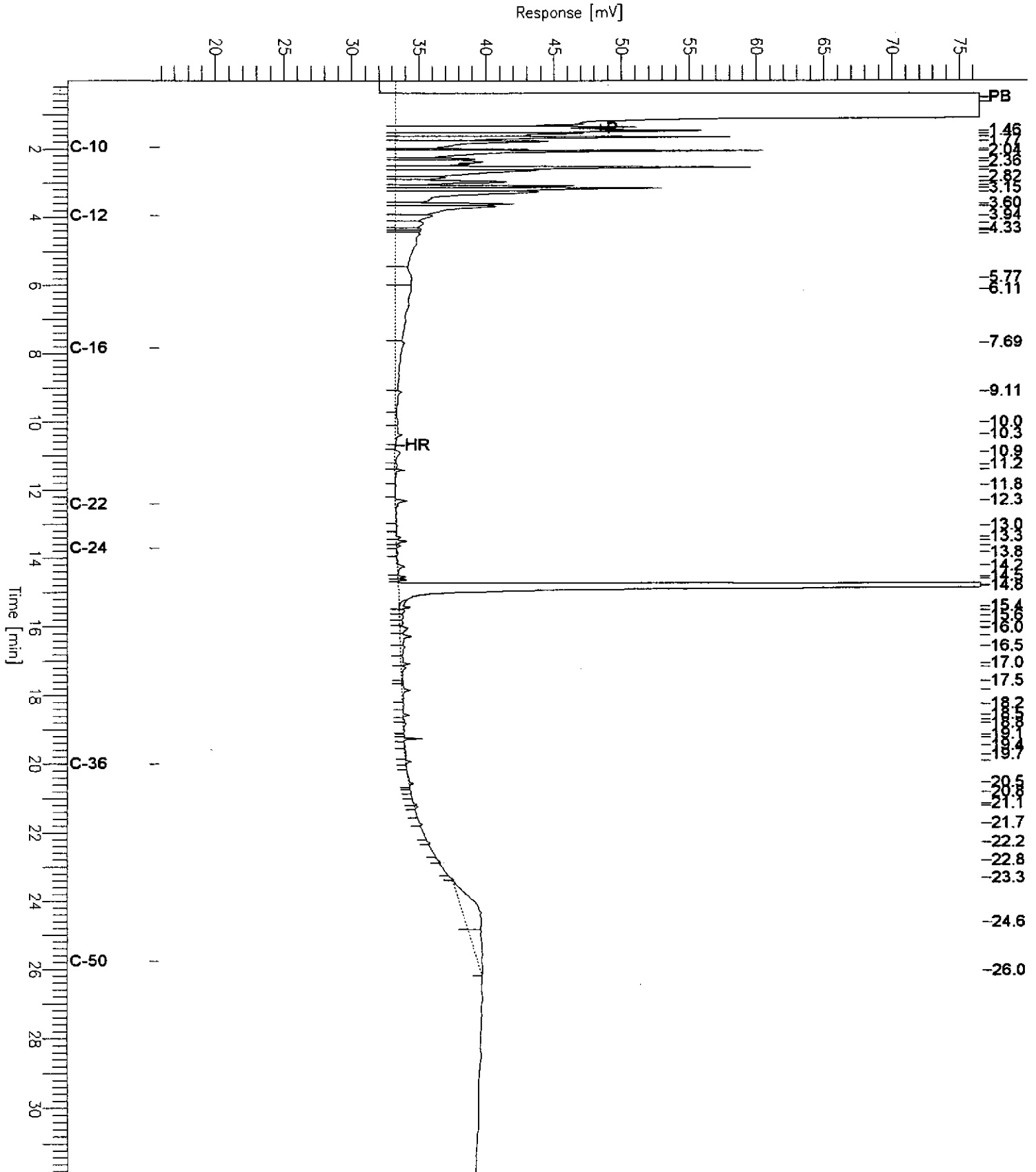
Date : 10/02/2000 06:23 PM

Time of Injection: 10/02/2000 05:30 PM

Low Point : 15.89 mV

Plot Scale: 60.6 mV

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Chromatogram

Sample Name : ccv,00ws9775,ds1

File Name : G:\GC11\CHA\276A002.RAW

Method : ATEH265.MPH

Start Time : 0.01 min

Scale Factor : 0.0

End Time : 31.91 min

Plot Offset : 11 mV

Sample #: 500mg/l

Date : 10/2/00 03:50 PM

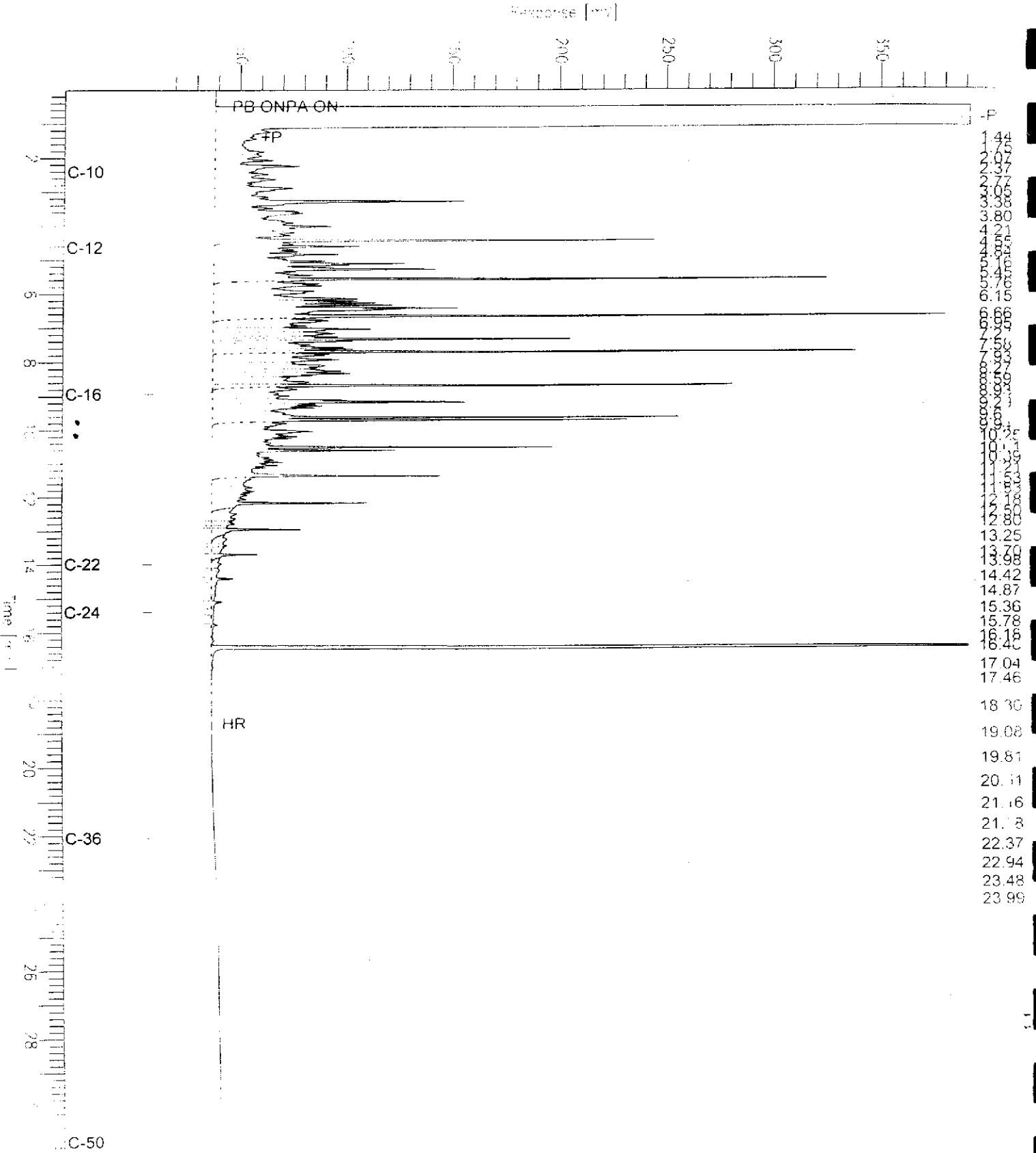
Time of Injection: 10/2/00 02:32 PM

Low Point : 11.08 mV

Plot Scale: 380.5 mV

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High Point : 391.60 mV



Total Extractable Hydrocarbons

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520
Project#:	STANDARD	Analysis:	EPA 8015M
Matrix:	Water	Batch#:	58597
Units:	ug/L	Prepared:	09/29/00
Diln Fac:	1.000	Analyzed:	10/02/00

Type: BS Lab ID: QC126330

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,339	1,512	65	45-110

Surrogate	%REC	Limits
Hexacosane	81	44-121

Type: BSD Lab ID: QC126331

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,339	1,392	60	45-110	8	22

Surrogate	%REC	Limits
Hexacosane	76	44-121

Nitrate Nitrogen

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Analyte:	Nitrogen, Nitrate	Batch#:	58582
Matrix:	Water	Sampled:	09/28/00
Units:	mg/L	Received:	09/28/00
Diln Fac:	1.000	Analyzed:	09/29/00

