QUALITY ASSURANCE SAMPLING PLAN

FOR

AMERICAN CREOSOTE DERIDDER
LATITUDE 30.831693° NORTH AND LONGITUDE 93.276863° WEST
DERIDDER, BEAUREGARD PARISH, LOUSIANA

Prepared for

U.S. Environmental Protection Agency Region 6
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102

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EPA OSC Adam Adams

Prepared by

Weston Solutions, Inc.
2600 Parkway, Suite 280
Frisco, Texas 75034

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1. INTRODUCTION

Weston Solutions, Inc. (WESTON®), the Superfund Technical Assessment and Response Team (START) contractor, has been tasked by the U.S. Environmental Protection Agency (EPA) Region 6 Emergency Management Branch (EMB) under Contract No. EP-S5-17-02 and Technical Direction Document (TDD) No. 0001/19-286, to conduct a removal assessment at American Creosote DeRidder (Site). The Site operations included creosoting timber, utilizing liquid pitch oil, tar oil and coal tar solutions in the wood preserving pressure treatment process. The specific operations consisted of dipping timber into creosote vats and the collection of spent creosote in an open pit and the discharging of untreated process wastewater into an open pit. The current address for the site is off Post Plant Road at Latitude 30.831693° North and Longitude 93.276863° West, DeRidder, Beauregard Parish, Louisiana. A Site Location Map is provided as Figure 1-1. Figures are provided as separate portable document format (PDF) files. The Superfund Enterprise Management System (SEMS) Identification Number assigned to the Site is LAN000604293. The Site coordinates are Latitude 30.831693° North and Longitude 93.276863° West. START has prepared this Quality Assurance Sampling Plan (QASP) to describe the technical scope of work and activities tasked for completion as part of TDD No. 0001/19-286.

1.1 PROJECT OBJECTIVE

START is providing technical assistance to EPA Region 6 for the performance of a Removal Assessment and to collect data necessary to support a determination by EPA that the Site presents a threat to public health and/or welfare of the United States or the environment in accordance with *40 Code of Federal Regulations (CFR) 300.415.*

The primary objective of the removal assessment is to determine the nature and extent of potential site-related contaminants of concern (COCs) (including dioxins/furans, TAL Metals + mercury, and semi-volatile organic compounds [SVOCs]), in both the surface and subsurface soils at locations tentatively identified in the HRS package, and confirmed during the site walk with the OSC. The analytical results of this removal assessment will be evaluated and compared to the minimum April 2019 EPA Regional Removal Management Level (RML) Composite Worker Soil Table (TR=1E-04, HQ=1) concentrations (Appendix C) of pre-selected analytes. Samples will be

compared to the minimum Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) October 20, 2003 Screening Standards for Soil and Groundwater (LDEQ RECAP 2003) concentrations (Appendix D) of pre-selected analytes. The pre-selected analytes are dioxins and furans; TAL Metals + mercury; and SVOCs.

1.2 PROJECT TEAM

The Project Team will consist of David Bordelon, the Scope of Work (SOW) Leader; James Collins the Project Team Leader (PTL), Field Team Leader (FTL), and Field Safety Officer (FSO); and additional START personnel as necessary. The PTL will be responsible for the technical quality of work performed in the field, for documentation of site operations, and will serve as the START liaison to EPA Region 6 On-scene Coordinators (OSC) Adam Adams. The PTL, in collaboration with EPA OSCs Adams, will determine the locations for sample collection in the field, collect samples as necessary, log the activities at each sample location in the field logbook, and verify the sample documentation. The PTL will oversee the packaging and shipping of samples to the EPA-approved laboratory. The FSO will be responsible for providing overall site health and safety support. Data management will include entering samples collected into EPA Scribe Environmental Sampling Data Management System (SCRIBE); producing accurate chain-of-custody documentation for the samples during the removal action; entering daily operations and sample collection data into the Regional Response Center–Enterprise Data Management System (RRC-EDMS) Response Manager software; and shipping samples. START will conduct sample collection, preparation, and documentation. START will document site activities with field logbooks and data sheets. The START SOW Leader, David Bordelon, will provide technical support to START during project activities.

1.3 QASP FORMAT

This QASP is organized in a format that is intended to facilitate and effectively meet the objective of the removal assessment. The QASP is organized as follows:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Sampling Approach and Procedures

- Section 4 – Analytical Methods and Data Validation
- Section 5 – Quality Assurance

Tables are included at the end of each respective section. Figures are provided as separate Portable Document Format (PDF) files. Appendices are attached with the following information.

- Appendix A Site-Specific Data Quality Objective
- Appendix B Standard Operating Procedures
- Appendix C EPA Regional Removal Management Level (RML) Industrial Soil Table (TR=1E-04, HQ=1) April 2019
- Appendix D LDEQ RECAP Table 1
- Appendix E Site Inspection Report – American Creosote DeRidder
- Appendix F Expanded Site Inspection Report – American Creosote DeRidder
- Appendix G American Creosote DeRidder HRS Package

2. SITE BACKGROUND

This section presents a summary of background information for the Site including site location and description, operational and regulatory history, previous investigations, and sources of contamination.

2.1 SITE LOCATION AND DESCRIPTION

The American Creosote DeRidder site is a 55-acre tract of land owned by Central Manufacturing Company (CMC) located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Louisiana and accessed by Post Plant Road (Figure 1-1 Site Location Map). The coordinates of the site are Latitude 30.831693° North and Longitude 93.276863° West as measured from the site entrance at the intersection of the Burlington Northern Santa Fe (BNSF) railroad and Post Plant Road. The site is characterized by a gently rolling topography, mild winters and hot/humid summers, silty clayey sands and sandy silty clay soils. The average elevation of the site is 150 feet above mean sea level. The site area primarily consists of pine, however a variety of oak and cypress are present in the low bottom areas within which drainage tributaries meander. The site is bounded on the north by a rural roadway, to the east is heavy brush, to the south is undeveloped land, and to the west is the BNSF railroad spur, currently used by Mead Westvaco Corporation. The site's broader surroundings include commercial, industrial and residential uses as shown on the Site Area Map, provided as Figure 2-1. Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin.

2.2 OPERATIONAL AND REGULATORY HISTORY

The American Creosote DeRidder site has been impacted by creosote related compounds from historical timber treatment operations at the site. The Shreveport Creosoting Company doing business as an Indiana and later a Delaware Corporation operated a creosote timber treatment facility from the early 1920's to approximately 1945 on a parcel of land at the site. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957. From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992, who planned heavy industrial/commercial use.

The Shreveport Company's facilities and operations for the timber treatment process were located approximately a half mile south of the intersection of Post Pole Road and the railroad corridor on the western portion of the property. Creosote oil and coal tar solutions were used in the wood preserving pressure treatment process. The specific operations at the site consisted of dipping timber into creosote vats, using a retort vessel to pressure treat the timber, collection of spent creosote in an open pit, and discharging of untreated process wastewater into an open pit. There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits.

Central Manufacturing Company (CMC) has been the primary owner of the 55-acre tract of land from September 1992 to present when it was sold by First National Bank in DeRidder, Louisiana. Prior to 1992, First National Bank of DeRidder, by means of "dation en paiement" conveyed the land in 1984 from Creighton and Frances Pugh to relieve them of mortgage and lien debt against the property. The Creighton's had formerly purchased the parcel of land in 1972 from Charles Holbrook for commercial purposes. Charles Holbrook was the original owner of the parcel of land that is currently in CMC ownership. Prior to 1963 the current tract of land was fundamentally three separate parcels (Parcel B, E1 and E2) of property acquired by Mr. Holbrook and incorporated into one single tract of land. In April of 1963, International Paper Company (IPC) sold Charles Holbrook, Parcel B, one of the three tracts of land which he incorporated into the two other tracts of land, Parcel E1 and E2, which he had purchased years earlier from American Creosoting Corporation in 1959.

In 1956, Union Camp Corporation acquired American Creosoting Company. Subsequent to the acquisition Union Camp renamed the operations to AmCre Corporation. In 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation.

The two tracts of land, Parcel E1 and E2, bought by Mr. Holbrook, that were later incorporated with the third tract of land purchased from (IPC), were purchased by American Creosoting Company in 1955 from Shreveport Creosoting Company, a Delaware Corporation. From 1928

to its sale in 1955 both tracts of land were owned by Shreveport Creosoting Company, a Delaware Corporation which had previously purchased the properties from Shreveport Creosoting Company, an Indiana Corporation.

Preceding both tracts of land being sold in 1928 by Shreveport Creosoting Company, an Indiana Corporation to Shreveport Creosoting Company, a Delaware Corporation both tracts of land were acquired separately by Shreveport Creosoting Company in 1918. One tract of land was sold by The Long Bell Lumber Company and the other tract of land was purchased from the Hudson River Lumber Company on the same date in 1918 by Shreveport Creosoting Company, an Indiana Corporation.

Historical ownership prior to 1956 for the tract of land, Parcel B, previous owned by IPC and sold to Mr. Charles Holbrook is currently unknown. Historical ownership previous to 1918 for the two tracts of land, Parcel E1 and E2, separately owned by The Long Bell Lumber Company and Hudson River Lumber Company is also currently unknown.

2.3 SUMMARY OF PREVIOUS INVESTIGATIONS

In 1991 the American Creosote site was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD). LDEQ IASD contacted Westvaco, a company nearby that was considering buying the property at the time, and had collected water and soil samples for analysis in February 1992. During 1992 LDEQ IASD visited the site several times to assess the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples. In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) at the site through a cooperative agreement with the responsible party identified at the time, CMC. In October 1993 LDEQ IASD realized the site compromised two distinct ownerships, due to creosote contamination migrating off-site to the adjacent property to the west. LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway Company (ATSF), who owned the railway right-of way corridor, and CMC who now owned the former wood treating facility. In late 1993 a cooperative agreement between LDEQ IASD, CMC and ATSF was entered into for a RI/FS.

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Dr. Portier of Louisiana State University (LSU) who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at site. The work plan proposed transporting of contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated to clean-up levels of less than 100 mg/kg TPH. An approximate total of 1,250 cubic yards of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway right-of-way (ROW) were proposed to be processed in the SPRU.

In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote material from the site for TPH analyses at the ATSF contracted laboratory Radian Corporation. The four samples collected of tarry material were collected from the pit moving southwest toward the Santa Fe railway ROW. Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg. By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with LDEQ to begin its own soil remediation strategy. In mid-1996 Kei Consultants hired by BNSF submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder. The estimated area of creosote impact to the BNSF railroad corridor extended 250 feet along the railway ROW and 25 feet wide. The noted contaminate of concern was TPH.

In August 2002 Acadian Engineers on behalf of CMC performed a Limited Site Investigation at the American Creosote site to delineate the horizontal and vertical extent of creosote contamination to determine potential remediation strategies. Acadian personnel collected soil samples and groundwater samples from temporary groundwater monitoring wells to assess the impact to shallow groundwater.

Late 2003 Acadian Engineers & Environmental Consultants submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media. The proposed methodology to address the impacted soil media was over excavation of impacted areas and on-site treatment of the impacted soil. No implementation of groundwater remediation

was required, yet continued groundwater monitoring was recommended. The limits of excavation proposed for the impacted soils were based on analytical results from soil samples collected from selected locations from the identified following Area of Concern, and are as follows:

- AOC #1 Old Railroad Spur – The proposed limits of excavation consisted of a 100 feet x 8 feet area at a two foot depth, resulting in an in place volume of 58 cubic yards, and an excavation/remediation volume of 77 cubic yards.
- AOC #2 Concrete Structure – The proposed limits of excavation consisted of approximately one acre at two foot depth, resulting in a proposed excavation volume of 2,852 cubic yards.
- AOC #3 Abandoned Waste Pit – The area of excavation is 3,000 square feet and the depth is estimated at three feet resulting in a proposed excavated volume of 367 cubic yards.
- AOC #4 Surface Soil – The proposed excavation consists of 35,700 square feet (0.82 acres) at two foot depth resulting in a proposed excavation volume of 2,644 cubic yards.

In 2005 CMC had Acadian Engineers & Environmental Consultants submit a Risk Evaluation Corrective Action Plan (RECAP) to LDEQ IASD. The RECAP was performed within the concept of the Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern at the site. CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval. To date no remediation has taken place at the site or nearby railroad. The site is currently void of any operations and consists of heavy timber and thick shrub overgrowth. Abandoned wood treatment facilities of the previous operations currently remain at the site and consist of a concrete foundation of a former vat, an unlined wastewater pit and random areas of creosote solids and soil contamination. One surface water runoff pathways exist at the facility, south along the western property boundary lateral to the railroad tracks right-of-way.

In April 2015, Superfund Technical Assessment and Response Team (START-3) CSS-Dynamac was tasked by EPA Region 6 to conduct a Site Investigation (SI) (Appendix E) then an Expanded Site Inspection (ESI) (Appendix F) in November 2016 at American Creosote DeRidder. These SI and ESI were conducted under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and

Reauthorization Act of 1986 (SARA). The purpose of these investigation were to collect information concerning conditions at the American Creosote sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation under CERCLA or other authority, and if appropriate, support for the site evaluation using the Hazard Ranking System (HRS) for proposal to the NPL (Appendix G).

During the field work conducted in June 2015 as part of the SI, START-3 personnel collected samples to assess possible migration pathways of on-site contamination, including the soil, groundwater and surface water migration pathways. Twenty-seven soil samples were collected from 10 borings and from a background location at up to 15 feet bgs to identify source material and contamination at the site. Groundwater was collected from three locations to assess the migration of contamination the groundwater pathway, and three surface water samples and four sediment samples were collected to assess the migration of contamination in the surface water pathway. Samples were submitted for analysis to KAP Technologies Inc. in the Woodlands, Texas for CLP Laboratory Target Compound List semi-volatile organic compounds and to Chemtech Consulting Group in Mountainside, New Jersey for TAL metals and mercury analysis.

2.4 POTENTIAL SOURCES OF HAZARDOUS MATERIALS

Information concerning the known or potential hazardous substance source areas at the Site and the COCs thought to be associated with each source is presented in the following section. Former Site activities that contributed to potential sources include the following areas identified in the American Creosote SI Report:

- Source #1: Concrete Structure
    - The concrete structure is located on the central western boundary of the property. The concrete structure is the former retort house form previous operations at the site. Due to the amount of pine forest and thick shrub overgrowth a complete survey of concrete structure has not be completed. The approximate dimensions of the concrete structure from observations made during the SI are 30 feet x 70 feet. There is approximately 24 inches of sediment on top of the concrete structure. Located within the concrete structure is a pit with a concrete bottom. Historically the pit has contained approximately five feet of water and no sediment.
    - Source #2: Oil / Water Separator - The oil/water separator is located just northwest and adjacent to the concrete structure. The oil/water separator is a concrete structure

and measures approximately five feet across with a center wall at approximately two and a half feet. The concrete structure of the oil/water separator is completely covered in creosote solids, contains stagnant water, and approximately 5 -10 feet of vegetation to the bottom.

- Source #3: Unlined Wastewater Pit – The unlined abandoned wastewater pit or pond, is located just west of the concrete (retort house) structure and east of the BNSF track, and was the waste pit for the creosote operations at the facility. The pit measures approximately 100 feet x 50 feet, with hardened creosote flanking the pit and adjacent to the pit. In 2014, the depth of the pit was measured to be approximately 8-10 inches deep.
- Source #4: Areas of Soil Contamination – All areas of soil contamination were aggregated together. Weather creosote material are approximate 1-4 inches thick in places on top of the surface soils in areas surrounding former processing areas and downgradient of the wash pit, and old drip area.
- Source #5: Creosote Pile – A weather pile of creosote waste is located north of the former facility, along an old railroad spur. The waste is the result of what was formerly the old drip area, when wood had been treated with creosote.

2.5 SITE CONCERNS

Site concerns regarding public health and the environment were determined based on the following site conditions.

- Based on previous on-site and off-site investigations, surface and subsurface soils were determined to contain concentrations of SVOCs and metals that exceeded industrial EPA Region 6 RSLs.
- Chance exposure to COCs by ingestion, skin absorption, and inhalation was determined to be a site concern.

The COCs for the site identified in the HRS are, but not limited to the following:

• 1,1'-Biphenyl
• 2-Methylnaphthalene
• Acenaphthene
• Acenaphthylene
• Anthracene
• Benzo (a) anthracene
• Benzo (a) pyrene
• Benzo (b) fluoranthene
• Benzo (g,h,i) perylene
• Benzo (k) fluoranthene

- Bis(2-ethylhexyl)phthalate
- Carbazole
- Chromium
- Chrysene
- Copper
- Dibenzo (a,h) anthracene
- Dibenzofuran
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Silver
- Zinc

3. SAMPLING APPROACH AND PROCEDURES

The specific field investigation activities to be conducted during the American Creosote Removal Assessment are described in the following subsections. Specifically, sampling procedures, locations, quality assurance (QA), and the analytical approach during the removal assessment are discussed. Relevant Standard Operating Procedures (SOPs) for field sampling methods are included as Appendix B to this QASP. START will use EPA SCRIBE software to manage sample data.

3.1 OVERVIEW OF SAMPLING ACTIVITIES

START and the EPA OSCs developed a sampling strategy intended to collect data necessary to evaluate and meet the objective of the removal assessment. START will collect up to approximately 6 grab soil/solid samples (including quality assurance/quality control samples) from the source areas, including:

- Source #1: Concrete Structure
- Source #2: Oil/Water Separator
- Source #3: Unlined Wastewater Pit
- Source #4 Areas of Soil Contamination
- Source #5 Creosote Piles

Figure 3-1 illustrates the locations of the proposed sampling locations. A Data Quality Objective (DQO), as well as an overview of the health and safety and field activities required to complete removal assessment activities, are presented in the following subsections.

3.1.1 Data Quality Objective

The objective of soil sampling is to further define the nature and extent of site-related COCs in surface and subsurface soils at the Site. To accomplish this, a DQO for determining the extent of site-related contaminated soil has been established and is included as Appendix A. The DQO presented was developed using the seven-step process set out in the *EPA Guidance on Systematic*

Planning Using the Data Quality Objectives Process: EPA QA/G-4. Soil sample locations were selected systematically to further delineate the potential for contaminant hotspots.

3.1.2 Health and Safety Implementation

The field activities will be conducted in accordance with a site-specific Health and Safety Plan (HASP). The FSO will be responsible for implementation of the HASP during field investigation activities. The field team will be required to conduct work according to the guidelines and requirements of the HASP. In accordance with the general health and safety operating procedures, the field team will also drive the route to the hospital specified in the HASP prior to initiating sampling activities.

3.1.3 Community Relations

Community relations may require additional EPA involvement due to the general nature of the site. Community relations issues will be directed to the EPA OSCs. If the EPA OSCs are not present, the START PTL, under the guidance of the SOW Leader, will manage community relations in the field as directed by the EPA OSCs. If a community relations plan and an implementation program become necessary, START will establish each if requested by the EPA OSCs.

3.1.4 Field Activities Review Meeting

The PTL will conduct a meeting with the entire field team to familiarize them with the project scope of work, discuss the planned field activities and roles and responsibilities, and review the project HASP and other relevant SOPs. This meeting will be conducted prior to any site activities.

3.2 SAMPLING/MONITORING APPROACH

Sampling will be conducted in general accordance with the *EPA Compendium of Emergency Response Team (ERT) Soil Sampling and Surface Geophysics Procedures* and with EPA ERT and START SOPs (Appendix B). WESTON SOPs include SOP No. 0110.01 and 1001.10 (Surface Soil Sampling and Composite Sampling). The specific site preparation, sampling, decontamination, and sample handling procedures, including disposition of investigation-derived

waste (IDW), are described in the following subsections. The following subsections also include the proposed sampling, sample handling procedures, and field quality control (QC) samples for the removal assessment activities. The EPA OSCs will be notified and concurrence requested if significant deviations from the planned sampling activities are proposed. Details regarding deviations from the QASP will be documented in the START site logbook.

3.2.1 Site Reconnaissance and Soil Sampling

The EPA OSCs and START developed a sampling strategy consisting of biased grab samples from within each identified source area (Figure 3-1). START will collect approximately 6 soil samples (including QA/QC samples) the five source locations.

At each designated location, START will utilize trowels, hand augers, or slam bars to collect soil samples. Depth of sample collection will be determined by the site team after investigating the locations. Potential depth intervals will be: 0 to 6 inches below ground surface (bgs), 6 to 12 inches bgs, 12 to 18 inches bgs, and 18 to 24 inches bgs. Samples will be submitted to an EPA-approved laboratory for analysis. Table 3-1 describes the laboratory-required sample containers, preservation techniques, sample volumes, and holding times.

3.2.2 Field Quality Control Samples

START will collect field duplicates and matrix spike (MS)/matrix spike duplicate (MSD) samples and prepare equipment rinsate blank samples as needed during the removal assessment (SOP 1005.01). QA/QC samples will be collected according to the following:

- Blind field duplicate samples will be collected during sample activities at locations selected by the PTL. The data obtained from these samples will be used to ensure the quality assurance of the sampling procedures and laboratory analytical data by following an evaluation of reproducibility of results. Efforts will be made to collect duplicate samples from an area co-located from the original sample location where there is visual evidence of contamination or where contamination is suspected. One duplicate sample will be collected for every 10 samples of the same matrix.
- MS/MSD samples will be collected during the sample activities for locations selected by the PTL. The data obtained from these samples will be used to ensure the QA of the sampling procedures and laboratory analytical data by following an evaluation of reproducibility of

results. Efforts will be made to collect MS/MSD samples from an area co-located from the original sample location where there is visual evidence of contamination or where contamination is suspected. One MS and one MSD sample will be collected for every 20 samples of the same matrix.

- Equipment rinsate blanks will be prepared by pouring laboratory-grade de-ionized water over non-disposable sampling equipment after it has been decontaminated and by collecting the rinse water in sample containers for analyses. These samples will be prepared to demonstrate that the equipment decontamination procedures for the sampling equipment were performed effectively. The equipment rinsate blanks will be prepared at the end of each day that non-disposable sampling equipment is used.
- Temperature Blanks will be prepared in the field and will consist of one 40-milliliter glass sample container with a Teflon-lined septum cap. The temperature blank will be packaged along with the field samples in the shipping cooler and will represent the temperature of the incoming cooler upon receipt at the laboratory. Use of these samples within a shipping container enables the laboratory to assess the temperature of the shipment without disturbing any of the field samples.

3.2.3 Investigation-Derived Wastes

Disposal of IDW such as personal protective equipment (PPE) will be the responsibility of the sampling team. Excess soil generated during sampling activities will be returned to the location where it was collected from the ground. The IDW will be managed according to EPA's Management of Investigation-Derived Wastes during Site Inspections (EPA/540/G-9/009) and other applicable state requirements and regulations. Following completion of sampling activities, disposable sampling equipment and PPE will be double-bagged for disposal. Minimal amounts of IDW is anticipated to be generated during this activity.

3.2.4 Sample Handling Procedures

Samples will be collected using equipment and procedures appropriate to the matrix, parameters, and sampling objectives. The volume of the sample collected must be sufficient to perform the analysis requested. Samples must be stored in the proper types of containers and preserved in a manner for the analysis to be performed (SOP 1001.01, 1001.10).

Clean, decontaminated sampling equipment and sample containers will be maintained in a clean, segregated area. Samples will be collected with clean decontaminated equipment (SOP 1201.01).

Each sample collected for laboratory analysis will be placed directly into pre-cleaned, unused containers. Sampling personnel will change gloves between each sample collection/handling. Samples will be assembled and catalogued prior to shipping (SOPs 1101.01 and 1102.01) to the designated laboratory.

3.3 SAMPLE MANAGEMENT

Specific nomenclature, used by START, will provide a consistent means of facilitating the sampling and overall data management for the project (SOP 0110.05). The START Scope of Work Leader must approve any deviations from the sample nomenclature proposed below.

As stated in SOP 0110.05, sample nomenclature will follow a general format regardless of the type or location of the sample collected. The general nomenclature consists of the following components:

- Property/Site Identification (ID)
- Area of Concern
- Sample Collection Date
- Sample Collection Depth
- Collection Type (Soil, Field QC, etc.)
- QA/QC Type (Normal, Duplicate, etc.)

The following presents the sample nomenclature for analytical samples that will generate unique sample names compatible with data management systems. Sample nomenclature is based on specific requirements for reporting these results.

SAMPLE NOMENCLATURE - SOIL

Property ID - Grid ID – Date - Depth - Collection Type + QC Type

Property ID: An identifier used to designate the particular property or Area of Concern (AOC) where the sample was collected (AC – American Creosote).

Area of Concern: A three-character alphanumeric code used to designate the particular grid or station within the AOC where the sample was collected.

- Source 1 = 1CS – Concrete Structure
- Source 2 = 2OW – Oil/Water Separator
- Source 3 = 3WP – Wastewater Pit
- Source 4 = 4SC – Soil Contamination
- Source 5 = 5CP – Creosote Piles
- An additional numeric code afterward signifies that number of sample collected from the AOC. For example 5CP1 (the first sample from 5CP) and 4SC3 (the third sample from 4SC)

Date: An identifier used to designate the year, month, and date when the sample was collected (yyyymmdd).

Depth: A two-digit code used to designate what depth of sample was collected:

06	0 to 6 inches
12	6 to 12 inches
18	12 to 18 inches
24	18 to 24 inches

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water	6	Oil
2	Groundwater	7	Waste
3	Leachate	8	Other
4	Field QC/Water Sample	9	Drinking Water
5	Soil	0	Sediment

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal	6	Confirmation
2	Duplicate	7	Confirmation Duplicate
3	Rinsate Blank		
4	Trip Blank		
5	Field Blank		

Examples:

- ***AC-5CP1-20191015-06-51***: Represents one normal soil sample collected from source #5 (creosote pit) 15 October 2019 at a depth of 0 to 6 inches bgs.
- ***AC-3WP2-20191015-06-51***: Represents the second normal soil sample collected from source #3 (waste pit) 15 October 2019 at a depth of 0 to 6 inches bgs.

Sample data management will be completed utilizing SCRIBE including chain-of-custody and sample documentation needs.

3.4 DECONTAMINATION

The non-disposable sampling equipment, if any, (hand trowels, stainless steel bowls, Geoprobe®coring shoe, etc.) used during the sample collection process will be thoroughly pre-cleaned before initial use, between use, and at the end of the field investigation. Equipment decontamination, as described in SOP 1201.01, will be completed in the following steps:

- Water spray or brush, if needed, to remove soil/sediment from the equipment.
- Nonphosphate detergent and potable water wash to clean the equipment.
- Final potable water rinse.
- Equipment air-dried.

Personnel decontamination procedures will be described in the site-specific HASP that will be prepared by START prior to implementation of activities at the site. Decontamination activities will be conducted at a temporary decontamination pad that will be constructed/designated in an area to be determined by the PTL. Any excess soil and/or fluids generated, resulting from equipment decontamination, will be placed in a drum and staged in an area that the OSCs have designated. The drum will be labelled on the side with the name of the site, the contents, sampling location, and date.

3.5 SAMPLE PRESERVATION, CONTAINERS, AND HOLD TIMES

Sample preservation, containers, and holding times utilized during this removal assessment will be consistent with analytical methods and laboratory volume requirements as provided in Table 3-1. Once collected and placed in their appropriate sample containers, samples will be stored in coolers and kept at approximately 4° C while at the site and until they are submitted for analysis. Chain-of-custody (C-O-C) forms will be completed for each sample shipment and sent with the samples to the designated laboratory (ALS Laboratory) via FedEx carrier or by field personnel. Samples that have been analyzed will be disposed of by the designated laboratory in accordance with the laboratory SOPs.

Table 3-1
Requirements for Containers, Preservation Techniques,
Sample Volumes, and Holding Times
American Creosote DeRidder Removal Assessment
DeRidder, Beauregard Parrish, Louisiana

Name	Analytical Methods	Matrix	Container	Preservation	Minimum Volume or Weight	Maximum Holding Time
Dioxins / Furans	SW846 8290	Soil	1 x 4-oz glass jar	4°C	30 grams	14 days
SVOCs	SW846 8270B	Soil	1 x 4-oz glass jar	4°C	30 grams	14 days
TAL Metals + Merucry	SW846 6020/7470	Soil	1 x 4-oz glass jar	4°C	20 grams	180 days

Notes: mL - milliliters

4. ANALYTICAL METHODS AND DATA VALIDATION

Soil samples will be submitted to a laboratory for analytical analysis. Sample analysis will be specified on the chain-of-custody and will include the following methods on all samples submitted (see Table 3-1):

- Dioxins / Furans by EPA SW846 Method 8290A
- Semi-volatile organic compounds by EPA SW846 Method 8270D
- TAL Metals by EPA SW846 Method 6020/7470

The laboratory and shipping information are as follows:

ALS Environmental
10450 Stancliff Road #210
Houston, Texas 77099
(281) 530-5656

Table 4-1
Sample Description and Rationale
American Creosote DeRidder Removal Assessment
DeRidder, Beauregard Parrish, Louisiana

Sample Location	Sample Collection Method	Sample Depth	No. of Samples	Rationale	EPA Analytical Method
Soil[1]	Disposable Scoop Hand Trowel and/or Hand Auger	Down to 24 inches bgs	Approximately 6 soil samples[1]	To document the presence of site-specific contaminants of concern in subsurface soil.	Dioxins / Furans - EPA SW846 Method 8290 TAL Metals – EPA SW846 Method 6020/7470 SVOC – EPA SW846 Method 8270D

Notes: Soil[1] Samples – Approximately 9 Normal and 1 QA/QC samples including field duplicates and MS/MSD samples.

Following analysis, the laboratory will provide preliminary data via email in PDF. The final data deliverable will include a full Contract Laboratory Program (CLP)-like data package (Level IV data package with QC and raw data) in PDF and a final Electronic Data Deliverable (EDD) in Microsoft Excel format. Initial data deliverables (preliminary results) will be based on a standard, 5-business-day Turn-around Time (TAT) starting when the laboratory receives the samples, unless otherwise directed by the EPA OSCs. The TAT criteria will be initiated when the sample group is received by the laboratory and continues until the data deliverable is submitted to START. The final Level IV data deliverable will be submitted by the laboratory based on a 5-business-day TAT.

START will validate the analytical data generated by the laboratory and provide an evaluation of QA/QC samples for reporting purposes. Data validation will be conducted in accordance with the EPA CLP *National Functional Guidelines for Inorganic Superfund Data Review (January 2017)*. A summary of the data validation findings will be presented in Data Validation Summary Reports as part of the final report. The following will be evaluated to verify that the analytical data is within acceptable QA/QC tolerances:

- The completeness of the laboratory reports, verifying that required components of the report are present and that the samples indicated on the accompanying chain-of-custody are addressed in the report.
- The calibration and tuning records for the laboratory instruments used for the sample analyses.
- The results of internal standards analyses.
- The results of laboratory blank analyses.
- The results of laboratory control sample (LCS) analyses.
- The results of MS/MSD analyses.
- The results of surrogate recovery analyses.
- Compound identification and quantification accuracy.
- Laboratory precision, by reviewing the results for blind field duplicates.
- Variances from the QA/QC objectives will be addressed as part of the Data Validation Summary Reports.

5. QUALITY ASSURANCE

Quality assurance will be conducted in accordance with the WESTON Corporate Quality Management Manual and the WESTON Programmatic Quality Assurance Project Plan (QAPP). Following receipt of the TDD from EPA, a Quality Control officer will be assigned and will monitor work conducted throughout the entire project including reviewing interim report deliverables and field audits. The START PTL will be responsible for QA/QC for the field investigation activities. The designated laboratory utilized during the investigation will be responsible for QA/QC related to the analytical work. START personnel will also collect samples to verify that laboratory QA/QC is consistent with the required standards and to validate the laboratory data received.

5.1 SAMPLE CUSTODY PROCEDURES

Because of the evidentiary nature of sample collection, the possession of samples must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. After sample collection and identification, samples will be maintained under C-O-C procedures. If the sample collected is to be split (laboratory QC), the sample will be allocated into similar sample containers. Sample labels completed with the same information as that on the original sample container will be attached to each of the split samples. Personnel required to package and ship coolers containing potentially hazardous material will be trained accordingly.

START personnel will prepare and complete C-O-C forms using the SCRIBE environmental sampling data management system for all samples sent to a START-designated off-site laboratory. The C-O-C procedures are documented and made available to personnel involved with the sampling. A typical C-O-C record is completed each time a sample or group of samples is prepared for shipment to the laboratory. The record will repeat the information on each sample label and serve as documentation of handling during shipment. A copy of this record will remain with the shipped samples at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples. During the project and at its completion, the Data Manager will publish the SCRIBE file to SCRIBE.net to establish a permanent record of the samples collected and the data resulting in the analysis of those samples.

Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

- Samples will be accompanied by the C-O-C record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. The custody record documents the transfer of sample custody from the sampler to another person or to the laboratory.
- Samples will be properly packed for shipment and dispatched to the appropriate laboratory for analysis with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be custody-sealed for shipment to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be sealed to ensure that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape.
- If sent by common carrier, a bill of lading or air bill will be used. Bill of lading and air-bill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer.

SOPs 1101.01 and 1102.01 describe these procedures in more detail.

5.2 PROJECT DOCUMENTATION

Documents will be completed legibly in ink as well as by entry into field logbooks, Response Manager, or SCRIBE. Response Manager is the Enterprise Data Collection System designed to provide near real-time access to data normally collected in logbooks. Response Manager provides a standard data collection interface for modules of data normally collected by START field personnel while on-site. These modules fall into two basic categories for response and removal. The modules include Emergency Response, Reconnaissance, Facility Assessment, Shipping, Container, Materials, Calls, Household Hazardous Waste (HHW), and General/Site-Specific Data. The system provides users with a standard template for laptop/desktop/tablet personal computers (PC) that will synchronize to the secure web interface using merge replication technology to provide access to collected data via the RRC-EDMS EPA Web Hub. Response Manager also includes an integrated Global Positioning System (GPS) unit with the secure personal digital assistant (PDA) application, and the coordinates collected in Response Manager are automatically

mapped on the RRC-EDMS interactive mapping site. GIS personnel can access this data to provide comprehensive site maps for decision-making support.

Response Manager also includes an analytical module that is designed to give SCRIBE users the ability to synchronize the SCRIBE field data to the RRC-EDMS Web Hub. This allows analytical data managers and data validators access to data to perform reviews from anywhere with an available Internet connection. The analytical module is designed to take the analytical data management functionality of the EPA SCRIBE software and make it available for multiple users to access on one site. Response Manager also supports EPA standards such as staged electronic data deliverable (SEDD) and will allow users to connect to the database using the SCRIBE desktop interface, thus providing normal SCRIBE desktop-like functionality for multiple users.

5.3 FIELD DOCUMENTATION

The following field documentation will be maintained as described below.

Field Logbook

The field logbook is a descriptive notebook detailing site activities and observations so that an accurate, factual account of field procedures may be reconstructed. Each individual will sign any entry he/she makes. Entries will include, at a minimum, the following:

- Site name and project number.
- Names of on-site personnel.
- Dates and times of all entries.
- Description of all site activities, including site entry and exit times.
- Noteworthy events and discussions.
- Weather conditions.
- Site observations.
- Identification and description of samples and locations.
- Subcontractor information and names of on-site personnel.
- Dates and times of sample collections and chain-of-custody information.
- Records of photographs.
- Site sketches.

- Calibration results.
- Sample Labels.

Sample labels will be securely affixed to the sample container. The labels will clearly identify the particular sample and will include the following information:

- Site name and project number.
- Date and time the sample was collected.
- Sample preservation method.
- Analysis requested.
- Sampling location.
- Chain-of-Custody Record

A chain-of-custody will be maintained from the time of sample collection until final deposition. Every transfer of custody will be noted and signed for and a copy of each record will be kept by the signing individual. The chain-of-custody is discussed in Subsection 5.1 Sample Custody Procedures.

Custody Seal

Custody seals demonstrate that a sample container has not been tampered with or opened. The individual who has custody of the samples will sign and date the seal and affix it to the container in such a manner that it cannot be opened without breaking the seal.

Photographic Documentation

START personnel will take photographs to document site conditions and activities as work progresses. Initial conditions should be well documented by photographing features that define the site-related contamination or special working conditions. Representative photographs should be taken of each type of site activity. The photographs should show typical operations and operating conditions as well as special situations and conditions that may arise during site activities. Site final conditions should also be documented as a record of how the site appeared at completion of the work.

Photographs should be taken with a digital camera capable of recording the date on the image. Each photograph will be recorded in the logbook and within Response Manager with the location of the photographer, direction the photograph was taken, the subject of the photograph, and its significance (i.e., why the picture was taken). Where appropriate, the photograph location, direction, and subject will also be shown on a site sketch and recorded within Response Manager. This same level of photographic detail will be practiced when recording metadata on the ArcGIS Survey123 app.

