PELCO SALES & SERVICE
1550 PARK AVENUE • EMERYVILLE, CALIFORNIA 94608
TELEPHONE: (510) 653-9850 • FAX: (510) 653-9854
Certified Refrigeration Contractors Lic. No. 675829

May 31, 2013

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, Calif. 94502

Dear Mr. Detterman:

"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 knowlege."

Sincerely,

PELCO SALES AND SERVICE

Pennie Barger

Pennie Barger
Secy-Treas.

Soil and Groundwater Investigation Summary Report
Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California

May 2013

ERRG Project No. 2012-144

Prepared for:

Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California 94608

Prepared by:

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Boulevard, Suite 200
Martinez, California 94553
(925) 969-0750

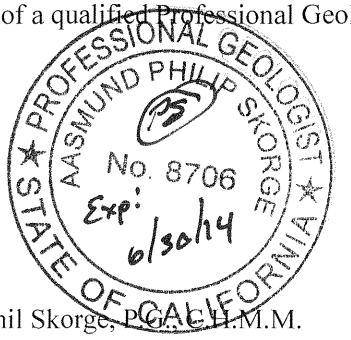
Soil and Groundwater Investigation Summary Report
Apex Refrigeration, Inc.
1550 Park Avenue
Emeryville, California

Submitted by:
Engineering/Remediation Resources Group, Inc.

Signature	May 31, 2013 Date
Phil Skorge, PG Name	Project Manager and Geologist Title

CERTIFICATION

This document was prepared under the direction and supervision of a qualified Professional Geologist.



Phil Skorge, P.G., C.H.M.M.
Professional Geologist No. 8706

Table of Contents

List of Figures

List of Tables

List of Appendices

Acronyms and Abbreviations

ACEH	Alameda County Environmental Health Department
Apex	Apex Refrigeration, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
1,2-DCA	1,2-dichloroethane
EDB	ethylene dibromide
EPA	U.S. Environmental Protection Agency
ERRG	Engineering/Remediation Resources Group, Inc.
ESLs	environmental screening levels
IDW	investigation-derived waste
LUFT	leaking underground fuel tank
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MTBE	methyl tert-butyl ether
PAH	polycyclic aromatic hydrocarbons
PG&E	Pacific Gas and Electric Company
PVC	polyvinyl chloride
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SSHP	Site-Specific Health and Safety Plan
STLC	soluble threshold limit concentration
SWRCB	State Water Resources Control Board
TPH	total petroleum hydrocarbons
TPH-d	TPH as diesel
TPH-g	TPH as gasoline
TPH-mo	TPH as motor oil
UST	underground storage tank

Section 1. Introduction

Engineering/Remediation Resources Group, Inc. (ERRG) has prepared this summary report to document completion of soil and groundwater investigation activities in the vicinity of a former 1,500-gallon underground storage tank (UST) at the Apex Refrigeration, Inc. (Apex) facility, located at 1550 Park Avenue in Emeryville, California (Figure 1). The objective of the investigation was to assess the nature and extent of any potential soil and groundwater contamination related to the recently removed UST. The work was performed in accordance with the "Work Plan for Soil and Groundwater Investigation, Apex Refrigeration, Inc. 1550 Park Avenue, Emeryville, California" (Work Plan) (ERRG, 2012), as approved by Alameda County Health Care Services (ACEH) on January 24, 2013.

In addition to this introduction, which includes a summary of background site information (Section 1.1) and investigation approach (Section 1.2), this report describes the field activities performed by ERRG (Section 2), summarizes the results of the investigation (Section 3), and lists the guidance and documents that were used to prepare this report (Section 4).

1.1. SITE BACKGROUND

On or about November 6, 2009, a UST was discovered during street improvements adjacent to the building located at 1550 Park Avenue in Emeryville, California (P&D Environmental, Inc., 2010). The street, curb, and gutter adjacent to the south side of the UST were excavated to a depth of approximately 4 feet below ground surface (bgs). The top of the UST was encountered at a depth of approximately 1 foot bgs and was measured to be approximately 10 feet long and 5 feet in diameter. No holes were reported in the tank; however, an opening at the top of the tank allowed access to the interior of the UST. The UST contained water and a floating layer of black viscous fluid with a strong petroleum odor.

On December 9, 2009, approximately 700 gallons of oily water was pumped from the UST and transported off site for disposal at the Clearwater Environmental disposal facility in Silver Springs, Nevada. One water sample collected from the UST was submitted to McCampbell Analytical, Inc. in Pittsburg, California, for fuel fingerprint laboratory analysis using U.S. Environmental Protection Agency (EPA) Methods 3550C and 8015B. The laboratory analyses identified fuel oil and possibly bunker oil in the sample. During January and February 2010, approximately 1,500 gallons of additional water was pumped from the UST and the adjacent excavated area and transported for disposal at the Alviso Independent Oil facility in Alviso, California (P&D Environmental, Inc., 2010).

After consulting with Apex, the City of Emeryville removed the UST on February 8, 2010. The soil excavated around the UST displayed a blue-gray discoloration and exhibited a strong oily odor. The UST

was visually inspected following removal from the excavation pit. The UST appeared to be in good condition and had a calculated capacity of approximately 1,500 gallons. No evidence of holes, cracks, or pitting from significant corrosion was observed; however, a hole was observed at the west end of the UST where a rivet was missing. It is unknown whether the rivet was dislodged during removal of the UST. Following removal of the UST from the excavation pit, a layer of black oil was observed floating on the water in pit at approximately 6 feet bgs. However, water samples could not be collected for chemical analysis because an inadequate amount of water was present in the pit (P&D Environmental, Inc., 2010).

After removal of the UST, two soil samples (T1 and T2) were collected from the bottom of the excavation pit using a backhoe bucket (Figure 2). The samples were collected from the western and eastern ends of the former UST and submitted for laboratory analysis. A four-point composite sample (SP1) was also collected from the excavated soil for waste characterization purposes. The samples were analyzed for total petroleum hydrocarbons (TPH) as diesel (TPH-d) using EPA Method 3550C in conjunction with modified EPA Method 8015C; benzene, toluene, ethylbenzene, and xylenes (BTEX) and the lead scavengers ethylene dibromide (EDB) and 1,2-dichloroethane (1,2-DCA) by EPA Method 5030B in conjunction with EPA Method 8260B. In addition, sample SP1 was analyzed for Leaking Underground Fuel Tank (LUFT) 5 metals (cadmium, total chromium, lead, nickel, and zinc) using EPA Method 3050B in conjunction with EPA Method 6010B, and for the soluble threshold limit concentration (STLC) of total chromium using California 22 Waste Extraction Test extraction methods and EPA Method 6010B for disposal characterization purposes (P&D Environmental, Inc., 2010).

BTEX, EDB, and 1,2-DCA were not detected at concentrations greater than the laboratory reporting limits in the tank pit bottom samples. TPH-d was detected in samples T1, T2, and SP1 at concentrations of 15, 5.8, and 830 milligrams per kilogram (mg/kg), respectively. Cadmium was not detected at concentrations greater than laboratory reporting limits in sample SP1. Total chromium, lead, nickel, and zinc were reported at concentrations of 54, 26, 57, and 110 mg/kg, respectively. The STLC total chromium result for sample SP1 was 0.23 milligrams per liter (mg/L) (P&D Environmental, Inc., 2010).

Approximately 20.29 tons of soil was transported as nonhazardous waste for offsite disposal at the Republic Services Vasco Road Landfill in Livermore, California (P&D Environmental, Inc., 2010).

A tank closure report was prepared and submitted to ACEH for review. ACEH subsequently submitted a letter, dated June 11, 2011, requiring that a soil and groundwater investigation be performed to delineate the lateral and vertical extent of potential petroleum impacts related to the UST (ACEH, 2011). A copy of the ACEH correspondence is presented in Appendix A. Apex contracted ERRG to conduct the additional soil and groundwater investigation required by the ACEH.

1.2. INVESTIGATION APPROACH

ERRG prepared and submitted a Work Plan to ACEH describing the approach to this investigation (ERRG, 2012). In a letter directed to Apex Refrigeration Corporation, dated January 24, 2013 (Appendix A), ACEH requested the following modifications to the investigation approach:

- Collect soil samples from 0 to 5 feet bgs and 5 to 10 feet bgs in accordance with the California State Water Resources Control Board (SWRCB) "Low-Threat Underground Storage Tank Closure Policy" (SWRCB, 2012).
- Collect groundwater samples from each boring location at the upper 10 feet or deep enough to encounter, collect, and analyze a groundwater sample. Collect groundwater samples from hydropunch sampler or temporary polyvinyl chloride (PVC) piping installed within the borings.
- Analyze samples for the following analytical groups:
  - TPH-purgeables and TPH-extractables
  - BTEX
  - Polycyclic aromatic hydrocarbons (PAH)
  - Fuel oxygenates (Methyl tert-butyl ether [MTBE], tertiary amyl methyl ether, ethyl tertiary butyl ether, diisopropyl ether, and tert-butyl alcohol).
- Perform a preferential pathway survey, including a utility survey evaluating utility lines, laterals, and trenches (including sewers and storm drains, pipelines, and foundation backfill). Include potential migration pathways and potential conduits that may be present in the vicinity of the former UST.

In a follow-up e-mail to ERRG from Mark Detterman of ACEH dated January 24, 2013 (Appendix A), fuel oxygenates were removed from the analytical suite based on previous findings from the UST Removal Report (P&D Environmental, Inc., 2010). Only the fuel oxygenate MTBE was requested to be analyzed using EPA Method 8260B.

Section 2. Field Activities

The drilling and sampling activities were performed on March 1, 2013. ERRG collected two soil samples and one set of groundwater samples from four locations surrounding the former UST to evaluate the lateral and vertical extent of petroleum hydrocarbons in soil and groundwater.

This section describes the specific tasks performed by ERRG during this investigation.

2.1. PERMITTING AND UTILITY CLEARANCE

Prior to mobilization, ERRG obtained soil boring permits from Alameda County Public Works Agency. An encroachment permit was also obtained from the City of Emeryville for the drilling of soil borings within the public right-of-way. Appendix B provides the relevant permits for this investigation.

ERRG marked the proposed boring locations in white paint and notified Underground Service Alert North on February 7, 2012, approximately 3 weeks prior to drilling. ERRG contracted with Subtronic Corporation of Martinez, California, a private utility locator, to mark and clear the proposed boring locations within the work area.

2.2. FIELD PROCEDURES AND SAMPLING

ERRG subcontracted Gregg Drilling of Martinez, California, a California-licensed driller, to advance four borings to a depth of 10 feet bgs in the vicinity of the former UST (Figure 2). The proposed boring locations shown on Figure 2 were adjusted in the field based on the presence of utilities and sidewalk improvements such as concrete planters. Additionally, the borings were advanced and sampled using hand augers because utilities were present within 5 feet of the proposed sample locations. Eight soil samples and four grab groundwater samples were collected from borings S1 through S4 during this soil and groundwater investigation. Shallow soil samples were collected from depths between 3.5 and 5.5 feet bgs. Deeper samples were collected from beneath the observed groundwater level at depths of 8.5 and 9 feet bgs. Sampling depths were selected based on visual observation of potential contamination both above and below encountered groundwater.

A field geologist, under the supervision of a California-registered geologist, logged the soil borings during hand auger drilling using the United Soil Classification System. Appendix C provides the soil boring logs for this investigation.

One grab groundwater sample was collected from each of the borings using a 3/4-inch PVC pipe placed within the boring. Groundwater grab samples were collected using a peristaltic pump and dedicated

polyethylene tubing and transferred to laboratory-supplied containers. Soil and groundwater samples were then placed on ice within coolers and transported under chain-of-custody procedures to Curtis & Tompkins of Berkeley, California, a California-certified laboratory for analysis of the following analytes:

- TPH-purgeables (TPH-gasoline[g]) by EPA Method 8015B
- TPH-extractables (TPH-d and TPH-motor oil [mo]) by EPA Method 8015B with silica gel cleanup
- BTEX and MTBE by EPA Method 8260B
- Priority pollutant PAHs by EPA Method 8270 SIM

In addition, one four-point soil composite soil sample and one water sample were analyzed for LUFT 5 metals (cadmium, chromium, nickel, lead, and zinc) for waste disposal characterization purposes using EPA Method 6010B.

All borings were tremie grouted from the bottom up with neat cement upon completion. The boring locations were then finished with concrete at the surface to match the existing sidewalks.

2.3. QUALITY CONTROL SAMPLE PROCEDURES

Quality control samples, including a trip blank and an equipment rinse, were submitted with the investigation samples. The trip blank sample was placed in the sample cooler at the beginning of the day, transported to the laboratory with the investigation samples, and then analyzed for BTEX and MTBE compounds under EPA Method 8260B. The equipment rinse sample was collected by running laboratory-supplied distilled water over the hand-auger bucket directly into the laboratory-supplied containers. The equipment rinse sample was analyzed for the full suite of analytical analyses, as discussed in Section 2.2.

2.4. DECONTAMINATION PROCEDURES

Nondedicated equipment used during the UST investigation was decontaminated on site using a triple-rinse method using three new 5-gallon buckets. The first bucket contained tap water and Alconox (soap), and the second and third buckets contained laboratory-provided deionized water for rinsing. The equipment was scrubbed and cleaned of sediments within the first bucket and then rinsed in the two subsequent buckets. Decontamination water was then transferred to the 55-gallon drum used for secured containment following the sampling event.

2.5. INVESTIGATION-DERIVED WASTE DISPOSAL

Investigation-derived waste (IDW) consisted of soil cuttings, decontamination water, and groundwater. IDW was stored in two U.S. Department of Transportation-approved 55-gallon drums, pending analysis and waste characterization. ERRG obtained permission to temporarily store the drums in a secure

location at the site. Any personal protective equipment was disposed of as nonhazardous waste in the municipal trash. The two soil drums were picked up from Apex on April 5, 2012. Wastewater generated during this investigation was transported and disposed of at Liquid Environmental Solutions of Arizona, of Phoenix, AZ. Waste soil was transported and disposed of at US Ecology in Beatty, Nevada. Appendix D presents the waste profile and manifest and laboratory analytical data related to profiling of the waste.

Section 3. Investigation Results and Recommendations

Soil and groundwater samples were analyzed following the methods discussed in Section 2.2. Appendix E presents the laboratory analytical reports for the former UST investigation. Figure 2 shows the sample locations and corresponding TPH concentrations in soil and groundwater. Results from the analytical data were compared with the San Francisco Bay Regional Water Quality Control Board's (Water Board) environmental screening levels (ESLs) in shallow soil less than or equal to 3 meters bgs for commercial/industrial land use where groundwater is not a current or potential source of drinking water (Water Board, 2013).

This section discusses the soil and groundwater conditions based on inspection of soil cores, summarizes the analytical results of the soil, groundwater, and QC samples, presents the results of the survey of preferential pathways, and provides recommendations for further action.

3.1. SOIL AND GROUNDWATER CONDITIONS

Based on boring logs completed during this investigation, the uppermost soil is composed of a silty-sandy gravel matrix (i.e., fill) containing crushed rock to approximately 5 to 6 feet bgs. Between 5 and 6 feet bgs, the soil transitions into black saturated clay that becomes dry and stiffens with depth to 10 feet bgs. Groundwater was encountered in each of the borings at approximately 3 to 4 feet bgs. The inferred groundwater flow direction is approximately west toward San Francisco Bay.

3.2. SOIL ANALYTICAL RESULTS

Soil samples from the four borings were analyzed for TPH by EPA Method 8015B with silica gel cleanup. Under the Method 8015B, the samples were analyzed for TPH-purgeables and extractables. The analyses were reported as TPH-g), TPH-d, and TPH-mo. Table 1 presents the soil analytical data for this investigation and compares the results with the ESLs. The sample results are summarized below.

- TPH-g was detected in five of eight samples at concentrations ranging from 0.31 mg/kg to 510 mg/kg. Two of the eight results exceeded the ESL of 420 mg/kg for TPH-g.
- TPH-d was detected in all eight samples at concentrations ranging from 4.4 to 3,100 mg/kg. Two of the eight results exceeded the ESL of 500 mg/kg for TPH-d.
- TPH-mo was detected in seven of eight samples at concentrations ranging from 9 to 1,200 mg/kg. None of the results exceeded the ESL of 2,500 mg/kg.

- Neither BTEX nor MTBE were detected at concentrations greater than the laboratory reporting limits in any of the samples submitted to the laboratory during this investigation.
- PAHs were detected at every boring location during the investigation. Most notably, location S1 had 14 PAH detections. However, none of the PAH concentrations detected in soil exceeded the ESLs.

3.3. GROUNDWATER ANALYTICAL RESULTS

Grab groundwater samples from each boring were analyzed for TPH by EPA Method 8015B with silica gel cleanup. Each sample was analyzed for TPH-g, TPH-d, and TPH-mo. Table 2 presents the grab groundwater data and compares the results with the ESLs. The sample results are summarized below.

- TPH-g was detected in all four grab groundwater samples at concentrations ranging from 5,600 to 9,300 µg/L. All of the detections exceeded the ESL of 500 µg/L.
- TPH-d was detected in all four grab groundwater samples at concentrations ranging from 9,100 to 83,000 µg/L. All of the detections exceeded the ESL of 640 µg/L.
- TPH-mo was detected in all four grab groundwater samples at concentrations ranging from 330 to 5,200 µg/L. Three of the four detections exceeded the ESL value of 640 µg/L.
- Neither BTEX nor MTBE were detected at concentrations greater than the laboratory reporting limits in any of the samples submitted to the laboratory during this investigation.
- PAHs were detected at two of the four grab groundwater samples. Seven PAHs were detected in each sample from borings S1 and S2. Only four PAHs exceeded their respective ESLs, as follows:
  - Anthracene was detected in borings S1 and S2 at concentrations of 2.2 and 1.3 µg/L, which exceeded the ESL of 0.73 µg/L.
  - Benzo(b)fluoranthene was detected in boring S2 at a concentrations of 0.9 µg/L, which exceeded the ESL of 0.056 µg/L.
  - Chrysene was detected in boring S2 at a concentration of 1.0 µg/L, which exceeded the ESL of 0.35 µg/L.
  - Phenanthrene was detected in boring S1 at a concentration of 5.8 µg/L, which exceeded the ESL of 4.6 µg/L.

3.4. QUALITY CONTROL SAMPLES COLLECTION

Quality control samples were submitted to the laboratory with the investigation samples. Neither the trip blank nor the equipment rinse sample had results greater than the laboratory reporting limits for the analyses requested.

3.5. PREFERENTIAL PATHWAY SURVEY

At the request of ACEH, a preferential pathway survey was performed during the investigation to locate possible utility corridors within the immediate area surrounding the former UST. Numerous utility lines were located within and surrounding the project site. The following utilities were identified during the survey:

- Two sets of high voltage electrical lines and two underground utility vaults belonging to Pacific Gas and Electric Company (PG&E) were located. Electrical lines running east/west beneath the sidewalk north of the former UST. An additional set of electrical lines was located running from a manhole-type vault west of the former UST that run out into the street then bends back into the newly installed PG&E vault adjacent to the former UST.
- A low voltage electrical line runs between the street lights within the right-of-way between the sidewalk and the street.
- Cable television lines were noted running from the sidewalk southeast out toward Park Avenue.
- A storm drain line was located that runs from the west side of 1550 Park Avenue out to a manhole located in the middle of Park Avenue. An additional storm drain line runs parallel to and along the north edge of Park Avenue.
- A gas line runs beneath the sidewalk and then out into the street east of the PG&E vault.

Figure 3 presents known utilities located during the utility survey. Based on the locations of the soil borings relative to the utility corridors, it is unclear whether the utility trenches may have contributed to the lateral migration of contaminants in the subsurface.

3.6. RECOMMENDATIONS

Based on the results of this soil and groundwater investigation, ERRG recommends additional sampling to delineate the nature and extent of petroleum compounds in soil, soil vapor and groundwater at the project site. ERRG recommends installation of at least three monitoring wells to obtain information on local groundwater gradient and chemical concentrations in groundwater. Soil vapor samples may be required to evaluate potential vapor intrusion risks. In addition, background soil and groundwater data should be collected to evaluate whether potential up-gradient sources may have contributed to petroleum contamination in the UST area. Additional data collection and investigation should be conducted in accordance with the criteria established in the SWRCB low-threat UST case closure policy. If the project site meets all of the general and media-specific criteria in the SWRCB policy, then it may potentially be granted closure as a low-threat UST case (SWRCB, 2012).

Section 4. References

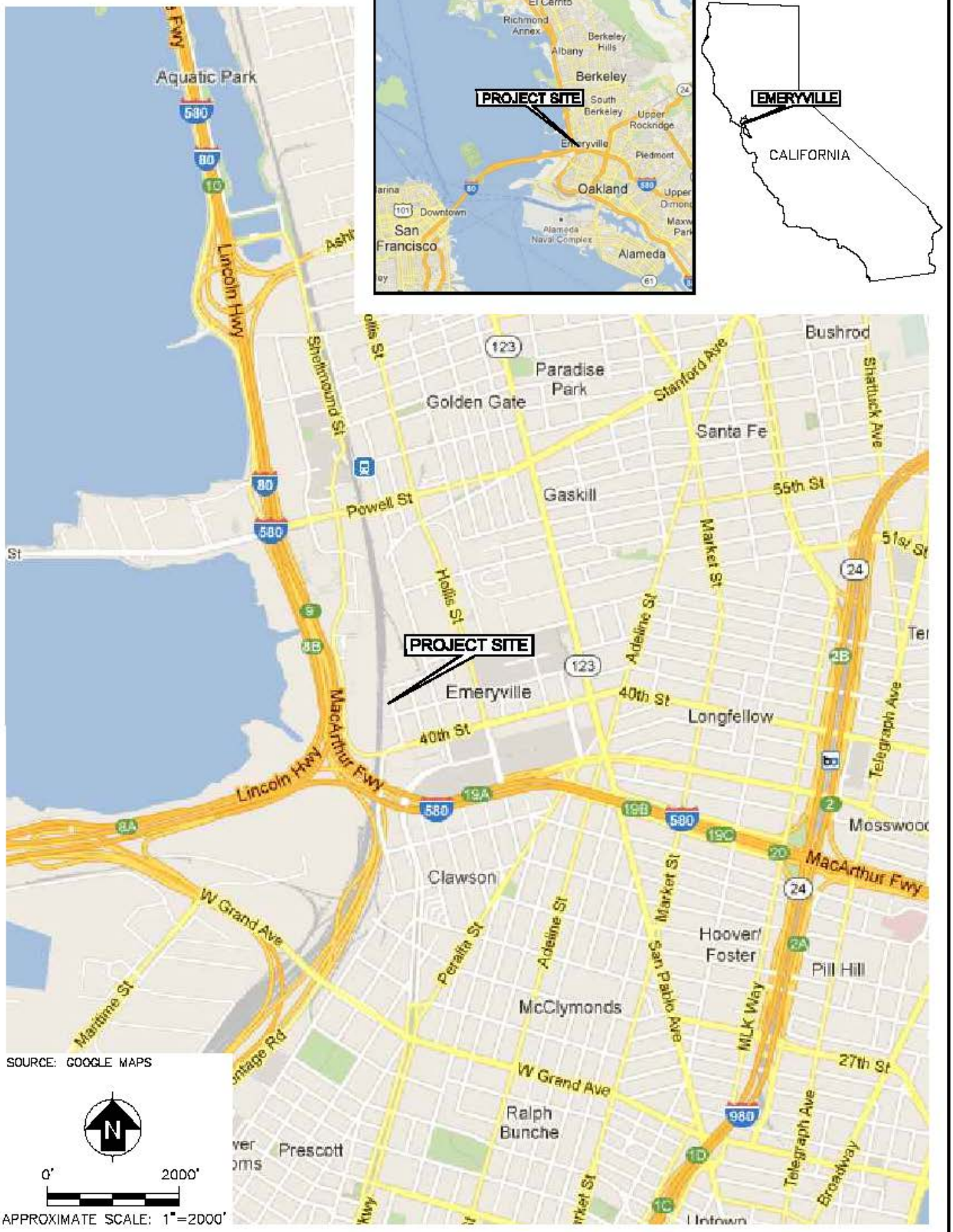
Engineering/Remediation Resources Group, Inc., 2012. "Work Plan for Soil and Groundwater Investigation, Apex Refrigeration, Inc., 1550 Park Avenue, Emeryville, California." October.

P&D Environmental, Inc. (P&D) 2010. "Underground Storage Tank Removal Report, 1550 Park Avenue, Emeryville, CA." March 12.

San Francisco Regional Water Quality Control Board (Water Board), 2013. "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater." Interim Final. February. Available Online at: <http://www.waterboards.ca.gov/rwqcb2/water_issues/programs/esl.shtml>.

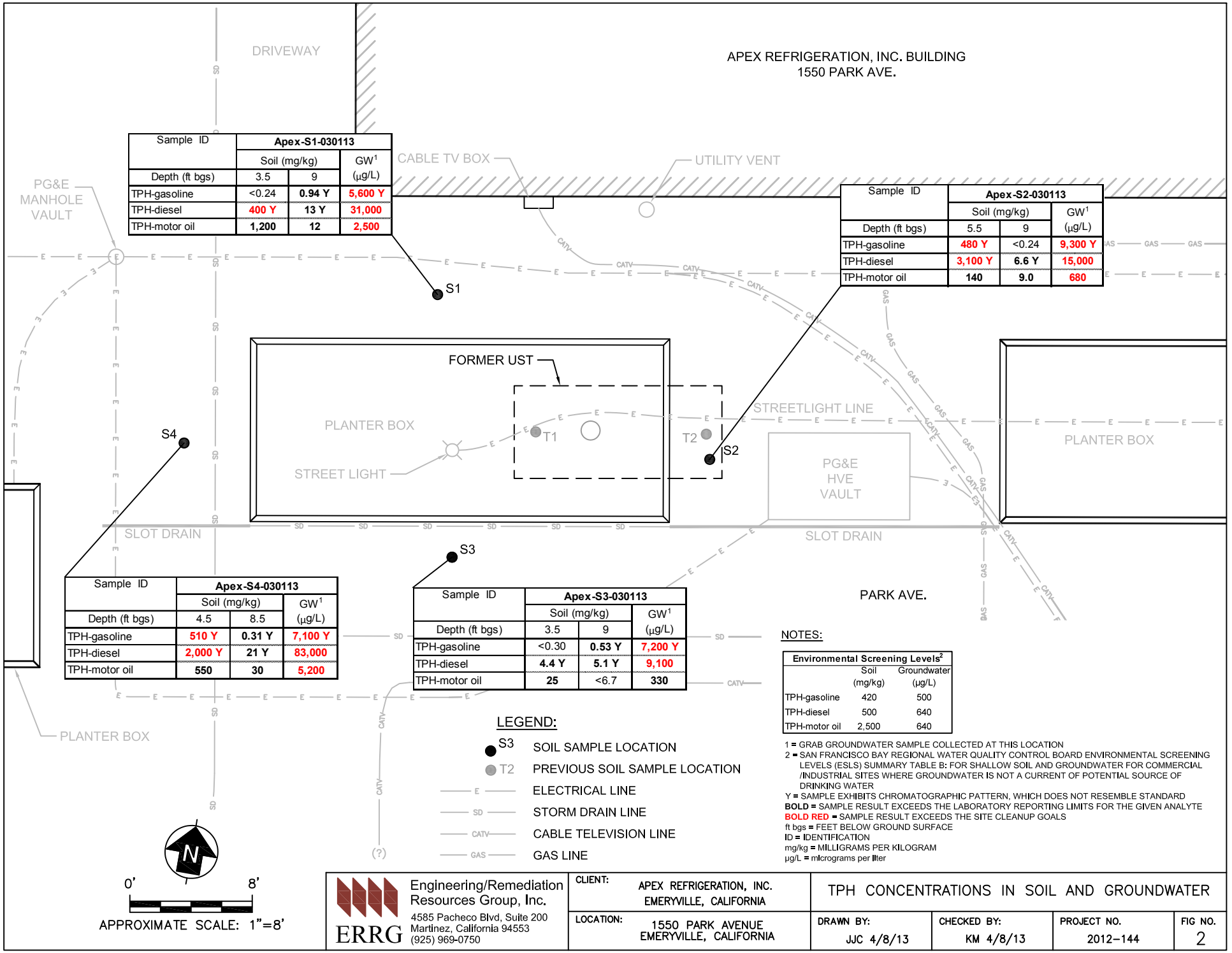
State Water Resources Control Board (SWRCB), 2012. "Low-Threat Underground Storage Tank Case Closure Policy." August 17. Available Online at: <http://www.waterboards.ca.gov/ust/lt_cls_plcy.shtml#policy081712>.

