THIRD QUARTER 2010 GROUNDWATER MONITORING REPORT

REDWOOD REGIONAL PARK
SERVICE YARD
OAKLAND, CALIFORNIA

Prepared for:

EAST BAY REGIONAL PARK DISTRICT
OAKLAND, CALIFORNIA

November 2010

STELLAR
ENVIRONMENTAL SOLUTIONS, INC.
GEOSCIENCE & ENGINEERING CONSULTING

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Prepared by:

STELLAR ENVIRONMENTAL SOLUTIONS, INC.
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November 8, 2010

Project No. 2010-02

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November 8, 2010

Mr. Jerry Wickham, P.G.
Hazardous Materials Specialist
Local Oversight Program
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Third Quarter 2010 Groundwater and Surface Water Monitoring Report — Redwood Regional Park Service Yard Site, Oakland, California (ACEH Fuel Leak Case No. RO0000246)

Dear Mr. Wickham:

Attached is the referenced 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 (EBRPD), and follows previous site investigation and remediation activities (conducted since 1993) associated with former leaking UFSTs. The key regulatory agencies for this investigation are the Alameda County Department of Environmental Health, the Regional Water Quality Control Board, and the California Department of Fish and Game.

This report summarizes Third Quarter 2010 groundwater and surface water monitoring activities conducted on October 28, 2010. In addition to the activities typically conducted during a quarterly groundwater monitoring event, water quality parameters including dissolved oxygen were taken to assess the effectiveness of the ORC™ injection conducted during the first quarter of 2010. Ongoing bioventing activities are reported in technical submittals separate from the quarterly monitoring reports; however, brief summaries of salient information are included in the quarterly reports.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge. If you have any questions regarding this report, please contact either Mr. Matt Graul of the EBRPD or me (510-644-3123).

Sincerely,

Richard S. Makdisi, R.G., R.E.A.
Principal and Project Manager

cc: Carl Wilcox, California Department of Fish and Game
Matt Graul, East Bay Regional Park District
State of California GeoTracker System
Alameda County Department of Environmental Health ftp system

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1.0 INTRODUCTION

PROJECT BACKGROUND

The subject property is the East Bay Regional Park District (EBRPD) 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 both former underground fuel storage tanks (UFSTs) that contained gasoline and diesel fuel. The Alameda County Department of Environmental Health (ACEH) has provided regulatory oversight of the investigation since its inception (ACEH Fuel Leak Case No. RO0000246). Other regulatory agencies with historical involvement in site review include the Regional Water Quality Control Board (Water Board) and the California Department of Fish and Game (CDFG).

OBJECTIVES AND SCOPE OF WORK

The overall objective of the latest remedial action is to continue trying to reduce the residual hydrocarbons in the source area and in the downgradient slope area (which is inaccessible to any remedies other than in-situ). Historical remedial efforts have shown that residual hydrocarbons entrained in subsurface material and/or stratigraphic traps are continuing to release significant amounts of hydrocarbons into the groundwater. This report discusses the following activities conducted/coordinated by Stellar Environmental Solutions, Inc. (Stellar Environmental) between July 1 and September 30, 2010 (Third Quarter 2010):

- Collecting water levels in site wells to determine shallow groundwater flow direction
- Sampling site wells for contaminant analysis and natural attenuation indicators
- Collecting surface water samples for contaminant analysis
- Performing quarterly monitoring and maintenance of bioventing system operation

HISTORICAL CORRECTIVE ACTIONS AND INVESTIGATIONS

Other Stellar Environmental reports have discussed previous site remediation and investigations, site geology and hydrogeology, residual site contamination, conceptual model for contaminant fate and transport, and hydrochemical trends and plume stability. Section 8.0 (References and Bibliography) of this report lists all technical reports for the site.

The general phases of site work included:

- An October 2000 Feasibility Study report for the site, submitted to ACEH, which provided detailed analyses of the regulatory implications of the site contamination and a request for the assessment and implementation of viable corrective actions (Stellar Environmental, 2000d).
- Two instream bioassessment events, conducted in April 1999 and January 2000, to evaluate potential impacts to stream biota associated with the site contamination. No impacts were documented.
- Additional monitoring well installations and corrective action by ORC™ injection proposed by Stellar Environmental and approved by ACEH in its January 8, 2001 letter to the EBRPD. Two phases of ORC™ injection were conducted—in September 2001 and July 2002.
- Groundwater monitoring and sampling, conducted on a quarterly basis since project inception (in November 1994). A total of 11 groundwater monitoring wells are currently available for monitoring.
- A bioventing pilot test, conducted in September and October 2004, to evaluate the feasibility of this corrective action strategy, and installation of the full-scale bioventing system in November and December 2005. Bioventing well VW-3 was decommissioned and two additional bioventing wells (VW-4 and VW-5) were installed on March 4, 2008. However, the bioventing remedy has not been effective to date. Bioventing activities conducted to date have been, and will continue to be, discussed in bioventing-specific technical reports, and updates will be provided in groundwater monitoring progress reports as they relate to this ongoing program.
- An ORC™ injection pilot test, conducted by Stellar Environmental on March 10, 2009, to control historical high levels of hydrocarbons contamination that began to appear in September 2007 in source well MW-2.
- A Remedial Action Workplan (RAW), dated August 20, 2009, prepared by Stellar Environmental in response to a letter from ACEH. ACEH approved the RAW in a letter (dated October 2, 2009) to the EBRPD.
- An ORC™ injection conducted over the full footprint of plume during First Quarter 2010 (on February 1-2), followed by 30-day post-injection monitoring and sampling of key site wells (on March 2).

SITE DESCRIPTION

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 530 feet amsl at Redwood Creek,

which defines the approximate western edge of the project site with regard to this investigation. Figure 1 shows the location of the project site, and Figure 2 presents the site plan.

REGULATORY OVERSIGHT

The lead regulatory agency for the site investigation and remediation is ACEH (Case No. RO0000246), with oversight provided by the Water Board (GeoTracker Global ID T0600100489). The CDFG is also involved with regard to water quality impacts to Redwood Creek. All workplans and reports have been submitted to these agencies. Historical ACEH-approved revisions to the groundwater sampling program have included:

- Discontinuing hydrochemical sampling and analysis in wells MW-1, MW-3, MW-5, and MW-6
- Discontinuing creek surface water sampling at upstream location SW-1
- Reducing the frequency of creek surface water sampling from quarterly to semi-annually. The latter recommendation has not yet been implemented due to the EBRPD's continued concern over potential impacts to Redwood Creek.

The site is in compliance with State Water Resources Control Board's GeoTracker requirements for uploading electronic data and reports. In addition, electronic copies of technical documentation reports published since Second Quarter 2005 have been uploaded to ACEH's file transfer protocol (ftp) system. Per ACEH's October 31, 2005 directive entitled "Miscellaneous Administrative Topics and Procedures," effective January 31, 2006, paper copies of reports will no longer be provided to ACEH.

3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

750 ft Scale: 1 : 25,000 Detail: 13-0 Datum: WGS84

N

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

Redwood Reg. Park Service Yard Oakland, CA	By: MJC	NOVEMBER 2010
	Figure 1	

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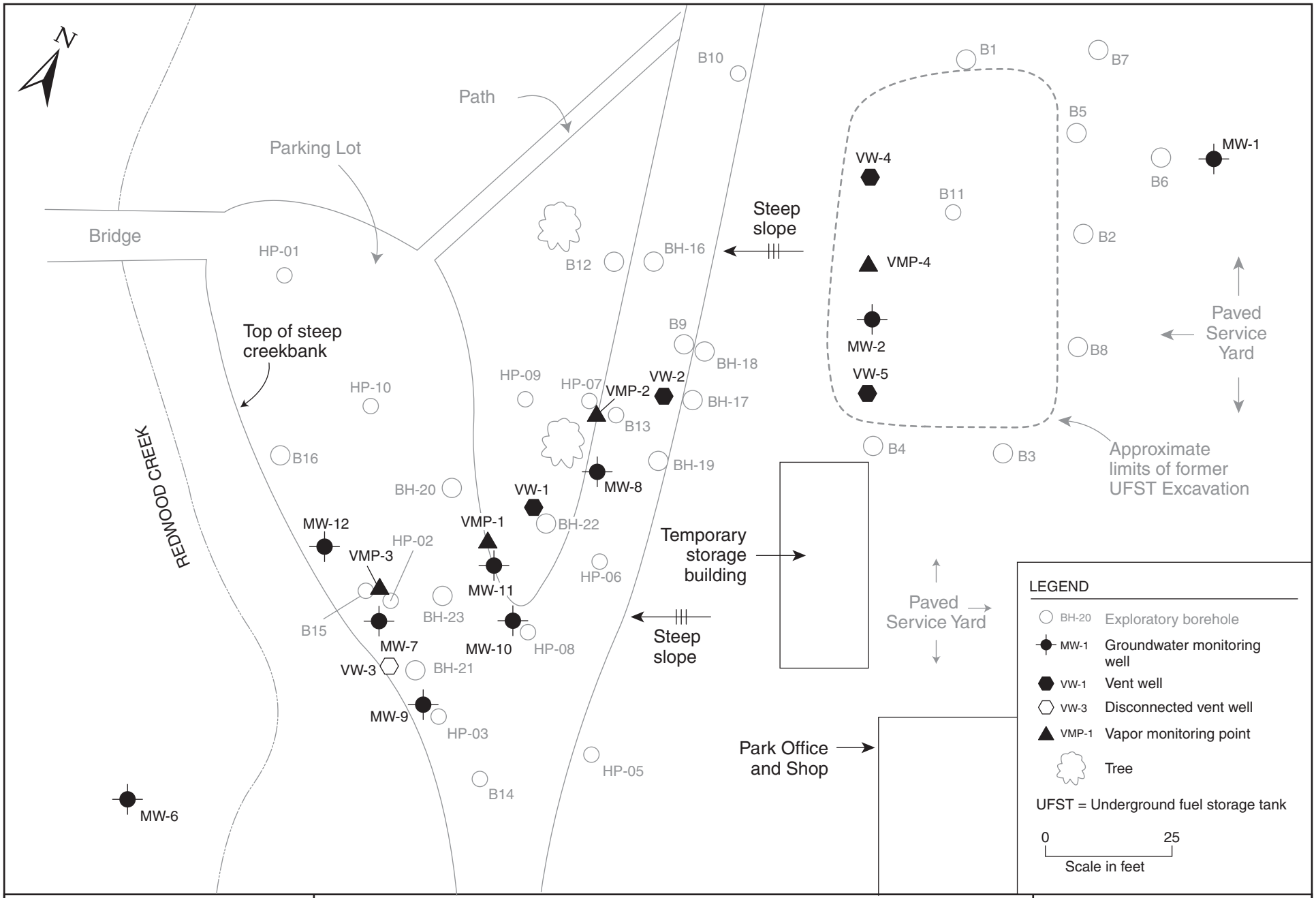
2010-02-04



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SITE PLAN AND WELL LOCATIONS
Redwood Regional Park Service Yard, Oakland, CA

Figure 2

by: MJC | NOVEMBER 2010

2010-02-05

2.0 PHYSICAL SETTING

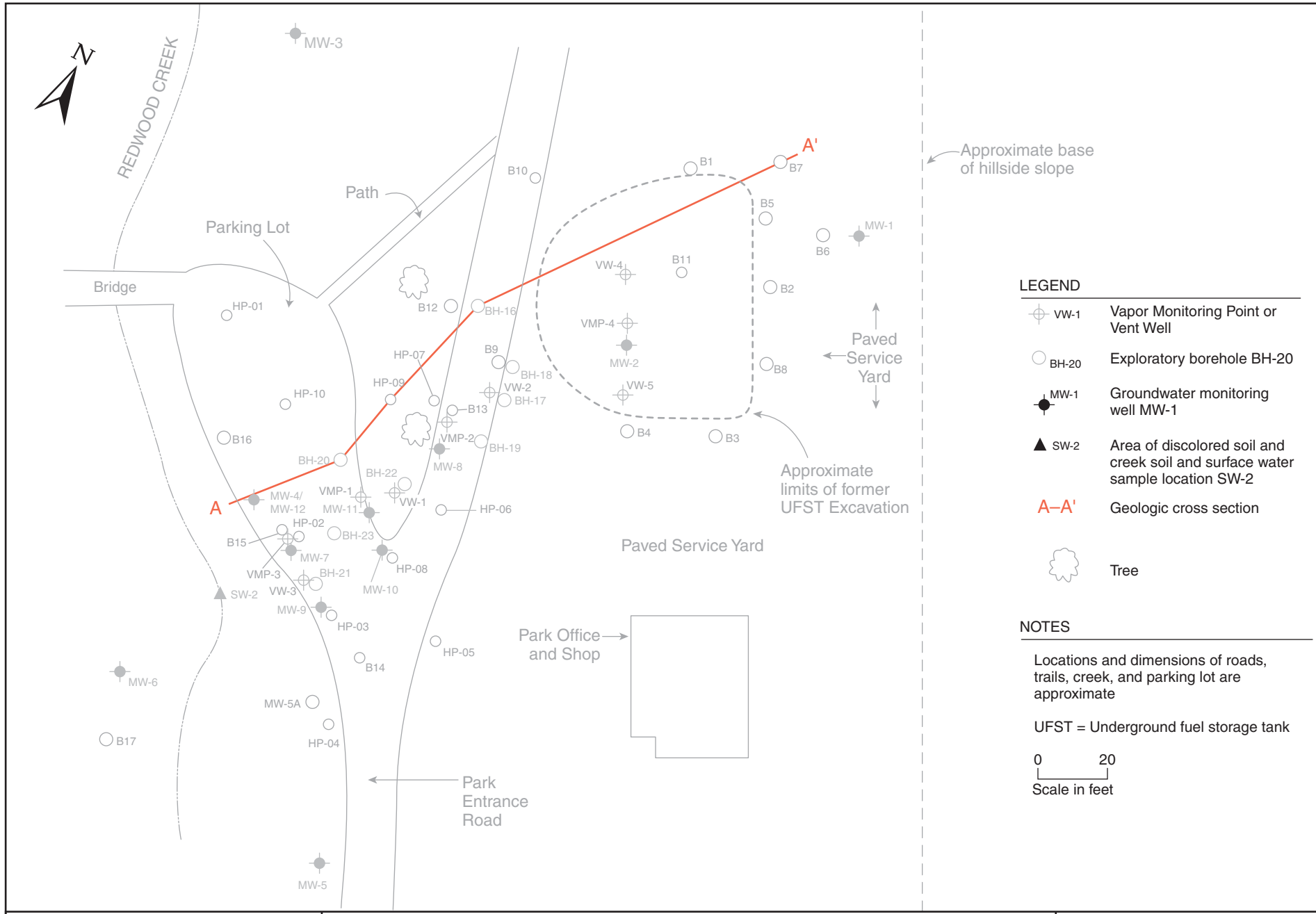
This section discusses the site hydrogeologic conditions based on geologic logging and water level measurements collected at the site since September 1993. Previous Stellar Environmental reports have included detailed discussions of site lithologic and hydrogeologic conditions. In May 2004, ACEH requested an additional evaluation of site lithology—specifically, the preparation of multiple geologic cross-sections both parallel and perpendicular to the contaminant plume's long axis.

SITE LITHOLOGY

Figure 3 shows the location of geologic cross-section aligned along the groundwater gradient axis. Figure 4 shows the cross-section A-A' along the long axis of the groundwater contaminant plume with the zone of ORC™ injection shown. Figure 5 shows the plan view of the early 2010 ORC™ injection areas. Due to the scale of Figure 4, the section show only significant lithologic conditions (soil type and bedrock depth). Additional information on water level depths, historical range of water levels, and inferred thickness of soil contamination are presented in a previous report (Stellar Environmental, 2004c) where six more detailed cross sectional lines are shown.

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 the majority of boreholes, a 5- to 10-foot-thick clayey coarse-grained sand and clayey gravel unit that laterally grades to a clay or silty clay was encountered. This unit overlies a weathered siltstone at the base of the observed soil profile. Soils in the vicinity of MW-1 in the most upgradient part of the site that abuts the canyon slope are inferred to be landslide debris.

A previous report (Stellar Environmental, 2004c) presented a bedrock surface isopleth map (elevation contours for the top of the bedrock surface) in the contaminant plume area. As shown in Figures 4 and 5, the isopleth map indicates the following: The bedrock surface slopes steeply, approximately 0.3 feet/foot, from east to west (toward Redwood Creek) in the upgradient portion of the site (from the service yard to under the entrance road), then shows a gentle east-to-west slope in the downgradient portion of the site (under the gravel parking area) toward Redwood Creek. This general gradient corresponds to the local groundwater flow direction. On the



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GEOLOGIC CROSS-SECTION LOCATION
Redwood Regional Park Service Yard, Oakland, CA

Figure 3

by: MJC | NOVEMBER 2010

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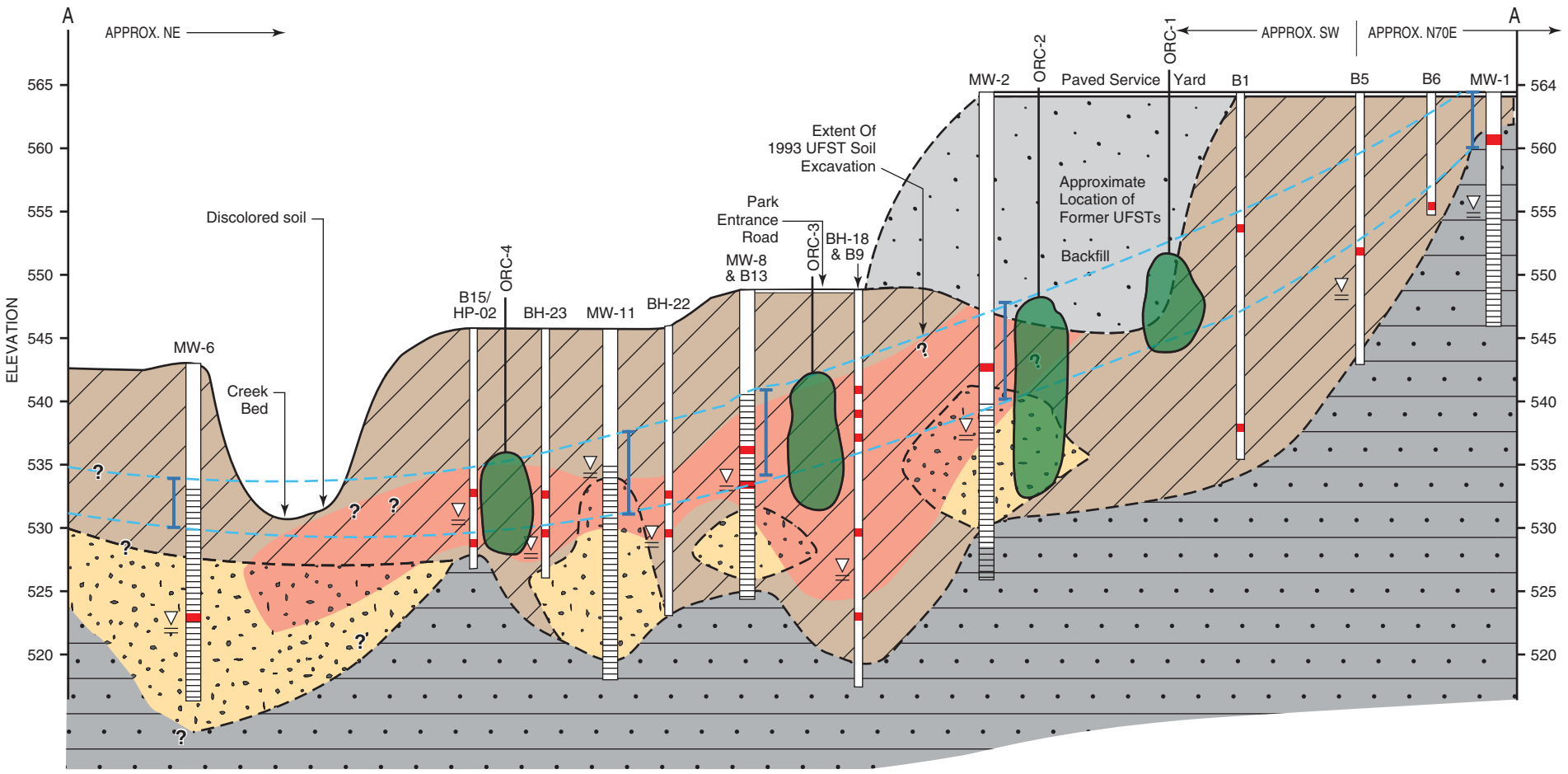

LEGEND

- B1 — Exploratory Boring B1
- Location of soil sample collected for laboratory analysis
- MW-1 — Monitoring Well MW-1
- Location of soil sample collected for laboratory analysis
- Well screen interval
- First occurance of groundwater during drilling
- Projected range of water levels
- Historical range of equilibrated water levels in wells
- Silt/clay
- Backfill
- Sand/gravel
- Zone of soil contamination
- Siltstone (bedrock)

NOTES

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

UFST = Underground fuel storage tank (not to scale)

All elevations are expressed as feet above mean sea level (MSL)

Well casing and boring widths not to scale

Some borings projected into cross section (see Figure 2)

10
Scale in feet
Vertical exaggeration Is 2.5x
0
0
20

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CROSS SECTION A-A' SHOWING FEBRUARY 2010 ORC® INJECTION ZONES

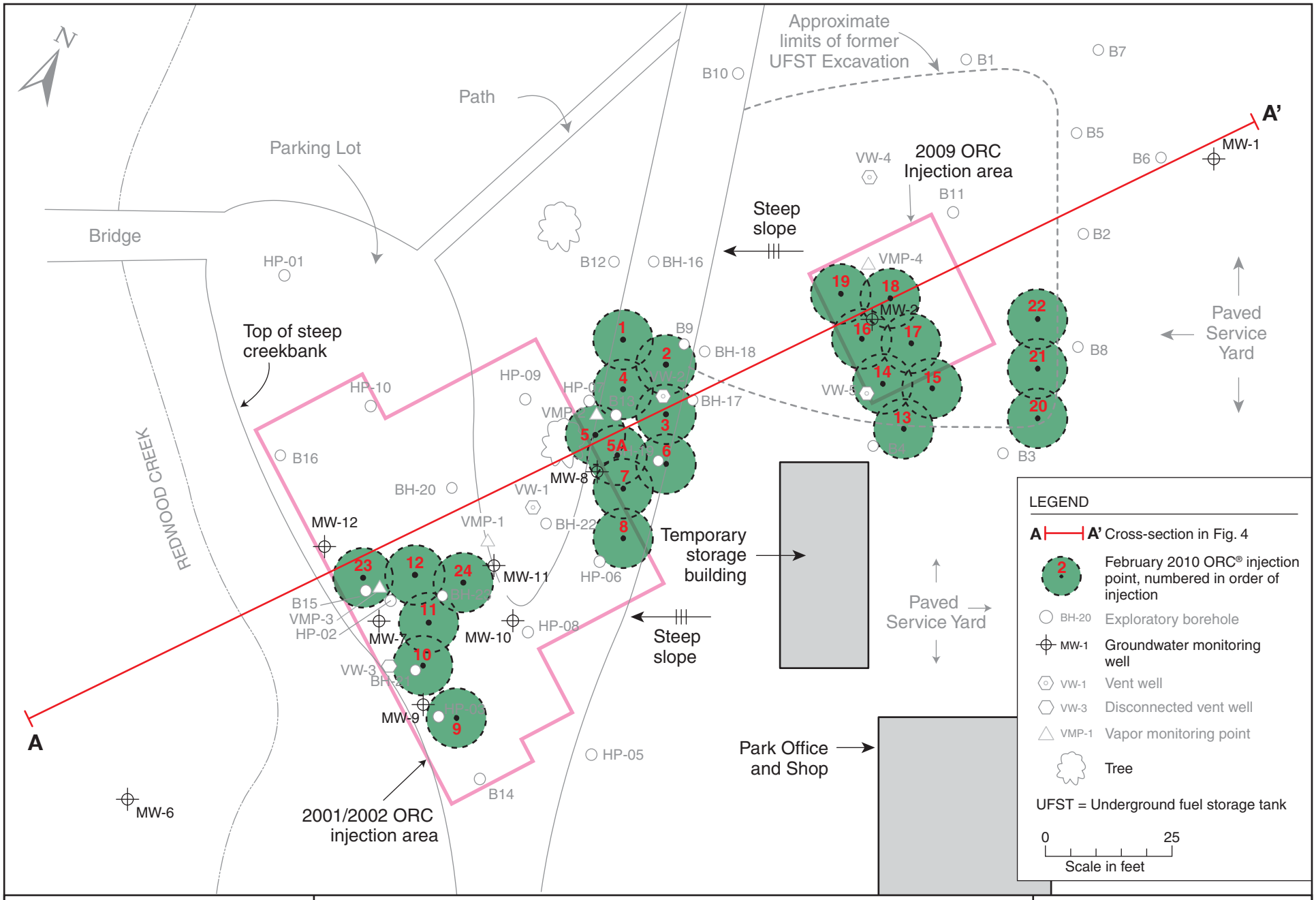
Redwood Regional Park Service Yard, Oakland, CA

Figure 4

by: MJC

NOVEMBER 2010

2010-02-09



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SITE PLAN SHOWING HISTORICAL AND RECENT ORC® INJECTION LOCATIONS

Redwood Regional Park Service Yard, Oakland, CA

Figure 5

by: MJC | NOVEMBER 2010

2010-02-08

southern side of the plume area, bedrock slopes gently from south to north (the opposite of the general topographic gradient). Bedrock topography on the northern side of the plume cannot be determined from the available data.

In the central and downgradient portions of the groundwater contaminant plume (under the entrance road and the parking area), the bedrock surface has local, fairly steep elevation highs and lows, expressing a hummocky surface. Bedrock elevations vary by up to 10 feet over distances of less than 20 feet in this area. Intervening elevation lows create troughs that trend north-south in the central portion of the plume and east-west in the downgradient portion of the plume.