5.4 RESPONSE MANAGER

START will use the Response Manager module located on the EPA Web Hub, https://solutions.westonproject.net/epawebhub/, to collect and organize the data collected from project activities. The information to be included encompasses some or all of the following depending on the specific project needs:

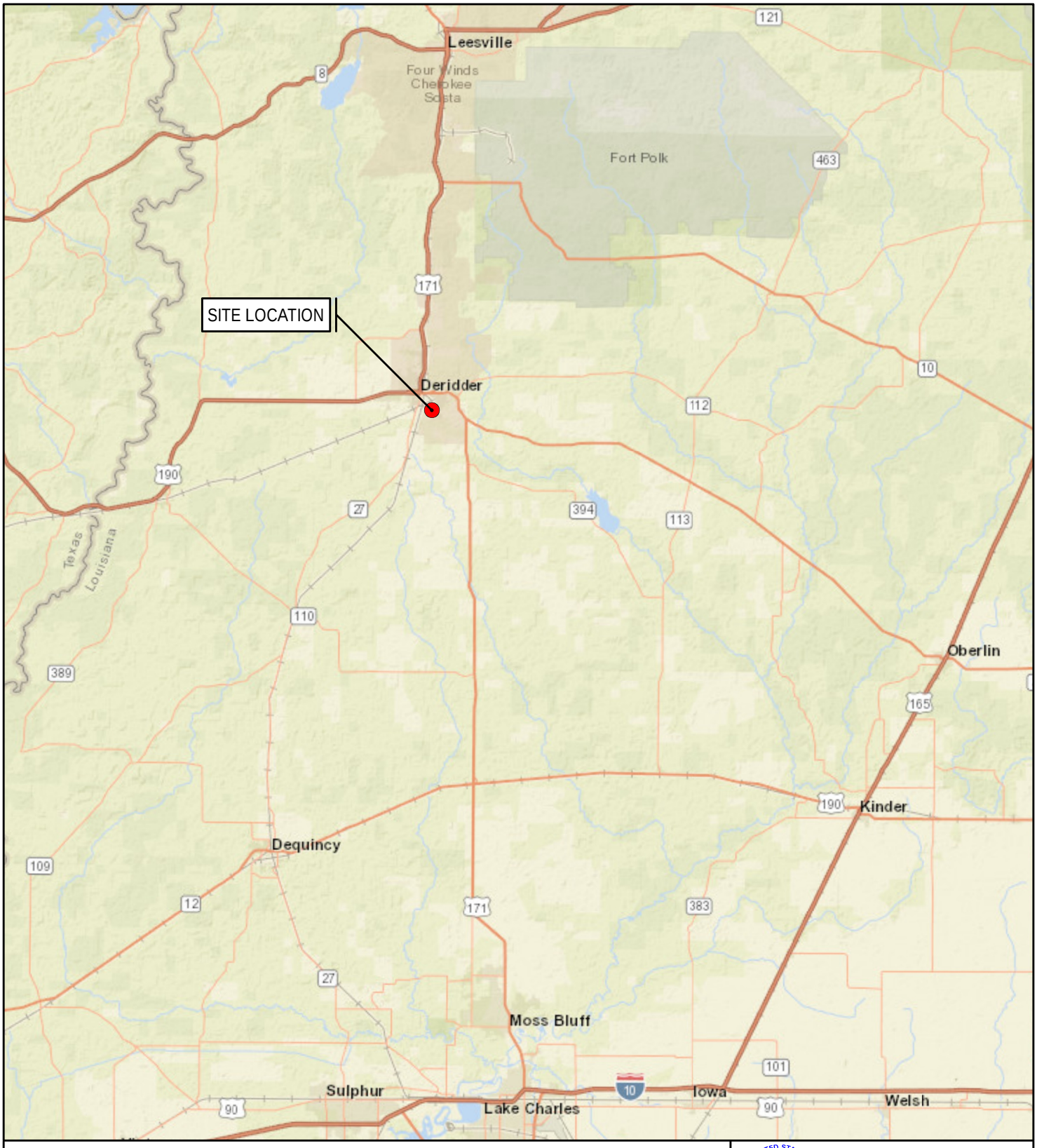
- General Module – Site-specific data including location and type of site. It also includes an area for all key site locations including geo-spatial data associated with the key site locations.
- Emergency Response Module – includes the following sub-modules: Basic Info, HAZMAT, Release, Timeline Log, Incident Zones, Photos, Sensitive Receptors, Evacuations, Source, Cause, and Weather.
- Reconnaissance Module – provides standard templates with the flexibility of adding any additional questions or values to the drop-down lists for targeted reconnaissance efforts. Typically, the data in this module is associated with ESF-10 deployments and the cleanup of orphaned containers and hazardous debris, but the module can be utilized for any reconnaissance activities and combined with all activities.
- Facility Assessment Module - provides standard templates with the flexibility of adding any additional questions or values to the drop-down lists for assessments of structures. Typically utilized for EPA-regulated program facilities during an ESF-10 deployment of resources. This module can be utilized to track the assessment of any facilities including multiple assessments of the fixed facilities.
- Shipping Module – provides standard templates for creating a cradle-to-grave record of all waste shipments from the site until they are recycled or destroyed. This includes the ability to capture manifest and manifest line items, and upload photos/original documents to support the records.

- Container Module – provides standard templates for cataloging containers including HAZCAT and Layer information in each container. The module also allows for tracking which containers are bulked.
- Properties Module – provides standard templates with the flexibility of adding any additional questions or values to the drop-down lists for collection of property data including access agreements and assessments of the property and current status of property with regard to the site removal action.
- Materials Module – provides standard templates for tracking materials that are brought on-site or that are removed from the site.
- Daily Reports – provides standard templates for tracking daily site activities, daily site personnel, and daily site notes for reporting back to the OSCs in a pollution report (POLREP) or situation report (SITREP).
- HHW Module - provides standard templates with the flexibility of adding any additional questions or values to the drop-down lists for tracking the amount of HHW collected at individual collection stations by HHW type.
- Data Files – data files can be uploaded in the photo module section and be associated with individual records or with the site in general. The metadata associated with that data file can be filled in using the photo log fields.

The data stored in the Response Manager database can be viewed and edited by any individual with access rights to those functions. At any time deemed necessary, POLREP and/or SITREPs can be generated by exporting the data out of Response Manager into Microsoft Excel/Word. The database is stored on a secure server and backed up regularly.

5.5 REPORT PREPARATION

At the completion of the project, START personnel will review and validate laboratory data and prepare a draft report of field activities and analytical results for EPA OSCs review. Draft deliverable documents will be uploaded to the EPA TeamLink website for EPA OSCs review and comment.



LEGEND

- SITE LOCATION

N

0 8 16

MILES

SOURCE: © WORLD STREET MAP, ESRI

TDD: 0001/19-286
SEMS: LAN000604293
SSID: A6KM

USEPA REGION 6

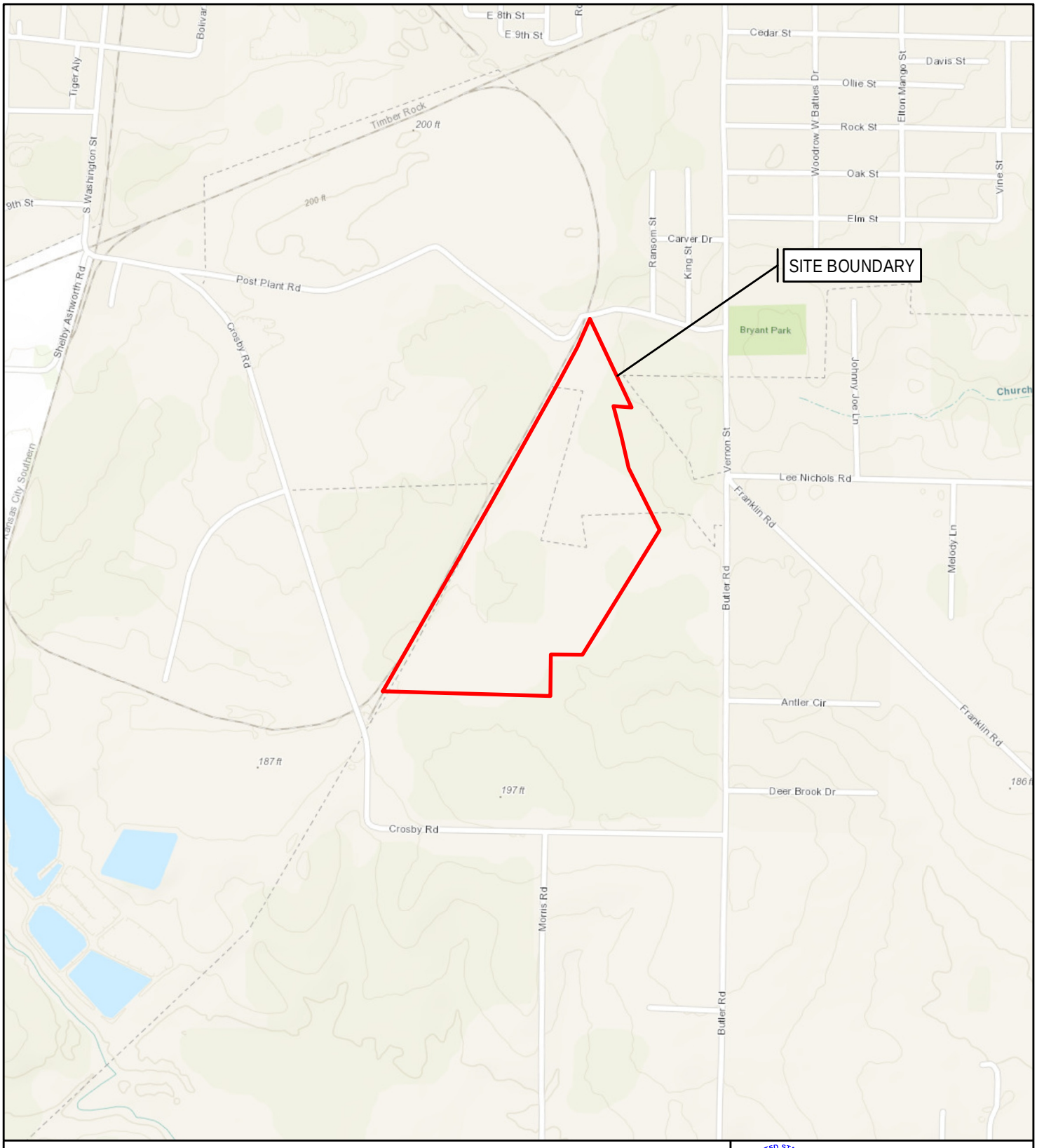
FIGURE 1-1

SITE LOCATION MAP

AMERICAN CREOSOTE DERIDDER
POST PLANT ROAD
DERIDDER, BEAUREGARD PARISH, LOUISIANA

DATE	PROJECT NO	SCALE
OCTOBER 2019	20600.012.001.1286	AS SHOWN

FILE: D:\EPA\Region 6 START IV\Superfund\American Creosote\mxd\Figure 1-1 Site Location Map.mxd 2:43:16 PM 10/7/2019 wilderj



LEGEND

SITE BOUNDARY

N

0 1,000 2,000

FEET

SOURCE: © WORLD TOPOGRAPHIC MAP, ESRI

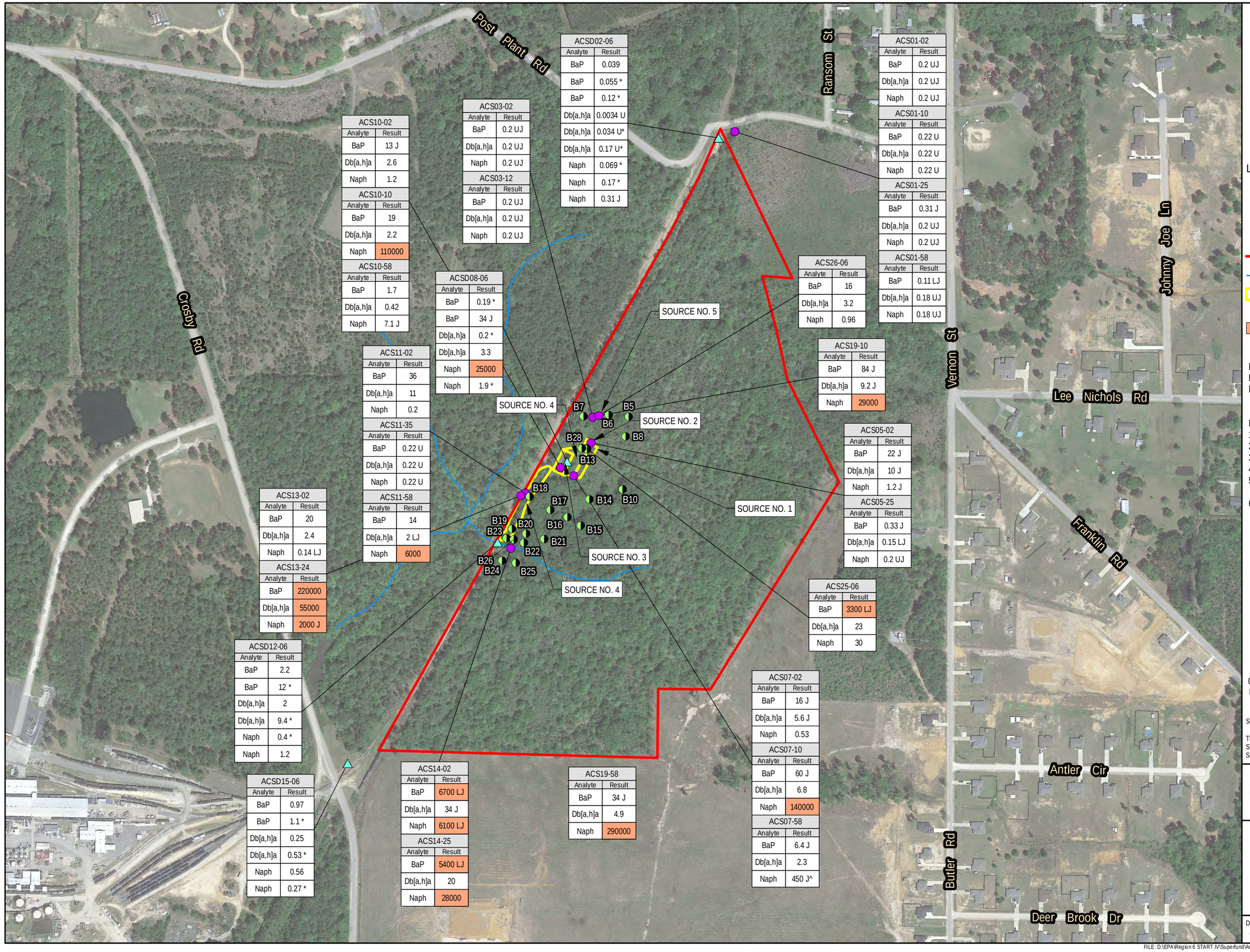
TDD: 0001/19-286
SEMS: LAN000604293
SSID: A6KM

USEPA REGION 6

FIGURE 2-1
SITE AREA MAP
AMERICAN CREOSOTE DERIDDER
POST PLANT ROAD
DERIDDER, BEAUREGARD PARISH, LOUISIANA

DATE	PROJECT NO	SCALE
OCTOBER 2019	20600.012.001.1286	AS SHOWN

FILE: D:\EPA\Region 6 START IV\Superfund\American Creosote\mxd\Figure 2-1 Site Area Map.mxd 2:42:29 PM 10/7/2019 wilderj



ACSD02-06	
Analyte	Result
BaP	0.039
BaP	0.055 *
BaP	0.12 *
Db[a,h]a	0.0034 U
Db[a,h]a	0.034 U*
Db[a,h]a	0.17 U*
Naph	0.069 *
Naph	0.17 *
Naph	0.31 J

ACS01-02	
Analyte	Result
BaP	0.2 UJ
Db[a,h]a	0.2 UJ
Naph	0.2 UJ

ACS01-10	
Analyte	Result
BaP	0.22 U
Db[a,h]a	0.22 U
Naph	0.22 U

ACS01-25	
Analyte	Result
BaP	0.31 J
Db[a,h]a	0.2 UJ
Naph	0.2 UJ

ACS01-58	
Analyte	Result
BaP	0.11 LJ
Db[a,h]a	0.18 UJ
Naph	0.18 UJ

ACS10-02	
Analyte	Result
BaP	13 J
Db[a,h]a	2.6
Naph	1.2

ACS10-10	
Analyte	Result
BaP	19
Db[a,h]a	2.2
Naph	110000

ACS10-58	
Analyte	Result
BaP	1.7
Db[a,h]a	0.42
Naph	7.1 J

ACS03-02	
Analyte	Result
BaP	0.2 UJ
Db[a,h]a	0.2 UJ
Naph	0.2 UJ

ACS03-12	
Analyte	Result
BaP	0.2 UJ
Db[a,h]a	0.2 UJ
Naph	0.2 UJ

ACSD08-06	
Analyte	Result
BaP	0.19 *
BaP	34 J
Db[a,h]a	0.2 *
Db[a,h]a	3.3
Naph	25000
Naph	1.9 *

ACS26-06	
Analyte	Result
BaP	16
Db[a,h]a	3.2
Naph	0.96

ACS19-10	
Analyte	Result
BaP	84 J
Db[a,h]a	9.2 J
Naph	29000

ACS11-02	
Analyte	Result
BaP	36
Db[a,h]a	11
Naph	0.2

ACS11-35	
Analyte	Result
BaP	0.22 U
Db[a,h]a	0.22 U
Naph	0.22 U

ACS11-58	
Analyte	Result
BaP	14
Db[a,h]a	2 LJ
Naph	6000

ACS05-02	
Analyte	Result
BaP	22 J
Db[a,h]a	10 J
Naph	1.2 J

ACS05-25	
Analyte	Result
BaP	0.33 J
Db[a,h]a	0.15 LJ
Naph	0.2 UJ

ACS13-02	
Analyte	Result
BaP	20
Db[a,h]a	2.4
Naph	0.14 LJ

ACS13-24	
Analyte	Result
BaP	220000
Db[a,h]a	55000
Naph	2000 J

ACS25-06	
Analyte	Result
BaP	3300 LJ
Db[a,h]a	23
Naph	30

ACSD12-06	
Analyte	Result
BaP	2.2
BaP	12 *
Db[a,h]a	2
Db[a,h]a	9.4 *
Naph	0.4 *
Naph	1.2

ACS07-02	
Analyte	Result
BaP	16 J
Db[a,h]a	5.6 J
Naph	0.53

ACS07-10	
Analyte	Result
BaP	60 J
Db[a,h]a	6.8
Naph	140000

ACS07-58	
Analyte	Result
BaP	6.4 J
Db[a,h]a	2.3
Naph	450 J^

ACSD15-06	
Analyte	Result
BaP	0.97
BaP	1.1 *
Db[a,h]a	0.25
Db[a,h]a	0.53 *
Naph	0.56
Naph	0.27 *

ACS14-02	
Analyte	Result
BaP	6700 LJ
Db[a,h]a	34 J
Naph	6100 LJ

ACS14-25	
Analyte	Result
BaP	5400 LJ
Db[a,h]a	20
Naph	28000

ACS19-58	
Analyte	Result
BaP	34 J
Db[a,h]a	4.9
Naph	290000

LEGEND

- SEDIMENT SAMPLE LOCATION (ESI)
- SOIL SAMPLE LOCATION (ESI)
- SOIL SAMPLE LOCATION (2005 ACADIAN RECAP REPORT)
- SITE BOUNDARY
- SURFACE WATER PATHWAY
- SOURCE AREAS
- RESULTS ABOVE REGIONAL REMOVAL MANAGEMENT LEVELS (HQ=3) FOR INDUSTRIAL SOIL

BaP - Benzo[a]pyrene
Db[a,h]a - Dibenz[a,h]anthracene
Napth - Naphthalene

NOTE:
1. Results reported in milligrams / kilogram (mg/kg)
2. Analyte shorten due to space limitations
3. Sample depths in feet (Ft)
4. U - The analyte was not detected
5. J - The analyte was analyzed for, but the value is an estimated quantity
6. L - The result is an estimated quantity, but the result may be biased low

N

0 400 800

FEET

SOURCE: © GOOGLE EARTH, 2018

TDD: 0001/19-286
SEMS: LAN000604293
SSID: A6KM

USEPA REGION 6

FIGURE 2--2
SITE LAYOUT MAP
AMERICAN CREOSOTE DERIDDER
POST PLANT ROAD
DERIDDER, BEAUREGARD PARISH, LOUISIANA

DATE	PROJECT NO	SCALE
OCTOBER 2019	20600.012.001.1286	AS SHOWN

FILE: D:\EPA\Region 6 START IV\Superfund\American Creosote\mxd\Figure 2-2 Site Layout Map.mxd 6:17:02 PM 10/8/2019 wilder

LEGEND

SITE BOUNDARY

N

0 300 600

FEET

SOURCE: © GOOGLE EARTH, 2018

TDD: 0001/19-286
SEMS: LAN000604293
SSID: A6KM

USEPA REGION 6

FIGURE 3-1
SAMPLE LOCATION MAP
AMERICAN CREOSOTE DERIDDER
POST PLANT ROAD
DERIDDER, BEAUREGARD PARISH, LOUISIANA

DATE	PROJECT NO	SCALE
OCTOBER 2019	20600.012.001.1286	AS SHOWN

FILE: D:\EPA\Region 6 START IV\Superfund\American Creosote\mxd\Figure 3-1 Sample Location Map.mxd 2:45:25 PM 10/7/2019 wilderj

APPENDIX A

SITE-SPECIFIC DATA QUALITY OBJECTIVES

Appendix A
Site-Specific Data Quality Objective
American Creosote DeRidder Removal Assessment
DeRidder, Beauregard Parish, Louisiana

STEP 1. STATE THE PROBLEM	
Former site operations, associated with the American Creosote DeRidder site, have resulted in site-related contaminated soil that was identified as a risk to human health and the environment. Soil results will be compared to the minimum concentrations listed in EPA Regional Removal Management Levels (RML) and Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) of pre-selected analytes. Documented constituents of concern (COCs) include: TAL Metals and mercury, SVOC, Dioxin/Furans. A removal assessment will be conducted to determine the nature and extent of potential site-related COCs in both the surface and subsurface soils at the site.	
STEP 2. IDENTIFY THE DECISION	
Soil samples will be collected from various locations within and around the American Creosote DeRidder site to determine whether COCs are present and above specified action levels.	
IDENTIFY THE ALTERNATIVE ACTIONS THAT MAY BE TAKEN BASED ON THE DECISIONS.	• If concentrations of COCs in soil samples collected from a grid exceed the EPA RMLS AND LDEQ RECAP, then that sample will be considered contaminated and require additional attention. • If concentrations of COCs in soil samples collected from a grid do not exceed the EPA RMLS AND LDEQ RECAP, then the media represented by that sample will not require additional attention.
STEP 3. IDENTIFY INPUTS TO THE DECISION	
IDENTIFY THE INFORMATIONAL INPUTS NEEDED TO RESOLVE A DECISION.	• Contaminant concentrations in soil samples collected from the American Creosote DeRidder site.
IDENTIFY THE SOURCES FOR EACH INFORMATIONAL INPUT AND LIST THE INPUTS THAT ARE OBTAINED THROUGH ENVIRONMENTAL MEASUREMENTS.	• The sample area is biased based on previously identified source areas of contamination: . • Analytical results obtained from the subcontracted laboratory following EPA SW846 Method 6020/6010B/7471A.
BASIS FOR THE CONTAMINANT SPECIFIC ACTION LEVELS.	• The site action levels as noted in Subsection 1.1 of the QASP.
IDENTIFY POTENTIAL SAMPLING TECHNIQUES AND APPROPRIATE ANALYTICAL METHODS.	• Soil sampling techniques are described in the QASP. • EPA SW846 Method 6020/6010B/7471A
STEP 4. DEFINE THE BOUNDARIES OF THE STUDY	
DEFINE THE DOMAIN OR GEOGRAPHIC AREA WITHIN WHICH ALL DECISIONS MUST APPLY.	• The soils within the grids in the sample grid map (Figure 3-1).
SPECIFY THE CHARACTERISTICS THAT DEFINE THE POPULATION OF INTEREST.	• Contaminant concentrations in on-site soil.
DEFINE THE SCALE OF DECISION MAKING.	• The scale of decision will be for soil represented by each sample collected from the site.

Appendix A
Site-Specific Data Quality Objective
American Creosote DeRidder Removal Assessment
DeRidder, Beauregard Parish, Louisiana
(Continued)

STEP 4. DEFINE THE BOUNDARIES OF THE STUDY (continued)	
DETERMINE THE TIME FRAME TO WHICH THE DATA APPLY.	• The data will apply until the soil represented by the samples receives appropriate response actions.
DETERMINE WHEN TO COLLECT DATA.	• Samples will be collected during the American Recycling Removal Assessment planned to begin August 2019.
IDENTIFY PRACTICAL CONSTRAINTS ON DATA COLLECTION.	• Inclement weather • Access not attainable • Equipment malfunction • Debris in soils
STEP 5. DEVELOP A DECISION RULE	
SPECIFY THE PARAMETER THAT CHARACTERIZES THE POPULATION OF INTEREST.	• Detection of COCs in the soil samples by analytical testing to confirm concentrations in the pathway that exceed the EPA RMLs AND LDEQ RECAP.
SPECIFY THE ACTION LEVEL FOR THE DECISION.	• Regional Removal Management Level (RML) Composite Worker Soil Table (TR=1E-04, HQ=1) April 2019 for on-site samples. • Regional Removal Management Level (RML) Resident Soil Table (TR=1E-04, HQ=1) April 2019 for off-site samples. • Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) October 2003 Screening Standards for Soil and Groundwater
STEP 6. SPECIFY LIMITS ON DECISION ERRORS	
DEVELOP A DECISION RULE.	• If any result in the soil sample is above the EPA RMLs AND LDEQ RECAP, then the area represented by that soil sample will require additional attention; otherwise, the sampled area does not require additional attention.
DETERMINE THE POSSIBLE RANGE OF THE PARAMETER OF INTEREST.	• Contaminant concentrations may range from 0 mg/kg to more than the contaminant specific action level.

Appendix A
Site-Specific Data Quality Objective
American Creosote DeRidder Removal Assessment
DeRidder, Beauregard Parish, Louisiana
(Continued)

DEFINE BOTH TYPES OF DECISION ERRORS AND IDENTIFY THE POTENTIAL CONSEQUENCES OF EACH.	Type I Error: Deciding that the specified area represented by the soil sample does not exceed the specified assessment level when, in truth, the concentration of the contaminant exceeds its specified assessment level (False Negative). The consequence of this decision error is that remedial efforts in the area may not be undertaken, possibly endangering human health and the environment. This decision error is more severe. Type II Error: Deciding that the specified area represented by the soil sample does exceed the specified assessment level when, in truth, it does not (False Positive). The consequences of this decision error are that remediation of the area will continue and unnecessary costs will be incurred.
ESTABLISH THE TRUE STATE OF NATURE FOR EACH DECISION RULE.	• The true state of nature when the soil is decided to be below the specified assessment levels when in fact, it is not below the specified assessment levels, is that the area does need remedial action. • The true state of nature when the soil is decided to be above the specified assessment levels when in fact, it is not above the specified assessment levels, is that the area does not need remedial action.
DEFINE THE TRUE STATE OF NATURE FOR THE MORE SEVERE DECISION ERROR AS THE BASELINE CONDITION OR THE NULL HYPOTHESIS (H_o) AND DEFINE THE TRUE STATE FOR THE LESS SEVERE DECISION ERROR AS THE ALTERNATIVE HYPOTHESIS (H_a).	H_o: The soil represented by the sample is above the specified action level. H_a: The soil represented by the sample is below the specified action level.
ASSIGN THE TERMS "FALSE POSITIVE" AND "FALSE NEGATIVE" TO THE PROPER DECISION ERRORS.	• False Positive Error = Type II • False Negative Error = Type I
REVIEW THE DQOs.	• The sample size was based on approximately 50-foot by 50-foot grids established within the study area. In order to select the optimal sampling program that satisfies the DQOs and is the most resource effective, other elements were considered.
DEVELOP GENERAL SAMPLING AND ANALYSIS DESIGN. START will collect approximately 400 soil samples from in and around the American Recycling site in Oil City, Caddo Parish, LA. The samples will be shipped for laboratory analysis and methodology consistent with EPA Region 6 protocols. The samples will be analyzed for TAL Metals and mercury by EPA Methods SW846 Method 6020/7471A.	•

APPENDIX B

STANDARD OPERATING PROCEDURES

COMPENDIUM OF ERT SOIL SAMPLING AND SURFACE GEOPHYSICS PROCEDURES

United States
Environmental Protection
Agency

Office of Solid Waste and
Emergency Response
Washington DC 20460

EPA/540/P-91/006
January 1991

9360.4-02

EPA

Compendium of ERT Soil Sampling and Surface Geophsics Procedures

EPA/540/P-91/006
OSWER Directive 9360.4-02
January 1991

COMPENDIUM OF ERT SOIL SAMPLING AND SURFACE GEOPHYSICS PROCEDURES

Sampling Equipment Decontamination

Soil Sampling

Soil Gas Sampling

General Surface Geophysics

Interim Final

Environmental Response Team
Emergency Response Division

Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
Washington, DC 20460

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Notice

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

The policies and procedures established in this document are intended solely for the guidance of government personnel for use in the Superfund Removal Program. They are not intended, and cannot be relied upon, to create any rights, substantive or procedural, enforceable by any party in litigation with the United States. The Agency reserves the right to act at variance with these policies and procedures and to change them at any time without public notice.

Depending on circumstances and needs, it may not be possible or appropriate to follow these procedures exactly in all situations due to site conditions, equipment limitations, and limitations of the standard procedures. Whenever these procedures cannot be followed as written, they may be used as general guidance with any and all modifications fully documented in either QA Plans, Sampling Plans, or final reports of results.

Each Standard Operating Procedure in this compendium contains a discussion on quality assurance/quality control (QA/QC). For more information on QA/QC objectives and requirements, refer to the *Quality Assurance/Quality Control Guidance for Removal Activities*, OSWER directive 9360.4-01, EPA/540/G-90/004.

Questions, comments, and recommendations are welcomed regarding the Compendium of ERT Soil Sampling and Surface Geophysics Procedures. Send remarks to:

Mr. William A. Coakley
Removal Program QA Coordinator
U.S. EPA - ERT
Raritan Depot - Building 18, MS-101
2890 Woodbridge Avenue
Edison, NJ 08837-3679

For additional copies of the Compendium of ERT Soil Sampling and Surface Geophysics Procedures, please contact:

National Technical Information Service (NTIS)
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4600

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1.0 SAMPLING EQUIPMENT DECONTAMINATION: SOP #2006

1.1 SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) describes methods used for preventing or reducing cross-contamination, and provides general guidelines for sampling equipment decontamination procedures at a hazardous waste site. Preventing or minimizing cross-contamination in sampled media and in samples is important for preventing the introduction of error into sampling results and for protecting the health and safety of site personnel.

Removing or neutralizing contaminants that have accumulated on sampling equipment ensures protection of personnel from permeating substances, reduces or eliminates transfer of contaminants to clean areas, prevents the mixing of incompatible substances, and minimizes the likelihood of sample cross-contamination.

1.2 METHOD SUMMARY

Contaminants can be physically removed from equipment, or deactivated by sterilization or disinfection. Gross contamination of equipment requires physical decontamination, including abrasive and non-abrasive methods. These include the use of brushes, air and wet blasting, and high-pressure water cleaning, followed by a wash/rinse process using appropriate cleaning solutions. Use of a solvent rinse is required when organic contamination is present.

1.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

This section is not applicable to this SOP.

1.4 INTERFERENCES AND POTENTIAL PROBLEMS

- The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free.

- An untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal water treatment system for mixing of decontamination solutions.

- Acids and solvents utilized in the decontamination sequence pose the health and safety risks of inhalation or skin contact, and raise shipping concerns of permeation or degradation.

- The site work plan must address disposal of the spent decontamination solutions.

- Several procedures can be established to minimize contact with waste and the potential for contamination. For example:

  - Stress work practices that minimize contact with hazardous substances.

  - Use remote sampling, handling, and container-opening techniques when appropriate.

  - Cover monitoring and sampling equipment with protective material to minimize contamination.

  - Use disposable outer garments and disposable sampling equipment when appropriate.

1.5 EQUIPMENT/APPARATUS

- appropriate personal protective clothing
- non-phosphate detergent
- selected solvents
- long-handled brushes
- drop cloths/plastic sheeting
- trash container
- paper towels
- galvanized tubs or buckets
- tap water

- distilled/deionized water
- metal/plastic containers for storage and disposal of contaminated wash solutions
- pressurized sprayers for tap and deionized/distilled water
- sprayers for solvents
- trash bags
- aluminum foil
- safety glasses or splash shield
- emergency eyewash bottle

1.6 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions and solvents. In general, the following solvents are utilized for decontamination purposes:

- 10% nitric acid[1]
- acetone (pesticide grade)[2]
- hexane (pesticide grade)[2]
- methanol

[1] Only if sample is to be analyzed for trace metals.
[2] Only if sample is to be analyzed for organics.

1.7 PROCEDURES

As part of the health and safety plan, develop and set up a decontamination plan before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- the number, location, and layout of decontamination stations
- which decontamination apparatus is needed
- the appropriate decontamination methods
- methods for disposal of contaminated clothing, apparatus, and solutions

1.7.1 Decontamination Methods

All personnel, samples, and equipment leaving the contaminated area of a site must be decontaminated. Various decontamination methods will either physically remove contaminants, inactivate contaminants by disinfection or sterilization, or do both.

In many cases, gross contamination can be removed by physical means. The physical decontamination techniques appropriate for equipment decontamination can be grouped into two categories: abrasive methods and non-abrasive methods.

Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The following abrasive methods are available:

- Mechanical: Mechanical cleaning methods use brushes of metal or nylon. The amount and type of contaminants removed will vary with the hardness of bristles, length of brushing time, and degree of brush contact.

- Air Blasting: Air blasting is used for cleaning large equipment, such as bulldozers, drilling rigs or auger bits. The equipment used in air blast cleaning employs compressed air to force abrasive material through a nozzle at high velocities. The distance between the nozzle and the surface cleaned, as well as the pressure of air, the time of application, and the angle at which the abrasive strikes the surface, determines cleaning efficiency. Air blasting has several disadvantages: it is unable to control the amount of material removed, it can aerate contaminants, and it generates large amounts of waste.

- Wet Blasting: Wet blast cleaning, also used to clean large equipment, involves use of a suspended fine abrasive delivered by compressed air to the contaminated area. The amount of materials removed can be carefully controlled by using very fine abrasives. This method generates a large amount of waste.

Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off of a surface with pressure. In general, less of the equipment surface is removed using non-abrasive methods. The following non-abrasive methods are available:

- High-Pressure Water: This method consists of a high-pressure pump, an operator-controlled directional nozzle, and a high pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) which relates to flow rates of 20 to 140 liters per minute.

- Ultra-High-Pressure Water: This system produces a pressurized water jet (from 1,000 to 4,000 atm). The ultra-high-pressure spray removes tightly-adhered surface film. The water velocity ranges from 500 m/sec (1,000 atm) to 900 m/sec (4,000 atm). Additives can enhance the method. This method is not applicable for hand-held sampling equipment.

Disinfection/Rinse Methods

- Disinfection: Disinfectants are a practical means of inactivating infectious agents.

- Sterilization: Standard sterilization methods involve heating the equipment. Sterilization is impractical for large equipment.

- Rinsing: Rinsing removes contaminants through dilution, physical attraction, and solubilization.

1.7.2 Field Sampling Equipment Cleaning Procedures

Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if analysis does not include inorganics.

1. Where applicable, follow physical removal procedures specified in section 1.7.1.

2. Wash equipment with a non-phosphate detergent solution.

3. Rinse with tap water.

4. Rinse with distilled/deionized water.

5. Rinse with 10% nitric acid if the sample will be analyzed for trace organics.

6. Rinse with distilled/deionized water.

7. Use a solvent rinse (pesticide grade) if the sample will be analyzed for organics.

8. Air dry the equipment completely.

9. Rinse again with distilled/deionized water.

Selection of the solvent for use in the decontamination process is based on the contaminants present at the site. Use of a solvent is required when organic contamination is present on-site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. An acid rinse step is required if metals are present on-site. If a particular contaminant fraction is not present at the site, the nine-step decontamination procedure listed above may be modified for site specificity. The decontamination solvent used should not be among the contaminants of concern at the site.

Table 1 lists solvent rinses which may be required for elimination of particular chemicals. After each solvent rinse, the equipment should be air dried and rinsed with distilled/deionized water.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing, before commencement of sampling and between sampling locations.

1.8 CALCULATIONS

This section is not applicable to this SOP.

1.9 QUALITY ASSURANCE/ QUALITY CONTROL

One type of quality control sample specific to the field decontamination process is the rinsate blank. The rinsate blank provides information on the effectiveness of the decontamination process employed in the field. When used in conjunction with field blanks and trip blanks, a rinsate blank can detect contamination during sample handling, storage and sample transportation to the laboratory.

Table 1: Recommended Solvent Rinse for Soluble Contaminants

SOLVENT	SOLUBLE CONTAMINANTS
Water	• Low-chain hydrocarbons • Inorganic compounds • Salts • Some organic acids and other polar compounds
Dilute Acids	• Basic (caustic) compounds • Amines • Hydrazines
Dilute Bases -- for example, detergent and soap	• Metals • Acidic compounds • Phenol • Thiols • Some nitro and sulfonic compounds
Organic Solvents[1] - for example, alcohols, ethers, ketones, aromatics, straight-chain alkanes (e.g., hexane), and common petroleum products (e.g., fuel, oil, kerosene)	• Nonpolar compounds (e.g., some organic compounds)

[1] - WARNING: Some organic solvents can permeate and/or degrade protective clothing.

A rinsate blank consists of a sample of analyte-free (i.e, deionized) water which is passed over and through a field decontaminated sampling device and placed in a clean sample container.

Rinsate blanks should be run for all parameters of interest at a rate of 1 per 20 for each parameter, even if samples are not shipped that day. Rinsate blanks are not required if dedicated sampling equipment is used.

1.10 DATA VALIDATION

This section is not applicable to this SOP.

1.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and specific health and safety procedures.

Decontamination can pose hazards under certain circumstances even though performed to protect health and safety. Hazardous substances may be incompatible with decontamination methods. For example, the decontamination solution or solvent may react with contaminants to produce heat, explosion, or toxic products. Decontamination methods may be incompatible with clothing or equipment; some solvents can permeate or degrade protective clothing. Also, decontamination solutions and solvents may pose a direct health hazard to workers through inhalation or skin contact, or if they combust.

The decontamination solutions and solvents must be determined to be compatible before use. Any method that permeates, degrades, or damages personal protective equipment should not be used. If decontamination methods pose a direct health hazard, measures should be taken to protect personnel or the methods should be modified to eliminate the hazard.

2.0 SOIL SAMPLING: SOP #2012

2.1 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to describe the procedures for collecting representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment.

2.2 METHOD SUMMARY

Soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of soil. Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, a trier, a split-spoon, or, if required, a backhoe.

2.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Chemical preservation of solids is not generally recommended. Refrigeration to 4°C, supplemented by a minimal holding time, is usually the best approach.

2.4 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems associated with soil sampling. These include cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results.

2.5 EQUIPMENT/APPARATUS

- sampling plan
- maps/plot plan
- safety equipment, as specified in the health and safety plan
- compass
- tape measure
- survey stakes or flags
- camera and film
- stainless steel, plastic, or other appropriate homogenization bucket or bowl
- 1-quart mason jars w/Teflon liners
- Ziploc plastic bags
- logbook
- labels
- chain of custody forms and seals
- field data sheets
- cooler(s)
- ice
- decontamination supplies/equipment
- canvas or plastic sheet
- spade or shovel
- spatula
- scoop
- plastic or stainless steel spoons
- trowel
- continuous flight (screw) auger
- bucket auger
- post hole auger
- extension rods
- T-handle
- sampling trier
- thin-wall tube sampler
- Vehimeyer soil sampler outfit
  - tubes
  - points
  - drive head
  - drop hammer
  - puller jack and grip
- backhoe

2.6 REAGENTS

Reagents are not used for the preservation of soil samples. Decontamination solutions are specified in

ERT SOP #2006, Sampling Equipment Decontamination.

2.7 PROCEDURES

2.7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and which equipment and supplies are required.

2. Obtain necessary sampling and monitoring equipment.

3. Decontaminate or preclean equipment, and ensure that it is in working order.

4. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.

5. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.

6. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample location. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner prior to soil sampling.

2.7.2 Sample Collection

Surface Soil Samples

Collect samples from near-surface soil with tools such as spades, shovels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample.

This method can be used in most soil types but is limited to sampling near surface areas. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sampling team member. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Avoid the use of devices plated with chrome or other materials. Plating is particularly common with garden implements such as potting trowels.

Follow these procedures to collect surface soil samples.

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.

2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.

3. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

Sampling at Depth with Augers and Thin-Wall Tube Samplers

This system consists of an auger, a series of extensions, a "T" handle, and a thin-wall tube sampler (Appendix A, Figure 1). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The sample may be collected directly from the auger. If a core sample is to be collected, the auger tip is then replaced with a thin-wall tube sampler. The system is then lowered down the borehole, and driven into the soil at the completion depth. The system is withdrawn and the core collected from the thin-wall tube sampler.

Several types of augers are available. These include: bucket, continuous flight (screw), and posthole augers. Bucket augers are better for direct

sample recovery since they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly from the flights, which are usually at 5-feet intervals. The continuous flight augers are satisfactory for use when a composite of the complete soil column is desired. Posthole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil.