Figures



Engineering/Remediation Resources Group, Inc. 4585 Pacheco Blvd., Suite 200 Martinez, California 94553 (925) 969-0750	CLIENT: APEX REFRIGERATION, INC. EMERYVILLE, CALIFORNIA	SITE LOCATION MAP			
ERRG	LOCATION: 1550 PARK AVENUE EMERYVILLE, CALIFORNIA	DRAWN BY: RDB 10/8/12	CHECKED BY: ERB 10/9/12	PROJECT NO. 2012-144	FIG NO. 1

FILE NAME: N:\Graphics\2012\2012-144 APEX Emeryville\Site Location Map.dwg LAYOUT NAME: 1 PLOTTED: Tuesday, October 09, 2012 - 11:13am



Sample ID	Apex-S1-030113		
	Soil (mg/kg)		GW[1] (µg/L)
Depth (ft bgs)	3.5	9	
TPH-gasoline	<0.24	**0.94 Y**	**5,600 Y**
TPH-diesel	**400 Y**	**13 Y**	**31,000**
TPH-motor oil	**1,200**	**12**	**2,500**

Sample ID	Apex-S2-030113		
	Soil (mg/kg)		GW[1] (µg/L)
Depth (ft bgs)	5.5	9	
TPH-gasoline	**480 Y**	<0.24	**9,300 Y**
TPH-diesel	**3,100 Y**	**6.6 Y**	**15,000**
TPH-motor oil	**140**	**9.0**	**680**

Sample ID	Apex-S4-030113		
	Soil (mg/kg)		GW[1] (µg/L)
Depth (ft bgs)	4.5	8.5	
TPH-gasoline	**510 Y**	**0.31 Y**	**7,100 Y**
TPH-diesel	**2,000 Y**	**21 Y**	**83,000**
TPH-motor oil	**550**	**30**	**5,200**

Sample ID	Apex-S3-030113		
	Soil (mg/kg)		GW[1] (µg/L)
Depth (ft bgs)	3.5	9	
TPH-gasoline	<0.30	**0.53 Y**	**7,200 Y**
TPH-diesel	**4.4 Y**	**5.1 Y**	**9,100**
TPH-motor oil	**25**	<6.7	**330**

NOTES:

Environmental Screening Levels[2]	Soil (mg/kg)	Groundwater (µg/L)
TPH-gasoline	420	500
TPH-diesel	500	640
TPH-motor oil	2,500	640

LEGEND:

- S3 — SOIL SAMPLE LOCATION
- T2 — PREVIOUS SOIL SAMPLE LOCATION
- E — ELECTRICAL LINE
- SD — STORM DRAIN LINE
- CATV — CABLE TELEVISION LINE
- GAS — GAS LINE

1 = GRAB GROUNDWATER SAMPLE COLLECTED AT THIS LOCATION
2 = SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD ENVIRONMENTAL SCREENING LEVELS (ESLS) SUMMARY TABLE B: FOR SHALLOW SOIL AND GROUNDWATER FOR COMMERCIAL /INDUSTRIAL SITES WHERE GROUNDWATER IS NOT A CURRENT OF POTENTIAL SOURCE OF DRINKING WATER
Y = SAMPLE EXHIBITS CHROMATOGRAPHIC PATTERN, WHICH DOES NOT RESEMBLE STANDARD
BOLD = SAMPLE RESULT EXCEEDS THE LABORATORY REPORTING LIMITS FOR THE GIVEN ANALYTE
BOLD RED = SAMPLE RESULT EXCEEDS THE SITE CLEANUP GOALS
ft bgs = FEET BELOW GROUND SURFACE
ID = IDENTIFICATION
mg/kg = MILLIGRAMS PER KILOGRAM
µg/L = micrograms per liter

Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, California 94553
(925) 969-0750
ERRG

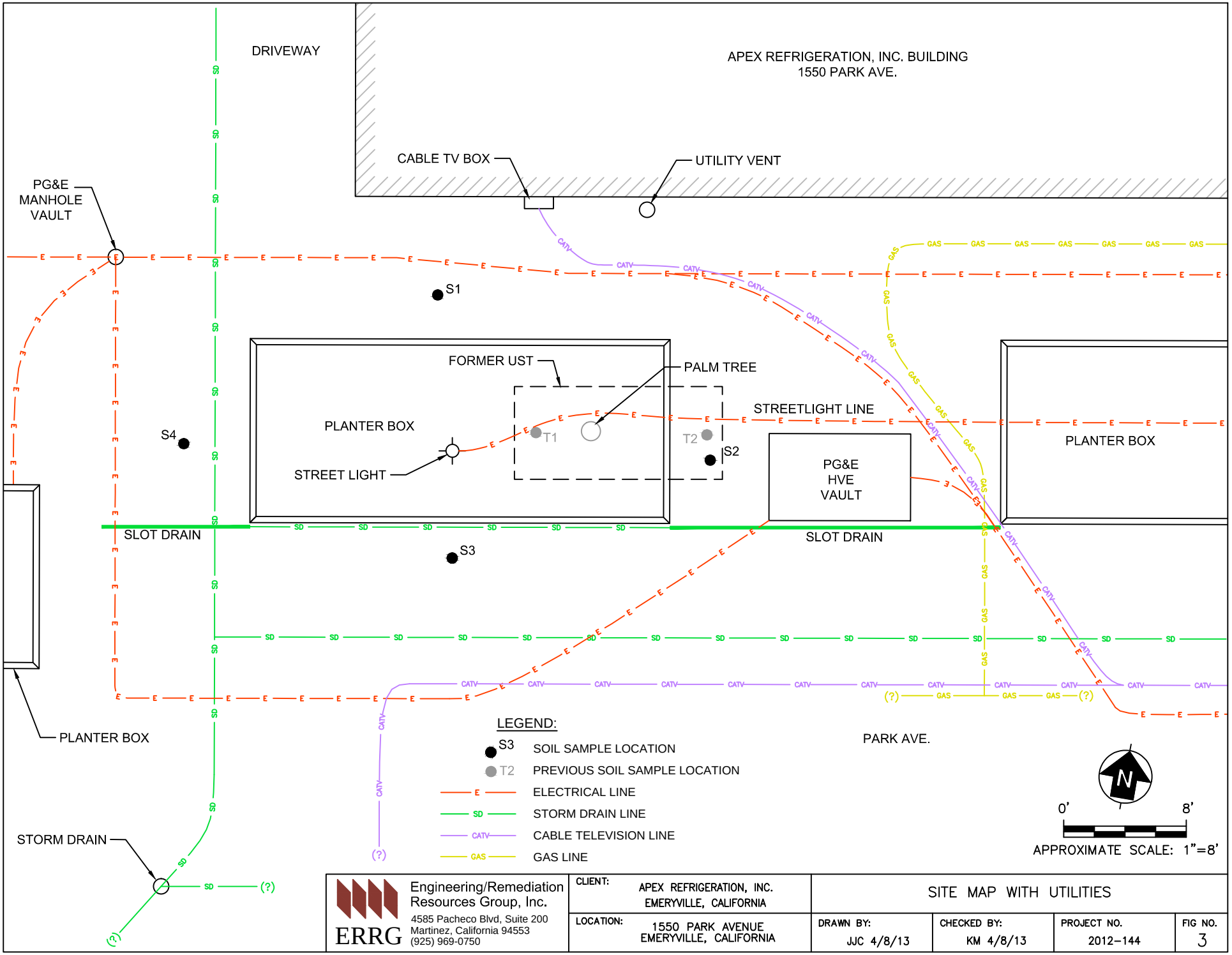
CLIENT: APEX REFRIGERATION, INC. EMERYVILLE, CALIFORNIA

LOCATION: 1550 PARK AVENUE EMERYVILLE, CALIFORNIA

TPH CONCENTRATIONS IN SOIL AND GROUNDWATER

DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
JJC 4/8/13	KM 4/8/13	2012-144	2

FILE NAME: N:\Graphics\2012\2012-144 APEX Emeryville\TPH Concentrations in Soil and GW.dwg LAYOUT NAME: 2 PLOTTED: Friday, April 26, 2013 - 4:16pm



FILE NAME: N:\Graphics\2012\2012-144 APEX Emeryville\Site Map with Utilities.dwg LAYOUT NAME: 2 PLOTTED: Wednesday, April 17, 2013 - 10:40am

ERRG Engineering/Remediation Resources Group, Inc. 4585 Pacheco Blvd, Suite 200 Martinez, California 94553 (925) 969-0750	CLIENT: APEX REFRIGERATION, INC. EMERYVILLE, CALIFORNIA	SITE MAP WITH UTILITIES			
	LOCATION: 1550 PARK AVENUE EMERYVILLE, CALIFORNIA	DRAWN BY: JJC 4/8/13	CHECKED BY: KM 4/8/13	PROJECT NO. 2012-144	FIG NO. 3

Tables

Table 1. Soil Boring Analytical Results

	Apex-S1-030113		Apex-S2-030113		Apex-S3-030113		Apex-S4-030113		
Sample Depth	3.5	9	5.5	9	3.5	9	4.5	8.5	SF Bay RWQCB ESLs[2]
Laboratory Analyses									
Total Petroleum Hydrocarbons (by US EPA Method 8015B) mg/kg									
TPH-gasoline	<0.24	**0.94 Y**	**480 Y**	<0.24	<0.30	**0.53 Y**	**510 Y**	**0.31 Y**	420
TPH-diesel[1]	**400 Y**	**13 Y**	**3,100 Y**	**6.6 Y**	**4.4 Y**	**5.1 Y**	**2,000 Y**	**21 Y**	500
TPH-motor oil[1]	**1,200**	**12**	**140**	**9.0**	**25**	<6.7	**550**	**30**	2500
Purgeable Aromatics (Select VOCs by US EPA Method 8260B) µg/kg									
MTBE	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	8,400
Benzene	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	1,200
Toluene	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	9,300
Ethylbenzene	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	4,700
m,p-Xylenes	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	1,100
o-Xylenes	<5.9	<6.0	<680	<6.2	<6.8	<6.2	<330	<5.7	1,100
Priority Pollutant Polycyclic Aromatic Hydrocarbons (US EPA Method 8270 SIM) µg/kg									
Napthalene	<29	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	2,800
Acenaphthylene	<29	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	130,000
Acenaphthene	<29	<6.4	**46**	<6.5	<7.0	<6.7	<26	<6.5	19,000
Fluorene	<29	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	8,900
Phenanthrene	**240**	**18**	<34	<6.5	**7.2**	<6.7	<26	<6.5	11,000
Anthracene	**42**	<6.4	<34	<6.5	<7.0	<6.7	**44**	<6.5	2,800
Fluoanthene	**490**	**9.2**	<34	<6.5	**11**	<6.7	<26	<6.5	4,000
Pyrene	**570**	**9.8**	<34	<6.5	**15**	<6.7	<26	<6.5	85,000
Benzo (a) anthracene	**180**	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	1,300
Chrysene	**310**	<6.4	<34	<6.5	**7**	<6.7	<26	<6.5	23,000
Benzo (b) fluoranthene	**270**	<6.4	<34	<6.5	**8.7**	<6.7	<26	<6.5	1,300
Benzo (k) fluoranthene	**81**	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	1,300
Benzo (a) pyrene	**170**	<6.4	<34	<6.5	**8.1**	<6.7	<26	<6.5	130
Indeno (1,2,3-cd) pyrene	**57**	<6.4	<34	<6.5	**7.2**	<6.7	<26	<6.5	2,100
Dibenz (a,h) anthracene	<29	<6.4	<34	<6.5	<7.0	<6.7	<26	<6.5	210
Benzo (g,h,i) perylene	**67**	<6.4	<34	<6.5	**10**	<6.7	<26	<6.5	27,000

Notes:

1 = Analysis run with silica gel cleanup

2 = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for shallow soil for Commercial/Industrial Sites where groundwater is not a current of potential source of drinking water

Bold = Sample result is above the laboratory reporting limits for the given analyte

Bold Red = Sample result exceeds the site cleanup goals

<0.30 = Sample result is less than the laboratory reporting limits for the analyte

mg/kg = miligrams per kilogram

TPH = Total Petroleum Hydrocarbons

US EPA = United States Environmental Protection Agency

Y = Sample resembles chromatographic pattern which does not resemble standard

µg/kg = micorgrams per kilogram

Table 2. Grab Groundwater Analytical Results

Laboratory Analyses	Sample Locations				SF Bay RWQCB ESLs[2]
	Apex-S1-GW-030113	Apex-S2-GW-030113	Apex-S3-GW-030113	Apex-S4-GW-030113	
Total Petroleum Hydrocarbons (by US EPA Method 8015B) µg/L					
TPH-gasoline	**5,600 Y**	**9,300 Y**	**7,200 Y**	**7,100 Y**	210
TPH-diesel[1]	**31,000**	**15,000**	**9,100**	**83,000**	210
TPH-motor oil[1]	**2,500**	**680**	**330**	**5,200**	210
Purgeable Aromatics (Select VOCs by US EPA Method 8260B) µg/L					
MTBE	<0.5	<0.5	<0.5	<0.5	1,800
Benzene	<0.5	<0.5	<0.5	<0.5	46
Toluene	<0.5	<0.5	<0.5	<0.5	130
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	43
m,p-Xylenes	<0.5	<0.5	<0.5	<0.5	100
o-Xylenes	<0.5	<0.5	<0.5	<0.5	100
Priority Pollutant Polycyclic Aromatic Hydrocarbons (US EPA Method 8270 SIM)					
Napthalene	**0.9**	<0.7	<0.4	<0.5	24
Acenaphthylene	<0.7	<0.7	<0.4	<0.5	23
Acenaphthene	**0.8**	**0.9**	<0.4	<0.5	30
Fluorene	**1.9**	<0.7	<0.4	<0.5	3.9
Phenanthrene	**5.8**	**2.4**	<0.4	<0.5	4.6
Anthracene	**2.2**	**1.3**	<0.4	<0.5	0.73
Fluoanthene	**1.2**	**1.6**	<0.4	<0.5	8.0
Pyrene	**1.3**	**1.7**	<0.4	<0.5	2.0
Benzo (a) anthracene	<0.7	<0.7	<0.4	<0.5	0.027
Chrysene	<0.7	**1.0**	<0.4	<0.5	0.35
Benzo (b) fluoranthene	<0.7	**0.9**	<0.4	<0.5	0.029
Benzo (k) fluoranthene	<0.7	<0.7	<0.4	<0.5	0.40
Benzo (a) pyrene	<0.7	<0.7	<0.4	<0.5	0.014
Indeno (1,2,3-cd) pyrene	<0.7	<0.7	<0.4	<0.5	0.048
Dibenz (a,h) anthracene	<0.7	<0.7	<0.4	<0.5	0.25
Benzo (g,h,i) perylene	<0.7	<0.7	<0.4	<0.5	0.10

Notes:

Analytical results presented in micrograms per liter

1 = Analysis run with silica gel cleanup

2 = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) for groundwater for Commercial/Industrial Sites where groundwater is not a current of potential source of drinking water

Bold = Sample result is above the laboratory reporting limits for the given analyte

Bold Red = Sample result exceeds the site cleanup goals

TPH = Total Petroleum Hydrocarbons

US EPA = United States Environmental Protection Agency

Y = Sample resembles chromatographic pattern which does not resemble standard

<0.30 = Sample result is less than the laboratory reporting limits for the analyte

µg/L = micrograms per liter

Appendix A. Project Correspondence

From: Detterman, Mark, Env. Health <Mark.Detterman@acgov.org>
Sent: Thursday, January 24, 2013 5:10 PM
To: Erik Brown
Cc: 'Michael Lamphere'; pelco1969@sbcglobal.net; Chris Mai
Subject: RE: ACEH Correspondence for RO3069

Erik,
You are correct. It was inadvertently not removed. Please do include MTBE as it can be obtained with the proposed analytical suite for no additional cost. Please use this email to document ACEH concurrence with the proposed modifications.

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
Email: mark.detterman@acgov.org

PDF copies of case files can be downloaded at:

http://www.acgov.org/aceh/lop/ust.htm

From: Erik Brown [mailto:erik.brown@errg.com]
Sent: Thursday, January 24, 2013 4:47 PM
To: Detterman, Mark, Env. Health
Cc: 'Michael Lamphere'; pelco1969@sbcglobal.net; Chris Mai
Subject: Re: ACEH Correspondence for RO3069

Mr. Detterman,

We have received ACEH's conditional approval of the Site Investigation Workplan for Pelligrini Refrigeration & Restaurant Equipment Company (Fuel Leak Case No. RO0003069 and GeoTracker Global ID T1000002519). We agree with Work Plan modifications 1(a), 1(b), and 2. However, we believe that the inclusion of fuel oxygenates (MTBE, TAME, ETBE, DIPE, and TBA) is not warranted. The Underground Storage Tank Removal Report completed by P&D Environmental, Inc. states that "Based on the type of petroleum hydrocarbons detected in and around the UST, the UST formerly contained heating oil." Furthermore, initial fuel fingerprint analysis indicated that the liquid in the tank consisted of fuel oil and possibly bunker oil. As you know, fuel oxygenates are added to gasoline, and it is therefore highly unlikely that fuel oxygenates would be related to the release at the site. We therefore respectfully request that the original analytical suite be retained as outlined in the Work Plan. Please feel free to contact me with any questions.

Thank you,
Erik

Erik Brown
Senior Project Scientist
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Boulvard, Suite 200
Martinez, CA 94553
(925) 839-2276 Direct
(925) 969-0750 Main
(925) 305-5337 Mobile

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

January 24, 2013

Ms. Pennie Barger
Apex Refrigeration Corp. and
Pellegrini Refrigeration & Restaurant Equipment Co.
1550 Park Avenue
Emeryville, CA 94608
(sent via electronic mail to: pelco1969@sbcglobal.net)

Subject: Conditional Approval of Site Investigation Work Plan; Fuel Leak Case No. RO0003069 and GeoTracker Global ID T1000002519, Pellegrini Refrigeration & Restaurant Equipment Company, 1550 Park Avenue, Emeryville, CA 94608

Dear Ms. Barger:

Alameda County Environmental Health (ACEH) has reviewed the case file, including the October 31, 2012 *Work Plan for Soil and Groundwater Investigation,* generated by Engineering / Remediation Resources Group, Inc (ERRG). The work plan was submitted in response to an ACEH letter dated March 14, 2012. Thank you for submitting the work plan.

Based on ACEH staff review of the work plan, the proposed scope of work is conditionally approved for implementation provided that the technical comments below are incorporated during the proposed work. Submittal of a revised work plan or a work plan addendum is not required unless an alternate scope of work outside that described in the work plan or these technical comments is proposed. We request that you address the following technical comments, perform the proposed work, and send us the report described below. Please provide 72-hour advance written notification to this office (e-mail preferred to: mark.detterman@acgov.org) prior to the start of field activities.

TECHNICAL COMMENTS

1. **Work Plan Modifications –** The referenced work plan proposes a series of actions with which ACEH is in general agreement of undertaking; however, ACEH requests several modifications to the approach. Please submit a report by the date specified below.

    a. **Soil Sample Selection Protocols –** The work plan proposes to collect and retain for laboratory analysis soil samples at the approximate depths of 4 and 6 feet below grade surface (bgs), or at indications of potential contamination. Please note that the Low-Threat Closure Policy (LTCP) recommends the collection and analysis of multiple soil samples in two depth zones (0 to 5 feet, and 5 to 10 feet bgs). Consequently please collect multiple samples in these depth intervals (as is currently planned), as well as at significant lithology changes.

    Additionally please collect, retain, and analyze a sufficient number of soil samples to determine the vertical extent of contaminated soil beneath the site.

    b. **Groundwater Collection Protocols –** The work plan indicates that the soil bores will be installed to a depth of 10 feet bgs and that groundwater will be collected and analyzed. Should groundwater not be present in the upper 10 feet bgs, ACEH requests the soil bores be extended a sufficient depth to encounter, collect, and analyze a groundwater sample.

    ACEH additionally requests that if the Hydropunch sampler is not successful in collecting a groundwater sample, that a temporary PVC casing be installed in each bore to allow the

collection of groundwater, and that the bore and casing be allowed to remain open a sufficiently long period of time for groundwater to infiltrate the well casing, including overnight.

c. **Appropriate Analytical Suite –** The work plan proposes to analyze soil and groundwater by TPH purgeables, TPH extractables (with Silica Gel Cleanup), BTEX, and PAHs. ACEH also requests inclusion of all fuel oxygenates (MTBE, TAME, ETBE, DIPE, and TBA) in the analytical suite. Analysis for ethanol and methanol can be excluded.

2. **Request for a Preferential Pathway Survey –** To preclude the potential for contaminant migration due to manmade conduits and utilities ACEH also requests the identification and location of utility conduits along Park Avenue in the vicinity of the site investigation. As you are likely aware, the purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of a groundwater plume encountering preferential pathways and conduits that could spread contamination. Specifically ACEH requests the inclusion of utility laterals an often overlooked potential conduit. Consequently, we request that you perform a preferential pathway study that details the potential migration pathways and potential conduits (utilities, utility laterals, pipelines, foundational, and etc.) for vertical and lateral migration that may be present in the vicinity of the site. Please report on the findings of the survey in the soil and groundwater investigation report requested below.

   Discuss your analysis and interpretation of the results of the preferential pathway and report your results in the report requested below. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

   a. **Utility Survey -** An evaluation of all utility lines, utility laterals, and trenches (including sewers, storm drains, pipelines, trench backfill, foundation backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please synthesize available information and maps, and generate appropriate (vicinity and / or site specific) maps and cross-sections (if appropriate) illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Mark Detterman), and to the State Water Resources Control Board's Geotracker website, in accordance with the specified file naming convention below, according to the following schedule:

- **March 22, 2013 –** Soil and Groundwater Investigation Report
  File to be named: RO3069_SWI_R_yyyy-mm-dd

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

Should you have any questions, please contact me at (510) 567--6876 or send me an electronic mail message at mark.detterman@acgov.org.

Sincerely,

Mark Detterman, PG, CEG
Senior Hazardous Materials Specialist

Enclosures: Attachment 1 – Responsible Party (ies) Legal Requirements / Obligations
Electronic Report Upload (ftp) Instructions

cc: Erik Brown, Engineering / Remediation Resources Group, Inc, 4585 Pacheco Blvd, Suite 200, Martinez, CA 94553; (sent via electronic mail to Erik.Brown@errg.com)

Donna Drogos, (sent via electronic mail to donna.drogos@acgov.org)
Mark Detterman (sent via electronic mail to mark.detterman@acgov.org)
Electronic File, GeoTracker

Attachment 1
Responsible Party(ies) Legal Requirements/Obligations

REPORT/DATA REQUESTS

These reports/data are being requested pursuant to Division 7 of the California Water Code (Water Quality), Chapter 6.7 of Division 20 of the California Health and Safety Code (Underground Storage of Hazardous Substances), and Chapter 16 of Division 3 of Title 23 of the California Code of Regulations (Underground Storage Tank Regulations).

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (Local Oversight Program [LOP] for unauthorized releases from petroleum Underground Storage Tanks [USTs], and Site Cleanup Program [SCP] for unauthorized releases of non-petroleum hazardous substances) require submission of reports in electronic format pursuant to Chapter 3 of Division 7, Sections 13195 and 13197.5 of the California Water Code, and Chapter 30, Articles 1 and 2, Sections 3890 to 3895 of Division 3 of Title 23 of the California Code of Regulations (23 CCR). Instructions for submission of electronic documents to the ACEH FTP site are provided on the attached "Electronic Report Upload Instructions."

Submission of reports to the ACEH FTP site is in addition to requirements for electronic submittal of information (ESI) to the State Water Resources Control Board's (SWRCB) Geotracker website. In April 2001, the SWRCB adopted 23 CCR, Division 3, Chapter 16, Article 12, Sections 2729 and 2729.1 (Electronic Submission of Laboratory Data for UST Reports). Article 12 required electronic submittal of analytical laboratory data submitted in a report to a regulatory agency (effective September 1, 2001), and surveyed locations (latitude, longitude and elevation) of groundwater monitoring wells (effective January 1, 2002) in Electronic Deliverable Format (EDF) to Geotracker. Article 12 was subsequently repealed in 2004 and replaced with Article 30 (Electronic Submittal of Information) which expanded the ESI requirements to include electronic submittal of any report or data required by a regulatory agency from a cleanup site. The expanded ESI submittal requirements for petroleum UST sites subject to the requirements of 23 CCR, Division, 3, Chapter 16, Article 11, became effective December 16, 2004. All other electronic submittals required pursuant to Chapter 30 became effective January 1, 2005. Please visit the SWRCB website for more information on these requirements. (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 7835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, late reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** July 25, 2012
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (petroleum UST and SCP) require submission of all reports in electronic form to the county's FTP site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single Portable Document Format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

Appendix B. Permits

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 02/11/2013 By jamesy

Permit Numbers: W2013-0080
Permits Valid from 02/15/2013 to 02/15/2013

Application Id:	1359762352266	**City of Project Site:** Emeryville
Site Location:	1550 Park Avenue	
Project Start Date:	02/15/2013	**Completion Date:** 02/15/2013
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org	
Applicant:	Engineering / Remediation Resources Group - Erik Brown 4585 Pacheco Blvd. Suite 200, Martinez, CA 94553	**Phone:** 925-839-2276
Property Owner:	Pennie Barger 1550 Park Avenue, Emeryville, CA 94608	**Phone:** 510-653-9850
Client:	** same as Property Owner **	
Contact:	Brianne Foster	**Phone:** 925-839-2273 **Cell:** 916-212-1130

	Total Due:	$265.00
Receipt Number: WR2013-0042	**Total Amount Paid:**	$265.00
Payer Name : ERRG	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 4 Boreholes
Driller: Gregg Drilling & Testing, Inc. - Lic #: 485165 - Method: DP

Work Total: $265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013-0080	02/11/2013	05/16/2013	4	2.00 in.	10.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled,

CITY OF EMERYVILLE • DEPARTMENT OF PUBLIC WORKS
ENCROACHMENT PERMIT

APPLICANT Engineering Remediation Resources Group, Inc.
CONTACT PERSON Brianne Foster
ADDRESS 4585 Pacheco Blvd. Suite 200
Martinez. CA 94553
PHONE 916-212-1130 EMAIL ~~Brianne.Foster@errg.com~~ Sullivan.Lee@ERRG.com

OWNER/DEVELOPER Pennie Barger
ADDRESS 1550 Park Avenue
Emeryville, California 94608
PHONE 510-653-9850 EMAIL

CONTRACTOR DOING WORK Gregg Drilling, Inc.
CONTACT PERSON
ADDRESS 950 Howe Road.
Martinez, California 94553
PHONE 925-313-5800 EMAIL
LICENSE NO. 485165 CLASS C-57

□Yes □No CURRENT CITY BUSINESS LICENSE ON FILE
□Yes □No PROVIDE PROOF OF INSURANCE

FOR CITY USE ONLY
Permit No. 21302160 Date 3-12-13
□ *Temporary Permit* #_____ *days* □ *Long Term Permit*
Permit Administrative Fee.....$ 167
"No Parking" Signs.....____ x $____.....$____
Permit Inspection Deposit (2 hr. min.).....$ 404
Cost Recovery Estimate.....$____
Arborist Recovery Estimate.....$____
Long Term Permit Fee (____mos. x ____)$____
Tree Removal Fee.....$____
Tree Protection Deposit (value x 3 + $10,000) $____
Required Security Deposit:
☑ $1,000 cash.....$ 1000
□ $10,000 Bond.....Bond #____
□100% Performance Bond, Bond #____
Bond Value $____
Total Payment Required.....$ 571
Receipt #____ Date____ Amt. Received:$____
□ Business License □ Certificate of Insurance

EST. START DATE 2/1/13 EST. COMPLETION DATE 2/1/13 EST. COST IN CITY R/W____

LOCATION OF WORK 1550 Park Avenue, Emeryville, CA 94608

CHECK ALL CONDITIONS THAT APPLY:
□ Traffic Control □Survey □ Sidewalk Detour □Dumpster □Temporary No Parking □ Construction □ Sidewalk □ Obstruction □ Private Facilities on Public Right of Way □ Driveway Approach □Curb & Gutter □Pedestrian Ramp □Water Service □Fence □ Excavation □Electric Service □Roof Drain □Utility Maintenance □Access Road □Monitoring Well □ Sewer Lateral □Crane □ Storm Drain □Block Party □Gas Service

FULLY DESCRIBE PROPOSED WORK WITHIN CITY RIGHT-OF-WAY (additional space on reverse if needed): Attach 3 complete sets of plans 8 ½ X 11, if applicable.

Concrete core and hand auger 4 borings down to 10 feet below ground surface. Location aof borings will be on the sidewalk near the Apex Refrigeration, Inc. building at 1550 Park Ave. in Emeryville, California.

I hereby agree to protect and indemnify the City of Emeryville and hold it harmless in every way from all claim or suits for injury or damage to persons or property as set forth in the Standard Provisions. I agree not to begin construction until all materials to be used are on hand; to perform all work in accordance with the plans submitted (if any), the Standard Provisions to Encroachment Permit, and all applicable Special Conditions of Approval, and to pay all inspection and engineering costs in addition to those paid at the time of issuance of this permit. I further agree to complete the work to the satisfaction of the City Engineer and if for any reason the City of Emeryville is required to complete this work, I will pay all costs for such work.

Applicant Signature  Date 2/26/13

FOR CITY USE ONLY

The following documents are attached and incorporated into this permit and have been given to the applicant:

□ Standard Provisions to Encroachment Permit □ Special Conditions of Approval
□ City Standard Details (List Details) □ Handout, Urban Runoff BMP's

□Other _____

Remarks Layout must be approved by City inspector PRIOR to drilling. USA and City to provide utility markings.

X 48 HOUR NOTICE PRIOR TO START OF WORK Dennis 455-7286
□ PROVIDE CONSTRUCTION SCHEDULE 5 DAYS PRIOR TO START OF WORK
□ AS-BUILT PLANS REQUIRED
X PLEASE CALL FOR INSPECTION AT 510-596-4333 Dennis 455-7286
□ PLEASE NOTIFY POLICE (510-596-3700) AND FIRE (510-596-3750) 24 HOURS IN ADVANCE.
This permit is void unless the work is completed before_____, 20_____
This permit is to be strictly construed and no other work than is specifically mentioned is hereby authorized.

After final inspection is approved, please contact the Public Works Department at 510-596-4330 to determine final cost, and for final payment or reimbursement of deposit. Failure to obtain approval of a Final Inspection of the work covered by this Encroachment Permit within one (1) year of the estimated completion date shall result in the loss of the security deposit which shall be retained by the City of Emeryville.