The bedrock surface (and overlying unconsolidated sediment lithology) suggests that it may have undergone channel erosion from a paleostream(s) flowing sub-parallel to present-day Redwood Creek. Because groundwater flows in the unconsolidated sediments that directly overlie the bedrock surface, it is likely that the surface affects local groundwater depth and flow direction. This is an important hydrogeologic control that should be considered if groundwater-specific corrective action is contemplated.

HYDROGEOLOGY

Groundwater at the site occurs under unconfined and semi-confined conditions, generally within the clayey, silty, sand-gravel zone. The top of this zone varies between approximately 12 and 19 feet below ground surface (bgs); the bottom of the water-bearing zone (approximately 25 to 28 feet bgs) corresponds to the top of the siltstone bedrock unit. Seasonal fluctuations in groundwater depth create a capillary fringe of several feet that is saturated in the rainy period (late fall through early spring) and unsaturated during the remainder of the year. The thickness of the saturated zone plus the capillary fringe varies between approximately 10 and 15 feet in the area of contamination. Local perched water zones have been observed well above the top of the capillary fringe. Consistent with the bedrock isopleth map showing an elevation depression in the vicinity of MW-11, historical groundwater elevations in MW-11 are sporadically lower than in the surrounding area. As discussed in the previous subsection, local groundwater flow direction likely is more variable than expressed by groundwater monitoring well data, due to local variations in bedrock surface topography.

We assume a site groundwater velocity of 7 to 10 feet per year, using general look-up tables for permeability characteristics for the site-specific lithologic data obtained from site investigations. This velocity estimate is conservatively low, but does meet minimum-distance-traveled criteria from the date when contamination was first observed in Redwood Creek (1993) relative to the time of the UFST installations (late 1970s). Locally, however, the groundwater velocity could vary significantly. Calculating the specific hydraulic conductivity critical to accurately

estimating site-specific groundwater velocity would require direct testing of the water-bearing zone through a slug or pumping test.

Redwood Creek, which borders the site to the west, 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 exceeding 1 foot during the winter and spring wet season. The creek is a gaining stream (i.e., it is recharged by groundwater seeps and springs) in the vicinity of the site, and discharges into Upper San Leandro Reservoir located approximately 1 mile southeast of the site. During low-flow conditions, the groundwater table is below the creek bed in most locations (including the area of historical contaminated groundwater discharge); consequently, there is little to no observable creek flow at these times.

The following groundwater gradient information is based on the Third Quarter 2010 monitoring data contained in Section 6.0 of this report. In the upgradient portion of the site (between well MW-1 and MW-2, in landslide debris and the former UFST excavation backfill), the groundwater gradient during this event was measured at approximately 0.22 feet per foot. Downgradient from (west of) the UFST source area (between MW-2 and Redwood Creek), the groundwater gradient during this event was approximately 0.23 feet per foot. The average groundwater elevation was 1.7 feet lower than the previous (June 2010) event, with the greatest decrease of 3.7 feet measured in MW-8 and the lowest decrease measured in well MW-6 of 0.4 foot. The direction of shallow groundwater flow during the current event was to the west-southwest (toward Redwood Creek), which is consistent with historical site groundwater flow direction.

3.0 REGULATORY CONSIDERATIONS

This section summarizes the regulatory considerations with regard to surface water and groundwater contamination. There are no ACEH or Water Board cleanup orders for the site, although all site work has been conducted under oversight of these agencies.

GROUNDWATER CONTAMINATION

As specified in the Water Board's *San Francisco Bay Region Water Quality Control Plan* (Water Board, 1995), all groundwater is considered a potential source of drinking water unless otherwise approved by the Water Board, and are also assumed to ultimately discharge to a surface water body and potentially impact aquatic organisms. While it is likely that site groundwater would satisfy geology-related criteria for exclusion as a drinking water source (excessive total dissolved solids and/or insufficient sustained yield), Water Board approval for this exclusion has not been obtained for the site. As summarized in Table 5 (in Section 7.0), site groundwater contaminant levels are compared to two sets of criteria: 1) Water Board Tier 1 Environmental Screening Levels (ESLs) for residential sites where groundwater *is* a current or potential drinking water source; and 2) ESLs for residential sites where groundwater *is not* a current or potential drinking water source.

As stipulated in the ESL guidance (Water Board, 2008), the ESLs are not cleanup criteria; rather, they are conservative screening-level criteria designed to be protective of both drinking water resources and aquatic environments in general. The groundwater ESLs are composed of multiple components, including ceiling value, human toxicity, indoor air impacts, and aquatic life protection. Exceedance of ESLs suggests that additional investigation and/or remediation is warranted. While drinking water standards [e.g., Maximum Contaminant Levels (MCLs)] are published for the site contaminants of concern, ACEH has indicated that impacts to nearby Redwood Creek are of primary importance, and that site target cleanup standards should be evaluated primarily in the context of surface water quality criteria.

SURFACE WATER CONTAMINATION

As summarized in Table 5 (in Section 7.0), site surface water contaminant levels are compared to the most stringent screening level criteria published by the State of California, U.S. Environmental Protection Agency, and U.S. Department of Energy. These screening criteria address chronic and acute exposures to aquatic life. As discussed in the ESL document (Water

Board, 2008), benthic communities at the groundwater/surface water interface (e.g., at site groundwater discharge location SW-2) are assumed to be exposed to the full concentration of groundwater contamination prior to dilution/mixing with the surface water). This was also a fundamental assumption in the instream benthic macroinvertebrate bioassessment events, which documented no measurable impacts.

Historical surface water sampling in the immediate vicinity of contaminated groundwater discharge (SW-2) has sporadically documented petroleum contamination, usually in periods of low stream flow, and generally at concentrations several orders of magnitude less than adjacent (within 20 feet) groundwater monitoring well concentrations. It is likely that mixing/dilution between groundwater and surface water precludes obtaining an "instantaneous discharge" surface water sample that is wholly representative of groundwater contamination at the discharge location. Therefore, the most conservative assumption is that surface water contamination at the groundwater/surface water interface is equivalent to the upgradient groundwater contamination (e.g., site downgradient wells MW-7, MW-9, and MW-12).

While site target cleanup standards for groundwater have not been determined, it is likely that no further action will be required by regulatory agencies when groundwater (and surface water) contaminant concentrations are all below their respective screening level criteria. Residual contaminant concentrations in excess of screening level criteria might be acceptable to regulatory agencies if a more detailed risk assessment (e.g., Tier 2 and/or Tier 3) demonstrates that no significant impacts are likely.

4.0 THIRD QUARTER 2010 QUARTERLY MONITORING ACTIVITIES

This section presents the quarterly creek surface water and groundwater sampling and analytical methods for the most recent groundwater monitoring event (Third Quarter 2010), conducted in September 2010. A summary of bioventing-related activities is also provided.

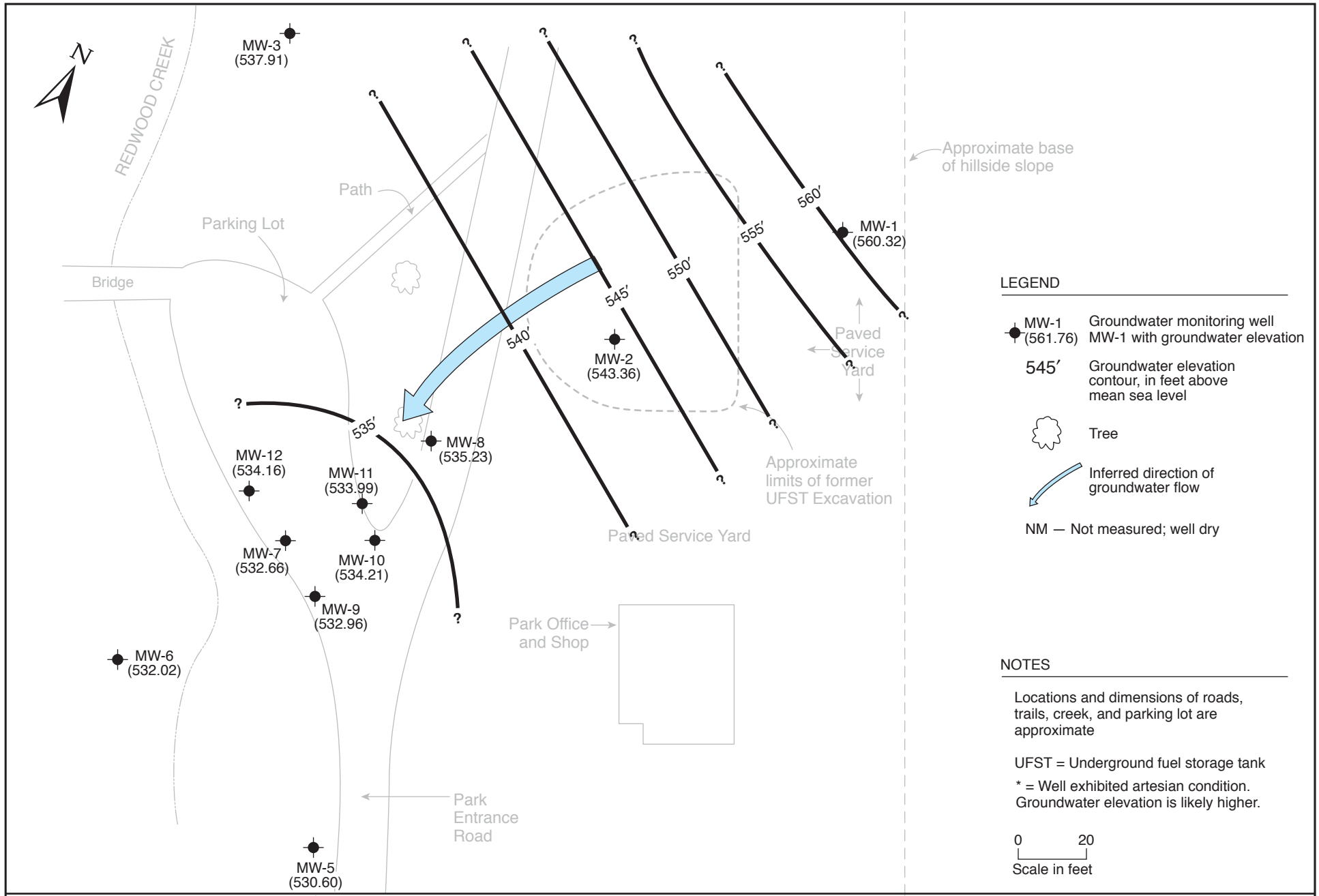
Groundwater and surface water analytical results are summarized in Section 7.0. Monitoring and sampling protocols were in accordance with the ACEH-approved workplan (Stellar Environmental, 1998a). Current Second Quarter 2010 event activities included:

- Measuring static water levels in all 11 site wells
- Collecting post-purge groundwater samples for laboratory analysis of site contaminants and as well as chemical parameters including dissolved oxygen (DO) from wells located within (or potentially within) the groundwater plume (MW-2, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12)
- Collecting Redwood Creek surface water samples for laboratory analysis from locations SW-2 and SW-3

Redwood Creek surface water sampling and groundwater monitoring and sampling was conducted on September 28, 2010. The locations of all site monitoring wells and creek water sampling locations are shown on Figure 2 (in Section 1.0). Appendix A contains historical groundwater elevation data. Appendix B contains the groundwater monitoring field records for the current event. Figure 6 is a groundwater elevation map constructed from the Third Quarter 2010 event monitoring well elevation data. Table 1 summarizes the groundwater elevation data.

GROUNDWATER LEVEL MONITORING AND SAMPLING

Groundwater monitoring well water level measurements, purging, sampling, and field analyses were conducted by Blaine Tech Services under the supervision of Stellar Environmental personnel. Groundwater sampling was conducted 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 ACEH in the workplan (Stellar Environmental, 1998a).



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GROUNDWATER ELEVATION MAP–September 28, 2010
Redwood Regional Park Service Yard, Oakland, CA

Figure 6

by: MJC | NOVEMBER 2010

2010-02-07

Table 1
Groundwater Monitoring Well Construction
and Groundwater Elevation Data – September 28, 2010

Well	Well Depth	Screened Interval	TOC Elevation	Groundwater Elevation (9/28/10)
MW-1	18	7 to17	565.83	560.32
MW-2	36	20 to 35	566.42	543.36
MW-3	42	7 to 41	560.81	537.91
MW-5	26	10 to 25	547.41	530.60
MW-6	26	10 to 25	545.43	532.02
MW-7	24	9 to24	547.56	532.66
MW-8	23	8 to 23	549.13	535.23
MW-9	26	11 to 26	549.28	532.96
MW-10	26	11 to 26	547.22	534.21
MW-11	26	11 to 26	547.75	533.99
MW-12	25	10 to 25	544.67	534.16

Notes:

TOC = top of casing

Wells MW-1 through MW-6 are 4-inch diameter; all other wells are 2-inch diameter.

All elevations are expressed in feet above U.S. Geological Survey mean sea level.

As the first task of the monitoring event, static water levels were measured using an electric water level indicator. The wells to be sampled for contaminant analyses were then purged (by bailing and/or pumping) of three wetted casing volumes. Aquifer stability parameters (temperature, pH, electrical conductivity, and turbidity) were measured after each purged casing volume to ensure that representative formation water would be sampled. In addition to the aquifer stability parameters, DO is being measured to evaluate the effects of the March 2009 and February 2010 ORC™ applications. To minimize the potential for cross contamination, wells were purged and sampled in order of increasing contamination (based on the analytical results of the previous quarter).

The sampling-derived purge water and decontamination rinseate (approximately 46 gallons) from the current event was containerized in the onsite aboveground storage tank. Purge water from future events will continue to be accumulated in the onsite tank until it is full, at which time the water will be transported offsite for proper disposal.

CREEK SURFACE WATER SAMPLING

Surface water sampling was conducted by Stellar Environmental personnel on September 28, 2010. Surface water samples were collected from Redwood Creek location SW-2 (immediately downgradient of the former UFST source area and within the area of documented creek bank soil contamination), and at SW-3 (located approximately 500 feet downstream of the SW-2 location). In accordance with a previous Stellar Environmental recommendations approved by ACEH, upstream sample location SW-1 is no longer part of the surface water sampling program.

At the time of sampling, the creek was at a very low stage; the water depth at the SW-2 location was approximately 0.5 inches. There was no flow. Orange algae and sheen was observed. Location SW-3 was dry.

BIOVENTING-RELATED ACTIVITIES

The bioventing system was installed and started up in December 2005/January 2006. Weekly system monitoring and air flow optimization events were conducted for a 1-month period in January and February 2006. Bioventing system operations and maintenance events had been conducted monthly since March 2006; however, they were reduced to quarterly events beginning in 2009. Redwood Regional Park staff checks the system on a weekly basis to ensure that it is continuing to function properly, and will notify Stellar Environmental in the event of a problem. As noted previously, two new bioventing wells (VW-4 and VW-5) were installed on March 4, 2008 to augment the system, and VW-3, which historically has seen no change in pressurization, was disconnected. Bioventing activities are discussed in detail in separate technical documents.

5.0 THIRD QUARTER 2010 ANALYTICAL RESULTS

This section presents the field and laboratory results of the current monitoring event. Table 2 summarizes the contaminant analytical results. Figure 7 shows the contaminant results and the inferred limits of the gasoline groundwater plume. Appendix C contains the certified analytical laboratory report and chain-of-custody record. Appendix D summarizes the historical groundwater and surface water analytical results.

GROUNDWATER AND SURFACE WATER ANALYTICAL RESULTS

Third Quarter 2010 site groundwater contaminant concentrations exceeded the groundwater ESL for total volatile hydrocarbons as gasoline (TVHg) in all of the seven wells sampled. Concentrations of total extractable hydrocarbons as diesel (TEHd) exceeded the ESL in all wells but MW-2, where the concentrations was below the laboratory detection limit. The ESL for benzene was exceeded in MW-8, MW-9, MW-10, and MW-11; the ESL for ethylbenzene was exceeded in MW-7, MW-9, and MW-11; the ESL for total xylenes was exceeded in MW-9. Methyl tertiary butyl ether (MTBE) was above the ESL in wells MW-7, MW-9, MW-11, and MW-12. Toluene was not detected above the laboratory detection limit in any of the seven wells sampled.

The maximum concentration of TVHg was detected in MW-9 and the maximum TEHd concentration was detected in MW-7 (located in the downgradient area of the plume). The northern edge of the plume in the downgradient area of the plume is defined by well MW-12. The southern edge of the plume in the downgradient area is not strictly defined; however, based on historical groundwater data, it appears to be located between well MW-9 and well MW-5. The current event contaminant plume geometry is consistent with historical contaminant distribution. While the center of contaminant mass in groundwater is generally located downgradient of the former source area, historically, contamination also has been observed in the former source area. Gasoline concentrations, in general, slightly increased as compared to the same time last year; however, diesel concentrations have decreased as compared to the same time last year.

TEHd was detected at surface water sampling location SW-2 at 66 micrograms per liter (µg/L); which is below the ESL of 100 µg/L. No other contaminants were detected above their

respective laboratory detection limits in the surface water sample. Location SW-3 could not be sampled during this event as the location was dry.

Table 2
Groundwater and Surface Water Samples – September 28, 2010
Analytical Results

Location	Oxygen Reduction Potential (mV)	Dissolved Oxygen (mg/L)	Contaminant Concentrations						
			TVHg	TEHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
GROUNDWATER SAMPLES									
MW-2	96	22.24	**910**	<50	<0.5	<0.5	<0.5	1.45	<2.0
MW-7	-46	0.39	**6,300**	**4,100**	<0.5	<0.5	**93**	6.0	**69**
MW-8	-37	0.26	**900**	**1,300**	**2.9**	<0.5	22	<2.5	<10
MW-9	-21	0.76	**13,000**	**2,900**	**43**	<0.5	**300**	**47.9**	**43**
MW-10	20	0.39	**140**	**360**	**2.1**	<0.5	1.4	<0.5	4.3
MW-11	-15	0.60	**3,000**	**2,200**	**18**	<0.5	**41**	0.55	**17**
MW-12	74	0.70	**380**	**220**	<0.5	<0.5	1.7	<0.5	**8.0**
Groundwater ESLs [(a)]	*NLP*	*NLP*	*100 / 210*	*100 / 210*	*1.0 / 46*	*4.0 / 130*	*30 / 43*	*20 / 100*	*5.0 / 1,800*
REDWOOD CREEK SURFACE WATER SAMPLES									
SW-2	NA	NA	<50	66	<0.5	<0.5	<0.5	<0.5	<2.0
SW-3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Surface Water Screening Levels [(b)]	*NLP*	*NLP*	*100*	*100*	*1.0*	*40*	*30*	*20*	*5.0*

Notes:

[(a)] ESLs = Water Board Environmental Screening Levels, where groundwater is/is not a potential drinking water resource (Water Board, 2008)

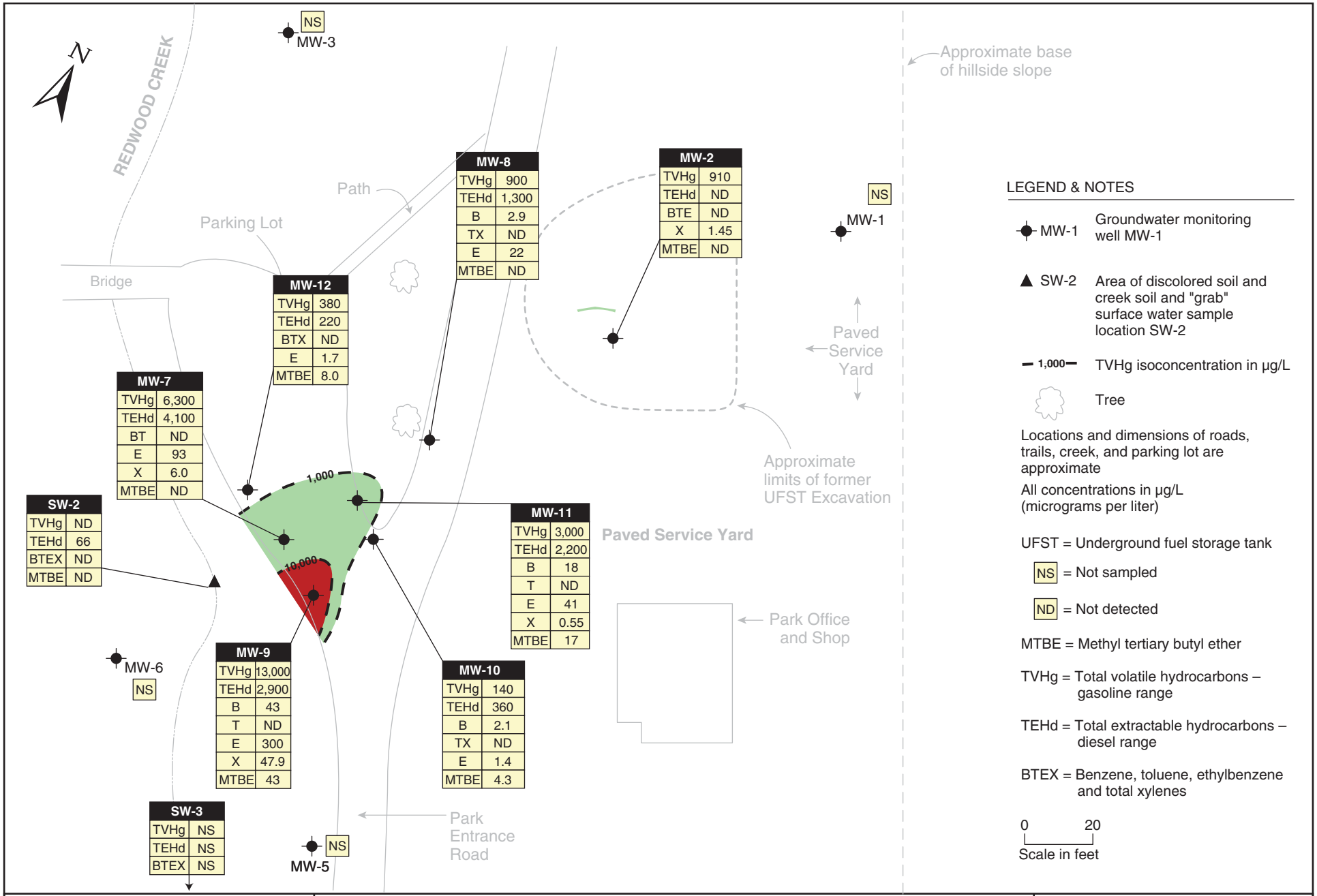
[(b)] Water Board Surface Water Screening Levels for freshwater habitats (Water Board, 2008)

NA = not analyzed
NLP = no level published

MTBE = methyl tertiary-butyl ether
TEHd = total extractable hydrocarbons - diesel range
TVHg = total volatile hydrocarbons - gasoline range

All contaminant concentrations are expressed in micrograms per liter (µg/L), equivalent to parts per billion. Samples in **bold-face** type exceed the ESLs and/or surface water screening levels where groundwater is a potential drinking water resource

Dissolved oxygen concentrations are expressed in milligrams per liter (mg/L).



LEGEND & NOTES

- MW-1 — Groundwater monitoring well MW-1
- SW-2 — Area of discolored soil and creek soil and "grab" surface water sample location SW-2
- 1,000 — TVHg isoconcentration in µg/L
- Tree

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

NS = Not sampled

ND = Not detected

MTBE = Methyl tertiary butyl ether

TVHg = Total volatile hydrocarbons – gasoline range

TEHd = Total extractable hydrocarbons – diesel range

BTEX = Benzene, toluene, ethylbenzene and total xylenes

0 20

Scale in feet

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

ANALYTICAL RESULTS AND GASOLINE PLUME—SEPTEMBER 2010

Redwood Regional Park Service Yard, Oakland, CA

Figure 7

by: MJC | NOVEMBER 2010

2010-02-03

QUALITY CONTROL SAMPLE ANALYTICAL RESULTS

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

EVALUATION OF EFFECT OF FEBRUARY 2010 ORC™ INJECTION

Despite the emphasis on oxygen and aerobic degradation, it is well known and widely accepted that natural attenuation of petroleum hydrocarbons at many sites primarily occurs anaerobically using alternate electron acceptors such as NO_3^-, Fe^{+3}, SO_4^{-2} and CO_2. However, clearly at this site, Advanced ORC™ is designed to provide a relatively long-term oxygen source for aerobic bioremediation. Laboratory studies have demonstrated a linear oxygen release rate of ORC™ as engineered by CRT™ (intercalation with phosphate), providing an efficient and steady supply of oxygen. Field results continue to confirm the efficacy of Advanced ORC™ as a cost-effective approach to contact recalcitrant residual hydrocarbons entrained in the subsurface materials and enhance natural attenuation.

The injection of the February 2010 ORC™ into the plume area followed a historical effort of remedial action to reduce the residual hydrocarbons in the source area and downgradient slope area that is inaccessible to any remedies other than in-situ. Historical efforts to address the continued hydrocarbon input into the groundwater have focused on enhancing reduction of the residual hydrocarbons entrained in subsurface material and/or stratigraphic traps. The dissolved fraction that results from this release forms a recalcitrant plume that still daylights at the Redwood Creek interface. As described in the analytical results below, this most recent remedial action continues to support the trend line of a reduction in hydrocarbon plume concentrations, but the concentration still remains well above the ESLs. The following is a discussion of the effect of the February 2010 ORC™ injection remedy.

Groundwater Analytical Results

The Third Quarter 2010 monitoring event took place approximately 250 days after the ORC™ treatment. The results of this and previous post injection monitoring events suggest that an in-situ interference with the microbial activity is affecting the hydrocarbon reduction process. The upgradient portion of the plume (particularly wells MW-8 and MW-11) showed the most hydrocarbon concentration reductions compared with Q3-2009, with well MW-2 showing the most significant percent decrease in both gasoline and diesel during this quarter compared the previous June 2010 Quarterly sampling. However, the lower portion of the plume, specifically at well MW-9, shows an increase in gasoline and diesel concentrations.