Follow these procedures for collecting soil samples with the auger and a thin-wall tube sampler.

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.

2. Clear the area to be sampled of any surface debris (e.g., twigs, rocks, litter). It may be advisable to remove the first 3 to 6 inches of surface soil for an area approximately 6 inches in radius around the drilling location.

3. Begin augering, periodically removing and depositing accumulated soils onto a plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.

4. After reaching the desired depth, slowly and carefully remove the auger from boring. When sampling directly from the auger, collect sample after the auger is removed from boring and proceed to Step 10.

5. Remove auger tip from drill rods and replace with a pre-cleaned thin-wall tube sampler. Install proper cutting tip.

6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into the soil. Care should be taken to avoid scraping the borehole sides. Avoid hammering the drill rods to facilitate coring as the vibrations may cause the boring walls to collapse.

7. Remove the tube sampler, and unscrew the drill rods.

8. Remove the cutting tip and the core from the device.

9. Discard the top of the core (approximately 1 inch), as this represents material collected before penetration of the layer of concern. Place the remaining core into the appropriate labeled sample container(s). Sample homogenization is not required.

10. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into the appropriate, labeled container(s) and secure the cap(s) tightly.

11. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.

12. Abandon the hole according to applicable state regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

Sampling at Depth with a Trier

The system consists of a trier, and a "T" handle. The auger is driven into the soil to be sampled and used to extract a core sample from the appropriate depth.

Follow these procedures to collect soil samples with a sampling trier.

1. Insert the trier (Appendix A, Figure 2) into the material to be sampled at a 0° to 45° angle from horizontal. This orientation minimizes the spillage of sample.

2. Rotate the trier once or twice to cut a core of material.

3. Slowly withdraw the trier, making sure that the slot is facing upward.

4. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly.

Sampling at Depth with a Split Spoon (Barrel) Sampler

The procedure for split spoon sampling describes the collection and extraction of undisturbed soil cores of 18 or 24 inches in length. A series of consecutive cores may be extracted with a split spoon sampler to give a complete soil column profile, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

When split tube sampling is performed to gain geologic information, all work should be performed in accordance with ASTM D 1586-67 (reapproved 1974).

Follow these procedures for collecting soil samples with a split spoon.

1. Assemble the sampler by aligning both sides of the barrel and then screwing the bit onto the bottom and the heavier head piece onto the top.

2. Place the sampler in a perpendicular position on the sample material.

3. Using a sledge hammer or well ring, if available, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.

4. Record in the site logbook or on field data sheets the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.

5. Withdraw the sampler, and open by unscrewing the bit and head and splitting the barrel. If a split sample is desired, a cleaned, stainless steel knife should be used to divide the tube contents in half, longitudinally. This sampler is typically available in diameters of 2 and 3 1/2 inches. However, in order to obtain the required sample volume, use of a larger barrel may be required.

6. Without disturbing the core, transfer it to an appropriate labeled sample container(s) and seal tightly.

Test Pit/Trench Excavation

These relatively large excavations are used to remove sections of soil, when detailed examination of soil characteristics (horizontal structure, color, etc.) are required. It is the least cost effective sampling method due to the relatively high cost of backhoe operation.

Follow these procedures for collecting soil samples from test pit/trench excavations.

1. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of utility lines and poles (subsurface as well as above surface).

2. Using the backhoe, dig a trench to approximately 3 feet in width and approximately 1 foot below the cleared sampling location. Place removed or excavated soils on plastic sheets. Trenches greater than 5 feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.

3. Use a shovel to remove a 1- to 2-inch layer of soil from the vertical face of the pit where sampling is to be done.

4. Take samples using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling

to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.

5. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

6. Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material.

2.8 CALCULATIONS

This section is not applicable to this SOP.

2.9 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance activities which apply to the implementation of these procedures. However, the following QA procedures apply:

- All data must be documented on field data sheets or within site logbooks.

- All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

2.10 DATA VALIDATION

This section is not applicable to this SOP.

2.11 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA, and specific health and safety procedures.

3.0 SOIL GAS SAMPLING: SOP #2149

3.1 SCOPE AND APPLICATION

Soil gas monitoring provides a quick means of waste site evaluation. Using this method, underground contamination can be identified, and the source, extent, and movement of the pollutants can be traced.

This Standard Operating Procedure (SOP) outlines the methods used by EPA/ERT in installing soil gas wells; measuring organic levels in the soil gas using an HNU PI 101 Portable Photoionization Analyzer and/or other air monitoring devices; and sampling the soil gas using Tedlar bags, Tenax sorbent tubes, and SUMMA canisters.

3.2 METHOD SUMMARY

A 3/8-inch diameter hole is driven into the ground to a depth of 4 to 5 feet using a commercially available "slam bar". (Soil gas can also be sampled at other depths by the use of a longer bar or bar attachments.) A 1/4-inch O.D. stainless steel probe is inserted into the hole. The hole is then sealed at the top around the probe using modeling clay. The gas contained in the interstitial spaces of the soil is sampled by pulling the sample through the probe using an air sampling pump. The sample may be stored in Tedlar bags, drawn through sorbent cartridges, or analyzed directly using a direct reading instrument.

The air sampling pump is not used for SUMMA canister sampling of soil gas. Sampling is achieved by soil gas equilibration with the evacuated SUMMA canister. Other field air monitoring devices, such as the combustible gas indicator (MSA CGI/02 Meter, Model 260) and the organic vapor analyzer (Foxboro OVA, Model 128), can also be used depending on specific site conditions. Measurement of soil temperature using a temperature probe may also be desirable. Bagged samples are usually analyzed in a field laboratory using a portable Photovac GC.

Power driven sampling probes may be utilized when soil conditions make sampling by hand unfeasible (i.e., frozen ground, very dense clays, pavement, etc.). Commercially available soil gas sampling probes (hollow, 1/2-inch O.D. steel probes) can be driven to the desired depth using a power hammer (e.g., Bosch Demolition Hammer). Samples can be drawn through the probe itself, or through Teflon tubing inserted through the probe and attached to the probe point. Samples are collected and analyzed as described above.

3.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

3.3.1 Tedlar Bag

Soil gas samples are generally contained in 1-L Tedlar bags. Bagged samples are best stored in coolers to protect the bags from any damage that may occur in the field or in transit. In addition, coolers ensure the integrity of the samples by keeping them at a cool temperature and out of direct sunlight. Samples should be analyzed as soon as possible, preferably within 24 to 48 hours.

3.3.2 Tenax Tube

Bagged samples can also be drawn into Tenax or other sorbent tubes to undergo lab GC/MS analysis. If Tenax tubes are to be utilized, special care must be taken to avoid contamination. Handling of the tubes should be kept to a minimum, and samplers must wear nylon or other lint-free gloves. After sampling, each tube should be stored in a clean, sealed culture tube; the ends packed with clean glass wool to protect the sorbent tube from breakage. The culture tubes should be kept cool and wrapped in aluminum foil to prevent any photodegradation of samples (see Section 3.7.4.).

3.3.3 SUMMA Canister

The SUMMA canisters used for soil gas sampling have a 6-L sample capacity and are certified clean by GC/MS analysis before being utilized in the field. After sampling is completed, they are stored and shipped in travel cases.

3.4 INTERFERENCES AND POTENTIAL PROBLEMS

3.4.1 HNU Measurements

A number of factors can affect the response of the HNU PI 101. High humidity can cause lamp fogging and decreased sensitivity. This can be significant when soil moisture levels are high, or when a soil gas well is actually in groundwater. High concentrations of methane can cause a downscale deflection of the meter. High and low temperature, electrical fields, FM radio transmission, and naturally occurring compounds, such as terpenes in wooded areas, will also affect instrument response.

Other field screening instruments can be affected by interferences. Consult the manufacturers' manuals.

3.4.2 Factors Affecting Organic Concentrations in Soil Gas

Concentrations in soil gas are affected by dissolution, adsorption, and partitioning. Partitioning refers to the ratio of component found in a saturated vapor above an aqueous solution to the amount in the solution; this can, in theory, be calculated using the Henry's Law constants. Contaminants can also be adsorbed onto inorganic soil components or "dissolved" in organic components. These factors can result in a lowering of the partitioning coefficient.

Soil "tightness" or amount of void space in the soil matrix, will affect the rate of recharging of gas into the soil gas well.

Existence of a high, or perched, water table, or of an impermeable underlying layer (such as a clay lens or layer of buried slag) may interfere with sampling of the soil gas. Knowledge of site geology is useful in such situations, and can prevent inaccurate sampling.

3.4.3 Soil Probe Clogging

A common problem with this sampling method is soil probe clogging. A clogged probe can be identified by using an in-line vacuum gauge or by listening for the sound of the pump laboring. This problem can usually be eliminated by using a wire cable to clear the probe (see procedure #3 in Section 3.7.1).

3.4.4 Underground Utilities

Prior to selecting sample locations, an underground utility search is recommended. The local utility companies can be contacted and requested to mark the locations of their underground lines. Sampling plans can then be drawn up accordingly. Each sample location should also be screened with a metal detector or magnetometer to verify that no underground pipes or drums exist.

3.5 EQUIPMENT/APPARATUS

3.5.1 Slam Bar Method

- slam bar (one per sampling team)
- soil gas probes, stainless steel tubing, 1/4-inch O.D., 5 foot length
- flexible wire or cable used for clearing the tubing during insertion into the well
- "quick connect" fittings to connect sampling probe tubing, monitoring instruments, and Gilian pumps to appropriate fittings on vacuum box
- modeling clay
- vacuum box for drawing a vacuum around Tedlar bag for sample collection (one per sampling team)
- Gilian pump Model HFS113A adjusted to approximately 3.0 L/min (one to two per sampling team)
- 1/4-inch Teflon tubing, 2 to 3 foot lengths, for replacement of contaminated sample line
- Tedlar bags, 1 liter, at least one bag per sample point
- soil gas sampling labels, field data sheets, logbook, etc.
- HNU Model PI 101, or other field air monitoring devices, (one per sampling team)
- ice chest, for carrying equipment and for protection of samples (two per sampling team)
- metal detector or magnetometer, for detecting underground utilities/ pipes/drums (one per sampling team)
- Photovac GC, for field-lab analysis of bagged samples
- SUMMA canisters (plus their shipping cases) for sample, storage and transportation

3.5.2 Power Hammer Method

- Bosch demolition hammer
- 1/2-inch O.D. steel probes, extensions, and points
- dedicated aluminum sampling points
- Teflon tubing, 1/4-inch O.D.
- "quick connect" fittings to connect sampling probe tubing, monitoring instruments, and Gilian pumps to appropriate fittings on vacuum box
- modeling clay
- vacuum box for drawing a vacuum around Tedlar bag for sample collection (one per sampling team)
- Gilian pump Model HFS113A adjusted to approximately 3.0 L/min (one to two per sampling team)
- 1/4-inch Teflon tubing, 2 to 3 foot lengths, for replacement of contaminated sample line
- Tedlar bags, 1 liter, at least one bag per sample point
- soil gas sampling labels, field data sheets, logbook, etc.
- HNU Model PI 101, or other field air monitoring devices, (one per sampling team)
- ice chest, for carrying equipment and for protection of samples (two per sampling team)
- metal detector or magnetometer, for detecting underground utilities/ pipes/drums (one per sampling team)
- Photovac GC, for field-lab analysis of bagged samples
- SUMMA canisters (plus their shipping cases) for sample, storage and transportation
- generator with extension cords
- high lift jack assembly for removing probes

3.6 REAGENTS

- HNU Systems Inc. Calibration Gas for HNU Model PI 101, and/or calibration gas for other field air monitoring devices
- deionized organic-free water, for decontamination
- methanol, HPLC grade, for decontamination
- ultra-zero grade compressed air, for field blanks
- standard gas preparations for Photovac GC calibration and Tedlar bag spikes

3.7 PROCEDURES

3.7.1 Soil Gas Well Installation

1. Initially, make a hole slightly deeper than the desired depth. For sampling up to 5 feet, use a 5-foot single piston slam bar. For deeper depths, use a piston slam bar with threaded 4-foot-long extensions. Other techniques can be used, so long as holes are of narrow diameter and no contamination is introduced.

2. After the hole is made, carefully withdraw the slam bar to prevent collapse of the walls of the hole. Then insert the soil gas probe.

3. It is necessary to prevent plugging of the probe, especially for deeper holes. Place a metal wire or cable, slightly longer than the probe, into the probe prior to inserting into the hole. Insert the probe to full depth, then pull it up 3 to 6 inches, then clear it by moving the cable up and down. The cable is removed before sampling.

4. Seal the top of the sample hole at the surface against ambient air infiltration by using modeling clay molded around the probe at the surface of the hole.

5. If conditions preclude hand installation of the soil gas wells, the power driven system may be employed. Use the generator-powered demolition hammer to drive the probe to the desired depth (up to 12 feet may be attained with extensions). Pull the probe up 1 to 3 inches if the retractable point is used. No clay is needed to seal the hole. After sampling, retrieve the probe using the high lift jack assembly.

6. If semi-permanent soil gas wells are required, use the dedicated aluminum probe points. Insert these points into the bottom of the power-driven probe and attach it to the Teflon tubing. Insert the probe as in step 5. When the probe is removed, the point and Teflon tube remain in the hole, which may be sealed by backfilling with sand, bentonite, or soil.

3.7.2 Screening with Field Instruments

1. The well volume **must** be evacuated prior to sampling. Connect the Gilian pump, adjusted to 3.0 L/min, to the sample probe using a section of Teflon tubing as a connector. Turn the pump on, and a vacuum is pulled through the probe for approximately 15 seconds. A longer time is required for sample wells of greater depths.

2. After evacuation, connect the monitoring instrument(s) to the probe using a Teflon connector. When the reading is stable, or peaks, record the reading. For detailed procedures on HNU field protocol, see appendix B, and refer to the manufacturer's instructions.

3. Some readings may be above or below the range set on the field instruments. The range may be reset, or the response recorded as a figure greater than or less than the range. Consider the recharge rate of the well with soil gas when sampling at a different range setting.

3.7.3 Tedlar Bag Sampling

1. Follow step 1 in section 3.7.2 to evacuate well volume. If air monitoring instrument screening was performed prior to sampling, evacuation is not necessary.

2. Use the vacuum box and sampling train (Figure 3 in Appendix A) to take the sample. The sampling train is designed to minimize the introduction of contaminants and losses due to adsorption. All wetted parts are either Teflon or stainless steel. The vacuum is drawn indirectly to avoid contamination from sample pumps.

3. Place the Tedlar bag inside the vacuum box, and attach it to the sampling port. Attach the sample probe to the sampling port via Teflon tubing and a "quick connect" fitting.

4. Draw a vacuum around the outside of the bag, using a Gilian pump connected to the vacuum box evacuation port, via Tygon tubing and a "quick connect" fitting. The vacuum causes the bag to inflate, drawing the sample.

5. Break the vacuum by removing the Tygon line from the pump. Remove the bagged sample from the box and close valve. Label bag, record data on data sheets or in logbooks. Record the date, time, sample location ID, and the HNU, or other instrument reading(s) on sample bag label.

CAUTION: Labels should not be pasted directly onto the bags, nor should bags be labeled directly using a marker or pen. Inks and adhesive may diffuse through the bag material, contaminating the sample. Place labels on the edge of the bags, or tie the labels to the metal eyelets provided on the bags. Markers with inks containing volatile organics (i.e., permanent ink markers) should not be used.

3.7.4 Tenax Tube Sampling

Samples collected in Tedlar bags may be sorbed onto Tenax tubes for further analysis by GC/MS.

Additional Apparatus

- Syringe with a luer-lock tip capable of drawing a soil gas or air sample from a Tedlar bag onto a Tenax/CMS sorbent tube. The syringe capacity is dependent upon the volume of sample being drawn onto the sorbent tube.

- Adapters for fitting the sorbent tube between the Tedlar bag and the sampling syringe. The adapter attaching the Tedlar bag to the sorbent tube consists of a reducing union (1/4-inch to 1/16-inch O.D. -- Swagelok cat. # SS-400-6-ILV or equivalent) with a length of 1/4-inch O.D. Teflon tubing replacing the nut on the 1/6-inch (Tedlar bag) side. A 1/4-inch I.D. silicone O-ring replaces the ferrules in the nut on the 1/4-inch (sorbent tube) side of the union.

  The adapter attaching the sampling syringe to the sorbent tube consists of a reducing union (1/4-inch to 1/16-inch O.D. -- Swagelok Cat. # SS-400-6-ILV or equivalent) with a 1/4-inch I.D. silicone O-ring replacing the ferrules in the nut on the 1/4-inch (sorbent tube) side and the needle of a luer-lock syringe needle inserted into the 1/16-inch side (held in place with a 1/16-inch ferrule). The

luer-lock end of the needle can be attached to the sampling syringe. It is useful to have a luer-lock on/off valve situated between the syringe and the needle.

- Two-stage glass sampling cartridge (1/4-inch O.D. x 1/8-inch I.D. x 5 1/8 inch) contained in a flame-sealed tube (manufactured by Supelco Custom Tenax/Spherocarb Tubes or equivalent) containing two sorbent sections retained by glass wool:

  Front section: 150 mg of Tenax-GC
  Back section: 150 mg of CMS (Carbonized Molecular Sieve)

  Sorbent tubes may also be prepared in the lab and stored in either Teflon-capped culture tubes or stainless steel tube containers. Sorbent tubes stored in this manner should not be kept more than 2 weeks without reconditioning. (See SOP #2052 for Tenax/CMS sorbent tube preparation).

- Teflon-capped culture tubes or stainless steel tube containers for sorbent tube storage. These containers should be conditioned by baking at 120°C for at least 2 hours. The culture tubes should contain a glass wool plug to prevent sorbent tube breakage during transport. Reconditioning of the containers should occur between usage or after extended periods of disuse (i.e., 2 weeks or more).

- Nylon gloves or lint-free cloth. (Hewlett Packard Part # 8650-0030 or equivalent.)

Sample Collection

1. Handle sorbent tubes with care, using nylon gloves (or other lint-free material) to avoid contamination.

2. Immediately before sampling, break one end of the sealed tube and remove the Tenax cartridge. For in-house prepared tubes, remove cartridge from its container.

3. Connect the valve on the Tedlar bag to the sorbent tube adapter. Connect the sorbent tube to the sorbent tube adapter with the Tenax (white granular) side of the tube facing the Tedlar bag.

4. Connect the sampling syringe assembly to the CMS (black) side of the sorbent tube. Fittings on the adapters should be very tight.

5. Open the valve on the Tedlar bag.

6. Open the on/off valve of the sampling syringe.

7. Draw a predetermined volume of sample onto the sorbent tube. (This may require closing the syringe valve, emptying the syringe and then repeating the procedure, depending upon the syringe capacity and volume of sample required.)

8. After sampling, remove the tube from the sampling train with gloves or a clean cloth. **Do not label or write on the Tenax/CMS tube.**

9. Place the sorbent tube in a conditioned stainless steel tube holder or culture tube. Culture tube caps should be sealed with Teflon tape.

Sample Labeling

Each sample tube container (not tube) must be labeled with the site name, sample station number, sample date, and sample volume.

Chain of custody forms must accompany all samples to the laboratory.

Quality Assurance

Before field use, a QA check should be performed on each batch of sorbent tubes by analyzing a tube with thermal desorption/cryogenic trapping GC/MS.

At least one blank sample must be submitted with each set of samples collected at a site. This trip blank must be treated the same as the sample tubes except no sample will be drawn through the tube.

Sample tubes should be stored out of UV light (i.e., sunlight) and kept on ice until analysis.

Samples should be taken in duplicate, when possible.

3.7.5 SUMMA Canister Sampling

1. Follow item 1 in step 3.7.2 to evacuate well volume. If HNU analysis was performed prior to taking a sample, evacuation is not necessary.

2. Attach a certified clean, evacuated 6-L SUMMA canister via the 1/4-inch Teflon tubing.

3. Open the valve on SUMMA canister. The soil gas sample is drawn into the canister by pressure equilibration. The approximate sampling time for a 6-L canister is 20 minutes.

4. Site name, sample location, number, and date must be recorded on a chain of custody form and on a blank tag attached to the canister.

3.8 CALCULATIONS

3.8.1 Field Screening Instruments

Instrument readings are usually read directly from the meter. In some cases, the background level at the soil gas station may be subtracted:

Final Reading = Sample Reading - Background

3.8.2 Photovac GC Analysis

Calculations used to determine concentrations of individual components by Photovac GC analysis are beyond the scope of this SOP and are covered in ERT SOP #2109, Photovac GC Analysis for Soil, Water and Air/Soil Gas.

3.9 QUALITY ASSURANCE/ QUALITY CONTROL

3.9.1 Field Instrument Calibration

Consult the manufacturers' manuals for correct use and calibration of all instrumentation. The HNU should be calibrated at least once a day.

3.9.2 Gilian Model HFS113A Air Sampling Pump Calibration

Flow should be set at approximately 3.0 L/min; accurate flow adjustment is not necessary. Pumps should be calibrated prior to bringing into the field.

3.9.3 Sample Probe Contamination

Sample probe contamination is checked between each sample by drawing ambient air through the probe via a Gilian pump and checking the response of the HNU PI 101. If HNU readings are higher than background, replacement or decontamination is necessary.

Sample probes may be decontaminated simply by drawing ambient air through the probe until the HNU reading is at background. More persistent contamination can be washed out using methanol and water, then air drying. Having more than one probe per sample team will reduce lag times between sample stations while probes are decontaminated.

3.9.4 Sample Train Contamination

The Teflon line forming the sample train from the probe to the Tedlar bag should be changed on a daily basis. If visible contamination (soil or water) is drawn into the sampling train, it should be changed immediately. When sampling in highly contaminated areas, the sampling train should be purged with ambient air, via a Gilian pump, for approximately 30 seconds between each sample. After purging, the sampling train can be checked using an HNU, or other field monitoring device, to establish the cleanliness of the Teflon line.

3.9.5 Field Blank

Each cooler containing samples should also contain one Tedlar bag of ultra-zero grade air, acting as a field blank. The field blank should accompany the samples in the field (while being collected) and when they are delivered for analysis. A fresh blank must be provided to be placed in the empty cooler pending additional sample collection. One new field blank per cooler of samples is required. A chain of custody form must accompany each cooler of samples and should include the blank that is dedicated to that group of samples.

3.9.6 Trip Standard

Each cooler containing samples should contain a Tedlar bag of standard gas to calibrate the

analytical instruments (Photovac GC, etc.). This trip standard will be used to determine any changes in concentrations of the target compounds during the course of the sampling day (e.g., migration through the sample bag, degradation, or adsorption). A fresh trip standard must be provided and placed in each cooler pending additional sample collection. A chain of custody form should accompany each cooler of samples and should include the trip standard that is dedicated to that group of samples.

3.9.7 Tedlar Bag Check

Prior to use, one bag should be removed from each lot (case of 100) of Tedlar bags to be used for sampling and checked for possible contamination as follows: the test bag should be filled with ultra-zero grade air; a sample should be drawn from the bag and analyzed via Photovac GC or whatever method is to be used for sample analysis. This procedure will ensure sample container cleanliness prior to the start of the sampling effort.

3.9.8 SUMMA Canister Check

From each lot of four cleaned SUMMA canisters, one is to be removed for a GC/MS certification check. If the canister passes certification, then it is re-evacuated and all four canisters from that lot are available for sampling.

If the chosen canister is contaminated, then the entire lot of four SUMMA canisters must be recleaned, and a single canister is re-analyzed by GC/MS for certification.

3.9.9 Options

Duplicate Samples

A minimum of 5% of all samples should be collected in duplicate (i.e., if a total of 100 samples are to be collected, five samples should be duplicated). In choosing which samples to duplicate, the following criterion applies: if, after filling the first Tedlar bag, and, evacuating the well for 15 seconds, the second HNU (or other field monitoring device being used) reading matches or is close to (within 50%) the first reading, a duplicate sample may be taken.

Spikes

A Tedlar bag spike and Tenax tube spike may be desirable in situations where high concentrations of contaminants other than the target compounds are found to exist (landfills, etc.). The additional level of QA/QC attained by this practice can be useful in determining the effects of interferences caused by these non-target compounds. SUMMA canisters containing samples are not spiked.

3.10 DATA VALIDATION

For each target compound, the level of concentration found in the sample must be greater than three times the level (for that compound) found in the field blank which accompanied that sample to be considered valid. The same criteria apply to target compounds detected in the Tedlar bag pre-sampling contamination check.

3.11 HEALTH AND SAFETY

Because the sample is being drawn from underground, and no contamination is introduced into the breathing zone, soil gas sampling usually occurs in Level D, unless the sampling location is within the hot zone of a site, which requires Level B or Level C protection. However, to ensure that the proper level of protection is utilized, constantly monitor the ambient air using the HNU PI 101 to obtain background readings during the sampling procedure. As long as the levels in ambient air do not rise above background, no upgrade of the level of protection is needed.

Also, perform an underground utility search prior to sampling (see section 3.4.4). When working with potentially hazardous materials, follow U.S. EPA, OSHA, and specific health and safety procedures.

4.0 General Surface Geophysics: SOP #2159

4.1 SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) describes the general procedures used to acquire surface geophysical data. This data is used for delineating subsurface waste, and for interpreting geologic, hydrogeologic or other data related to hazardous waste site characterization.

The media pertinent to these surface geophysical methods are soil/rock and groundwater. The sensitivity or minimum response of a given method depends on the comparison of the object or area of study to that of its background (i.e., what the media's response would be like without the object of study). Therefore, the suitability of surface geophysical methods for a given investigation must be judged on the object's ability to be measured and the extent to which the specific setting of the study interferes with the measurement.

The surface geophysical method(s) selected for application at a site are dependent on site conditions, such as depth to bedrock, depth to target, urban disturbances (fences, power lines, surface debris, etc.) and atmospheric conditions. Detectability of the target is dependent on the sensitivity of the instrument and the variation of the field measurement from the ambient noise. Ambient noise is the pervasive noise associated with an environment. Therefore, the applicability of geophysical methods at a given site is dependent on the specific setting at that site.

Five geophysical methods may be utilized in hazardous waste site characterization: magnetometry, electromagnetics, resistivity, seismology and ground penetrating radar (GPR). Magnetometers may be used to locate buried ferrous metallic objects and geologic information. Electromagnetic methods can be used to determine the presence of metals, electrical conductivity of the terrain, and geologic information. Resistivity methods are used to determine the electrical resistivity of the terrain and geologic information. Seismic methods are useful in determining geologic stratigraphy and structure. GPR may be used to locate disturbance in the soil (i.e., trenches, buried utilities and fill boundaries) and some near-surface geologic information.

These procedures may be varied or changed as required, dependent on site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the procedures employed should be documented and associated with the final report.

4.2 METHOD SUMMARY

4.2.1 Magnetics

A magnetometer is an instrument which measures magnetic field strength in units of gammas (nanoteslas). Local variations, or anomalies, in the earth's magnetic field are the result of disturbances caused mostly by variations in concentrations of ferromagnetic material in the vicinity of the magnetometer's sensor. A buried ferrous object, such as a steel drum or tank, locally distorts the earth's magnetic field and results in a magnetic anomaly. The objective of conducting a magnetic survey at a hazardous waste or groundwater pollution site is to map these anomalies and delineate the area containing buried sources of the anomalies.

Analysis of magnetic data can allow an experienced geophysicist to estimate the areal extent of buried ferrous targets, such as a steel tank or drum. Often, areas of burial can be prioritized upon examination of the data, with high priority areas indicating a near certainty of buried ferrous material. In some instances, estimates of depth of burial can be made from the data. Most of these depth estimates are graphical methods of interpretation, such as slope techniques and half-width rules, as described by Nettleton (1976). The accuracy of these methods is dependent upon the quality of the data and the skill of the interpreting geophysicist. An accuracy of 10 to 20 percent is considered acceptable. The magnetic method may also be used to map certain geologic features, such as igneous intrusions, which may play an important role in the hydrogeology of a groundwater pollution site.

Advantages

Advantages of using the magnetic method for the initial assessment of hazardous waste sites are the

relatively low cost of conducting the survey and the relative ease of completing a survey in a short amount of time. Little, if any, site preparation is necessary. Surveying requirements are not as stringent as for other methods and may be completed with a transit or Brunton-type pocket transit and a non-metallic measuring tape. Often, a magnetic investigation is a very cost-effective method for initial assessment of a hazardous waste site where buried steel drums or tanks are a concern.

Disadvantages

"Cultural noise" is a limitation of the magnetic method in certain areas. Man-made structures that are constructed with ferrous material, such as steel, have a detrimental effect on the quality of the data. Avoid features such as steel structures, power lines, metal fences, steel reinforced concrete, pipelines and underground utilities. When these features are unavoidable, note their locations in a field notebook and on the site map.

Another limitation of the magnetic method is the inability of the interpretation methods to differentiate between various steel objects. For instance, it is not possible to determine if an anomaly is the result of a steel tank, or a group of steel drums, or old washing machines. Also, the magnetic method does not allow the interpreter to determine the contents of a buried tank or drum.

4.2.2 Electromagnetics

The electromagnetic method is a geophysical technique based on the physical principles of inducing and detecting electrical current flow within geologic strata. A receiver detects these induced currents by measuring the resulting time-varying magnetic field. The electromagnetic method measures bulk conductivity (the inverse of resistivity) of geologic materials beneath the transmitter and receiver coils. Electromagnetics should not be confused with the electrical resistivity method. The difference between the two techniques is in the method which the electrical currents are forced to flow in the earth. In the electromagnetic method, currents are induced by the application of time-varying magnetic fields, whereas in the electrical resistivity method, current is injected into the ground through surface electrodes.

Electromagnetics can be used to locate pipes, utility lines, cables, buried steel drums, trenches, buried waste, and concentrated contaminant plumes. The method can also be used to map shallow geologic features, such as lithologic changes and fault zones.

Advantages

Electromagnetic measurements can be collected rapidly and with a minimum number of field personnel. Most electromagnetic equipment used in groundwater pollution investigations is lightweight and easily portable. The electromagnetic method is one of the more commonly used geophysical techniques applied to groundwater pollution investigations.

Disadvantages

The main limitation of the electromagnetic method is "cultural noise". Sources of "cultural noise" can include: large metal objects, buried cables, pipes, buildings, and metal fences.

The electromagnetic method has limitations in areas where the geology varies laterally. These can cause conductivity anomalies or lineations, which might be misinterpreted as contaminant plumes.

4.2.3 Electrical Resistivity

The electrical resistivity method is used to map subsurface electrical resistivity structure, which is in turn interpreted by the geophysicist to determine the geologic structure and/or physical properties of the geologic materials. Electrical resistivities of geologic materials are measured in ohm-meters, and are functions of porosity, permeability, water saturation and the concentration of dissolved solids in the pore fluids.

Resistivity methods measure the bulk resistivity of the subsurface, as do the electromagnetic methods. The difference between the two methods is in the way that electrical currents are forced to flow in the earth. In the electrical resistivity method, current is injected into the ground through surface electrodes, whereas in electromagnetic methods currents are induced by application of time-varying magnetic fields.

Advantages

The principal advantage of the electrical resistivity method is that quantitative modeling is possible

using either computer software or published master curves. The resulting models can provide accurate estimates of depths, thicknesses and resistivities of subsurface layers. The layer resistivities can then be used to estimate the resistivity of the saturating fluid, which is related to the total concentration of dissolved solids in the fluid.

Disadvantages

The limitations of using the resistivity method in groundwater pollution site investigations are largely due to site characteristics, rather than in any inherent limitations of the method. Typically, polluted sites are located in industrial areas that contain an abundance of broad spectrum electrical noise. In conducting a resistivity survey, the voltages are relayed to the receiver over long wires that are grounded at each end. These wires act as antennae receiving the radiated electrical noise that in turn degrades the quality of the measured voltages.

Resistivity surveys require a fairly large area, far removed from pipelines and grounded metallic structures such as metal fences, pipelines and railroad tracks. This requirement precludes using resistivity on many polluted sites. However, the resistivity method can often be used successfully off-site to map the stratigraphy of the area surrounding the site. A general "rule of thumb" for resistivity surveying is that grounded structures be at least half of the maximum electrode spacing distance away from the axis of the survey line.

Another consideration in the resistivity method is that the fieldwork tends to be more labor intensive than some other geophysical techniques. A minimum of two to three crew members are required for the fieldwork.

4.2.4 Seismic

Surface seismic techniques used in groundwater pollution site investigations are largely restricted to seismic refraction and seismic reflection methods. The equipment used for both methods is fundamentally the same and both methods measure the travel-time of acoustic waves propagating through the subsurface. In the refraction method, the travel-time of waves refracted along an acoustic interface is measured, and in the reflection method, the travel-time of a wave which reflects or echoes off an interface is measured.

The interpretation of seismic data will yield subsurface velocity information, which is dependent upon the acoustic properties of the subsurface material. Various geologic materials can be categorized by their acoustic properties or velocities. Depth to geologic interfaces are calculated using the velocities obtained from a seismic investigation. The geologic information gained from a seismic investigation is then used in the hydrogeologic assessment of a groundwater pollution site and the surrounding area. The interpretation of seismic data indicates changes in lithology or stratigraphy, geologic structure, or water saturation (water table). Seismic methods are commonly used to determine the depth and structure of geologic and hydrogeologic units, to estimate hydraulic conductivity, to detect cavities or voids, to determine structure stability, to detect fractures and fault zones, and to estimate ripability. The choice of method depends upon the information needed and the nature of the study area. This decision must be made by a geophysicist who is experienced in both methods, is aware of the geologic information needed by the hydrogeologist, and is also aware of the environment of the study area. The refraction technique has been used more often than the reflection technique for hazardous waste site investigations.

Seismic Refraction Method

Seismic refraction is most commonly used at sites where bedrock is less than 500 feet below the ground surface. Seismic refraction is simply the travel path of a sound wave through an upper medium and along an interface and then back to the surface. A detailed discussion of the seismic refraction technique can be found in Dobrin (1976), Telford, et. al. (1985), and Musgrave (1967).

Advantages: Seismic refraction surveys are more common than reflection surveys for site investigations. The velocities of each layer can be determined from refraction data, and a relatively precise estimate of the depth to different interfaces can be calculated.

Refraction surveys add to depth information in-between boreholes. Subsurface information can be obtained between boreholes at a fraction of the cost of drilling. Refraction data can be used to determine the depth to the water table or bedrock. In buried valley areas, refraction surveys map the depth to bedrock. The velocity information

obtained from a refraction survey can be related to various physical properties of the bedrock. Rock types have certain ranges of velocities and these velocities are not always unique to a particular rock type. However, they can allow a geophysicist to differentiate between certain units, such as shales and granites.

Disadvantages: The seismic refraction method is based on several assumptions. To successfully resolve the subsurface using the refraction method, the conditions of the geologic environment must approximate these assumptions:

- the velocities of the layers increase with depth,
- the velocity contrast between layers is sufficient to resolve the interface, and
- the geometry of the geophones in relation to the refracting layers will permit the detection of thin layers.

These conditions must be met for accurate depth information.

Collecting and interpreting seismic refraction data has several disadvantages. Data collection can be labor intensive. Also, large line lengths are needed; therefore, as a general rule, the distance from the shot, or seismic source, to the first geophone station must be at least three times the desired depth of exploration.

Seismic Reflection Method

The seismic reflection method is not as commonly used on groundwater pollution site investigations as seismic refraction. In the seismic reflection method, a sound wave travels down to a geologic interface and reflects back to the surface. Reflections occur at an interface where there is a change in the acoustic properties of the subsurface material.

Advantages: The seismic reflection method yields information that allows the interpreter to discern between fairly discrete layers, so it is useful for mapping stratigraphy. Reflection data is usually presented in profile form, and depths to interfaces are represented as a function of time. Depth information can be obtained by converting time sections into depth measurements using velocities obtained from seismic refraction data, sonic logs, or velocity logs. The reflection technique requires much less space than refraction surveys. The long offsets of the seismic source from the geophones, common in refraction surveys, are not required in the reflection method. In some geologic environments, reflection data can yield acceptable depth estimates.

Disadvantages: The major disadvantage to using reflection data is that a precise depth determination cannot be made. Velocities obtained from most reflection data are at least 10% and can be 20% of the true velocities. The interpretation of reflection data requires a qualitative approach. In addition to being more labor intensive, the acquisition of reflection data is more complex than refraction data.

The reflection method places higher requirements on the capabilities of the seismic equipment. Reflection data is commonly used in the petroleum exploration industry and requires a large amount of data processing time and lengthy data collection procedures. Although mainframe computers are often used in the reduction and analysis of large amounts of reflection data, recent advances have allowed for the use of personal computers on small reflection surveys for engineering purposes. In most cases, the data must be recorded digitally or converted to a digital format, to employ various numerical processing operations. The use of high resolution reflection seismic methods relies heavily on the geophysicist, the computer capacity, the data reduction and processing programs, resolution capabilities of the seismograph and geophones, and the ingenuity of the interpreter. Without these capabilities, reflection surveys are not recommended.

4.2.5 Ground Penetrating Radar

The ground penetrating radar (GPR) method is used for a variety of civil engineering, groundwater evaluation and hazardous waste site applications. This geophysical method is the most site-specific of all geophysical techniques, providing subsurface information ranging in depth from several tens of meters to only a fraction of a meter. A basic understanding of the function of the GPR instrument, together with a knowledge of the geology and mineralogy of the site, can help determine if GPR will be successful in the site assessment. When possible, the GPR technique should be integrated with other geophysical and

geologic data to provide the most comprehensive site assessment.

The GPR method uses a transmitter that emits pulses of high-frequency electromagnetic waves into the subsurface. The transmitter is either moved slowly across the ground surface or moved at fixed station intervals. The penetrating electromagnetic waves are scattered at points of change in the complex dielectric permittivity, which is a property of the subsurface material dependent primarily upon the bulk density, clay content and water content of the subsurface (Olhoeft, 1984). The electromagnetic energy which is scattered back to the receiving antenna on the surface is recorded as a function of time.

Depth penetration is severely limited by attenuation of the transmitted electromagnetic waves into the ground. Attenuation is caused by the sum of electrical conductivity, dielectric relaxation, and geometric scattering losses in the subsurface. Generally, penetration of radar frequencies is minimized by a shallow water table, an increase in the clay content of the subsurface, and in environments where the electrical resistivity of the subsurface is less than 30 ohm-meters (Olhoeft, 1986). Ground penetrating radar works best in dry sandy soil above the water table. At applicable sites, depth resolution should be between 1 and 10 meters (Benson, 1982).

The analog plot produced by a continuously recording GPR system is analogous to a seismic reflection profile; that is, data is represented as a function of horizontal distance versus time. This representation should not be confused with a geologic cross section which represents data as a function of horizontal distance versus depth. Because very high-frequency electromagnetic waves in the megahertz range are used by radar systems, and time delays are measured in nanoseconds (10^{-9} seconds), very high resolution of the subsurface is possible using GPR. This resolution can be as high as 0.1 meter. For depth determinations, it is necessary to correlate the recorded features with actual depth measurements from boreholes or from the results of other geophysical investigations. When properly interpreted, GPR data can optimally resolve changes in soil horizons, fractures, water insoluble contaminants, geological features, man-made buried objects, and hydrologic features such as water table depth and wetting fronts.