APPROVED MM TITLE Sr Civil. Eng DATE 3/1/13

FINAL INSPECTION APPROVED_____ TITLE_____ DATE_____

Michael 510-596-4333

Appendix C. Soil Boring Logs

Project: Apex Refrigeration | Boring: **S1** | Pg. 1 of 1

Drilling Co: **Gregg Drilling** | Drilling Method: **Hand Auger** | Date Started: **3/1/13**

Location: | Sampler: | Date Completed: **3/1/13**

Logged by: **B. Foster** | Reviewed by: **P. Skorge**

Water Level (below ground surface) ▽ During Drilling **3.5**

DEPTH - FT.	BLOW COUNT	% RECOVERY	FID\PID (ppm)	SAMPLES	GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	ESTIMATED % OF GR	SA	FI	MOISTURE
						CONCRETE	CONCRETE				
1						Silty, Sandy GRAVEL (GM) with CONCRETE; dark grayish-brown (10YR 4/2); aggregate-silty matrix; moist; very dense; no odor; some staining		25	15	60	M
2											
3											
▽							GM				
4						wet; standing water in borehole Sample Collected: APEX-S1-3.5-030113 (soil)					W
5											
6						CLAY (CL); black (10YR 2/1); wet; slight hydrocarbon odor; low plasticity; soft				100	W
						dark gray (10YR 4/1); dry; very stiff					D
7											
8							CL				
9						Sample Collected: APEX-S1-9.0-030113 (soil)					
10						Sample Collected: APEX-S1-GW-030113 (water) Bottom of boring at 10 feet					

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd.
Martinez, CA 94553
Phone: 9259690750
Fax: 9259690751

Lithologic Log for S1
Apex Refrigeration

Project Location: **15550 Park Ave, Emeryville, CA**

Project No. **2012-144**

2012-144 APEX.GPJ 4/12/13

Project: Apex Refrigeration | Boring: **S2** | Pg. 1 of 1

Drilling Co: **Gregg Drilling** | Drilling Method: **Hand Auger** | Date Started: **3/1/13**

Location: | Sampler: | Date Completed: **3/1/13**

Logged by: **B. Foster** | Reviewed by: **P. Skorge**

Water Level (below ground surface) ▽ During Drilling **3.5**

DEPTH - FT.	BLOW COUNT	% RECOVERY	FID\PID (ppm)	SAMPLES	GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	ESTIMATED % OF GR	SA	FI	MOISTURE
						CONCRETE with 2" AB Gravel Base	CONCRETE				
1						GRAVEL (GM) with brown silty matrix (10YR 4/3); slightly moist; very dense; no odor; fine sands throughout		35	15	50	M
2											
3							GM				
4	▽					fill material becomes saturated					S
5											
6						CLAY (CL); black (10YR 2/1); slightly moist; very faint hydrocarbon odor; low to medium plasticity; stiff Sample Collected: APEX-S2-5.5-030113 (soil)				100	M
7											
8							CL				
9						increased plasticity; trace coarse sand; angular Sample Collected: APEX-S2-9.0-030113 (soil)			5	95	
10						Sample Collected: APEX-S2-GW-030113 (water) Bottom of boring at 10 feet					

2012-144 APEX.GPJ 4/12/13

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd.
Martinez, CA 94553
Phone: 9259690750
Fax: 9259690751

Lithologic Log for S2
Apex Refrigeration

Project Location: **15550 Park Ave, Emeryville, CA**

Project No. **2012-144**

Project: Apex Refrigeration | Boring: **S3** | Pg. 1 of 1

Drilling Co: **Gregg Drilling** | Drilling Method: **Hand Auger** | Date Started: **3/1/13**

Location: | Sampler: | Date Completed: **3/1/13**

Logged by: **B. Foster** | Reviewed by: **P. Skorge**

Water Level (below ground surface) ▽ During Drilling **4**

DEPTH - FT.	BLOW COUNT	% RECOVERY	FID\PID (ppm)	SAMPLES	GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	ESTIMATED % OF GR	SA	FI	MOISTURE
						CONCRETE with 1.5" AB Gravel Base	CONCRETE				
1						Silty GRAVEL FILL (GM); 1.5-2" AB gravel with silty matrix					
2							GM				
3						CLAY (CL); very dark gray (2.5YR 3/1); moist; medium to high plasticity; firm; trace brown silt					
						fill material becomes saturated				100	M
4 ▽						Sample Collected: APEX-S3-3.5-030113 (soil)					
						black (2.5Y 1/1); wet; medium plasticity; stiff; trace coarse sand; angular; slight hydrocarbon odor; sheen on wet clay					W
5											
6											
							CL				
7											
8						less moist; trace roots/fibrous materials throughout					
9						Sample Collected: APEX-S3-9.0-030113 (soil)				100	M
10						Sample Collected: APEX-S3-GW-030113 (water)					
						Bottom of boring at 10 feet					

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd.
Martinez, CA 94553
Phone: 9259690750
Fax: 9259690751

Lithologic Log for S3
Apex Refrigeration

Project Location: **15550 Park Ave, Emeryville, CA**

Project No. **2012-144**

2012-144 APEX.GPJ 4/12/13

Project: Apex Refrigeration | Boring: **S4** | Pg. 1 of 1

Drilling Co: **Gregg Drilling** | Drilling Method: **Hand Auger** | Date Started: **3/1/13**

Location: | Sampler: | Date Completed: **3/1/13**

Logged by: **B. Foster** | Reviewed by: **P. Skorge**

Water Level (below ground surface) ▽ During Drilling **4**

DEPTH - FT.	BLOW COUNT	% RECOVERY	FID\PID (ppm)	SAMPLES	GRAPHIC LOG	DESCRIPTION	USCS SYMBOL	ESTIMATED % OF GR	SA	FI	MOISTURE
						CONCRETE with 1.5" AB Gravel Base	CONCRETE				
1						Sandy SILT with GRAVEL (ML); very dark grayish-brown; fine; moist; no odor; medium plasticity	GM	20	30	50	M
2											
3						CLAY (CL); very dark gray (10YR 3/1); moist; slight hydrocarbon odor; medium to high plasticity; soft; trace brown silt; slight sheen on wet clay				100	M
4	▽										
5						Sample Collected: APEX-S4-4.5-030113 (soil)					
6						very dark gray-brown (2.5Y 3/2); less moist; olive brown (4/3) staining	CL			100	M
7											
8						trace roots and fibrous materials					
9						less moist; lean; medium plasticity; stiff Sample Collected: APEX-S4-8.5-030113 (soil)					
10						Sample Collected: APEX-S4-GW-030113 (water)					
						Bottom of boring at 10 feet					

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd.
Martinez, CA 94553
Phone: 9259690750
Fax: 9259690751

Lithologic Log for S4
Apex Refrigeration

Project Location: **15550 Park Ave, Emeryville, CA**

Project No. **2012-144**

2012-144 APEX.GPJ 4/12/13

Appendix D. Investigation-Derived Waste Profiles, Manifests, and Laboratory Analytical Data

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	1	(800) 368-4778	033113142

GENERATOR

5. Generator's Name and Mailing Address

APEX REFRIGERATION CORP DBA PELCO DISTRIBUTORS
1550 PARK AVE
EMERYVILLE CA 94608
Generator's Phone: 510 653-9650

Generator's Site Address (if different than mailing address)

1550 PARK AVENUE
EMERYVILLE CA 94608

6. Transporter 1 Company Name — U.S. EPA ID Number

ENVIRONMENTAL RECOVERY SERVICES, INC. — CAR000188201

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

LIQUID ENVIRONMENTAL SOLUTIONS OF ARIZONA
5159 WEST VAN BUREN STREET
PHOENIX AZ 85043
Facility's Phone: 602 561-2414 — AZR000030452

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS,LIQUID (MONITORING WATER)	1	DM	55	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

9511 15179-1550 - MONITORING WATER 1 X 55 DM ** ERS W.O.# 91279 - ECB * CONTRACTOR: ERRG - JOB NUMBER 2012-144 **

BILL TO ENVIROSERV ** WEAR PROPER PPE

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Peter Kaiser — Signature: Peter Kaiser — Month: 4 — Day: 5 — Year: 13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Brandon Osborne — Signature: — Month: 4 — Day: 5 — Year: 13

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	1	(800) 368-4778	003113143

GENERATOR

5. Generator's Name and Mailing Address

APEX REFRIGERATION CORP DBA PELCO DISTRIBUTORS
1580 PARK AVE
EMERYVILLE CA 94608
Generator's Phone: 510 653-9660

Generator's Site Address (if different than mailing address)

1650 PARK AVENUE
EMERYVILLE CA 94608

6. Transporter 1 Company Name

ENVIRONMENTAL RECOVERY SERVICES, INC.

U.S. EPA ID Number: CAR000188201

7. Transporter 2 Company Name

NV TRANSPORT

U.S. EPA ID Number: CAR000180928

8. Designated Facility Name and Site Address

US ECOLOGY
HWY 95, 12 MILES SOUTH
BEATTY NV 89003
Facility's Phone: 775 553-2203

U.S. EPA ID Number: NVT330010000

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZARDOUS, SOLID (SOIL)	1	DM	400	P	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

SB1) A 07-3 - MONITORING SOIL 1455 DM

** ERS W.O.#91279 - ECS * CONTRACTOR ERRG - JOB NUMBER 2012-144 **

BILL TO ENVIROSERV **WEAR PROPER PPE

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
Pedro Barrera		4	5	13

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
Ricardo Lorenzo		4	5	13
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)	Month	Day	Year

ignated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

yped Name	Signature	Month	Day	Year


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 243511
ANALYTICAL REPORT

Engineering/Remediation Resource Grp	Project : 2012-144
4585 Pacheco Blvd.	Location : APEX
Martinez, CA 94553	Level : II

Sample ID	Lab ID
APEX-WW-030113	243511-001
APEX-WS-030113	243511-002

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: Tracy Babjar Date: 03/12/2013

Tracy Babjar
Project Manager
(510) 204-2226

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**243511**
Client:	**Engineering/Remediation Resource Grp**
Project:	**2012-144**
Location:	**APEX**
Request Date:	**03/01/13**
Samples Received:	**03/01/13**

This data package contains sample and QC results for one soil sample and one three-point water composite, requested for the above referenced project on 03/01/13. The samples were received cold and intact.

Metals (EPA 6010B) Water:
No analytical problems were encountered.

Metals (EPA 6010B) Soil:
No analytical problems were encountered.

243511

Engineering / Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
~~Martinez, CA 94553~~
Phone: (925) 969-0750
Fax: (925) 969-0751

Lab No. _____
Address _____

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Chris Mai	**California EDF Report?** **Navy EDD Report?**
Laboratory: Curtis & Tompkins	**Electronic Deliverables To (Email Address):** Chris.Mai@ERRG.com
Phone No.: (925) 839-2260 **Fax No.:** (925) 969-0751	**Sampler:** bn foster
Project Number: 2012-144 **Phase # / Task #** 01.03	
Project Name: APEX	**Project Address:** 1550 PARK AVE. SMVYville CA
Project Manager: Chris Mai	

Analysis Request

	Sample Designation	Sampling: Date	Sampling: Time	Container: 40 oz jar	Container: 500 ml poly	Container:	Container:	Container:	Matrix: Soil	Matrix: Water	LUFT 5 (EPA 6010B)										STD (1 wk) TAT	Number of Containers	Comments	For Lab Use Only
1.	APEX-WW-030113	3-1-13	1445	X					X	X	X										X	1		
2.	APEX-WS-030113	3-1-13	1455		X					X	X										X	~~2~~ 3		
3.																						-Si		
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								

Relinquished by:	Date	Time	Received by:	Remarks:
Bn Foster	3-1-13	1570	Pat Hamilton	Composite soil samples prior to analysis
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by Laboratory:	Bill to: Engineering / Remediation Resources Group, Inc. 4585 Pacheco Blvd, Suite 200 Martinez, CA 94553

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 243511 Date Received 3/1/13 Number of coolers 3
Client ERRG Project APEX

Date Opened 3/1/13 By (print) AM (sign)
Date Logged in 3/4/13 By (print) EL (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: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 8.0, 14.0

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☒ 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 there any missing / extra samples? YES NO
11. Are samples in the appropriate containers for indicated tests? YES NO
12. Are sample labels present, in good condition and complete? YES NO
13. Do the sample labels agree with custody papers? YES NO
14. Was sufficient amount of sample sent for tests requested? YES NO
15. Are the samples appropriately preserved? YES NO N/A
16. Did you check preservatives for all bottles for each sample? YES NO N/A
17. Did you document your preservative check? YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? YES NO N/A
21. Was the client contacted concerning this sample delivery? YES NO
If YES, Who was called? By Date:

COMMENTS
13) -001: Rec'd 1 jar of soil labeled APEX-MS-030113
-002: Rec'd 3 polys labeled APEX-MW-030113
15) -002: 1 of 3 polys rec'd @ pH ≥ 2. Added 1mL HNO_3 (#52174) on 3/4/13 ^1245.
* COC specifies "composite soil samples prior to analysis" but only rec'd 1 jar for soil. However, rec'd 3 polys for ~~metals~~ water samples logged in composite for water sample.

Rev 10, 11/11

Curtis & Tompkins Sample Preservation for 243511

Sample	pH: <2	>9	>12	Other
-002a	[X]	[ ]	[ ]	_____
b	[X]	[ ]	[ ]	_____
c	[X]	[ ]	[ ]	_____

Analyst: EL
Date: 3/4/13

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3010A
Project#:	2012-144	Analysis:	EPA 6010B
Field ID:	APEX-WS-030113	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/11/12
Diln Fac:	1.000	Analyzed:	03/11/13
Batch#:	196224		

Type: SAMPLE Lab ID: 243511-002

Analyte	Result	RL
Cadmium	ND	5.0
Chromium	68	5.0
Lead	12	5.0
Nickel	61	5.0
Zinc	110	20

Type: BLANK Lab ID: QC679449

Analyte	Result	RL
Cadmium	ND	5.0
Chromium	ND	5.0
Lead	ND	5.0
Nickel	ND	5.0
Zinc	ND	20

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3010A
Project#:	2012-144	Analysis:	EPA 6010B
Matrix:	Water	Batch#:	196224
Units:	ug/L	Prepared:	03/11/12
Diln Fac:	1.000	Analyzed:	03/11/13

Type: BS Lab ID: QC679450

Analyte	Spiked	Result	%REC	Limits
Cadmium	50.00	56.09	112	80-120
Chromium	200.0	221.7	111	80-120
Lead	100.0	106.8	107	78-120
Nickel	500.0	536.3	107	80-120
Zinc	500.0	551.0	110	80-120

Type: BSD Lab ID: QC679451

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	50.00	56.40	113	80-120	1	20
Chromium	200.0	219.8	110	80-120	1	20
Lead	100.0	108.4	108	78-120	2	20
Nickel	500.0	532.0	106	80-120	1	20
Zinc	500.0	557.1	111	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3010A
Project#:	2012-144	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	196224
MSS Lab ID:	243639-001	Sampled:	03/08/13
Matrix:	Water	Received:	03/08/13
Units:	ug/L	Prepared:	03/11/12
Diln Fac:	1.000	Analyzed:	03/11/13

Type: MS Lab ID: QC679452

Analyte	MSS Result	Spiked	Result	%REC	Limits
Cadmium	<0.2578	50.00	53.36	107	72-121
Chromium	4.167	200.0	218.6	107	74-120
Lead	1.171	100.0	105.4	104	68-120
Nickel	4.157	500.0	511.0	101	73-120
Zinc	<2.612	500.0	544.6	109	72-123

Type: MSD Lab ID: QC679453

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	50.00	54.75	109	72-121	3	20
Chromium	200.0	224.1	110	74-120	3	20
Lead	100.0	107.2	106	68-120	2	24
Nickel	500.0	524.2	104	73-120	3	20
Zinc	500.0	558.6	112	72-123	3	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3050B
Project#:	2012-144	Analysis:	EPA 6010B
Field ID:	APEX-WW-030113	Batch#:	196053
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	as received	Prepared:	03/04/13
Diln Fac:	1.000	Analyzed:	03/05/13

Type: SAMPLE Lab ID: 243511-001

Analyte	Result	RL
Cadmium	0.35	0.24
Chromium	31	0.24
Lead	17	0.24
Nickel	41	0.24
Zinc	59	0.94

Type: BLANK Lab ID: QC678784

Analyte	Result	RL
Cadmium	ND	0.25
Chromium	ND	0.25
Lead	ND	0.25
Nickel	ND	0.25
Zinc	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3050B
Project#:	2012-144	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	196053
Units:	mg/Kg	Prepared:	03/04/13
Diln Fac:	1.000	Analyzed:	03/05/13

Type: BS Lab ID: QC678785

Analyte	Spiked	Result	%REC	Limits
Cadmium	10.00	10.30	103	80-120
Chromium	100.0	98.56	99	80-120
Lead	100.0	96.69	97	80-120
Nickel	25.00	24.61	98	80-120
Zinc	25.00	25.05	100	80-120

Type: BSD Lab ID: QC678786

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	10.00	10.31	103	80-120	0	20
Chromium	100.0	98.90	99	80-120	0	20
Lead	100.0	96.13	96	80-120	1	22
Nickel	25.00	24.67	99	80-120	0	20
Zinc	25.00	25.09	100	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California LUFT Metals

Lab #:	243511	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3050B
Project#:	2012-144	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	196053
MSS Lab ID:	243480-005	Sampled:	02/27/13
Matrix:	Soil	Received:	03/01/13
Units:	mg/Kg	Prepared:	03/04/13
Basis:	as received	Analyzed:	03/05/13
Diln Fac:	1.000		

Type: MS Lab ID: QC678787

Analyte	MSS Result	Spiked	Result	%REC	Limits
Cadmium	0.4934	9.615	9.863	97	69-120
Chromium	27.15	96.15	123.0	100	60-122
Lead	45.28	96.15	120.6	78	52-120
Nickel	7.916	24.04	32.68	103	45-134
Zinc	13.45	24.04	37.08	98	38-146

Type: MSD Lab ID: QC678788

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Cadmium	9.709	9.714	95	69-120	2	23
Chromium	97.09	130.6	107	60-122	5	34
Lead	97.09	121.3	78	52-120	0	51
Nickel	24.27	33.97	107	45-134	3	38
Zinc	24.27	39.76	108	38-146	6	36

RPD= Relative Percent Difference

LIQUID ENVIRONMENTAL SOLUTIONS

866 • 694 • 7327

www.liquidenviro.com

Internal Use Only:
Profile #: 15179-1550
Account #: 020180
(●) Approved ( ) Refused

Profile Information

US EPA ID#: N/A State ID#: TCEQ ID#: ( ) Analytical Attached ( ) MSDS Attached

Generator Information

Name: APEX REFRIGERATION CORP DBA PELCO DISTRIBUTORS
Address: Site: 1550 Park Avenue
City: Emeryville State: CA Zip: 94608
Contact: P. Barger Title: Secretary - Treasurer
Phone: (510) 653-9850 Fax: (510) 653-9854
Email:

Billing Information

Name: Environmental Recovery Services
Address: 15902 S Main St
City: Gardena State: CA Zip: 90248
Contact: Chris Barnes Title:
Phone: 562.427.7277 x232 Fax: 310.532.5958
Email: cbarnes@enviroserv.net

Waste Questionnaire (check one)

(●) **Non-hazardous Waste**

	Yes	No
1) Is the waste hazardous by: Ignitabilty? (40 CFR Part 261.21)	( )	(●)
Corrosivity? (40 CFR Part 261.21)	( )	(●)
Reactivity? (40 CFR Part 261.21)	( )	(●)
Toxicity? (40 CFR Part 261.21)	( )	(●)
2) Does the waste contain: Herbicides, pesticides, insecticides?	( )	(●)
Dioxins?	( )	(●)
Radioactive substances?	( )	(●)
Domestic Wastes?	( )	(●)
Biohazardous materials?	( )	(●)
3) Is this a hazardous waste (F, K, U, or P listed) as defined by 40 CFR 261 Subpart D? If yes to the above, identify the listing.	( )	(●)
4) Is the waste derived from outside an underground storage tank (UST)?	( )	(●)
5) If waste is derived from fuel, is the fuel leaded?	( )	(●)

( ) **Used Oil (as defined by CRF 279.1)**

1) Has this used oil been mixed with hazardous waste?	( )	( )
2) Does this used oil contain chlorinated paraffins? If yes, attach MSDS	( )	( )
3) Does this used oil contain TSCA (40 CFR 761) regulated levels of PCB? If yes, list PCB level:	( )	( )
4) Does this used oil contain greater(>) than 1,000 mg/L Total Organic Halogens (TOH)? * If yes, rebuttal per 40 CFR 279.10(b)(1)(ii) must be included	( )	( )
5) Is this used oil soluble in water?	( )	( )

( ) **Virgin Product (must include MSDS)**

	Yes	No
1) Has this product been mixed with a hazardous waste?	( )	( )

( ) **Off-Spec Product (must include MSDS)**

	Yes	No
1) Has this product been mixed with a hazardous waste?	( )	( )

( ) **Petroleum Contact Water (PCW)/ Leaking Underground Storage Tank (LUST) Water**

( ) **Conditional Exempt Small Quantity Generator (CESQG)**

Waste Description

Common Name of Waste: Monitoring Water
Process Generating Waste: Site monitoring
Other Process Information:

( ) Unused Product or Chemical
( ) Waste by-product from process
( ) Spill Clean Up
(●) Planned Site Remediation

Physical State
( ) 100% Solid Without Free Liquid
(●) 100% Liquid With No Solids
( ) Liquid/Solid Mixture
% Free Liquid
% Settled Solids
% Total Suspended Solids

Layers
(●) Single Phase ( ) Bi-Layered ( ) Multi Layered

PH
( ) <2 ( ) 2-6 ( ) 6-8 ( ) 8-12.5 ( ) >12.5 ( ) N/A

Flash Point
( ) <73 F ( ) 73-100 F ( ) 101-140 F ( ) 141-200 F ( ) >200 F (●) N/A

Specific Gravity
Range: 1.001 To: 1.002

Color
Describe clearish

Odor
(●) None ( ) Mild ( ) Strong
Describe:

Viscosity
(●) Low ( ) Medium ( ) High

TX Classification
( ) Class I ( ) Class II ( ) Other:

Transportation Information

Method of Shipment: ( ) Bulk Liquid ( ) Bulk Sludge ( ) Bulk Solid (●) Drum/Box ( ) Other:
Shipment Frequency: ( ) One Time ( ) Weekly ( ) Monthly (●) Quarterly ( ) Annually (●) Other: as generated
Anticipated Volume:

Generator Certification

By signing this profile sheet, the generator (or representative) certifies that all information submitted on this profile and attached documents is correct to the best of my knowledge. In addition, I certify the following: 1) This waste does not contain regulated quantities of PCB's (polychlorinated Biphenyls). 2) This waste is not hazardous by reference to local and state law or by reference to US EPA rules 40 CFR Part 261 Subpart C (characteristic hazardous waste). 3) This profile sheet and its attachments contain true and accurate descriptions of the waste material. All relevant information regarding known or suspected hazards in the possession of the generator have been disclosed. 4) The generator will promptly notify LES of any material change in the composition of the waste which could result in the waste otherwise being characterized as hazardous pursuant to US EPA rules.

Penni Barger — Generator Authorization Signature
4/2/13 — Date
Pennie Barger, Secy-Treas. — Print Name and Title

USEcology

☑ US Ecology Nevada (Beatty) Fax (775) 553-2125 ☐ US Ecology Texas (Robstown) Fax (361) 387-0794 Profile #: _____

☐ US Ecology Idaho (Grand View) Fax (208) 834-2919

A. CUSTOMER INFORMATION

*Waste as shipped will be : ☐ Industrial ☐ NON - Industrial *(Texas customers only)*

Generator: Apex Refrigeration Corp dba Pelco Distributors

Facility Address : 1559 Park Avenue

(No PO Box) Emeryville, CA 94608

Mailing Address same

City/State/Zip:

Technical Contact: P. Barger

Phone: (510) 653-9850 Fax: (510) 653-9854

☑ Check if Billing is Same

Billing Company: ENVIROSERV

Billing Address: 15902 S. MAIN STREET

City/State/Zip: GARDENA, CA 90248

Billing Contact: Jackie Inscore/ Chris Barnes

Phone No.: 562-427-7277 Fax No.: 310-532-5958

Email: Cbarnes@enviroserv.net

NAICS# _____ ☐ CESQG ☐ SQG ☐ LQG EPA ID# N/A State ID# _____

B. SHIPPING INFORMATION

1. US DOT Shipping Name NON HAZARDOUS, SOLID (SOIL) 2. Hazard Class _____

3. UN/NA # _____ 4. Packaging Group _____ 5. RQ _____

6. Container Type: ☐ Bulk ☑ Totes ☐ Pallet Size 55 G/ 1 CuYd 7. Frequency: ☐ Year ☐ QTR ☐ Month

☐ Boxes ☑ Bags ☑ Drums ☐ Other _____ Quantity 1 to 20 ☐ 1 Time ☐ Other _____

C. GENERAL MATERIAL & REGULATORY INFORMATION

1. Common name for this waste Non Haz SOIL

2. Process generating the material MONITORING / WELL INSTALLATION

3. Describe physical appearance of waste DRY TO MOIST / WET SOIL

4. Describe odor of waste: ☑ None ☐ Slight ☐ Strong Describe _____

5. Knowledge is from: ☐ Lab Analysis ☐ MSDS ☑ Process/Generator knowledge ☐ Yes ☑ No Is the waste restricted under EPA Land Disposal Restrictions (40 CFR 268) *If yes, please complete LDR form*

☑ Yes ☐ No Is the material <500 PPMW VOC as generated?

☐ Yes ☑ No Is the waste, or generating facility, subject to regulation under 40 CFR Part 61 Subpart FF (Benzene Rule) of NESHAPS? If yes, complete form *"attachment 4"* . (Note: Waste generated from chemical manufacturing, coke-by-product recovery plants, petroleum refineries or treaters of such waste are subject to these requirements.)

☐ Wastewater ☑ Non-wastewater ☐ Debris

☐ Yes ☑ No State waste codes NONE

☐ Yes ☐ No Alternative standards for Soil ?

☐ Yes ☑ No CERCLA Regulated (Superfund) Waste

☐ Yes ☑ No Contains UHCs/Constituents of Concern: List in section D

☐ Yes ☑ No **EPA Haz. Waste (list codes)** NONE

☐ Yes ☑ No Has the waste been treated after the initial point of generation?

☐ Yes ☑ No Subpart XX (40 CFR 63.1080) *Controls Required?*

☐ Yes ☑ No Exempt Waste: If yes, list ref. 40 CFR _____

Source Code **G** _____ Form Code **W** _____ Mgt. Method **H** _____

D. MATERIAL COMPOSITION (Physical/Chemical)

(Range Total > or = 100%) Values are ☐ TCLP ☐ TOTALS

(include additional sheets as necessary)

	typical value	unit	range
SOIL	80	%	50 to 100
MOISTURE	10	%	0 to 10
ROCKS / SILT / SAND	5	%	0 to 30
DEBRIS	5	%	0 to 10

E. Does the waste exhibit or contain the following:

☐ Yes ☑ No	Oxidizer	☐ Yes ☑ No	React. Sulfides _____ ppm
☐ Yes ☑ No	Explosive	☐ Yes ☑ No	React. Cyanides _____ ppm
☐ Yes ☑ No	Organic Peroxide	☐ Yes ☑ No	Water/Air (Pyrophoric) React.
☐ Yes ☑ No	Shock Sensitive	☐ Yes ☑ No	Thermally Unstable
☐ Yes ☑ No	Tires	☐ Yes ☑ No	TSCA Regulated PCB Waste
☐ Yes ☑ No	Pyrophoric	☐ Yes ☑ No	Regulated Medical/Infectious Waste
☐ Yes ☑ No	Radioactive**	☐ Yes ☑ No	Compressed Gasses
☐ Yes ☑ No	Exempt RAD**	**Additional Radiological info is provided in USEI's WAC Addendum	
☐ Yes ☑ No	Halogenated Organic Compounds? (per 40 CFR 268, Appendix III)		

F. PHYSICAL CHARACTERISTICS

pH Range _____ to _____

1. Flash Point: > 200 °F (if <140°F) 2. Typical pH: 7 pH Range: ☐ ≤2

☐ Yes ☑ No Possibility of incidental liquids from transportation? ☑ >2, <12.50

☑ Yes ☐ No Does waste pass the EPA specified paint filter test? ☐ ≥12.5

(Pass is a solid)

G. GENERATOR'S CERTIFICATION:

☑ Yes ☐ No **I certify this material may be disposed of without further treatment.**

Certification Statement: I certify under penalty of law that I am familiar with this waste stream through analysis and/or process knowledge, and that all information provided is true, accurate, representative and complete, and that all known or suspected hazards have been disclosed. Furthermore, I certify that this form was completed in accordance with the instructions provided.

Print Name: Pennie Barger

Signature: Pennie Barger Title: Secy-Treas Date: 4/2/13

Facility use only

First review _____ Second review _____ Final review: _____

Date approved: _____ Date Denied: _____

v032010

Appendix E. Laboratory Analytical Data


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 243508
ANALYTICAL REPORT

Engineering/Remediation Resource Grp	Project : 2012-144
4585 Pacheco Blvd.	Location : APEX
Martinez, CA 94553	Level : II

Sample ID	Lab ID
APEX-TB-030113	243508-001
APEX-S4-4.5-030113	243508-002
APEX-S4-8.5-030113	243508-003
APEX-S4-GW-030113	243508-004
APEX-S3-3.5-030113	243508-005
APEX-S3-9.0-030113	243508-006
APEX-S3-GW-030113	243508-007
APEX-S1-3.5-030113	243508-008
APEX-S1-9.0-030113	243508-009
APEX-S1-GW-030113	243508-010
APEX-S2-5.5-030113	243508-011
APEX-S2-9.0-030113	243508-012
APEX-S2-GW-030113	243508-013
APEX-ER-030113	243508-014

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: Tracy Babjar Date: 03/08/2013

Tracy Babjar
Project Manager
(510) 204-2226

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**243508**
Client:	**Engineering/Remediation Resource Grp**
Project:	**2012-144**
Location:	**APEX**
Request Date:	**03/01/13**
Samples Received:	**03/01/13**

This data package contains sample and QC results for eight soil samples and six water samples, requested for the above referenced project on 03/01/13. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Water:
High surrogate recoveries were observed for bromofluorobenzene (FID) in APEX-S3-GW-030113 (lab # 243508-007), APEX-S1-GW-030113 (lab # 243508-010), and APEX-S2-GW-030113 (lab # 243508-013). No other analytical problems were encountered.

TPH-Purgeables and/or BTXE by GC (EPA 8015B) Soil:
High surrogate recoveries were observed for bromofluorobenzene (FID) in APEX-S4-4.5-030113 (lab # 243508-002) and APEX-S2-5.5-030113 (lab # 243508-011). No other analytical problems were encountered.

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

TPH-Extractables by GC (EPA 8015B) Soil:
Low recoveries were observed for diesel C10-C24 in the MS/MSD for batch 196023; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. APEX-S1-3.5-030113 (lab # 243508-008) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Water:
Low recoveries were observed for ethylbenzene in the MS/MSD for batch 196061; the parent sample was not a project sample, and the LCS was within limits. Response exceeding the instrument's linear range was observed for ethylbenzene in the MS for batch 196061; affected data was qualified with "b". No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B) Soil:
Matrix spikes were not performed for this analysis in batch 196146 due to insufficient sample amount. High surrogate recoveries were observed for bromofluorobenzene in APEX-S4-4.5-030113 (lab # 243508-002) and APEX-S2-5.5-030113 (lab # 243508-011); no target analytes were detected in these samples. High surrogate recoveries were observed for trifluorotoluene in APEX-S4-4.5-030113 (lab # 243508-002) and APEX-S2-5.5-030113 (lab # 243508-011); no target analytes were detected in these samples. APEX-S4-4.5-030113 (lab # 243508-002) and APEX-S2-5.5-030113 (lab #

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**243508**
Client:	**Engineering/Remediation Resource Grp**
Project:	**2012-144**
Location:	**APEX**
Request Date:	**03/01/13**
Samples Received:	**03/01/13**

Volatile Organics by GC/MS (EPA 8260B) Soil:
243508-011) were diluted due to high hydrocarbons. No other analytical problems were encountered.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM) Water:
High surrogate recoveries were observed for nitrobenzene-d5 in a number of samples. Low surrogate recoveries were observed for 2-fluorobiphenyl in a number of samples. Low surrogate recoveries were observed for terphenyl-d14 in a number of samples. A number of samples were diluted due to high non-target analytes. APEX-S1-GW-030113 (lab # 243508-010) and APEX-S2-GW-030113 (lab # 243508-013) were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

Semivolatile Organics by GC/MS SIM (EPA 8270C-SIM) Soil:
Matrix spikes QC678716,QC678717 (batch 196038) were not reported because the parent sample required a dilution that would have diluted out the spikes. APEX-S4-4.5-030113 (lab # 243508-002) was diluted due to the dark and viscous nature of the sample extract. APEX-S4-4.5-030113 (lab # 243508-002) and APEX-S2-5.5-030113 (lab # 243508-011) were diluted due to high non-target analytes. No other analytical problems were encountered.