Field ID	Type	Lab ID	Result	RL
MW-3	SAMPLE	147762-002	0.07	0.05
MW-4	SAMPLE	147762-003	ND	0.05
	BLANK	QC126266	ND	0.05

Sulfate

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Analyte:	Sulfate	Sampled:	09/28/00
Matrix:	Water	Received:	09/28/00
Units:	mg/L	Analyzed:	09/29/00
Batch#:	58582		

Field ID	Type	Lab ID	Result	RL	Diln Fac
MW-3	SAMPLE	147762-002	38	1.0	2.000
MW-4	SAMPLE	147762-003	44	0.50	1.000
	BLANK	QC126266	ND	0.50	1.000

Nitrate Nitrogen

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Analyte:	Nitrogen, Nitrate	Batch#:	58582
Field ID:	MW-3	Sampled:	09/28/00
MSS Lab ID:	147762-002	Received:	09/28/00
Matrix:	Water	Analyzed:	09/29/00
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln	Fac
BS	QC126267		2.000	1.900	95	90-110				1.000
BSD	QC126268		2.000	1.950	98	90-110	3	20		1.000
MS	QC126269	0.06650	2.000	2.060	100	80-120				2.000
MSD	QC126270		2.000	2.080	101	80-120	1	20		2.000

Sulfate

Lab #:	147762	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA 300.0
Analyte:	Sulfate	Batch#:	58582
Field ID:	MW-3	Sampled:	09/28/00
MSS Lab ID:	147762-002	Received:	09/28/00
Matrix:	Water	Analyzed:	09/29/00
Units:	mg/L		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln	Fac
BS	QC126267		20.00	19.91	100	90-110				1.000
BSD	QC126268		20.00	19.79	99	90-110	1	20		1.000
MS	QC126269	37.58	20.00	57.99	102	80-120				2.000
MSD	QC126270		20.00	59.18	108	80-120	2	20		2.000