Advantages

Most GPR systems can provide a continuous display of data along a traverse which can often be interpreted qualitatively in the field. GPR is capable of providing high resolution data under favorable site conditions. The real-time capability of GPR results in a rapid turnaround, and allows the geophysicist to quickly evaluate subsurface site conditions.

Disadvantages

One of the major limitations of GPR is the site-specific nature of the technique. Another limitation is the cost of site preparation which is necessary prior to the survey. Most GPR units are towed across the ground surface. Ideally, the ground surface should be flat, dry, and clear of any brush or debris. The quality of the data can be degraded by a variety of factors, such as an uneven ground surface or various cultural noise sources. For these reasons, it is mandatory that the site be visited by the project geophysicist before a GPR investigation is proposed. The geophysicist should also evaluate all stratigraphic information available, such as borehole data and information on the depth to water table in the survey area.

4.3 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

This section is not applicable to this SOP.

4.4 INTERFERENCES AND POTENTIAL PROBLEMS

See section 4.2.1 for a discussion of limitations of the magnetic method.

See section 4.2.2 for a discussion of limitations of the electromagnetic method.

See section 4.2.3 for a discussion of limitations of the electrical resistivity method.

See section 4.2.4 for a discussion of limitations of the seismic refraction method and the seismic reflection method.

See section 4.2.5 for a discussion of limitations of the ground penetrating radar (GPR) method.

4.5 EQUIPMENT/APPARATUS

4.5.1 Magnetics

- GEM GSM-19G magnetometer/gradiometer, EDA OMNI IV magnetometer/gradiometer, Geonics 856AGX (with built-in datalogger) or equivalent
- magnetometer base station
- 300-foot tape measure
- non-ferrous survey stakes (wooden or plastic)

4.5.2 Electromagnetics

- Geonics EM-31, EM-34 or equivalent
- Polycorder datalogger
- Dat 31Q software (data dump software)
- 300-foot tape measure
- survey stakes

4.5.3 Electrical Resistivity

- DC resistivity unit (non-specific)
- 4 electrodes and appropriate cables (length dependent on depth of survey)
- 1 or 2 12-volt car batteries
- 300-foot tape measure

4.5.4 Seismic

- 12- or 24-channel seismograph (Geometrics 2401 or equivalent)
- 30 10Hz to 14Hz geophones (for refraction)
- 30 50Hz or greater geophones (for reflection)
- 300-foot tape measure
- survey stakes
- sledge hammer and metal plate or explosives

4.5.5 Ground Penetrating Radar

- GSSI SIR-8 or equivalent
- 80 Mhz, 100 Mhz or 300 Mhz antenna/receiver pit
- 200-foot cable
- 300-foot tape measure

4.6 REAGENTS

This section is not applicable to this SOP.

4.7 PROCEDURES

Refer to the manufacturer's operating manual for specific procedures relating to operation of the equipment.

4.8 CALCULATIONS

Calculations vary based on the geophysical method employed. Refer to the instrument-specific users manual for specific formulae.

4.9 QUALITY ASSURANCE/ QUALITY CONTROL

The following general quality assurance activities apply to the implementation of these procedures.

- All data must be documented on field data sheets or within site logbooks.
- All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

Method-specific quality assurance procedures may be found in the user's manual.

4.10 DATA VALIDATION

Evaluate data as per the criteria established in section 4.9 above.

4.11 HEALTH AND SAFETY

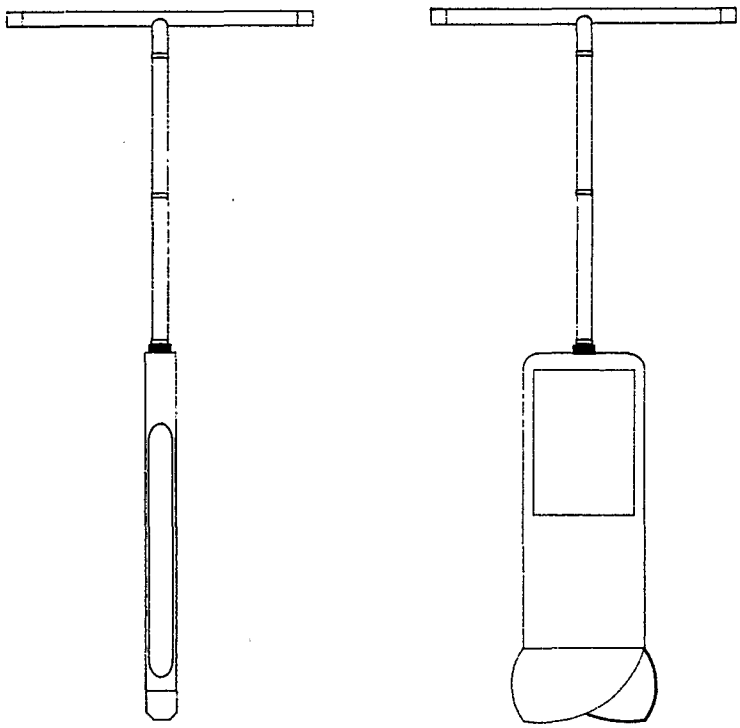
When working with potentially hazardous materials, follow U.S. EPA, OSHA and specific health and safety procedures.

APPENDIX A

Figures

Figure 1: Sampling Augers

SOP #2012



TUBE AUGER

BUCKET AUGER

Figure 2: Sampling Trier

SOP #2012

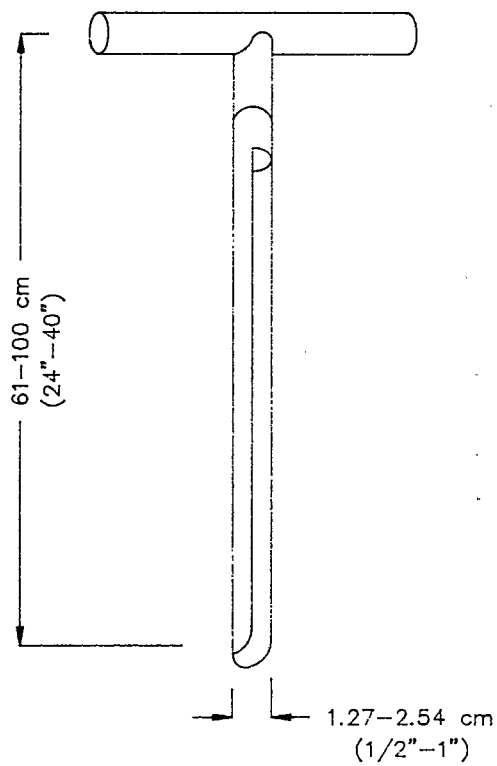
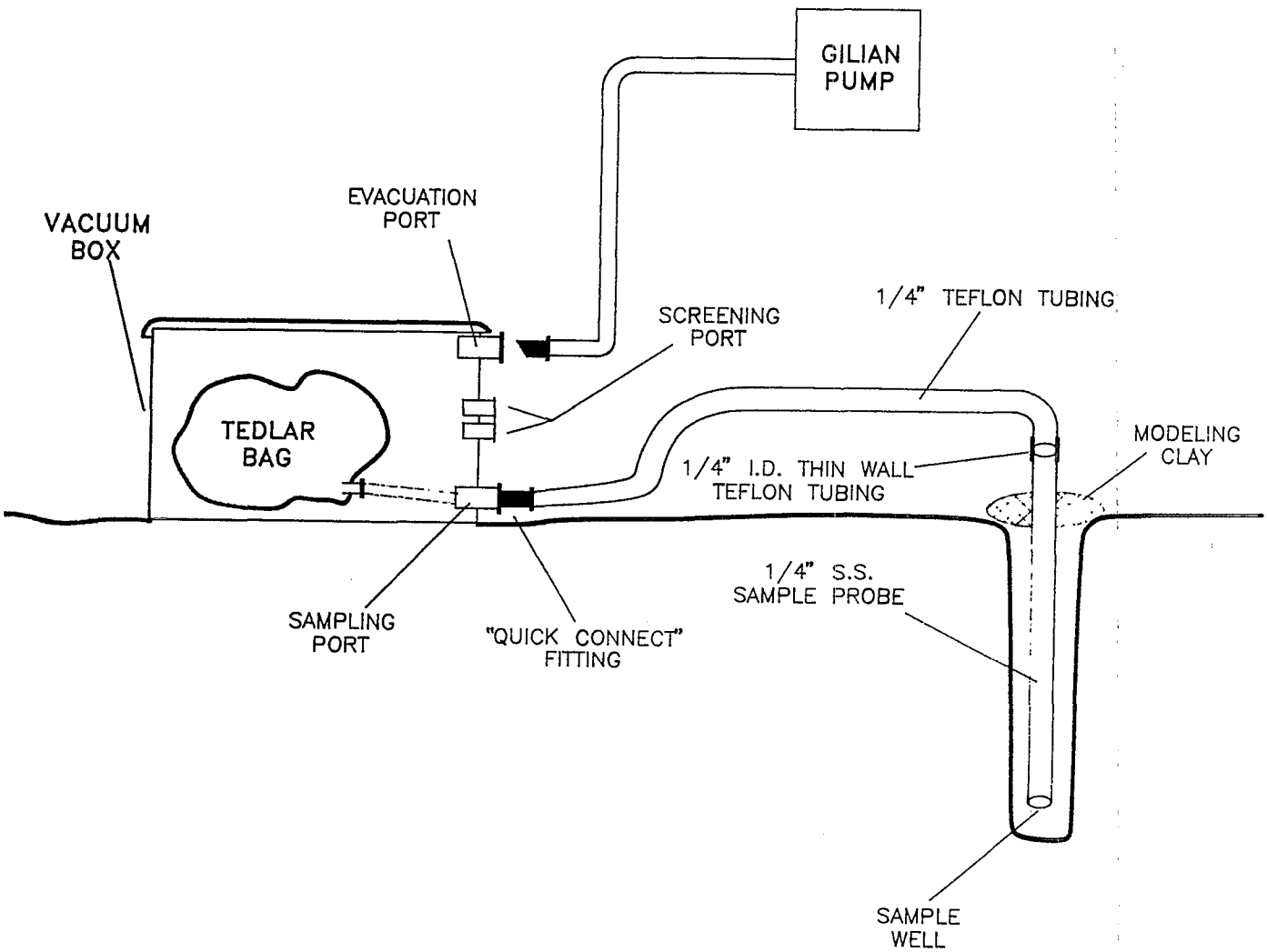


Figure 3: Sampling Train Schematic

SOP #2149



APPENDIX B

HNU Field Protocol

Startup Procedure

1. Before attaching the probe, check the function switch on the control panel to ensure that it is in the "off" position. Attach the probe by plugging it into the interface on the top of the readout module. Use care in aligning the prongs in the probe cord with the socket: do not force it.

2. Turn the function switch to the battery check position. The needle on the meter should read within or above the green area on the scale. If not, recharge the battery. If the red indicator light comes on, the battery needs recharging.

3. Turn the function switch to any range setting. For no more than 2 to 3 seconds, look into the end of the probe to see if the lamp is on. If it is on, you will see a purple glow. Do not stare into the probe any longer than three seconds. Long term exposure to UV light can damage the eyes. Also, listen for the hum of the fan motor.

4. To zero the instrument, turn the function switch to the standby position and rotate the zero adjustment until the meter reads zero. A calibration gas is not needed since this is an electronic zero adjustment. If the span adjustment setting is changed after the zero is set, the zero should be rechecked and adjusted, if necessary. Wait 15 to 20 seconds to ensure that the zero reading is stable. If necessary, readjust the zero.

Operational Check

1. Follow the startup procedure.

2. With the instrument set on the 0-20 range, hold a solvent-based Magic Marker near the probe tip. If the meter deflects upscale, the instrument is working.

Field Calibration Procedure

1. Follow the startup procedure and the operational check.

2. Set the function switch to the range setting for the concentration of the calibration gas.

3. Attach a regulator (HNU 101-351) to a disposable cylinder of isobutylene gas. Connect the regulator to the probe of the HNU with a piece of clean Tygon tubing. Turn the valve on the regulator to the "on" position.

4. After 15 seconds, adjust the span dial until the meter reading equals the concentration of the calibration gas used. The calibration gas is usually 100 ppm of isobutylene in zero air. The cylinders are marked in benzene equivalents for the 10.2 eV probe (approximately 55 ppm benzene equivalent) and for the 11.7 eV probe (approximately 65 ppm benzene equivalent). Be careful to unlock the span dial before adjusting it. If the span has to be set below 3.0 calibration, the lamp and ion chamber should be inspected and cleaned as appropriate. For cleaning of the 11.7 eV probe, only use an electronic-grade, oil-free freon or similar water-free, grease-free solvent.

5. Record in the field log: the instrument ID # (EPA decal or serial number if the instrument is a rental); the initial and final span settings; the date and time; concentration and type of calibration used; and the name of the person who calibrated the instrument.

Operation

1. Follow the startup procedure, operational check, and calibration check.

2. Set the function switch to the appropriate range. If the concentration of gases or vapors is unknown, set the function switch to the 0-20 ppm range. Adjust it as necessary.

3. While taking care not to permit the HNU to be exposed to excessive moisture, dirt, or contamination, monitor the work activity as specified in the site health and safety plan.

4. When the activity is completed or at the end of the day, carefully clean the outside of the HNU with a damp disposable towel to remove any

visible dirt. Return the HNU to a secure area and place on charge.

5. With the exception of the probe's inlet and exhaust, the HNU can be wrapped in clear plastic to prevent it from becoming contaminated and to prevent water from getting inside in the event of precipitation.

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SOP 0110.05

SAMPLE NOMENCLATURE

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the sample nomenclature for analytical samples that will generate unique sample names compatible with most data management systems. The sample nomenclature is based upon specific requirements for the reporting of these results. A site specific data management plan should be prepared prior to sample collection.

PROCEDURE

SAMPLE NOMENCLATURE – SOIL AND SEDIMENT

Area of Concern – ID – Depth - Collection Type + QC Type

Where:

Area of Concern: A four-digit identifier used to designate the particular Area of Concern (AOC) that the location where the sample was collected.

ID: A three letter &/or digit identifier used to designate the particular location (i.e. grid A01, P06, or 055) in the AOC from which the sample was collected or the center of the composite sample.

Depth: A two-digit code used to designate what depth of sample was collected:

code	Assessment	Confirmation
00	0 to 0 Surface	N/A
03	0 to 3 inches	3 inches below original ground surface
06	3 to 6 inches	6 inches below original ground surface
12	6 to 12 inches	12 inches below original ground surface

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water
2	Ground Water
3	Leachate
4	Field QC/water sample
5	Soil/Sediment

6	Oil
7	Waste
8	Other
9	Drinking Water

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal
2	Duplicate
3	Rinsate Blank
4	Trip Blank
5	Field Blank
6	Confirmation, Normal
7	Confirmation, Duplicate

Examples:

- ***2054-055-06-51:*** Represents the normal soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- ***2054-055-06-52***: Represents the duplicate soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

- ***2054-000-00-43:*** Represents the rinsate sample from AOC 2054

- ***2054-055-06-56***: Represents the normal soil sample collected from AOC 2054 at location 055 after 6 inches of material has been removed as the confirmation sample during removal.

  NOTE: The depth is in relation to the original ground surface.

- ***2054-055-06-43***: Represents the rinsate water sample collected after the last sample of the day if last sample was collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

SAMPLE NOMENCLATURE – WATER (from fixed station or location to be sampled more than once)

WELL OR STATION – YYYYMMDD - Collection Type + QC Type

Where:

Well or Station: For Wells and boreholes always assume there will be 10 or more so Monitoring Well 1 becomes designated MW01 or MW-01. If it is anticipated that there will be over 100 wells designate Monitoring Well 1 as MW001 or MW-001.

YYYYMMDD: A four-digit year + two-digit month + two-digit day

Collection Type: A one-digit code used to designate what type of sample was collected and are shown on page 1.

QC Type: A one-digit code used to designate the QC type of the sample and are shown on page 1.

Examples:

- ***MW01-20090226-21:*** Represents the normal groundwater sample collected from Monitoring Well 1 on 26 February 2009.

- ***MW01-20090226-44:*** Represents the trip blank in the same ice chest as the groundwater sample in the previous collected from Monitor Well 1 on 02/26/2009. All trip blanks must have a sample ID and they must be unique and on the Chain-of -Custody.

SOP 0110.01

SAMPLE NOMENCLATURE

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the sample nomenclature for analytical samples that will generate unique sample names compatible with most data management systems. The sample nomenclature is based upon specific requirements for the reporting of these results. A site specific data management plan should be prepared prior to sample collection.

PROCEDURE

SAMPLE NOMENCLATURE – SOIL AND SEDIMENT

Area of Concern – ID – Depth - Collection Type + QC Type

Where:

Area of Concern: A four-digit identifier used to designate the particular Area of Concern (AOC) that the location where the sample was collected.

ID: A three-digit identifier used to designate the particular location in the AOC from which the sample was collected or the center of the composite sample.

Depth: A two-digit code used to designate what depth of sample was collected:

03	0 to 3 inches
06	3 to 6 inches
12	6 to 12 inches

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water
2	Ground Water
3	Leachate
4	Field QC/water sample
5	Soil/Sediment

6	Oil
7	Waste
8	Other
9	Drinking Water

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal
2	Duplicate
3	Rinsate Blank
4	Trip Blank
5	Field Blank
6	Confirmation

Examples:

- ***2054-055-06-51:*** Represents the normal soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- ***2054-055-06-52***: Represents the duplicate soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- ***2054-055-06-43***: Represents the rinsate water sample collected after the last sample of the day if last sample was collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

SAMPLE NOMENCLATURE – WATER (from fixed station or location to be sampled more than once)

WELL OR STATION – YYYYMMDD - Collection Type + QC Type

Where:

Well or Station: For Wells and boreholes always assume there will be 10 or more so Monitoring Well 1 becomes designated MW01 or MW-01. If it is anticipated that there will be over 100 wells designate Monitoring Well 1 as MW001 or MW-001.

YYYYMMDD: A four-digit year + two-digit month + two-digit day

Collection Type: A one-digit code used to designate what type of sample was collected and are shown on page 1.

QC Type: A one-digit code used to designate the QC type of the sample and are shown on page 1.

Examples:

- ***MW01-20090226-21:*** Represents the normal groundwater sample collected from Monitoring Well 1 on 26 February 2009.
- ***MW01-20090226-44:*** Represents the trip blank in the same ice chest as the groundwater sample in the previous collected from Monitor Well 1 on 02/26/2009. All trip blanks must have a sample ID and they must be unique and on the Chain-of -Custody.
- ***2054-000-00-43:*** Represents the rinsate sample from AOC 2054

SOP 0110.05

SAMPLE NOMENCLATURE

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the sample nomenclature for analytical samples that will generate unique sample names compatible with most data management systems. The sample nomenclature is based upon specific requirements for the reporting of these results. A site specific data management plan should be prepared prior to sample collection.

PROCEDURE

SAMPLE NOMENCLATURE – SOIL AND SEDIMENT

Area of Concern – ID – Depth - Collection Type + QC Type

Where:

Area of Concern: A four-digit identifier used to designate the particular Area of Concern (AOC) that the location where the sample was collected.

ID: A three letter &/or digit identifier used to designate the particular location (i.e. grid A01, P06, or 055) in the AOC from which the sample was collected or the center of the composite sample.

Depth: A two-digit code used to designate what depth of sample was collected:

code	Assessment	Confirmation
00	0 to 0 Surface	N/A
03	0 to 3 inches	3 inches below original ground surface
06	3 to 6 inches	6 inches below original ground surface
12	6 to 12 inches	12 inches below original ground surface

Collection Type: A one-digit code used to designate what type of sample was collected:

1	Surface Water
2	Ground Water
3	Leachate
4	Field QC/water sample
5	Soil/Sediment

6	Oil
7	Waste
8	Other
9	Drinking Water

QC Type: A one-digit code used to designate the QC type of the sample:

1	Normal
2	Duplicate
3	Rinsate Blank
4	Trip Blank
5	Field Blank
6	Confirmation, Normal
7	Confirmation, Duplicate

Examples:

- ***2054-055-06-51:*** Represents the normal soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.
- ***2054-055-06-52***: Represents the duplicate soil sample collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

- ***2054-000-00-43:*** Represents the rinsate sample from AOC 2054

- ***2054-055-06-56***: Represents the normal soil sample collected from AOC 2054 at location 055 after 6 inches of material has been removed as the confirmation sample during removal.

  NOTE: The depth is in relation to the original ground surface.

- ***2054-055-06-43***: Represents the rinsate water sample collected after the last sample of the day if last sample was collected from AOC 2054 at location 055 from 3 to 6 inches of depth.

SAMPLE NOMENCLATURE – WATER (from fixed station or location to be sampled more than once)

WELL OR STATION – YYYYMMDD - Collection Type + QC Type

Where:

Well or Station: For Wells and boreholes always assume there will be 10 or more so Monitoring Well 1 becomes designated MW01 or MW-01. If it is anticipated that there will be over 100 wells designate Monitoring Well 1 as MW001 or MW-001.

YYYYMMDD: A four-digit year + two-digit month + two-digit day

Collection Type: A one-digit code used to designate what type of sample was collected and are shown on page 1.

QC Type: A one-digit code used to designate the QC type of the sample and are shown on page 1.

Examples:

- ***MW01-20090226-21:*** Represents the normal groundwater sample collected from Monitoring Well 1 on 26 February 2009.

- ***MW01-20090226-44:*** Represents the trip blank in the same ice chest as the groundwater sample in the previous collected from Monitor Well 1 on 02/26/2009. All trip blanks must have a sample ID and they must be unique and on the Chain-of -Custody.

SOP 1001.01

SURFACE SOIL SAMPLING

INTRODUCTION

The following Standard Operating Procedure (SOP) is to describe the procedures for collecting representative soil samples. Analysis of soil samples may determine whether concentrations of specific soil pollutants exceed established action levels, or if the concentrations of soil pollutants present a risk to public health, welfare, or the environment. This SOP is similar to SOP Number 1001.03 for collecting near surface soil samples with a hand auger.

PROCEDURE

Surface soil samples may be collected using a variety of methods and equipment. The methods and equipment used are dependent on the depth of the desired sample, the type of sample required (disturbed versus undisturbed), and the type of soil. Near-surface soils may be easily sampled using a spade, trowel, or hand scoop.

Sample Preservation

Cooling to 4°C ± 2°C, supplemented by a minimal holding time, is suggested.

Interferences and Potential Problems

There are two primary interferences or potential problems associated with soil sampling: cross-contamination of samples and improper sample collection. Cross-contamination problems can be eliminated or minimized through the use of dedicated (disposable) sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results. Homogenization may also affect sample representativeness where the analytical requirements include volatile organic compounds.

Equipment or Apparatus

The equipment used for sampling may be selected from the following list, as appropriate:

- Tape measure
- Survey stakes or flags
- Stainless steel, plastic, or other appropriate homogenization bucket or bowl
- Ziploc plastic bags
- Logbook
- Labels
- Chain-of-custody forms and seals
- Coolers
- Ice
- Decontamination supplies and equipment
- Canvas or plastic sheet
- Spatulas/spades/shovels
- Scoops

- Plastic or stainless steel spoons
- Trowel

Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and what equipment and supplies are required.
2. Obtain necessary sampling and monitoring equipment from the list above.
3. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.
4. Perform a general site survey prior to site entry in accordance with the site-specific health and safety plan.
5. Decontaminate or preclean equipment, and ensure that it is in working order.
6. Use stakes, buoys, or flagging to identify and mark all sampling locations. Consider specific site factors, including extent and nature of contaminant, when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations will be utility-cleared by the property owner or other responsible party prior to soil sampling.
7. Evaluate safety concerns associated with sampling that may require use of personal protective equipment and/or air monitoring.

Surface Soil Sample Collection

Collect samples from the near-surface soil with tools such as spades, shovels, and scoops. Surface material can be removed to the required depth with this equipment, then a stainless steel or plastic scoop can be used to collect the sample. The use of a flat, pointed mason trowel to cut a block of the desired soil can be helpful when undisturbed profiles are required. A stainless steel scoop, lab spoon, or plastic spoon will suffice in most other applications. Avoid the use of devices plated with chrome or other target analyte materials.

The following procedures should be followed when collecting surface soil samples:

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.
2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.
3. If volatile organic analysis is to be performed, transfer a portion of the sample directly into an appropriate, labeled sample container(s) with a stainless steel lab spoon, plastic lab spoon, or equivalent and secure the cap(s) tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into an appropriate, labeled container(s) and secure the cap(s) tightly; or if composite samples are to be collected, place a sample from another sampling interval into the

homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled container(s) and secure the cap(s) tightly.

4. Fill hole created through sampling with unused material or other appropriate backfill material (sand).

5. Record applicable information into field log book or appropriate forms as documentation of sampling.

SOP 1001.10

SOIL COMPOSITING

SOP	**1001.10**				
GROUP	Soil Sampling Procedures				
SUB-GROUP					
TITLE	Soil Compositing				
DATE	2/23/2010	**FILE**	1001-10.DOC	**PAGE**	1 of 2

INTRODUCTION

The following Standard Operating Procedure (SOP) describes the procedure for compositing soil samples. Soil samples are typically collected for laboratory analysis, and sometimes it is necessary to composite (mix together) samples from several locations for one combined analysis at the laboratory. This soil sampling procedure is closely related to SOP Nos. 1001.01, 1001.03, and 1001.10 regarding soil sampling procedures. This procedure serves as an alternative method of sample preparation prior to placing the samples in containers, as described in the other named SOPs.

PROCEDURE

Equipment

Equipment that may be used as part of the soil compositing procedure is identified under SOP Nos. 1001.01 and 1001.03 where soil sampling methods are described. Specific equipment typically used during the compositing process after discrete samples are collected includes:

- Mixing bowls or buckets
- Scoops, spatulas, and knives
- Sample containers
- Personal protection clothing
- Plastic Sheeting
- Decontamination equipment and supplies

Method

The procedure to be used to physically collect soil samples are described in SOP Nos. 1001.01 and 1001.03. Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. As soil samples are collected, the site-specific Sampling and Analysis Plan may required compositing (mixing together) of two or more samples to create a single sample that will be sent to the laboratory for analysis. When this is the case, the following compositing procedure will generally be used:

- The soil will be collected in general accordance with SOP 1001.01 or 1001.03, with the exception that samples from discrete locations will generally not be immediately placed into sample containers and an additional preparation step (i.e., compositing) will be performed.

- As they are collected, soil samples selected for compositing will be staged in a clean mixing bowl or mixing bucket until each sample to be included in the composite sample is obtained. Depending on site requirements and analytical procedures to be requested, it may be necessary to temporarily stage individual discrete-location samples within clean sample jars, aluminum foil, or other appropriate materials for the project. The method for sample staging should be specified in the site-specific sampling and analysis plan.

- For composite samples that will be analyzed for volatile organic compounds, an equal portion of soil will be removed directly from each discrete-location sample and placed into a final sample jar without homogenizing the soil.

- For analyses other than volatile organics, equal portions of soil will be removed from each discrete-location sample and placed in a clean mixing bowl. The equal portions of the samples will then be broken up and homogenized together using a scoop or spatula. Homogenization will generally continue until the discrete samples being combined are reasonably indistinquishable as indivual individual samples in the soil mixture. However, it is recognized that homogenization can be difficult for highly plastic clays. In this case, equal amounts of the the soil core of each clay sample will be cut into small, roughly cubical pieces using a stainless steel knife, and an equal numbers of pieces of each discrete sample will be placed into the bowl and homogenized to extent practical.

- The composited soil sample will be collected from the mixing bowl containing the individual homogenized samples after homogenization is performed. The composited sample will be collected using a stainless steel or disposable plastic scoop or similar tool. The sample will be placed in a clean sample container and then handled in accordance with soil sampling SOPs 1001.01 and 1001.03.

Variations on this procedure are allowable to accomodate different soil conditions and any site requirements specifically identified in the site-specific Sampling and Analysis Plan.

The number of discrete samples that may be composited into a single sample typically ranges from two to six. The number of discrete samples that may be composited for the project in question will be specified in the site-specific Sampling and Analysis Plan.

REFERENCES

SOP No. 1001.01 - Standard Operating Procedure, Surface Soil Sampling
SOP No. 1001.03 - Standard Operating Procedure, Shallow Subsurface and Near Surface Soil Sampling

SOP 1005.01

FIELD DUPLICATE COLLECTION

INTRODUCTION

The following Standard Operating Procedure (SOP) describes the procedure for collecting field duplicate soil and water samples. When samples are collected for analysis, it is typically desired that independent data allowing evaluation of laboratory precision (i.e., the degree to which a laboratory result can be repeated) on site-specific samples be collected.

A field duplicate sample is a second sample collected at the same location as the original sample. Duplicate samples are collected simultaneously or in immediate succession, using identical recovery techniques, and treated in an identical manner during storage, transportation, and analysis. The sample containers are assigned an identification number in the field such that they cannot be identified (blind duplicate) as duplicated samples by laboratory personnel performing the analysis. Specific locations are designated for collection of field duplicate samples prior to the beginning of sample collection.

The duplicate soil sampling procedure is closely related to SOP Nos. 1001.01, 1001.03, and 1001.10 regarding soil sampling procedures. This procedure serves as an alternative method or extension of sample preparation prior to placing the samples in containers, as described in the 1001 series of the SOPs (e.g. 1001.01 and 1001.03).

DUPLICATE SOIL SAMPLING PROCEDURE

The procedure to be used to physically collect soil samples are described in SOP Nos. 1001.01 and 1001.03. Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. As soil is collected, the following procedure will be used to prepare a field duplicate sample:

- The soil will be collected in general accordance with SOP 1001.01 or 1001.03, with the exception that samples will generally not be immediately placed into sample containers and an additional preparation step (i.e., sample splitting) will be performed.

- As they are collected, soil samples to be submitted as field duplicates will be staged in a clean mixing bowl or mixing bucket.

- For samples that will be analyzed for volatile organic compounds, the soil sample will be split in half and an equal portion of soil will be placed directly into two or more different sample containers, each container representing a different sample for laboratory analysis. The soil will not be homogenized to minimize the potential for volatilization of the organic compounds potentially in the sample.

- For analyses of chemicals other than volatile organic compounds, the soil removed from the discrete sample location will be homogenized in a clean mixing bowl using a clean scoop or spatula (as described in SOPs 1001.01 and 1001.03). Homogenization will generally continue until the discrete samples being combined are reasonably indistinguishable as individual samples in the soil mixture. However, it is recognized that homogenization can be difficult for highly plastic clays. In this case, equal amounts of the soil core of each clay sample will be cut into small, roughly cubical pieces using a stainless steel knife and placed into a bowl and homogenized to extent practical.

- The field duplicate sample (except for volatiles as note above) will be collected from the mixing bowl containing the homogenized samples after homogenization is performed. The composited sample will be collected using a stainless steel or disposable plastic scoop or similar tool. The sample will be placed in a clean sample container and then handled in accordance with soil sampling SOPs 1001.01 and 1001.03.

Another difference from the referenced SOPs is that additional soil volume may need to be collected from a discrete sample location during the sampling process to provide sufficient sample volume for two or more sets of laboratory analyses. If the collection of additional sample volume will result in the sample interval expanding to greater depths or laterally outward, the sampling tools identified in 1001 series of the SOPs can be used at two immediately vertically or laterally adjacent locations, as appropriate. If sampling from two adjacent but distinct locations is necessary to obtain adequate sample volume, the soil from the two locations should be composited in accordance with SOP 1001.10. Field duplicates of composited samples may also be performed using this SOP for field duplicate samples.

Variations on this procedure are allowable to accommodate different soil conditions and any site requirements specifically identified in the site-specific Sampling and Analysis Plan. Equipment that may be used as part of the soil compositing procedure is identified under SOP Nos. 1001.01 and 1001.03 where soil sampling methods are described.

DUPLICATE WATER SAMPLING PROCEDURES

The procedure to be used to physically collect water samples are described in 1002 series of the SOPs (e.g. 1002.01 and 1002.02). Reference should be made to these SOPs for specific sampling equipment, procedures, and other general guidelines. A duplicate water sample will be collected from the same location as the parent sample and within 15 minutes of the collection of the parent sample.

The number of samples that may be submitted as blind field duplicates for the project in question will be specified in the site-specific sampling plan. Blind field duplicates are typically collected at a frequency of 1 per 10 samples of a given environmental media at sites, especially where laboratory analytical data will be used for evaluating regulatory compliance and other engineering judgments. Sampling in support of a routine monitoring program may not require field duplicates. Reference should be made to the site-specific contract and work plans.

REFERENCES

SOP No. 1001.01 - Standard Operating Procedure, Surface Soil Sampling
SOP No. 1001.03 - Standard Operating Procedure, Soil Sampling - Hand Auger Method
SOP No. 1001.10 - Standard Operating Procedure, Soil Compositing

SOP 1101.01

SAMPLING HANDLING

SOP	**1101.01**				
GROUP	Sampling Handling				
SUB-GROUP	Sample Custody				
TITLE	Sample Custody in the Field				
DATE	**11/19/2001**	**FILE**	1101-01.DOC	**PAGE**	1 of 4

INTRODUCTION

The following Standard Operating Procedure (SOP) presents procedures for maintaining sample chain of custody (COC) during activities where samples are collected.

PROCEDURE

Sample custody is defined as being under a person's custody if any of the following conditions exist:

- it is in their possession,
- it is in their view, after being in their possession,
- it was in their possession and they locked it up, or
- it is in a designated secure area.

A designated field sampler will be personally responsible for the care and custody of collected samples until they are transferred to another person or properly dispatched to the laboratory. To the extent practicable, as few people as possible will handle the samples.

Sample tags or labels will be completed and applied to the container of each sample. When the tags or labels are being completed, waterproof ink will be used. If waterproof ink is not used, the tags or labels will be covered by transparent waterproof tape. Sample containers may also be placed in Ziploc-type storage bags to help keep them clean in the cooler. Information typically included on the sample tags or labels will include the following:

- Project Code
- Station Number and Location
- Sample Identification Number
- Date and Time of Sample Collection
- Type of Laboratory Analysis Required
- Preservation Required, if applicable
- Collector's Signature
- Priority (optional)
- Other Remarks

Additonal information may include:

- Anticipated Range of Results (Low, Medium, or High)
- Sample Analysis Priority

A COC form will be completed each time a sample or group of samples is prepared for transfer to the laboratory. The form will repeat the information on each of the sample labels and will serve as documentation of handling during shipment. The minimum information requirements of the COC form are listed in Table 1101.01-A. An example COC form is shown in Figure 1101.01-A. The completed COC must be reviewed by the Field Team Leader or Site Manager prior to sample shipment. The COC form will remain each sample shipping container at all times, and another copy will be retained by the member of the sampling team who originally relinquished the samples or in a project file.

TABLE 1101.01-A CHAIN OF CUSTODY FORM

INFORMATION	COMPLETED BY	DESCRIPTION
COC	Laboratory	enter a unique number for each chain of custody form
SHIP TO	Field Team	enter the laboratory name and address
CARRIER	Field Team	enter the name of the transporter (e.g., FedEx) or handcarried
AIRBILL	Field Team	enter the airbill number or transporter tracking number (if applicable)
PROJECT NAME	Field Team	enter the project name
SAMPLER NAME	Field Team	enter the name of the person collecting the samples
SAMPLER SIGNATURE	Field Team	signature of the person collecting the samples
SEND RESULTS TO	Field Team	enter the name and address of the prime contractor
FIELD SAMPLE ID	Field Team	enter the unique identifying number given to the field sample (includes MS, MSD, field duplicate and field blanks)
DATE	Field Team	enter the year and date the sample was collected in the format M/D (e.g., 6/3)
TIME	Field Team	enter the time the sample was collected in 24 hour format (e.g., 0900)
MATRIX	Field Team	enter the sample matrix (e.g., water, soil)
PRESERVATIVE	Field Team	enter the preservative used (e.g., HNO3) or "none"
FILTERED/ UNFILTERED	Field Team	enter "F" if the sample was filtered or "U" if the sample was not filtered
CONTAINERS	Field Team	enter the number of containers associated with the sample
MS/MSD	Field Team or Laboratory	enter "X" if the sample is designated for the MS/MSD
ANALYSES REQUESTED	Field Team	enter the method name of the analysis requested (e.g., SW6010A)
COMMENTS	Field Team	enter comments
SAMPLE CONDITION UPON RECEIPT AT LABORATORY	Laboratory	enter any problems with the condition of any sample(s)
COOLER TEMPERATURE	Laboratory	enter the internal temperature of the cooler, in degrees C, upon opening
SPECIAL INSTRUCTIONS/COMMENTS	Laboratory	enter any special instructions or comments
RELEASED BY (SIG)	Field Team and Laboratory	enter the signature of the person releasing custody of the samples
COMPANY NAME	Field Team and Laboratory	enter the company name employing the person releasing/receiving custody
RECEIVED BY (SIG)	Field Team and Laboratory	enter the signature of the person receiving custody of the samples
DATE	Field Team and Laboratory	enter the date in the format M/D/YY (e.g., 6/3/96) when the samples were released/received
TIME	Field Team and Laboratory	enter the date in 24 hour format (e.g., 0900) when the samples were released/received

FIGURE 1101.01-A CHAIN OF CUSTODY FORM

SOP 1102.01

SAMPLE HANDLING

SOP	**1102.01**				
GROUP	Sample Handling				
SUB-GROUP	Sample Shipping				
TITLE	Sample Shipping				
DATE	11/19/2001	**FILE**	1102-01.DOC	**PAGE**	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the procedures for sample shipping that will be implemented during field work involving sampling activities.

TERMS

COC - Chain-of-Custody

PROCEDURE

Prior to shipping or transferring custody of samples, they will be packed according to D.O.T. requirements with sufficient ice to maintain an internal temperature of 4°C ± 2°C during transport to the laboratory. Samples relinquished to the participating laboratories will be subject to the following procedures for transfer of custody and shipment:

1. Samples will be accompanied by a COC record. When transferring possession of samples, the individuals relinquishing and receiving the samples will sign, date, and note the time of the sample transfer on the record. If sent by common carrier, a bill of lading or airbill should be used. Bill of lading and airbill receipts will be retained in the project file as part of the permanent documentation of sample shipping and transfer. This custody record documents transfer of sample custody from the sampler to another person or to the laboratory. The designated laboratory will accept custody in the field upon sample pick-up or at the laboratory if the samples are delivered via field personnel or a courier service.
2. Samples will be properly packed in approved shipping containers for laboratory pick-up by the appropriate laboratory for analysis, with separate, signed custody records enclosed in each sample box or cooler. Sample shipping containers will be padlocked or custody-sealed for transfer to the laboratory. The preferred procedure includes use of a custody seal wrapped across filament tape that is wrapped around the package at least twice. The custody seal will then be folded over and stuck to itself so that the only access to the package is by cutting the filament tape or breaking the seal to unwrap the tape. The seal will then be signed. The designated laboratory will accept custody of the samples upon receipt.
3. Whenever samples are split with state representatives or other parties, the COC record will be marked to indicate with whom the samples were split.
4. The field sampler will call the designated laboratory to inform them of sample shipment and verify sample receipt as necessary.