Moisture (ASTM D2216/CLP):
No analytical problems were encountered.

243508

Engineering / Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750
Fax: (925) 969-0751

Lab No. C+T
Address 2323 5th St
Berkeley CA

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Chris Mai	California EDF Report? Navy EDD Report?
Laboratory: Curtis & Tompkins	Electronic Deliverables To (Email Address): chris.mai@errg.com
Phone No.: 925.839.2263 / Fax No.: 925.969.0751	Sampler : bri foster
Project Number: 2012-144 / Phase # / Task # 01.03	
Project Name: APEX	Project Address: Emeryville, CA
Project Manager: Chris Mai	

	Sample Designation	Sampling: Date	Sampling: Time	Container: Encore-5g	Container: 8 oz Jar	Container: 1 L Amber	Container: 500 ml Amber	Container: 40 ml VOA	Container: 500 ml Poly	Matrix: Soil	Matrix: Water	TPH-purgeables (EPA 8015B)	TPH-extractables (EPA Method 8015B) with Silica Gel Cleanup	BTEX / MTBE (EPA 8260B)	Priority Pollutants PAHs (EPA 8270SIM)	STD (1 wk) TAT	Number of Containers	Comments	For Lab Use Only
1.	APEX-TB-030113	3-1-13	0900					X			X			X		X	1		
2.	APEX-S4-4.5-030113	3-1-13	1005	X	X	~~X~~	~~X~~ 5m	X		X		X	X	X	X	X	7		
3.	APEX-S4-8.5-030113	3-1-13	1025	X	X	~~X~~	~~X~~ 5m	X		X		X	X	X	X	X	7		
4.	APEX-S4-GW-030113	3-1-13	1045			X	X	X			X	X	X	X	X	X	10		
5.	APEX-S3-3.5-030113	3-1-13	1130	X	X					X		X	X	X	X	X	~~10~~ 7 5m		
6.	APEX-S3-9.0-030113	3-1-13	1150	X	X					X		X	X	X	X	X	7		
7.	APEX-S3-GW-030113	3-1-13	1205			X	X	X			X	X	X	X	X	X	10		
8.	APEX-S1-3.5-030113	3-1-13	1230	X	X					X		X	X	X	X	X	7		
9.	APEX-S1-9.0-030113	3-1-13	1302	X	X					X		X	X	X	X	X	7		
10.	APEX-S1-GW-030113	3-1-13	1312			X	X	X			X	X	X	X	X	X	10		

	Date	Time		
Relinquished by:	3-1-13	1530	Received by:	Remarks: Correct for Moisture
Relinquished by:			Received by:	
Relinquished by:			Received by Laboratory:	Bill to: Engineering / Remediation Resources Group, Inc. 4585 Pacheco Blvd, Suite 200 Martinez, CA 94553

243508

Engineering / Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750
Fax: (925) 969-0751

Lab No. _____
Address _____

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Chris Mai	California EDF Report? / Navy EDD Report?
Laboratory: Curtis & Tompkins	Electronic Deliverables To (Email Address): chris.mai@errg.com
Phone No.: 925.839.2263 / Fax No.: 925.969.0751	Sampler : bri foster
Project Number: 2012-144 / Phase # / Task #: 01.03	
Project Name: APEX	Project Address: Emeryville, CA
Project Manager: Chris Mai	

	Sampling		Container					Matrix			Analysis Request														
Sample Designation	Date	Time	Encore 5g	8oz Jar	1 L Amber	500 mL Amber	40 mL VOA	Soil	Water		TPH-purgeables (EPA 8015B)	TPH-extractables (EPA Method 8015B) with Silica Gel Cleanup	BTEX / MTBE (EPA 8260B)	Priority Pollutants PAHs (EPA 8270SIM)								STD (1 wk) TAT	Number of Containers	Comments	For Lab Use Only
1. APEX-S2-5.5-030113	3-1-13	1350	X	X				X			X	X	X	X								X	7		
2. APEX-S2-9.0-030113	3-1-13	1420	X	X				X			X	X	X	X								X	7		
3. APEX-S2-GW-030113	3-1-13	1420			X	X	X		X		X	X	X	X								X	10		
4. APEX-ER-030113	3-1-13	1500			X	X	X		X		X	X	X	X								X	10		
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									

Relinquished by:	Date	Time	Received by:	Remarks:
Bri Foster	3-1-13	1530	Pat Hamby	Correct for Moisture
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by Laboratory:	Bill to: Engineering / Remediation Resources Group, Inc. 4585 Pacheco Blvd, Suite 200 Martinez, CA 94553

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 243508 Date Received 3/1/13 Number of coolers 3
Client ERRG Project APEX

Date Opened 3/1/13 By (print) [illegible] (sign) [illegible]
Date Logged in 3/4/13 By (print) [illegible] (sign) [illegible]

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: * Notify PM if temperature exceeds 6°C

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 8.0, 14.0

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☑ 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? 2125
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are there any missing / extra samples? YES (NO)
11. Are samples in the appropriate containers for indicated tests? (YES) NO
12. Are sample labels present, in good condition and complete? (YES) NO
13. Do the sample labels agree with custody papers? (YES) NO
14. Was sufficient amount of sample sent for tests requested? (YES) NO
15. Are the samples appropriately preserved? (YES) NO N/A
16. Did you check preservatives for all bottles for each sample? YES NO (N/A)
17. Did you document your preservative check? YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? (YES) NO N/A
21. Was the client contacted concerning this sample delivery? YES (NO)
If YES, Who was called? By Date:

COMMENTS

Rev 10, 11/11

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/01/13
Units:	ug/L	Received:	03/01/13

Field ID:	APEX-S4-GW-030113	Diln Fac:	5.000
Type:	SAMPLE	Batch#:	196148
Lab ID:	243508-004	Analyzed:	03/07/13

Analyte	Result	RL
Gasoline C7-C12	7,100 Y	250

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	120	76-128

Field ID:	APEX-S3-GW-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196070
Lab ID:	243508-007	Analyzed:	03/05/13

Analyte	Result	RL
Gasoline C7-C12	7,200 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	218 *	76-128

Field ID:	APEX-S1-GW-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196070
Lab ID:	243508-010	Analyzed:	03/05/13

Analyte	Result	RL
Gasoline C7-C12	5,600 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	175 *	76-128

Field ID:	APEX-S2-GW-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196070
Lab ID:	243508-013	Analyzed:	03/05/13

Analyte	Result	RL
Gasoline C7-C12	9,300 Y	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	227 *	76-128

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/01/13
Units:	ug/L	Received:	03/01/13

Field ID:	APEX-ER-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196128
Lab ID:	243508-014	Analyzed:	03/06/13

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	82	76-128

Type:	BLANK	Batch#:	196070
Lab ID:	QC678856	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-128

Type:	BLANK	Batch#:	196128
Lab ID:	QC679081	Analyzed:	03/06/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	81	76-128

Type:	BLANK	Batch#:	196148
Lab ID:	QC679155	Analyzed:	03/07/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-128

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC678855	Batch#:	196070
Matrix:	Water	Analyzed:	03/05/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	964.4	96	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-128

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	196070
MSS Lab ID:	243476-003	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Type: MS Lab ID: QC678859

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<10.56	2,000	1,894	95	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	76-128

Type: MSD Lab ID: QC678860

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,881	94	76-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	76-128

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC679080	Batch#:	196128
Matrix:	Water	Analyzed:	03/06/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	962.2	96	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	85	76-128

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	196128
MSS Lab ID:	243555-001	Sampled:	03/04/13
Matrix:	Water	Received:	03/05/13
Units:	ug/L	Analyzed:	03/06/13
Diln Fac:	1.000		

Type: MS Lab ID: QC679082

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	97.58	2,000	1,985	94	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	76-128

Type: MSD Lab ID: QC679083

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,751	83	76-120	13	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	91	76-128

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC679154	Batch#:	196148
Matrix:	Water	Analyzed:	03/07/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	979.2	98	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-128

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	196148
MSS Lab ID:	243528-001	Sampled:	03/01/13
Matrix:	Water	Received:	03/04/13
Units:	ug/L	Analyzed:	03/07/13
Diln Fac:	1.000		

Type: MS Lab ID: QC679156

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	3,141	2,000	4,687	77	76-120

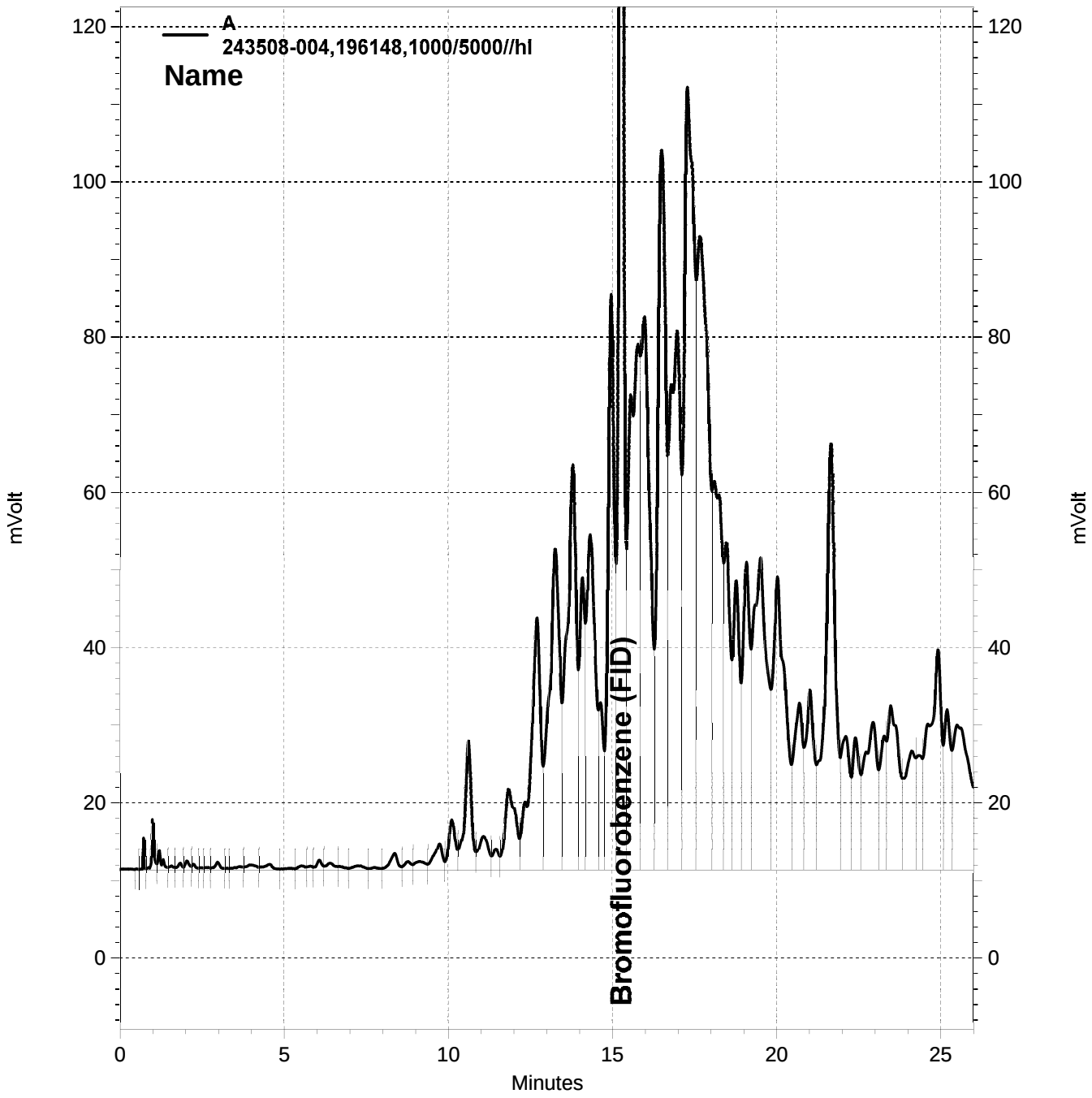
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	76-128

Type: MSD Lab ID: QC679157

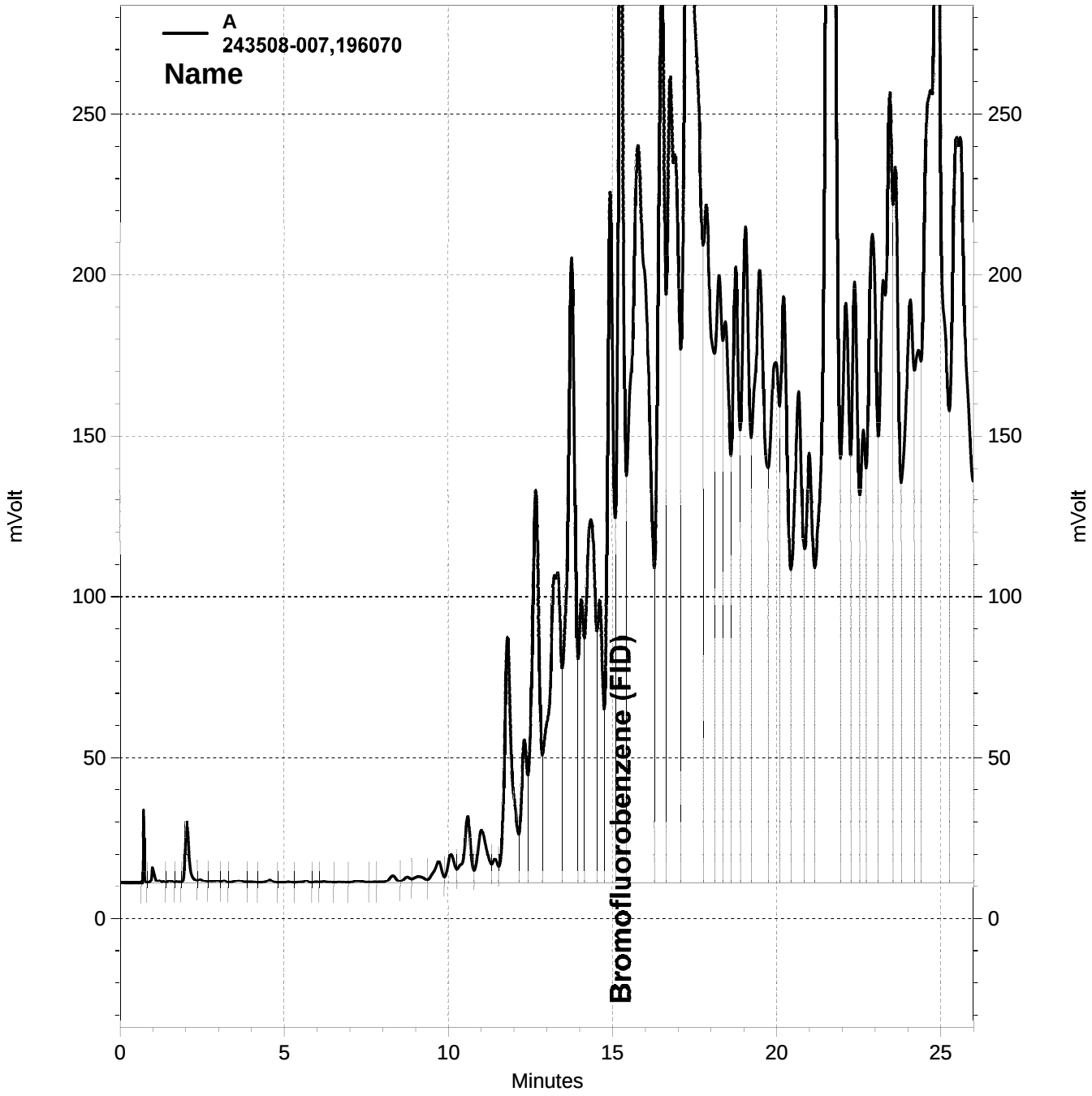
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	4,679	77	76-120	0	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	76-128

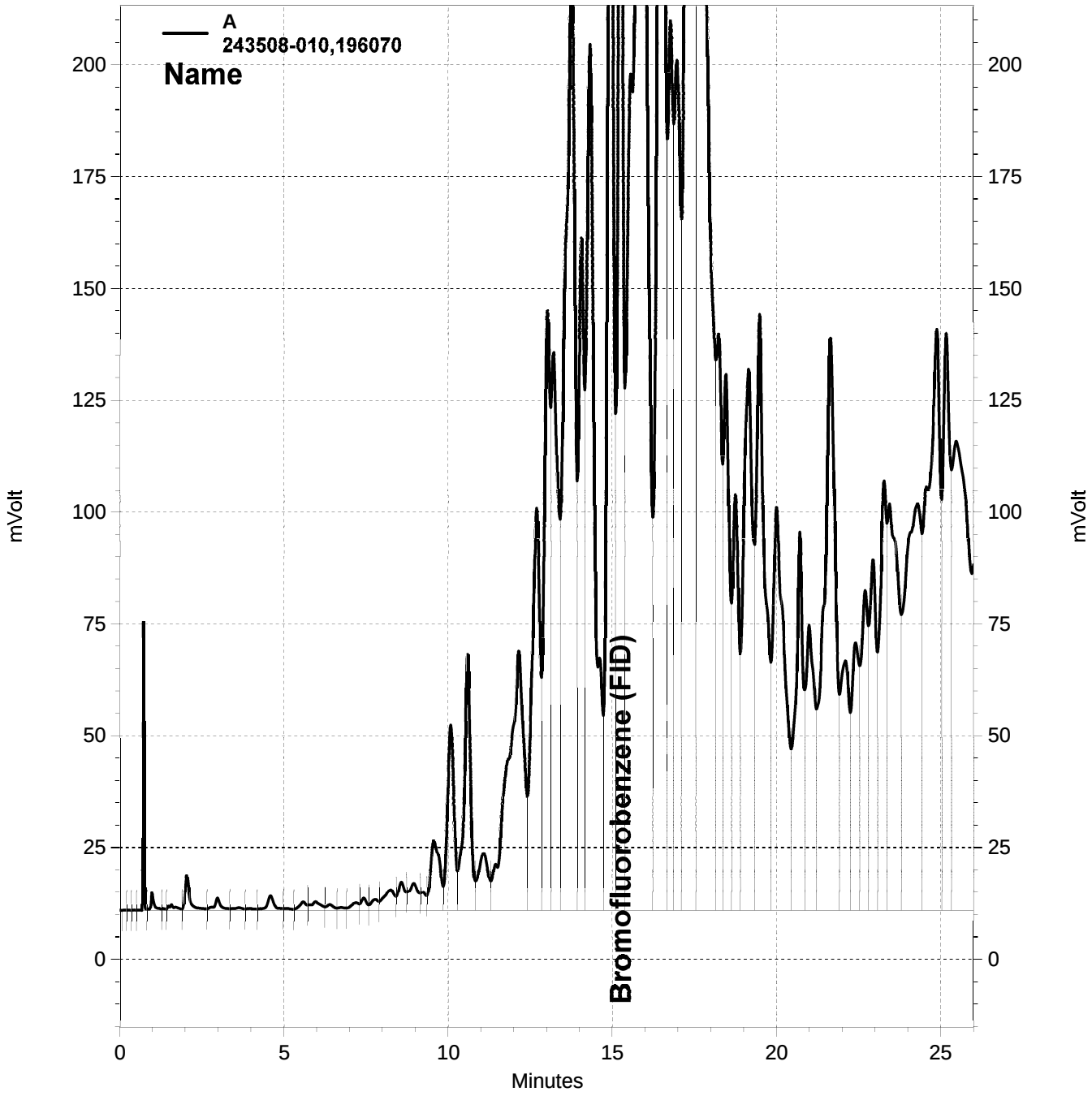
RPD= Relative Percent Difference



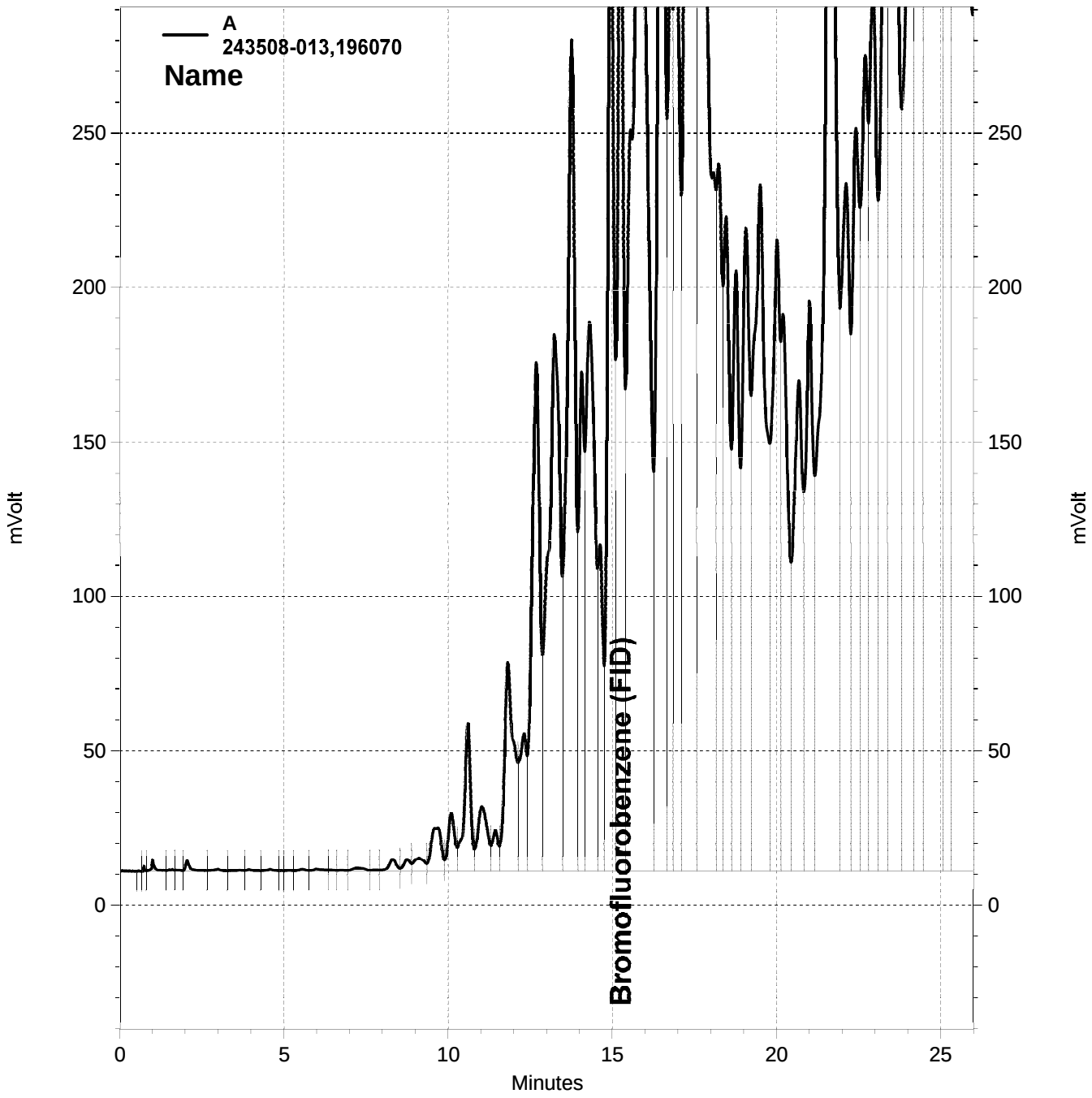
\\Lims\gdrive\ezchrom\Projects\GC07\Data\066-006, A

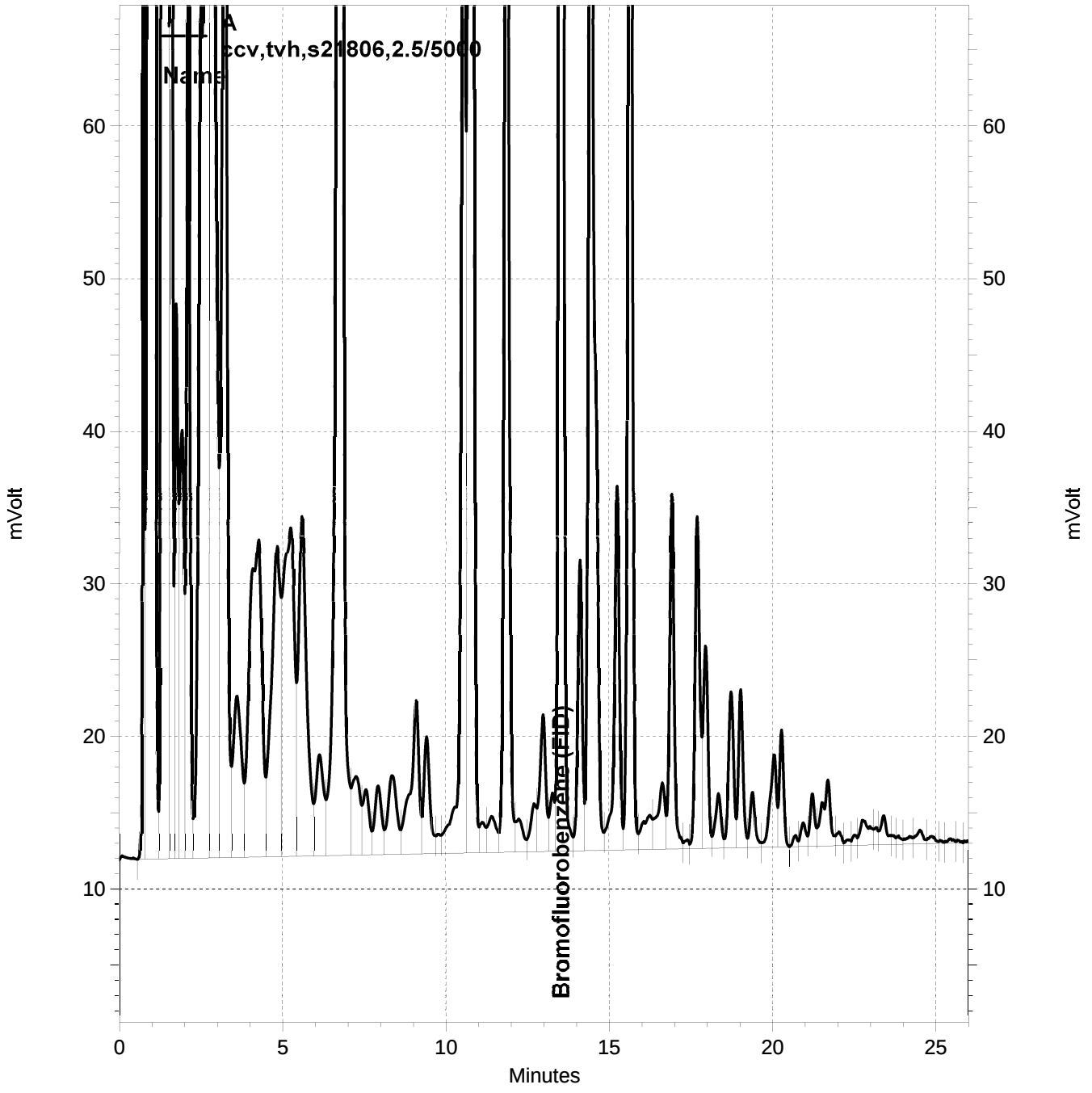


\\Lims\gdrive\ezchrom\Projects\GC07\Data\064-017, A



\\Lims\gdrive\ezchrom\Projects\GC07\Data\064-018, A


A
243508-013,196070
Name
250
200
150
100
50
0
mVolt
Bromofluorobenzene (FID)
0
5
10
15
20
25
Minutes
\\Lims\gdrive\ezchrom\Projects\GC07\Data\064-019, A



\\Lims\gdrive\ezchrom\Projects\GC05\Data\065-002, A

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S4-4.5-030113	Diln Fac:	90.91
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-002	Analyzed:	03/07/13
Moisture:	25%		

Analyte	Result	RL
Gasoline C7-C12	510 Y	24

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	261 *	64-139

Field ID:	APEX-S4-8.5-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-003	Analyzed:	03/07/13
Moisture:	23%		

Analyte	Result	RL
Gasoline C7-C12	0.31 Y	0.23

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	116	64-139

Field ID:	APEX-S3-3.5-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-005	Analyzed:	03/07/13
Moisture:	28%		

Analyte	Result	RL
Gasoline C7-C12	ND	0.30

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	64-139

Field ID:	APEX-S3-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-006	Analyzed:	03/07/13
Moisture:	25%		

Analyte	Result	RL
Gasoline C7-C12	0.53 Y	0.25

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	120	64-139

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S1-3.5-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-008	Analyzed:	03/07/13
Moisture:	14%		

Analyte	Result	RL
Gasoline C7-C12	ND	0.24

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	64-139

Field ID:	APEX-S1-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196083
Lab ID:	243508-009	Analyzed:	03/06/13
Moisture:	23%		

Analyte	Result	RL
Gasoline C7-C12	0.94 Y	0.23

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	64-139

Field ID:	APEX-S2-5.5-030113	Diln Fac:	111.1
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-011	Analyzed:	03/07/13
Moisture:	27%		

Analyte	Result	RL
Gasoline C7-C12	480 Y	29

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	224 *	64-139

Field ID:	APEX-S2-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Batch#:	196116
Lab ID:	243508-012	Analyzed:	03/07/13
Moisture:	22%		

Analyte	Result	RL
Gasoline C7-C12	ND	0.24

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	64-139

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry		

Type:	BLANK	Batch#:	196083
Lab ID:	QC678904	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	82	64-139

Type:	BLANK	Batch#:	196116
Lab ID:	QC679034	Analyzed:	03/06/13
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	88	64-139

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC678903	Batch#:	196083
Matrix:	Soil	Analyzed:	03/05/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.013	101	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	89	64-139

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	243420-001	Batch#:	196083
Matrix:	Soil	Sampled:	02/27/13
Units:	mg/Kg	Received:	02/27/13
Basis:	dry	Analyzed:	03/05/13

Type: MS Moisture: 12%
Lab ID: QC678905

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.08735	12.09	10.50	86	42-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	64-139

Type: MSD Moisture: 12%
Lab ID: QC678906

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	11.96	9.975	83	42-120	4	42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	64-139

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC679033	Batch#:	196116
Matrix:	Soil	Analyzed:	03/06/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9737	97	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	64-139

Curtis & Tompkins, Ltd.