Dissolved Oxygen

DO is the most thermodynamically favored electron acceptor used in aerobic biodegradation of hydrocarbons. Active aerobic biodegradation of petroleum hydrocarbon compounds requires at least 1 to 2 milligrams per liter (mg/L) of DO in groundwater. During aerobic biodegradation, DO levels are reduced in the hydrocarbon plume as respiration occurs. Therefore, DO levels that vary inversely to hydrocarbon concentrations are consistent with the occurrence of aerobic biodegradation.

During the First Quarter 2010 sampling event, DO concentrations in site wells ranged from 0.28 mg/L to 2.41 mg/L. During the Second Quarter 2010 sampling event, DO concentrations ranged from 0.30 mg/L to 24.01 mg/L. During this third quarter event, DO concentrations ranged from 0.26 mg/L to 22.24 mg/L. An average DO decrease of 0.71 mg/L was measured in the wells, which indicates the effect of the ORC™ injection may be decreasing as is normal over time.

ORC™ MONITORING ACTIVITIES

During this quarterly sampling event, alternate electron acceptors including nitrates, sulfates, biological oxygen demand (BOD), and chemical oxygen demand (COD) were analyzed to track the ORC™ utilization. One concern about the use of ORC™ is that other non-hydrocarbon-utilizing microorganisms will use the product as well, without the benefit of hydrocarbon reduction occurring as effectively. The oxygen demand exerted by extraneous oxygen sinks such as nitrates and sulfates can then be estimated to evaluate its equivalent to the oxygen demand exerted by the contaminants of concern. Table 3 includes the results of these additional analyses.

The effectiveness of the ORC™ injection corrective action program in reducing groundwater contaminant concentrations in site wells will continue to be evaluated in subsequent quarterly groundwater monitoring events. This evaluation will occur though the comparison of the pre-injection baseline data with post-injection groundwater monitoring well analytical results over subsequent quarterly sampling events. The post-injection groundwater data are evaluated in the context of effectiveness of the corrective action, including DO and hydrochemical trends.

The main active ingredient in Advanced ORC™ is magnesium peroxide. The optimal pH of such a system is adjusted to 7 to 9. Under these conditions, the remedy product will release its activity partially as hydrogen peroxide and partially as oxygen. This allows for the initial chemical oxidation to take place, starting the breakup of the contaminants. The oxygen is then released more slowly, which will assist bioremediation over a period of up to 1.5 years.

Because only a moderate reduction in hydrocarbon contaminant concentrations has been observed in the key site wells since the injection, it is suspected that microbial biodegradation activity may be occurring preferentially in natural site constituents, in competition with the target

residual hydrocarbons. This hypothesis is also supported by the only rapid decrease in concentrations being observed in well MW-2, which is located in fill material in the historical excavation area. This hypothesis can be tested by continuing to collect additional site chemical parameters during sampling in subsequent quarterly monitoring events. Table 3 contains the results from the parameter analysis conducted during this September 2010 second quarter sampling event.

Table 3
Electron Acceptors and Oxygen Demand – September 28, 2010
Analytical Results

Location	Concentrations			
	Nitrates	**Sulfates**	**BOD**	**COD**
MW-2	0.77	150	<5.0	19
MW-7	<0.05	0.67	8.9	28
MW-8	<0.05	55	5.8	37
MW-12	<0.05	20	<5.0	32

COD = Chemical oxygen demand
BOD = Biological oxygen demand

6.0 SUMMARY, CONCLUSIONS AND PROPOSED ACTIONS

The following conclusions and proposed actions are based on the findings of the current event activities, as well as on salient historical data.

SUMMARY AND CONCLUSIONS

- The overall objective of the current (additional) remedial action is to continue trying to reduce the residual hydrocarbons in the source area and in the downgradient slope area (which is inaccessible to any remedies other than in-situ). Historical remedial efforts have shown that residual hydrocarbons entrained in subsurface material and/or stratigraphic traps are continuing to release significant amounts of hydrocarbons into the groundwater. The dissolved fraction that results from this release forms a recalcitrant plume that still daylights at the Redwood Creek interface. As described in the report, the Second Quarter 2010 remedial action continues to support the trend line of a reduction in hydrocarbon plume concentrations, although the levels remain above the ESLs.
- Groundwater sampling has been conducted on an approximately quarterly basis since November 1994. A total of 11 site wells are available for monitoring; 7 of the available wells are currently monitored for contamination.
- Site contaminants of concern include TVHg; TEHd; benzene, toluene, ethylbenzene, and total xylenes (BTEX); and MTBE. Current groundwater concentrations exceed regulatory screening levels for TVHg, TEHd, benzene, ethylbenzene, total xylenes, and MTBE in groundwater and TEHd in surface water.
- The primary environmental risk is discharge of contaminated groundwater to the adjacent Redwood Creek. A stream bioassessment concluded that there were no direct impacts to the surface water benthic community; however, groundwater contamination is sporadically detected in surface water samples, and there is historical visual evidence of plume discharge at the creek/groundwater interface. Surface water samples have sporadically exceeded surface water ESL criteria for gasoline, diesel, and benzene, and generally only under low-creek flow conditions. An in-stream bioassessment evaluation conducted from 1999 to 2000 determined that there were no impacts to the benthic macroinvertebrate community.
- The existing well layout adequately constrains the lateral extent of groundwater contamination, and the vertical limit is very likely the top of the near-surface (25 to 28

feet bgs) siltstone bedrock. The saturated interval extends approximately 12 to 15 feet from top of bedrock through the capillary fringe. Groundwater elevations fluctuate seasonally, creating a capillary fringe that varies seasonally in thickness.

- To address concerns raised by ACEH in its March 24, 2009 letter regarding source area and overall sitewide contamination, Stellar Environmental developed a corrective action workplan entailing injection of Advanced ORC™. On February 1-2, 2010, in accordance with the ACEH-approved workplan, a total of 24 injection points were drilled to various depths using direct-push technology to deliver approximately 2,075 pounds of Advanced ORC™ mixed in a 30 percent water slurry mix to the subsurface.
- In accordance with ACEH requirements, groundwater sampling of the five key plume wells (MW-2, MW-7, MW-8, MW-9, and MW-11) was conducted on March 2, 2010, approximately 1 month after the February 1-2, 2010 Advanced ORC™ injection event. Subsequent quarterly monitoring events have shown a slight increase in DO signifying the ORC™ is present in the system; however, concentrations have not substantially decreased except in well MW-2.
- Third Quarter 2010 site groundwater contaminant concentrations exceeded the groundwater ESL for TVHg in all seven wells sampled. Concentrations of TEHd were found above the ESL in all wells except MW-2, which did not contain TEHd above the laboratory detection limit.
- The ESL for benzene was exceeded in MW-8, MW-9, MW-10, and MW-11; the ESL for ethylbenzene was exceeded in MW-7, MW-9, and MW-11; the ESL for total xylenes was exceeded in MW-9. Methyl tertiary butyl ether (MTBE) was above the ESL in wells MW-7, MW-9, MW-11, and MW-12. Toluene was not detected above the laboratory detection limit in any of the seven wells sampled.
- The Third Quarter 2010 monitoring event took place approximately 250 days after the ORC™ treatment. The upgradient portion of the plume (particularly wells MW-8 and MW-11) showed the most hydrocarbon concentrations reductions compared with Q3-2009, with well MW-2 showing the most significant percent decrease in both gasoline and diesel during this quarter compared the previous June 2010 Quarterly sampling. However, the lower portion of the plume, specifically at well MW-9, show an increase in gasoline and diesel concentrations.
- TEHd was detected at surface water sampling location SW-2 at 66 µg/L; which is below the ESL of 100 µg/L. No other contaminants were detected above their respective laboratory detection limits. SW-3 could not be sampled during this September 2010 sampling event as the location was dry, which is typical during this time of the year.

- Contaminant concentrations of TVHg, in general, slightly increased as compared to the same time last year; however, concentrations of TEHd decreased.
- The contaminant plume is neither stable nor reducing, as groundwater contaminant concentrations fluctuate seasonally, and the center of mass of the contaminant plume (represented by maximum concentrations) has alternated between the upgradient, mid-plume, and downgradient wells in recent history.
- Soil bioventing is a proven technology for contaminant mass removal in the unsaturated zone, under conditions similar to the site. However, the heterogeneous environment in the location of the plume limits effectiveness; with only MW-8 in the upper center of the plume area showing a significant reduction in hydrocarbon concentrations. In other areas of the plume, it appears as if tight soil morphology is preventing air saturation in several of the vent wells, and the system is therefore performing at a less-than-optimal level.
- Only moderate lowering of hydrocarbon contaminant concentrations has been observed in the key site wells in both the 30-day post-injection and quarterly monitoring events. It appears as if microbial biodegradation activity is occurring preferentially in natural site constituents in competition with the target residual hydrocarbons.

PROPOSED ACTIONS

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

- Continue to monitor the February 2010 ORC™ injection remedy effectiveness during regular quarterly sampling events. Include the collection of additional site chemical parameters during sampling in subsequent quarterly monitoring events to investigate whether microbial biodegradation activity is occurring preferentially in natural site constituents in competition with the target residual hydrocarbons.
- Continue the quarterly monitoring program of creek and groundwater sampling and reporting.
- Continue to inform regulators of site progress and seek their concurrence with proposed actions.
- Continue to operate the bioventing system as a part of the overall corrective action program, although it has limited potential to achieve significant reduction in contaminant mass throughout the affected area.
- Continue to evaluate analytical results (and bioventing contaminant removal data) in the context of hydrochemical trends, impacts of groundwater contamination on Redwood Creek, and effectiveness of the corrective action.

- Continue to make required Electronic Data Format uploads to the State of California GeoTracker database, and upload an electronic copy of technical reports to the ACEH ftp system.

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8.0 LIMITATIONS

This report has been prepared for the exclusive use of the East Bay Regional Park District, its authorized representatives, and the regulatory agencies. No reliance on this report shall be made by anyone other than those 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 onsite activities conducted by Stellar Environmental since September 1998. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The Stellar Environmental personnel who performed this work 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 site characterization and corrective actions completed.

APPENDIX A

Historical Groundwater Monitoring Well Water Level Data

HISTORICAL GROUNDWATER ELEVATIONS IN MONITORING WELLS
REDWOOD REGIONAL PARK SERVICE YARD
7867 REDWOOD ROAD, OAKLAND, CALIFORNIA

Well I.D.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12
TOC Elevation (a)	565.83	566.42	560.81	548.10	547.41	545.43	547.56	549.13	549.28	547.22	547.75	544.67
Date Monitored	Groundwater Elevations (feet above mean sea level)											
09/18/98	563.7	544.2	540.8	534.5	531.1	531.4						
04/06/99	565.2	546.9	542.3	535.6	532.3	532.9						
12/20/99	562.9	544.7	541.5	534.9	531.2	532.2						
09/28/00	562.8	542.7	538.3	532.2	530.9	532.0						
01/11/01	562.9	545.1	541.7	535.0	531.2	532.3	534.9	538.1				
04/13/01	562.1	545.7	541.7	535.1	531.5	532.4	535.3	539.8				
09/01/01	560.9	542.0	537.7	533.9	530.7	531.8	534.0	535.6				
12/17/01	562.2	545.2	542.2	534.8	531.4	532.4	534.8	538.4	534.6	535.7	535.2	
03/14/02	563.0	547.1	542.2	535.5	532.4	533.3	535.7	541.8	535.0	537.6	536.6	
06/18/02	562.1	544.7	541.1	534.6	531.2	532.2	534.8	537.9	534.7	535.6	535.3	
09/24/02	561.4	542.2	537.3	533.5	530.6	531.8	533.5	535.5	535.3	533.8	531.7	
12/18/02	562.4	545.0	542.0	534.8	531.5	532.5	534.6	537.1	536.5	535.2	532.8	
03/27/03	562.6	545.7	541.7	534.8	531.6	532.4	535.1	539.9	537.2	536.2	533.6	
06/19/03	562.3	544.9	541.5	534.8	531.3	532.3	534.9	538.2	536.9	535.7	533.2	
09/10/03	561.6	542.1	537.9	533.8	530.8	531.9	533.7	535.6	535.6	534.1	531.9	
12/10/03	562.4	542.7	537.6	533.7	530.9	531.9	533.7	535.2	535.5	533.8	531.7	
03/18/04	563.1	546.6	541.9	535.0	531.7	532.4	535.2	540.9	537.4	536.6	533.8	
06/17/04	562.1	544.3	540.7	534.3	531.0	532.1	534.6	537.4	536.5	535.1	532.7	
09/21/04	561.5	541.1	536.5	533.1	530.5	531.6	533.1	534.7	532.7	533.2	533.2	
12/14/04	562.2	545.3	541.7	534.7	531.4	532.2	534.6	540.4	536.7	535.5	532.9	
03/16/05	563.8	547.3	541.7	535.3	532.4	532.8	535.6	541.8	538.0	537.1	534.2	
06/15/05	562.9	545.9	541.6	535.0	531.7	532.5	535.0	540.0	535.0	536.1	535.6	
09/13/05	562.3	543.5	539.7	534.4	530.9	532.2	534.3	536.7	536.1	534.7	532.4	
12/15/05	562.2	544.3	541.4	(b)	531.0	532.2	534.5	537.3	534.1	534.7	534.9	535.1
03/30/06	565.8	548.6	542.7	(b)	533.9	534.4	536.2	542.3	536.4	537.3	537.6	535.7
06/20/06	563.6	545.4	541.6	(b)	531.5	532.5	534.9	538.6	534.6	536.2	535.5	535.0
09/29/06	561.9	542.8	539.0	(b)	530.7	532.1	535.1	536.1	533.7	534.6	534.7	534.7
12/14/06	562.9	544.2	541.5	(b)	531.1	532.3	534.7	536.7	534.0	534.8	535.2	535.0
03/21/07	562.5	545.2	541.7	(b)	531.4	532.4	534.9	539.3	534.6	535.6	535.6	535.1
06/20/07	561.5	543.5	540.8	(b)	531.0	532.4	534.6	537.1	531.1	535.2	535.3	534.9
9/14/2007	560.71	541.02	536.99	(b)	530.46	531.58	533.42	534.86	532.64	533.47	533.68	533.74
12/6/2007	560.62	541.22	536.85	(b)	530.68	531.48	533.21	535.08	532.62	533.3	533.61	533.64
3/14/2008	561.76	545.73	541.63	(b)	531.34	532.30	534.88	539.30	534.67	536.04	535.89	535.72
6/13/2008	560.92	543.61	540.6	(b)	530.83	532.02	534.42	536.86	533.81	534.84	535.16	534.67
9/18/2008	560.43	540.15	536.41	(b)	529.85	531.11	532.69	534.15	531.97	532.65	533.09	533.12
12/17/2008	561.11	540.88	536.77	(b)	530.68	531.67	533.26	534.04	532.35	532.94	533.29	533.66
3/16/2009	561.84	546.25	539.51	(b)	531.63	532.58	534.65	539.51	534.56	535.55	535.49	535.08
6/10/2009	561.05	545.02	541.38	(b)	531.02	532.08	534.45	537.94	534.08	535.40	535.18	534.96
9/25/2009	560.00	540.79	536.33	(b)	529.98	Dry	532.58	534.25	531.96	532.62	532.97	533.08
12/21/2009	560.93	543.49	541.22	(b)	530.96	532.06	534.03	536.17	533.46	534.13	534.57	534.69
3/29/2010	561.48	546.44	541.59	(b)	531.52	532.58	534.72	540.03	534.53	535.94	535.55	535.28
6/22/2010	561.17	545.62	541.40	(b)	531.26	532.41	534.63	538.90	534.37	535.62	535.27	535.21
9/28/2010	560.32	543.36	537.91	(b)	530.6	532.02	532.66	535.23	532.96	534.21	533.99	534.16

TOC = Top of well Casing
(a) TOC Elevations resurveyed on December 15, 2005 in accordance GeoTracker requirements.
(b) Well decomissioned and replaced by MW-12 in December 2005.

APPENDIX B

Groundwater Monitoring
Field Documentation

WELL GAUGING DATA

Project # 100928-JP1 Date 9/29/10 Client STELLAR

Site REDWOOD REGIONAL PARK OAKLAND, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	0820	4	-	-	-	-	5.51	19.15		
MW-2	0827	4	-	-	-	-	23.06	37.42		
MW-3	0757	4	-	-	-	-	22.90	45.08		
MW-5	0804	4	-	-	-	-	16.81	27.02		
MW-6	0813	4	-	-	-	-	13.41	14.47		
MW-7	0837	2	-	-	-	-	14.90	25.31		
MW-8	0849	2	-	-	-	-	13.90	22.21		
MW-9	0845	2	-	-	-	-	16.32	30.20		
MW-10	0832	2	-	-	-	-	13.01	28.33		
MW-11	0852	2	-	-	-	-	13.76	28.50		
MW-12	0841	2	-	-	-	-	10.51	23.82		

WELLHEAD INSPECTION CHECKLIST

Date 9/28/10 Client STELLAR

Site Address REDWOOD REGIONAL PARK

Job Number 100928-JP1 Technician JPROVER

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1	X							
MW-2	X							
MW-3	X							
MW-5	X							
MW-6	X							
MW-7	X							
MW-8			3/3 BOLTS MISSING					
MW-9	X							
MW-10			2/2 BOLTS STRIPPED					
MW-11	X							
MW-12	X							

NOTES:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME STELLAR @ REDWOOD REGIONAL				PROJECT NUMBER 1009129-SP1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
MYRON L	0095549	9/28/10	7/10/14 3900	7.06/10.00/3.98 3927	YES	18.4	JP
YSI 550	06B1C09151		100%	99.9%	↓		

WELL MONITORING DATA SHEET

Project #: 100928-JP1	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 37.42	Depth to Water: 23.06
Before: After:	Before: After: 30.70
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ : 25.39

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- X Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

9.3 (Gals.) X 3 = 27.9 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 or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
0919	16.1	6.72	1014	342	9.3	LT BRN.
		WELL DEWATERED @ 10 GALLONS				
1345	21.2	7.64	993.3	410	—	CLOUDY

Did well dewater? (Yes) No — Gallons actually evacuated: 9.3

Sampling Time: 1345 — Sampling Date: 9/28/10

Sample I.D.: 9/28/10 — Laboratory: (CAT) STL

Analyzed for: TPH-G BTEX MTBE TPH-D — Other: SEE COC

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

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

D.O. (if req'd):	Pre-purge:	— mg/L	Post-purge:	22.24 ↙↙ mg/L
ORP (if req'd):	Pre-purge:	— mV	Post-purge:	96 mV

* DO, DOUBLE CHECKED, METER RE-CALIBRATED, SAME READING *

WELL MONITORING DATA SHEET

Project #: 100928-JP	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 25.31	Depth to Water: 14.90
Before: After:	Before: After: 15.45
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ 16.98

Purge Method:

- Bailer
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

1.7 (Gals.) X 3 = 5.1 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 or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1005	14.9	7.22	760.9	88	1.7	
1008	14.6	7.09	772.0	145	3.4	
1013	14.6	7.06	770.4	155	5.1	

Did well dewater? Yes (No)		Gallons actually evacuated: 5.1	
Sampling Time: 1020		Sampling Date: 9/28/10	
Sample I.D.: 9/28/10		Laboratory: (CAT) STL	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other: SEE COC	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: — mg/L	Post-purge: 0.39 mg/L	
ORP (if req'd):	Pre-purge: — mV	Post-purge: -46 mV	

WELL MONITORING DATA SHEET

Project #: 100928-SP	Client: STELLAR ENV.
Sampler: SP	Start Date: 9/28/10
Well I.D.: MW-8	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 22.21	Depth to Water: 13.90
Before: After:	Before: After: 14.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ 1556

Purge Method:

- Bailer
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

1.3 (Gals.) X 3 = 3.9 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 or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1137	17.2	7.40	778.4	129	1.3	GRAY, CLOUDY
1140	15.9	7.36	790.3	673	2.6	" "
1143	15.7	7.35	797.4	>1000	3.9	" "

Did well dewater? Yes (No) Gallons actually evacuated: 3.9

Sampling Time: 1150 Sampling Date: 9/28/10

Sample I.D.: 9/28/10 Laboratory: (CAT) STL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

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

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

D.O. (if req'd):	Pre-purge:	— mg/L	Post-purge:	0.26 mg/L
ORP (if req'd):	Pre-purge:	— mV	Post-purge:	-37 mV

WELL MONITORING DATA SHEET

Project #: 100928-JP1	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-9	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 30.20	Depth to Water: 16.32
Before: After:	Before: After: 16.32
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ 19.10

Purge Method:

- Bailer
- x Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

2.2 (Gals.) X	3 =	6.6 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 or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1115	15.9	6.89	909.1	413	2.2	GREY, CLOUDY
1119	14.9	7.00	889.7	>1000	4.4	" "
1123	14.7	7.05	891.8	>1000	6.6	" "

Did well dewater? Yes (No) Gallons actually evacuated: 6.6

Sampling Time: 1325 Sampling Date: 9/28/10

Sample I.D.: 9/28/10 Laboratory: (C&T) STL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

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

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

D.O. (if req'd):	Pre-purge:	— mg/L	Post-purge:	0.76 mg/L
ORP (if req'd):	Pre-purge:	— mV	Post-purge:	-21 mV

WELL MONITORING DATA SHEET

Project #: 100978-JP1	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-10	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 28.33	Depth to Water: 13.01
Before: After:	Before: After: 13.91
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH 80% @ 1607

Purge Method:

- Bailer
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

1 Case Volume	Specified Volumes	Calculated Volume
2.5 (Gals.) X	3 =	7.5 Gals.

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 or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
0943	15.4	8.08	830.7	195	2.5	LT. BRN. CLOUDY
0946	15.0	7.64	839.1	217	5.0	" "
0950	14.9	7.61	841.1	804	7.5	" "
						DTW: 19.22

Did well dewater? Yes (No)		Gallons actually evacuated: 7.5	
Sampling Time: 1300		Sampling Date: 9/28/10	
Sample I.D.: 9/28/10		Laboratory: (CAT) STL	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other: SEE COC	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: — mg/L	Post-purge:	0.39 mg/L
ORP (if req'd):	Pre-purge: — mV	Post-purge:	20 mV

WELL MONITORING DATA SHEET

Project #: 100928-JP1	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-11	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 28.58	Depth to Water: 13.76
Before: After:	Before: After: 14.03
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ 16.72

Purge Method:

- Bailer
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

2.4 (Gals.) X	3 =	7.2 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 or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1208	20.3	7.04	732.6	>1000	2.4	GREY, CLOUDY
1212	17.1	7.01	782.3	>1000	4.8	" "
1216	16.9	6.97	792.6	>1000	7.2	" "

Did well dewater? Yes (No)		Gallons actually evacuated: 7.2	
Sampling Time: 1220		Sampling Date: 9/28/10	
Sample I.D.: 9/28/10		Laboratory: (CAT) STL	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other: SEE COC	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: — mg/L	Post-purge:	0.60 mg/L
ORP (if req'd):	Pre-purge: — mV	Post-purge:	-15 mV

WELL MONITORING DATA SHEET

Project #: 100978-JP1	Client: STELLAR ENV.
Sampler: JP	Start Date: 9/28/10
Well I.D.: MW-12	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 23.82	Depth to Water: 10.51
Before: After:	Before: After: 10.54
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

80% @ 13:17

Purge Method:

- Bailer
- X Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

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

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

2.1 (Gals.) X 3 = 6.3 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Time	Temp. (°F or (°C))	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1051	16.4	7.42	665.4	492	2.1	BRN CLOUDY
1054	14.4	7.06	670.0	>1000	4.2	" "
1058	14.1	6.90	667.7	>1000	6.3	" "
						14.92 BTW

Did well dewater? Yes (No) Gallons actually evacuated: 6.3

Sampling Time: 1310 Sampling Date: 9/28/10

Sample I.D.: 9/28/10 Laboratory: (CAT) STL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: SEE COC

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

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

D.O. (if req'd):	Pre-purge:	— mg/L	Post-purge:	0.70 mg/L
ORP (if req'd):	Pre-purge:	— mV	Post-purge:	74 mV

APPENDIX C

Analytical Laboratory Report and Chain-of-Custody Record


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

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

Laboratory Job Number 222750
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2006-16
2198 6th Street	Location : Redwood Regional Park
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
MW-2	222750-001
MW-10	222750-002
MW-7	222750-003
MW-12	222750-004
MW-9	222750-005
MW-8	222750-006
MW-11	222750-007

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 signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 10/05/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**222750**
Client:	**Stellar Environmental Solutions**
Project:	**2006-16**
Location:	**Redwood Regional Park**
Request Date:	**09/28/10**
Samples Received:	**09/28/10**

This data package contains sample and QC results for seven water samples, requested for the above referenced project on 09/28/10. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Ion Chromatography (EPA 300.0):
No analytical problems were encountered.

Chemical Oxygen Demand (SM5220D):
No analytical problems were encountered.

Biochemical Oxygen Demand (SM5210B):
No analytical problems were encountered.

Chain of Custody Record

Lab job no. 222750

Date

Page 1 of 1

Laboratory Curtis and Tompkins, Ltd.
Address 2323 Fifth Street
Berkeley, California 94710
510-486-0900

Project Owner East Bay Regional Park District
Site Address 7867 Redwood Road
Oakland, California

Project Name Redwood Regional Park
Project Number 2006-16

Method of Shipment Hand Delivery
Shipment No.
Airbill No.
Cooler No.
Project Manager Richard Makdisi
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: *(Signature)*

	Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TVH-G (8015)	BTEX/MTBE (8021)	TEH-D (8015)	Nitrate	Sulfate	BOD	COD				Remarks
1	MW-2		9/28	1345	W	~~3x40 ml HCl VOA 1x500 1 Amber~~ MIXED		HCl, H_2SO_4	N	8	X	X	X	X	X	X	X				
2	MW-10	~~1300~~		1300				HCl	N	5	X	X	X								
3	MW-7	~~1320~~		1020				HCl, H_2SO_4	N	8	X	X	X	X	X	X	X				
4	MW-12			1310				HCl, H_2SO_4	N	8	X	X	X	X	X	X	X				
5	MW-9			1325				HCl	N	5	X	X	X								
6	MW-8	~~1150~~		~~1150~~				HCl, H_2SO_4	N	8	X	X	X	X	X	X	X				
7	MW-11	~~1220~~		1220				HCl	N	5	X	X	X								

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	9/28	Signature	9/28	Signature		Signature	
Printed J. PARKER	Time	Printed M. DAHLQUIST	Time	Printed	Time	Printed	Time
Company Stellar Environmental	1515	Company C+T	1515	Company		Company	

Turnaround Time: 5 Day TAT

Comments: Please provide a GeoTracker EDF for groundwater samples only
Surface water samples collected by Stellar Environmental Solutions.
Groundwater samples collected by Blaine Tech Services.