SOP 1201.01

SAMPLING EQUIPMENT DECONTAMINATION

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the methods used for minimizing the potential for cross-contamination, and provides general guidelines for sampling equipment decontamination procedures.

PROCEDURE

As part of the Health and Safety Plan (HASP), develop and set up a decontamination plan before any personnel or equipment enter the areas of potential exposure. The decontamination plan should include the following:

- The number, location, and layout of decontamination stations
- Which decontamination apparatus is needed
- The appropriate decontamination methods
- Methods for disposal of contaminated clothing, apparatus, and solutions

Decontamination Methods

Personnel, samples, and equipment leaving the contaminated area of a site will be decontaminated. Various decontamination methods will be used to either physically remove contaminants, inactivate contaminants by disinfection or sterilization, or both. The physical decontamination techniques appropriate for equipment decontamination can be grouped into two categories: abrasive methods and non-abrasive methods.

Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing/scrubbing the surface containing the contaminant. This method includes mechanical and wet blasting methods.

Mechanical cleaning methods use brushes of metal or nylon. The amount and type of contaminants removed will vary with the hardness of bristles, length of brushing time, and degree of brush contact.

Cleaning can also be accomplished by water blasting which is also referred to as steam cleaning and pressure washing. Pressure washing utilizes high-pressure that is sprayed from a nozzle onto sampling equipment to physically remove soil or (potentially) contaminated material. Steam cleaning is a modification of pressure washing where the water is heated to temperatures approaching 100°C to assist in removing organic constituents from equipment.

Disinfection/Rinse Methods

Disinfectants are a practical means of inactivating chemicals or contaminants of concern. Standard sterilization methods involve heating the equipment which is impractical for large equipment. Rinsing removes contaminants through dilution, physical attraction, and solubilization.

The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be target analyte free. Tap water may be used from any municipal water treatment system for mixing of decontamination solutions. An untreated potable water supply is not an acceptable substitute for tap water. Acids and solvents are occasionally utilized in decontamination of equipment to remove metals and organics, respectively, from sampling equipment. Other than ethanol, these are avoided when possible due to the safety, disposal, and transportation concerns associated with them.

Equipment or apparatuses that may be selected for use include the following:

- Personal protective clothing
- Non-phosphate detergent
- Selected solvents for removal of polar and nonpolar organics (ethanol, methanol, hexane)
- Acid washes for removal of metals (nitric acid)
- Long-handled brushes
- Drop cloths or plastic sheeting
- Paper towels
- Galvanized tubs or buckets
- Distilled, deionized, or tap water (as required by the project)
- Storage containers for spent wash solutions
- Sprayers (pressurized and non-pressurized)
- Trash bags
- Safety glasses or splash shield

<u>Field Sampling Equipment Cleaning Procedures</u>

The following procedures should be followed:

1. Where applicable, follow physical removal procedures previously described (pressure wash, scrub wash)
2. Wash equipment with a non-phosphate detergent solution
3. Rinse with tap water
4. Rinse with distilled or deionized water
5. Rinse with 10% nitric acid if the sample will be analyzed for metals/organics
6. Rinse with distilled or deionized water
7. Use a solvent rinse (pesticide grade) if the sample will be analyzed for organics
8. Air dry the equipment completely
9. Rinse again with distilled or deionized water

10. Place in clean bag or container for storage/transport to subsequent sampling locations.

Selection of the solvent for use in the decontamination process is based on the contaminants present at the site. Solvent rinses are not necessarily required when organics are not a contaminant of concern and may be eliminated from the sequence specified below. Similarly, an acid rinse is not required if the analyses do not include inorganics. Use of a solvent is required when organic contamination is present on-site. Typical solvents used for removal of organic contaminants include acetone, ethanol, hexane, methanol, or water. An acid rinse step is required if metals are present on-site. If a particular contaminant fraction is not present at the site, the ten-step decontamination procedure listed above may be modified for site specificity.

Sampling equipment that requires the use of plastic tubing should be disassembled and the tubing replaced with clean tubing before commencement of sampling and between sampling locations. Plastic tubing should not be reused.

SOP 1501.01

FIELD LOGBOOK

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the procedures for documenting activities observed or completed in the field in a field logbook. The documentation should represent all activities of WESTON personnel and entities under WESTON's supervision.

TERMS

FSP - Field Sampling Plan

SAP - Sampling and Analysis Plan

QAPP - Quality Assurance Project Plan

HASP - Health and Safety Plan

PROCEDURE

Field logbooks will be used and maintained during field activities to document pertinent information observed or completed by WESTON personnel or entities that WESTON is responsible for providing oversight. Field logbooks are legal documents that form the basis for later written reports and may serve as evidence in legal proceedings. The Site Manager or Field Team Leader will review field log entries daily and initial each page of entries. Field logbooks will be maintained by the Site Manager or Field Team Leader during field activities and transferred to the project files for a record of activities at the conclusion of the project. General logbook entry procedures are listed below.

- Logbooks must be permanently bound with all pages numbered to the end of the book. Entries should begin on page 1.
- Only use blue or black ink (waterproof) for logbook entries.
- Sign entries at the end of the day, or before someone else writes in the logbook.
- If a complete page is not used, draw a line diagonally across the blank portion of the page and initial and date the bottom line.
- If a line on the page is not completely filled, draw a horizontal line through the blank portion.
- Ensure that the logbook clearly shows the sequence of the day's events.
- Do not write in the margins or between written lines, and do not leave blank pages to fill in later.
- If an error is made, make corrections by drawing a single line through the error and initialing it.
- Maintain control of the logbook and keep in a secure location.

Field logbooks will contain, at a minimum, the following information, if applicable:

General Information

- Name, location of site, and work order number
- Name of the Site Manager or Field Team Leader
- Names and responsibilities of all field team members using the logbook (or involved with activities for which entries are being made)
- Weather conditions
- Field observations
- Names of any site visitors including entities that they represent

Sample Collection Activities

- Date(s) and times of the sample collection or event.
- Number and types of collected samples.
- Sample location with an emphasis on any changes to documentation in governing documents (i.e., SAP, FSP). This may include measurements from reference points or sketches of sample locations with respect to local features.
- Sample identification numbers, including any applicable cross-references to split samples or samples collected by another entity.
- A description of sampling methodology, or reference to any governing document (i.e., FSP, SAP, QAPP).
- Summary of equipment preparation and decontamination procedures.
- Sample description including depth, color, texture, moisture content, and evidence of waste material or staining.
- Air monitoring (field screening) results.
- Types of laboratory analyses requested.

Site Health and Safety Activities

- All safety, accident, and/or incident reports.

- Real-time personnel air monitoring results, if applicable, or if not documented in the HASP.
- Heat/cold stress monitoring data, if applicable.
- Reasons for upgrades or downgrades in personal protective equipment.
- Health and safety inspections, checklists (drilling safety guide), meetings/briefings.
- Calibration records for field instruments.

Oversight Activities

- Progress and activities performed by contractors including operating times.
- Deviations of contractor activities with respect to project governing documents (i.e., specifications).
- Contractor sampling results and disposition of contingent soil materials/stockpiles.
- Excavation specifications and locations of contractor confirmation samples.
- General site housekeeping and safety issues by site contractors.

SOP 1502.1

PHOTOGRAPH LOGS

SOP	**1502.01**				
GROUP	Field Documentation				
SUB-GROUP					
TITLE	Photograph Logs				
DATE	11/19/2001	**FILE**	1502-01.DOC	**PAGE**	1 of 1

INTRODUCTION

The following Standard Operating Procedure (SOP) presents the requirements for collecting information related to photodocumentation of site activities.

PROCEDURE

- Uniquely number each roll of film obtained for use.
- Record the following information for each negative exposed:
    1. Date and Time
    2. Photographer Name
    3. Witness Name
    4. Orientation (Landscape, Portrait, or Panaoramic)
    5. Description (including activity being performed, specific equipment of interest, sample location(s), compass direction photographer is facing)
- Record "NA" for the negatives not used if the roll is not completely used prior to development.
- Record unique roll number on receipt when film is submitted for development.
- Verify descriptions on log with negative numbers when photographs are received from processing.

FORMS

Blank Photograph Logs can be printed from WESTON On-Line from the *Records Management Application.* Selecting the *Reports/Project Planning/Blank Photo Logs* menu option will generate a project specific log with 36 entries.

APPENDIX C

EPA Regional Removal Management Level (RML) Composite Worker Soil Table (TR=1E-04, HQ=1) April 2019

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				1.2E-03	O						1.4E+09		1	0.1	Acephate	30560-19-1					1.4E+03	3.3E+03		9.8E+02
		2.2E-06	I			9.0E-03	I	V		1.1E+05	1.4E+09	8.7E+03	1		Acetaldehyde	75-07-0			4.9E+03	4.9E+03			3.4E+02	3.4E+02
				2.0E-02	I						1.4E+09		1	0.1	Acetochlor	34256-82-1					2.3E+04	5.5E+04		1.6E+04
				9.0E-01	I	3.1E+01	A	V		1.1E+05	1.4E+09	1.4E+04	1		Acetone	67-64-1					1.1E+06		1.8E+06	6.7E+05
						2.0E-03	X				1.4E+09		1	0.1	Acetone Cyanohydrin	75-86-5							1.2E+07	1.2E+07
						6.0E-02	I	V		1.3E+05	1.4E+09	1.3E+04	1		Acetonitrile	75-05-8							3.4E+03	3.4E+03
				1.0E-01	I			V		2.5E+03	1.4E+09	6.0E+04	1		Acetophenone	98-86-2					1.2E+05			1.2E+05
3.8E+00	C	1.3E-03	C								1.4E+09		1	0.1	Acetylaminofluorene, 2-	53-96-3	8.6E+01	2.0E+02	1.3E+06	6.0E+01				
				5.0E-04	I	2.0E-05	I	V		2.3E+04	1.4E+09	6.9E+03	1		Acrolein	107-02-8					5.8E+02		6.1E-01	6.0E-01
5.0E-01	I	1.0E-04	I	2.0E-03	I	6.0E-03	I		M		1.4E+09		1	0.1	Acrylamide	79-06-1	6.5E+02	1.5E+03	1.7E+07	4.6E+02	2.3E+03	5.5E+03	3.6E+07	1.6E+03
				5.0E-01	I	1.0E-03	I	V		1.1E+05	1.4E+09	9.5E+04	1		Acrylic Acid	79-10-7					5.8E+05		4.2E+02	4.2E+02
5.4E-01	I	6.8E-05	I	4.0E-02	A	2.0E-03	I	V		1.1E+04	1.4E+09	7.7E+03	1		Acrylonitrile	107-13-1	6.1E+02		1.4E+02	1.1E+02	4.7E+04		6.7E+01	6.7E+01
						6.0E-03	P				1.4E+09		1	0.1	Adiponitrile	111-69-3							3.6E+07	3.6E+07
5.6E-02	C			1.0E-02	I						1.4E+09		1	0.1	Alachlor	15972-60-8	5.8E+03	1.4E+04		4.1E+03	1.2E+04	2.8E+04		8.2E+03
				1.0E-03	I						1.4E+09		1	0.1	Aldicarb	116-06-3					1.2E+03	2.8E+03		8.2E+02
				1.0E-03	I						1.4E+09		1	0.1	Aldicarb Sulfone	1646-88-4					1.2E+03	2.8E+03		8.2E+02
											1.4E+09		1	0.1	Aldicarb sulfoxide	1646-87-3								
1.7E+01	I	4.9E-03	I	3.0E-05	I			V			1.4E+09	1.7E+06	1		Aldrin	309-00-2	1.9E+01		4.3E+02	1.8E+01	3.5E+01			3.5E+01
				5.0E-03	I	1.0E-04	X	V		1.1E+05	1.4E+09	3.4E+04	1		Allyl Alcohol	107-18-6					5.8E+03		1.5E+01	1.5E+01
2.1E-02	C	6.0E-06	C			1.0E-03	I	V		1.4E+03	1.4E+09	1.6E+03	1		Allyl Chloride	107-05-1	1.6E+04		3.2E+02	3.2E+02			6.9E+00	6.9E+00
				1.0E+00	P	5.0E-03	P				1.4E+09		1		Aluminum	7429-90-5					1.2E+06		3.0E+07	1.1E+06
				4.0E-04	I						1.4E+09		1		Aluminum Phosphide	20859-73-8					4.7E+02			4.7E+02
				9.0E-03	I						1.4E+09		1	0.1	Ametryn	834-12-8					1.1E+04	2.5E+04		7.4E+03
2.1E+01	C	6.0E-03	C								1.4E+09		1	0.1	Aminobiphenyl, 4-	92-67-1	1.6E+01	3.7E+01	2.8E+05	1.1E+01				
				8.0E-02	P						1.4E+09		1	0.1	Aminophenol, m-	591-27-5					9.3E+04	2.2E+05		6.6E+04
				4.0E-03	X						1.4E+09		1	0.1	Aminophenol, o-	95-55-6					4.7E+03	1.1E+04		3.3E+03
				2.0E-02	P						1.4E+09		1	0.1	Aminophenol, p-	123-30-8					2.3E+04	5.5E+04		1.6E+04
				2.5E-03	I						1.4E+09		1	0.1	Amitraz	33089-61-1					2.9E+03	6.9E+03		2.1E+03
						5.0E-01	I	V					1		Ammonia	7664-41-7								
				2.0E-01	I						1.4E+09		1		Ammonium Sulfamate	7773-06-0					2.3E+05			2.3E+05
						3.0E-03	X	V		1.4E+04	1.4E+09	2.6E+04	1		Amyl Alcohol, tert-	75-85-4							3.4E+02	3.4E+02
5.7E-03	I	1.6E-06	C	7.0E-03	P	1.0E-03	I				1.4E+09		1	0.1	Aniline	62-53-3	5.7E+04	1.4E+05	1.0E+09	4.0E+04	8.2E+03	1.9E+04	6.0E+06	5.7E+03
4.0E-02	P			2.0E-03	X						1.4E+09		1	0.1	Anthraquinone, 9,10-	84-65-1	8.2E+03	1.9E+04		5.7E+03	2.3E+03	5.5E+03		1.6E+03
				4.0E-04	I						1.4E+09		0.15		Antimony (metallic)	7440-36-0					4.7E+02			4.7E+02
				5.0E-04	H						1.4E+09		0.15		Antimony Pentoxide	1314-60-9					5.8E+02			5.8E+02
				4.0E-04	H						1.4E+09		0.15		Antimony Tetroxide	1332-81-6					4.7E+02			4.7E+02
						2.0E-04	I				1.4E+09		0.15		Antimony Trioxide	1309-64-4							1.2E+06	1.2E+06
1.5E+00	I	4.3E-03	I	3.0E-04	I	1.5E-05	C				1.4E+09		1	0.03	Arsenic, Inorganic	7440-38-2	3.6E+02	1.7E+03	3.9E+05	3.0E+02	5.8E+02	2.8E+03	8.9E+04	4.8E+02
				3.5E-06	C	5.0E-05	I				1.4E+09		1		Arsine	7784-42-1					4.1E+00		3.0E+05	4.1E+00
													1		Asbestos (units in fibers)	1332-21-4								
				3.6E-02	O						1.4E+09		1	0.1	Asulam	3337-71-1					4.2E+04	9.9E+04		3.0E+04
2.3E-01	C			3.5E-02	I						1.4E+09		1	0.1	Atrazine	1912-24-9	1.4E+03	3.4E+03		1.0E+03	4.1E+04	9.7E+04		2.9E+04
8.8E-01	C	2.5E-04	C								1.4E+09		1	0.1	Auramine	492-80-8	3.7E+02	8.8E+02	6.7E+06	2.6E+02				
				4.0E-04	I						1.4E+09		1	0.1	Avermectin B1	65195-55-3					4.7E+02	1.1E+03		3.3E+02
				3.0E-03	A	1.0E-02	A				1.4E+09		1	0.1	Azinphos-methyl	86-50-0					3.5E+03	8.3E+03	6.0E+07	2.5E+03
1.1E-01	I	3.1E-05	I					V			1.4E+09	5.2E+05	1		Azobenzene	103-33-3	3.0E+03		2.1E+04	2.6E+03				
				1.0E+00	P	7.0E-06	P				1.4E+09		1	0.1	Azodicarbonamide	123-77-3					1.2E+06	2.8E+06	4.2E+04	4.0E+04
				2.0E-01	I	5.0E-04	H				1.4E+09		0.07		Barium	7440-39-3					2.3E+05		3.0E+06	2.2E+05
				5.0E-03	O			V			1.4E+09	3.1E+05	1		Benfluralin	1861-40-1					5.8E+03			5.8E+03
				5.0E-02	I						1.4E+09		1	0.1	Benomyl	17804-35-2					5.8E+04	1.4E+05		4.1E+04
				2.0E-01	I						1.4E+09		1	0.1	Bensulfuron-methyl	83055-99-6					2.3E+05	5.5E+05		1.6E+05
				3.0E-02	I						1.4E+09		1	0.1	Bentazon	25057-89-0					3.5E+04	8.3E+04		2.5E+04
4.0E-03	P			1.0E-01	I			V		1.2E+03	1.4E+09	2.3E+04	1		Benzaldehyde	100-52-7	8.2E+04			8.2E+04	1.2E+05			1.2E+05
5.5E-02	I	7.8E-06	I	4.0E-03	I	3.0E-02	I	V		1.8E+03	1.4E+09	3.5E+03	1		Benzene	71-43-2	5.9E+03		5.6E+02	5.1E+02	4.7E+03		4.6E+02	4.2E+02
1.0E-01	X			3.0E-04	X						1.4E+09		1	0.1	Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	3.3E+03	7.7E+03		2.3E+03	3.5E+02	8.3E+02		2.5E+02
				1.0E-03	P			V		1.3E+03	1.4E+09	1.9E+04	1		Benzenethiol	108-98-5					1.2E+03			1.2E+03
2.3E+02	I	6.7E-02	I	3.0E-03	I				M		1.4E+09		1	0.1	Benzidine	92-87-5	1.4E+00	3.4E+00	2.5E+04	1.0E+00	3.5E+03	8.3E+03		2.5E+03
				4.0E+00	I						1.4E+09		1	0.1	Benzoic Acid	65-85-0					4.7E+06	1.1E+07		3.3E+06
1.3E+01	I							V		3.2E+02	1.4E+09	6.8E+04	1		Benzotrichloride	98-07-7	2.5E+01			2.5E+01				
				1.0E-01	P						1.4E+09		1	0.1	Benzyl Alcohol	100-51-6					1.2E+05	2.8E+05		8.2E+04
1.7E-01	I	4.9E-05	C	2.0E-03	P	1.0E-03	P	V		1.5E+03	1.4E+09	2.6E+04	1		Benzyl Chloride	100-44-7	1.9E+03		6.4E+02	4.8E+02	2.3E+03		1.1E+02	1.1E+02
		2.4E-03	I	2.0E-03	I	2.0E-05	I				1.4E+09		0.007		Beryllium and compounds	7440-41-7			6.9E+05	6.9E+05	2.3E+03		1.2E+05	2.3E+03
				9.0E-03	P						1.4E+09		1	0.1	Bifenox	42576-02-3					1.1E+04	2.5E+04		7.4E+03
				1.5E-02	I						1.4E+09		1	0.1	Biphenthrin	82657-04-3					1.8E+04	4.1E+04		1.2E+04
8.0E-03	I			5.0E-01	I	4.0E-04	X	V			1.4E+09	1.1E+05	1		Biphenyl, 1,1'-	92-52-4	4.1E+04			4.1E+04	5.8E+05		2.0E+02	2.0E+02
				4.0E-02	I			V		1.0E+03	1.4E+09	3.5E+04	1		Bis(2-chloro-1-methylethyl) ether	108-60-1					4.7E+04			4.7E+04
				3.0E-03	P						1.4E+09		1	0.1	Bis(2-chloroethoxy)methane	111-91-1					3.5E+03	8.3E+03		2.5E+03
1.1E+00	I	3.3E-04	I					V		5.1E+03	1.4E+09	4.3E+04	1		Bis(2-chloroethyl)ether	111-44-4	3.0E+02		1.6E+02	1.0E+02				
2.2E+02	I	6.2E-02	I					V		4.2E+03	1.4E+09	1.9E+03	1		Bis(chloromethyl)ether	542-88-1	1.5E+00		3.7E-02	3.6E-02				
				5.0E-02	I						1.4E+09		1	0.1	Bisphenol A	80-05-7					5.8E+04	1.4E+05		4.1E+04
				2.0E-01	I	2.0E-02	H				1.4E+09		1		Boron And Borates Only	7440-42-8					2.3E+05		1.2E+08	2.3E+05
				2.0E+00	P	2.0E-02	P	V			1.4E+09		1		Boron Trichloride	10294-34-5					2.3E+06		1.2E+08	2.3E+06
				4.0E-02	C	1.3E-02	C	V			1.4E+09		1		Boron Trifluoride	7637-07-2					4.7E+04		7.7E+07	4.7E+04
7.0E-01	I			4.0E-03	I						1.4E+09		1		Bromate	15541-45-4	4.7E+02			4.7E+02	4.7E+03			4.7E+03

RMLS TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
2.0E+00	X	6.0E-04	X					V		2.4E+03	1.4E+09	5.9E+03	1		Bromo-2-chloroethane, 1-	107-04-0	1.6E+02		1.2E+01	1.1E+01				
				3.0E-04	X			V		9.0E+02	1.4E+09	1.1E+04	1		Bromo-3-fluorobenzene, 1-	1073-06-9					3.5E+02			3.5E+02
				3.0E-04	X			V		3.2E+02	1.4E+09	1.1E+04	1		Bromo-4-fluorobenzene, 1-	460-00-4					3.5E+02			3.5E+02
											1.4E+09		1	0.1	Bromoacetic acid	79-08-3								
				8.0E-03	I	6.0E-02	I	V		6.8E+02	1.4E+09	8.4E+03	1		Bromobenzene	108-86-1					9.3E+03		2.2E+03	1.8E+03
						4.0E-02	X	V		4.0E+03	1.4E+09	3.6E+03	1		Bromochloromethane	74-97-5							6.3E+02	6.3E+02
6.2E-02	I	3.7E-05	C	2.0E-02	I			V		9.3E+02	1.4E+09	4.0E+03	1		Bromodichloromethane	75-27-4	5.3E+03		1.3E+02	1.3E+02	2.3E+04			2.3E+04
7.9E-03	I	1.1E-06	I	2.0E-02	I			V		9.2E+02	1.4E+09	9.7E+03	1		Bromoform	75-25-2	4.1E+04		1.1E+04	8.6E+03	2.3E+04			2.3E+04
				1.4E-03	I	5.0E-03	I	V		3.6E+03	1.4E+09	1.4E+03	1		Bromomethane	74-83-9					1.6E+03		3.1E+01	3.0E+01
				5.0E-03	H			V			1.4E+09	1.2E+05	1		Bromophos	2104-96-3					5.8E+03			5.8E+03
						1.0E-01	A	V		9.7E+02	1.4E+09	2.1E+03	1		Bromopropane, 1-	106-94-5							9.4E+02	9.4E+02
1.0E-01	O			1.5E-02	O						1.4E+09		1	0.1	Bromoxynil	1689-84-5	3.2E+03	7.5E+03		2.2E+03	1.8E+04	4.1E+04		1.2E+04
1.0E-01	O			1.5E-02	O			V			1.4E+09	4.7E+05	1		Bromoxynil Octanoate	1689-99-2	3.2E+03			3.2E+03	1.8E+04			1.8E+04
6.0E-01	C	3.0E-05	I			2.0E-03	I	V		6.7E+02	1.4E+09	8.7E+02	1		Butadiene, 1,3-	106-99-0	5.5E+02		3.5E+01	3.3E+01			7.6E+00	7.6E+00
				3.0E-02	O						1.4E+09		1	0.1	Butanoic acid, 4-(2,4-dichlorophenoxy)-	94-82-6					3.5E+04	8.3E+04		2.5E+04
				1.0E-01	I			V		7.6E+03	1.4E+09	3.0E+04	1		Butanol, N-	71-36-3					1.2E+05			1.2E+05
				2.0E+00	P	3.0E+01	P	V		2.1E+04	1.4E+09	2.9E+04	1		Butyl alcohol, sec-	78-92-2					2.3E+06		3.8E+06	1.5E+06
				5.0E-02	I			V			1.4E+09	8.6E+04	1		Butylate	2008-41-5					5.8E+04			5.8E+04
2.0E-04	C	5.7E-08	C								1.4E+09		1	0.1	Butylated hydroxyanisole	25013-16-5	1.6E+06	3.9E+06	2.9E+10	1.1E+06				
3.6E-03	P			3.0E-01	P						1.4E+09		1	0.1	Butylated hydroxytoluene	128-37-0	9.1E+04	2.1E+05		6.4E+04	3.5E+05	8.3E+05		2.5E+05
				5.0E-02	P			V		1.1E+02	1.4E+09	8.1E+03	1		Butylbenzene, n-	104-51-8					5.8E+04			5.8E+04
				1.0E-01	X			V		1.5E+02	1.4E+09	7.4E+03	1		Butylbenzene, sec-	135-98-8					1.2E+05			1.2E+05
				1.0E-01	X			V		1.8E+02	1.4E+09	7.4E+03	1		Butylbenzene, tert-	98-06-6					1.2E+05			1.2E+05
				2.0E-02	A						1.4E+09		1	0.1	Cacodylic Acid	75-60-5					2.3E+04	5.5E+04		1.6E+04
		1.8E-03	I	1.0E-03	I	1.0E-05	A				1.4E+09		0.025	0.001	Cadmium (Diet)	7440-43-9			9.3E+05	9.3E+05	1.2E+03	6.9E+03	6.0E+04	9.8E+02
		1.8E-03	I	5.0E-04	I	1.0E-05	A						0.05	0.001	Cadmium (Water)	7440-43-9								
				5.0E-01	I	2.2E-03	C				1.4E+09		1	0.1	Caprolactam	105-60-2					5.8E+05	1.4E+06	1.3E+07	4.0E+05
1.5E-01	C	4.3E-05	C	2.0E-03	I						1.4E+09		1	0.1	Captafol	2425-06-1	2.2E+03	5.2E+03	3.9E+07	1.5E+03	2.3E+03	5.5E+03		1.6E+03
2.3E-03	C	6.6E-07	C	1.3E-01	I						1.4E+09		1	0.1	Captan	133-06-2	1.4E+05	3.4E+05	2.5E+09	1.0E+05	1.5E+05	3.6E+05		1.1E+05
				1.0E-01	I						1.4E+09		1	0.1	Carbaryl	63-25-2					1.2E+05	2.8E+05		8.2E+04
				5.0E-03	I						1.4E+09		1	0.1	Carbofuran	1563-66-2					5.8E+03	1.4E+04		4.1E+03
				1.0E-01	I	7.0E-01	I	V		7.4E+02	1.4E+09	1.2E+03	1		Carbon Disulfide	75-15-0					1.2E+05		3.6E+03	3.5E+03
7.0E-02	I	6.0E-06	I	4.0E-03	I	1.0E-01	I	V		4.6E+02	1.4E+09	1.5E+03	1		Carbon Tetrachloride	56-23-5	4.7E+03		3.1E+02	2.9E+02	4.7E+03		6.5E+02	5.7E+02
						1.0E-01	P	V		5.9E+03	1.4E+09	6.5E+02	1		Carbonyl Sulfide	463-58-1							2.8E+02	2.8E+02
				1.0E-02	I						1.4E+09		1	0.1	Carbosulfan	55285-14-8					1.2E+04	2.8E+04		8.2E+03
				1.0E-01	I						1.4E+09		1	0.1	Carboxin	5234-68-4					1.2E+05	2.8E+05		8.2E+04
						9.0E-04	I				1.4E+09		1		Ceric oxide	1306-38-3							5.4E+06	5.4E+06
				1.0E-01	I			V			1.4E+09	1.5E+05	1		Chloral Hydrate	302-17-0					1.2E+05			1.2E+05
				1.5E-02	I						1.4E+09		1	0.1	Chloramben	133-90-4					1.8E+04	4.1E+04		1.2E+04
											1.4E+09				Chloramines, Organic									
4.0E-01	H										1.4E+09		1	0.1	Chloranil	118-75-2	8.1E+02	1.9E+03		5.7E+02				
3.5E-01	I	1.0E-04	I	5.0E-04	I	7.0E-04	I	V			1.4E+09	1.5E+06	1	0.04	Chlordane	12789-03-6	9.3E+02	5.5E+03	1.9E+04	7.7E+02	5.8E+02	3.4E+03	4.7E+03	4.5E+02
1.0E+01	I	4.6E-03	C	3.0E-04	I						1.4E+09		1	0.1	Chlordecone (Kepone)	143-50-0	3.3E+01	7.7E+01	3.6E+05	2.3E+01	3.5E+02	8.3E+02		2.5E+02
				7.0E-04	A						1.4E+09		1	0.1	Chlorfenvinphos	470-90-6					8.2E+02	1.9E+03		5.7E+02
				9.0E-02	O						1.4E+09		1	0.1	Chlorimuron, Ethyl-	90982-32-4					1.1E+05	2.5E+05		7.4E+04
				1.0E-01	I	1.5E-04	A	V		2.8E+03	1.4E+09	1.2E+03	1		Chlorine	7782-50-5					1.2E+05		7.8E-01	7.8E-01
				3.0E-02	I	2.0E-04	I	V			1.4E+09		1		Chlorine Dioxide	10049-04-4					3.5E+04		1.2E+06	3.4E+04
				3.0E-02	I						1.4E+09		1		Chlorite (Sodium Salt)	7758-19-2					3.5E+04			3.5E+04
						5.0E+01	I	V		1.2E+03	1.4E+09	1.0E+03	1		Chloro-1,1-difluoroethane, 1-	75-68-3							2.3E+05	2.3E+05
		3.0E-04	I	2.0E-02	H	2.0E-02	I	V		7.9E+02	1.4E+09	1.1E+03	1		Chloro-1,3-butadiene, 2-	126-99-8			4.4E+00	4.4E+00	2.3E+04		9.4E+01	9.4E+01
4.6E-01	H										1.4E+09		1	0.1	Chloro-2-methylaniline HCl, 4-	3165-93-3	7.1E+02	1.7E+03		5.0E+02				
1.0E-01	P	7.7E-05	C	3.0E-03	X						1.4E+09		1	0.1	Chloro-2-methylaniline, 4-	95-69-2	3.3E+03	7.7E+03	2.2E+07	2.3E+03	3.5E+03	8.3E+03		2.5E+03
2.7E-01	X							V		1.2E+04	1.4E+09	1.6E+04	1		Chloroacetaldehyde, 2-	107-20-0	1.2E+03			1.2E+03				
											1.4E+09		1	0.1	Chloroacetic Acid	79-11-8								
						3.0E-05	I				1.4E+09		1	0.1	Chloroacetophenone, 2-	532-27-4							1.8E+05	1.8E+05
2.0E-01	P			4.0E-03	I						1.4E+09		1	0.1	Chloroaniline, p-	106-47-8	1.6E+03	3.9E+03		1.1E+03	4.7E+03	1.1E+04		3.3E+03
				2.0E-02	I	5.0E-02	P	V		7.6E+02	1.4E+09	6.5E+03	1		Chlorobenzene	108-90-7					2.3E+04		1.4E+03	1.3E+03
				1.0E-01	X						1.4E+09		1	0.1	Chlorobenzene sulfonic acid, p-	98-66-8					1.2E+05	2.8E+05		8.2E+04
1.1E-01	C	3.1E-05	C	2.0E-02	I						1.4E+09		1	0.1	Chlorobenzilate	510-15-6	3.0E+03	7.0E+03	5.4E+07	2.1E+03	2.3E+04	5.5E+04		1.6E+04
				3.0E-02	X						1.4E+09		1	0.1	Chlorobenzoic Acid, p-	74-11-3					3.5E+04	8.3E+04		2.5E+04
				3.0E-03	P	3.0E-01	P	V		2.9E+02	1.4E+09	6.8E+03	1		Chlorobenzotrifluoride, 4-	98-56-6					3.5E+03		8.9E+03	2.5E+03
				4.0E-02	P			V		7.3E+02	1.4E+09	1.8E+03	1		Chlorobutane, 1-	109-69-3					4.7E+04			4.7E+04
						5.0E+01	I	V		1.7E+03	1.4E+09	9.4E+02	1		Chlorodifluoromethane	75-45-6							2.1E+05	2.1E+05
				2.0E-02	P			V		1.1E+05	1.4E+09	7.8E+04	1		Chloroethanol, 2-	107-07-3					2.3E+04			2.3E+04
3.1E-02	C	2.3E-05	I	1.0E-02	I	9.8E-02	A	V		2.5E+03	1.4E+09	2.6E+03	1		Chloroform	67-66-3	1.1E+04		1.4E+02	1.4E+02	1.2E+04		1.1E+03	1.0E+03
						9.0E-02	I	V		1.3E+03	1.4E+09	1.2E+03	1		Chloromethane	74-87-3							4.6E+02	4.6E+02
2.4E+00	C	6.9E-04	C					V		9.3E+03	1.4E+09	5.3E+03	1		Chloromethyl Methyl Ether	107-30-2	1.4E+02		9.5E+00	8.9E+00				
3.0E-01	P			3.0E-03	P	1.0E-05	X				1.4E+09		1	0.1	Chloronitrobenzene, o-	88-73-3	1.1E+03	2.6E+03		7.7E+02	3.5E+03	8.3E+03	6.0E+04	2.4E+03
6.0E-02	P			7.0E-04	P	2.0E-03	P				1.4E+09		1	0.1	Chloronitrobenzene, p-	100-00-5	5.5E+03	1.3E+04		3.8E+03	8.2E+02	1.9E+03	1.2E+07	5.7E+02
				5.0E-03	I			V		2.7E+04	1.4E+09	1.4E+05	1		Chlorophenol, 2-	95-57-8					5.8E+03			5.8E+03
						4.0E-04	C	V		6.2E+02	1.4E+09	4.7E+03	1		Chloropicrin	76-06-2							8.2E+00	8.2E+00
3.1E-03	C	8.9E-07	C	1.5E-02	I						1.4E+09		1	0.1	Chlorothalonil	1897-45-6	1.1E+05	2.5E+05	1.9E+09	7.4E+04	1.8E+04	4.1E+04		1.2E+04
				2.0E-02	I			V		9.1E+02	1.4E+09	8.1E+03	1		Chlorotoluene, o-	95-49-8					2.3E+04			2.3E+04
				2.0E-02	X			V		2.5E+02	1.4E+09	7.3E+03	1		Chlorotoluene, p-	106-43-4					2.3E+04			2.3E+04