Batch QC Report

Gasoline by GC/FID (5035 Prep)

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	243517-001	Batch#:	196116
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/04/13
Basis:	as received	Analyzed:	03/06/13

Type: MS Lab ID: QC679035

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.08698	10.00	6.702	66	42-120

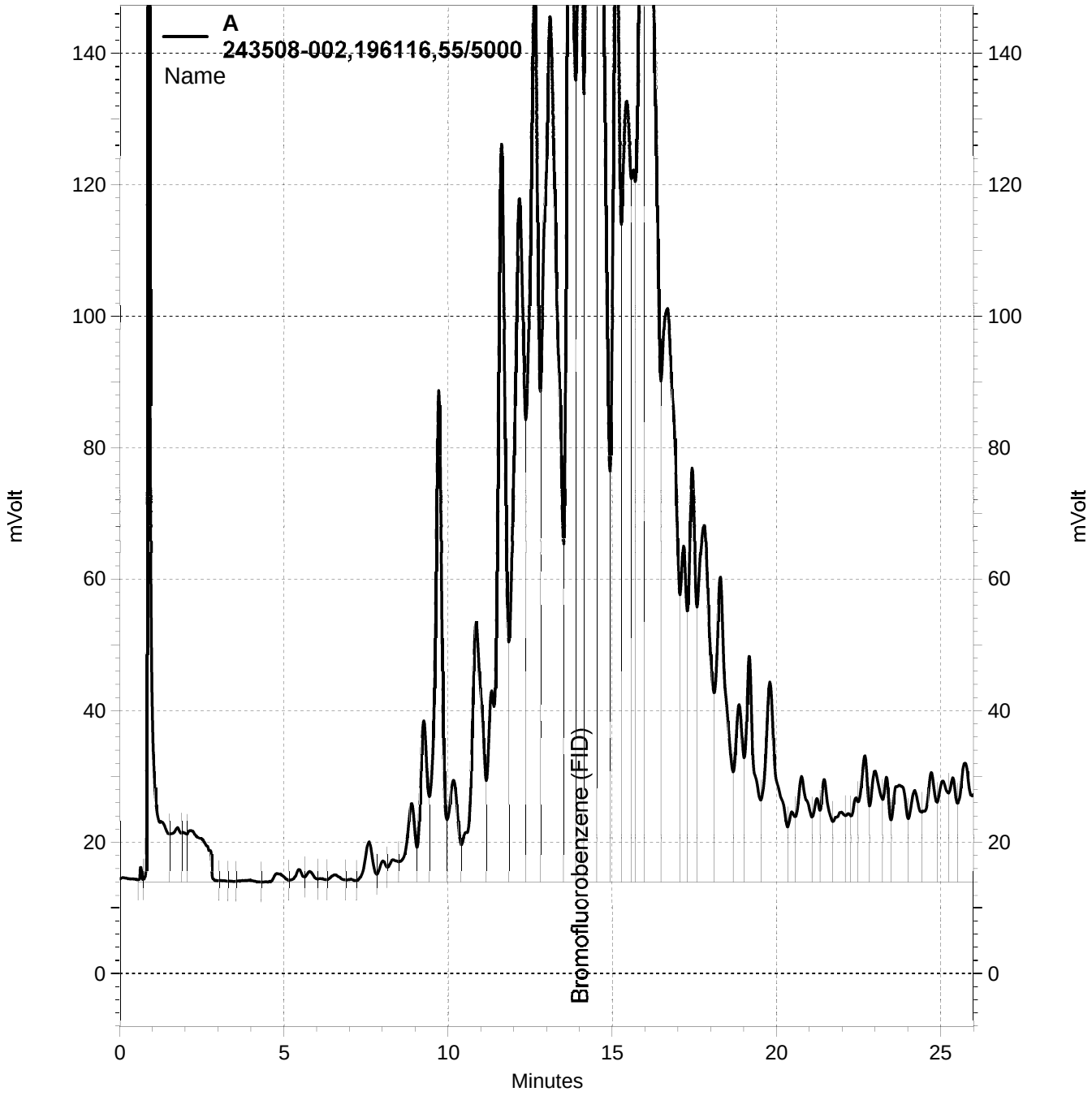
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	92	64-139

Type: MSD Lab ID: QC679036

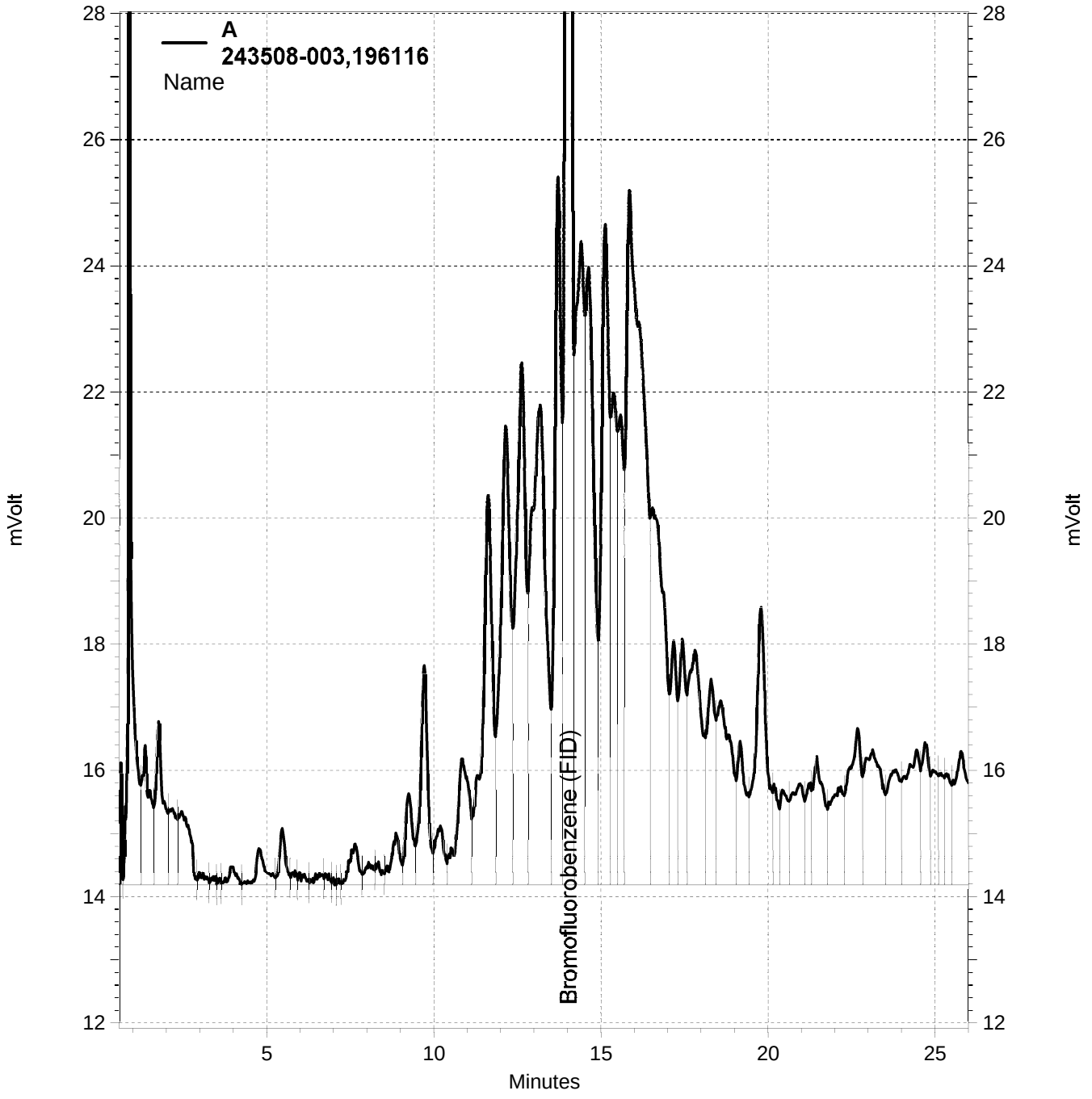
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.87	7.759	71	42-120	6	42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	110	64-139

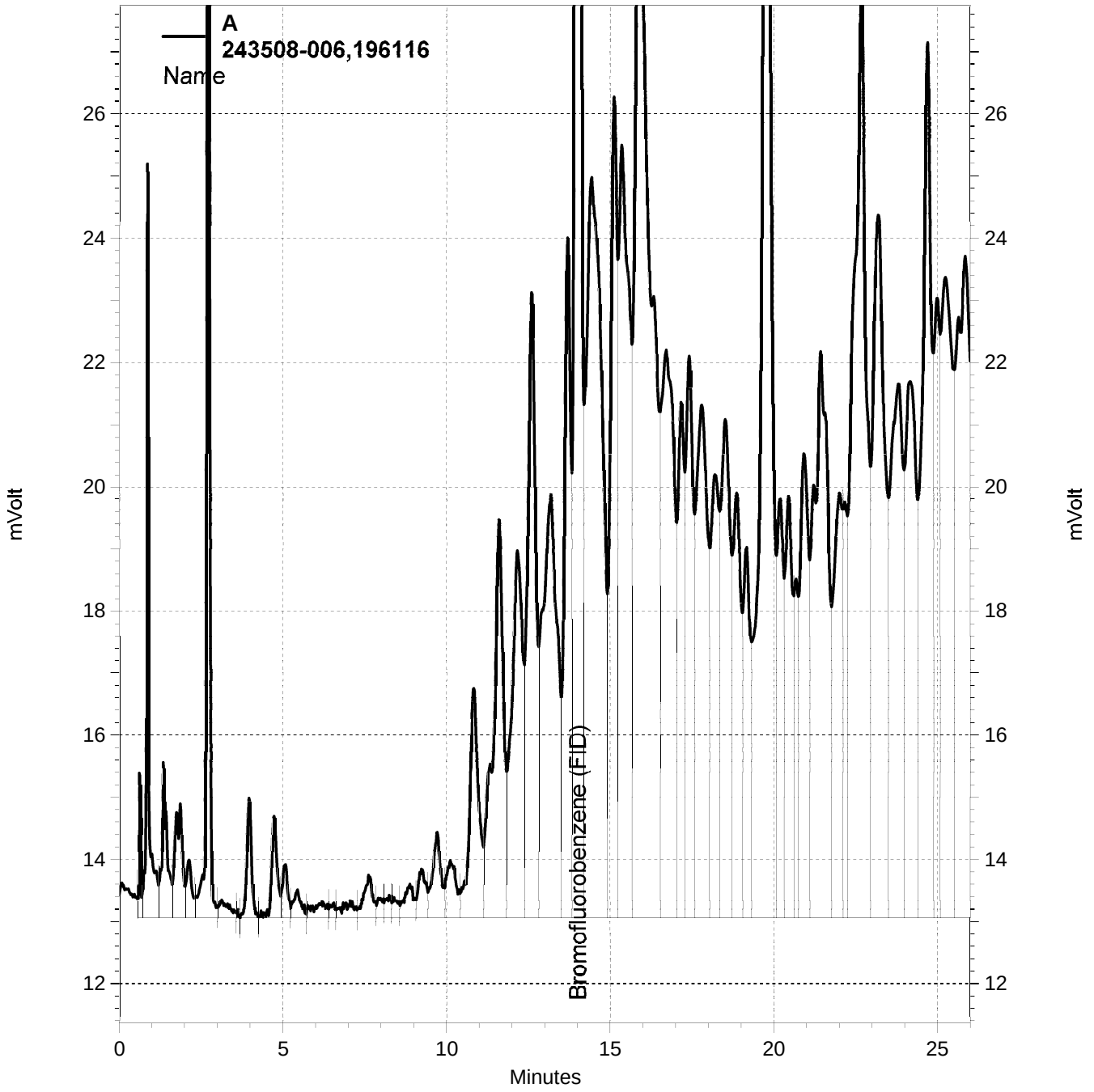
RPD= Relative Percent Difference

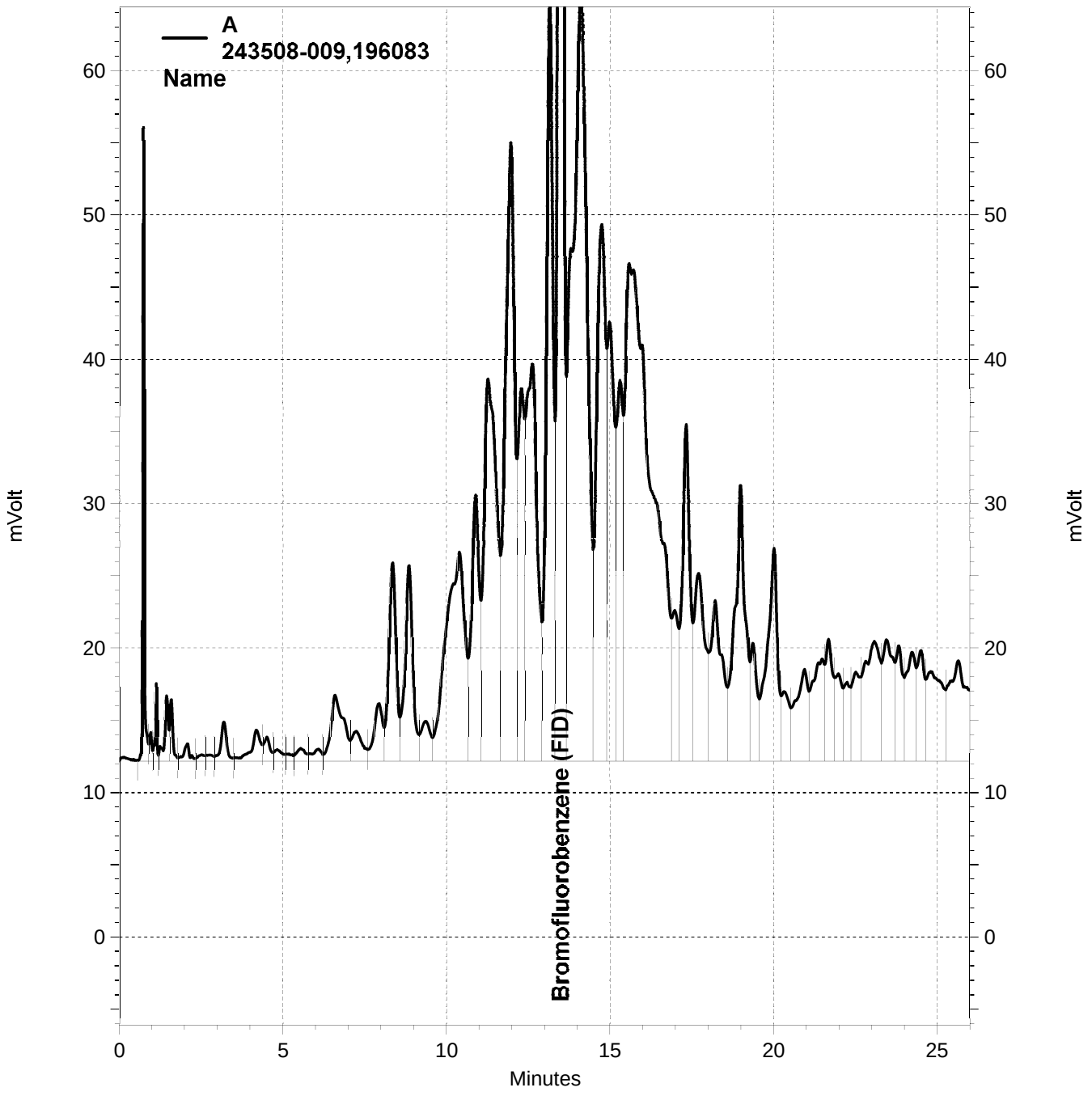


\\Lims\gdrive\ezchrom\Projects\GC19\Data\065-034, A

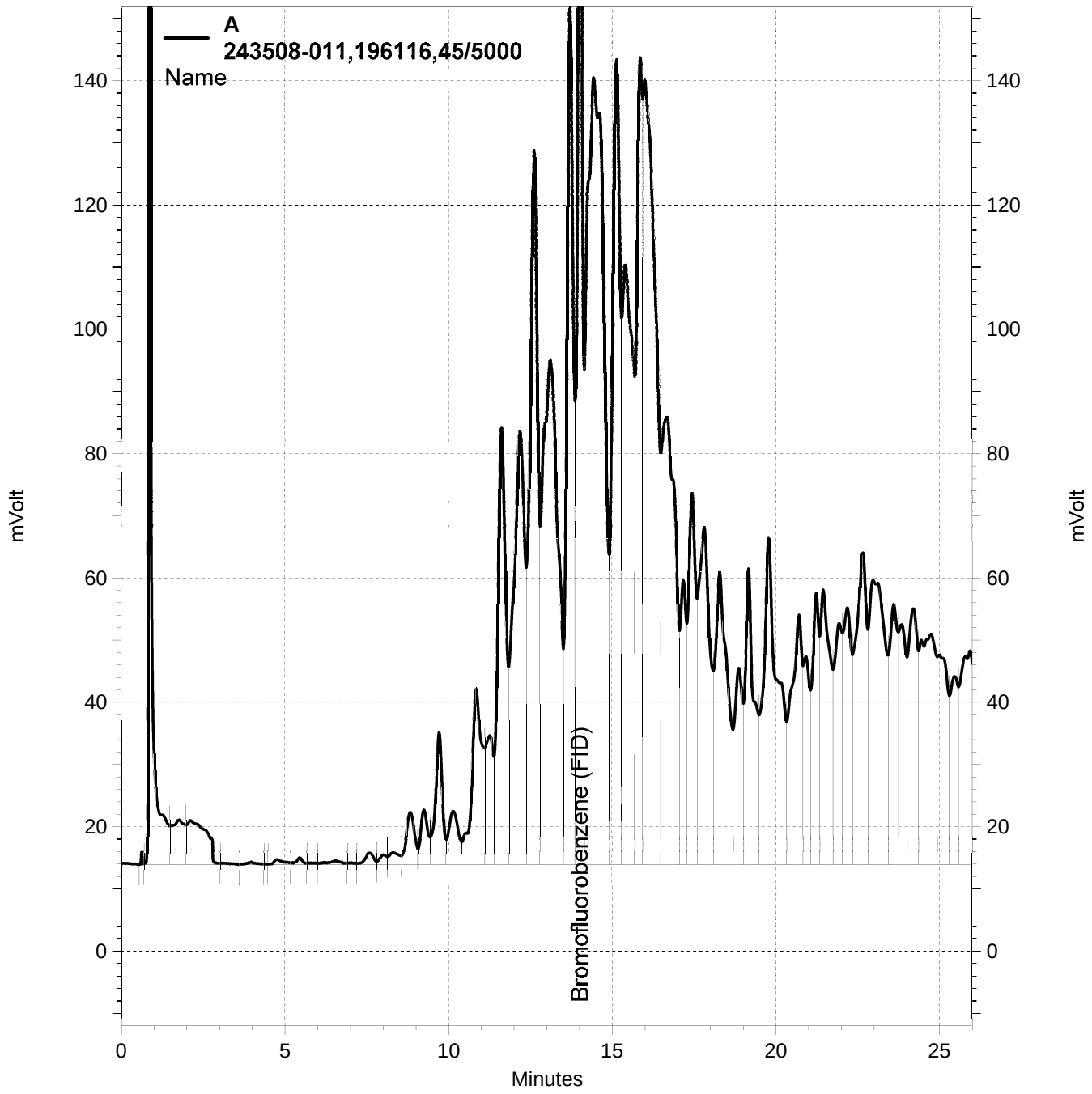


\\Lims\gdrive\ezchrom\Projects\GC19\Data\065-033, A

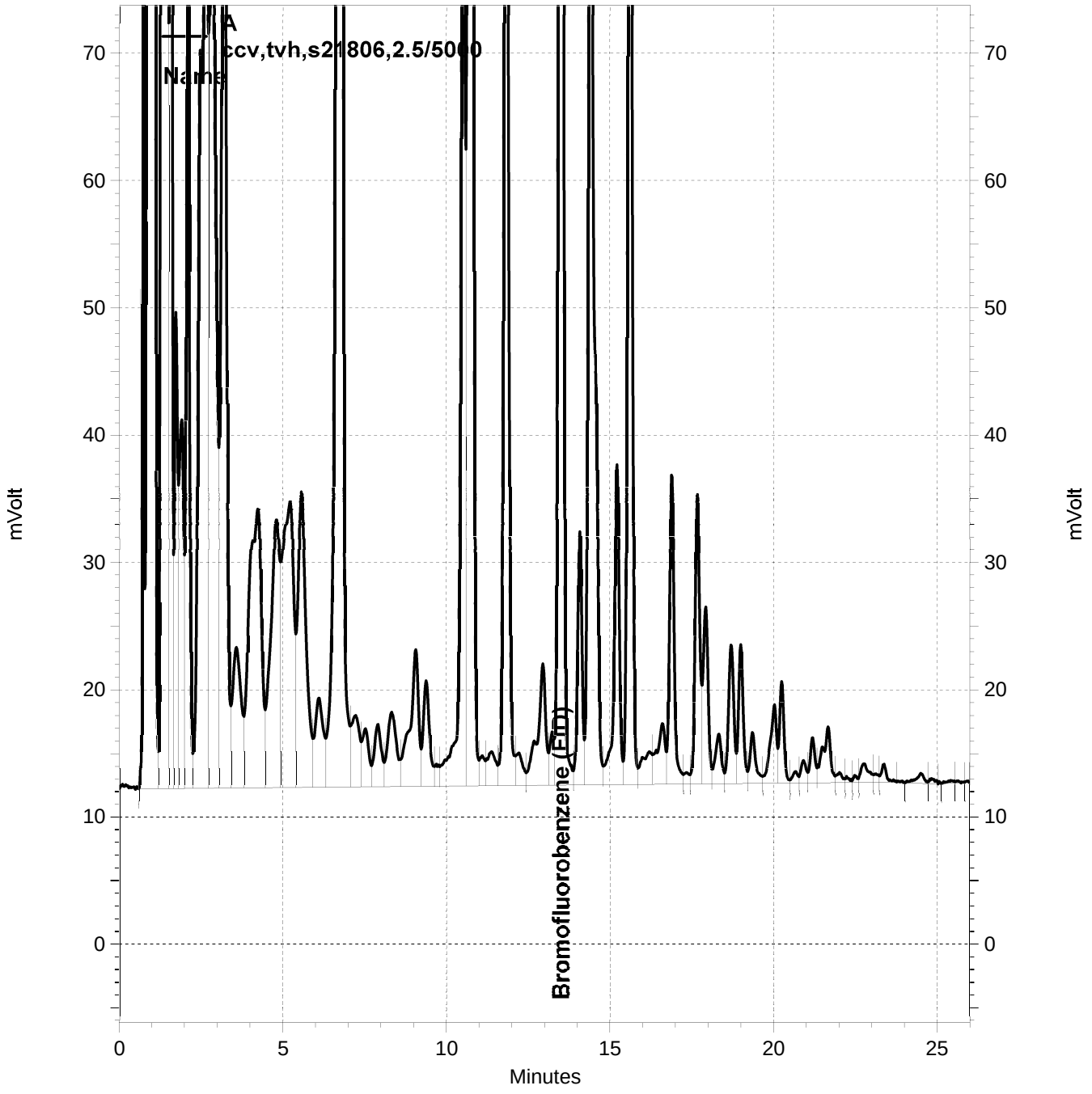

A
243508-006,196116
Name
mVolt
mVolt
26
24
22
20
18
16
14
12
0
5
10
15
20
25
Minutes
Bromofluorobenzene (FID)
\\Lims\gdrive\ezchrom\Projects\GC19\Data\065-023, A



\\Lims\gdrive\ezchrom\Projects\GC05\Data\064-024, A



\\Lims\gdrive\ezchrom\Projects\GC19\Data\065-029, A



\\Lims\gdrive\ezchrom\Projects\GC05\Data\064-003, A

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/01/13
Units:	ug/L	Received:	03/01/13
Batch#:	196039	Prepared:	03/04/13

Field ID:	APEX-S4-GW-030113	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	03/07/13
Lab ID:	243508-004	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	83,000	500
Motor Oil C24-C36	5,200	3,000

Surrogate	%REC	Limits
o-Terphenyl	DO	62-133

Field ID:	APEX-S3-GW-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/06/13
Lab ID:	243508-007	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	9,100	49
Motor Oil C24-C36	330	290

Surrogate	%REC	Limits
o-Terphenyl	80	62-133

Field ID:	APEX-S1-GW-030113	Diln Fac:	5.000
Type:	SAMPLE	Analyzed:	03/07/13
Lab ID:	243508-010	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	31,000	270
Motor Oil C24-C36	2,500	1,600

Surrogate	%REC	Limits
o-Terphenyl	71	62-133

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/01/13
Units:	ug/L	Received:	03/01/13
Batch#:	196039	Prepared:	03/04/13

Field ID:	APEX-S2-GW-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/06/13
Lab ID:	243508-013	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	15,000	53
Motor Oil C24-C36	680	320

Surrogate	%REC	Limits
o-Terphenyl	69	62-133

Field ID:	APEX-ER-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/06/13
Lab ID:	243508-014	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	49
Motor Oil C24-C36	ND	290

Surrogate	%REC	Limits
o-Terphenyl	112	62-133

Type:	BLANK	Analyzed:	03/06/13
Lab ID:	QC678720	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	96	62-133

DO= Diluted Out
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	196039
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	1.000	Analyzed:	03/06/13

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC678721

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,869	75	59-120

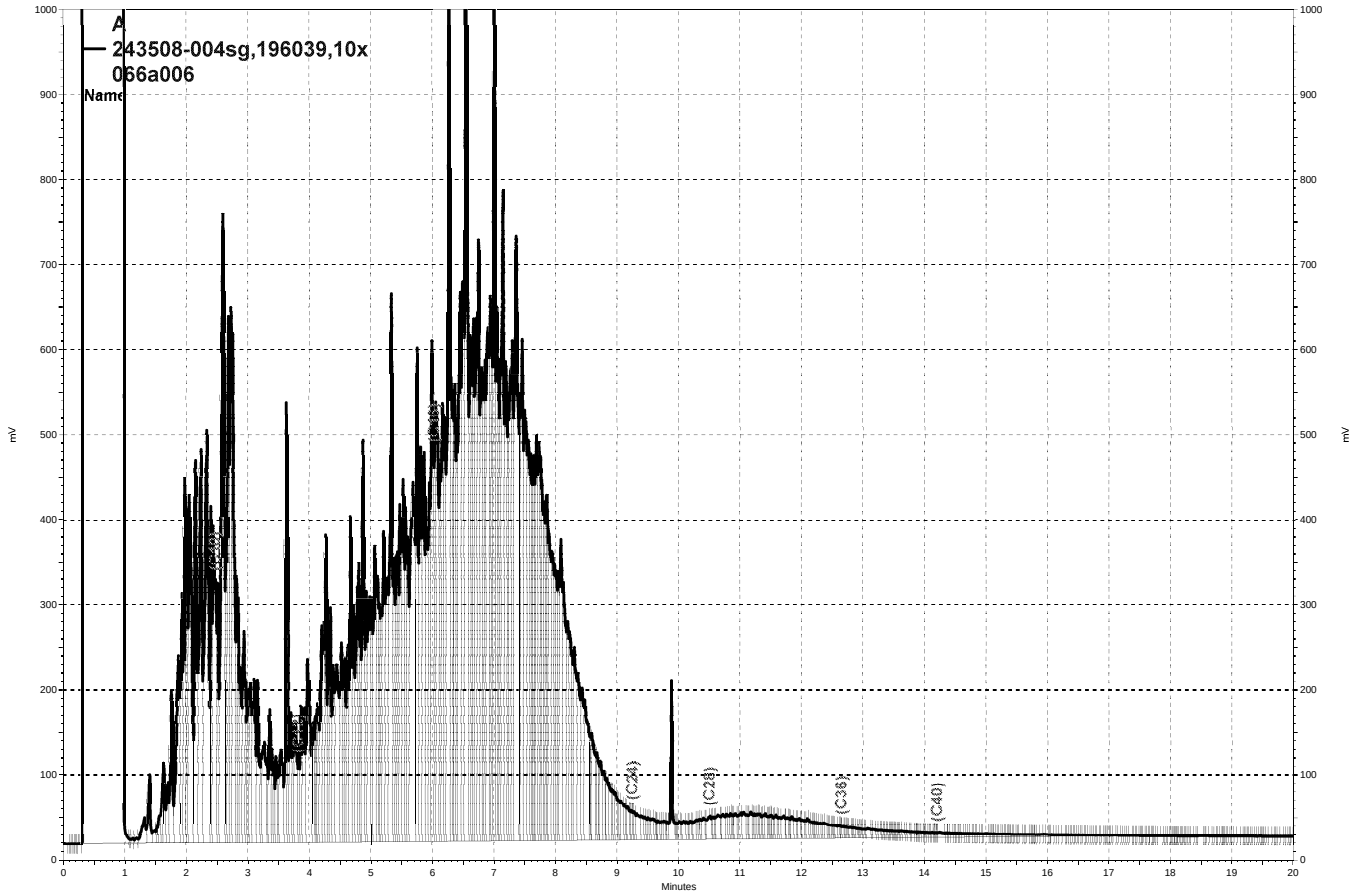
Surrogate	%REC	Limits
o-Terphenyl	84	62-133