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

2000-00-01

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 222750 Date Received 9/28/10 Number of coolers 2
Client SES Project ESSRFD - RRP

Date Opened 9/28/10 By (print) M. VILLANUEVA (sign)
Date Logged in 9/28/10 By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☑ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10

Field ID:	MW-2	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-001	Analyzed:	09/29/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	910 Y	50	EPA 8015B
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	0.70	0.50	EPA 8021B
o-Xylene	0.75	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	99	70-140	EPA 8015B
Bromofluorobenzene (PID)	92	54-134	EPA 8021B

Field ID:	MW-10	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-002	Analyzed:	09/29/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	140 Y	50	EPA 8015B
MTBE	4.3	2.0	EPA 8021B
Benzene	2.1	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	1.4	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	104	70-140	EPA 8015B
Bromofluorobenzene (PID)	97	54-134	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10

Field ID:	MW-7	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-003	Analyzed:	09/29/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	6,300 Y	50	EPA 8015B
MTBE	69	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	93	0.50	EPA 8021B
m,p-Xylenes	4.3	0.50	EPA 8021B
o-Xylene	1.7 C	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	115	70-140	EPA 8015B
Bromofluorobenzene (PID)	96	54-134	EPA 8021B

Field ID:	MW-12	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-004	Analyzed:	09/29/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	380 Y	50	EPA 8015B
MTBE	8.0 C	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	1.7	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	101	70-140	EPA 8015B
Bromofluorobenzene (PID)	91	54-134	EPA 8021B

Field ID:	MW-9	Lab ID:	222750-005
Type:	SAMPLE		

Analyte	Result	RL	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	13,000 Y	250	5.000	167519	10/02/10	EPA 8015B
MTBE	43 C	2.0	1.000	167429	09/29/10	EPA 8021B
Benzene	43	0.50	1.000	167429	09/29/10	EPA 8021B
Toluene	ND	0.50	1.000	167429	09/29/10	EPA 8021B
Ethylbenzene	300	0.50	1.000	167429	09/29/10	EPA 8021B
m,p-Xylenes	38	0.50	1.000	167429	09/29/10	EPA 8021B
o-Xylene	9.9 C	0.50	1.000	167429	09/29/10	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Bromofluorobenzene (FID)	132	70-140	5.000	167519	10/02/10	EPA 8015B
Bromofluorobenzene (PID)	99	54-134	1.000	167429	09/29/10	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10

Field ID:	MW-8	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-006	Analyzed:	09/29/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	900 Y	250	EPA 8015B
MTBE	ND	10	EPA 8021B
Benzene	2.9	2.5	EPA 8021B
Toluene	ND	2.5	EPA 8021B
Ethylbenzene	22	2.5	EPA 8021B
m,p-Xylenes	ND	2.5	EPA 8021B
o-Xylene	ND	2.5	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	70-140	EPA 8015B
Bromofluorobenzene (PID)	85	54-134	EPA 8021B

Field ID:	MW-11	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	167429
Lab ID:	222750-007	Analyzed:	09/30/10

Analyte	Result	RL	Analysis
Gasoline C7-C12	3,000 Y	50	EPA 8015B
MTBE	17 C	2.0	EPA 8021B
Benzene	18	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	41	0.50	EPA 8021B
m,p-Xylenes	0.55 C	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	122	70-140	EPA 8015B
Bromofluorobenzene (PID)	101	54-134	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10

Type:	BLANK	Batch#:	167429
Lab ID:	QC562263	Analyzed:	09/29/10
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
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
Bromofluorobenzene (FID)	96	70-140	EPA 8015B
Bromofluorobenzene (PID)	91	54-134	EPA 8021B

Type:	BLANK	Batch#:	167519
Lab ID:	QC562601	Analyzed:	10/01/10
Diln Fac:	1.000	Analysis:	EPA 8015B

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	Result	%REC	Limits
Bromofluorobenzene (FID)		98	70-140
Bromofluorobenzene (PID)	NA		

C= Presence confirmed, but RPD between columns exceeds 40%
Y= Sample exhibits chromatographic pattern which does not resemble standard
NA= Not Analyzed
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Matrix:	Water	Batch#:	167429
Units:	ug/L	Analyzed:	09/29/10
Diln Fac:	1.000		

Type: BS Lab ID: QC562264

Analyte	Spiked	Result	%REC	Limits	Analysis
MTBE	10.00	10.07	101	57-150	EPA 8021B
Benzene	10.00	10.12	101	70-122	EPA 8021B
Toluene	10.00	9.731	97	72-125	EPA 8021B
Ethylbenzene	10.00	9.692	97	72-126	EPA 8021B
m,p-Xylenes	10.00	10.06	101	73-126	EPA 8021B
o-Xylene	10.00	10.20	102	71-127	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	100	70-140	EPA 8015B
Bromofluorobenzene (PID)	94	54-134	EPA 8021B

Type: BSD Lab ID: QC562265

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
MTBE	10.00	9.833	98	57-150	2	46	EPA 8021B
Benzene	10.00	10.49	105	70-122	4	33	EPA 8021B
Toluene	10.00	10.29	103	72-125	6	25	EPA 8021B
Ethylbenzene	10.00	10.51	105	72-126	8	26	EPA 8021B
m,p-Xylenes	10.00	10.65	107	73-126	6	25	EPA 8021B
o-Xylene	10.00	10.84	108	71-127	6	25	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	101	70-140	EPA 8015B
Bromofluorobenzene (PID)	96	54-134	EPA 8021B

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC562266	Batch#:	167429
Matrix:	Water	Analyzed:	09/29/10
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	962.9	96	73-127

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	70-140

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16		
Field ID:	ZZZZZZZZZZ	Batch#:	167429
MSS Lab ID:	222655-009	Sampled:	09/22/10
Matrix:	Water	Received:	09/22/10
Units:	ug/L	Analyzed:	09/30/10
Diln Fac:	1.000		

Type: MS Lab ID: QC562267

Analyte	MSS Result	Spiked	Result	%REC	Limits	Analysis
Gasoline C7-C12	32.30	2,000	1,755	86	68-120	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	99	70-140	EPA 8015B
Bromofluorobenzene (PID)	91	54-134	EPA 8021B

Type: MSD Lab ID: QC562268

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
Gasoline C7-C12	2,000	1,848	91	68-120	5	20	EPA 8015B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	104	70-140	EPA 8015B
Bromofluorobenzene (PID)	95	54-134	EPA 8021B

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

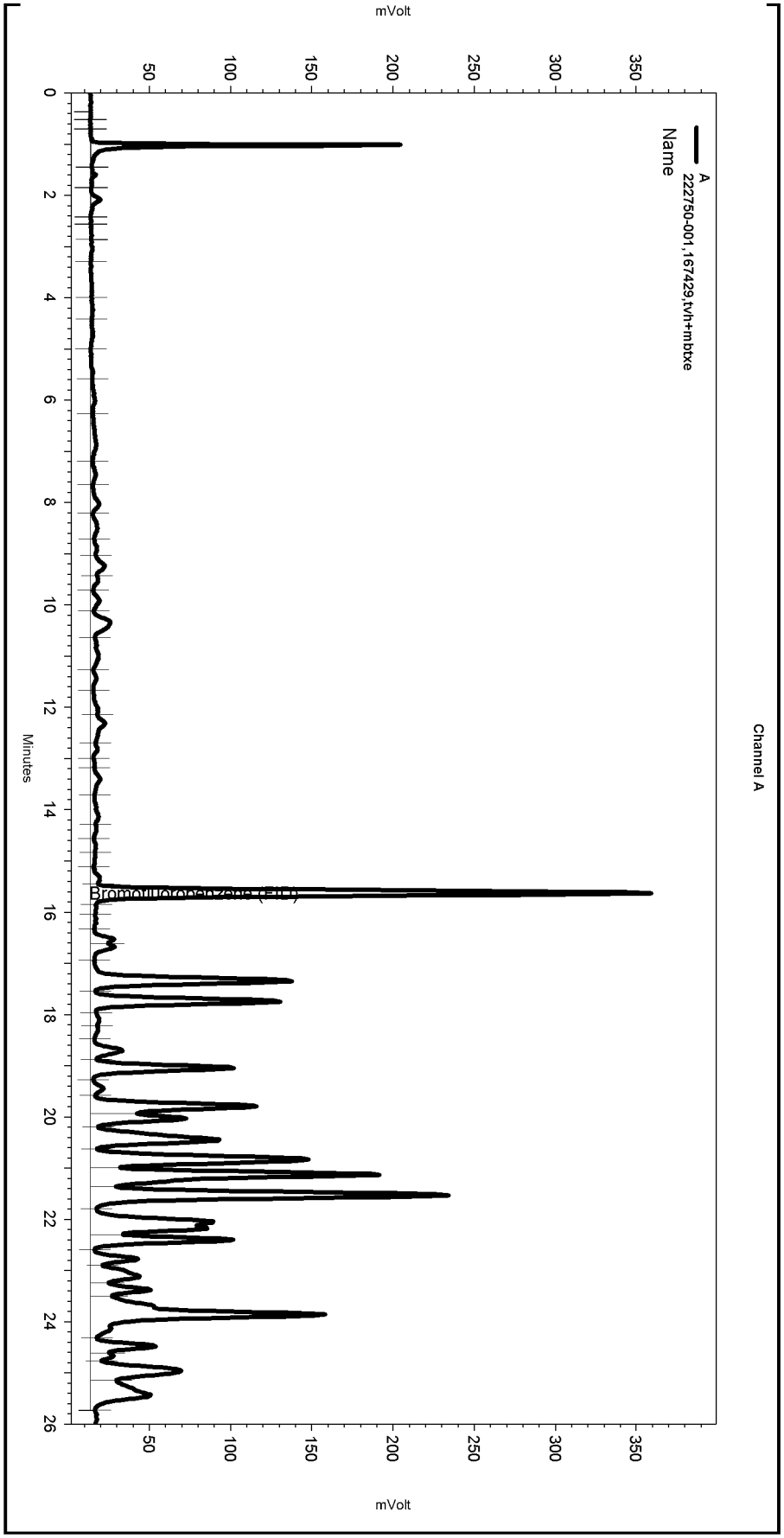
Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2006-16	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC562600	Batch#:	167519
Matrix:	Water	Analyzed:	10/01/10
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,001	100	73-127

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	70-140

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-001,167429,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-006**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/29/2010 8:09:17 PM
Analysis Date: 10/1/2010 2:41:05 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-006

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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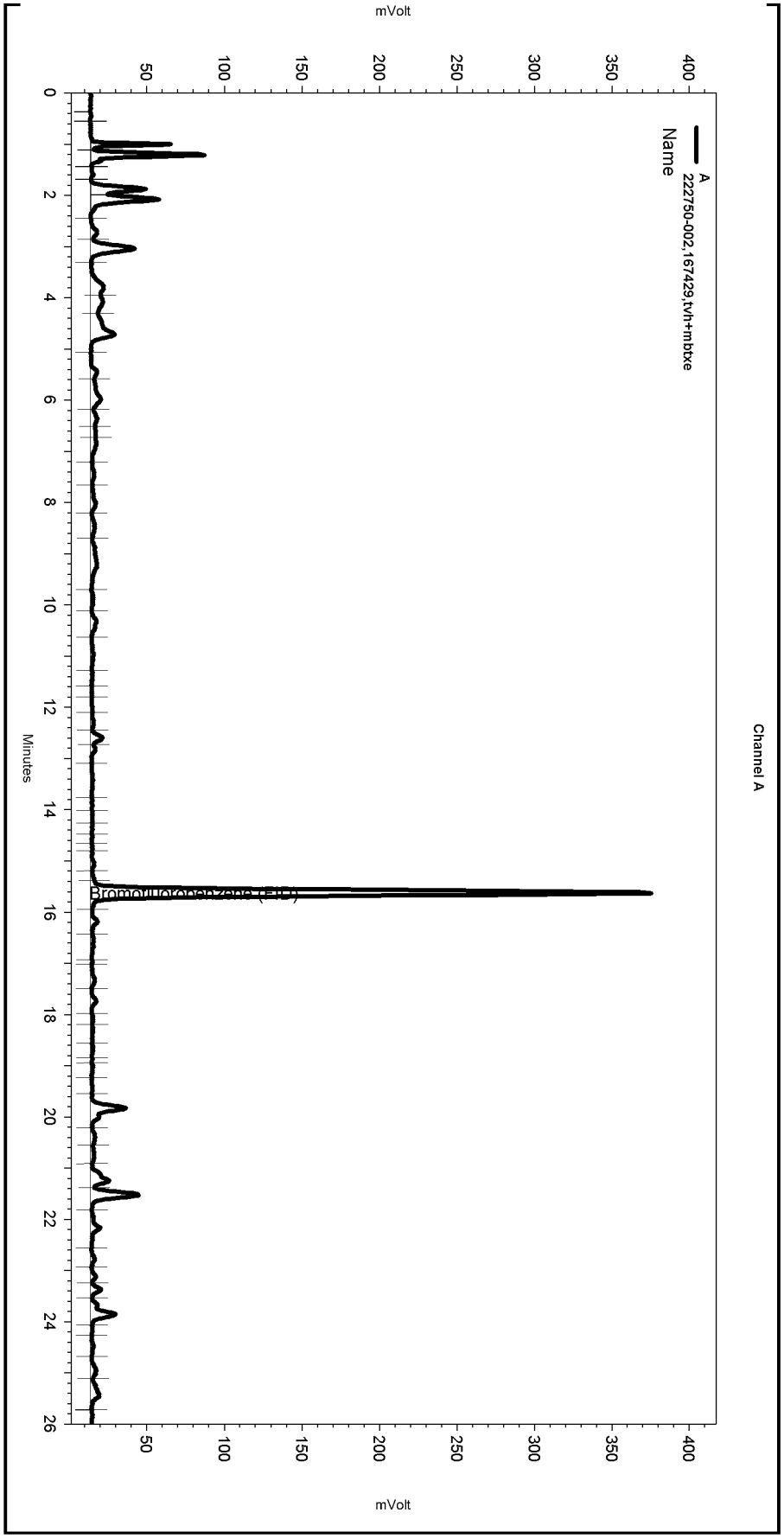
Yes	Split Peak	15.856	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-002,167429,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-007**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/29/2010 8:45:52 PM
Analysis Date: 10/1/2010 2:56:06 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

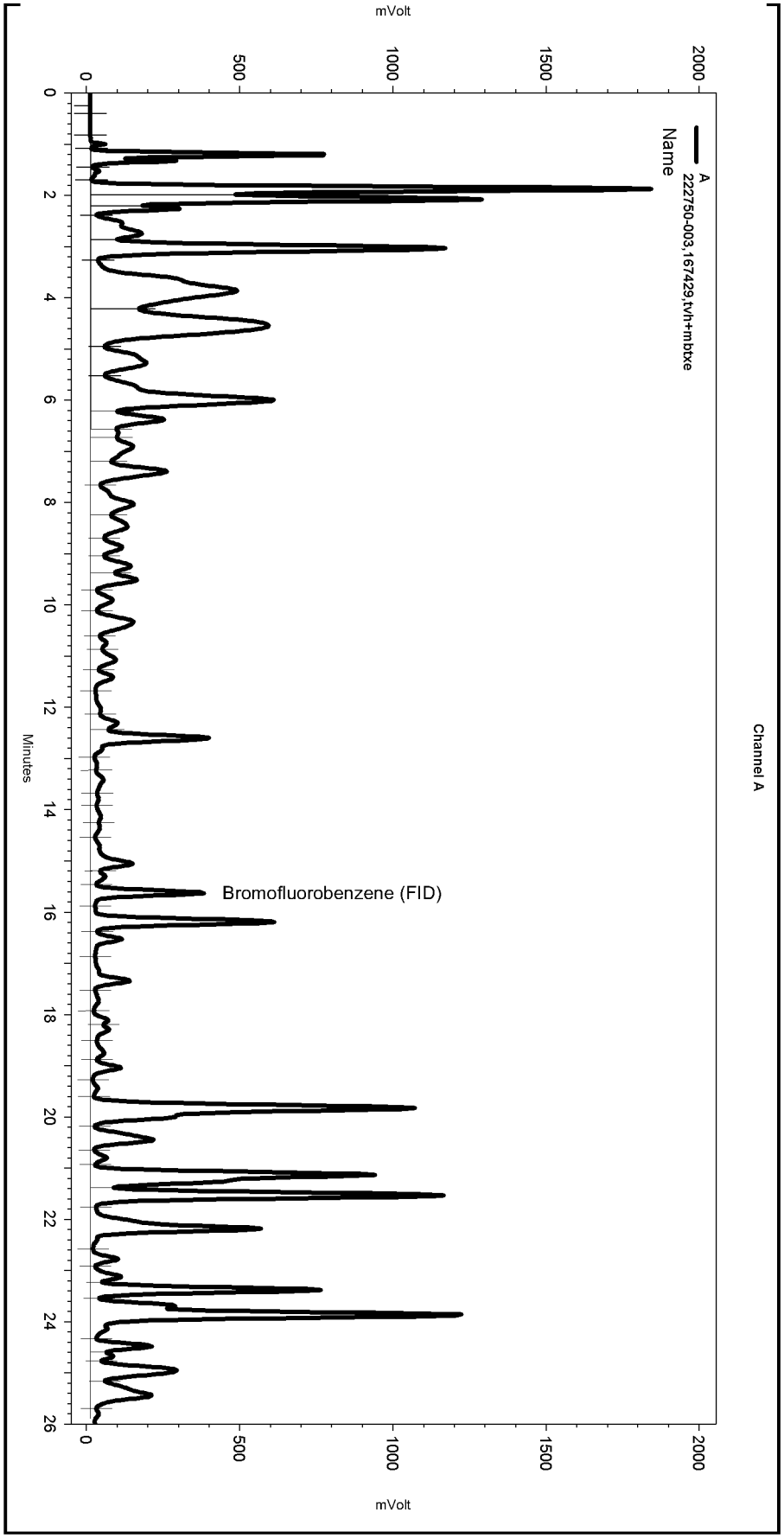
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-007

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0.56	25.71	0
Yes	Split Peak	15.379	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-003,167429,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-008**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/29/2010 9:22:25 PM
Analysis Date: 10/1/2010 2:58:47 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: b1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

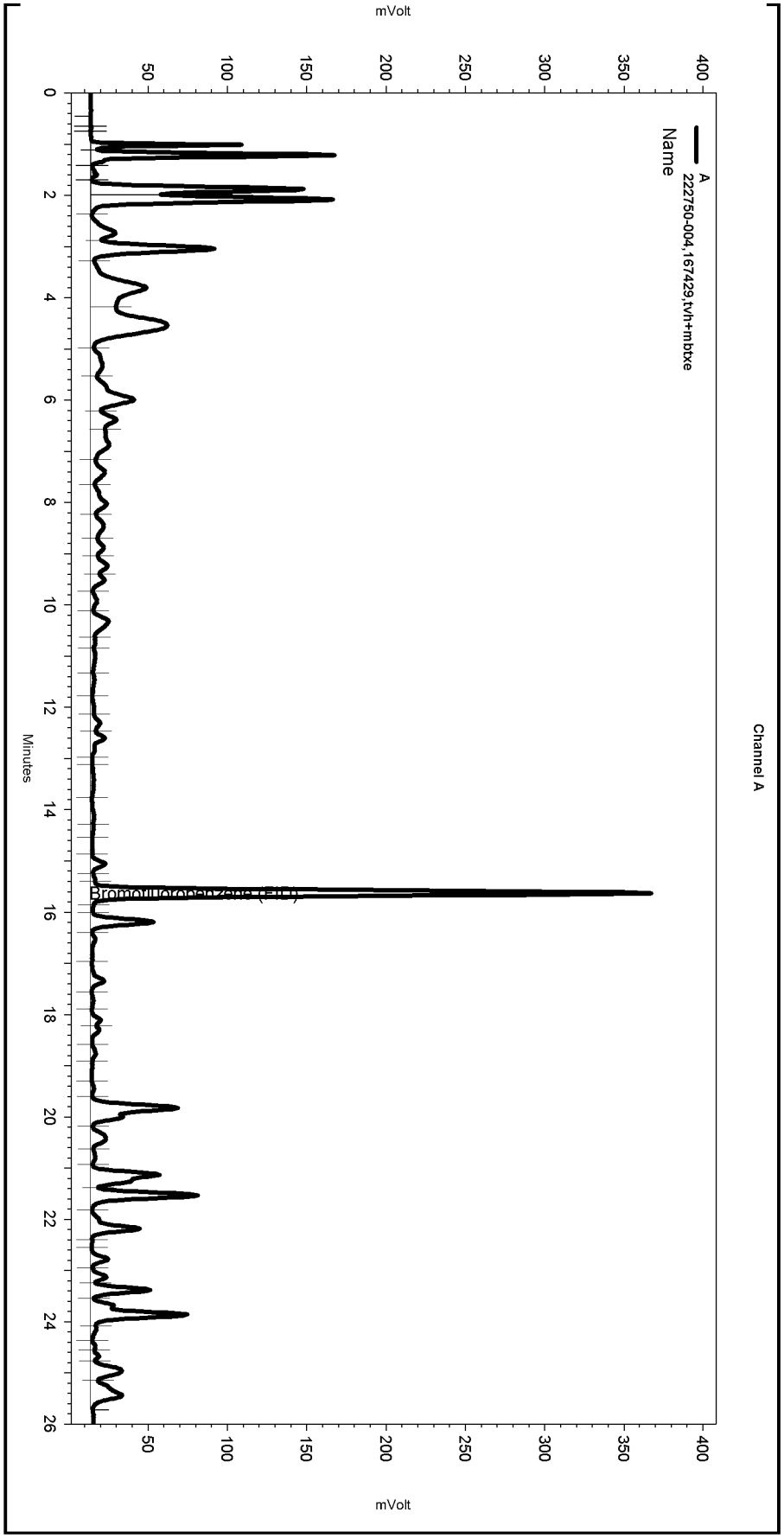
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-008

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Horizontal Baseline	0.344	25.899	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-004,167429,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-009**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/29/2010 9:58:57 PM
Analysis Date: 10/1/2010 3:01:47 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

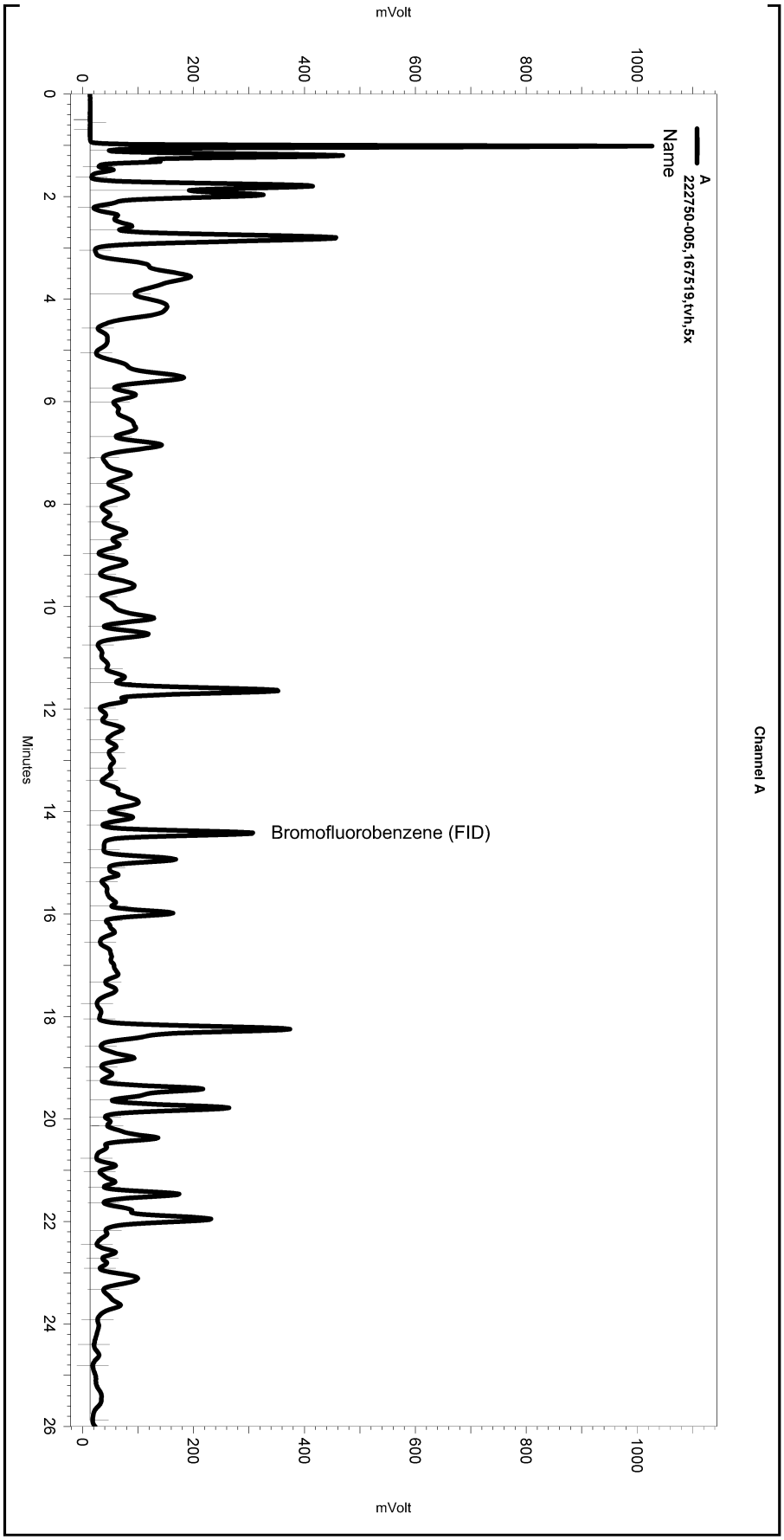
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-009