RMLS TR=1E-04 THQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information																Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
2.4E+02	C	6.9E-02	C								1.4E+09		1	0.1	Chlorozotocin	54749-90-5	1.4E+00	3.2E+00	2.4E+04	9.6E-01				
				5.0E-02	O						1.4E+09		1	0.1	Chlorpropham	101-21-3					5.8E+04	1.4E+05		4.1E+04
				1.0E-03	A						1.4E+09		1	0.1	Chlorpyrifos	2921-88-2					1.2E+03	2.8E+03		8.2E+02
				1.0E-02	H						1.4E+09		1	0.1	Chlorpyrifos Methyl	5598-13-0					1.2E+04	2.8E+04		8.2E+03
				5.0E-02	O						1.4E+09		1	0.1	Chlorsulfuron	64902-72-3					5.8E+04	1.4E+05		4.1E+04
				1.0E-02	I						1.4E+09		1	0.1	Chlorthal-dimethyl	1861-32-1					1.2E+04	2.8E+04		8.2E+03
				8.0E-04	H						1.4E+09		1	0.1	Chlorthiophos	60238-56-4					9.3E+02	2.2E+03		6.6E+02
				1.5E+00	I						1.4E+09		0.013		Chromium(III), Insoluble Salts	16065-83-1					1.8E+06			1.8E+06
5.0E-01	C	8.4E-02	G	3.0E-03	I	1.0E-04	I		M		1.4E+09		0.025		Chromium(VI)	18540-29-9	6.5E+02		2.0E+04	6.3E+02	3.5E+03		6.0E+05	3.5E+03
											1.4E+09		0.013		Chromium, Total	7440-47-3								
				1.3E-02	I						1.4E+09		1	0.1	Clofentezine	74115-24-5					1.5E+04	3.6E+04		1.1E+04
		9.0E-03	P	3.0E-04	P	6.0E-06	P				1.4E+09		1		Cobalt	7440-48-4			1.9E+05	1.9E+05	3.5E+02		3.6E+04	3.5E+02
		6.2E-04	I					V	M				1		Coke Oven Emissions	8007-45-2								
				4.0E-02	H						1.4E+09		1		Copper	7440-50-8					4.7E+04			4.7E+04
				5.0E-02	I	6.0E-01	C				1.4E+09		1	0.1	Cresol, m-	108-39-4					5.8E+04	1.4E+05	3.6E+09	4.1E+04
				5.0E-02	I	6.0E-01	C				1.4E+09		1	0.1	Cresol, o-	95-48-7					5.8E+04	1.4E+05	3.6E+09	4.1E+04
				1.0E-01	A	6.0E-01	C				1.4E+09		1	0.1	Cresol, p-	106-44-5					1.2E+05	2.8E+05	3.6E+09	8.2E+04
				1.0E-01	A						1.4E+09		1	0.1	Cresol, p-chloro-m-	59-50-7					1.2E+05	2.8E+05		8.2E+04
				1.0E-01	A	6.0E-01	C				1.4E+09		1	0.1	Cresols	1319-77-3					1.2E+05	2.8E+05	3.6E+09	8.2E+04
1.9E+00	H			1.0E-03	P			V		1.7E+04	1.4E+09	1.9E+04	1		Crotonaldehyde, trans-	123-73-9	1.7E+02			1.7E+02	1.2E+03			1.2E+03
				1.0E-01	I	4.0E-01	I	V		2.7E+02	1.4E+09	6.2E+03	1		Cumene	98-82-8					1.2E+05		1.1E+04	9.9E+03
2.2E-01	C	6.3E-05	C								1.4E+09		1	0.1	Cupferron	135-20-6	1.5E+03	3.5E+03	2.6E+07	1.0E+03				
8.4E-01	H			2.0E-03	H						1.4E+09		1	0.1	Cyanazine	21725-46-2	3.9E+02	9.2E+02		2.7E+02	2.3E+03	5.5E+03		1.6E+03
															Cyanides									
				1.0E-03	I						1.4E+09		1		~Calcium Cyanide	592-01-8					1.2E+03			1.2E+03
				5.0E-03	I						1.4E+09		1		~Copper Cyanide	544-92-3					5.8E+03			5.8E+03
				6.0E-04	I	8.0E-04	G	V		9.5E+05	1.4E+09	5.3E+04	1		~Cyanide (CN-)	57-12-5					7.0E+02		1.9E+02	1.5E+02
				1.0E-03	I			V			1.4E+09		1		~Cyanogen	460-19-5					1.2E+03			1.2E+03
				9.0E-02	I			V			1.4E+09		1		~Cyanogen Bromide	506-68-3					1.1E+05			1.1E+05
				5.0E-02	I			V			1.4E+09		1		~Cyanogen Chloride	506-77-4					5.8E+04			5.8E+04
				6.0E-04	I	8.0E-04	I	V		1.0E+07	1.4E+09	5.2E+04	1		~Hydrogen Cyanide	74-90-8					7.0E+02		1.8E+02	1.5E+02
				2.0E-03	I						1.4E+09		1		~Potassium Cyanide	151-50-8					2.3E+03			2.3E+03
				5.0E-03	I						1.4E+09		0.04		~Potassium Silver Cyanide	506-61-6					5.8E+03			5.8E+03
				1.0E-01	I						1.4E+09		0.04		~Silver Cyanide	506-64-9					1.2E+05			1.2E+05
				1.0E-03	I						1.4E+09		1		~Sodium Cyanide	143-33-9					1.2E+03			1.2E+03
				2.0E-04	P						1.4E+09		1		~Thiocyanates	E1790664					2.3E+02			2.3E+02
				2.0E-04	X			V			1.4E+09		1		~Thiocyanic Acid	463-56-9					2.3E+02			2.3E+02
				5.0E-02	I						1.4E+09		1		~Zinc Cyanide	557-21-1					5.8E+04			5.8E+04
						6.0E+00	I	V		1.2E+02	1.4E+09	1.0E+03	1		Cyclohexane	110-82-7							2.7E+04	2.7E+04
2.0E-02	X			2.0E-02	X						1.4E+09		1	0.1	Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	1.6E+04	3.9E+04		1.1E+04	2.3E+04	5.5E+04		1.6E+04
				5.0E+00	I	7.0E-01	P	V		5.1E+03	1.4E+09	4.2E+04	1		Cyclohexanone	108-94-1					5.8E+06		1.3E+05	1.3E+05
				5.0E-03	P	1.0E+00	X	V		2.8E+02	1.4E+09	1.5E+03	1		Cyclohexene	110-83-8					5.8E+03		6.4E+03	3.1E+03
				2.0E-01	I			V		2.9E+05	1.4E+09	7.5E+04	1		Cyclohexylamine	108-91-8					2.3E+05			2.3E+05
				2.5E-02	I						1.4E+09		1	0.1	Cyfluthrin	68359-37-5					2.9E+04	6.9E+04		2.1E+04
				1.0E-03	O						1.4E+09		1	0.1	Cyhalothrin	68085-85-8					1.2E+03	2.8E+03		8.2E+02
				5.0E-01	O						1.4E+09		1	0.1	Cyromazine	66215-27-8					5.8E+05	1.4E+06		4.1E+05
2.4E-01	I	6.9E-05	C	3.0E-05	X						1.4E+09		1	0.1	DDD, p,p' - (DDD)	72-54-8	1.4E+03	3.2E+03	2.4E+07	9.6E+02	3.5E+01	8.3E+01		2.5E+01
3.4E-01	I	9.7E-05	C	3.0E-04	X			V			1.4E+09	2.1E+06	1		DDE, p,p'-	72-55-9	9.6E+02		2.7E+04	9.3E+02	3.5E+02			3.5E+02
3.4E-01	I	9.7E-05	I	5.0E-04	I						1.4E+09		1	0.1	DDT	50-29-3	9.6E+02	7.6E+03	1.7E+07	8.5E+02	5.8E+02	4.6E+03		5.2E+02
				3.0E-02	I						1.4E+09		1	0.1	Dalapon	75-99-0					3.5E+04	8.3E+04		2.5E+04
1.8E-02	C	5.1E-06	C	1.5E-01	I						1.4E+09		1	0.1	Daminozide	1596-84-5	1.8E+04	4.3E+04	3.3E+08	1.3E+04	1.8E+05	4.1E+05		1.2E+05
7.0E-04	I			7.0E-03	I						1.4E+09		1	0.1	Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	4.7E+05	1.1E+06		3.3E+05	8.2E+03	1.9E+04		5.7E+03
				4.0E-05	I						1.4E+09		1	0.1	Demeton	8065-48-3					4.7E+01	1.1E+02		3.3E+01
1.2E-03	I			6.0E-01	I						1.4E+09		1	0.1	Di(2-ethylhexyl)adipate	103-23-1	2.7E+05	6.4E+05		1.9E+05	7.0E+05	1.7E+06		4.9E+05
6.1E-02	H										1.4E+09		1	0.1	Diallate	2303-16-4	5.4E+03	1.3E+04		3.8E+03				
				7.0E-04	A						1.4E+09		1	0.1	Diazinon	333-41-5					8.2E+02	1.9E+03		5.7E+02
				1.0E-02	X			V			1.4E+09	5.2E+05	1		Dibenzothiophene	132-65-0					1.2E+04			1.2E+04
8.0E-01	P	6.0E-03	P	2.0E-04	P	2.0E-04	I	V	M	9.8E+02	1.4E+09	3.2E+04	1		Dibromo-3-chloropropane, 1,2-	96-12-8	4.1E+02		6.5E+00	6.4E+00	2.3E+02		2.8E+01	2.5E+01
											1.4E+09		1	0.1	Dibromoacetic acid	631-64-1								
				4.0E-04	X			V		1.6E+02	1.4E+09	1.9E+04	1		Dibromobenzene, 1,3-	108-36-1					4.7E+02			4.7E+02
				1.0E-02	I			V			1.4E+09	2.2E+04	1		Dibromobenzene, 1,4-	106-37-6					1.2E+04			1.2E+04
8.4E-02	I			2.0E-02	I			V		8.0E+02	1.4E+09	8.0E+03	1		Dibromochloromethane	124-48-1	3.9E+03			3.9E+03	2.3E+04			2.3E+04
2.0E+00	I	6.0E-04	I	9.0E-03	I	9.0E-03	I	V		1.3E+03	1.4E+09	8.6E+03	1		Dibromoethane, 1,2-	106-93-4	1.6E+02		1.8E+01	1.6E+01	1.1E+04		3.4E+02	3.3E+02
						4.0E-03	X	V		2.8E+03	1.4E+09	5.6E+03	1		Dibromomethane (Methylene Bromide)	74-95-3							9.9E+01	9.9E+01
				3.0E-04	P						1.4E+09		1	0.1	Dibutyltin Compounds	E1790660					3.5E+02	8.3E+02		2.5E+02
				3.0E-02	I						1.4E+09		1	0.1	Dicamba	1918-00-9					3.5E+04	8.3E+04		2.5E+04
											1.4E+09				Dichloramine	3400-09-7								
		4.2E-03	P					V		5.5E+02	1.4E+09	3.2E+03	1		Dichloro-2-butene, 1,4-	764-41-0			9.4E-01	9.4E-01				
		4.2E-03	P					V		5.2E+02	1.4E+09	1.1E+04	1		Dichloro-2-butene, cis-1,4-	1476-11-5			3.2E+00	3.2E+00				
		4.2E-03	P					V		7.6E+02	1.4E+09	1.1E+04	1		Dichloro-2-butene, trans-1,4-	110-57-6			3.2E+00	3.2E+00				
5.0E-02	I			4.0E-03	I						1.4E+09		1	0.1	Dichloroacetic Acid	79-43-6	6.5E+03	1.5E+04		4.6E+03	4.7E+03	1.1E+04		3.3E+03
				9.0E-02	I	2.0E-01	H	V		3.8E+02	1.4E+09	1.2E+04	1		Dichlorobenzene, 1,2-	95-50-1					1.1E+05		1.0E+04	9.3E+03
5.4E-03	C	1.1E-05	C	7.0E-02	A	8.0E-01	I	V			1.4E+09	1.0E+04	1		Dichlorobenzene, 1,4-	106-46-7	6.1E+04		1.2E+03	1.1E+03	8.2E+04		3.7E+04	2.5E+04
4.5E-01	I	3.4E-04	C								1.4E+09		1	0.1	Dichlorobenzidine, 3,3'-	91-94-1	7.3E+02	1.7E+03	4.9E+06	5.1E+02				

RMLS TR=1E-04 THQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				9.0E-03	X						1.4E+09		1	0.1	Dichlorobenzophenone, 4,4'-	90-98-2					1.1E+04	2.5E+04		7.4E+03
				2.0E-01	I	1.0E-01	X	V		8.5E+02	1.4E+09	8.4E+02	1		Dichlorodifluoromethane	75-71-8					2.3E+05		3.7E+02	3.7E+02
5.7E-03	C	1.6E-06	C	2.0E-01	P			V		1.7E+03	1.4E+09	2.1E+03	1		Dichloroethane, 1,1-	75-34-3	5.7E+04		1.6E+03	1.6E+03	2.3E+05			2.3E+05
9.1E-02	I	2.6E-05	I	6.0E-03	X	7.0E-03	P	V		3.0E+03	1.4E+09	4.6E+03	1		Dichloroethane, 1,2-	107-06-2	3.6E+03		2.2E+02	2.0E+02	7.0E+03		1.4E+02	1.4E+02
				5.0E-02	I	2.0E-01	I	V		1.2E+03	1.4E+09	1.2E+03	1		Dichloroethylene, 1,1-	75-35-4					5.8E+04		1.0E+03	1.0E+03
				2.0E-03	I			V		2.4E+03	1.4E+09	2.5E+03	1		Dichloroethylene, 1,2-cis-	156-59-2					2.3E+03			2.3E+03
				2.0E-02	I			V		1.9E+03	1.4E+09	1.8E+03	1		Dichloroethylene, 1,2-trans-	156-60-5					2.3E+04			2.3E+04
				3.0E-03	I						1.4E+09		1	0.1	Dichlorophenol, 2,4-	120-83-2					3.5E+03	8.3E+03		2.5E+03
				1.0E-02	I						1.4E+09		1	0.05	Dichlorophenoxy Acetic Acid, 2,4-	94-75-7					1.2E+04	5.5E+04		9.6E+03
3.7E-02	P	3.7E-06	P	4.0E-02	P	4.0E-03	I	V		1.4E+03	1.4E+09	3.8E+03	1		Dichloropropane, 1,2-	78-87-5	8.8E+03		1.3E+03	1.1E+03	4.7E+04		6.6E+01	6.6E+01
				2.0E-02	P			V		1.5E+03	1.4E+09	6.8E+03	1		Dichloropropane, 1,3-	142-28-9					2.3E+04			2.3E+04
				3.0E-03	I						1.4E+09		1	0.1	Dichloropropanol, 2,3-	616-23-9					3.5E+03	8.3E+03		2.5E+03
1.0E-01	I	4.0E-06	I	3.0E-02	I	2.0E-02	I	V		1.6E+03	1.4E+09	3.6E+03	1		Dichloropropene, 1,3-	542-75-6	3.3E+03		1.1E+03	8.2E+02	3.5E+04		3.1E+02	3.1E+02
2.9E-01	I	8.3E-05	C	5.0E-04	I	5.0E-04	I				1.4E+09		1	0.1	Dichlorvos	62-73-7	1.1E+03	2.7E+03	2.0E+07	7.9E+02	5.8E+02	1.4E+03	3.0E+06	4.1E+02
				3.0E-05	O						1.4E+09		1	0.1	Dicrotophos	141-66-2					3.5E+01	8.3E+01		2.5E+01
				8.0E-02	P	3.0E-04	X	V		2.6E+02	1.4E+09	4.1E+03	1		Dicyclopentadiene	77-73-6					9.3E+04		5.4E+00	5.4E+00
1.6E+01	I	4.6E-03	I	5.0E-05	I						1.4E+09		1	0.1	Dieldrin	60-57-1	2.0E+01	4.8E+01	3.6E+05	1.4E+01	5.8E+01	1.4E+02		4.1E+01
		3.0E-04	C			5.0E-03	I						1	0.1	Diesel Engine Exhaust	E17136615								
				2.0E-03	P	2.0E-04	P				1.4E+09		1	0.1	Diethanolamine	111-42-2					2.3E+03	5.5E+03	1.2E+06	1.6E+03
				3.0E-02	P	1.0E-04	P				1.4E+09		1	0.1	Diethylene Glycol Monobutyl Ether	112-34-5					3.5E+04	8.3E+04	6.0E+05	2.4E+04
				6.0E-02	P	3.0E-04	P				1.4E+09		1	0.1	Diethylene Glycol Monoethyl Ether	111-90-0					7.0E+04	1.7E+05	1.8E+06	4.8E+04
				1.0E-03	P			V		1.1E+05	1.4E+09	1.4E+05	1		Diethylformamide	617-84-5					1.2E+03			1.2E+03
3.5E+02	C	1.0E-01	C								1.4E+09		1	0.1	Diethylstilbestrol	56-53-1	9.3E-01	2.2E+00	1.7E+04	6.6E-01				
				8.3E-02	O						1.4E+09		1	0.1	Difenzoquat	43222-48-6					9.7E+04	2.3E+05		6.8E+04
				2.0E-02	I						1.4E+09		1	0.1	Diflubenzuron	35367-38-5					2.3E+04	5.5E+04		1.6E+04
						4.0E+01	I	V		1.4E+03	1.4E+09	1.2E+03	1		Difluoroethane, 1,1-	75-37-6							2.0E+05	2.0E+05
						3.0E+01	X	V		6.9E+02	1.4E+09	7.6E+02	1		Difluoropropane, 2,2-	420-45-1							1.0E+05	1.0E+05
4.4E-02	C	1.3E-05	C					V			1.4E+09	1.2E+05	1		Dihydrosafrole	94-58-6	7.4E+03		1.2E+04	4.5E+03				
						7.0E-01	P	V		2.3E+03	1.4E+09	3.1E+03	1		Diisopropyl Ether	108-20-3							9.4E+03	9.4E+03
				8.0E-02	I			V		5.3E+02	1.4E+09	3.8E+04	1		Diisopropyl Methylphosphonate	1445-75-6					9.3E+04			9.3E+04
				2.2E-02	O						1.4E+09		1	0.1	Dimethipin	55290-64-7					2.5E+04	6.0E+04		1.8E+04
				2.2E-03	O						1.4E+09		1	0.1	Dimethoate	60-51-5					2.6E+03	6.1E+03		1.8E+03
1.6E+00	P										1.4E+09		1	0.1	Dimethoxybenzidine, 3,3'-	119-90-4	2.0E+02	4.8E+02		1.4E+02				
1.7E-03	P			6.0E-02	P						1.4E+09		1	0.1	Dimethyl methylphosphonate	756-79-6	1.9E+05	4.5E+05		1.4E+05	7.0E+04	1.7E+05		4.9E+04
4.6E+00	C	1.3E-03	C								1.4E+09		1	0.1	Dimethylamino azobenzene [p-]	60-11-7	7.1E+01	1.7E+02	1.3E+06	5.0E+01				
5.8E-01	H										1.4E+09		1	0.1	Dimethylaniline HCl, 2,4-	21436-96-4	5.6E+02	1.3E+03		4.0E+02				
2.0E-01	P			2.0E-03	X						1.4E+09		1	0.1	Dimethylaniline, 2,4-	95-68-1	1.6E+03	3.9E+03		1.1E+03	2.3E+03	5.5E+03		1.6E+03
2.7E-02	P			2.0E-03	I			V		8.3E+02	1.4E+09	3.1E+04	1		Dimethylaniline, N,N-	121-69-7	1.2E+04			1.2E+04	2.3E+03			2.3E+03
1.1E+01	P										1.4E+09		1	0.1	Dimethylbenzidine, 3,3'-	119-93-7	3.0E+01	7.0E+01		2.1E+01				
				1.0E-01	P	3.0E-02	I	V		1.1E+05	1.4E+09	1.3E+05	1		Dimethylformamide	68-12-2					1.2E+05		1.7E+04	1.5E+04
				1.0E-04	X	2.0E-06	X	V		1.7E+05	1.4E+09	2.8E+04	1		Dimethylhydrazine, 1,1-	57-14-7					1.2E+02		2.4E-01	2.4E-01
5.5E+02	C	1.6E-01	C					V		1.9E+05	1.4E+09	1.7E+05	1		Dimethylhydrazine, 1,2-	540-73-8	5.9E-01		1.3E+00	4.1E-01				
				2.0E-02	I						1.4E+09		1	0.1	Dimethylphenol, 2,4-	105-67-9					2.3E+04	5.5E+04		1.6E+04
				6.0E-04	I						1.4E+09		1	0.1	Dimethylphenol, 2,6-	576-26-1					7.0E+02	1.7E+03		4.9E+02
				1.0E-03	I						1.4E+09		1	0.1	Dimethylphenol, 3,4-	95-65-8					1.2E+03	2.8E+03		8.2E+02
4.5E-02	C	1.3E-05	C					V		4.7E+02	1.4E+09	5.5E+03	1		Dimethylvinylchloride	513-37-1	7.3E+03		5.2E+02	4.8E+02				
				8.0E-05	X						1.4E+09		1	0.1	Dinitro-o-cresol, 4,6-	534-52-1					9.3E+01	2.2E+02		6.6E+01
				2.0E-03	I						1.4E+09		1	0.1	Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5					2.3E+03	5.5E+03		1.6E+03
				1.0E-04	P						1.4E+09		1	0.1	Dinitrobenzene, 1,2-	528-29-0					1.2E+02	2.8E+02		8.2E+01
				1.0E-04	I						1.4E+09		1	0.1	Dinitrobenzene, 1,3-	99-65-0					1.2E+02	2.8E+02		8.2E+01
				1.0E-04	P						1.4E+09		1	0.1	Dinitrobenzene, 1,4-	100-25-4					1.2E+02	2.8E+02		8.2E+01
				2.0E-03	I						1.4E+09		1	0.1	Dinitrophenol, 2,4-	51-28-5					2.3E+03	5.5E+03		1.6E+03
6.8E-01	I										1.4E+09		1	0.1	Dinitrotoluene Mixture, 2,4/2,6-	E1615210	4.8E+02	1.1E+03		3.4E+02				
3.1E-01	C	8.9E-05	C	2.0E-03	I						1.4E+09		1	0.102	Dinitrotoluene, 2,4-	121-14-2	1.1E+03	2.4E+03	1.9E+07	7.4E+02	2.3E+03	5.4E+03		1.6E+03
1.5E+00	P			3.0E-04	X						1.4E+09		1	0.099	Dinitrotoluene, 2,6-	606-20-2	2.2E+02	5.2E+02		1.5E+02	3.5E+02	8.4E+02		2.5E+02
				2.0E-03	G						1.4E+09		1	0.006	Dinitrotoluene, 2-Amino-4,6-	35572-78-2					2.3E+03	9.2E+04		2.3E+03
				2.0E-03	G						1.4E+09		1	0.009	Dinitrotoluene, 4-Amino-2,6-	19406-51-0					2.3E+03	6.1E+04		2.3E+03
4.5E-01	X			9.0E-04	X						1.4E+09		1	0.1	Dinitrotoluene, Technical grade	25321-14-6	7.3E+02	1.7E+03		5.1E+02	1.1E+03	2.5E+03		7.4E+02
				1.0E-03	I						1.4E+09		1	0.1	Dinoseb	88-85-7					1.2E+03	2.8E+03		8.2E+02
1.0E-01	I	5.0E-06	I	3.0E-02	I	3.0E-02	I	V		1.2E+05	1.4E+09	4.0E+04	1		Dioxane, 1,4-	123-91-1	3.3E+03		9.7E+03	2.4E+03	3.5E+04		5.2E+03	4.5E+03
															Dioxins									
6.2E+03	I	1.3E+00	I								1.4E+09		1	0.03	~Hexachlorodibenzo-p-dioxin, Mixture		5.3E-02	4.2E-01	1.3E+03	4.7E-02				
1.3E+05	C	3.8E+01	C	7.0E-10	I	4.0E-08	C	V			1.4E+09	2.0E+06	1	0.03	~TCDD, 2,3,7,8-	1746-01-6	2.5E-03	2.0E-02	6.3E-02	2.2E-03	8.2E-04	6.4E-03	3.4E-01	7.2E-04
				3.0E-02	I						1.4E+09		1	0.1	Diphenamid	957-51-7					3.5E+04	8.3E+04		2.5E+04
						4.0E-04	X	V			1.4E+09	8.1E+04	1		Diphenyl Ether	101-84-8							1.4E+02	1.4E+02
				8.0E-04	X						1.4E+09		1	0.1	Diphenyl Sulfone	127-63-9					9.3E+02	2.2E+03		6.6E+02
				1.0E-01	O						1.4E+09		1	0.1	Diphenylamine	122-39-4					1.2E+05	2.8E+05		8.2E+04
8.0E-01	I	2.2E-04	I								1.4E+09		1	0.1	Diphenylhydrazine, 1,2-	122-66-7	4.1E+02	9.7E+02	7.6E+06	2.9E+02				
				2.2E-03	I						1.4E+09		1	0.1	Diquat	85-00-7					2.6E+03	6.1E+03		1.8E+03
7.1E+00	C	1.4E-01	C								1.4E+09		1	0.1	Direct Black 38	1937-37-7	4.6E+01	1.1E+02	1.2E+04	3.2E+01				
7.4E+00	C	1.4E-01	C								1.4E+09		1	0.1	Direct Blue 6	2602-46-2	4.4E+01	1.0E+02	1.2E+04	3.1E+01				
6.7E+00	C	1.4E-01	C								1.4E+09		1	0.1	Direct Brown 95	16071-86-6	4.9E+01	1.2E+02	1.2E+04	3.4E+01				
				4.0E-05	I						1.4E+09		1	0.1	Disulfoton	298-04-4					4.7E+01	1.1E+02		3.3E+01
				1.0E-02	I			V			1.4E+09	4.5E+04	1		Dithiane, 1,4-	505-29-3					1.2E+04			1.2E+04

FAILS TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				2.0E-03	I						1.4E+09		1	0.1	Diuron	330-54-1					2.3E+03	5.5E+03		1.6E+03
				2.0E-02	O						1.4E+09		1	0.1	Dodine	2439-10-3					2.3E+04	5.5E+04		1.6E+04
				5.0E-02	O			V			1.4E+09	1.2E+05	1		EPTC	759-94-4					5.8E+04			5.8E+04
				6.0E-03	I			V			1.4E+09	4.1E+05	1		Endosulfan	115-29-7					7.0E+03			7.0E+03
				6.0E-03	P						1.4E+09		1	0.1	Endosulfan Sulfate	1031-07-8					7.0E+03	1.7E+04		4.9E+03
				2.0E-02	I						1.4E+09		1	0.1	Endothall	145-73-3					2.3E+04	5.5E+04		1.6E+04
				3.0E-04	I						1.4E+09		1	0.1	Endrin	72-20-8					3.5E+02	8.3E+02		2.5E+02
9.9E-03	I	1.2E-06	I	6.0E-03	P	1.0E-03	I	V		1.1E+04	1.4E+09	1.9E+04	1		Epichlorohydrin	106-89-8	3.3E+04		1.9E+04	1.2E+04	7.0E+03		8.3E+01	8.2E+01
						2.0E-02	I	V		1.5E+04	1.4E+09	7.7E+03	1		Epoxybutane, 1,2-	106-88-7							6.7E+02	6.7E+02
				4.0E-02	P						1.4E+09		1	0.1	Ethanol, 2-(2-methoxyethoxy)-	111-77-3					4.7E+04	1.1E+05		3.3E+04
				5.0E-03	I						1.4E+09		1	0.1	Ethephon	16672-87-0					5.8E+03	1.4E+04		4.1E+03
				5.0E-04	I						1.4E+09		1	0.1	Ethion	563-12-2					5.8E+02	1.4E+03		4.1E+02
				1.0E-01	P	6.0E-02	P	V		2.4E+04	1.4E+09	6.2E+04	1		Ethoxyethanol Acetate, 2-	111-15-9					1.2E+05		1.6E+04	1.4E+04
				9.0E-02	P	2.0E-01	I	V		1.1E+05	1.4E+09	9.8E+04	1		Ethoxyethanol, 2-	110-80-5					1.1E+05		8.6E+04	4.7E+04
				9.0E-01	I	7.0E-02	P	V		1.1E+04	1.4E+09	8.6E+03	1		Ethyl Acetate	141-78-6					1.1E+06		2.6E+03	2.6E+03
				5.0E-03	P	8.0E-03	P	V		2.5E+03	1.4E+09	6.3E+03	1		Ethyl Acrylate	140-88-5					5.8E+03		2.2E+02	2.1E+02
						1.0E+01	I	V		2.1E+03	1.4E+09	1.3E+03	1		Ethyl Chloride (Chloroethane)	75-00-3							5.7E+04	5.7E+04
				2.0E-01	I			V		1.0E+04	1.4E+09	3.1E+03	1		Ethyl Ether	60-29-7					2.3E+05			2.3E+05
						3.0E-01	P	V		1.1E+03	1.4E+09	5.8E+03	1		Ethyl Methacrylate	97-63-2							7.6E+03	7.6E+03
				1.0E-05	I						1.4E+09		1	0.1	Ethyl-p-nitrophenyl Phosphonate	2104-64-5					1.2E+01	2.8E+01		8.2E+00
1.1E-02	C	2.5E-06	C	1.0E-01	I	1.0E+00	I	V		4.8E+02	1.4E+09	5.7E+03	1		Ethylbenzene	100-41-4	3.0E+04		2.8E+03	2.5E+03	1.2E+05		2.5E+04	2.0E+04
				7.0E-02	P						1.4E+09		1	0.1	Ethylene Cyanohydrin	109-78-4					8.2E+04	1.9E+05		5.7E+04
				9.0E-02	P			V		1.9E+05	1.4E+09	1.8E+05	1		Ethylene Diamine	107-15-3					1.1E+05			1.1E+05
				2.0E+00	I	4.0E-01	C				1.4E+09		1	0.1	Ethylene Glycol	107-21-1					2.3E+06	5.5E+06	2.4E+09	1.6E+06
				1.0E-01	I	1.6E+00	I				1.4E+09		1	0.1	Ethylene Glycol Monobutyl Ether	111-76-2					1.2E+05	2.8E+05	9.5E+09	8.2E+04
3.1E-01	C	3.0E-03	I			3.0E-02	C	V	M	1.2E+05	1.4E+09	6.1E+03	1		Ethylene Oxide	75-21-8	1.1E+03		2.5E+00	2.5E+00			8.0E+02	8.0E+02
4.5E-02	C	1.3E-05	C	8.0E-05	I						1.4E+09		1	0.1	Ethylene Thiourea	96-45-7	7.3E+03	1.7E+04	1.3E+08	5.1E+03	9.3E+01	2.2E+02		6.6E+01
6.5E+01	C	1.9E-02	C					V		1.5E+05	1.4E+09	2.4E+04	1		Ethyleneimine	151-56-4	5.0E+00		1.5E+00	1.2E+00				
				3.0E+00	I						1.4E+09		1	0.1	Ethylphthalyl Ethyl Glycolate	84-72-0					3.5E+06	8.3E+06		2.5E+06
				2.5E-04	I						1.4E+09		1	0.1	Fenamiphos	22224-92-6					2.9E+02	6.9E+02		2.1E+02
				2.5E-02	I						1.4E+09		1	0.1	Fenpropathrin	39515-41-8					2.9E+04	6.9E+04		2.1E+04
				2.5E-02	I						1.4E+09		1	0.1	Fenvalerate	51630-58-1					2.9E+04	6.9E+04		2.1E+04
				1.3E-02	I						1.4E+09		1	0.1	Fluometuron	2164-17-2					1.5E+04	3.6E+04		1.1E+04
				4.0E-02	C	1.3E-02	C				1.4E+09		1		Fluoride	16984-48-8					4.7E+04		7.7E+07	4.7E+04
				6.0E-02	I	1.3E-02	C				1.4E+09		1		Fluorine (Soluble Fluoride)	7782-41-4					7.0E+04		7.7E+07	7.0E+04
				8.0E-02	I						1.4E+09		1	0.1	Fluridone	59756-60-4					9.3E+04	2.2E+05		6.6E+04
				4.0E-02	O						1.4E+09		1	0.1	Flurprimidol	56425-91-3					4.7E+04	1.1E+05		3.3E+04
				2.0E-03	O						1.4E+09		1	0.1	Flusilazole	85509-19-9					2.3E+03	5.5E+03		1.6E+03
				5.0E-01	O						1.4E+09		1	0.1	Flutolanil	66332-96-5					5.8E+05	1.4E+06		4.1E+05
				1.0E-02	I						1.4E+09		1	0.1	Fluvalinate	69409-94-5					1.2E+04	2.8E+04		8.2E+03
				9.0E-02	O						1.4E+09		1	0.1	Folpet	133-07-3					1.1E+05	2.5E+05		7.4E+04
				2.5E-03	O						1.4E+09		1	0.1	Fomesafen	72178-02-0					2.9E+03	6.9E+03		2.1E+03
				2.0E-03	I						1.4E+09		1	0.1	Fonofos	944-22-9					2.3E+03	5.5E+03		1.6E+03
2.1E-02	C	1.3E-05	I	2.0E-01	I	9.8E-03	A	V		4.2E+04	1.4E+09	7.8E+04	1		Formaldehyde	50-00-0	1.6E+04		7.3E+03	5.0E+03	2.3E+05		3.3E+03	3.3E+03
				9.0E-01	P	3.0E-04	X	V		1.1E+05	1.4E+09	9.3E+04	1		Formic Acid	64-18-6					1.1E+06		1.2E+02	1.2E+02
				2.5E+00	O						1.4E+09		1	0.1	Fosetyl-AL	39148-24-8					2.9E+06	6.9E+06		2.1E+06
															Furans									
				1.0E-03	X			V			1.4E+09	1.6E+05	1	0.03	~Dibenzofuran	132-64-9					1.2E+03	9.2E+03		1.0E+03
				1.0E-03	I			V		6.2E+03	1.4E+09	2.6E+03	1	0.03	~Furan	110-00-9					1.2E+03	9.2E+03		1.0E+03
				9.0E-01	I	2.0E+00	I	V		1.7E+05	1.4E+09	1.2E+04	1	0.03	~Tetrahydrofuran	109-99-9					1.1E+06	8.3E+06	1.0E+05	9.4E+04
3.8E+00	H										1.4E+09		1	0.1	Furazolidone	67-45-8	8.6E+01	2.0E+02		6.0E+01				
				3.0E-03	I	5.0E-02	H	V		1.0E+04	1.4E+09	4.9E+04	1		Furfural	98-01-1					3.5E+03		1.1E+04	2.6E+03
1.5E+00	C	4.3E-04	C								1.4E+09		1	0.1	Furium	531-82-8	2.2E+02	5.2E+02	3.9E+06	1.5E+02				
3.0E-02	I	8.6E-06	C								1.4E+09		1	0.1	Furmecyclox	60568-05-0	1.1E+04	2.6E+04	1.9E+08	7.7E+03				
				6.0E-03	O						1.4E+09		1	0.1	Glufosinate, Ammonium	77182-82-2					7.0E+03	1.7E+04		4.9E+03
				1.0E-01	A	8.0E-05	C				1.4E+09		1	0.1	Glutaraldehyde	111-30-8					1.2E+05	2.8E+05	4.8E+05	7.0E+04
				4.0E-04	I	1.0E-03	H	V		1.1E+05	1.4E+09	8.4E+04	1		Glycidyl	765-34-4					4.7E+02		3.7E+02	2.1E+02
				1.0E-01	I						1.4E+09		1	0.1	Glyphosate	1071-83-6					1.2E+05	2.8E+05		8.2E+04
				1.0E-02	X			V			1.4E+09	1.5E+05	1		Guanidine	113-00-8					1.2E+04			1.2E+04
				2.0E-02	P						1.4E+09		1	0.1	Guanidine Chloride	50-01-1					2.3E+04	5.5E+04		1.6E+04
				3.0E-02	X						1.4E+09		1	0.1	Guanidine Nitrate	506-93-4					3.5E+04	8.3E+04		2.5E+04
				5.0E-05	I						1.4E+09		1	0.1	Haloxyfop, Methyl	69806-40-2					5.8E+01	1.4E+02		4.1E+01
4.5E+00	I	1.3E-03	I	5.0E-04	I			V			1.4E+09	4.8E+05	1		Heptachlor	76-44-8	7.3E+01		4.5E+02	6.3E+01	5.8E+02			5.8E+02
9.1E+00	I	2.6E-03	I	1.3E-05	I			V			1.4E+09	8.4E+05	1		Heptachlor Epoxide	1024-57-3	3.6E+01		4.0E+02	3.3E+01	1.5E+01			1.5E+01
						3.0E-03	X	V		2.1E+02	1.4E+09	7.8E+03	1		Heptanal, n-	111-71-7							1.0E+02	1.0E+02
				3.0E-04	X	4.0E-01	P	V		5.8E+01	1.4E+09	9.0E+02	1		Heptane, N-	142-82-5					3.5E+02		1.6E+03	2.9E+02
				2.0E-03	I			V			1.4E+09	3.8E+05	1		Hexabromobenzene	87-82-1					2.3E+03			2.3E+03
				2.0E-04	I						1.4E+09		1	0.1	Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2					2.3E+02	5.5E+02		1.6E+02
1.6E+00	I	4.6E-04	I	8.0E-04	I			V			1.4E+09	6.8E+04	1		Hexachlorobenzene	118-74-1	2.0E+02		1.8E+02	9.6E+01	9.3E+02			9.3E+02
7.8E-02	I	2.2E-05	I	1.0E-03	P			V		1.7E+01	1.4E+09	1.1E+04	1		Hexachlorobutadiene	87-68-3	4.2E+03		6.0E+02	5.3E+02	1.2E+03			1.2E+03
6.3E+00	I	1.8E-03	I	8.0E-03	A						1.4E+09		1	0.1	Hexachlorocyclohexane, Alpha-	319-84-6	5.2E+01	1.2E+02	9.3E+05	3.6E+01	9.3E+03	2.2E+04		6.6E+03
1.8E+00	I	5.3E-04	I								1.4E+09		1	0.1	Hexachlorocyclohexane, Beta-	319-85-7	1.8E+02	4.3E+02	3.1E+06	1.3E+02				
1.1E+00	C	3.1E-04	C	3.0E-04	I						1.4E+09		1	0.04	Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	3.0E+02	1.8E+03	5.4E+06	2.5E+02	3.5E+02	2.1E+03		3.0E+02
1.8E+00	I	5.1E-04	I								1.4E+09		1	0.1	Hexachlorocyclohexane, Technical	608-73-1	1.8E+02	4.3E+02	3.3E+06	1.3E+02				