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC678722

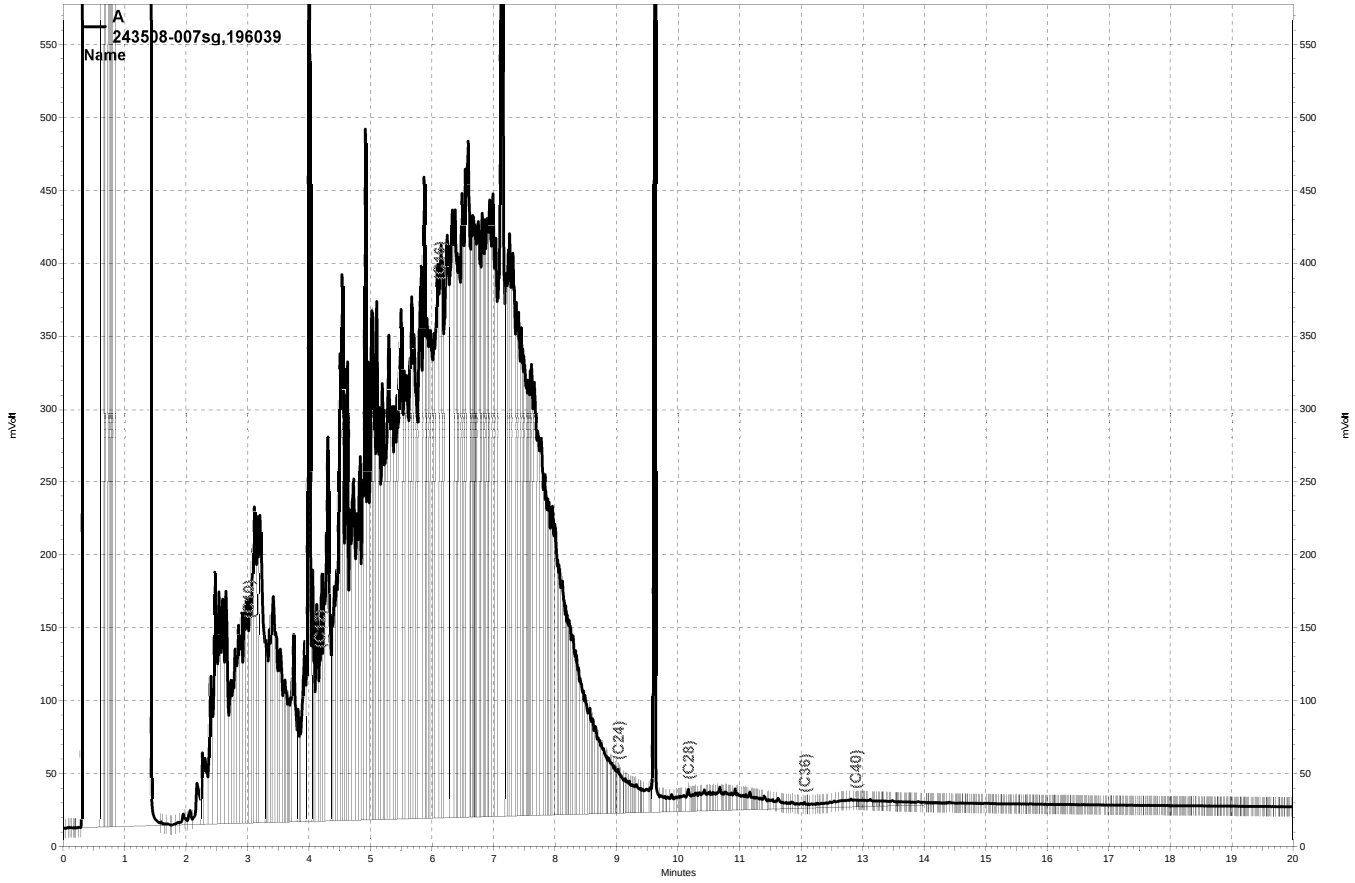
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,135	85	59-120	13	46

Surrogate	%REC	Limits
o-Terphenyl	95	62-133

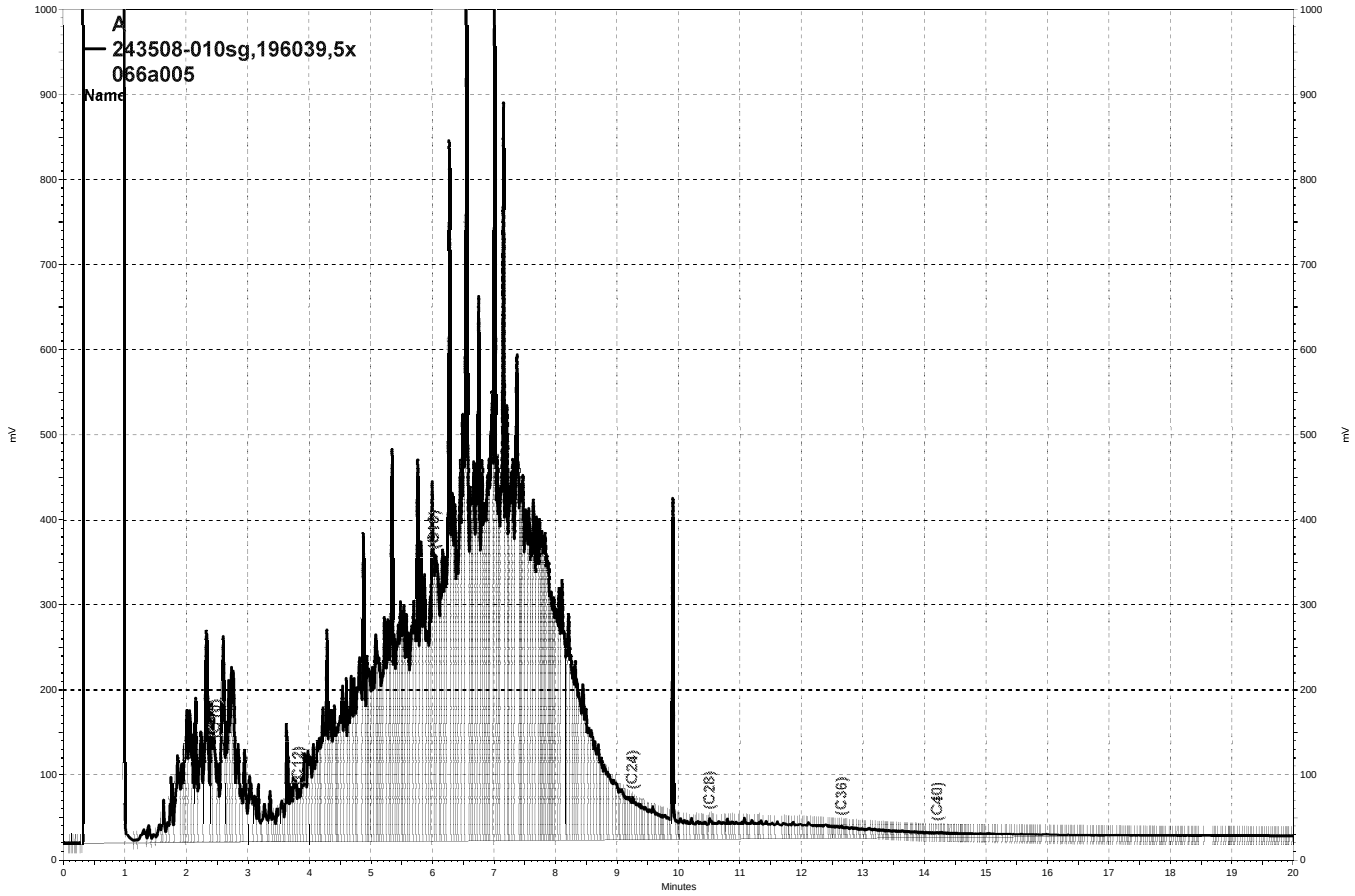
RPD= Relative Percent Difference



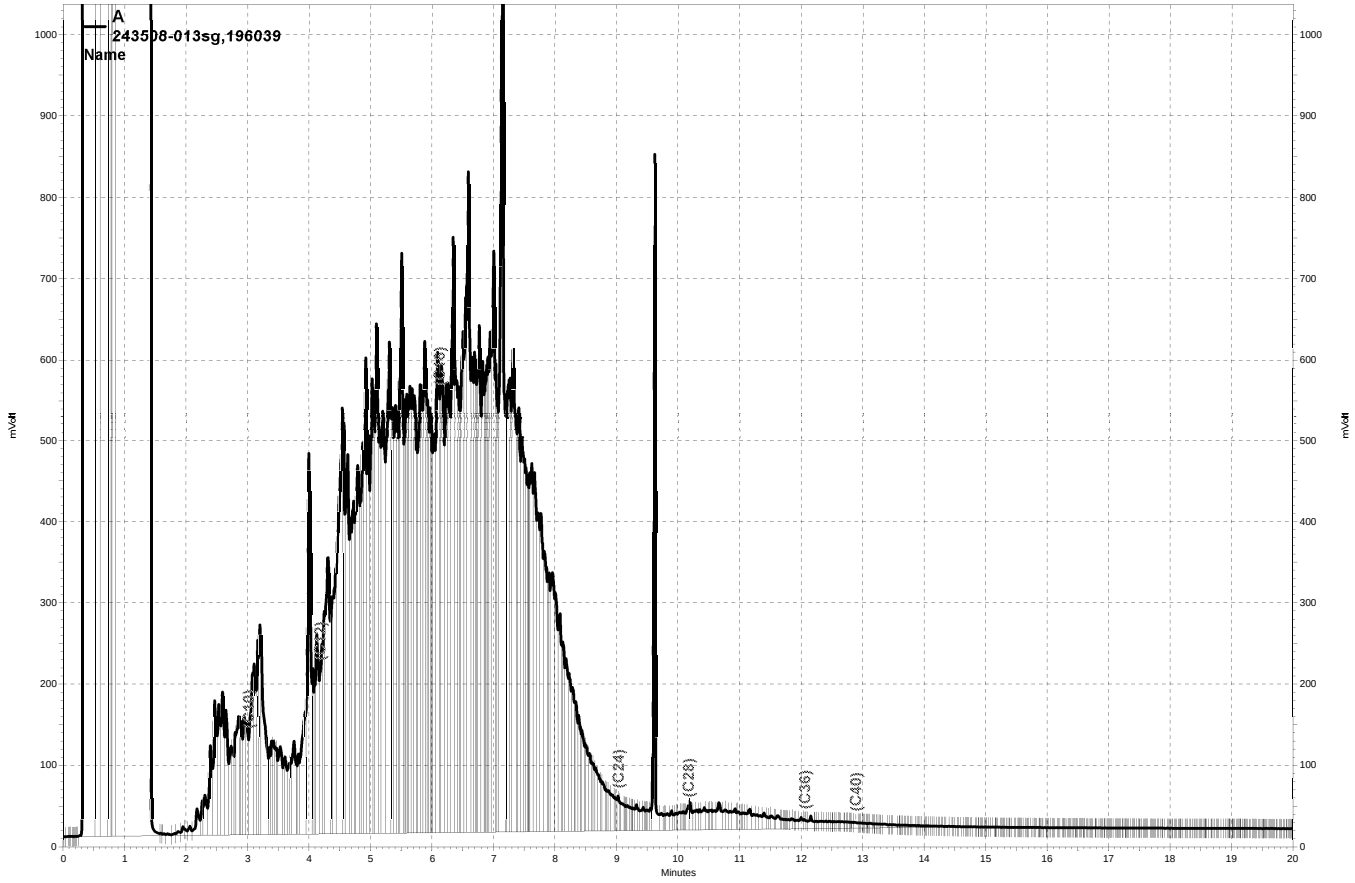
\\Lims\gdrive\ezchrom\Projects\GC17A\Data\066a006, A



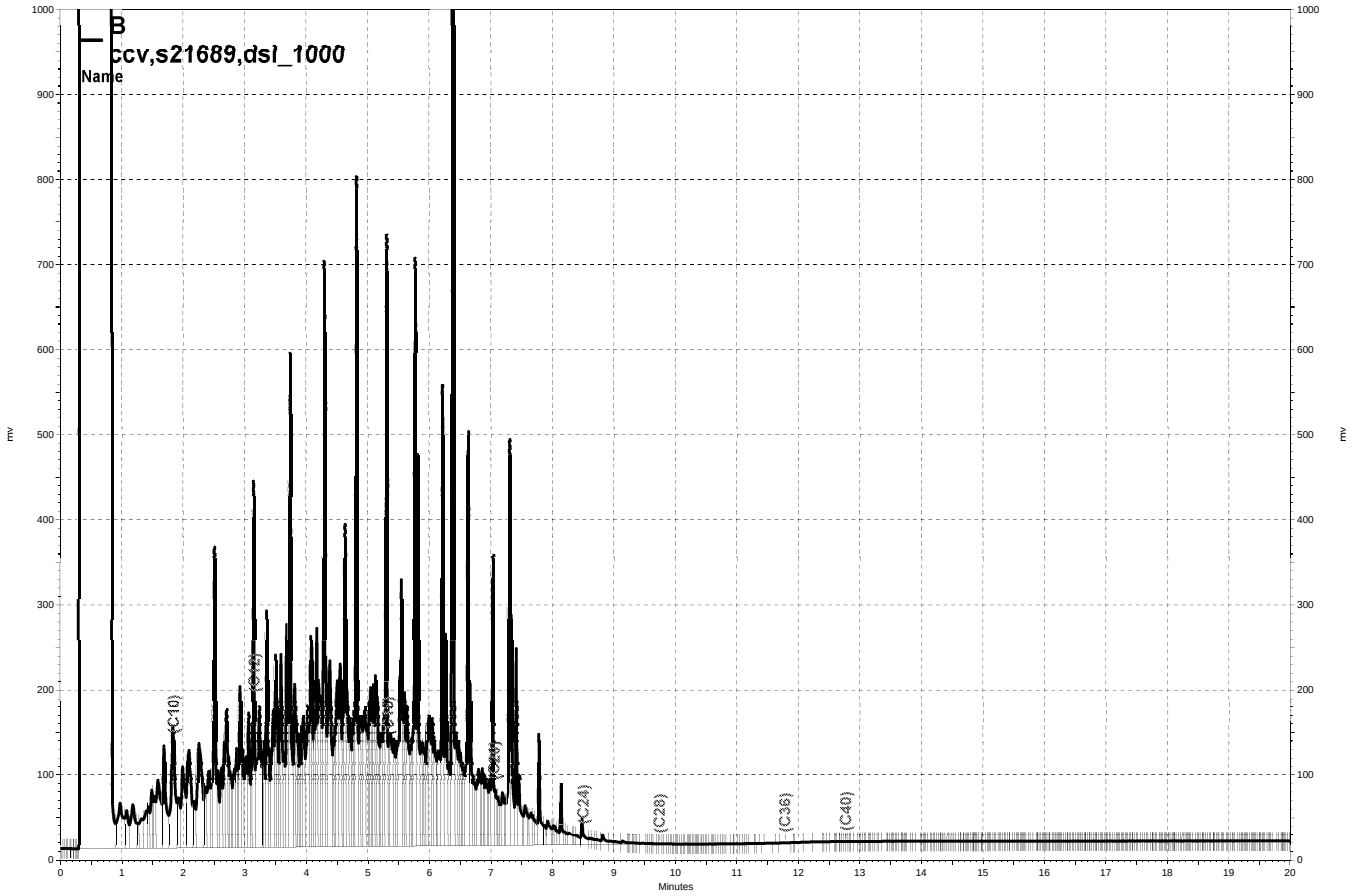
\\Lims\gdrive\ezchrom\Projects\GC26\Data\064a052, A



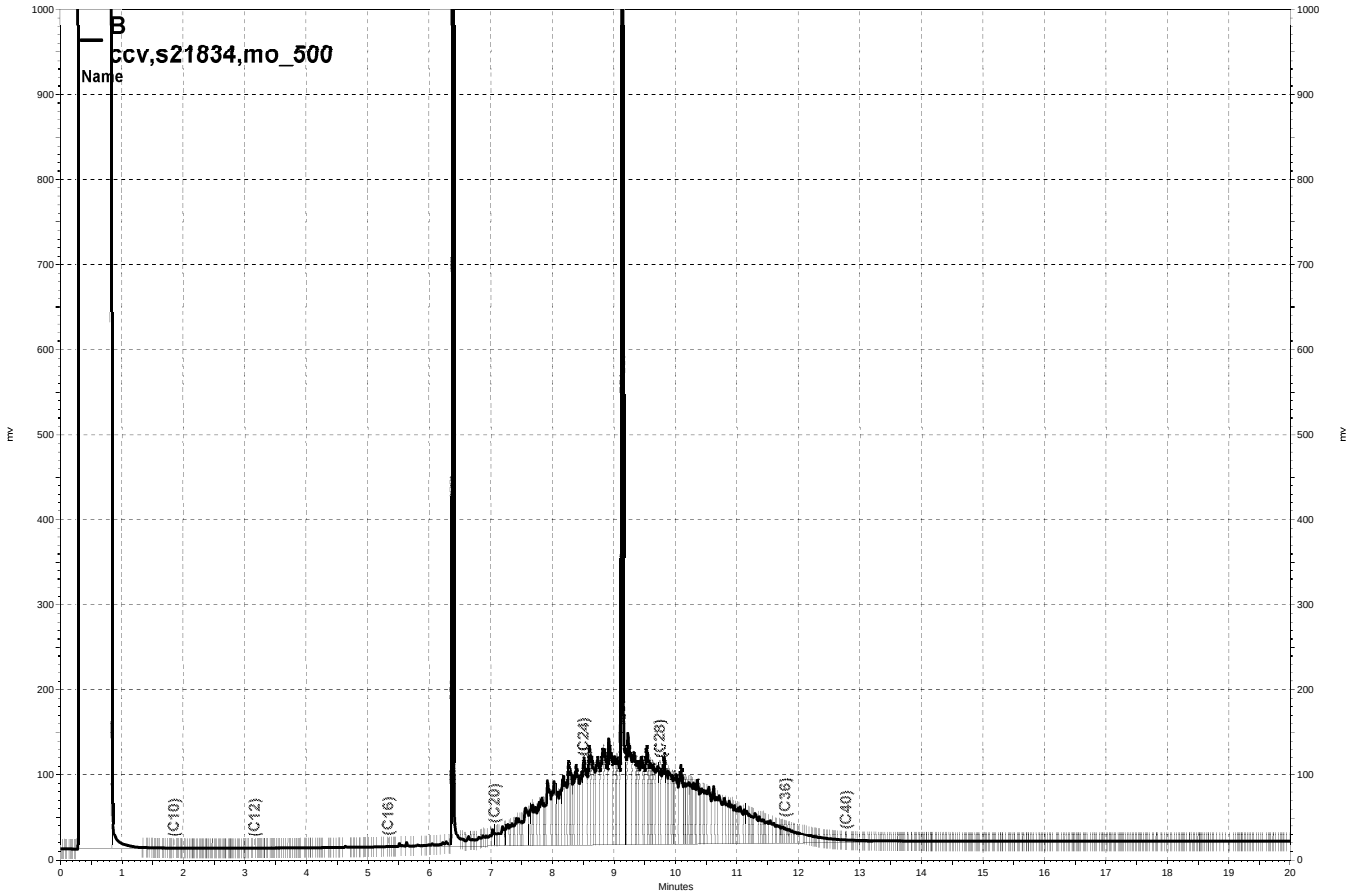
\\Lims\gdrive\ezchrom\Projects\GC17A\Data\066a005, A



\\Lims\gdrive\ezchrom\Projects\GC26\Data\064a054, A



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\065a004, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\065a006, B

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry	Prepared:	03/04/13
Batch#:	196023		

Field ID:	APEX-S4-4.5-030113	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-002	Cleanup Method:	EPA 3630C
Moisture:	25%		

Analyte	Result	RL
Diesel C10-C24	2,000 Y	13
Motor Oil C24-C36	550	67

Surrogate	%REC	Limits
o-Terphenyl	DO	62-136

Field ID:	APEX-S4-8.5-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/04/13
Lab ID:	243508-003	Cleanup Method:	EPA 3630C
Moisture:	23%		

Analyte	Result	RL
Diesel C10-C24	21 Y	1.3
Motor Oil C24-C36	30	6.5

Surrogate	%REC	Limits
o-Terphenyl	102	62-136

Field ID:	APEX-S3-3.5-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/04/13
Lab ID:	243508-005	Cleanup Method:	EPA 3630C
Moisture:	28%		

Analyte	Result	RL
Diesel C10-C24	4.4 Y	1.4
Motor Oil C24-C36	25	6.9

Surrogate	%REC	Limits
o-Terphenyl	95	62-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry	Prepared:	03/04/13
Batch#:	196023		

Field ID:	APEX-S3-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-006	Cleanup Method:	EPA 3630C
Moisture:	25%		

Analyte	Result	RL
Diesel C10-C24	5.1 Y	1.3
Motor Oil C24-C36	ND	6.7

Surrogate	%REC	Limits
o-Terphenyl	95	62-136

Field ID:	APEX-S1-3.5-030113	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-008	Cleanup Method:	EPA 3630C
Moisture:	14%		

Analyte	Result	RL
Diesel C10-C24	400 Y	12
Motor Oil C24-C36	1,200	58

Surrogate	%REC	Limits
o-Terphenyl	DO	62-136

Field ID:	APEX-S1-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-009	Cleanup Method:	EPA 3630C
Moisture:	23%		

Analyte	Result	RL
Diesel C10-C24	13 Y	1.3
Motor Oil C24-C36	12	6.5

Surrogate	%REC	Limits
o-Terphenyl	100	62-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	03/01/13
Units:	mg/Kg	Received:	03/01/13
Basis:	dry	Prepared:	03/04/13
Batch#:	196023		

Field ID:	APEX-S2-5.5-030113	Diln Fac:	10.00
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-011	Cleanup Method:	EPA 3630C
Moisture:	27%		

Analyte	Result	RL
Diesel C10-C24	3,100 Y	14
Motor Oil C24-C36	140	68

Surrogate	%REC	Limits
o-Terphenyl	DO	62-136

Field ID:	APEX-S2-9.0-030113	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	03/05/13
Lab ID:	243508-012	Cleanup Method:	EPA 3630C
Moisture:	22%		

Analyte	Result	RL
Diesel C10-C24	6.6 Y	1.3
Motor Oil C24-C36	9.0	6.4

Surrogate	%REC	Limits
o-Terphenyl	93	62-136

Type:	BLANK	Analyzed:	03/04/13
Lab ID:	QC678654	Cleanup Method:	EPA 3630C
Diln Fac:	1.000		

Analyte	Result	RL
Diesel C10-C24	ND	0.99
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	110	62-136

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC678655	Batch#:	196023
Matrix:	Soil	Prepared:	03/04/13
Units:	mg/Kg	Analyzed:	03/04/13

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.79	44.86	90	62-130

Surrogate	%REC	Limits
o-Terphenyl	92	62-136

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	196023
MSS Lab ID:	243420-001	Sampled:	02/27/13
Matrix:	Soil	Received:	02/27/13
Units:	mg/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/04/13
Diln Fac:	1.000		

Type: MS Moisture: 12%
Lab ID: QC678682

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	57.94	56.86	53.45	-8 *	39-148

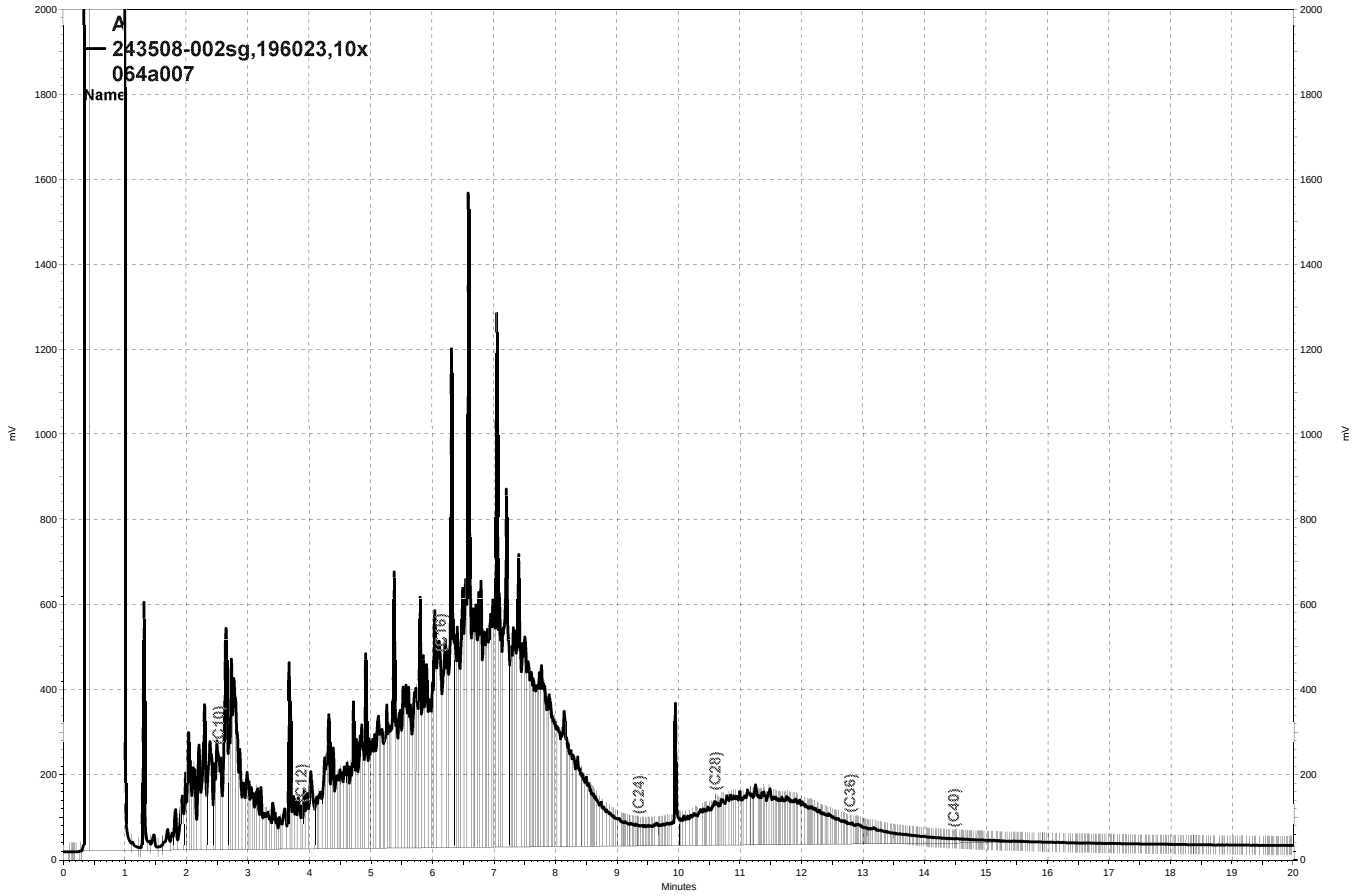
Surrogate	%REC	Limits
o-Terphenyl	87	62-136

Type: MSD Moisture: 12%
Lab ID: QC678683

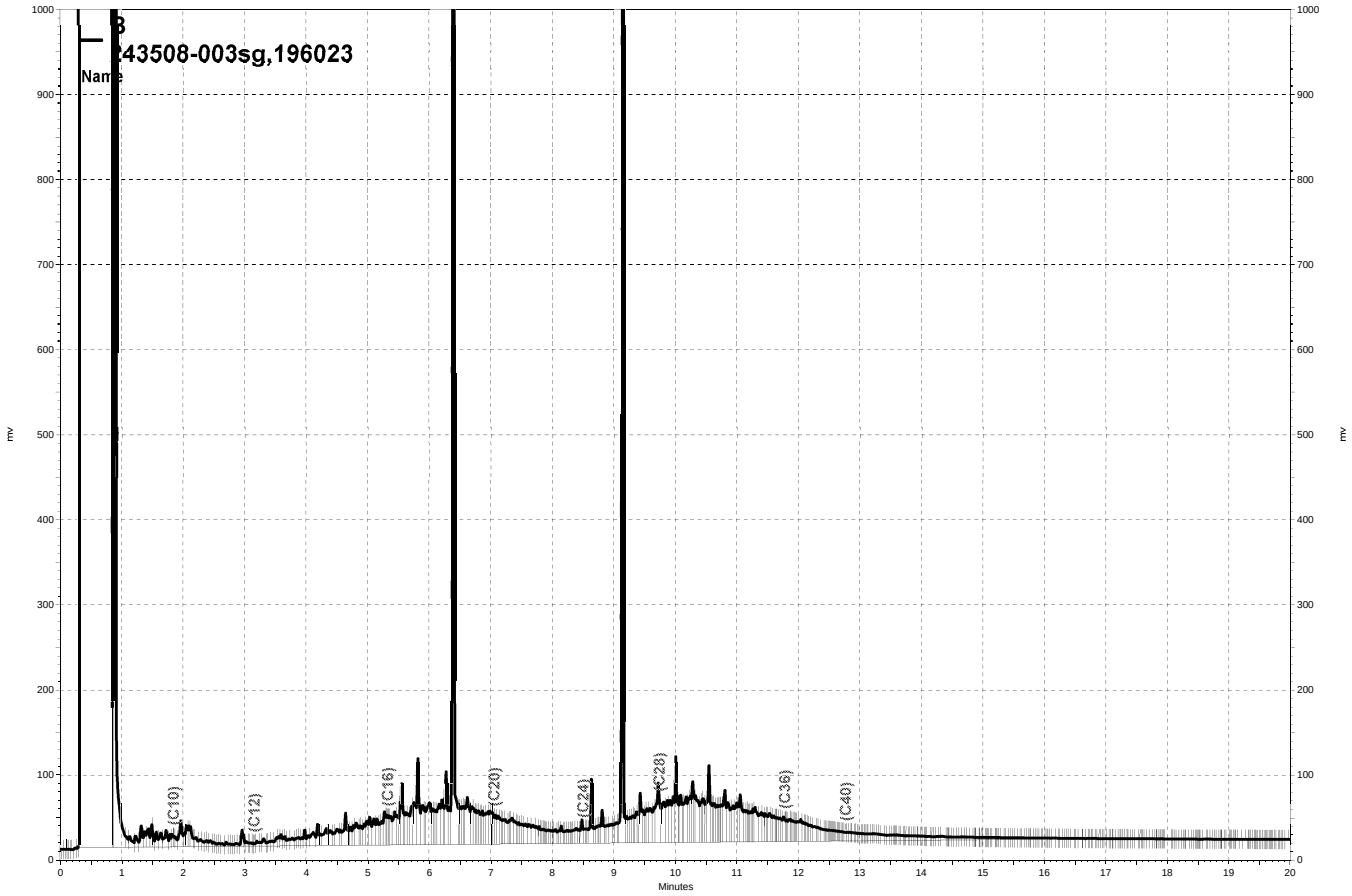
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	56.75	49.19	-15 *	39-148	8	45