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Horizontal Baseline	0.831	25.737	0
Yes	Split Peak	15.399	0	0
Yes	Split Peak	15.87	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\274.seq**
Sample Name: **222750-005,167519,tvh,5x**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\274-023**
Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 1. Analyst (lims2k3\tvh1)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe246.met

Software Version 3.1.7
Run Date: 10/2/2010 8:38:13 AM
Analysis Date: 10/4/2010 3:51:21 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: b1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

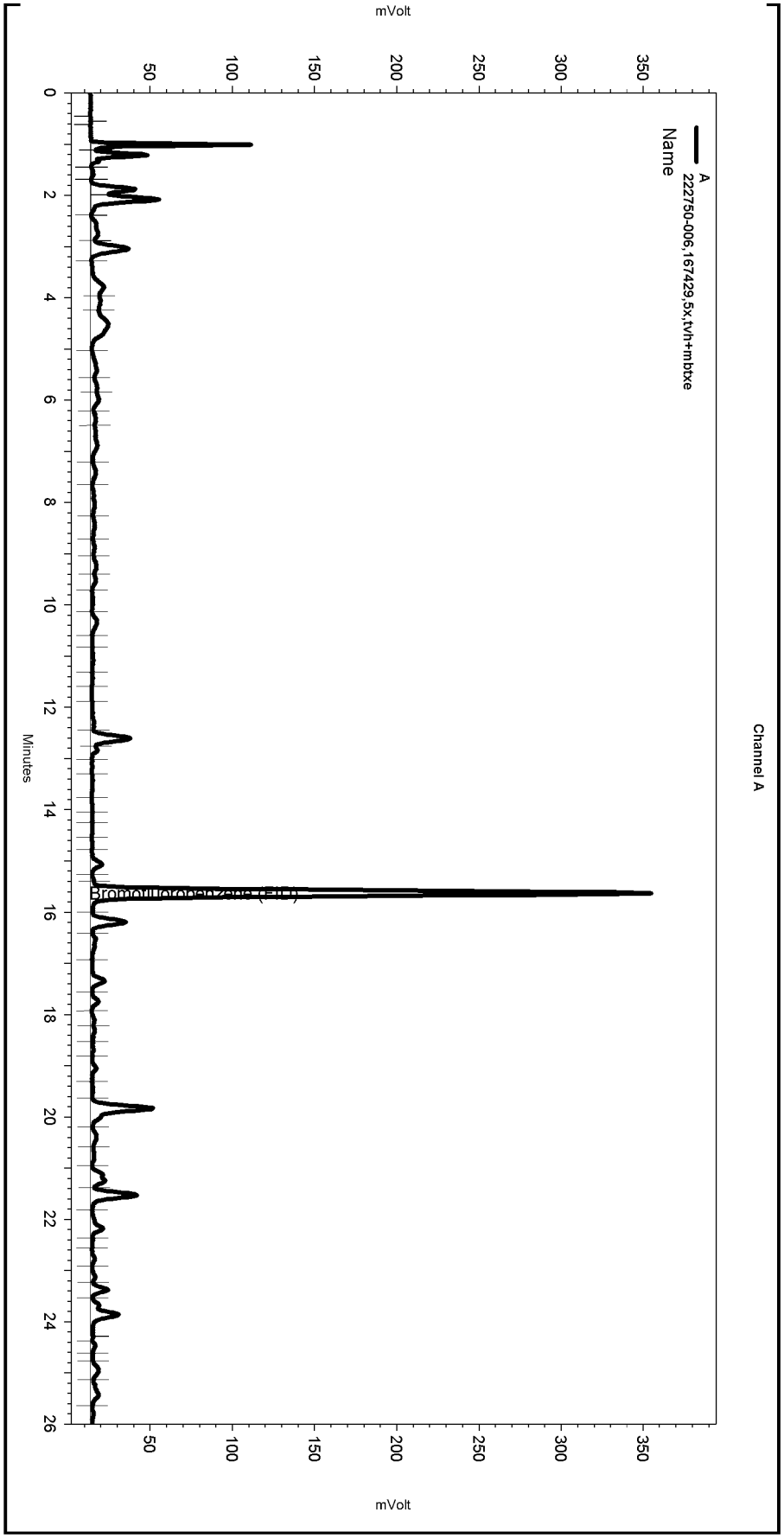
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\274-023

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0.617	25.918	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-006,167429,5x,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-011**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/29/2010 11:12:15 PM
Analysis Date: 10/1/2010 3:30:39 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.0



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No items selected for this section

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No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

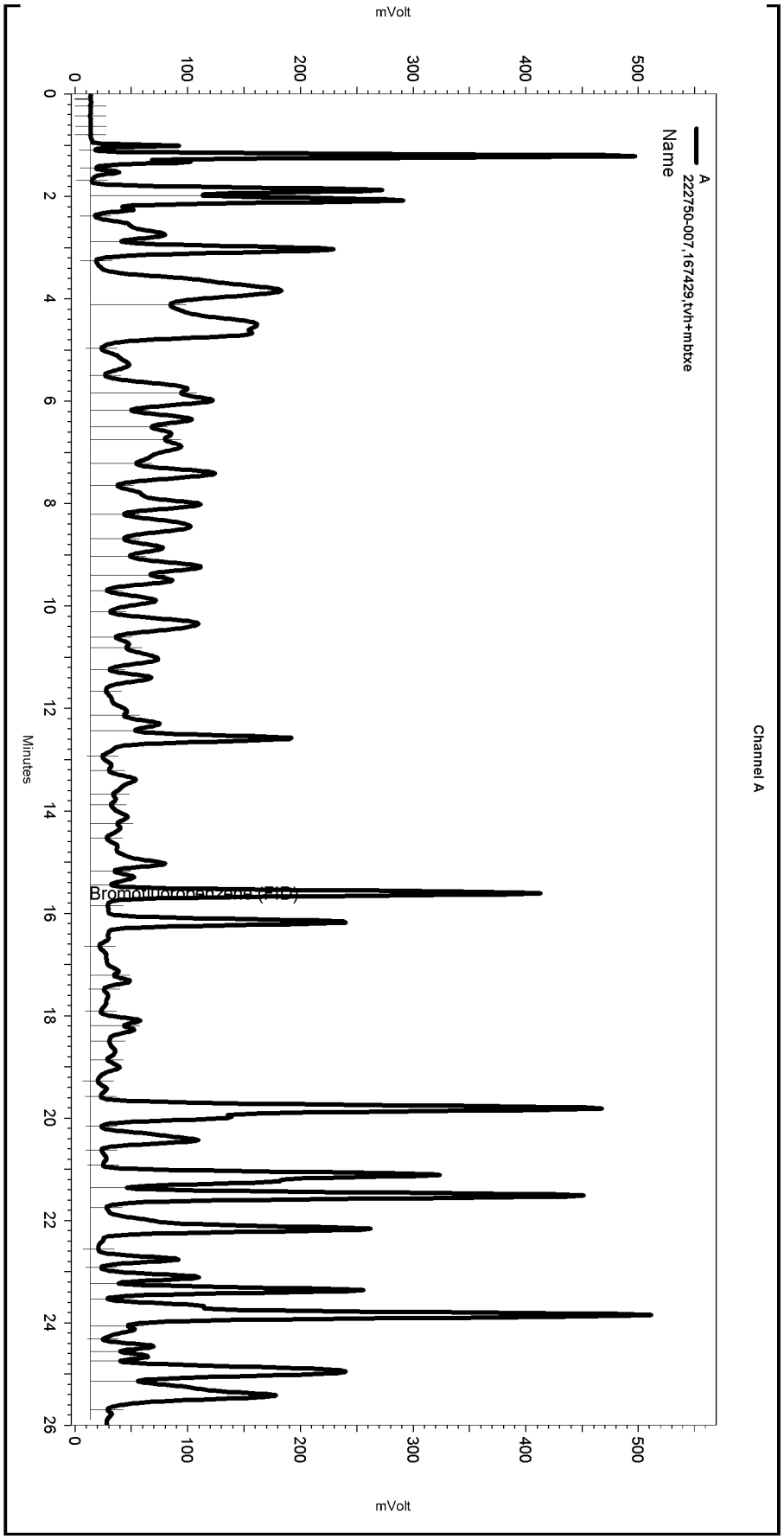
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-011

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0.614	25.899	0
Yes	Split Peak	15.407	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC05\Sequence\272.seq**
Sample Name: **222750-007,167429,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC05\Data\272-015**
Instrument: GC05 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC05\Method\tvhbtxe271.met

Software Version 3.1.7
Run Date: 9/30/2010 1:38:37 AM
Analysis Date: 10/5/2010 2:45:22 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.0



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

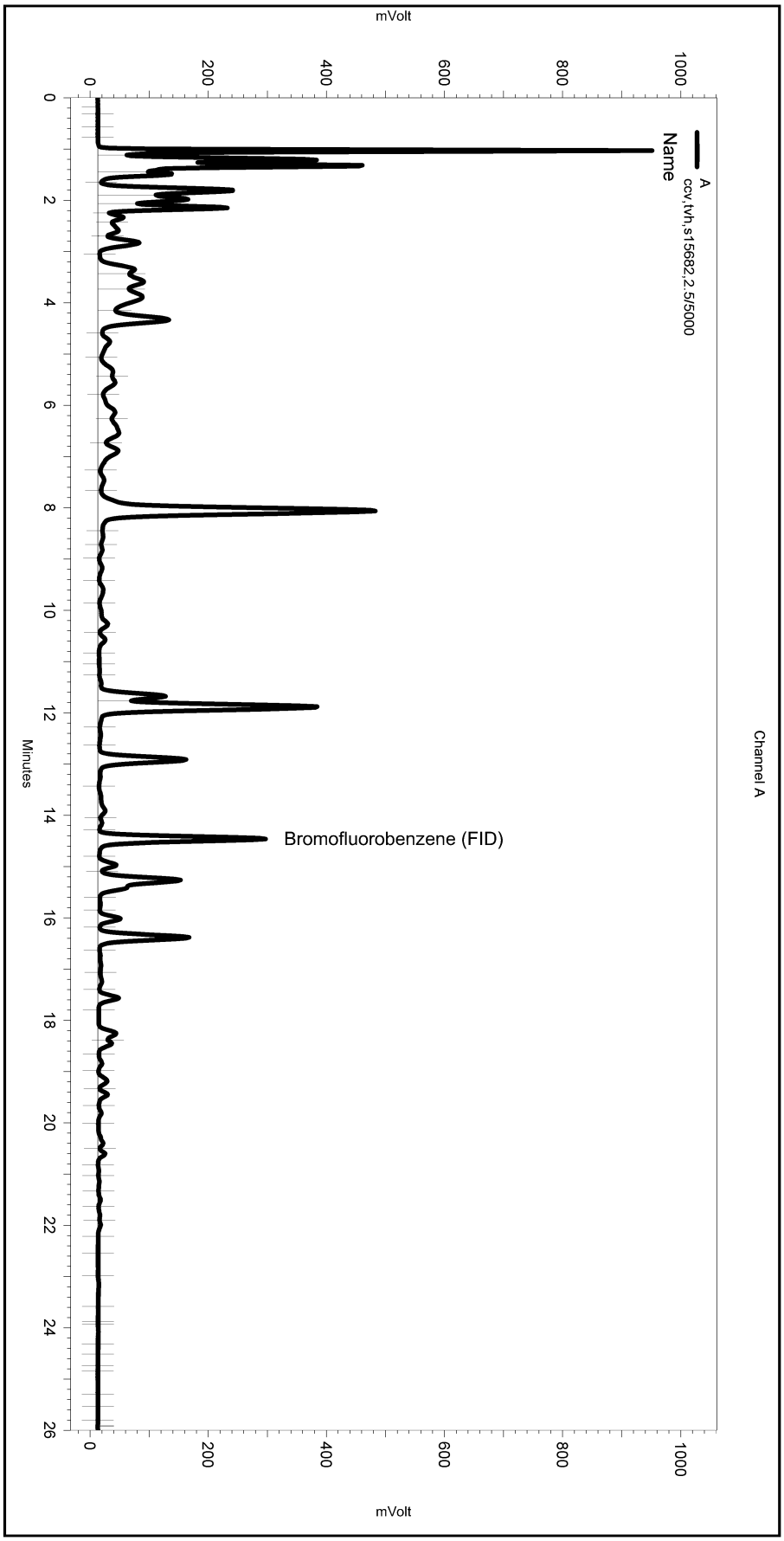
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC05\Data\272-015

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0.696	25.899	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\274.seq**
Sample Name: **ccv,tvh,s15682,2.5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\274-002**
Instrument: GC04 Vial: N/A Operator: lims2k3\tvh3
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe246.met

Software Version 3.1.7
Run Date: 10/1/2010 2:47:18 PM
Analysis Date: 10/1/2010 3:16:48 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: C:\Documents and Settings\All Users\Application Data\ChromatographySystem\Recovery Data\Instrument.10047\274-002_A435.tmp

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2006-16	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10
Diln Fac:	1.000	Prepared:	09/29/10
Batch#:	167415		

Field ID: MW-2 Lab ID: 222750-001
Type: SAMPLE Analyzed: 09/30/10

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
o-Terphenyl	92	60-129

Field ID: MW-10 Lab ID: 222750-002
Type: SAMPLE Analyzed: 09/30/10

Analyte	Result	RL
Diesel C10-C24	360 Y	50

Surrogate	%REC	Limits
o-Terphenyl	97	60-129

Field ID: MW-7 Lab ID: 222750-003
Type: SAMPLE Analyzed: 09/30/10

Analyte	Result	RL
Diesel C10-C24	4,100	50

Surrogate	%REC	Limits
o-Terphenyl	93	60-129

Field ID: MW-12 Lab ID: 222750-004
Type: SAMPLE Analyzed: 09/30/10

Analyte	Result	RL
Diesel C10-C24	220 Y	50

Surrogate	%REC	Limits
o-Terphenyl	94	60-129

Field ID: MW-9 Lab ID: 222750-005
Type: SAMPLE Analyzed: 09/30/10

Analyte	Result	RL
Diesel C10-C24	2,900	50

Surrogate	%REC	Limits
o-Terphenyl	98	60-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2006-16	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10
Diln Fac:	1.000	Prepared:	09/29/10
Batch#:	167415		

Field ID: MW-8 Lab ID: 222750-006
Type: SAMPLE Analyzed: 10/01/10

Analyte	Result	RL
Diesel C10-C24	1,300	50

Surrogate	%REC	Limits
o-Terphenyl	93	60-129

Field ID: MW-11 Lab ID: 222750-007
Type: SAMPLE Analyzed: 10/01/10

Analyte	Result	RL
Diesel C10-C24	2,200	50

Surrogate	%REC	Limits
o-Terphenyl	91	60-129

Type: BLANK Analyzed: 10/01/10
Lab ID: QC562208

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
o-Terphenyl	99	60-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2006-16	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC562209	Batch#:	167415
Matrix:	Water	Prepared:	09/29/10
Units:	ug/L	Analyzed:	10/01/10

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,038	82	54-125

Surrogate	%REC	Limits
o-Terphenyl	99	60-129

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2006-16	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	167415
MSS Lab ID:	222718-003	Sampled:	09/27/10
Matrix:	Water	Received:	09/27/10
Units:	ug/L	Prepared:	09/29/10
Diln Fac:	1.000	Analyzed:	10/01/10

Type: MS
Lab ID: QC562210
Cleanup Method: EPA 3630C

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	35.46	2,500	1,984	78	46-131

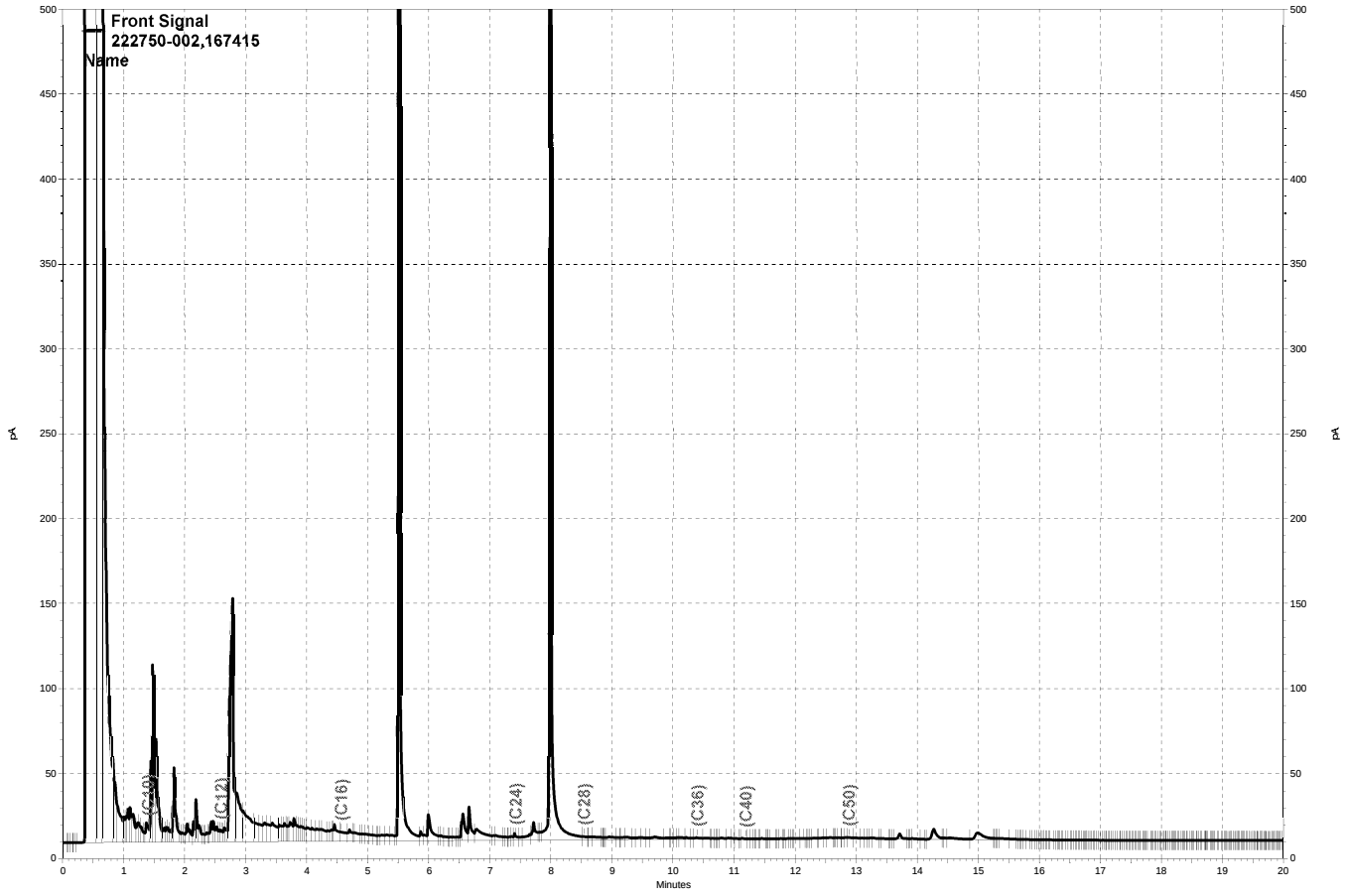
Surrogate	%REC	Limits
o-Terphenyl	96	60-129

Type: MSD
Lab ID: QC562211
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,814	71	46-131	9	61

Surrogate	%REC	Limits
o-Terphenyl	85	60-129

RPD= Relative Percent Difference



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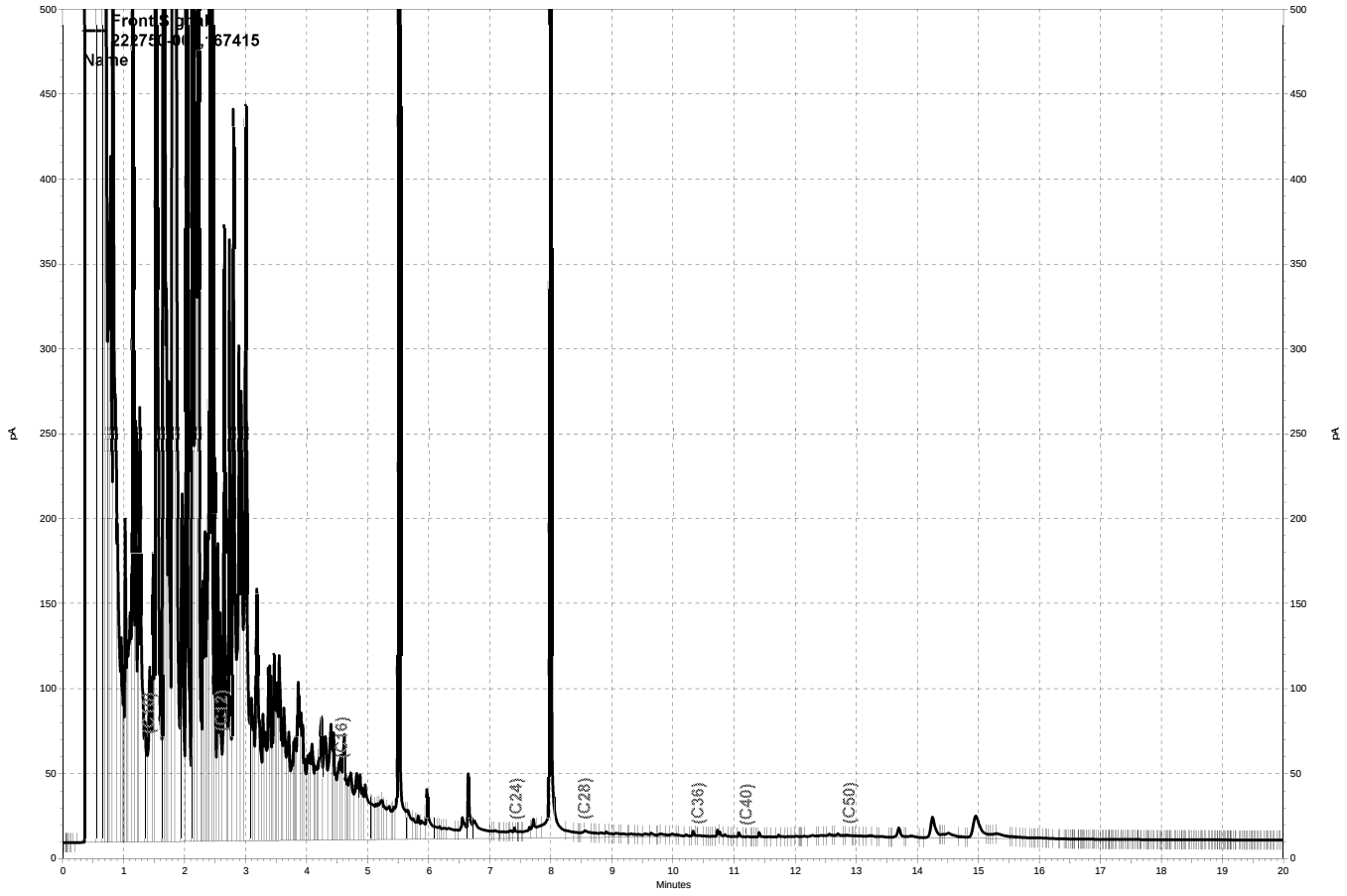

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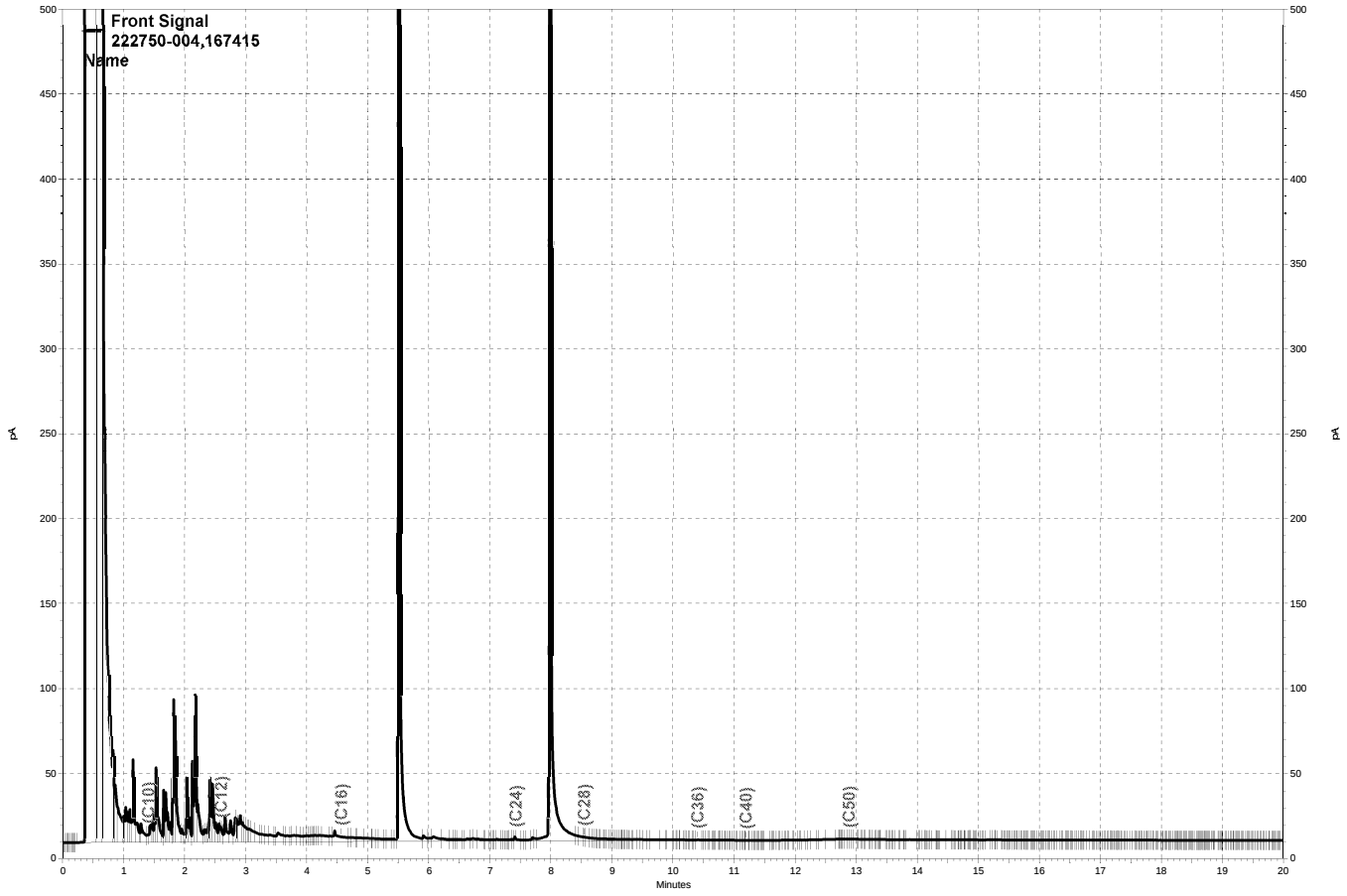