RMLS TR=1E-04 THQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				6.0E-03	I	2.0E-04	I	V		1.6E+01	1.4E+09	8.5E+03	1		Hexachlorocyclopentadiene	77-47-4					7.0E+03		7.5E+00	7.5E+00
4.0E-02	I	1.1E-05	C	7.0E-04	I	3.0E-02	I	V			1.4E+09	8.0E+03	1		Hexachloroethane	67-72-1	8.2E+03		8.9E+02	8.0E+02	8.2E+02		1.1E+03	4.6E+02
				3.0E-04	I						1.4E+09		1	0.1	Hexachlorophene	70-30-4					3.5E+02	8.3E+02		2.5E+02
8.0E-02	I			4.0E-03	I						1.4E+09		1	0.015	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	4.1E+03	6.4E+04		3.8E+03	4.7E+03	7.4E+04		4.4E+03
						1.0E-05	I	V		3.4E+03	1.4E+09	3.0E+05	1		Hexamethylene Diisocyanate, 1,6-	822-06-0							1.3E+01	1.3E+01
				4.0E-04	P						1.4E+09		1	0.1	Hexamethylphosphoramide	680-31-9					4.7E+02	1.1E+03		3.3E+02
						7.0E-01	I	V		1.4E+02	1.4E+09	8.3E+02	1		Hexane, N-	110-54-3							2.5E+03	2.5E+03
				2.0E+00	P						1.4E+09		1	0.1	Hexanedioic Acid	124-04-9					2.3E+06	5.5E+06		1.6E+06
9.5E-03	P			7.0E-02	P	4.0E-04	P	V			1.4E+09		1		Hexanol, 1-,2-ethyl- (2-Ethyl-1-hexanol)	104-76-7	3.4E+04			3.4E+04	8.2E+04		2.4E+06	7.9E+04
				5.0E-03	I	3.0E-02	I	V		3.3E+03	1.4E+09	1.3E+04	1		Hexanone, 2-	591-78-6					5.8E+03		1.7E+03	1.3E+03
				3.3E-02	I						1.4E+09		1	0.1	Hexazinone	51235-04-2					3.9E+04	9.1E+04		2.7E+04
				2.5E-02	I						1.4E+09		1	0.1	Hexythiazox	78587-05-0					2.9E+04	6.9E+04		2.1E+04
				1.7E-02	O						1.4E+09		1	0.1	Hydramethylnon	67485-29-4					2.0E+04	4.7E+04		1.4E+04
3.0E+00	I	4.9E-03	I			3.0E-05	P	V		1.1E+05	1.4E+09	6.5E+04	1		Hydrazine	302-01-2	1.1E+02		1.6E+01	1.4E+01			8.6E+00	8.6E+00
3.0E+00	I	4.9E-03	I								1.4E+09		1		Hydrazine Sulfate	10034-93-2	1.1E+02		3.4E+05	1.1E+02				
						2.0E-02	I	V			1.4E+09		1		Hydrogen Chloride	7647-01-0							1.2E+08	1.2E+08
				4.0E-02	C	1.4E-02	C	V			1.4E+09		1		Hydrogen Fluoride	7664-39-3					4.7E+04		8.3E+07	4.7E+04
						2.0E-03	I	V			1.4E+09		1		Hydrogen Sulfide	7783-06-4							1.2E+07	1.2E+07
6.0E-02	P			4.0E-02	P						1.4E+09		1	0.1	Hydroquinone	123-31-9	5.5E+03	1.3E+04		3.8E+03	4.7E+04	1.1E+05		3.3E+04
6.1E-02	O			2.5E-03	O						1.4E+09		1	0.1	Imazalil	35554-44-0	5.4E+03	1.3E+04		3.8E+03	2.9E+03	6.9E+03		2.1E+03
				2.5E-01	I						1.4E+09		1	0.1	Imazaquin	81335-37-7					2.9E+05	6.9E+05		2.1E+05
				2.5E+00	O						1.4E+09		1	0.1	Imazethapyr	81335-77-5					2.9E+06	6.9E+06		2.1E+06
				1.0E-02	A						1.4E+09		1		Iodine	7553-56-2					1.2E+04			1.2E+04
				4.0E-02	I						1.4E+09		1	0.1	Iprodione	36734-19-7					4.7E+04	1.1E+05		3.3E+04
				7.0E-01	P						1.4E+09		1		Iron	7439-89-6					8.2E+05			8.2E+05
				3.0E-01	I			V		1.0E+04	1.4E+09	2.8E+04	1		Isobutyl Alcohol	78-83-1					3.5E+05			3.5E+05
9.5E-04	I			2.0E-01	I	2.0E+00	C				1.4E+09		1	0.1	Isophorone	78-59-1	3.4E+05	8.1E+05		2.4E+05	2.3E+05	5.5E+05	1.2E+10	1.6E+05
				1.5E-02	I			V			1.4E+09	4.2E+05	1		Isopropalin	33820-53-0					1.8E+04			1.8E+04
				2.0E+00	P	2.0E-01	P	V		1.1E+05	1.4E+09	2.8E+04	1		Isopropanol	67-63-0					2.3E+06		2.4E+04	2.4E+04
				1.0E-01	I						1.4E+09		1	0.1	Isopropyl Methyl Phosphonic Acid	1832-54-8					1.2E+05	2.8E+05		8.2E+04
				5.0E-02	I						1.4E+09		1	0.1	Isoxaben	82558-50-7					5.8E+04	1.4E+05		4.1E+04
						3.0E-01	A	V			1.4E+09		1		JP-7	E1737665							1.8E+09	1.8E+09
				8.0E-03	O						1.4E+09		1	0.1	Lactofen	77501-63-4					9.3E+03	2.2E+04		6.6E+03
				2.0E-04	X						1.4E+09		1	0.1	Lactonitrile	78-97-7					2.3E+02	5.5E+02		1.6E+02
				5.0E-05	P						1.4E+09		1		Lanthanum	7439-91-0					5.8E+01			5.8E+01
				2.1E-05	P						1.4E+09		1	0.1	Lanthanum Acetate Hydrate	100587-90-4					2.4E+01	5.7E+01		1.7E+01
				1.9E-05	P						1.4E+09		1		Lanthanum Chloride Heptahydrate	10025-84-0					2.2E+01			2.2E+01
				2.8E-05	P						1.4E+09		1		Lanthanum Chloride, Anhydrous	10099-58-8					3.3E+01			3.3E+01
				1.6E-05	P						1.4E+09		1		Lanthanum Nitrate Hexahydrate	10277-43-7					1.9E+01			1.9E+01
															Lead Compounds									
8.5E-03	C	1.2E-05	C								1.4E+09		1		~Lead Phosphate	7446-27-7	3.8E+04		1.4E+08	3.8E+04				
8.5E-03	C	1.2E-05	C								1.4E+09		1	0.1	~Lead acetate	301-04-2	3.8E+04	9.1E+04	1.4E+08	2.7E+04				
											1.4E+09		1		~Lead and Compounds	7439-92-1								8.0E+02
8.5E-03	C	1.2E-05	C								1.4E+09		1	0.1	~Lead subacetate	1335-32-6	3.8E+04	9.1E+04	1.4E+08	2.7E+04				
				1.0E-07	I			V		2.4E+00	1.4E+09	1.9E+03	1		~Tetraethyl Lead	78-00-2					1.2E-01			1.2E-01
				5.0E-06	P			V		3.8E+02	1.4E+09	2.6E+04	1		Lewisite	541-25-3					5.8E+00			5.8E+00
				7.7E-03	O						1.4E+09		1	0.1	Linuron	330-55-2					9.0E+03	2.1E+04		6.3E+03
				2.0E-03	P						1.4E+09		1		Lithium	7439-93-2					2.3E+03			2.3E+03
				5.0E-04	I						1.4E+09		1	0.1	MCPA	94-74-6					5.8E+02	1.4E+03		4.1E+02
				4.4E-03	O						1.4E+09		1	0.1	MCPB	94-81-5					5.1E+03	1.2E+04		3.6E+03
				1.0E-03	I						1.4E+09		1	0.1	MCPP	93-65-2					1.2E+03	2.8E+03		8.2E+02
				2.0E-02	I						1.4E+09		1	0.1	Malathion	121-75-5					2.3E+04	5.5E+04		1.6E+04
				1.0E-01	I	7.0E-04	C				1.4E+09		1	0.1	Maleic Anhydride	108-31-6					1.2E+05	2.8E+05	4.2E+06	8.0E+04
				5.0E-01	I						1.4E+09		1	0.1	Maleic Hydrazide	123-33-1					5.8E+05	1.4E+06		4.1E+05
				1.0E-04	P						1.4E+09		1	0.1	Malononitrile	109-77-3					1.2E+02	2.8E+02		8.2E+01
				3.0E-02	H						1.4E+09		1	0.1	Mancozeb	8018-01-7					3.5E+04	8.3E+04		2.5E+04
				5.0E-03	I						1.4E+09		1	0.1	Maneb	12427-38-2					5.8E+03	1.4E+04		4.1E+03
				1.4E-01	I	5.0E-05	I						1		Manganese (Diet)	7439-96-5								
				2.4E-02	G	5.0E-05	I				1.4E+09		0.04		Manganese (Non-diet)	7439-96-5					2.8E+04		3.0E+05	2.6E+04
				9.0E-05	H						1.4E+09		1	0.1	Mephosfolan	950-10-7					1.1E+02	2.5E+02		7.4E+01
				3.0E-02	I						1.4E+09		1	0.1	Mepiquat Chloride	24307-26-4					3.5E+04	8.3E+04		2.5E+04
1.1E-02	P			4.0E-03	P						1.4E+09		1	0.1	Mercaptobenzothiazole, 2-	149-30-4	3.0E+04	7.0E+04		2.1E+04	4.7E+03	1.1E+04		3.3E+03
															Mercury Compounds									
				3.0E-04	I	3.0E-04	G				1.4E+09		0.07		~Mercuric Chloride (and other Mercury salts)	7487-94-7					3.5E+02		1.8E+06	3.5E+02
						3.0E-04	I	V		3.1E+00	1.4E+09	3.5E+04	1		~Mercury (elemental)	7439-97-6							4.6E+01	4.6E+01
				1.0E-04	I						1.4E+09		1		~Methyl Mercury	22967-92-6					1.2E+02			1.2E+02
				8.0E-05	I						1.4E+09		1	0.1	~Phenylmercuric Acetate	62-38-4					9.3E+01	2.2E+02		6.6E+01
				3.0E-05	I			V			1.4E+09	1.9E+06	1		Merphos	150-50-5					3.5E+01			3.5E+01
				1.0E-04	O						1.4E+09		1	0.1	Merphos Oxide	78-48-8					1.2E+02	2.8E+02		8.2E+01
				6.0E-02	I						1.4E+09		1	0.1	Metalaxyl	57837-19-1					7.0E+04	1.7E+05		4.9E+04
				1.0E-04	I	3.0E-02	P	V		4.6E+03	1.4E+09	6.8E+03	1		Methacrylonitrile	126-98-7					1.2E+02		8.9E+02	1.0E+02
				5.0E-05	I						1.4E+09		1	0.1	Methamidophos	10265-92-6					5.8E+01	1.4E+02		4.1E+01
				2.0E+00	I	2.0E+01	I	V		1.1E+05	1.4E+09	2.9E+04	1		Methanol	67-56-1					2.3E+06		2.5E+06	1.2E+06
				1.5E-03	O						1.4E+09		1	0.1	Methidathion	950-37-8					1.8E+03	4.1E+03		1.2E+03

RMLS TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				2.5E-02	I						1.4E+09		1	0.1	Methomyl	16752-77-5					2.9E+04	6.9E+04		2.1E+04
4.9E-02	C	1.4E-05	C								1.4E+09		1	0.1	Methoxy-5-nitroaniline, 2-	99-59-2	6.7E+03	1.6E+04	1.2E+08	4.7E+03				
				5.0E-03	I						1.4E+09		1	0.1	Methoxychlor	72-43-5					5.8E+03	1.4E+04		4.1E+03
				8.0E-03	P	1.0E-03	P	V		1.2E+05	1.4E+09	1.2E+05	1		Methoxyethanol Acetate, 2-	110-49-6					9.3E+03		5.4E+02	5.1E+02
				5.0E-03	P	2.0E-02	I	V		1.1E+05	1.4E+09	1.0E+05	1		Methoxyethanol, 2-	109-86-4					5.8E+03		8.8E+03	3.5E+03
				1.0E+00	X			V		2.9E+04	1.4E+09	8.1E+03	1		Methyl Acetate	79-20-9					1.2E+06			1.2E+06
						2.0E-02	P	V		6.8E+03	1.4E+09	7.0E+03	1		Methyl Acrylate	96-33-3							6.1E+02	6.1E+02
				6.0E-01	I	5.0E+00	I	V		2.8E+04	1.4E+09	1.2E+04	1		Methyl Ethyl Ketone (2-Butanone)	78-93-3					7.0E+05		2.7E+05	1.9E+05
		1.0E-03	X	1.0E-03	P	2.0E-05	X	V		1.8E+05	1.4E+09	5.0E+04	1		Methyl Hydrazine	60-34-4			6.2E+01	6.2E+01	1.2E+03		4.4E+00	4.4E+00
						3.0E+00	I	V		3.4E+03	1.4E+09	1.1E+04	1		Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1							1.4E+05	1.4E+05
						1.0E-03	C	V		1.0E+04	1.4E+09	4.4E+03	1		Methyl Isocyanate	624-83-9							1.9E+01	1.9E+01
				1.4E+00	I	7.0E-01	I	V		2.4E+03	1.4E+09	6.3E+03	1		Methyl Methacrylate	80-62-6					1.6E+06		1.9E+04	1.9E+04
				2.5E-04	I						1.4E+09		1	0.1	Methyl Parathion	298-00-0					2.9E+02	6.9E+02		2.1E+02
				6.0E-02	X						1.4E+09		1	0.1	Methyl Phosphonic Acid	993-13-5					7.0E+04	1.7E+05		4.9E+04
				6.0E-03	H	4.0E-02	H	V		3.9E+02	1.4E+09	2.4E+04	1		Methyl Styrene (Mixed Isomers)	25013-15-4					7.0E+03		4.3E+03	2.6E+03
9.9E-02	C	2.8E-05	C								1.4E+09		1	0.1	Methyl methanesulfonate	66-27-3	3.3E+03	7.8E+03	6.0E+07	2.3E+03				
1.8E-03	C	2.6E-07	C			3.0E+00	I	V		8.9E+03	1.4E+09	4.9E+03	1		Methyl tert-Butyl Ether (MTBE)	1634-04-4	1.8E+05		2.3E+04	2.1E+04			6.4E+04	6.4E+04
				3.0E-04	X						1.4E+09		1	0.1	Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2					3.5E+02	8.3E+02		2.5E+02
						3.0E+00	X	V		2.5E+03	1.4E+09	1.7E+04	1		Methyl-2-Pentanol, 4-	108-11-2							2.3E+05	2.3E+05
9.0E-03	P			2.0E-02	X						1.4E+09		1	0.1	Methyl-5-Nitroaniline, 2-	99-55-8	3.6E+04	8.6E+04		2.6E+04	2.3E+04	5.5E+04		1.6E+04
8.3E+00	C	2.4E-03	C								1.4E+09		1	0.1	Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	3.9E+01	9.3E+01	6.9E+05	2.8E+01				
1.3E-01	C	3.7E-05	C								1.4E+09		1	0.1	Methylaniline Hydrochloride, 2-	636-21-5	2.5E+03	5.9E+03	4.5E+07	1.8E+03				
				1.0E-02	A						1.4E+09		1	0.1	Methylarsonic acid	124-58-3					1.2E+04	2.8E+04		8.2E+03
				2.0E-04	X						1.4E+09		1	0.1	Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7					2.3E+02	5.5E+02		1.6E+02
1.0E-01	X			3.0E-04	X						1.4E+09		1	0.1	Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	3.3E+03	7.7E+03		2.3E+03	3.5E+02	8.3E+02		2.5E+02
2.2E+01	C	6.3E-03	C						M		1.4E+09		1	0.1	Methylcholanthrene, 3-	56-49-5	1.5E+01	3.5E+01	2.6E+05	1.0E+01				
2.0E-03	I	1.0E-08	I	6.0E-03	I	6.0E-01	I	V	M	3.3E+03	1.4E+09	2.2E+03	1		Methylene Chloride	75-09-2	1.6E+05		2.7E+05	1.0E+05	7.0E+03		5.8E+03	3.2E+03
1.0E-01	P	4.3E-04	C	2.0E-03	P				M		1.4E+09		1	0.1	Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	3.3E+03	7.7E+03	3.9E+06	2.3E+03	2.3E+03	5.5E+03		1.6E+03
4.6E-02	I	1.3E-05	C								1.4E+09		1	0.1	Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	7.1E+03	1.7E+04	1.3E+08	5.0E+03				
1.6E+00	C	4.6E-04	C			2.0E-02	C				1.4E+09		1	0.1	Methylenebisbenzenamine, 4,4'-	101-77-9	2.0E+02	4.8E+02	3.6E+06	1.4E+02			1.2E+08	1.2E+08
						6.0E-04	I				1.4E+09		1		Methylenediphenyl Diisocyanate	101-68-8							3.6E+06	3.6E+06
				7.0E-02	H			V		5.0E+02	1.4E+09	1.3E+04	1		Methylstyrene, Alpha-	98-83-9					8.2E+04			8.2E+04
				1.5E-01	I						1.4E+09		1	0.1	Metolachlor	51218-45-2					1.8E+05	4.1E+05		1.2E+05
				2.5E-02	I						1.4E+09		1	0.1	Metribuzin	21087-64-9					2.9E+04	6.9E+04		2.1E+04
				2.5E-01	I						1.4E+09		1	0.1	Metsulfuron-methyl	74223-64-6					2.9E+05	6.9E+05		2.1E+05
				3.0E+00	P			V		3.4E-01	1.4E+09	1.4E+03	1		Mineral oils	8012-95-1					3.5E+06			3.5E+06
1.8E+01	C	5.1E-03	C	2.0E-04	I			V			1.4E+09	8.6E+05	1		Mirex	2385-85-5	1.8E+01		2.1E+02	1.7E+01	2.3E+02			2.3E+02
				2.0E-03	I						1.4E+09		1	0.1	Molinate	2212-67-1					2.3E+03	5.5E+03		1.6E+03
				5.0E-03	I						1.4E+09		1		Molybdenum	7439-98-7					5.8E+03			5.8E+03
				1.0E-01	I						1.4E+09		1		Monochloramine	10599-90-3					1.2E+05			1.2E+05
				2.0E-03	P						1.4E+09		1	0.1	Monomethylaniline	100-61-8					2.3E+03	5.5E+03		1.6E+03
				2.5E-02	I						1.4E+09		1	0.1	Myclobutanil	88671-89-0					2.9E+04	6.9E+04		2.1E+04
				3.0E-04	X						1.4E+09		1	0.1	N,N'-Diphenyl-1,4-benzenediamine	74-31-7					3.5E+02	8.3E+02		2.5E+02
				2.0E-03	I			V			1.4E+09	5.7E+04	1		Naled	300-76-5					2.3E+03			2.3E+03
				3.0E-02	X	1.0E-01	P	V			1.4E+09		1		Naphtha, High Flash Aromatic (HFAN)	64742-95-6					3.5E+04		6.0E+08	3.5E+04
1.8E+00	C	0.0E+00	C								1.4E+09		1	0.1	Naphthylamine, 2-	91-59-8	1.8E+02	4.3E+02		1.3E+02				
				1.2E-01	O						1.4E+09		1	0.1	Napropamide	15299-99-7					1.4E+05	3.3E+05		9.8E+04
		2.6E-04	C	1.1E-02	C	1.4E-05	C				1.4E+09		1	0.1	Nickel Acetate	373-02-4			6.4E+06	6.4E+06	1.3E+04	3.0E+04	8.3E+04	8.1E+03
		2.6E-04	C	1.1E-02	C	1.4E-05	C				1.4E+09		1	0.1	Nickel Carbonate	3333-67-3			6.4E+06	6.4E+06	1.3E+04	3.0E+04	8.3E+04	8.1E+03
		2.6E-04	C	1.1E-02	C	1.4E-05	C	V			1.4E+09		1		Nickel Carbonyl	13463-39-3			6.4E+06	6.4E+06	1.3E+04		8.3E+04	1.1E+04
		2.6E-04	C	1.1E-02	C	1.4E-05	C				1.4E+09		0.04		Nickel Hydroxide	12054-48-7			6.4E+06	6.4E+06	1.3E+04		8.3E+04	1.1E+04
		2.6E-04	C	1.1E-02	C	2.0E-05	C				1.4E+09		0.04		Nickel Oxide	1313-99-1			6.4E+06	6.4E+06	1.3E+04		1.2E+05	1.2E+04
		2.4E-04	I	1.1E-02	C	1.4E-05	C				1.4E+09		0.04		Nickel Refinery Dust	E715532			6.9E+06	6.9E+06	1.3E+04		8.3E+04	1.1E+04
		2.6E-04	C	2.0E-02	I	9.0E-05	A				1.4E+09		0.04		Nickel Soluble Salts	7440-02-0			6.4E+06	6.4E+06	2.3E+04		5.4E+05	2.2E+04
1.7E+00	C	4.8E-04	I	1.1E-02	C	1.4E-05	C				1.4E+09		0.04		Nickel Subsulfide	12035-72-2	1.9E+02		3.5E+06	1.9E+02	1.3E+04		8.3E+04	1.1E+04
		2.6E-04	C	1.1E-02	C	1.4E-05	C				1.4E+09		1	0.1	Nickelocene	1271-28-9			6.4E+06	6.4E+06	1.3E+04	3.0E+04	8.3E+04	8.1E+03
				1.6E+00	I						1.4E+09		1		Nitrate (measured as nitrogen)	14797-55-8					1.9E+06			1.9E+06
											1.4E+09		1		Nitrate + Nitrite (measured as nitrogen)	E701177								
				1.0E-01	I						1.4E+09		1		Nitrite (measured as nitrogen)	14797-65-0					1.2E+05			1.2E+05
				1.0E-02	X	5.0E-05	X				1.4E+09		1	0.1	Nitroaniline, 2-	88-74-4					1.2E+04	2.8E+04	3.0E+05	8.0E+03
2.0E-02	P			4.0E-03	P	6.0E-03	P				1.4E+09		1	0.1	Nitroaniline, 4-	100-01-6	1.6E+04	3.9E+04		1.1E+04	4.7E+03	1.1E+04	3.6E+07	3.3E+03
		4.0E-05	I	2.0E-03	I	9.0E-03	I	V		3.1E+03	1.4E+09	7.3E+04	1		Nitrobenzene	98-95-3			2.2E+03	2.2E+03	2.3E+03		2.9E+03	1.3E+03
				3.0E+03	P						1.4E+09		1	0.1	Nitrocellulose	9004-70-0					3.5E+09	8.3E+09		2.5E+09
				7.0E-02	H						1.4E+09		1	0.1	Nitrofurantoin	67-20-9					8.2E+04	1.9E+05		5.7E+04
1.3E+00	C	3.7E-04	C								1.4E+09		1	0.1	Nitrofurazone	59-87-0	2.5E+02	5.9E+02	4.5E+06	1.8E+02				
1.7E-02	P			1.0E-04	P						1.4E+09		1	0.1	Nitroglycerin	55-63-0	1.9E+04	4.5E+04		1.4E+04	1.2E+02	2.8E+02		8.2E+01
				1.0E-01	I						1.4E+09		1	0.1	Nitroguanidine	556-88-7					1.2E+05	2.8E+05		8.2E+04
		8.8E-06	P			5.0E-03	P	V		1.8E+04	1.4E+09	1.7E+04	1		Nitromethane	75-52-5			2.4E+03	2.4E+03			3.7E+02	3.7E+02
		2.7E-03	H			2.0E-02	I	V		4.9E+03	1.4E+09	1.3E+04	1		Nitropropane, 2-	79-46-9			6.0E+00	6.0E+00			1.2E+03	1.2E+03
2.7E+01	C	7.7E-03	C						M		1.4E+09		1	0.1	Nitroso-N-ethylurea, N-	759-73-9	1.2E+01	2.9E+01	2.2E+05	8.5E+00				
1.2E+02	C	3.4E-02	C						M		1.4E+09		1	0.1	Nitroso-N-methylurea, N-	684-93-5	2.7E+00	6.4E+00	4.9E+04	1.9E+00				
5.4E+00	I	1.6E-03	I					V			1.4E+09	2.4E+05	1		Nitroso-di-N-butylamine, N-	924-16-3	6.1E+01		1.9E+02	4.6E+01				
7.0E+00	I	2.0E-03	C								1.4E+09		1	0.1	Nitroso-di-N-propylamine, N-	621-64-7	4.7E+01	1.1E+02	8.3E+05	3.3E+01				
2.8E+00	I	8.0E-04	C								1.4E+09		1	0.1	Nitrosodiethanolamine, N-	1116-54-7	1.2E+02	2.8E+02	2.1E+06	8.2E+01				

RMLS TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information														Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
1.5E+02	I	4.3E-02	I						M		1.4E+09		1	0.1	Nitrosodiethylamine, N-	55-18-5	2.2E+00	5.2E+00	3.9E+04	1.5E+00				
5.1E+01	I	1.4E-02	I	8.0E-06	P	4.0E-05	X	V	M	2.4E+05	1.4E+09	8.2E+04	1		Nitrosodimethylamine, N-	62-75-9	6.4E+00		7.2E+00	3.4E+00	9.3E+00		1.4E+01	5.7E+00
4.9E-03	I	2.6E-06	C								1.4E+09		1	0.1	Nitrosodiphenylamine, N-	86-30-6	6.7E+04	1.6E+05	6.4E+08	4.7E+04				
2.2E+01	I	6.3E-03	C					V		1.1E+05	1.4E+09	1.2E+05	1		Nitrosomethylethylamine, N-	10595-95-6	1.5E+01		2.4E+01	9.1E+00				
6.7E+00	C	1.9E-03	C								1.4E+09		1	0.1	Nitrosomorpholine [N-]	59-89-2	4.9E+01	1.2E+02	8.8E+05	3.4E+01				
9.4E+00	C	2.7E-03	C								1.4E+09		1	0.1	Nitrosopiperidine [N-]	100-75-4	3.5E+01	8.2E+01	6.2E+05	2.4E+01				
2.1E+00	I	6.1E-04	I								1.4E+09		1	0.1	Nitrosopyrrolidine, N-	930-55-2	1.6E+02	3.7E+02	2.7E+06	1.1E+02				
				1.0E-04	X						1.4E+09		1	0.1	Nitrotoluene, m-	99-08-1					1.2E+02	2.8E+02		8.2E+01
2.2E-01	P			9.0E-04	P			V		1.5E+03	1.4E+09	1.4E+05	1		Nitrotoluene, o-	88-72-2	1.5E+03			1.5E+03	1.1E+03			1.1E+03
1.6E-02	P			4.0E-03	P						1.4E+09		1	0.1	Nitrotoluene, p-	99-99-0	2.0E+04	4.8E+04		1.4E+04	4.7E+03	1.1E+04		3.3E+03
				3.0E-04	X	2.0E-02	P	V		6.9E+00	1.4E+09	1.0E+03	1		Nonane, n-	111-84-2					3.5E+02		9.1E+01	7.2E+01
				1.5E-02	O						1.4E+09		1	0.1	Norflurazon	27314-13-2					1.8E+04	4.1E+04		1.2E+04
				3.0E-03	I						1.4E+09		1	0.1	Octabromodiphenyl Ether	32536-52-0					3.5E+03	8.3E+03		2.5E+03
				5.0E-02	I						1.4E+09		1	0.006	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0					5.8E+04	2.3E+06		5.7E+04
				2.0E-03	H						1.4E+09		1	0.1	Octamethylpyrophosphoramide	152-16-9					2.3E+03	5.5E+03		1.6E+03
7.8E-03	O			1.4E-01	O						1.4E+09		1	0.1	Oryzalin	19044-88-3	4.2E+04	9.9E+04		2.9E+04	1.6E+05	3.9E+05		1.1E+05
				5.0E-03	I						1.4E+09		1	0.1	Oxadiazon	19666-30-9					5.8E+03	1.4E+04		4.1E+03
				2.5E-02	I						1.4E+09		1	0.1	Oxamyl	23135-22-0					2.9E+04	6.9E+04		2.1E+04
7.3E-02	O			3.0E-02	O						1.4E+09		1	0.1	Oxyfluorfen	42874-03-3	4.5E+03	1.1E+04		3.1E+03	3.5E+04	8.3E+04		2.5E+04
				1.3E-02	I						1.4E+09		1	0.1	Paclobutrazol	76738-62-0					1.5E+04	3.6E+04		1.1E+04
				4.5E-03	I						1.4E+09		1	0.1	Paraquat Dichloride	1910-42-5					5.3E+03	1.2E+04		3.7E+03
				6.0E-03	H						1.4E+09		1	0.1	Parathion	56-38-2					7.0E+03	1.7E+04		4.9E+03
				5.0E-02	H			V			1.4E+09	4.5E+04	1		Pebulate	1114-71-2					5.8E+04			5.8E+04
				3.0E-01	O						1.4E+09		1	0.1	Pendimethalin	40487-42-1					3.5E+05	8.3E+05		2.5E+05
				2.0E-03	I			V		3.1E-01	1.4E+09	5.1E+05	1		Pentabromodiphenyl Ether	32534-81-9					2.3E+03			2.3E+03
				1.0E-04	I						1.4E+09		1	0.1	Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9					1.2E+02	2.8E+02		8.2E+01
				8.0E-04	I			V			1.4E+09	8.1E+04	1		Pentachlorobenzene	608-93-5					9.3E+02			9.3E+02
9.0E-02	P							V		4.6E+02	1.4E+09	9.7E+03	1		Pentachloroethane	76-01-7	3.6E+03			3.6E+03				
2.6E-01	H			3.0E-03	I			V			1.4E+09	4.3E+05	1		Pentachloronitrobenzene	82-68-8	1.3E+03			1.3E+03	3.5E+03			3.5E+03
4.0E-01	I	5.1E-06	C	5.0E-03	I						1.4E+09		1	0.25	Pentachlorophenol	87-86-5	8.2E+02	7.7E+02	3.3E+08	4.0E+02	5.8E+03	5.5E+03		2.8E+03
4.0E-03	X			2.0E-03	P						1.4E+09		1	0.1	Pentaerythritol tetranitrate (PETN)	78-11-5	8.2E+04	1.9E+05		5.7E+04	2.3E+03	5.5E+03		1.6E+03
						1.0E+00	P	V		3.9E+02	1.4E+09	7.8E+02	1		Pentane, n-	109-66-0							3.4E+03	3.4E+03
															Perchlorates									
				7.0E-04	I						1.4E+09		1		~Ammonium Perchlorate	7790-98-9					8.2E+02			8.2E+02
				7.0E-04	I						1.4E+09		1		~Lithium Perchlorate	7791-03-9					8.2E+02			8.2E+02
				7.0E-04	I						1.4E+09		1		~Perchlorate and Perchlorate Salts	14797-73-0					8.2E+02			8.2E+02
				7.0E-04	I						1.4E+09		1		~Potassium Perchlorate	7778-74-7					8.2E+02			8.2E+02
				7.0E-04	I						1.4E+09		1		~Sodium Perchlorate	7601-89-0					8.2E+02			8.2E+02
				2.0E-02	P						1.4E+09		1	0.1	Perfluorobutane sulfonic acid (PFBS)	375-73-5					2.3E+04	5.5E+04		1.6E+04
				2.0E-02	P						1.4E+09		1	0.1	Perfluorobutanesulfonate	45187-15-3					2.3E+04	5.5E+04		1.6E+04
				5.0E-02	I						1.4E+09		1	0.1	Permethrin	52645-53-1					5.8E+04	1.4E+05		4.1E+04
2.2E-03	C	6.3E-07	C								1.4E+09		1	0.1	Phenacetin	62-44-2	1.5E+05	3.5E+05	2.6E+09	1.0E+05				
				2.4E-01	O						1.4E+09		1	0.1	Phenmedipham	13684-63-4					2.8E+05	6.6E+05		2.0E+05
				3.0E-01	I	2.0E-01	C				1.4E+09		1	0.1	Phenol	108-95-2					3.5E+05	8.3E+05	1.2E+09	2.5E+05
				4.0E-03	I						1.4E+09		1	0.1	Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1					4.7E+03	1.1E+04		3.3E+03
				5.0E-04	X						1.4E+09		1	0.1	Phenothiazine	92-84-2					5.8E+02	1.4E+03		4.1E+02
				2.0E-04	X			V		1.3E+02	1.4E+09	7.1E+03	1		Phenyl Isothiocyanate	103-72-0					2.3E+02			2.3E+02
				6.0E-03	I						1.4E+09		1	0.1	Phenylenediamine, m-	108-45-2					7.0E+03	1.7E+04		4.9E+03
1.2E-01	P			4.0E-03	P						1.4E+09		1	0.1	Phenylenediamine, o-	95-54-5	2.7E+03	6.4E+03		1.9E+03	4.7E+03	1.1E+04		3.3E+03
				1.0E-03	X						1.4E+09		1	0.1	Phenylenediamine, p-	106-50-3					1.2E+03	2.8E+03		8.2E+02
1.9E-03	H										1.4E+09		1	0.1	Phenylphenol, 2-	90-43-7	1.7E+05	4.0E+05		1.2E+05				
				2.0E-04	H						1.4E+09		1	0.1	Phorate	298-02-2					2.3E+02	5.5E+02		1.6E+02
						3.0E-04	I	V		1.6E+03	1.4E+09	9.8E+02	1		Phosgene	75-44-5							1.3E+00	1.3E+00
				2.0E-02	I						1.4E+09		1	0.1	Phosmet	732-11-6					2.3E+04	5.5E+04		1.6E+04
															Phosphates, Inorganic									
				4.9E+01	P						1.4E+09		1		~Aluminum metaphosphate	13776-88-0					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Ammonium polyphosphate	68333-79-9					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Calcium pyrophosphate	7790-76-3					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Diammonium phosphate	7783-28-0					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Dicalcium phosphate	7757-93-9					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Dimagnesium phosphate	7782-75-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Dipotassium phosphate	7758-11-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Disodium phosphate	7558-79-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monoaluminum phosphate	13530-50-2					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monoammonium phosphate	7722-76-1					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monocalcium phosphate	7758-23-8					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monomagnesium phosphate	7757-86-0					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monopotassium phosphate	7778-77-0					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Monosodium phosphate	7558-80-7					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Polyphosphoric acid	8017-16-1					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Potassium tripolyphosphate	13845-36-8					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium acid pyrophosphate	7758-16-9					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium aluminum phosphate (acidic)	7785-88-8					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium aluminum phosphate (anhydrous)	10279-59-1					5.7E+07			5.7E+07

RMLS TR=1E-04 THQ=1.0

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c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				4.9E+01	P						1.4E+09		1		~Sodium aluminum phosphate (tetrahydrate)	10305-76-7					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium hexametaphosphate	10124-56-8					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium polyphosphate	68915-31-1					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium trimetaphosphate	7785-84-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Sodium tripolyphosphate	7758-29-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Tetrapotassium phosphate	7320-34-5					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Tetrasodium pyrophosphate	7722-88-5					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Tricalcium phosphate	7758-87-4					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Trimagnesium phosphate	7757-87-1					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Tripotassium phosphate	7778-53-2					5.7E+07			5.7E+07
				4.9E+01	P						1.4E+09		1		~Trisodium phosphate	7601-54-9					5.7E+07			5.7E+07
				3.0E-04	I	3.0E-04	I	V			1.4E+09		1		Phosphine	7803-51-2					3.5E+02		1.8E+06	3.5E+02
				4.9E+01	P	1.0E-02	I				1.4E+09		1		Phosphoric Acid	7664-38-2					5.7E+07		6.0E+07	2.9E+07
				2.0E-05	I			V			1.4E+09	6.9E+03	1		Phosphorus, White	7723-14-0					2.3E+01			2.3E+01
															Phthalates									
1.4E-02	I	2.4E-06	C	2.0E-02	I						1.4E+09		1	0.1	~Bis(2-ethylhexyl)phthalate	117-81-7	2.3E+04	5.5E+04	6.9E+08	1.6E+04	2.3E+04	5.5E+04		1.6E+04
1.9E-03	P			2.0E-01	I						1.4E+09		1	0.1	~Butyl Benzyl Phthalate	85-68-7	1.7E+05	4.1E+05		1.2E+05	2.3E+05	5.5E+05		1.6E+05
				1.0E+00	I						1.4E+09		1	0.1	~Butylphthalyl Butylglycolate	85-70-1					1.2E+06	2.8E+06		8.2E+05
				1.0E-01	I						1.4E+09		1	0.1	~Dibutyl Phthalate	84-74-2					1.2E+05	2.8E+05		8.2E+04
				8.0E-01	I						1.4E+09		1	0.1	~Diethyl Phthalate	84-66-2					9.3E+05	2.2E+06		6.6E+05
				1.0E-01	I			V			1.4E+09	2.1E+04	1		~Dimethylterephthalate	120-61-6					1.2E+05			1.2E+05
				1.0E-02	P						1.4E+09		1	0.1	~Octyl Phthalate, di-N-	117-84-0					1.2E+04	2.8E+04		8.2E+03
				1.0E+00	H						1.4E+09		1	0.1	~Phthalic Acid, P-	100-21-0					1.2E+06	2.8E+06		8.2E+05
				2.0E+00	I	2.0E-02	C				1.4E+09		1	0.1	~Phthalic Anhydride	85-44-9					2.3E+06	5.5E+06	1.2E+08	1.6E+06
				7.0E-02	I						1.4E+09		1	0.1	Picloram	1918-02-1					8.2E+04	1.9E+05		5.7E+04
				1.0E-04	X						1.4E+09		1	0.1	Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3					1.2E+02	2.8E+02		8.2E+01
				9.0E-04	X						1.4E+09		1	0.1	Picric Acid (2,4,6-Trinitrophenol)	88-89-1					1.1E+03	2.5E+03		7.4E+02
				7.0E-05	O						1.4E+09		1	0.1	Pirimiphos, Methyl	29232-93-7					8.2E+01	1.9E+02		5.7E+01
3.0E+01	C	8.6E-03	C	7.0E-06	H						1.4E+09		1	0.1	Polybrominated Biphenyls	59536-65-1	1.1E+01	2.6E+01	1.9E+05	7.7E+00	8.2E+00	1.9E+01		5.7E+00
															Polychlorinated Biphenyls (PCBs)									
7.0E-02	G	2.0E-05	G	7.0E-05	I			V			1.4E+09	7.1E+05	1	0.14	~Aroclor 1016	12674-11-2	4.7E+03	7.9E+03	4.4E+04	2.7E+03	8.2E+01	1.4E+02		5.1E+01
2.0E+00	G	5.7E-04	G					V			1.4E+09	2.0E+05	1	0.14	~Aroclor 1221	11104-28-2	1.6E+02	2.8E+02	4.4E+02	8.3E+01				
2.0E+00	G	5.7E-04	G					V			1.4E+09	1.1E+05	1	0.14	~Aroclor 1232	11141-16-5	1.6E+02	2.8E+02	2.4E+02	7.2E+01				
2.0E+00	G	5.7E-04	G					V			1.4E+09	5.9E+05	1	0.14	~Aroclor 1242	53469-21-9	1.6E+02	2.8E+02	1.3E+03	9.5E+01				
2.0E+00	G	5.7E-04	G					V			1.4E+09	6.3E+05	1	0.14	~Aroclor 1248	12672-29-6	1.6E+02	2.8E+02	1.3E+03	9.5E+01				
2.0E+00	G	5.7E-04	G	2.0E-05	I			V			1.4E+09	8.4E+05	1	0.14	~Aroclor 1254	11097-69-1	1.6E+02	2.8E+02	1.8E+03	9.7E+01	2.3E+01	3.9E+01		1.5E+01
2.0E+00	G	5.7E-04	G					V			1.4E+09	1.3E+06	1	0.14	~Aroclor 1260	11096-82-5	1.6E+02	2.8E+02	2.8E+03	9.9E+01				
				6.0E-04	X			V			1.4E+09	9.8E+05	1	0.14	~Aroclor 5460	11126-42-4					7.0E+02	1.2E+03		4.4E+02
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	2.4E+06	1	0.14	~Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	8.4E+01	1.4E+02	2.6E+03	5.2E+01	2.7E+01	4.6E+01	1.4E+04	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	1.6E+06	1	0.14	~Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	8.4E+01	1.4E+02	1.7E+03	5.1E+01	2.7E+01	4.6E+01	9.2E+03	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	1.0E+06	1	0.14	~Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	8.4E+01	1.4E+02	1.1E+03	5.0E+01	2.7E+01	4.6E+01	6.1E+03	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	1.1E+06	1	0.14	~Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	8.4E+01	1.4E+02	1.2E+03	5.0E+01	2.7E+01	4.6E+01	6.5E+03	1.7E+01
3.9E+03	W	1.1E+00	W	2.3E-08	W	1.3E-06	W	V			1.4E+09	1.6E+06	1	0.14	~Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	8.4E-02	1.4E-01	1.7E+00	5.1E-02	2.7E-02	4.6E-02	9.2E+00	1.7E-02
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	7.3E+05	1	0.14	~Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	8.4E+01	1.4E+02	7.9E+02	4.9E+01	2.7E+01	4.6E+01	4.3E+03	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	5.9E+05	1	0.14	~Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	8.4E+01	1.4E+02	6.3E+02	4.9E+01	2.7E+01	4.6E+01	3.4E+03	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	6.0E+05	1	0.14	~Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	8.4E+01	1.4E+02	6.5E+02	4.9E+01	2.7E+01	4.6E+01	3.5E+03	1.7E+01
3.9E+00	W	1.1E-03	W	2.3E-05	W	1.3E-03	W	V			1.4E+09	1.1E+06	1	0.14	~Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	8.4E+01	1.4E+02	1.1E+03	5.0E+01	2.7E+01	4.6E+01	6.1E+03	1.7E+01
1.3E+04	W	3.8E+00	W	7.0E-09	W	4.0E-07	W	V			1.4E+09	7.3E+05	1	0.14	~Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	2.5E-02	4.2E-02	2.3E-01	1.5E-02	8.2E-03	1.4E-02	1.3E+00	5.1E-03
2.0E+00	I	5.7E-04	I					V			1.4E+09	5.3E+05	1	0.14	~Polychlorinated Biphenyls (high risk)	1336-36-3	1.6E+02	2.8E+02	1.1E+03	9.4E+01				
4.0E-01	I	1.0E-04	I					V					1	0.14	~Polychlorinated Biphenyls (low risk)	1336-36-3								
7.0E-02	I	2.0E-05	I					V					1	0.14	~Polychlorinated Biphenyls (lowest risk)	1336-36-3								
1.3E+01	W	3.8E-03	W	7.0E-06	W	4.0E-04	W				1.4E+09		1	0.14	~Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	2.5E+01	4.2E+01	4.4E+05	1.6E+01	8.2E+00	1.4E+01	2.4E+06	5.1E+00
3.9E+01	W	1.1E-02	W	2.3E-06	W	1.3E-04	W	V			1.4E+09	5.1E+05	1	0.14	~Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	8.4E+00	1.4E+01	5.5E+01	4.8E+00	2.7E+00	4.6E+00	3.0E+02	1.7E+00
						6.0E-04	I				1.4E+09		1	0.1	Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9							3.6E+06	3.6E+06
															Polynuclear Aromatic Hydrocarbons (PAHs)									
				6.0E-02	I			V			1.4E+09	1.4E+05	1	0.13	~Acenaphthene	83-32-9					7.0E+04	1.3E+05		4.5E+04
				3.0E-01	I			V			1.4E+09	5.2E+05	1	0.13	~Anthracene	120-12-7					3.5E+05	6.4E+05		2.3E+05
1.0E-01	E	6.0E-05	E					V	M		1.4E+09	4.4E+06	1	0.13	~Benz[a]anthracene	56-55-3	3.3E+03	5.9E+03	9.0E+04	2.1E+03				
1.2E+00	C	1.1E-04	C								1.4E+09		1	0.13	~Benzo(j)fluoranthene	205-82-3	2.7E+02	5.0E+02	1.5E+07	1.8E+02				
1.0E+00	I	6.0E-04	I	3.0E-04	I	2.0E-06	I		M		1.4E+09		1	0.13	~Benzo[a]pyrene	50-32-8	3.3E+02	5.9E+02	2.8E+06	2.1E+02	3.5E+02	6.4E+02	1.2E+04	2.2E+02
1.0E-01	E	6.0E-05	E						M		1.4E+09		1	0.13	~Benzo[b]fluoranthene	205-99-2	3.3E+03	5.9E+03	2.8E+07	2.1E+03				
1.0E-02	E	6.0E-06	E						M		1.4E+09		1	0.13	~Benzo[k]fluoranthene	207-08-9	3.3E+04	5.9E+04	2.8E+08	2.1E+04				
				8.0E-02	I			V			1.4E+09	8.0E+04	1	0.13	~Chloronaphthalene, Beta-	91-58-7					9.3E+04	1.7E+05		6.0E+04
1.0E-03	E	6.0E-07	E						M		1.4E+09		1	0.13	~Chrysene	218-01-9	3.3E+05	5.9E+05	2.8E+09	2.1E+05				
1.0E+00	E	6.0E-04	E						M		1.4E+09		1	0.13	~Dibenz[a,h]anthracene	53-70-3	3.3E+02	5.9E+02	2.8E+06	2.1E+02				
1.2E+01	C	1.1E-03	C								1.4E+09		1	0.13	~Dibenzo(a,e)pyrene	192-65-4	2.7E+01	5.0E+01	1.5E+06	1.8E+01				
2.5E+02	C	7.1E-02	C						M		1.4E+09		1	0.13	~Dimethylbenz(a)anthracene, 7,12-	57-97-6	1.3E+00	2.4E+00	2.3E+04	8.4E-01				
				4.0E-02	I						1.4E+09		1	0.13	~Fluoranthene	206-44-0					4.7E+04	8.5E+04		3.0E+04
				4.0E-02	I			V			1.4E+09	2.8E+05	1	0.13	~Fluorene	86-73-7					4.7E+04	8.5E+04		3.0E+04
1.0E-01	E	6.0E-05	E						M		1.4E+09		1	0.13	~Indeno[1,2,3-cd]pyrene	193-39-5	3.3E+03	5.9E+03	2.8E+07	2.1E+03				
2.9E-02	P			7.0E-02	A			V		3.9E+02	1.4E+09	5.9E+04	1	0.13	~Methylnaphthalene, 1-	90-12-0	1.1E+04	2.0E+04		7.3E+03	8.2E+04	1.5E+05		5.3E+04
				4.0E-03	I			V			1.4E+09	5.8E+04	1	0.13	~Methylnaphthalene, 2-	91-57-6					4.7E+03	8.5E+03		3.0E+03
		3.4E-05	C	2.0E-02	I	3.0E-03	I	V			1.4E+09	4.6E+04	1	0.13	~Naphthalene	91-20-3			1.7E+03	1.7E+03	2.3E+04	4.2E+04	6.1E+02	5.9E+02