Surrogate	%REC	Limits
o-Terphenyl	80	62-136

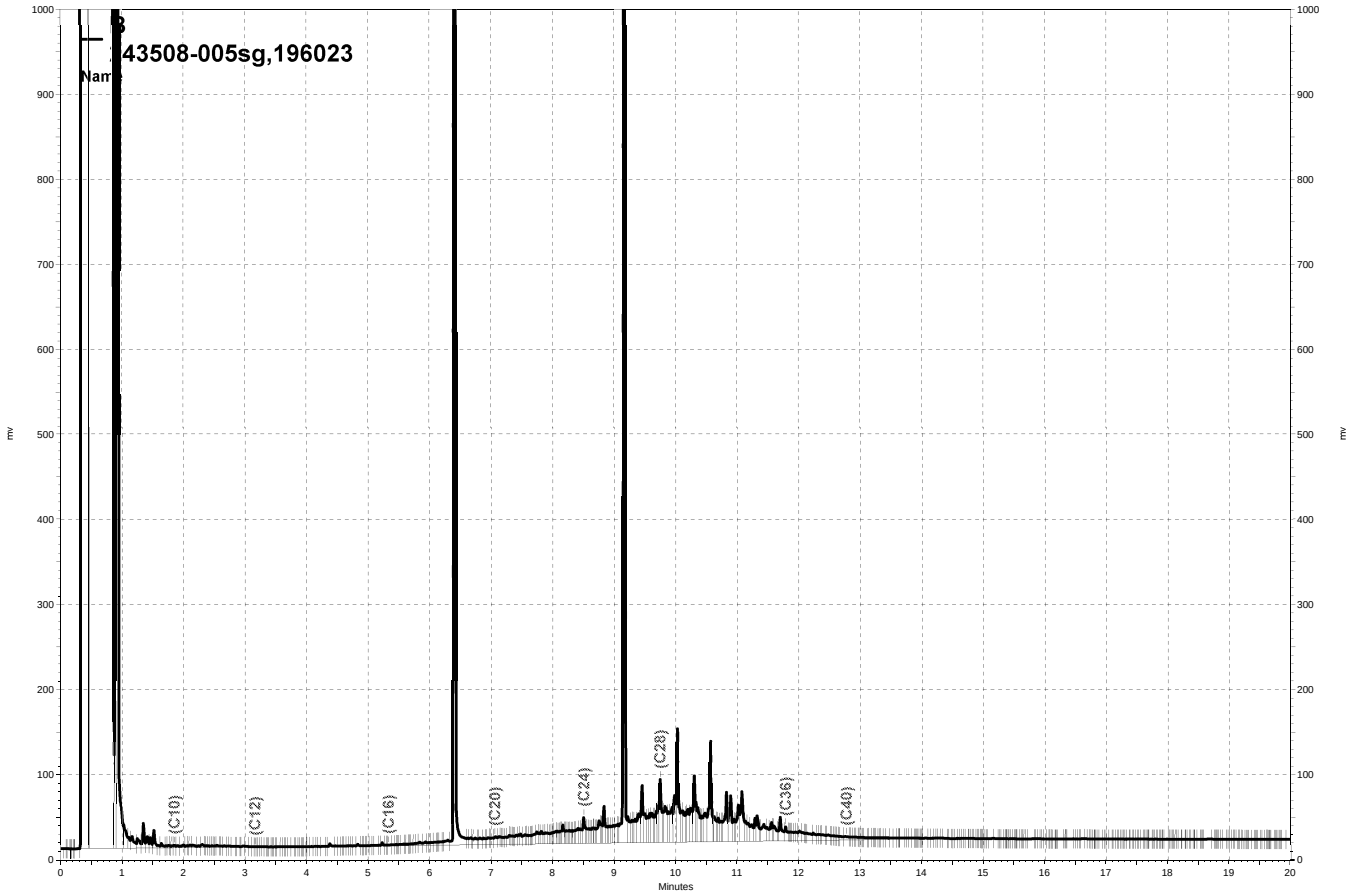
*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference



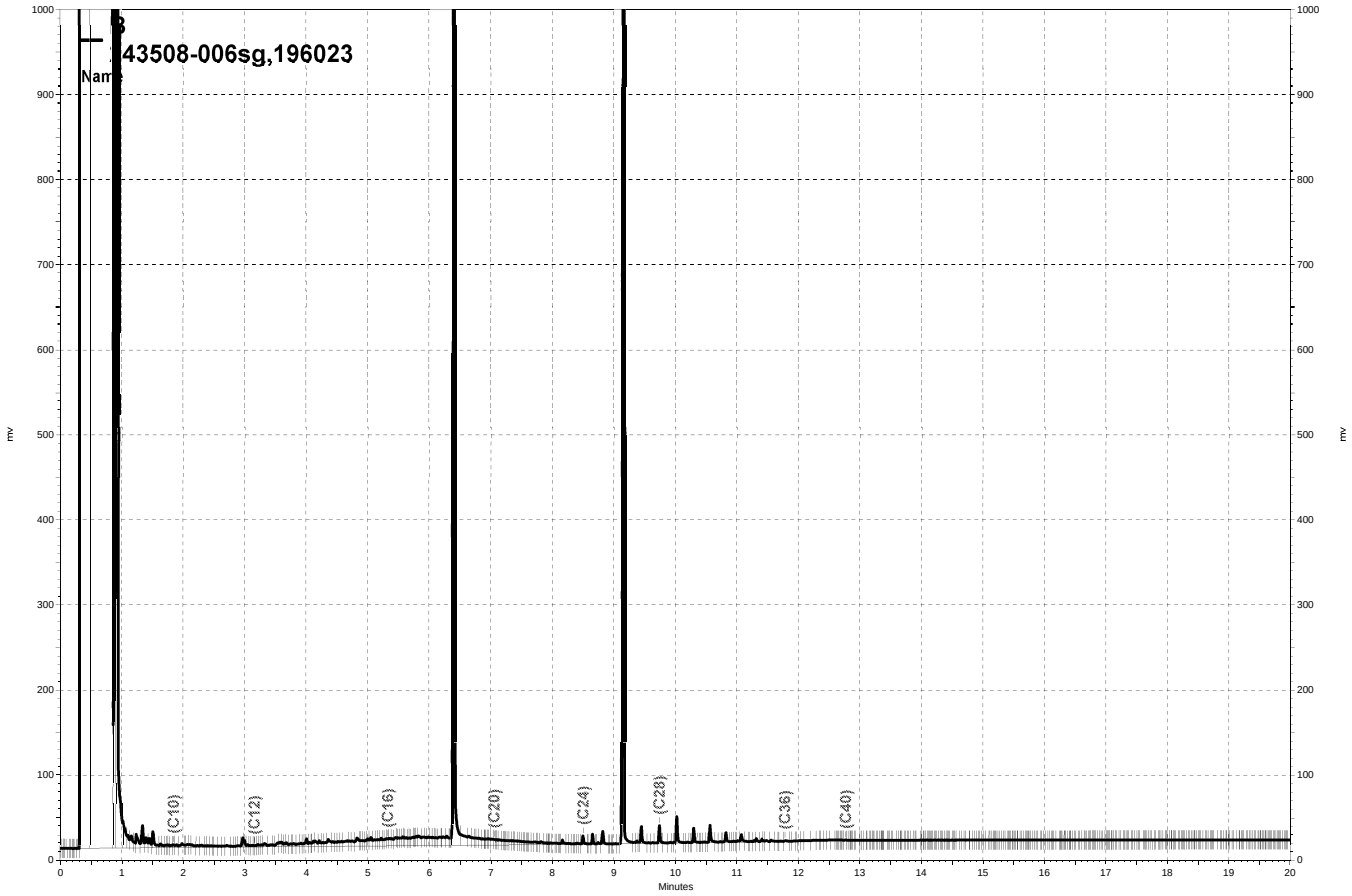
\\Lims\gdrive\ezchrom\Projects\GC17A\Data\064a007, A



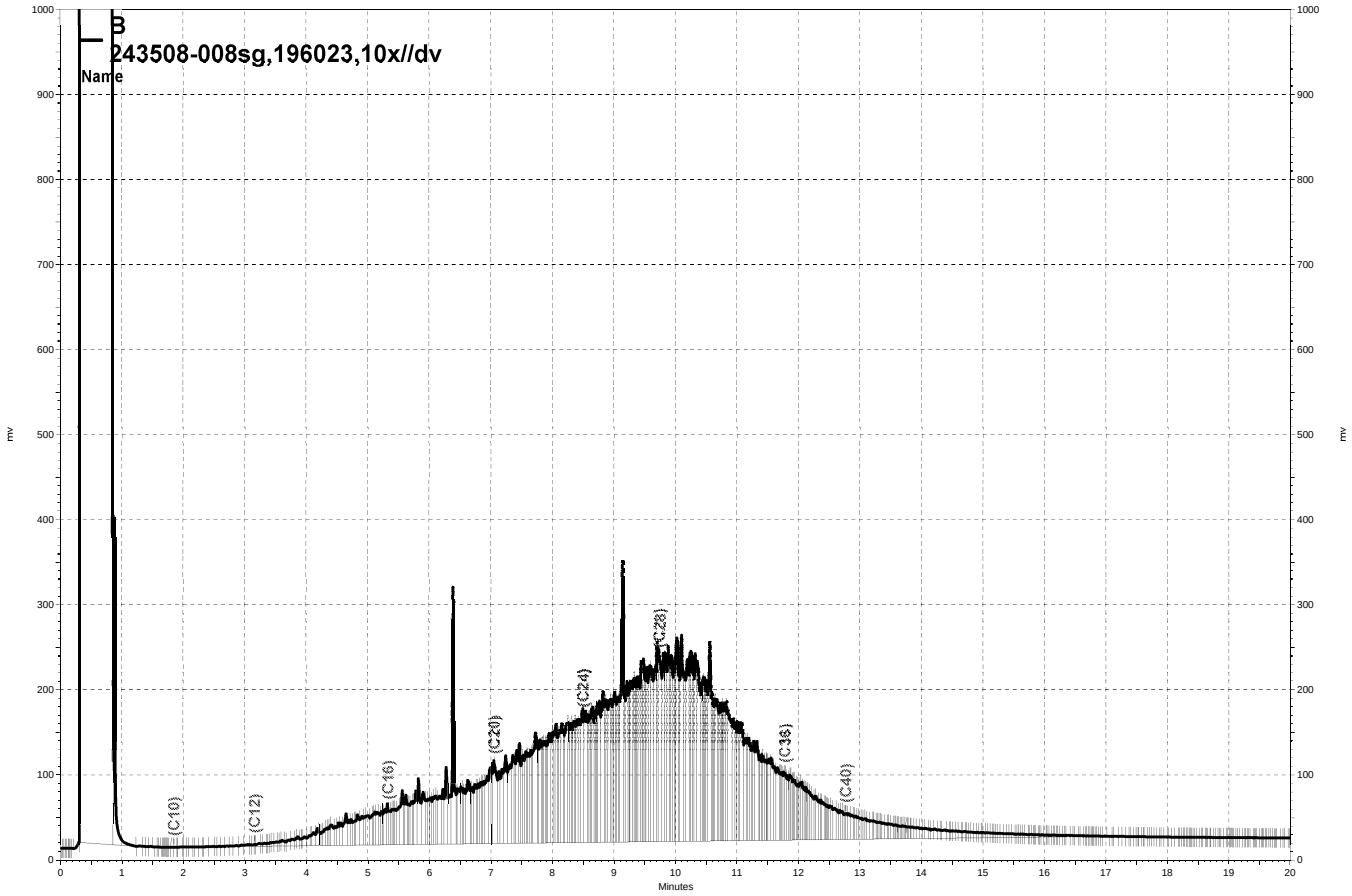
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b017, B



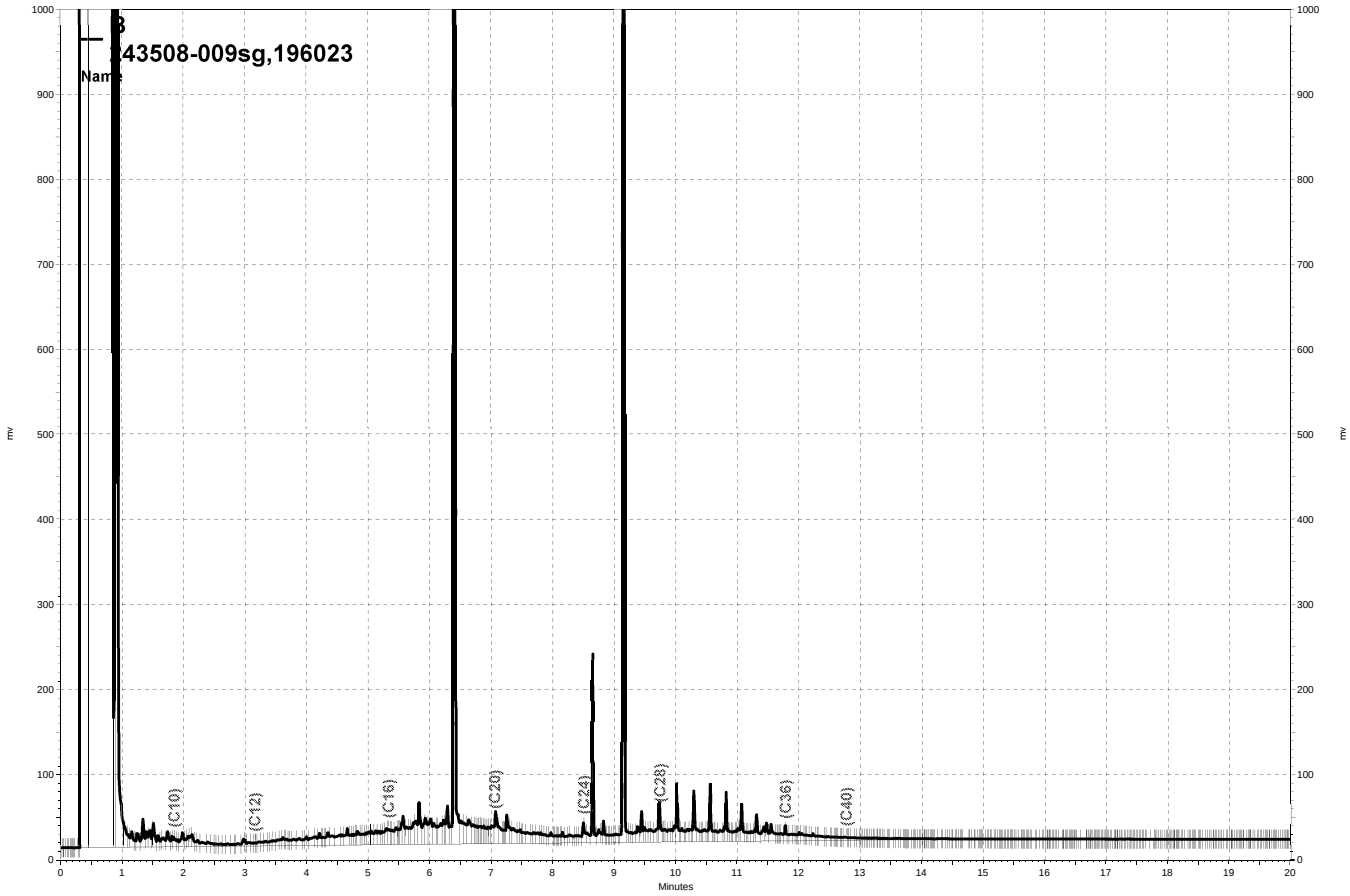
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b018, B



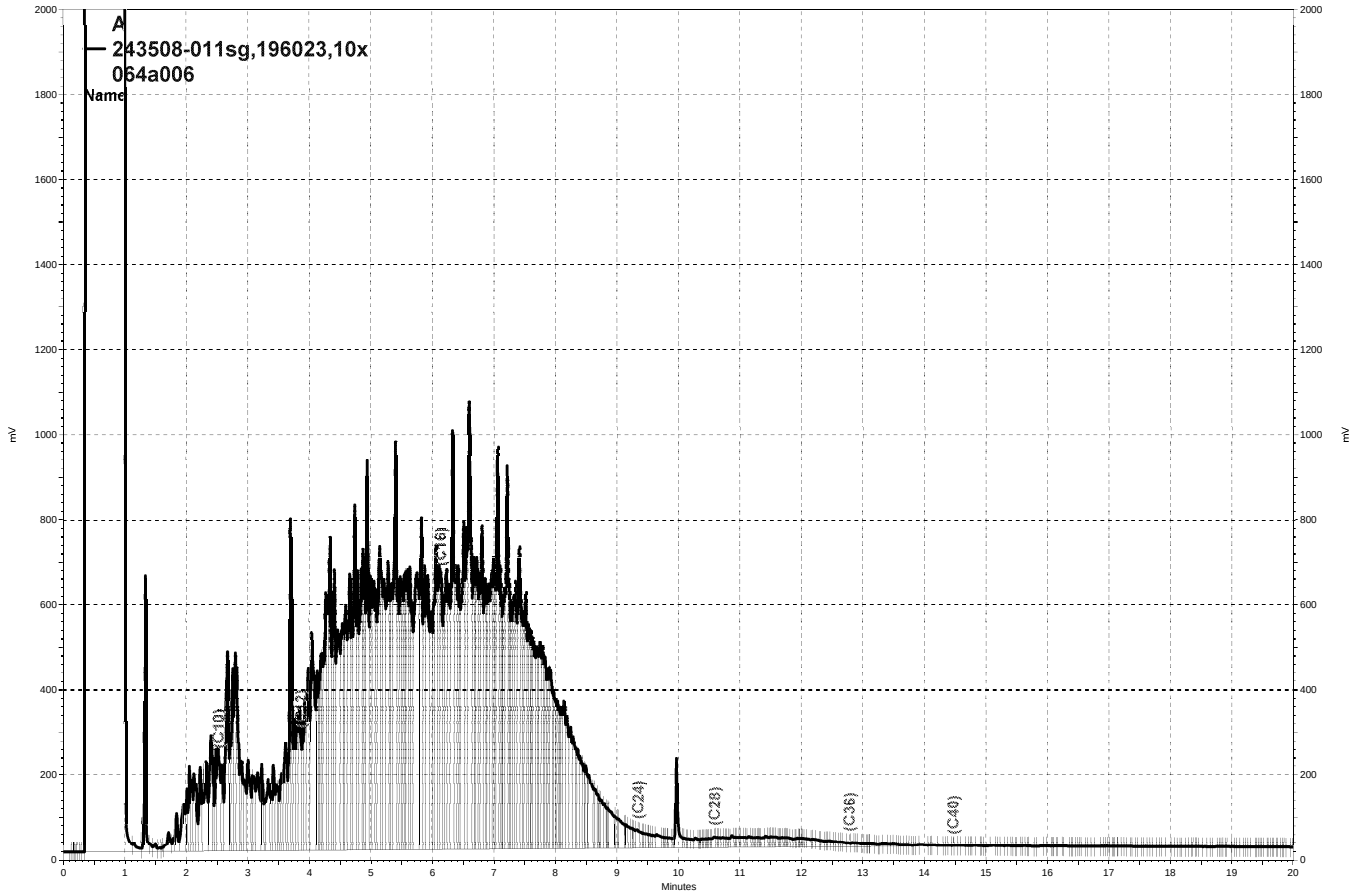
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b026, B



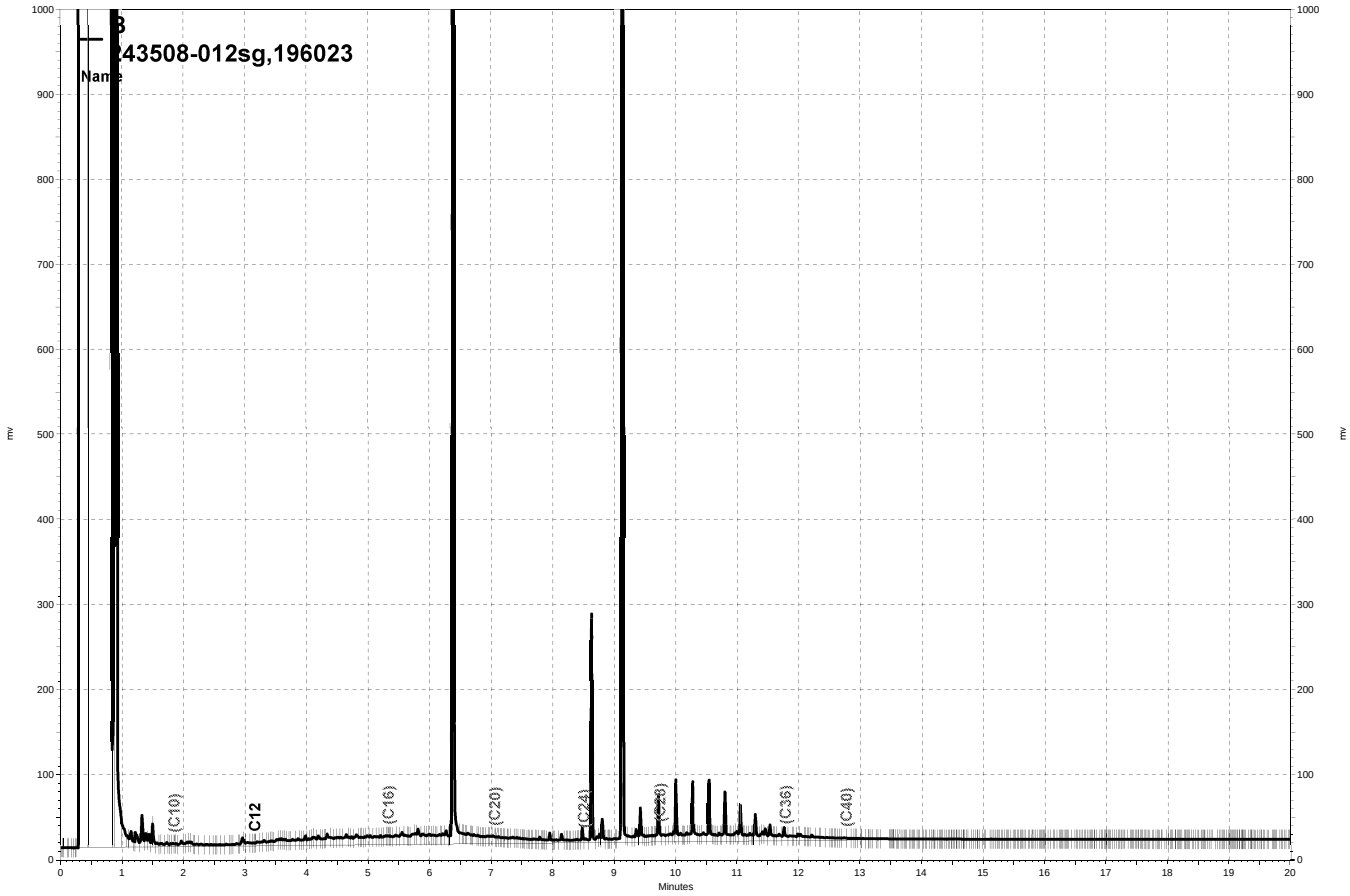
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b027, B



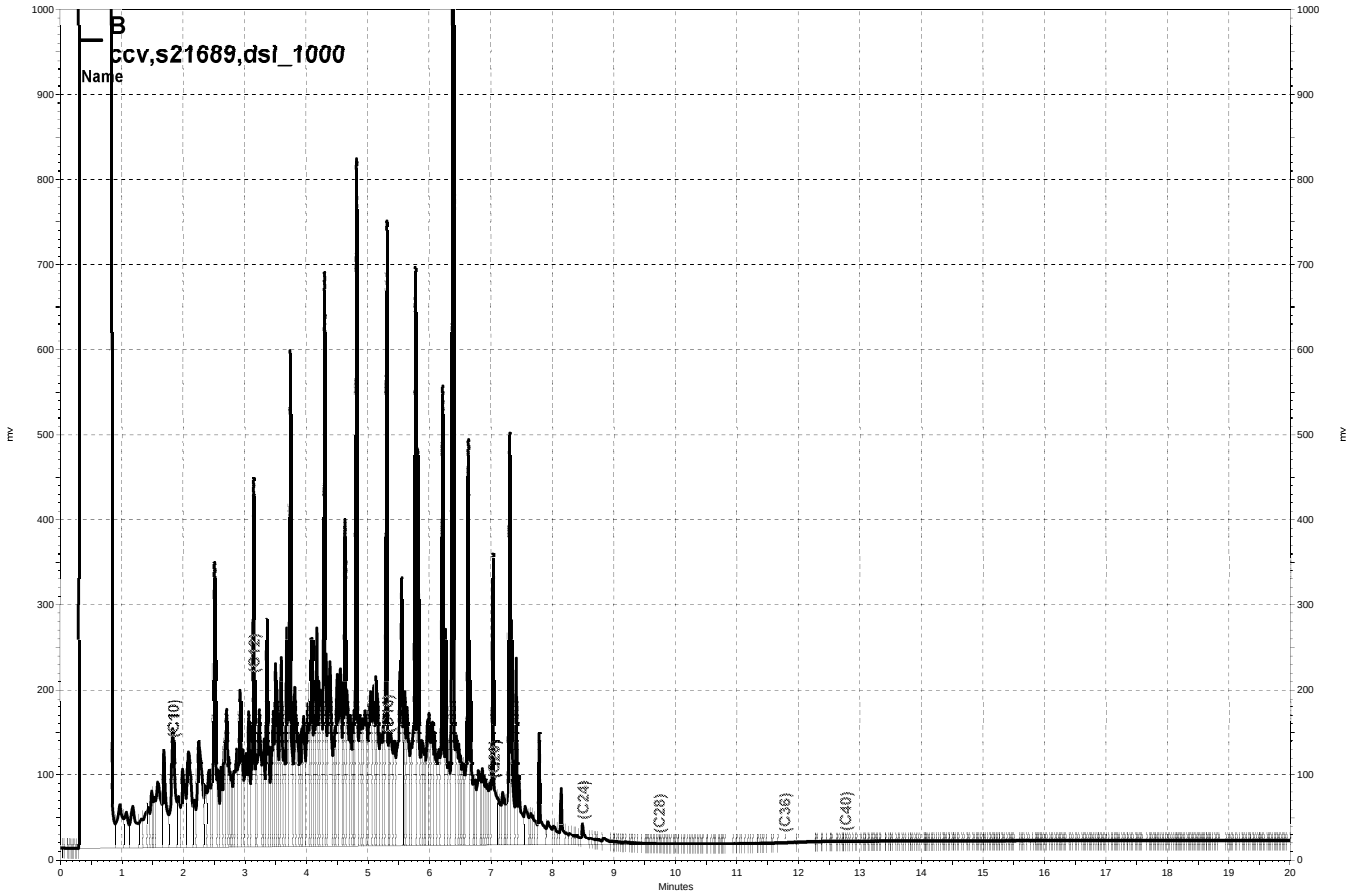
\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b029, B



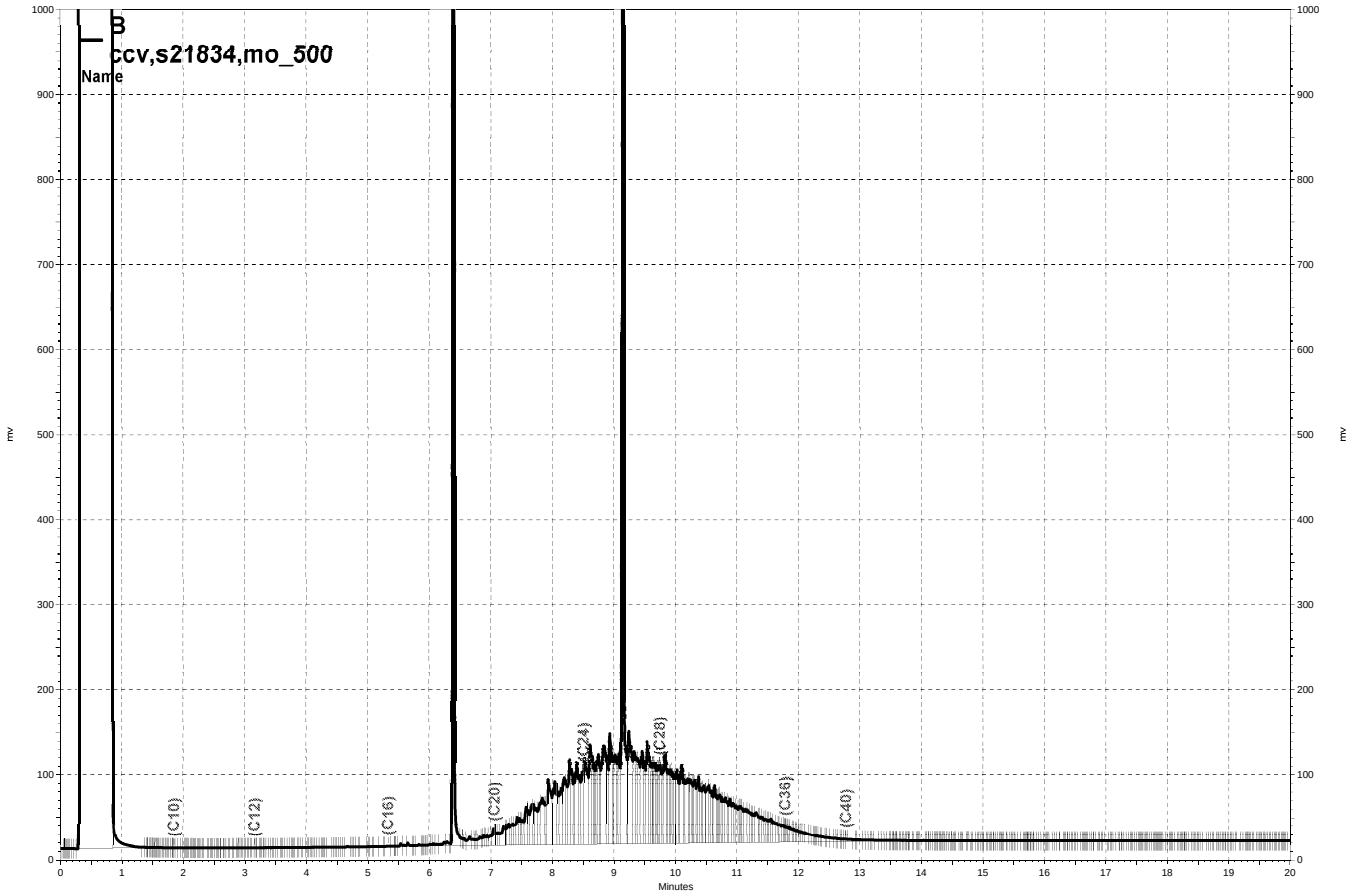
\\Lims\gdrive\ezchrom\Projects\GC17A\Data\064a006, A



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b031, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b004, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\063b003, B