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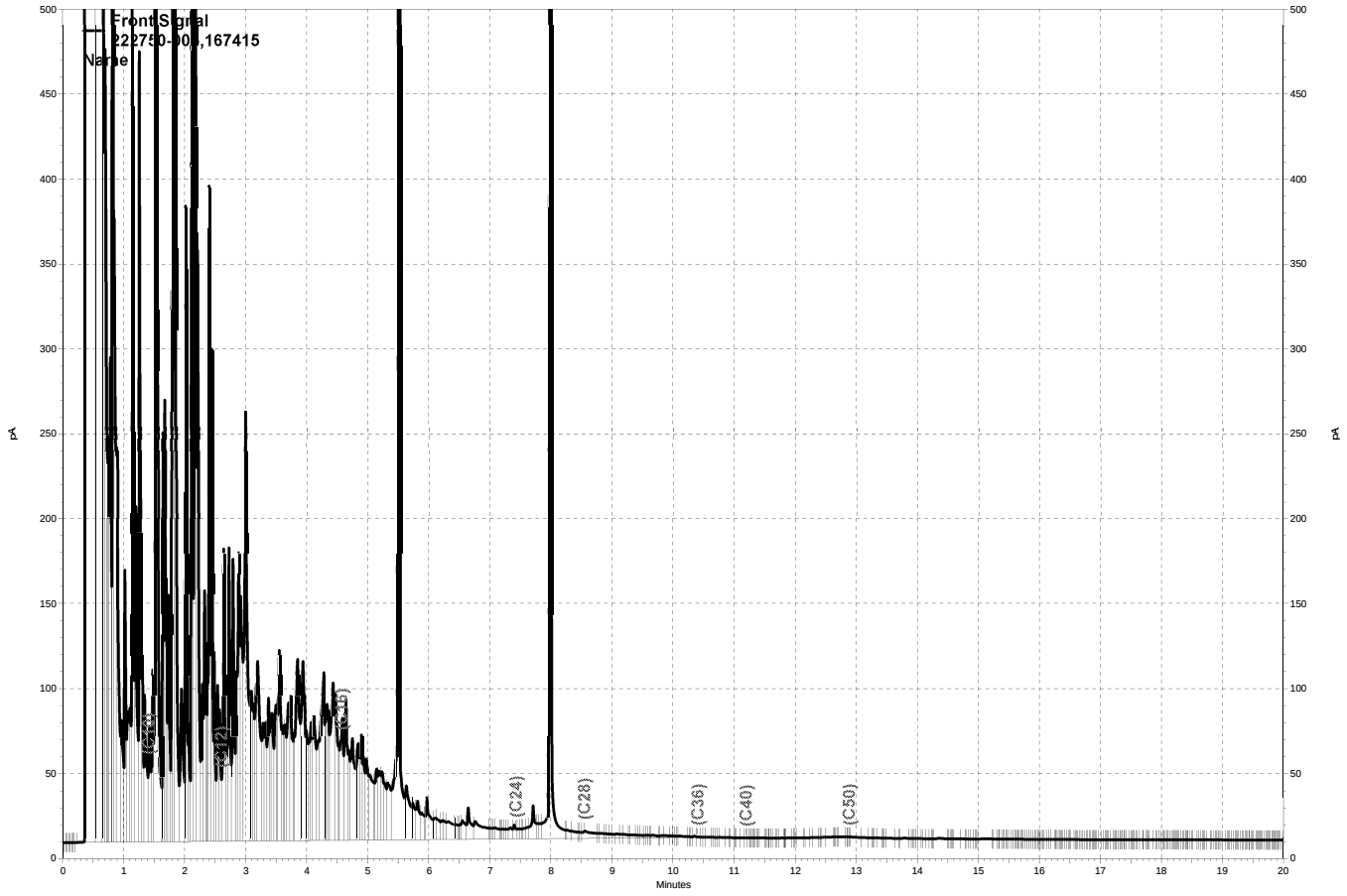

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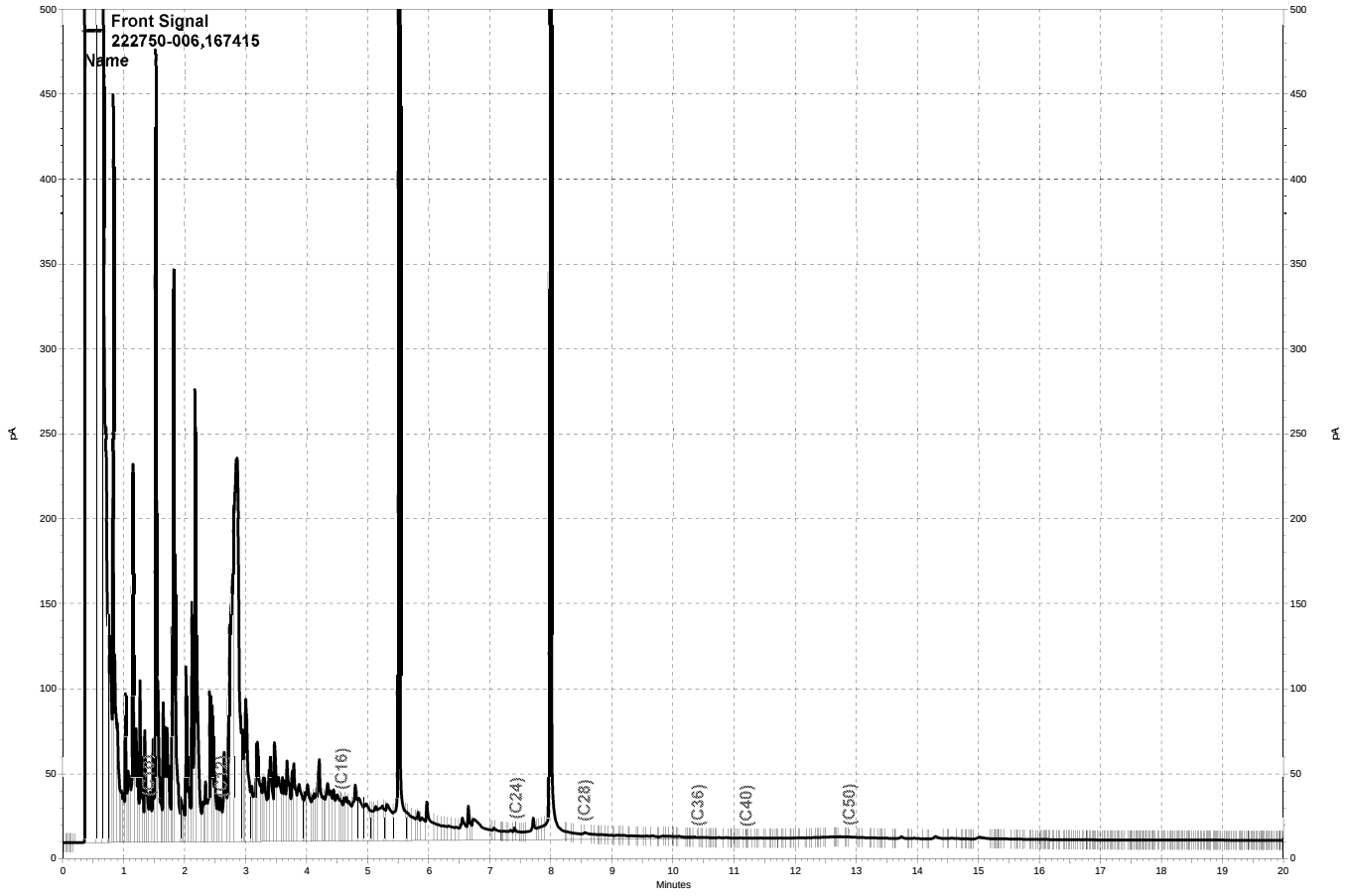

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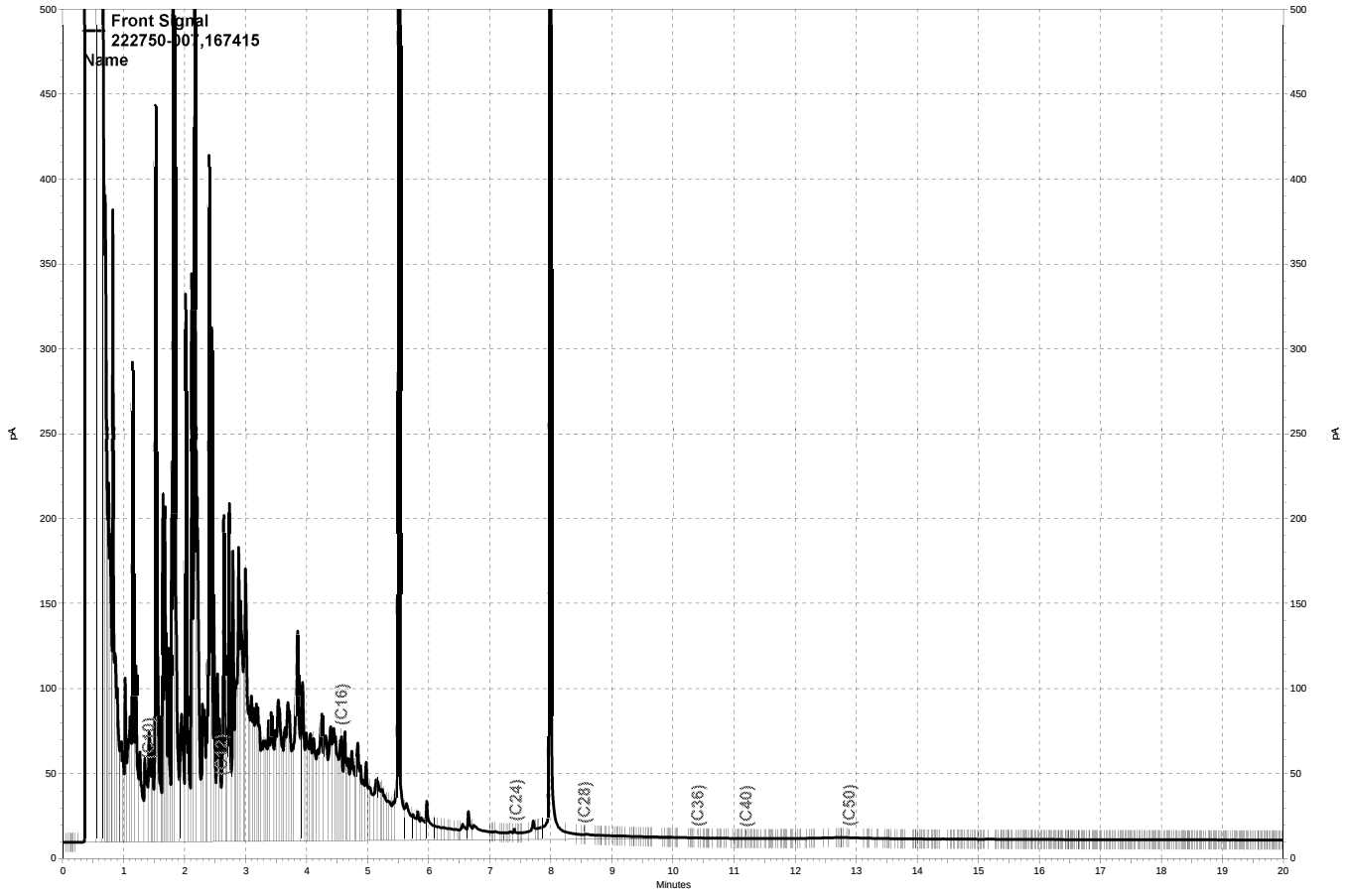

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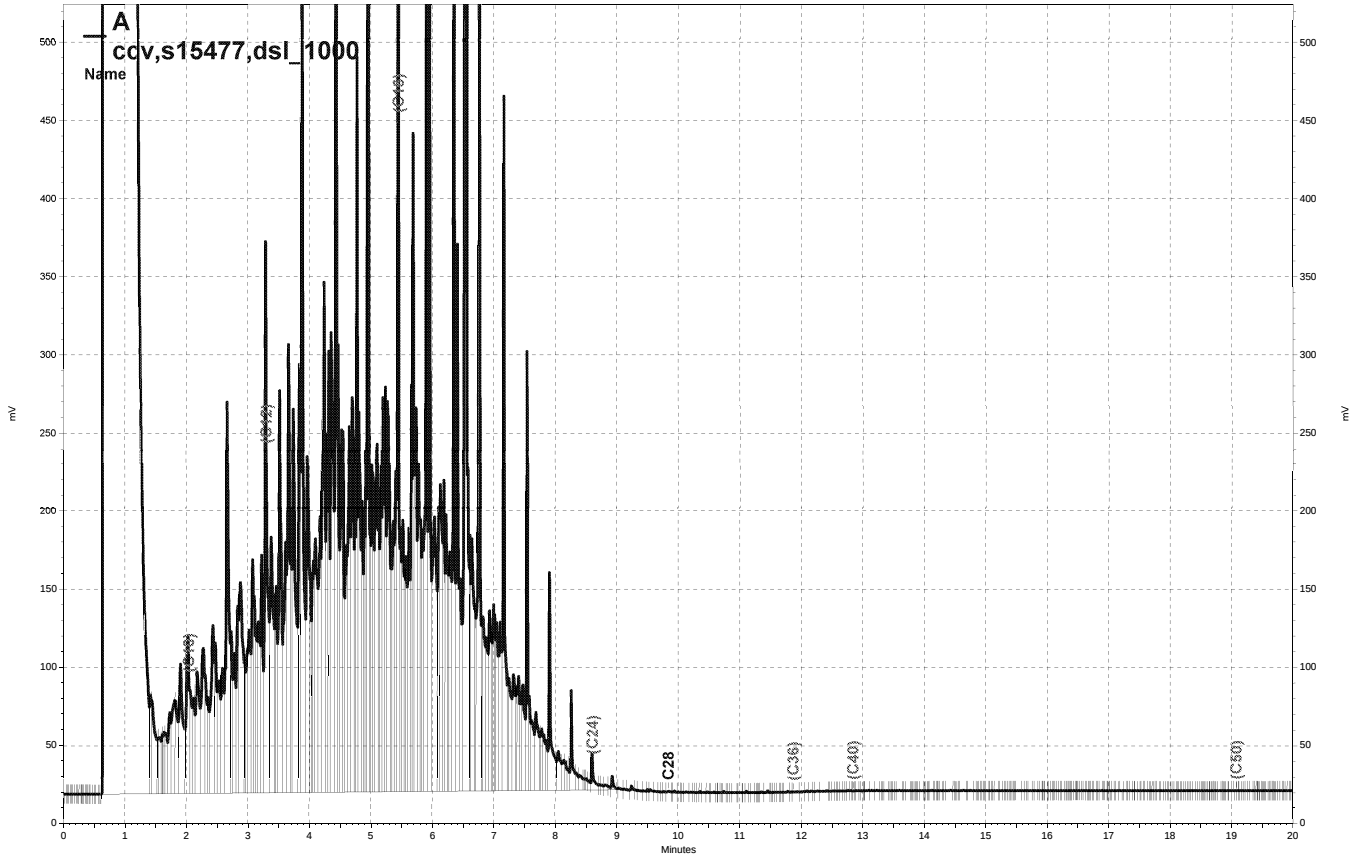

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Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	EPA 300.0
Matrix:	Water	Batch#:	167330
Units:	mg/L	Received:	09/28/10

Field ID: MW-2 Lab ID: 222750-001
Type: SAMPLE Sampled: 09/28/10 13:45

Analyte	Result	RL	Diln Fac	Analyzed
Nitrogen, Nitrate	0.77	0.05	1.000	09/28/10 15:36
Sulfate	150	5.0	10.00	09/28/10 20:17

Field ID: MW-7 Diln Fac: 1.000
Type: SAMPLE Sampled: 09/28/10 10:20
Lab ID: 222750-003 Analyzed: 09/28/10 16:12

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Sulfate	0.67	0.50

Field ID: MW-12 Diln Fac: 1.000
Type: SAMPLE Sampled: 09/28/10 13:10
Lab ID: 222750-004 Analyzed: 09/28/10 16:30

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Sulfate	20	0.50

Field ID: MW-8 Lab ID: 222750-006
Type: SAMPLE Sampled: 09/28/10 11:50

Analyte	Result	RL	Diln Fac	Analyzed
Nitrogen, Nitrate	ND	0.05	1.000	09/28/10 16:47
Sulfate	55	1.0	2.000	09/28/10 20:35

Type: BLANK Diln Fac: 1.000
Lab ID: QC561862 Analyzed: 09/28/10 08:47

Analyte	Result	RL
Nitrogen, Nitrate	ND	0.05
Sulfate	ND	0.50

ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	EPA 300.0
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC561863	Batch#:	167330
Matrix:	Water	Analyzed:	09/28/10 09:05
Units:	mg/L		

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	1.000	0.9912	99	80-120
Sulfate	10.00	9.487	95	80-120

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	EPA 300.0
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.020
MSS Lab ID:	222711-006	Batch#:	167330
Matrix:	Water	Sampled:	09/23/10
Units:	mg/L	Received:	09/27/10

Type: MS Analyzed: 09/28/10 10:09
Lab ID: QC561864

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	<0.005240	0.5100	0.5039	99	80-120
Sulfate	<0.04655	5.100	4.859	95	80-120

Type: MSD Analyzed: 09/28/10 10:27
Lab ID: QC561865

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	0.5100	0.4909	96	80-120	3	20
Sulfate	5.100	4.939	97	80-120	2	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Biochemical Oxygen Demand

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	SM5210B
Analyte:	Biochemical Oxygen Demand	Batch#:	167413
Matrix:	Water	Received:	09/28/10
Units:	mg/L	Prepared:	09/29/10 14:15
Diln Fac:	1.000	Analyzed:	10/04/10 17:10

Field ID	Type	Lab ID	Result	RL	Sampled
MW-2	SAMPLE	222750-001	ND	5.0	09/28/10 13:45
MW-7	SAMPLE	222750-003	8.9	5.0	09/28/10 10:20
MW-12	SAMPLE	222750-004	ND	5.0	09/28/10 13:10
MW-8	SAMPLE	222750-006	5.8	5.0	09/28/10 11:50
	BLANK	QC562199	ND	5.0	

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Biochemical Oxygen Demand

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	SM5210B
Analyte:	Biochemical Oxygen Demand	Batch#:	167413
Field ID:	ZZZZZZZZZZ	Sampled:	09/28/10
MSS Lab ID:	222735-001	Received:	09/28/10
Matrix:	Water	Prepared:	09/29/10 14:15
Units:	mg/L	Analyzed:	10/04/10 17:10
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	RL	%REC	Limits	RPD	Lim
BS	QC562200		198.0	217.8		110	85-115		
BSD	QC562201		198.0	219.8		111	85-115	1	20
SDUP	QC562202	1,032		1,052	300.0			2	21

RL= Reporting Limit
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Chemical Oxygen Demand

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	SM5220D
Analyte:	Chemical Oxygen Demand	Batch#:	167499
Matrix:	Water	Received:	09/28/10
Units:	mg/L	Prepared:	10/01/10 12:15
Diln Fac:	1.000	Analyzed:	10/01/10 17:00

Field ID	Type	Lab ID	Result	RL	Sampled
MW-2	SAMPLE	222750-001	19	10	09/28/10 13:45
MW-7	SAMPLE	222750-003	28	10	09/28/10 10:20
MW-12	SAMPLE	222750-004	32	10	09/28/10 13:10
MW-8	SAMPLE	222750-006	37	10	09/28/10 11:50
	BLANK	QC562524	ND	10	

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Chemical Oxygen Demand

Lab #:	222750	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	METHOD
Project#:	2006-16	Analysis:	SM5220D
Analyte:	Chemical Oxygen Demand	Batch#:	167499
Field ID:	ZZZZZZZZZZ	Sampled:	09/27/10 11:00
MSS Lab ID:	222701-001	Received:	09/27/10
Matrix:	Water	Prepared:	10/01/10 12:15
Units:	mg/L	Analyzed:	10/01/10 17:00
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
LCS	QC562525		75.00	75.02	100	90-110		
MS	QC562526	<10.00	150.0	146.2	97	67-130		
MSD	QC562527		150.0	150.6	100	67-130	3	20

RPD= Relative Percent Difference


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

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

Laboratory Job Number 222751
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2010-02
2198 6th Street	Location : Redwood Regional Park
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
SW-2	222751-001

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 signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 10/04/2010
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**222751**
Client:	**Stellar Environmental Solutions**
Project:	**2010-02**
Location:	**Redwood Regional Park**
Request Date:	**09/28/10**
Samples Received:	**09/28/10**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 09/28/10. The sample was received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Chain of Custody Record

Lab job no. 222751

Date

Page 1 of 1

Laboratory Curtis and Tompkins, Ltd.
Address 2323 Fifth Street
Berkeley, California 94710
510-486-0900

Project Owner East Bay Regional Park District
Site Address 7867 Redwood Road
Oakland, California
Project Name Redwood Regional Park
Project Number 2010-02

Method of Shipment Hand Delivery
Shipment No.
Airbill No.
Cooler No.
Project Manager Richard Makdisi
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: (Signature)

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation Cooler	Preservation Chemical	Filtered	No. of Containers	Analysis Required	Remarks
SW-2	Creek	9-28-10	1020	W	VOA 500 ml	Y	Yes (a)	N	5	X X	
~~SW-3~~	~~Creek~~	~~9-28-10~~		~~W~~		Y	Yes (a)				

Relinquished by: Signature / Printed Teal Glass / Company Stellar Environmental — Date ~~3-29-10~~ 9-28-10 — Time 1030

Received by: Signature / Printed J PARKER / Company Blaine Tech — Date ~~12-18-09~~ 9-28-10 — Time 1030 1515

Relinquished by: Signature / Printed J PARKER / Company BLAINE TECH — Date 9/28 — Time 1515

Received by: Signature / Printed M. DAHLQUIST / Company CET — Date 9/28 — Time 1515

Turnaround Time: Standard - 5 Day

Comments: (a) VOA w/ HCL

Relinquished by: Signature / Printed / Company — Date — Time

Received by: Signature / Printed / Company — Date — Time

2000-00-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 222751 Date Received 9/28/10 Number of coolers 2
Client SES Project ESB RFD RKP

Date Opened 9/28/10 By (print) M. Villanueva (sign)
Date Logged in 1 By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
Shipping info

2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☐ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☑ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☐ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2010-02		
Field ID:	SW-2	Batch#:	167429
Matrix:	Water	Sampled:	09/28/10
Units:	ug/L	Received:	09/28/10
Diln Fac:	1.000		

Type: SAMPLE Analyzed: 09/30/10
Lab ID: 222751-001

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
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
Bromofluorobenzene (FID)	105	70-140	EPA 8015B
Bromofluorobenzene (PID)	95	54-134	EPA 8021B

Type: BLANK Analyzed: 09/29/10
Lab ID: QC562263

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
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
Bromofluorobenzene (FID)	96	70-140	EPA 8015B
Bromofluorobenzene (PID)	91	54-134	EPA 8021B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2010-02		
Matrix:	Water	Batch#:	167429
Units:	ug/L	Analyzed:	09/29/10
Diln Fac:	1.000		

Type: BS Lab ID: QC562264

Analyte	Spiked	Result	%REC	Limits	Analysis
MTBE	10.00	10.07	101	57-150	EPA 8021B
Benzene	10.00	10.12	101	70-122	EPA 8021B
Toluene	10.00	9.731	97	72-125	EPA 8021B
Ethylbenzene	10.00	9.692	97	72-126	EPA 8021B
m,p-Xylenes	10.00	10.06	101	73-126	EPA 8021B
o-Xylene	10.00	10.20	102	71-127	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	100	70-140	EPA 8015B
Bromofluorobenzene (PID)	94	54-134	EPA 8021B

Type: BSD Lab ID: QC562265

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analysis
MTBE	10.00	9.833	98	57-150	2	46	EPA 8021B
Benzene	10.00	10.49	105	70-122	4	33	EPA 8021B
Toluene	10.00	10.29	103	72-125	6	25	EPA 8021B
Ethylbenzene	10.00	10.51	105	72-126	8	26	EPA 8021B
m,p-Xylenes	10.00	10.65	107	73-126	6	25	EPA 8021B
o-Xylene	10.00	10.84	108	71-127	6	25	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	101	70-140	EPA 8015B
Bromofluorobenzene (PID)	96	54-134	EPA 8021B