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-TB-030113	Batch#:	196055
Lab ID:	243508-001	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	123	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	108	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-S4-GW-030113	Batch#:	196092
Lab ID:	243508-004	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/06/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	101	72-140
Toluene-d8	102	80-120
Bromofluorobenzene	114	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-S3-GW-030113	Batch#:	196092
Lab ID:	243508-007	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/06/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	77-134
1,2-Dichloroethane-d4	91	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-S1-GW-030113	Batch#:	196055
Lab ID:	243508-010	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	106	77-134
1,2-Dichloroethane-d4	123	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	108	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-S2-GW-030113	Batch#:	196061
Lab ID:	243508-013	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	105	77-134
1,2-Dichloroethane-d4	105	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	107	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	APEX-ER-030113	Batch#:	196061
Lab ID:	243508-014	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	104	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196055
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	1.000		

Type: BS Lab ID: QC678796

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	27.24	109	58-120
Benzene	25.00	27.04	108	78-125
Toluene	25.00	24.99	100	79-123
Ethylbenzene	25.00	26.23	105	80-126
m,p-Xylenes	50.00	47.57	95	80-123
o-Xylene	25.00	23.19	93	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	119	72-140
Toluene-d8	96	80-120
Bromofluorobenzene	103	80-120

Type: BSD Lab ID: QC678797

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	28.30	113	58-120	4	23
Benzene	25.00	26.37	105	78-125	3	20
Toluene	25.00	24.85	99	79-123	1	20
Ethylbenzene	25.00	26.43	106	80-126	1	20
m,p-Xylenes	50.00	48.35	97	80-123	2	20
o-Xylene	25.00	23.25	93	75-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	77-134
1,2-Dichloroethane-d4	117	72-140
Toluene-d8	99	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC678800	Batch#:	196055
Matrix:	Water	Analyzed:	03/05/13
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	114	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	103	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC678820	Batch#:	196061
Matrix:	Water	Analyzed:	03/05/13
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	17.50	17.57	100	58-120
Benzene	17.50	18.76	107	78-125
Toluene	17.50	18.67	107	79-123
Ethylbenzene	17.50	18.69	107	80-126
m,p-Xylenes	35.00	38.05	109	80-123
o-Xylene	17.50	18.34	105	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-134
1,2-Dichloroethane-d4	104	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-120

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC678821	Batch#:	196061
Matrix:	Water	Analyzed:	03/05/13
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	102	77-134
1,2-Dichloroethane-d4	103	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	102	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	196061
MSS Lab ID:	243482-003	Sampled:	02/27/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Analyzed:	03/05/13
Diln Fac:	7.140		

Type: MS Lab ID: QC678891

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.7143	178.5	175.0	98	63-120
Benzene	59.33	178.5	239.2	101	80-125
Toluene	2.802	178.5	189.4	105	80-122
Ethylbenzene	602.6	178.5	737.1 >LR b	75 *	80-124
m,p-Xylenes	202.4	357.0	579.0	106	80-121
o-Xylene	39.12	178.5	236.0	110	77-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	77-134
1,2-Dichloroethane-d4	101	72-140
Toluene-d8	97	80-120
Bromofluorobenzene	101	80-120

Type: MSD Lab ID: QC678892

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	178.5	169.6	95	63-120	3	27
Benzene	178.5	225.3	93	80-125	6	21
Toluene	178.5	179.5	99	80-122	5	21
Ethylbenzene	178.5	703.8	57 *	80-124	NC	21
m,p-Xylenes	357.0	552.2	98	80-121	5	21
o-Xylene	178.5	225.7	105	77-120	4	22

Surrogate	%REC	Limits
Dibromofluoromethane	95	77-134
1,2-Dichloroethane-d4	99	72-140
Toluene-d8	98	80-120
Bromofluorobenzene	100	80-120

*= Value outside of QC limits; see narrative
b= See narrative
NC= Not Calculated
>LR= Response exceeds instrument's linear range
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	196092
Units:	ug/L	Analyzed:	03/06/13
Diln Fac:	1.000		

Type: BS Lab ID: QC678946

Analyte	Spiked	Result	%REC	Limits
MTBE	12.50	12.08	97	58-120
Benzene	12.50	12.99	104	78-125
Toluene	12.50	13.49	108	79-123
Ethylbenzene	12.50	13.25	106	80-126
m,p-Xylenes	25.00	26.53	106	80-123
o-Xylene	12.50	12.54	100	75-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	77-134
1,2-Dichloroethane-d4	95	72-140
Toluene-d8	102	80-120
Bromofluorobenzene	101	80-120

Type: BSD Lab ID: QC678947

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	12.50	12.33	99	58-120	2	23
Benzene	12.50	13.14	105	78-125	1	20
Toluene	12.50	13.05	104	79-123	3	20
Ethylbenzene	12.50	12.45	100	80-126	6	20
m,p-Xylenes	25.00	25.34	101	80-123	5	20
o-Xylene	12.50	12.18	97	75-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	101	77-134
1,2-Dichloroethane-d4	99	72-140
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC678948	Batch#:	196092
Matrix:	Water	Analyzed:	03/06/13
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	77-134
1,2-Dichloroethane-d4	98	72-140
Toluene-d8	105	80-120
Bromofluorobenzene	104	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Sampled:	03/01/13
Units:	ug/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S4-4.5-030113	Diln Fac:	50.00
Type:	SAMPLE	Batch#:	196146
Lab ID:	243508-002	Analyzed:	03/07/13
Moisture:	25%		

Analyte	Result	RL
MTBE	ND	330
Benzene	ND	330
Toluene	ND	330
Ethylbenzene	ND	330
m,p-Xylenes	ND	330
o-Xylene	ND	330

Surrogate	%REC	Limits
Dibromofluoromethane	82	80-124
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	82	80-120
Bromofluorobenzene	207 *	79-127
Trifluorotoluene (MeOH)	153 *	46-140

Field ID:	APEX-S4-8.5-030113	Diln Fac:	0.8787
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-003	Analyzed:	03/05/13
Moisture:	23%		

Analyte	Result	RL
MTBE	ND	5.7
Benzene	ND	5.7
Toluene	ND	5.7
Ethylbenzene	ND	5.7
m,p-Xylenes	ND	5.7
o-Xylene	ND	5.7

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-124
1,2-Dichloroethane-d4	108	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	110	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Sampled:	03/01/13
Units:	ug/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S3-3.5-030113	Diln Fac:	0.9785
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-005	Analyzed:	03/05/13
Moisture:	28%		

Analyte	Result	RL
MTBE	ND	6.8
Benzene	ND	6.8
Toluene	ND	6.8
Ethylbenzene	ND	6.8
m,p-Xylenes	ND	6.8
o-Xylene	ND	6.8

Surrogate	%REC	Limits
Dibromofluoromethane	103	80-124
1,2-Dichloroethane-d4	114	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	99	79-127

Field ID:	APEX-S3-9.0-030113	Diln Fac:	0.9294
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-006	Analyzed:	03/05/13
Moisture:	25%		

Analyte	Result	RL
MTBE	ND	6.2
Benzene	ND	6.2
Toluene	ND	6.2
Ethylbenzene	ND	6.2
m,p-Xylenes	ND	6.2
o-Xylene	ND	6.2

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-124
1,2-Dichloroethane-d4	116	80-137
Toluene-d8	94	80-120
Bromofluorobenzene	107	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Sampled:	03/01/13
Units:	ug/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S1-3.5-030113	Diln Fac:	1.016
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-008	Analyzed:	03/05/13
Moisture:	14%		

Analyte	Result	RL
MTBE	ND	5.9
Benzene	ND	5.9
Toluene	ND	5.9
Ethylbenzene	ND	5.9
m,p-Xylenes	ND	5.9
o-Xylene	ND	5.9

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-124
1,2-Dichloroethane-d4	112	80-137
Toluene-d8	91	80-120
Bromofluorobenzene	102	79-127

Field ID:	APEX-S1-9.0-030113	Diln Fac:	0.9311
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-009	Analyzed:	03/05/13
Moisture:	23%		

Analyte	Result	RL
MTBE	ND	6.0
Benzene	ND	6.0
Toluene	ND	6.0
Ethylbenzene	ND	6.0
m,p-Xylenes	ND	6.0
o-Xylene	ND	6.0

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-124
1,2-Dichloroethane-d4	107	80-137
Toluene-d8	95	80-120
Bromofluorobenzene	102	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Sampled:	03/01/13
Units:	ug/Kg	Received:	03/01/13
Basis:	dry		

Field ID:	APEX-S2-5.5-030113	Diln Fac:	100.0
Type:	SAMPLE	Batch#:	196146
Lab ID:	243508-011	Analyzed:	03/07/13
Moisture:	27%		

Analyte	Result	RL
MTBE	ND	680
Benzene	ND	680
Toluene	ND	680
Ethylbenzene	ND	680
m,p-Xylenes	ND	680
o-Xylene	ND	680

Surrogate	%REC	Limits
Dibromofluoromethane	89	80-124
1,2-Dichloroethane-d4	92	80-137
Toluene-d8	91	80-120
Bromofluorobenzene	265 *	79-127
Trifluorotoluene (MeOH)	146 *	46-140

Field ID:	APEX-S2-9.0-030113	Diln Fac:	0.9709
Type:	SAMPLE	Batch#:	196056
Lab ID:	243508-012	Analyzed:	03/05/13
Moisture:	22%		

Analyte	Result	RL
MTBE	ND	6.2
Benzene	ND	6.2
Toluene	ND	6.2
Ethylbenzene	ND	6.2
m,p-Xylenes	ND	6.2
o-Xylene	ND	6.2

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-124
1,2-Dichloroethane-d4	109	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	104	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Sampled:	03/01/13
Units:	ug/Kg	Received:	03/01/13
Basis:	dry		

Type:	BLANK	Batch#:	196056
Lab ID:	QC678803	Analyzed:	03/05/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-124
1,2-Dichloroethane-d4	120	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	103	79-127

Type:	BLANK	Batch#:	196146
Lab ID:	QC679144	Analyzed:	03/07/13
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	5.0
Benzene	ND	5.0
Toluene	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	87	80-124
1,2-Dichloroethane-d4	97	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	84	79-127

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	196056
Units:	ug/Kg	Analyzed:	03/05/13
Diln Fac:	1.000		

Type: BS Lab ID: QC678801

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	23.68	95	65-121
Benzene	25.00	26.61	106	77-126
Toluene	25.00	26.77	107	76-124
Ethylbenzene	25.00	28.21	113	76-127
m,p-Xylenes	50.00	54.07	108	74-126
o-Xylene	25.00	25.82	103	70-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-124
1,2-Dichloroethane-d4	109	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	100	79-127

Type: BSD Lab ID: QC678802

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	24.54	98	65-121	4	22
Benzene	25.00	27.58	110	77-126	4	20
Toluene	25.00	26.60	106	76-124	1	26
Ethylbenzene	25.00	26.91	108	76-127	5	24
m,p-Xylenes	50.00	51.47	103	74-126	5	24
o-Xylene	25.00	25.54	102	70-120	1	22

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-124
1,2-Dichloroethane-d4	105	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	104	79-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5030B
Project#:	2012-144	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	196056
MSS Lab ID:	243517-001	Sampled:	03/01/13
Matrix:	Soil	Received:	03/04/13
Units:	ug/Kg	Analyzed:	03/05/13
Basis:	as received		

Type: MS Diln Fac: 0.9940
Lab ID: QC678877

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	<0.9951	49.70	48.94	98	51-120
Benzene	<0.6846	49.70	46.26	93	54-121
Toluene	<0.4607	49.70	43.17	87	47-120
Ethylbenzene	<0.6062	49.70	41.82	84	42-122
m,p-Xylenes	<1.307	99.40	75.67	76	39-120
o-Xylene	<0.6737	49.70	37.82	76	39-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-124
1,2-Dichloroethane-d4	98	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	104	79-127

Type: MSD Diln Fac: 0.9766
Lab ID: QC678878

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	48.83	32.55	67	51-120	39	43
Benzene	48.83	44.63	91	54-121	2	43
Toluene	48.83	45.88	94	47-120	8	53
Ethylbenzene	48.83	42.58	87	42-122	4	52
m,p-Xylenes	97.66	76.93	79	39-120	3	54
o-Xylene	48.83	39.14	80	39-120	5	54

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-124
1,2-Dichloroethane-d4	92	80-137
Toluene-d8	98	80-120
Bromofluorobenzene	104	79-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Aromatics by GC/MS

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 5035
Project#:	2012-144	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	196146
Units:	ug/Kg	Analyzed:	03/07/13
Diln Fac:	1.000		

Type: BS Lab ID: QC679145

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	15.07	75	65-121
Benzene	20.00	21.28	106	77-126
Toluene	20.00	21.28	106	76-124
Ethylbenzene	20.00	22.59	113	76-127
m,p-Xylenes	40.00	49.42	124	74-126
o-Xylene	20.00	20.77	104	70-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-124
1,2-Dichloroethane-d4	102	80-137
Toluene-d8	96	80-120
Bromofluorobenzene	85	79-127

Type: BSD Lab ID: QC679146

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	15.48	77	65-121	3	22
Benzene	20.00	19.32	97	77-126	10	20
Toluene	20.00	20.93	105	76-124	2	26
Ethylbenzene	20.00	21.86	109	76-127	3	24
m,p-Xylenes	40.00	45.90	115	74-126	7	24
o-Xylene	20.00	19.05	95	70-120	9	22

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-124
1,2-Dichloroethane-d4	92	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	87	79-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S4-GW-030113	Batch#:	196032
Lab ID:	243508-004	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	5.000	Analyzed:	03/06/13

Analyte	Result	RL
Naphthalene	ND	0.5
Acenaphthylene	ND	0.5
Acenaphthene	ND	0.5
Fluorene	ND	0.5
Phenanthrene	ND	0.5
Anthracene	ND	0.5
Fluoranthene	ND	0.5
Pyrene	ND	0.5
Benzo(a)anthracene	ND	0.5
Chrysene	ND	0.5
Benzo(b)fluoranthene	ND	0.5
Benzo(k)fluoranthene	ND	0.5
Benzo(a)pyrene	ND	0.5
Indeno(1,2,3-cd)pyrene	ND	0.5
Dibenz(a,h)anthracene	ND	0.5
Benzo(g,h,i)perylene	ND	0.5

Surrogate	%REC	Limits
Nitrobenzene-d5	1841 *	48-130
2-Fluorobiphenyl	14 *	47-120
Terphenyl-d14	8 *	33-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S3-GW-030113	Batch#:	196032
Lab ID:	243508-007	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	4.000	Analyzed:	03/06/13

Analyte	Result	RL
Naphthalene	ND	0.4
Acenaphthylene	ND	0.4
Acenaphthene	ND	0.4
Fluorene	ND	0.4
Phenanthrene	ND	0.4
Anthracene	ND	0.4
Fluoranthene	ND	0.4
Pyrene	ND	0.4
Benzo(a)anthracene	ND	0.4
Chrysene	ND	0.4
Benzo(b)fluoranthene	ND	0.4
Benzo(k)fluoranthene	ND	0.4
Benzo(a)pyrene	ND	0.4
Indeno(1,2,3-cd)pyrene	ND	0.4
Dibenz(a,h)anthracene	ND	0.4
Benzo(g,h,i)perylene	ND	0.4

Surrogate	%REC	Limits
Nitrobenzene-d5	404 *	48-130
2-Fluorobiphenyl	46 *	47-120
Terphenyl-d14	11 *	33-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S1-GW-030113	Batch#:	196032
Lab ID:	243508-010	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	8.000	Analyzed:	03/06/13

Analyte	Result	RL
Naphthalene	0.9	0.7
Acenaphthylene	ND	0.7
Acenaphthene	0.8	0.7
Fluorene	1.9	0.7
Phenanthrene	5.8	0.7
Anthracene	2.2	0.7
Fluoranthene	1.2	0.7
Pyrene	1.3	0.7
Benzo(a)anthracene	ND	0.7
Chrysene	ND	0.7
Benzo(b)fluoranthene	ND	0.7
Benzo(k)fluoranthene	ND	0.7
Benzo(a)pyrene	ND	0.7
Indeno(1,2,3-cd)pyrene	ND	0.7
Dibenz(a,h)anthracene	ND	0.7
Benzo(g,h,i)perylene	ND	0.7

Surrogate	%REC	Limits
Nitrobenzene-d5	180 *	48-130
2-Fluorobiphenyl	25 *	47-120
Terphenyl-d14	7 *	33-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S2-GW-030113	Batch#:	196032
Lab ID:	243508-013	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	8.000	Analyzed:	03/06/13

Analyte	Result	RL
Naphthalene	ND	0.7
Acenaphthylene	ND	0.7
Acenaphthene	0.9	0.7
Fluorene	ND	0.7
Phenanthrene	2.4	0.7
Anthracene	1.3	0.7
Fluoranthene	1.6	0.7
Pyrene	1.7	0.7
Benzo(a)anthracene	ND	0.7
Chrysene	1.0	0.7
Benzo(b)fluoranthene	0.9	0.7
Benzo(k)fluoranthene	ND	0.7
Benzo(a)pyrene	ND	0.7
Indeno(1,2,3-cd)pyrene	ND	0.7
Dibenz(a,h)anthracene	ND	0.7
Benzo(g,h,i)perylene	ND	0.7

Surrogate	%REC	Limits
Nitrobenzene-d5	514 *	48-130
2-Fluorobiphenyl	13 *	47-120
Terphenyl-d14	7 *	33-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-ER-030113	Batch#:	196032
Lab ID:	243508-014	Sampled:	03/01/13
Matrix:	Water	Received:	03/01/13
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	1.000	Analyzed:	03/05/13

Analyte	Result	RL
Naphthalene	ND	0.09
Acenaphthylene	ND	0.09
Acenaphthene	ND	0.09
Fluorene	ND	0.09
Phenanthrene	ND	0.09
Anthracene	ND	0.09
Fluoranthene	ND	0.09
Pyrene	ND	0.09
Benzo(a)anthracene	ND	0.09
Chrysene	ND	0.09
Benzo(b)fluoranthene	ND	0.09
Benzo(k)fluoranthene	ND	0.09
Benzo(a)pyrene	ND	0.09
Indeno(1,2,3-cd)pyrene	ND	0.09
Dibenz(a,h)anthracene	ND	0.09
Benzo(g,h,i)perylene	ND	0.09

Surrogate	%REC	Limits
Nitrobenzene-d5	71	48-130
2-Fluorobiphenyl	91	47-120
Terphenyl-d14	92	33-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC678693	Batch#:	196032
Matrix:	Water	Prepared:	03/04/13
Units:	ug/L	Analyzed:	03/05/13

Analyte	Result	RL
Naphthalene	ND	0.1
Acenaphthylene	ND	0.1
Acenaphthene	ND	0.1
Fluorene	ND	0.1
Phenanthrene	ND	0.1
Anthracene	ND	0.1
Fluoranthene	ND	0.1
Pyrene	ND	0.1
Benzo(a)anthracene	ND	0.1
Chrysene	ND	0.1
Benzo(b)fluoranthene	ND	0.1
Benzo(k)fluoranthene	ND	0.1
Benzo(a)pyrene	ND	0.1
Indeno(1,2,3-cd)pyrene	ND	0.1
Dibenz(a,h)anthracene	ND	0.1
Benzo(g,h,i)perylene	ND	0.1

Surrogate	%REC	Limits
Nitrobenzene-d5	72	48-130
2-Fluorobiphenyl	88	47-120
Terphenyl-d14	72	33-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3520C
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Matrix:	Water	Batch#:	196032
Units:	ug/L	Prepared:	03/04/13
Diln Fac:	1.000	Analyzed:	03/05/13

Type: BS Lab ID: QC678694

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	1.000	1.076	108	52-120
Pyrene	1.000	0.8003	80	45-120

Surrogate	%REC	Limits
Nitrobenzene-d5	91	48-130
2-Fluorobiphenyl	97	47-120
Terphenyl-d14	75	33-120

Type: BSD Lab ID: QC678695

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Acenaphthene	1.000	0.9060	91	52-120	17	72
Pyrene	1.000	0.7068	71	45-120	12	53

Surrogate	%REC	Limits
Nitrobenzene-d5	80	48-130
2-Fluorobiphenyl	82	47-120
Terphenyl-d14	65	33-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S4-4.5-030113	Batch#:	196038
Lab ID:	243508-002	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	4.000		

Moisture: 25%

Analyte	Result	RL
Naphthalene	ND	26
Acenaphthylene	ND	26
Acenaphthene	ND	26
Fluorene	ND	26
Phenanthrene	ND	26
Anthracene	44	26
Fluoranthene	ND	26
Pyrene	ND	26
Benzo(a)anthracene	ND	26
Chrysene	ND	26
Benzo(b)fluoranthene	ND	26
Benzo(k)fluoranthene	ND	26
Benzo(a)pyrene	ND	26
Indeno(1,2,3-cd)pyrene	ND	26
Dibenz(a,h)anthracene	ND	26
Benzo(g,h,i)perylene	ND	26

Surrogate	%REC	Limits
Nitrobenzene-d5	90	46-120
2-Fluorobiphenyl	66	53-120
Terphenyl-d14	87	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S4-8.5-030113	Batch#:	196038
Lab ID:	243508-003	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 23%

Analyte	Result	RL
Naphthalene	ND	6.5
Acenaphthylene	ND	6.5
Acenaphthene	ND	6.5
Fluorene	ND	6.5
Phenanthrene	ND	6.5
Anthracene	ND	6.5
Fluoranthene	ND	6.5
Pyrene	ND	6.5
Benzo(a)anthracene	ND	6.5
Chrysene	ND	6.5
Benzo(b)fluoranthene	ND	6.5
Benzo(k)fluoranthene	ND	6.5
Benzo(a)pyrene	ND	6.5
Indeno(1,2,3-cd)pyrene	ND	6.5
Dibenz(a,h)anthracene	ND	6.5
Benzo(g,h,i)perylene	ND	6.5

Surrogate	%REC	Limits
Nitrobenzene-d5	50	46-120
2-Fluorobiphenyl	60	53-120
Terphenyl-d14	76	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S3-3.5-030113	Batch#:	196038
Lab ID:	243508-005	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 28%

Analyte	Result	RL
Naphthalene	ND	7.0
Acenaphthylene	ND	7.0
Acenaphthene	ND	7.0
Fluorene	ND	7.0
Phenanthrene	7.2	7.0
Anthracene	ND	7.0
Fluoranthene	11	7.0
Pyrene	15	7.0
Benzo(a)anthracene	ND	7.0
Chrysene	7.0	7.0
Benzo(b)fluoranthene	8.7	7.0
Benzo(k)fluoranthene	ND	7.0
Benzo(a)pyrene	8.1	7.0
Indeno(1,2,3-cd)pyrene	7.2	7.0
Dibenz(a,h)anthracene	ND	7.0
Benzo(g,h,i)perylene	10	7.0

Surrogate	%REC	Limits
Nitrobenzene-d5	47	46-120
2-Fluorobiphenyl	61	53-120
Terphenyl-d14	70	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S3-9.0-030113	Batch#:	196038
Lab ID:	243508-006	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 25%

Analyte	Result	RL
Naphthalene	ND	6.7
Acenaphthylene	ND	6.7
Acenaphthene	ND	6.7
Fluorene	ND	6.7
Phenanthrene	ND	6.7
Anthracene	ND	6.7
Fluoranthene	ND	6.7
Pyrene	ND	6.7
Benzo(a)anthracene	ND	6.7
Chrysene	ND	6.7
Benzo(b)fluoranthene	ND	6.7
Benzo(k)fluoranthene	ND	6.7
Benzo(a)pyrene	ND	6.7
Indeno(1,2,3-cd)pyrene	ND	6.7
Dibenz(a,h)anthracene	ND	6.7
Benzo(g,h,i)perylene	ND	6.7

Surrogate	%REC	Limits
Nitrobenzene-d5	51	46-120
2-Fluorobiphenyl	61	53-120
Terphenyl-d14	86	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S1-3.5-030113	Batch#:	196038
Lab ID:	243508-008	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 14%

Analyte	Result	RL
Naphthalene	ND	29
Acenaphthylene	ND	29
Acenaphthene	ND	29
Fluorene	ND	29
Phenanthrene	240	29
Anthracene	42	29
Fluoranthene	490	29
Pyrene	570	29
Benzo(a)anthracene	180	29
Chrysene	310	29
Benzo(b)fluoranthene	270	29
Benzo(k)fluoranthene	81	29
Benzo(a)pyrene	170	29
Indeno(1,2,3-cd)pyrene	57	29
Dibenz(a,h)anthracene	ND	29
Benzo(g,h,i)perylene	67	29

Surrogate	%REC	Limits
Nitrobenzene-d5	49	46-120
2-Fluorobiphenyl	81	53-120
Terphenyl-d14	99	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S1-9.0-030113	Batch#:	196038
Lab ID:	243508-009	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 23%

Analyte	Result	RL
Naphthalene	ND	6.4
Acenaphthylene	ND	6.4
Acenaphthene	ND	6.4
Fluorene	ND	6.4
Phenanthrene	18	6.4
Anthracene	ND	6.4
Fluoranthene	9.2	6.4
Pyrene	9.8	6.4
Benzo(a)anthracene	ND	6.4
Chrysene	ND	6.4
Benzo(b)fluoranthene	ND	6.4
Benzo(k)fluoranthene	ND	6.4
Benzo(a)pyrene	ND	6.4
Indeno(1,2,3-cd)pyrene	ND	6.4
Dibenz(a,h)anthracene	ND	6.4
Benzo(g,h,i)perylene	ND	6.4

Surrogate	%REC	Limits
Nitrobenzene-d5	52	46-120
2-Fluorobiphenyl	65	53-120
Terphenyl-d14	81	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S2-5.5-030113	Batch#:	196038
Lab ID:	243508-011	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	5.000		

Moisture: 27%

Analyte	Result	RL
Naphthalene	ND	34
Acenaphthylene	ND	34
Acenaphthene	46	34
Fluorene	ND	34
Phenanthrene	ND	34
Anthracene	ND	34
Fluoranthene	ND	34
Pyrene	ND	34
Benzo(a)anthracene	ND	34
Chrysene	ND	34
Benzo(b)fluoranthene	ND	34
Benzo(k)fluoranthene	ND	34
Benzo(a)pyrene	ND	34
Indeno(1,2,3-cd)pyrene	ND	34
Dibenz(a,h)anthracene	ND	34
Benzo(g,h,i)perylene	ND	34

Surrogate	%REC	Limits
Nitrobenzene-d5	94	46-120
2-Fluorobiphenyl	72	53-120
Terphenyl-d14	100	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Field ID:	APEX-S2-9.0-030113	Batch#:	196038
Lab ID:	243508-012	Sampled:	03/01/13
Matrix:	Soil	Received:	03/01/13
Units:	ug/Kg	Prepared:	03/04/13
Basis:	dry	Analyzed:	03/05/13
Diln Fac:	1.000		

Moisture: 22%

Analyte	Result	RL
Naphthalene	ND	6.5
Acenaphthylene	ND	6.5
Acenaphthene	ND	6.5
Fluorene	ND	6.5
Phenanthrene	ND	6.5
Anthracene	ND	6.5
Fluoranthene	ND	6.5
Pyrene	ND	6.5
Benzo(a)anthracene	ND	6.5
Chrysene	ND	6.5
Benzo(b)fluoranthene	ND	6.5
Benzo(k)fluoranthene	ND	6.5
Benzo(a)pyrene	ND	6.5
Indeno(1,2,3-cd)pyrene	ND	6.5
Dibenz(a,h)anthracene	ND	6.5
Benzo(g,h,i)perylene	ND	6.5

Surrogate	%REC	Limits
Nitrobenzene-d5	53	46-120
2-Fluorobiphenyl	68	53-120
Terphenyl-d14	91	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC678714	Batch#:	196038
Matrix:	Soil	Prepared:	03/04/13
Units:	ug/Kg	Analyzed:	03/05/13

Analyte	Result	RL
Naphthalene	ND	4.9
Acenaphthylene	ND	4.9
Acenaphthene	ND	4.9
Fluorene	ND	4.9
Phenanthrene	ND	4.9
Anthracene	ND	4.9
Fluoranthene	ND	4.9
Pyrene	ND	4.9
Benzo(a)anthracene	ND	4.9
Chrysene	ND	4.9
Benzo(b)fluoranthene	ND	4.9
Benzo(k)fluoranthene	ND	4.9
Benzo(a)pyrene	ND	4.9
Indeno(1,2,3-cd)pyrene	ND	4.9
Dibenz(a,h)anthracene	ND	4.9
Benzo(g,h,i)perylene	ND	4.9

Surrogate	%REC	Limits
Nitrobenzene-d5	74	46-120
2-Fluorobiphenyl	80	53-120
Terphenyl-d14	75	53-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS SIM

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	EPA 3550B
Project#:	2012-144	Analysis:	EPA 8270C-SIM
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC678715	Batch#:	196038
Matrix:	Soil	Prepared:	03/04/13
Units:	ug/Kg	Analyzed:	03/05/13

Analyte	Spiked	Result	%REC	Limits
Acenaphthene	33.44	28.23	84	47-120
Pyrene	33.44	25.18	75	44-120

Surrogate	%REC	Limits
Nitrobenzene-d5	71	46-120
2-Fluorobiphenyl	75	53-120
Terphenyl-d14	71	53-127

Curtis & Tompkins, Ltd.

Moisture

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	METHOD
Project#:	2012-144	Analysis:	ASTM D2216/CLP
Analyte:	Moisture, Percent	Batch#:	196085
Matrix:	Soil	Sampled:	03/01/13
Units:	%	Received:	03/01/13
Diln Fac:	1.000	Analyzed:	03/05/13

Field ID	Lab ID	Result	RL
APEX-S4-4.5-030113	243508-002	25	1
APEX-S4-8.5-030113	243508-003	23	1
APEX-S3-3.5-030113	243508-005	28	1
APEX-S3-9.0-030113	243508-006	25	1
APEX-S1-3.5-030113	243508-008	14	1
APEX-S1-9.0-030113	243508-009	23	1
APEX-S2-5.5-030113	243508-011	27	1
APEX-S2-9.0-030113	243508-012	22	1

RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Moisture

Lab #:	243508	Location:	APEX
Client:	Engineering/Remediation Resource Grp	Prep:	METHOD
Project#:	2012-144	Analysis:	ASTM D2216/CLP
Analyte:	Moisture, Percent	Units:	%
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
Type:	SDUP	Batch#:	196085
MSS Lab ID:	243522-001	Sampled:	03/04/13
Lab ID:	QC678913	Received:	03/04/13
Matrix:	Soil	Analyzed:	03/05/13

MSS Result	Result	RL	RPD	Lim
3.596	3.697	1.000	3	24

RL= Reporting Limit
RPD= Relative Percent Difference