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2010-02	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC562266	Batch#:	167429
Matrix:	Water	Analyzed:	09/29/10
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	962.9	96	73-127

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	70-140

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2010-02	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	167429
MSS Lab ID:	222655-009	Sampled:	09/22/10
Matrix:	Water	Received:	09/22/10
Units:	ug/L	Analyzed:	09/30/10
Diln Fac:	1.000		

Type: MS Lab ID: QC562267

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	32.30	2,000	1,755	86	68-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	70-140

Type: MSD Lab ID: QC562268

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,848	91	68-120	5	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	70-140

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2010-02	Analysis:	EPA 8015B
Field ID:	SW-2	Sampled:	09/28/10
Matrix:	Water	Received:	09/28/10
Units:	ug/L	Prepared:	09/29/10
Diln Fac:	1.000	Analyzed:	10/01/10
Batch#:	167415		

Type: SAMPLE Lab ID: 222751-001

Analyte	Result	RL
Diesel C10-C24	66 Y	50

Surrogate	%REC	Limits
o-Terphenyl	100	60-129

Type: BLANK Lab ID: QC562208

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
o-Terphenyl	99	60-129

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2010-02	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC562209	Batch#:	167415
Matrix:	Water	Prepared:	09/29/10
Units:	ug/L	Analyzed:	10/01/10

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,038	82	54-125

Surrogate	%REC	Limits
o-Terphenyl	99	60-129

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	222751	Location:	Redwood Regional Park
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2010-02	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	167415
MSS Lab ID:	222718-003	Sampled:	09/27/10
Matrix:	Water	Received:	09/27/10
Units:	ug/L	Prepared:	09/29/10
Diln Fac:	1.000	Analyzed:	10/01/10

Type: MS Cleanup Method: EPA 3630C
Lab ID: QC562210

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	35.46	2,500	1,984	78	46-131

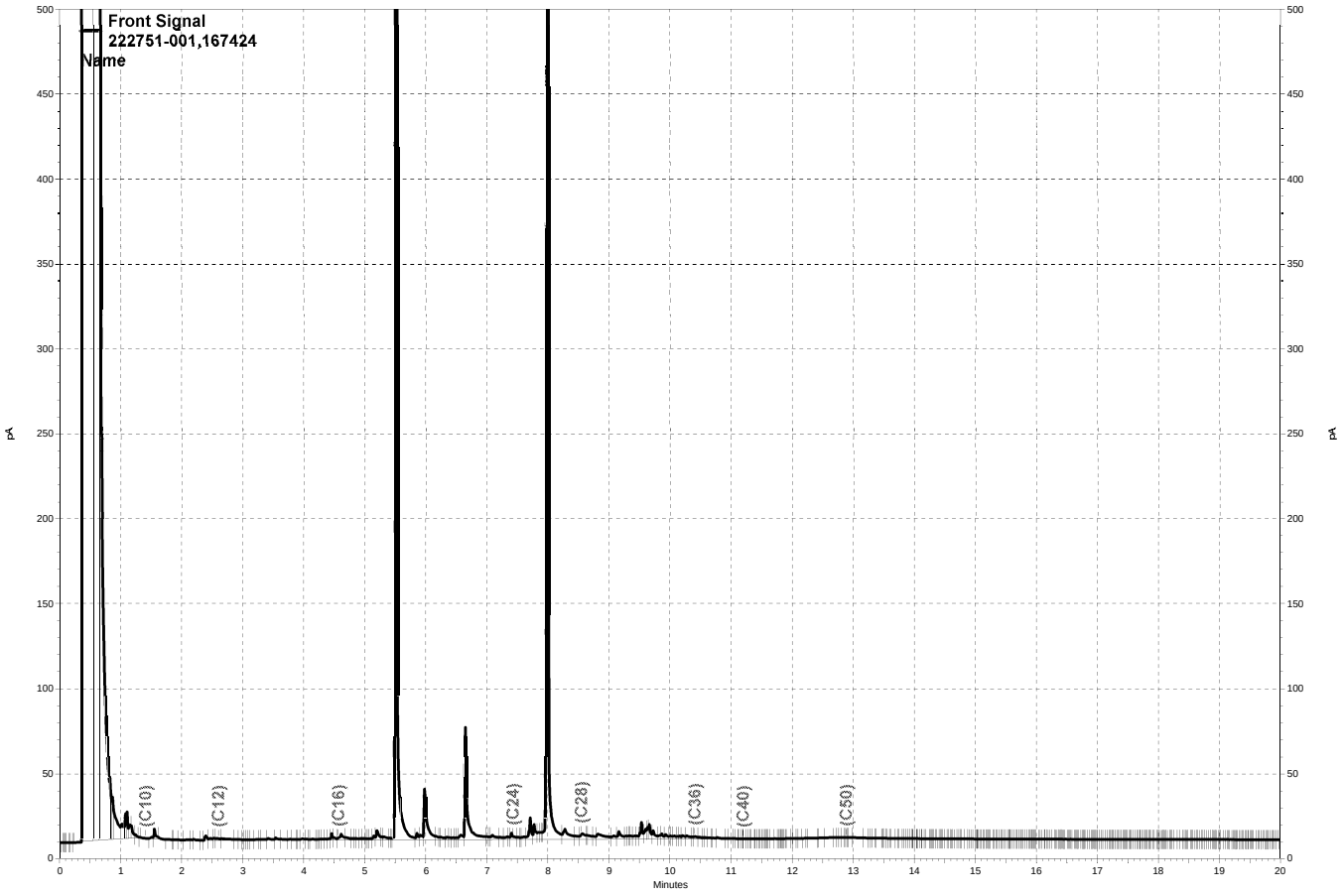
Surrogate	%REC	Limits
o-Terphenyl	96	60-129

Type: MSD Cleanup Method: EPA 3630C
Lab ID: QC562211

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,814	71	46-131	9	61

Surrogate	%REC	Limits
o-Terphenyl	85	60-129

RPD= Relative Percent Difference



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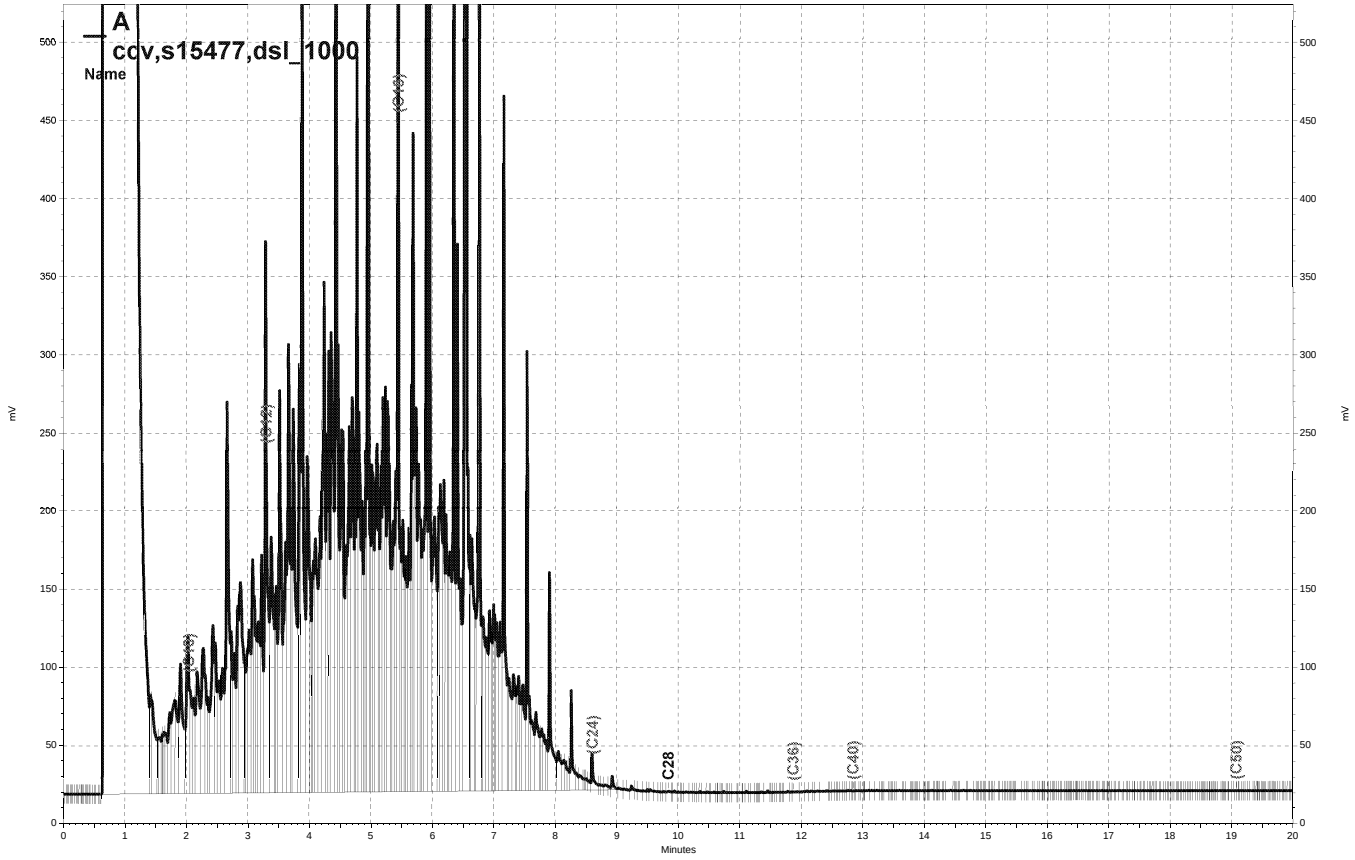

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APPENDIX D

Historical Groundwater and Surface Water Analytical Results

HISTORICAL GROUNDWATER MONITORING WELLS ANALYTICAL RESULTS

REDWOOD REGIONAL PARK SERVICE YARD, OAKLAND, CALIFORNIA

(all concentrations in ug/L, equivalent to parts per billion [ppb])

Well MW-2									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Nov-94	**66**	*< 50*	**3.4**	*< 0.5*	*< 0.5*	**0.9**	**4.3**	*NA*
2	Feb-95	**89**	*< 50*	**18**	**2.4**	**1.7**	**7.5**	**30**	*NA*
3	May-95	*< 50*	*< 50*	**3.9**	*< 0.5*	**1.6**	**2.5**	**8.0**	*NA*
4	Aug-95	*< 50*	*< 50*	**5.7**	*< 0.5*	*< 0.5*	*< 0.5*	**5.7**	*NA*
5	May-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
6	Aug-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
7	Dec-96	*< 50*	*< 50*	**6.3**	*< 0.5*	**1.6**	*< 0.5*	**7.9**	*NA*
8	Feb-97	*< 50*	*< 50*	**0.69**	*< 0.5*	**0.55**	*< 0.5*	**1.2**	*NA*
9	May-97	**67**	*< 50*	**8.9**	*< 0.5*	**5.1**	*< 1.0*	**14**	*NA*
10	Aug-97	*< 50*	*< 50*	**4.5**	*< 0.5*	**1.1**	*< 0.5*	**5.6**	*NA*
11	Dec-97	**61**	*< 50*	**21**	*< 0.5*	**6.5**	**3.9**	**31**	*NA*
12	Feb-98	**2,000**	**200**	**270**	**92**	**150**	**600**	**1,112**	*NA*
13	Sep-98	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	**7.0**
14	Apr-99	**82**	**710**	**4.2**	*< 0.5*	**3.4**	**4.0**	**12**	**7.5**
15	Dec-99	**57**	*< 50*	**20**	**0.6**	**5.9**	*<0.5*	**27**	**4.5**
16	Sep-00	*< 50*	*< 50*	**0.72**	*< 0.5*	*< 0.5*	*< 0.5*	**0.7**	**7.9**
17	Jan-01	**51**	*< 50*	**8.3**	*< 0.5*	**1.5**	*< 0.5*	**9.8**	**8.0**
18	Apr-01	**110**	*< 50*	**10**	*< 0.5*	**11**	**6.4**	**27**	**10**
19	Aug-01	**260**	**120**	**30**	**6.7**	**1.6**	**6.4**	**45**	**27**
20	Dec-01	**74**	**69**	**14**	**0.8**	**3.7**	**3.5**	**22**	**6.6**
21	Mar-02	*< 50*	*< 50*	**2.3**	**0.51**	**1.9**	**1.3**	**8.3**	**8.2**
22	Jun-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	**7.7**
23	Sep-02	**98**	*< 50*	**5.0**	*< 0.5*	*< 0.5*	*< 0.5*	—	**13**
24	Dec-02	*< 50*	*< 50*	**4.3**	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
25	Mar-03	**130**	**82**	**39**	*< 0.5*	**20**	**4.1**	**63**	**16**
26	Jun-03	*< 50*	*< 50*	**1.9**	*< 0.5*	*< 0.5*	*< 0.5*	**1.9**	**8.7**
27	Sep-03	**120**	*< 50*	**8.6**	**0.51**	**0.53**	*< 0.5*	**9.6**	**23**
28	Dec-03	**282**	*<100*	**4.3**	**1.6**	**1.3**	**1.2**	**8.4**	**9.4**
29	Mar-04	**374**	*<100*	**81**	**1.2**	**36**	**7.3**	**126**	**18**
30	Jun-04	*< 50*	*< 50*	**0.75**	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	**15**
31	Sep-04	**200**	*< 50*	**23**	*< 0.5*	*< 0.5*	**0.70**	**24**	**16**
32	Dec-04	**80**	*< 50*	**14**	*< 0.5*	*2.9*	**0.72**	**18**	**20**
33	Mar-05	**190**	**68**	**27**	*<0.5*	**14**	**11**	**52**	**26**
34	Jun-05	**68**	*< 50*	**7.1**	*< 0.5*	**6.9**	**1.8**	**16**	**24**
35	Sep-05	*< 50*	*< 50*	**2.5**	*< 0.5*	*< 0.5*	*< 1.0*	**2.5**	**23**
36	Dec-05	*< 50*	*< 50*	**3.9**	*< 0.5*	*< 0.5*	*< 1.0*	**3.9**	**23**
37	Mar-06	**1300**	**300**	**77**	**4.4**	**91**	**250**	**422**	**18**
38	Jun-06	*< 50*	**60**	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	**17**
39	Sep-06	**270**	**52**	**31**	*< 0.5*	**15**	**6.69**	**53**	**17**
40	Dec-06	*< 50*	*< 50*	**2.1**	*< 0.5*	*< 0.5*	*< 0.5*	**2**	**16**
41	Mar-07	**59**	*< 50*	**4**	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	**14**
42	Jun-07	*<50*	*<50*	**3.5**	*<0.5*	*<0.5*	*<0.5*	**3.5**	**8**
43	Sep-07	**2,600**	**260**	**160**	**44**	**86**	**431**	**721**	**15**
44	Dec-07	**16,000**	**5,800**	**23**	**91**	**230**	**2,420**	**2764**	**16**
44a	Jan-08	**480**	**200**	**1.1**	**3.2**	**5.5**	**68**	**77.8**	**11**
45	Mar-08	**20,000**	**24,000**	**21**	**39**	**300**	**2,620**	**2980**	**13**
45a	Apr-08	**800**	**640**	**2.6**	**2.1**	**13**	**155**	**172.7**	**13**
46a	May-08	**7,100**	**3,900**	**14**	**8.8**	**140**	**710**	**872.8**	**11**
46	Jun-08	**5,700**	**1,000**	**9.4**	**5.2**	**80**	**550**	**644.6**	**11**
46a	Jul-08	**6,400**	**2,200**	**13**	**5.1**	**140**	**570**	**728.1**	**2.9**
46b	Jul-08	**390**	**55**	**1.3**	**0.77**	**4.6**	**44.4**	**51.07**	**9**
46c	Aug-08	**28,000**	**7,100**	**12**	**19**	**260**	**2,740**	**3031**	*<20*
46d	Aug-08	**8,700**	**2,700**	**5.7**	**7.4**	**130**	**900.0**	**1043.1**	**3.5**
47	Sep-08	**40,000**	**9,100**	**1.6**	*<0.5*	**110**	**910.0**	**1021.6**	**9.5**
48	Dec-08	**9,200**	**2,200**	**0.52**	*<0.5*	*<0.5*	**201.0**	**201.52**	**12**
49	Mar-09	**3,100**	**37,000**	**1.1**	**1.4**	**7.9**	**35.0**	**45.4**	**14**
50	May-09	**5,000**	**15,000**	**1.5**	*<0.5*	**9.8**	**39.0**	**50**	**13**
51	Jun-09	**2,400**	**8,000**	**5.4**	*<0.5*	**11**	**20.2**	**36.6**	**13**
52	Aug-09	**1,900**	**3,100**	**1.6**	**1.8**	**11**	**23.8**	**38.2**	**7.1**
53	Sep-09	**1,400**	**1,800**	*<0.5*	*<0.5*	*<0.5*	**4.2**	**4.24**	**12**
54	Dec-09	**590**	**1,800**	*<0.5*	*<0.5*	**1.2**	**1.2**	**2.4**	**3.6**
55	Mar-10	**1,900**	**3,200**	*<0.5*	*<0.5*	*<0.5*	**2.2**	**2.2**	**2.2**
56	Mar-10	**2,000**	**4,300**	*<0.5*	*<0.5*	*<0.5*	**3.5**	**3.45**	*<2.0*
57	Jun-10	**1,300**	**2,400**	*<0.5*	*<0.5*	*<0.5*	**1.7**	**1.74**	*<2.0*
58	Sep-10	**910**	*<50*	*<0.5*	*<0.5*	*<0.5*	**1.5**	**1.45**	*<2.0*

Well MW-4									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Nov-94	**2,600**	**230**	**120**	**4.8**	**150**	**88**	**363**	*NA*
2	Feb-95	**11,000**	**330**	**420**	**17**	**440**	**460**	**1,337**	*NA*
3	May-95	**7,200**	**440**	**300**	**13**	**390**	**330**	**1,033**	*NA*
4	Aug-95	**1,800**	**240**	**65**	**6.8**	**89**	**67**	**227**	*NA*
5	May-96	**1,100**	**140**	**51**	*< 0.5*	*< 0.5*	**47**	**98**	*NA*
6	Aug-96	**3,700**	**120**	**63**	**2.0**	**200**	**144**	**409**	*NA*
7	Dec-96	**2,700**	**240**	**19**	*< 0.5*	**130**	**93**	**242**	*NA*
8	Feb-97	**3,300**	*< 50*	**120**	**1.0**	**150**	**103**	**374**	*NA*
9	May-97	**490**	*< 50*	**2.6**	**6.7**	**6.4**	**6.7**	**22**	*NA*
10	Aug-97	**1,900**	**150**	**8.6**	**3.5**	**78**	**53**	**143**	*NA*
11	Dec-97	**1,000**	**84**	**4.6**	**2.7**	**61**	**54**	**123**	*NA*
12	Feb-98	**5,300**	**340**	**110**	**24**	**320**	**402**	**856**	*NA*
13	Sep-98	**1,800**	*< 50*	**8.9**	*< 0.5*	**68**	**27**	**104**	**23**
14	Apr-99	**2,900**	**710**	**61**	**1.2**	**120**	**80**	**263**	**32**
15	Dec-99	**1,000**	**430**	**4.0**	**2.0**	**26**	**14**	**46**	*< 2.0*
16	Sep-00	**570**	**380**	*< 0.5*	*< 0.5*	**16**	**4.1**	**20**	**2.4**
17	Jan-01	**1,600**	**650**	**4.2**	**0.89**	**46**	**13.8**	**65**	**8.4**
18	Apr-01	**1,700**	**1,100**	**4.5**	**2.8**	**48**	**10.7**	**66**	**5.0**
19	Aug-01	**1,300**	**810**	**3.2**	**4.0**	**29**	**9.7**	**46**	*< 2.0*
20	Dec-01	*< 50*	**110**	*< 0.5*	*< 0.5*	*< 0.5*	**1.2**	**1.2**	*< 2.0*
21	Mar-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
22	Jun-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
23	Sep-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
24	Dec-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
25	Mar-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
26	Jun-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
27	Sep-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
28	Dec-03	*<50*	*<100*	*<0.3*	*<0.3*	*<0.3*	*<0.6*	—	*< 5.0*
29	Mar-04	*<50*	*<100*	*<0.3*	*<0.3*	*<0.3*	*<0.6*	—	*< 5.0*
30	Jun-04	*<50*	**2,500**	*<0.3*	*<0.3*	*<0.3*	*<0.6*	—	*< 5.0*
31	Sep-04	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*
32	Dec-04	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*
33	Mar-05	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*
34	Jun-05	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*
35	Sep-05	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*
Groundwater monitoring in this well discontinued with Alameda County Health Care Services Agency approval.									

Well MW-5									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Nov-94	**50**	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
2	Feb-95	**70**	*< 50*	**0.6**	*< 0.5*	*< 0.5*	*< 0.5*	**0.6**	*NA*
3	May-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
4	Aug-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
5	May-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
6	Aug-96	**80**	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
7	Dec-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
8	Feb-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
9	May-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
10	Aug-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
11	Dec-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
12	Feb-98	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
13	Sep-98	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2*
Groundwater monitoring in this well discontinued in 1998 with Alameda County Health Care Services Agency approval. Subsequent groundwater monitoring conducted to confirm plume's southern limit									
14	Jun-04	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	**5.9**
15	Sep-04	*<50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.0*	—	*< 2.0*

Well MW-7									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Jan-01	**13,000**	**3,100**	**95**	**4**	**500**	**289**	**888**	**95**
2	Apr-01	**13,000**	**3,900**	**140**	*< 0.5*	**530**	**278**	**948**	**52**
3	Aug-01	**12,000**	**5,000**	**55**	**25**	**440**	**198**	**718**	**19**
4	Dec-01	**9,100**	**4,600**	**89**	*< 2.5*	**460**	**228**	**777**	*< 10*
5	Mar-02	**8,700**	**3,900**	**220**	**6.2**	**450**	**191**	**867**	**200**
6	Jun-02	**9,300**	**3,500**	**210**	**6.3**	**380**	**155**	**751**	**18**
7	Sep-02	**9,600**	**3,900**	**180**	*< 0.5*	**380**	**160**	**720**	*< 2.0*
8	Dec-02	**9,600**	**3,700**	**110**	*< 0.5*	**400**	**189**	**699**	*< 2.0*
9	Mar-03	**10,000**	**3,600**	**210**	**12**	**360**	**143**	**725**	**45**
10	Jun-03	**9,300**	**4,200**	**190**	*< 10*	**250**	**130**	**570**	**200**
11	Sep-03	**10,000**	**3,300**	**150**	**11**	**300**	**136**	**597**	*< 2.0*
12	Dec-03	**9,140**	**1,100**	**62**	**45**	**295**	**184**	**586**	**89**
13	Mar-04	**8,170**	**600**	**104**	**41**	**306**	**129**	**580**	**84**
14	Jun-04	**9,200**	**2,700**	**150**	*< 0.5*	**290**	**91**	**531**	*< 2.0*
15	Sep-04	**9,700**	**3,400**	**98**	*< 0.5*	**300**	**125**	**523**	*< 2.0*
16	Dec-04	**8200**	**4,000**	**95**	*< 0.5*	**290**	**124**	**509**	*< 2.0*
17	Mar-05	**10,000**	**4,300**	**150**	*<0.5*	**370**	**71**	**591**	*<2.0*
18	Jun-05	**10,000**	**3,300**	**210**	*<1.0*	**410**	**56**	**676**	*<4.0*
19	Sep-05	**7,600**	**2,700**	**110**	*<1.0*	**310**	**54**	**474**	*<4.0*
20	Dec-05	**2,900**	**3,300**	**31**	*<1.0*	**140**	**41**	**212**	*<4.0*
21	Mar-06	**6,800**	**3,000**	**110**	*< 1.0*	**280**	**42**	**432**	**110**
22	Jun-06	**6,900**	**3,600**	**63**	*< 2.5*	**290**	**43**	**396**	*< 10*
23	Sep-06	**7,900**	**3,600**	**64**	*< 0.5*	**260**	**58**	**382**	49
24	Dec-06	**7,300**	**2,400**	**50**	*< 0.5*	**220**	**42**	**312**	*< 2.0*
25	Mar-07	**6,200**	**2,900**	**34**	*< 0.5*	**190**	**15**	**239**	*< 2.0*
26	Jun-07	**6,800**	**3,000**	**30**	*<1.0*	**160**	**27**	**217**	*<4.0*
27	Sep-07	**6,400**	**3,000**	*<0.5*	*<0.5*	**170**	**43**	**213**	*<2.0*
28	Dec-07	**4,800**	**2,800**	*<0.5*	*<0.5*	**100**	**26.5**	**126.5**	*2.7*
30	Mar-08	**5,400**	**5,900**	**21**	*<0.5*	**150**	**15**	**186**	**51**
31	Jun-08	**4,800**	**3,500**	**55**	*<0.5*	**140**	**7.03**	**202**	*<2.0*
32	Sep-08	**6,400**	**2,800**	**22**	*<0.5*	**100**	**9.30**	**131**	*<2.0*
33	Dec-08	**3,500**	**3,600**	**5**	*<0.5*	**100**	**9.10**	**114**	*<2.0*
34	Mar-09	**5,100**	**6,700**	**19**	*<0.5*	**140**	**12.30**	**171**	**51**
35	Jun-09	**4,600**	**5,400**	**40**	*< 0.5*	**140**	**5.12**	**185**	**260**
36	Sep-09	**4,400**	**4,700**	*<0.5*	*<0.5*	**96**	**5.60**	**102**	**3.5**
37	Dec-09	**4,900**	**4,500**	*< 0.5*	*< 0.5*	**90**	**2.90**	**93**	**57.0**
38	Mar-10	**5,300**	**4,300**	**17**	*<0.5*	**110**	**2.60**	**130**	**16.0**
39	Mar-10	**2,600**	**6,100**	**11**	*<0.5*	**76**	**4.50**	**92**	*<2.0*
40	Jun-10	**5,800**	**5,000**	**20**	*<0.5*	**140**	**9.90**	**170**	*<2.0*
41	Sep-10	**6,300**	**4,100**	*<0.5*	*<0.5*	**93**	**6.00**	**99**	**69.0**

Well MW-8									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Jan-01	**14,000**	**1,800**	**430**	**17**	**360**	**1230**	**2,037**	**96**
2	Apr-01	**11,000**	**3,200**	**320**	**13**	**560**	**1,163**	**2,056**	**42**
3	Aug-01	**9,600**	**3,200**	**130**	**14**	**470**	**463**	**1,077**	**14**
4	Dec-01	**3,500**	**950**	**69**	**2.4**	**310**	**431**	**812**	*< 4.0*
5	Mar-02	**14,000**	**3,800**	**650**	**17**	**1,200**	**1,510**	**3,377**	**240**
6	Jun-02	**2,900**	**1,100**	**70**	**2.0**	**170**	**148**	**390**	**19**
7	Sep-02	**1,000**	**420**	**22**	*< 0.5*	**64**	**50**	**136**	*< 2.0*
8	Dec-02	**3,300**	**290**	**67**	*< 0.5*	**190**	**203**	**460**	*< 2.0*
9	Mar-03	**13,000**	**3,500**	**610**	**12**	**1,100**	**958**	**2,680**	*< 10*
10	Jun-03	**7,900**	**2,200**	**370**	**7.4**	**620**	**562**	**1,559**	*< 4.0*
11	Sep-03	**3,600**	**400**	**120**	**3.3**	**300**	**221**	**644**	*< 2.0*
12	Dec-03	**485**	**100**	**19**	**1.5**	**26**	**36**	**83**	*< 5.0*
13	Mar-04	**16,000**	**900**	**592**	**24**	**1,060**	**1,870**	**3,546**	**90**
14	Jun-04	**5,900**	**990**	**260**	**9.9**	**460**	**390**	**1,120**	*< 10*
15	Sep-04	**2,000**	**360**	**100**	*< 2.5*	**180**	**102**	**382**	*< 10*
16	Dec-04	**15,000**	**4,000**	**840**	**21**	**1,200**	**1,520**	**3,581**	*< 10*
17	Mar-05	**24,000**	**7,100**	**840**	**51**	**1,800**	**2,410**	**5,101**	*<10*
18	Jun-05	**33,000**	**5,700**	**930**	**39**	**2,500**	**3,860**	**7,329**	*<20*
19	Sep-05	**5,600**	**1,200**	**270**	**6.6**	**400**	**390**	**1,067**	*<20*
20	Dec-05	**3,700**	**1,300**	**110**	*< 5.0*	**320**	**356**	**786**	*<20*
21	Mar-06	**22,000**	**4,300**	**550**	**30**	**1,800**	**2,380**	**4,760**	*<20*
22	Jun-06	**19,000**	**5,000**	**500**	**28**	**1,800**	**1,897**	**4,225**	*<20*
23	Sep-06	**9,000**	**820**	**170**	**7.7**	**730**	**539**	**1,447**	*<10*
24	Dec-06	**4,400**	**800**	**75**	**4.2**	**320**	**246**	**645**	*< 2.0*
25	Mar-07	**15,000**	**4,500**	**340**	**19**	**1,300**	**1,275**	**2,934**	*< 20*
26	Jun-07	**10,000**	**3,500**	**220**	**11**	**670**	**675**	**1,576**	*<4.0*
27	Sep-07	**9,400**	**3,400**	**200**	**6.9**	**1,000**	**773**	**1,980**	*<8.0*
28	Dec-07	**1,200**	**500**	**15**	**0.88**	**95**	**57.7**	**168.58**	*<2.0*
30	Mar-08	**11,000**	**13,000**	**150**	**13**	**1,100**	**950.0**	**2,213**	**76**
31	Jun-08	**2,000**	**1,700**	**27**	**2.5**	**190**	**113.2**	**333**	*<2.0*
32	Sep-08	**5,500**	**4,400**	**89**	**3.9**	**630**	**194.4**	**917**	*<2.0*
33	Dec-08	**520**	**400**	**1.5**	*<0.5*	**20**	**4.4**	**26**	**4.5**
34	Mar-09	**4,600**	**7,300**	**55**	*<5.0*	**410**	**639.0**	**1,104**	*<20*
35	Jun-09	**2,100**	**3,400**	**32**	*< 0.5*	**260**	**80.8**	**373**	**55**
36	Sep-09	**440**	**1,700**	**2.8**	*<0.5*	**33**	**2.7**	**39**	**3.7**
37	Dec-09	**560**	**540**	**1.5**	*< 0.5*	**39**	**7.1**	**48**	**4.2**
38	Mar-10	**220**	**270**	**0.8**	*<0.5*	**14**	**3.1**	**18**	**3.9**
39	Mar-10	**3,400**	**5,700**	**28.0**	*<0.5*	**340**	**255.7**	**624**	*<2.0*
40	Jun-10	**4,700**	**4,200**	**27.0**	**2.9**	**400**	**103.2**	**533**	**27**
41	Sep-10	**900**	**1,300**	**2.9**	*<0.5*	**22**	*<2.5*	**25**	*<10*

Well MW-9									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Aug-01	**11,000**	**170**	**340**	**13**	**720**	**616**	**1,689**	**48**
2	Dec-01	**9,400**	**2,700**	**250**	**5.1**	**520**	**317**	**1,092**	*< 10*
3	Mar-02	**1,700**	**300**	**53**	**4.2**	**120**	**67**	**244**	**20**
4	Jun-02	**11,000**	**2,500**	**200**	**16**	**600**	**509**	**1,325**	**85**
5	Sep-02	**3,600**	**2,800**	**440**	**11**	**260**	**39**	**750**	*< 4.0*
6	Dec-02	**7,000**	**3,500**	**380**	**9.5**	**730**	**147**	**1,266**	*< 10*
7	Mar-03	**4,400**	**1,400**	**320**	**6.9**	**400**	**93**	**820**	*< 2.0*
8	Jun-03	**7,600**	**1,600**	**490**	**10**	**620**	**167**	**1,287**	*< 4.0*
9	Sep-03	**8,300**	**2,900**	**420**	**14**	**870**	**200**	**1,504**	*< 10*
10	Dec-03	**7,080**	**700**	**287**	**31**	**901**	**255**	**1,474**	*< 10*
11	Mar-04	**3,550**	**600**	**122**	**15**	**313**	**84**	**534**	**35**
12	Jun-04	**6,800**	**1,700**	**350**	*< 2.5*	**620**	**99**	**1,069**	*< 10*
13	Sep-04	**7,100**	**1,900**	**160**	*8.1*	**600**	**406**	**1,174**	*< 10*
14	Dec-04	**4,700**	**2,800**	**160**	*< 2.5*	**470**	*< 0.5*	**630**	*< 10*
15	Mar-05	**4,200**	**1,600**	**97**	*<2.5*	**310**	**42**	**449**	*< 10*
16	Jun-05	**9,900**	**2,000**	**170**	*<2.5*	**590**	**359**	**1,119**	*< 10*
17	Sep-05	**3,600**	**1,200**	**250**	*<0.5*	**330**	**36**	**616**	*< 2.0*
18	Dec-05	**8,700**	**1,500**	**150**	**4**	**650**	**551**	**1,355**	*< 4.0*
19	Mar-06	**3,600**	**880**	**37**	*<1.0*	**210**	**165**	**412**	*< 4.0*
20	Jun-06	**3,200**	**1,300**	**39**	*<1.0*	**220**	**144**	**403**	**4.2**
21	Sep-06	**12,000**	**3,300**	**130**	**8**	**850**	**604**	**1,592**	*<1.0*
22	Dec-06	**12,000**	**2,800**	**140**	**9.4**	**880**	**634**	**1,663**	*< 10*
23	Mar-07	**9,600**	**2,900**	**120**	**8.7**	**780**	**453**	**1,362**	*< 10*
24	Jun-07	**7,100**	**2,200**	**75**	**5.2**	**480**	**298**	**858**	*<4.0*
25	Sep-07	**4,500**	**2,100**	**60**	**3.8**	**420**	**227**	**710**	*<4.0*
26	Dec-07	**6,200**	**2,000**	**51**	*<0.5*	**340**	**128.8**	**519.8**	*<2.0*
27	Mar-08	**6,400**	**3,500**	**67**	**5.2**	**480**	**177.6**	**724.6**	**38**
28	Jun-08	**10,000**	**3,400**	**89**	*<2.5*	**510**	**231.0**	**830.0**	*<10*
29	Sep-08	**4,800**	**2,700**	**53**	*<0.5*	**250**	**66.4**	**369.4**	*<2.0*
30	Dec-08	**4,300**	**2,300**	**45**	*<0.5*	**330**	**39.1**	**414.1**	*<2.0*
31	Mar-09	**4,000**	**2,200**	*<2.0*	*<0.5*	**160**	**34.9**	**194.9**	*<2.0*
32	Jun-09	**4,100**	**3,600**	**62**	*< 0.5*	**280**	**41.7**	**383.7**	**160**
33	Sep-09	**2,200**	**2,900**	**15**	*<0.5*	**110**	**11.8**	**136.8**	*<2.0*
34	Dec-09	**2,500**	**4,000**	**27**	*<0.5*	**170**	**8.7**	**205.7**	*<2.0*
35	Mar-10	**3,300**	**2,600**	**15**	*<0.5*	**140**	**12.0**	**167.0**	**8.6**
36	Mar-10	**2,500**	**3,400**	**16**	*<0.5*	**70**	**15.4**	**101.4**	**2.1**
37	Jun-10	**1,700**	**1,300**	**13**	*<0.5*	**48**	**4.9**	**65.9**	**11**
38	Sep-10	**13,000**	**2,900**	**43**	*<0.5*	**300**	**47.9**	**390.9**	**43**

Well MW-10									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Aug-01	**550**	**2,100**	**17**	*< 0.5*	**31**	**44**	**92**	**40**
2	Dec-01	*< 50*	**81**	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	**25**
3	Mar-02	*< 50*	*< 50*	**0.61**	*< 0.5*	*< 0.5*	*< 0.5*	**0.61**	**6.0**
4	Jun-02	*< 50*	*< 50*	**0.59**	*< 0.5*	**0.58**	*< 0.5*	**1.2**	**9.0**
5	Sep-02	**160**	**120**	**10**	*< 0.5*	**6.7**	**3.6**	**20**	**26**
6	Dec-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	**16**
7	Mar-03	**110**	*< 50*	**11**	*< 0.5*	**12**	**1.3**	**24**	**15**
8	Jun-03	**110**	*< 50*	**9.6**	*< 0.5*	**6.8**	*< 0.5*	**16**	**9.0**
9	Sep-03	*< 50*	*< 50*	**1.1**	*< 0.5*	**1.5**	*< 0.5*	**2.6**	**7.0**
10	Dec-03	**162**	*<100*	**6.9**	*<0.3*	**8.0**	*<0.6*	**15**	**9.9**
11	Mar-04	**94**	*<100*	**2.8**	*<0.3*	**5.7**	**7.0**	**16**	*<5.0*
12	Jun-04	**150**	**56**	**11**	*< 0.5*	**12**	*< 0.5*	**23**	**15**
13	Sep-04	*< 50*	*< 50*	**1.6**	*< 0.5*	**1.9**	*< 1.0*	**3.5**	**5.8**
14	Dec-04	**64**	*< 50*	**3.7**	*< 0.5*	**3.7**	**0.7**	**8.1**	**10**
15	Mar-05	**95**	**98**	**8.3**	*<0.5*	**7.7**	**0.77**	**17**	**13**
16	Jun-05	**150**	**57**	**14**	*<0.5*	**10**	**1.0**	**25**	*<2.0*
17	Sep-05	**87**	*< 50*	**5.0**	*<0.5*	**3.6**	*<1.0*	**8.6**	*<2.0*
18	Dec-05	*< 50*	*< 50*	**1.2**	*<0.5*	*<0.5*	*<1.0*	**1.2**	**7.8**
19	Mar-06	**58**	**71**	**3.2**	*<0.5*	**2.2**	*<1.0*	**5.4**	**8.8**
20	Jun-06	**73**	**140**	**4.9**	*<0.5*	**2.5**	*<1.0*	**7.4**	**5.3**
21	Sep-06	**88**	**51**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	**9.6**
22	Dec-06	*<50*	*<50*	**0.61**	*<0.5*	**0.55**	*<0.5*	**1.2**	**3.7**
23	Mar-07	**57**	*<50*	**3.6**	*<0.5*	**2.2**	*<0.5*	**5.8**	**3.1**
24	Jun-07	**60**	**65**	**2.4**	*<0.5*	**1.6**	*<0.5*	**4.0**	**4.0**
25	Sep-07	**84**	*<50*	**3.6**	*<0.5*	**2.3**	**0.52**	**6.4**	**3.6**
26	Dec-07	**130**	**67**	**0.77**	*<0.5*	**340**	**0.83**	**341.6**	*<2.0*
27	Mar-08	**78**	**170**	**1.7**	*<0.5*	**3.1**	**0.97**	**5.8**	**2.4**
28	Jun-08	**230**	**320**	**12**	*<0.5*	**9.9**	**3.50**	**25.4**	*<2.0*
29	Sep-08	**80**	*<50*	**1.6**	*<0.5*	**0.52**	*<0.5*	**2.1**	**3.0**
30	Dec-08	*<50*	**66**	**0.89**	*<0.5*	*<0.5*	*<0.5*	**0.9**	**2.1**
31	Mar-09	**76**	**230**	*<2.0*	*<0.5*	**1.4**	*<0.5*	**1.4**	*<2.0*
32	Jun-09	**72**	**120**	**2.0**	*< 0.5*	**4.4**	**1.3**	**7.7**	*<2.0*
33	Sep-09	**74**	**220**	**1.6**	*<0.5*	*<0.5*	*<0.5*	**1.6**	*<2.0*
34	Dec-09	**72**	**150**	**0.6**	*<0.5*	**1.6**	**1.2**	**3.4**	*<2.0*
36	Mar-10	**63**	**280**	**1.3**	*<0.5*	**48**	**<0.5**	**49.3**	*<2.0*
37	Jun-10	**110**	**340**	**1.4**	*<0.5*	**2.6**	**0.74**	**4.7**	**2.4**
38	Sep-10	**140**	**360**	**2.1**	*<0.5*	**1.4**	<0.5	**3.5**	**4.3**

Well MW-11									
Event	Date	TVHg	TEHd	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
1	Aug-01	17,000	7,800	390	17	820	344	1,571	< 10
2	Dec-01	5,800	2,800	280	7.8	500	213	1,001	< 10
3	Mar-02	100	94	< 0.5	< 0.5	0.64	< 0.5	0.64	2.4
4	Jun-02	8,200	2,600	570	13	560	170	1,313	< 4
5	Sep-02	12,000	4,400	330	13	880	654	1,877	< 10
6	Dec-02	18,000	4,500	420	< 2.5	1,100	912	2,432	< 10
7	Mar-03	7,800	2,600	170	4.7	530	337	1,042	53
8	Jun-03	14,000	3,800	250	< 2.5	870	693	1,813	< 10
9	Sep-03	10,000	3,000	250	9.9	700	527	1,487	< 4
10	Dec-03	15,000	1,100	314	60	1,070	802	2,246	173
11	Mar-04	4,900	400	72	17	342	233	664	61
12	Jun-04	10,000	2,300	210	2.8	690	514	1,417	< 10
13	Sep-04	7,200	2,300	340	< 2.5	840	75	1,255	< 10
14	Dec-04	11,000	3,900	180	5.1	780	695	1,660	< 10
15	Mar-05	4,600	1,900	69	<2.5	300	206	575	< 10
16	Jun-05	1,400	590	85	<0.5	110	8.2	203	< 2.0
17	Sep-05	12,000	3,100	220	< 1.0	840	762	1,822	< 4.0
18	Dec-05	2,500	2,100	120	< 2.5	260	16	396	< 10
19	Mar-06	2,200	1,300	27	<2.5	130	5.2	162	< 10
20	Jun-06	3,700	1,900	170	<1.0	230	14	414	< 4.0
21	Sep-06	3,600	2,100	80	<0.5	230	8.8	319	< 2.0
22	Dec-06	6,000	3,500	83	<1.0	260	16.4	359	< 4.0
23	Mar-07	4,500	1,900	110	< 0.5	170	7.9	288	< 2.0
24	Jun-07	4	2,200	120	<0.5	140	6.6	267	<4.0
25	Sep-07	5,500	2,700	86	<0.5	180	16.1	282	<2.0
26	Dec-07	7,100	4,000	68	<0.5	140	14	222	35
27	Mar-08	5,300	4,000	130	<0.5	120	13	263	8.8
28	Jun-08	3,600	4,200	190	<0.5	140	11	341	<2.0
29	Sep-08	7,300	4,600	130	<0.5	110	4.5	245	<2.0
30	Dec-08	2,800	1,600	93	<0.5	82	0.69	176	<2.0
31	Mar-09	4,100	4,600	18	<0.5	82	8	108	8.0
32	Jun-09	2,100	2,700	38	< 0.5	80	3.3	121	3.3
33	Sep-09	830	2,400	11	<0.5	19	<0.5	30	<2.0
34	Dec-09	2,200	3,100	19	<0.5	46	0.78	66	14.0
35	Mar-10	2,300	2,500	13	<0.5	59	0.79	73	3.4
36	Mar-10	1,500	3,400	12	<0.5	48	<0.5	60	<2.0
37	Jun-10	2,000	3,500	14	<0.5	42	0.92	57	7.9
38	Sep-10	3,000	2,200	18	<0.5	41	0.55	60	8.0

Well MW-12									
Event	Date	TVHg	TEHd	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	MTBE
1	Dec-05	1,300	700	< 0.5	< 0.5	33	5.6	39	< 2.0
2	Mar-06	1,100	540	<0.5	<0.5	8.5	1.5	10	49
3	Jun-06	680	400	<0.5	<0.5	5.8	1.4	7.2	< 2.0
4	Sep-06	910	480	<0.5	<0.5	9.9	1.5	11.4	21
5	Dec-06	770	230	< 0.5	< 0.5	7.4	2.0	9.4	< 2.0
6	Mar-07	390	110	< 0.5	< 0.5	1.7	1.7	3.4	< 2.0
7	Jun-07	590	280	<0.5	<0.5	4.5	0.9	5.4	<2.0
8	Sep-07	390	180	<0.5	<0.5	2.4	2.4	4.8	<2.0
9	Dec-07	210	140	<0.5	<0.5	2.1	1.3	3.4	<2.0
10	Mar-08	720	500	<0.5	4.4	9.0	2.8	16.2	<2.0
11	Jun-08	220	50	<0.5	<0.5	2.0	<0.5	2.0	<2.0
12	Sep-08	370	95	<0.5	<0.5	2.8	0.98	3.8	<2.0
13	Dec-08	93	170	<0.5	<0.5	0.76	<0.5	0.8	<2.0
14	Mar-09	180	130	<0.5	<0.5	1.70	<0.5	1.7	<2.0
15	Jun-09	300	280	< 0.5	< 0.5	4.60	< 0.5	4.6	<2.0
16	Sep-09	330	270	<0.5	<0.5	2.30	<0.5	2.3	<2.0
17	Dec-09	76	170	<0.5	<0.5	<0.5	<0.5	0.0	<2.0
18	Mar-10	240	380	<0.5	<0.5	2.7	<0.5	2.7	<2.0
19	Jun-10	540	370	<0.5	<0.5	3.5	0.92	4.4	7.9
20	Sep-10	380	220	<0.5	<0.5	1.7	<0.5	1.7	8

HISTORICAL SURFACE WATER ANALYTICAL RESULTS
REDWOOD REGIONAL PARK SERVICE YARD, OAKLAND, CALIFORNIA

(all concentrations in ug/L, equivalent to parts per billion [ppb])

Sampling Location SW-1 (Upstream of Contaminated Groundwater Discharge Location SW-2)									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Feb-94	**50**	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
2	May-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
3	May-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
4	Aug-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
5	Dec-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
6	Feb-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
7	Aug-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
8	Dec-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
9	Feb-98	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*NA*
10	Sep-98	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
11	Apr-99	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	—	*< 2.0*
Sampling at this location discontinued after April 1999 with Alameda County Health Services Agency approval.									

Sampling Location SW-2 (Area of Historical Contaminated Groundwater Discharge)									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	Feb-94	**130**	*< 50*	**1.9**	*< 0.5*	**4.4**	**3.2**	**9.5**	*NA*
2	May-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
3	Aug-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
4	May-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
5	Aug-96	**200**	*< 50*	**7.5**	*< 0.5*	**5.4**	*< 0.5*	**13**	*NA*
6	Dec-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
7	Feb-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
8	Aug-97	**350**	**130**	**13**	**0.89**	**19**	**11**	**44**	*NA*
9	Dec-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
10	Feb-98	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*NA*
11	Sep-98	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
12	Apr-99	**81**	*<50*	**2.0**	*< 0.5*	**2.5**	**1.3**	**5.8**	**2.3**
13	Dec-99	**1,300**	**250**	**10**	**1.0**	**47**	**27**	**85**	**2.2**
14	Sep-00	**160**	**100**	**2.1**	*< 0.5*	**5.2**	**1.9**	**9.2**	**3.4**
15	Jan-01	*< 50*	*< 50*	*< 0.5*	*< 0.5*	**0.53**	*< 0.5*	**0.5**	*< 2.0*
16	Apr-01	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
17	Sep-01	**440**	**200**	**2.1**	*< 0.5*	**17**	**1.3**	**20**	**10**
18	Dec-01	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
19	Mar-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
20	Jun-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
21	Sep-02	**220**	**590**	**10**	*< 0.5*	**13**	*< 0.5*	**23**	*< 2.0*
22	Dec-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
23	Mar-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	**0.56**	*< 0.5*	**0.56**	**2.8**
24	Jun-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*<0.5*	*< 2.0*
25	Sep-03	**190**	**92**	**2.1**	*< 0.5*	**4.2**	*< 0.5*	**6.3**	*< 2.0*
26	Dec-03	**86**	*< 100*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	*<0.6*	*< 5.0*
27	Mar-04	*<50*	*<100*	*<0.3*	*<0.3*	**1.1**	*<0.6*	**1.1**	*< 5.0*
28	Jun-04	*<50*	*<50*	*<0.5*	*<0.5*	**0.83**	*<0.5*	**0.83**	*< 2.0*
29	Sep-04	**260**	**370**	**4.4**	*<0.5*	**6.3**	*< 1.0*	**11**	*< 2.0*
30	Dec-04	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*1.0*	*< 2.0*
31	Mar-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
32	Jun-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
33	Sep-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
34	Dec-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
35	Mar-06	*<50*	**62**	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
36	Jun-06	*<50*	**110**	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
37	Sep-06	**62**	**94**	*<0.5*	*<0.5*	**0.81**	*<0.5*	**0.8**	*< 2.0*
38	Dec-06	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
39	Mar-07	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
40	Jun-07	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<1.0*	*<2.0*
41	Sep-07	*<50*	**77**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	<1.0	*<2.0*
42	Dec-07	**130**	**430**	*<0.5*	*<0.5*	**1.5**	*<0.5*	**1.5**	*<2.0*
43	Mar-08	*<50*	**130**	*<0.5*	*<0.5*	*<0.5*	**0.61**	**0.61**	*<2.0*
44	Jun-08	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
45	Sep-08	**530**	**690**	*<0.5*	*<0.5*	**4.3**	*<0.5*	**4.3**	*<2.0*
46	Dec-08	*<50*	**83**	*<5.0*	*<5.0*	*<5.0*	*<5.0*	**<0.5**	*<2.0*
47	Mar-09	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<1.0*	*<2.0*
48	Jun-09	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
49	Sep-09	**110**	**220**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
50	Dec-09	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
51	Mar-10	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
52	Jun-10	*<50*	**240**	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
53	Sep-10	*<50*	**66**	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*

Sampling Location SW-3 (Downstream of Contaminated Groundwater Discharge Location SW-2)									
Event	**Date**	**TVHg**	**TEHd**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total BTEX**	**MTBE**
1	May-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
2	Aug-95	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
3	May-96	*< 50*	**74**	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
4	Aug-96	**69**	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
5	Dec-96	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
6	Feb-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
7	Aug-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
8	Dec-97	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
9	Feb-98	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*NA*
10	Sep-98	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
11	Apr-99	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
12	Dec-99	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
13	Sep-00	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
14	Jan-01	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
15	Apr-01	*< 50*	*<50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
16	Sep-01	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*< 0.5*	*NS*
17	Dec-01	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
18	Mar-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
19	Jun-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	**2.4**
20	Sep-02	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
21	Dec-02	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
22	Mar-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
23	Jun-03	*< 50*	*< 50*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 2.0*
24	Sep-03	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
25	Dec-03	**60**	*< 100*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	*<0.6*	*< 5.0*
26	Mar-04	*<50*	*<100*	*<0.3*	*<0.3*	*<0.6*	*<0.6*	*<0.6*	*< 5.0*
27	Jun-04	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
28	Sep-04	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
29	Dec-04	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
30	Mar-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
31	Jun-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
32	Sep-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
33	Dec-05	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
34	Mar-06	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
35	Jun-06	*<50*	**120**	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
36	Sep-06	*<50*	**120**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*0.5*	**7.8**
37	Dec-06	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	*< 2.0*
38	Mar-07	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*< 1.0*	*<1.0*	**3.3**
39	Jun-07	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*0.5*	*<2.0*
40	Sep-07	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
41	Dec-07	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
42	Mar-08	*<50*	**200**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
43	Jun-08	*<50*	**55**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<2.0*
44	Sep-08	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
45	Dec-08	*<50*	**360**	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<2.0*
46	Mar-09	*<50*	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*0.5*	*<2.0*
47	Jun-09	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<2.0*
48	Sep-09	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
49	Dec-09	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
50	Mar-10	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
51	Jun-10	*<50*	*<50*	*<5.0*	*<5.0*	*<5.0*	*<5.0*	*<0.5*	*<2.0*
52	Sep-10	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*

NS = Not Sampled (no surface water present during sampling event)