RMLS TR=1E-04 HQ=1

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
1.2E+00	C	1.1E-04	C								1.4E+09		1	0.13	~Nitropyrene, 4-	57835-92-4	2.7E+02	5.0E+02	1.5E+07	1.8E+02				
				3.0E-02	I			V			1.4E+09	2.4E+06	1	0.13	~Pyrene	129-00-0					3.5E+04	6.4E+04		2.3E+04
				2.0E-02	P						1.4E+09		1	0.1	Potassium Perfluorobutane Sulfonate	29420-49-3					2.3E+04	5.5E+04		1.6E+04
1.5E-01	I			9.0E-03	I						1.4E+09		1	0.1	Prochloraz	67747-09-5	2.2E+03	5.2E+03		1.5E+03	1.1E+04	2.5E+04		7.4E+03
				6.0E-03	H			V			1.4E+09	4.2E+05	1		Profluralin	26399-36-0					7.0E+03			7.0E+03
				1.5E-02	I						1.4E+09		1	0.1	Prometon	1610-18-0					1.8E+04	4.1E+04		1.2E+04
				4.0E-02	O						1.4E+09		1	0.1	Prometryn	7287-19-6					4.7E+04	1.1E+05		3.3E+04
				7.5E-02	I						1.4E+09		1	0.1	Pronamide	23950-58-5					8.8E+04	2.1E+05		6.2E+04
				1.3E-02	I						1.4E+09		1	0.1	Propachlor	1918-16-7					1.5E+04	3.6E+04		1.1E+04
				5.0E-03	I						1.4E+09		1	0.1	Propanil	709-98-8					5.8E+03	1.4E+04		4.1E+03
1.9E-01	O			4.0E-02	O						1.4E+09		1	0.1	Propargite	2312-35-8	1.7E+03	4.0E+03		1.2E+03	4.7E+04	1.1E+05		3.3E+04
				2.0E-03	I			V		1.1E+05	1.4E+09	6.3E+04	1		Propargyl Alcohol	107-19-7					2.3E+03			2.3E+03
				2.0E-02	I						1.4E+09		1	0.1	Propazine	139-40-2					2.3E+04	5.5E+04		1.6E+04
				2.0E-02	I						1.4E+09		1	0.1	Propham	122-42-9					2.3E+04	5.5E+04		1.6E+04
				1.0E-01	O						1.4E+09		1	0.1	Propiconazole	60207-90-1					1.2E+05	2.8E+05		8.2E+04
						8.0E-03	I	V		3.3E+04	1.4E+09	8.9E+03	1		Propionaldehyde	123-38-6							3.1E+02	3.1E+02
				1.0E-01	X	1.0E+00	X	V		2.6E+02	1.4E+09	7.0E+03	1		Propyl benzene	103-65-1					1.2E+05		3.1E+04	2.4E+04
						3.0E+00	C	V		3.5E+02	1.4E+09	7.0E+02	1		Propylene	115-07-1							9.3E+03	9.3E+03
				2.0E+01	P						1.4E+09		1	0.1	Propylene Glycol	57-55-6					2.3E+07	5.5E+07		1.6E+07
						2.7E-04	A				1.4E+09		1	0.1	Propylene Glycol Dinitrate	6423-43-4							1.6E+06	1.6E+06
				7.0E-01	H	2.0E+00	I	V		1.1E+05	1.4E+09	7.8E+04	1		Propylene Glycol Monomethyl Ether	107-98-2					8.2E+05		6.9E+05	3.7E+05
2.4E-01	I	3.7E-06	I			3.0E-02	I	V		7.8E+04	1.4E+09	1.0E+04	1		Propylene Oxide	75-56-9	1.4E+03		3.4E+03	9.7E+02			1.4E+03	1.4E+03
				1.0E-03	I			V		5.3E+05	1.4E+09	5.5E+04	1		Pyridine	110-86-1					1.2E+03			1.2E+03
				5.0E-04	I						1.4E+09		1	0.1	Quinalphos	13593-03-8					5.8E+02	1.4E+03		4.1E+02
3.0E+00	I										1.4E+09		1	0.1	Quinoline	91-22-5	1.1E+02	2.6E+02		7.7E+01				
				9.0E-03	I						1.4E+09		1	0.1	Quizalofop-ethyl	76578-14-8					1.1E+04	2.5E+04		7.4E+03
						3.0E+04	A						1		Refractory Ceramic Fibers (units in fibers)	E715557								
				3.0E-02	I						1.4E+09		1	0.1	Resmethrin	10453-86-8					3.5E+04	8.3E+04		2.5E+04
				5.0E-02	H			V			1.4E+09	4.7E+05	1		Ronnel	299-84-3					5.8E+04			5.8E+04
				4.0E-03	I						1.4E+09		1	0.1	Rotenone	83-79-4					4.7E+03	1.1E+04		3.3E+03
2.2E-01	C	6.3E-05	C						M		1.4E+09		1	0.1	Safrole	94-59-7	1.5E+03	3.5E+03	2.6E+07	1.0E+03				
				5.0E-03	I						1.4E+09		1		Selenious Acid	7783-00-8					5.8E+03			5.8E+03
				5.0E-03	I	2.0E-02	C				1.4E+09		1		Selenium	7782-49-2					5.8E+03		1.2E+08	5.8E+03
				5.0E-03	C	2.0E-02	C				1.4E+09		1		Selenium Sulfide	7446-34-6					5.8E+03		1.2E+08	5.8E+03
				1.4E-01	O						1.4E+09		1	0.1	Sethoxydim	74051-80-2					1.6E+05	3.9E+05		1.1E+05
						3.0E-03	C				1.4E+09		1		Silica (crystalline, respirable)	7631-86-9							1.8E+07	1.8E+07
				5.0E-03	I						1.4E+09		0.04		Silver	7440-22-4					5.8E+03			5.8E+03
1.2E-01	H			5.0E-03	I						1.4E+09		1	0.1	Simazine	122-34-9	2.7E+03	6.4E+03		1.9E+03	5.8E+03	1.4E+04		4.1E+03
				1.3E-02	I						1.4E+09		1	0.1	Sodium Acifluorfen	62476-59-9					1.5E+04	3.6E+04		1.1E+04
				4.0E-03	I						1.4E+09		1		Sodium Azide	26628-22-8					4.7E+03			4.7E+03
2.7E-01	H			3.0E-02	I						1.4E+09		1	0.1	Sodium Diethyldithiocarbamate	148-18-5	1.2E+03	2.9E+03		8.5E+02	3.5E+04	8.3E+04		2.5E+04
				5.0E-02	A	1.3E-02	C				1.4E+09		1		Sodium Fluoride	7681-49-4					5.8E+04		7.7E+07	5.8E+04
				2.0E-05	I						1.4E+09		1	0.1	Sodium Fluoroacetate	62-74-8					2.3E+01	5.5E+01		1.6E+01
				1.0E-03	H						1.4E+09		1		Sodium Metavanadate	13718-26-8					1.2E+03			1.2E+03
				8.0E-04	P						1.4E+09		1		Sodium Tungstate	13472-45-2					9.3E+02			9.3E+02
				8.0E-04	P						1.4E+09		1		Sodium Tungstate Dihydrate	10213-10-2					9.3E+02			9.3E+02
2.4E-02	H			3.0E-02	I						1.4E+09		1	0.1	Stirofos (Tetrachlorovinphos)	961-11-5	1.4E+04	3.2E+04		9.6E+03	3.5E+04	8.3E+04		2.5E+04
				6.0E-01	I						1.4E+09		1		Strontium, Stable	7440-24-6					7.0E+05			7.0E+05
				3.0E-04	I						1.4E+09		1	0.1	Strychnine	57-24-9					3.5E+02	8.3E+02		2.5E+02
				2.0E-01	I	1.0E+00	I	V		8.7E+02	1.4E+09	9.4E+03	1		Styrene	100-42-5					2.3E+05		4.1E+04	3.5E+04
				3.0E-03	P						1.4E+09		1	0.1	Styrene-Acrylonitrile (SAN) Trimer (THNA isomer)	57964-39-3					3.5E+03	8.3E+03		2.5E+03
				3.0E-03	P						1.4E+09		1	0.1	Styrene-Acrylonitrile (SAN) Trimer (THNP isomer)	57964-40-6					3.5E+03	8.3E+03		2.5E+03
				1.0E-03	P	2.0E-03	X				1.4E+09		1	0.1	Sulfolane	126-33-0					1.2E+03	2.8E+03	1.2E+07	8.2E+02
				8.0E-04	P						1.4E+09		1	0.1	Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9					9.3E+02	2.2E+03		6.6E+02
						1.0E-03	C	V			1.4E+09		1		Sulfur Trioxide	7446-11-9							6.0E+06	6.0E+06
						1.0E-03	C				1.4E+09		1		Sulfuric Acid	7664-93-9							6.0E+06	6.0E+06
2.5E-02	I	7.1E-06	I	5.0E-02	H						1.4E+09		1	0.1	Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	1.3E+04	3.1E+04	2.3E+08	9.2E+03	5.8E+04	1.4E+05		4.1E+04
				3.0E-02	H						1.4E+09		1	0.1	TCMTB	21564-17-0					3.5E+04	8.3E+04		2.5E+04
				7.0E-02	I						1.4E+09		1	0.1	Tebuthiuron	34014-18-1					8.2E+04	1.9E+05		5.7E+04
				2.0E-02	H						1.4E+09		1	0.1	Temephos	3383-96-8					2.3E+04	5.5E+04		1.6E+04
				1.3E-02	I						1.4E+09		1	0.1	Terbacil	5902-51-2					1.5E+04	3.6E+04		1.1E+04
				2.5E-05	H			V		3.1E+01	1.4E+09	2.6E+05	1		Terbufos	13071-79-9					2.9E+01			2.9E+01
				1.0E-03	I						1.4E+09		1	0.1	Terbutryn	886-50-0					1.2E+03	2.8E+03		8.2E+02
5.0E-03	C	1.3E-06	C					V			1.4E+09	4.0E+03	1		Tert-Butyl Acetate	540-88-5	6.5E+04		3.8E+03	3.6E+03				
				1.0E-04	I						1.4E+09		1	0.1	Tetrabromodiphenyl ether, 2,2',4,4'- (BDE-47)	5436-43-1					1.2E+02	2.8E+02		8.2E+01
				3.0E-04	I			V			1.4E+09	5.1E+04	1		Tetrachlorobenzene, 1,2,4,5-	95-94-3					3.5E+02			3.5E+02
2.6E-02	I	7.4E-06	I	3.0E-02	I			V		6.8E+02	1.4E+09	5.7E+03	1		Tetrachloroethane, 1,1,1,2-	630-20-6	1.3E+04		9.4E+02	8.8E+02	3.5E+04			3.5E+04
2.0E-01	I	5.8E-05	C	2.0E-02	I			V		1.9E+03	1.4E+09	1.5E+04	1		Tetrachloroethane, 1,1,2,2-	79-34-5	1.6E+03		3.2E+02	2.7E+02	2.3E+04			2.3E+04
2.1E-03	I	2.6E-07	I	6.0E-03	I	4.0E-02	I	V		1.7E+02	1.4E+09	2.4E+03	1		Tetrachloroethylene	127-18-4	1.6E+05		1.1E+04	1.0E+04	7.0E+03		4.1E+02	3.9E+02
				3.0E-02	I						1.4E+09		1	0.1	Tetrachlorophenol, 2,3,4,6-	58-90-2					3.5E+04	8.3E+04		2.5E+04
2.0E+01	H							V			1.4E+09	1.1E+05	1		Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	1.6E+01			1.6E+01				
				5.0E-04	I						1.4E+09		1	0.1	Tetraethyl Dithiopyrophosphate	3689-24-5					5.8E+02	1.4E+03		4.1E+02
						8.0E+01	I	V		2.1E+03	1.4E+09	1.2E+03	1		Tetrafluoroethane, 1,1,1,2-	811-97-2							4.3E+05	4.3E+05
				2.0E-03	P						1.4E+09		1	0.00065	Tetryl (Trinitrophenylmethylnitramine)	479-45-8					2.3E+03	8.5E+05		2.3E+03

RMLs TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information															Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO (mg/kg-day)$^{-1}$	key	IUR (ug/m^3)$^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				2.0E-05	G						1.4E+09		1		Thallic Oxide	1314-32-5					2.3E+01			2.3E+01
				1.0E-05	X						1.4E+09		1		Thallium (I) Nitrate	10102-45-1					1.2E+01			1.2E+01
				1.0E-05	X						1.4E+09		1		Thallium (Soluble Salts)	7440-28-0					1.2E+01			1.2E+01
				1.0E-05	X			V			1.4E+09		1		Thallium Acetate	563-68-8					1.2E+01			1.2E+01
				2.0E-05	X			V			1.4E+09		1		Thallium Carbonate	6533-73-9					2.3E+01			2.3E+01
				1.0E-05	X						1.4E+09		1		Thallium Chloride	7791-12-0					1.2E+01			1.2E+01
				1.0E-05	G						1.4E+09		1		Thallium Selenite	12039-52-0					1.2E+01			1.2E+01
				2.0E-05	X						1.4E+09		1		Thallium Sulfate	7446-18-6					2.3E+01			2.3E+01
				4.3E-02	O						1.4E+09		1	0.1	Thifensulfuron-methyl	79277-27-3					5.0E+04	1.2E+05		3.5E+04
				1.0E-02	I						1.4E+09		1	0.1	Thiobencarb	28249-77-6					1.2E+04	2.8E+04		8.2E+03
				7.0E-02	X						1.4E+09		1	0.0075	Thiodiglycol	111-48-8					8.2E+04	2.6E+06		7.9E+04
				3.0E-04	H						1.4E+09		1	0.1	Thiofanox	39196-18-4					3.5E+02	8.3E+02		2.5E+02
1.2E-02	O			2.7E-02	O						1.4E+09		1	0.1	Thiophanate, Methyl	23564-05-8	2.8E+04	6.7E+04		2.0E+04	3.2E+04	7.5E+04		2.2E+04
				1.5E-02	O						1.4E+09		1	0.1	Thiram	137-26-8					1.8E+04	4.1E+04		1.2E+04
				6.0E-01	H						1.4E+09		1		Tin	7440-31-5					7.0E+05			7.0E+05
						1.0E-04	A	V			1.4E+09		1		Titanium Tetrachloride	7550-45-0							6.0E+05	6.0E+05
				8.0E-02	I	5.0E+00	I	V		8.2E+02	1.4E+09	4.3E+03	1		Toluene	108-88-3					9.3E+04		9.4E+04	4.7E+04
3.9E-02	C	1.1E-05	C			8.0E-06	C	V			1.4E+09	7.6E+05	1		Toluene-2,4-diisocyanate	584-84-9	8.4E+03		8.5E+04	7.6E+03			2.7E+01	2.7E+01
1.8E-01	X			2.0E-04	X						1.4E+09		1	0.1	Toluene-2,5-diamine	95-70-5	1.8E+03	4.3E+03		1.3E+03	2.3E+02	5.5E+02		1.6E+02
3.9E-02	C	1.1E-05	C			8.0E-06	C	V		1.7E+03	1.4E+09	6.3E+05	1		Toluene-2,6-diisocyanate	91-08-7	8.4E+03		7.0E+04	7.5E+03			2.2E+01	2.2E+01
				5.0E-03	P						1.4E+09		1	0.1	Toluic Acid, p-	99-94-5					5.8E+03	1.4E+04		4.1E+03
1.6E-02	P	5.1E-05	C								1.4E+09		1	0.1	Toluidine, o- (Methylaniline, 2-)	95-53-4	2.0E+04	4.8E+04	3.3E+07	1.4E+04				
3.0E-02	P			4.0E-03	X						1.4E+09		1	0.1	Toluidine, p-	106-49-0	1.1E+04	2.6E+04		7.7E+03	4.7E+03	1.1E+04		3.3E+03
				3.0E+00	P			V		3.4E-01	1.4E+09	1.4E+03	1		Total Petroleum Hydrocarbons (Aliphatic High)	E1790670					3.5E+06			3.5E+06
						6.0E-01	P	V		1.4E+02	1.4E+09	8.3E+02	1		Total Petroleum Hydrocarbons (Aliphatic Low)	E1790666							2.2E+03	2.2E+03
				1.0E-02	X	1.0E-01	P	V		6.9E+00	1.4E+09	1.0E+03	1		Total Petroleum Hydrocarbons (Aliphatic Medium)	E1790668					1.2E+04		4.6E+02	4.4E+02
				4.0E-02	P						1.4E+09		1	0.1	Total Petroleum Hydrocarbons (Aromatic High)	E1790676					4.7E+04	1.1E+05		3.3E+04
				4.0E-03	P	3.0E-02	P	V		1.8E+03	1.4E+09	3.5E+03	1		Total Petroleum Hydrocarbons (Aromatic Low)	E1790672					4.7E+03		4.6E+02	4.2E+02
				4.0E-03	P	3.0E-03	P	V			1.4E+09	5.2E+04	1		Total Petroleum Hydrocarbons (Aromatic Medium)	E1790674					4.7E+03		6.9E+02	6.0E+02
1.1E+00	I	3.2E-04	I	9.0E-05	P						1.4E+09		1	0.1	Toxaphene	8001-35-2	3.0E+02	7.0E+02	5.2E+06	2.1E+02	1.1E+02	2.5E+02		7.4E+01
				3.0E-05	X						1.4E+09		1	0.1	Toxaphene, Weathered	E1841606					3.5E+01	8.3E+01		2.5E+01
				7.5E-03	I						1.4E+09		1	0.1	Tralomethrin	66841-25-6					8.8E+03	2.1E+04		6.2E+03
				3.0E-04	A			V			1.4E+09	3.4E+03	1		Tri-n-butyltin	688-73-3					3.5E+02			3.5E+02
				8.0E+01	X						1.4E+09		1	0.1	Triacetin	102-76-1					9.3E+07	2.2E+08		6.6E+07
				3.4E-02	O						1.4E+09		1	0.1	Triadimefon	43121-43-3					4.0E+04	9.4E+04		2.8E+04
7.2E-02	O			2.5E-02	O			V			1.4E+09	3.6E+05	1		Triallate	2303-17-5	4.6E+03			4.6E+03	2.9E+04			2.9E+04
				1.0E-02	I						1.4E+09		1	0.1	Triasulfuron	82097-50-5					1.2E+04	2.8E+04		8.2E+03
				8.0E-03	I						1.4E+09		1	0.1	Tribenuron-methyl	101200-48-0					9.3E+03	2.2E+04		6.6E+03
				5.0E-03	I			V			1.4E+09	4.8E+04	1		Tribromobenzene, 1,2,4-	615-54-3					5.8E+03			5.8E+03
				9.0E-03	X						1.4E+09		1	0.1	Tribromophenol, 2,4,6-	118-79-6					1.1E+04	2.5E+04		7.4E+03
9.0E-03	P			1.0E-02	P						1.4E+09		1	0.1	Tributyl Phosphate	126-73-8	3.6E+04	8.6E+04		2.6E+04	1.2E+04	2.8E+04		8.2E+03
				3.0E-04	P						1.4E+09		1	0.1	Tributyltin Compounds	E1790678					3.5E+02	8.3E+02		2.5E+02
				3.0E-04	I						1.4E+09		1	0.1	Tributyltin Oxide	56-35-9					3.5E+02	8.3E+02		2.5E+02
											1.4E+09				Trichloramine	10025-85-1								
				3.0E+01	I	5.0E+00	P	V		9.1E+02	1.4E+09	1.3E+03	1		Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1					3.5E+07		2.8E+04	2.8E+04
7.0E-02	I			2.0E-02	I						1.4E+09		1	0.1	Trichloroacetic Acid	76-03-9	4.7E+03	1.1E+04		3.3E+03	2.3E+04	5.5E+04		1.6E+04
2.9E-02	H										1.4E+09		1	0.1	Trichloroaniline HCl, 2,4,6-	33663-50-2	1.1E+04	2.7E+04		7.9E+03				
7.0E-03	X			3.0E-05	X						1.4E+09		1	0.1	Trichloroaniline, 2,4,6-	634-93-5	4.7E+04	1.1E+05		3.3E+04	3.5E+01	8.3E+01		2.5E+01
				8.0E-04	X			V			1.4E+09	3.2E+04	1		Trichlorobenzene, 1,2,3-	87-61-6					9.3E+02			9.3E+02
2.9E-02	P			1.0E-02	I	2.0E-03	P	V		4.0E+02	1.4E+09	3.0E+04	1		Trichlorobenzene, 1,2,4-	120-82-1	1.1E+04			1.1E+04	1.2E+04		2.6E+02	2.6E+02
				2.0E+00	I	5.0E+00	I	V		6.4E+02	1.4E+09	1.7E+03	1		Trichloroethane, 1,1,1-	71-55-6					2.3E+06		3.6E+04	3.6E+04
5.7E-02	I	1.6E-05	I	4.0E-03	I	2.0E-04	X	V		2.2E+03	1.4E+09	7.2E+03	1		Trichloroethane, 1,1,2-	79-00-5	5.7E+03		5.5E+02	5.0E+02	4.7E+03		6.3E+00	6.3E+00
4.6E-02	I	4.1E-06	I	5.0E-04	I	2.0E-03	I	V	M	6.9E+02	1.4E+09	2.2E+03	1		Trichloroethylene	79-01-6	7.1E+03		6.6E+02	6.0E+02	5.8E+02		1.9E+01	1.9E+01
				3.0E-01	I			V		1.2E+03	1.4E+09	1.0E+03	1		Trichlorofluoromethane	75-69-4					3.5E+05			3.5E+05
				1.0E-01	I						1.4E+09		1	0.1	Trichlorophenol, 2,4,5-	95-95-4					1.2E+05	2.8E+05		8.2E+04
1.1E-02	I	3.1E-06	I	1.0E-03	P						1.4E+09		1	0.1	Trichlorophenol, 2,4,6-	88-06-2	3.0E+04	7.0E+04	5.4E+08	2.1E+04	1.2E+03	2.8E+03		8.2E+02
				1.0E-02	I						1.4E+09		1	0.1	Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5					1.2E+04	2.8E+04		8.2E+03
				8.0E-03	I						1.4E+09		1	0.1	Trichlorophenoxypropionic acid, -2,4,5	93-72-1					9.3E+03	2.2E+04		6.6E+03
				5.0E-03	I			V		1.3E+03	1.4E+09	1.5E+04	1		Trichloropropane, 1,1,2-	598-77-6					5.8E+03			5.8E+03
3.0E+01	I			4.0E-03	I	3.0E-04	I	V	M	1.4E+03	1.4E+09	1.6E+04	1		Trichloropropane, 1,2,3-	96-18-4	1.1E+01			1.1E+01	4.7E+03		2.1E+01	2.1E+01
				3.0E-03	X	3.0E-04	P	V		3.1E+02	1.4E+09	2.3E+03	1		Trichloropropene, 1,2,3-	96-19-5					3.5E+03		3.1E+00	3.1E+00
				2.0E-02	A						1.4E+09		1	0.1	Tricresyl Phosphate (TCP)	1330-78-5					2.3E+04	5.5E+04		1.6E+04
				3.0E-03	I						1.4E+09		1	0.1	Tridiphane	58138-08-2					3.5E+03	8.3E+03		2.5E+03
						7.0E-03	I	V		2.8E+04	1.4E+09	1.6E+04	1		Triethylamine	121-44-8							4.8E+02	4.8E+02
				2.0E+00	P						1.4E+09		1	0.1	Triethylene Glycol	112-27-6					2.3E+06	5.5E+06		1.6E+06
						2.0E+01	P	V		4.8E+03	1.4E+09	7.1E+02	1		Trifluoroethane, 1,1,1-	420-46-2							6.2E+04	6.2E+04
7.7E-03	I			7.5E-03	I			V			1.4E+09	5.1E+05	1		Trifluralin	1582-09-8	4.2E+04			4.2E+04	8.8E+03			8.8E+03
2.0E-02	P			1.0E-02	P						1.4E+09		1	0.1	Trimethyl Phosphate	512-56-1	1.6E+04	3.9E+04		1.1E+04	1.2E+04	2.8E+04		8.2E+03
				1.0E-02	I	6.0E-02	I	V		2.9E+02	1.4E+09	9.4E+03	1		Trimethylbenzene, 1,2,3-	526-73-8					1.2E+04		2.5E+03	2.0E+03
				1.0E-02	I	6.0E-02	I	V		2.2E+02	1.4E+09	7.9E+03	1		Trimethylbenzene, 1,2,4-	95-63-6					1.2E+04		2.1E+03	1.8E+03
				1.0E-02	I	6.0E-02	I	V		1.8E+02	1.4E+09	6.6E+03	1		Trimethylbenzene, 1,3,5-	108-67-8					1.2E+04		1.7E+03	1.5E+03
				1.0E-02	X			V		3.0E+01	1.4E+09	1.0E+03	1		Trimethylpentene, 2,4,4-	25167-70-8					1.2E+04			1.2E+04
				3.0E-02	I						1.4E+09		1	0.019	Trinitrobenzene, 1,3,5-	99-35-4					3.5E+04	4.4E+05		3.2E+04
3.0E-02	I			5.0E-04	I						1.4E+09		1	0.032	Trinitrotoluene, 2,4,6-	118-96-7	1.1E+04	8.0E+04		9.6E+03	5.8E+02	4.3E+03		5.1E+02

RMLS TR=1E-04 THQ=1.0

Key: I = IRIS; P = PPRTV; O = OPP; A = ATSDR; C = Cal EPA; X = PPRTV Screening Level; H = HEAST; W = TEF applied; E = RPF applied; G = user's guide Section 5; M = mutagen; V = volatile; R = RBA applied;
c = cancer; n = noncancer; * = where: n SL < 100X c SL; ** = where n SL < 10X c SL; SSL values are based on DAF=1; m = ceiling limit exceeded; s = Csat exceeded.

Toxicity and Chemical-specific Information														Contaminant		Carcinogenic Target Risk (TR) = 1E-04				Noncancer Hazard Index (HI) = 1			
SFO $(mg/kg\text{-}day)^{-1}$	key	IUR $(ug/m^3)^{-1}$	key	RfD_o (mg/kg-day)	key	RfC_i (mg/m^3)	key	vol	mutagen	C_{sat} (mg/kg)	PEF (m^3/kg)	VF (m^3/kg)	GIABS	ABS_d	Analyte	CAS No.	Ingestion SL TR=1E-04 (mg/kg)	Dermal SL TR=1E-04 (mg/kg)	Inhalation SL TR=1E-04 (mg/kg)	Carcinogenic SL TR=1E-04 (mg/kg)	Ingestion SL THQ=1 (mg/kg)	Dermal SL THQ=1 (mg/kg)	Inhalation SL THQ=1 (mg/kg)	Noncarcinogenic SL THI=1 (mg/kg)
				2.0E-02	P						1.4E+09		1	0.1	Triphenylphosphine Oxide	791-28-6					2.3E+04	5.5E+04		1.6E+04
				2.0E-02	A						1.4E+09		1	0.1	Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8					2.3E+04	5.5E+04		1.6E+04
				1.0E-02	X						1.4E+09		1	0.1	Tris(1-chloro-2-propyl)phosphate	13674-84-5					1.2E+04	2.8E+04		8.2E+03
2.3E+00	C	6.6E-04	C					V		4.7E+02	1.4E+09	9.0E+05	1		Tris(2,3-dibromopropyl)phosphate	126-72-7	1.4E+02		1.7E+03	1.3E+02				
2.0E-02	P			7.0E-03	P						1.4E+09		1	0.1	Tris(2-chloroethyl)phosphate	115-96-8	1.6E+04	3.9E+04		1.1E+04	8.2E+03	1.9E+04		5.7E+03
3.2E-03	P			1.0E-01	P						1.4E+09		1	0.1	Tris(2-ethylhexyl)phosphate	78-42-2	1.0E+05	2.4E+05		7.2E+04	1.2E+05	2.8E+05		8.2E+04
				8.0E-04	P						1.4E+09		1		Tungsten	7440-33-7					9.3E+02			9.3E+02
				2.0E-04	A	4.0E-05	A				1.4E+09		1		Uranium (Soluble Salts)	E715565					2.3E+02		2.4E+05	2.3E+02
1.0E+00	C	2.9E-04	C						M		1.4E+09		1	0.1	Urethane	51-79-6	3.3E+02	7.7E+02	5.7E+06	2.3E+02				
		8.3E-03	P	9.0E-03	I	7.0E-06	P				1.4E+09		0.026		Vanadium Pentoxide	1314-62-1			2.0E+05	2.0E+05	1.1E+04		4.2E+04	8.4E+03
				5.0E-03	G	1.0E-04	A				1.4E+09		0.026		Vanadium and Compounds	7440-62-2					5.9E+03		6.0E+05	5.8E+03
				1.0E-03	I			V			1.4E+09	1.2E+05	1		Vernolate	1929-77-7					1.2E+03			1.2E+03
				1.2E-03	O						1.4E+09		1	0.1	Vinclozolin	50471-44-8					1.4E+03	3.3E+03		9.8E+02
				1.0E+00	H	2.0E-01	I	V		2.8E+03	1.4E+09	4.4E+03	1		Vinyl Acetate	108-05-4					1.2E+06		3.9E+03	3.8E+03
		3.2E-05	H			3.0E-03	I	V		2.5E+03	1.4E+09	1.4E+03	1		Vinyl Bromide	593-60-2			5.2E+01	5.2E+01			1.8E+01	1.8E+01
7.2E-01	I	4.4E-06	I	3.0E-03	I	1.0E-01	I	V	M	3.9E+03	1.4E+09	9.6E+02	1		Vinyl Chloride	75-01-4	4.5E+02		2.7E+02	1.7E+02	3.5E+03		4.2E+02	3.7E+02
				3.0E-04	I						1.4E+09		1	0.1	Warfarin	81-81-2					3.5E+02	8.3E+02		2.5E+02
				2.0E-01	G	1.0E-01	G	V		3.9E+02	1.4E+09	5.6E+03	1		Xylene, P-	106-42-3					2.3E+05		2.4E+03	2.4E+03
				2.0E-01	G	1.0E-01	G	V		3.9E+02	1.4E+09	5.5E+03	1		Xylene, m-	108-38-3					2.3E+05		2.4E+03	2.4E+03
				2.0E-01	G	1.0E-01	G	V		4.3E+02	1.4E+09	6.5E+03	1		Xylene, o-	95-47-6					2.3E+05		2.8E+03	2.8E+03
				2.0E-01	I	1.0E-01	I	V		2.6E+02	1.4E+09	5.7E+03	1		Xylenes	1330-20-7					2.3E+05		2.5E+03	2.5E+03
				3.0E-04	I						1.4E+09		1		Zinc Phosphide	1314-84-7					3.5E+02			3.5E+02
				3.0E-01	I						1.4E+09		1		Zinc and Compounds	7440-66-6					3.5E+05			3.5E+05
				5.0E-02	I						1.4E+09		1	0.1	Zineb	12122-67-7					5.8E+04	1.4E+05		4.1E+04
				8.0E-05	X						1.4E+09		1		Zirconium	7440-67-7					9.3E+01			9.3E+01

RMLS TR=1E-04 THQ=1.0

APPENDIX D

LDEQ RECAP TABLE 1

LDEQ RECAP TABLE 1
SCREENING OPTION
SCREENING STANDARDS FOR SOIL AND GROUNDWATER

		SOIL_SSni		SOIL_SSi		SOIL_SSGW		GW_SS	
COMPOUND	CAS #	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/L)	NOTE
Acenaphthene	83-32-9	3.7E+02	N	6.1E+03	N	2.2E+02	A	3.7E-02	N
Acenaphthylene	208-96-8	3.5E+02	N	5.1E+03	N	8.8E+01	A	1.0E-01	Q
Acetone	67-64-1	1.7E+02	N	1.4E+03	N	1.5E+00	A	1.0E-01	Q
Aldrin	309-00-2	2.8E-02	C	1.3E-01	C	1.1E+01	A	1.9E-03	Q
Aniline	62-53-3	2.4E+00	N	1.7E+01	N	6.5E-02	A	1.2E-02	C
Anthracene	120-12-7	2.2E+03	N	4.8E+04	N	1.2E+02	A	4.3E-02	W
Antimony	7440-36-0	3.1E+00	N	8.2E+01	N	1.2E+01	L1	6.0E-03	MCL
Arsenic	7440-38-2	1.2E+01	D	1.2E+01	D	1.0E+02	L	1.0E-02	MCL
Barium	7440-39-3	5.5E+02	N	1.4E+04	N	2.0E+03	L	2.0E+00	MCL
Benzene	71-43-2	1.5E+00	C	3.1E+00	C	5.1E-02	A	5.0E-03	MCL
Benz(a)anthracene	56-55-3	6.2E-01	C	2.9E+00	C	3.3E+02	A	7.8E-03	Q
Benzo(a)pyrene	50-32-8	3.3E-01	Q	3.3E-01	Q	2.3E+01	A	2.0E-04	MCL
Benzo(b)fluoranthene	205-99-2	6.2E-01	C	2.9E+00	C	2.2E+02	A	4.8E-03	Q
Benzo(k)fluoranthene	207-08-9	6.2E+00	C	2.9E+01	C	1.2E+02	A	2.5E-03	Q
Beryllium	7440-41-7	1.6E+01	N	4.1E+02	N	8.0E+00	L1	4.0E-03	MCL
Biphenyl,1,1-	92-52-4	2.3E+02	P	2.3E+02	P	1.9E+02	A	3.0E-02	N
Bis(2-chloroethyl)ether	111-44-4	3.3E-01	Q	1.1E+00	C	3.3E-01	Q	5.7E-03	Q
Bis(2-chloroisopropyl)ether	108-60-1	4.9E+00	C	1.7E+01	C	8.0E-01	Q	5.7E-03	Q
Bis(2-ethyl-hexyl)phthalate	117-81-7	3.5E+01	C	1.7E+02	C	7.9E+01	A	6.0E-03	MCL
Bromodichloromethane	75-27-4	1.8E+00	C	4.2E+00	C	9.2E-01	A	1.0E-01	MCL
Bromoform	75-25-2	4.8E+01	C	1.8E+02	C	1.8E+00	A	1.0E-01	MCL
Bromomethane	74-83-9	4.3E-01	N	3.0E+00	N	4.0E-02	A	1.0E-02	Q
Butyl benzyl phthalate	85-68-7	2.2E+02	P	2.2E+02	P	2.2E+02	P	7.3E-01	N
Cadmium	7440-43-9	3.9E+00	N	1.0E+02	N	2.0E+01	L	5.0E-03	MCL
Carbon Disulfide	75-15-0	3.6E+01	N	2.5E+02	N	1.1E+01	A	1.0E-01	N
Carbon Tetrachloride	56-23-5	1.8E-01	N	1.1E+00	C	1.1E-01	A	5.0E-03	MCL
Chlordane	57-74-9	1.6E+00	C	1.0E+01	C	1.2E+01	A	2.0E-03	MCL
Chloroaniline,p-	106-47-8	1.6E+01	N	1.7E+02	N	1.5E+00	A	2.0E-02	Q
Chlorobenzene	108-90-7	1.7E+01	N	1.2E+02	N	3.0E+00	A	1.0E-01	MCL
Chlorodibromomethane	124-48-1	2.2E+00	C	5.4E+00	C	1.0E+00	A	1.0E-01	MCL
Chloroethane (Ethylchloride)	75-00-3	4.1E+00	C	8.2E+00	C	3.5E-02	A	1.0E-02	Q
Chloroform	67-66-3	4.4E-02	N	3.0E-01	N	9.0E-01	A	1.0E-01	MCL
Chloromethane	74-87-3	3.5E+00	C	7.3E+00	C	1.0E-01	Q	1.0E-02	Q
Chloronaphthalene,2-	91-58-7	5.0E+02	N	8.3E+03	N	5.0E+02	A	4.9E-02	N
Chlorophenol,2-	95-57-8	1.5E+01	N	1.4E+02	N	1.4E+00	A	1.0E-02	Q
Chromium(III)	16065-83-1	1.2E+04	N	3.1E+05	N	1.0E+02	L	1.0E-01	MCL

NOTE: See end of Table for designation of letter symbols

LDEQ RECAP TABLE 1
SCREENING OPTION
SCREENING STANDARDS FOR SOIL AND GROUNDWATER

		SOIL_SSni		SOIL_SSi		SOIL_SSGW		GW_SS	
COMPOUND	CAS #	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/L)	NOTE
Chromium(VI)	18540-29-97	2.3E+01	N	6.1E+02	N	1.0E+02	L	1.0E-01	MCL
Chrysene	218-01-9	6.2E+01	C	2.9E+02	C	7.6E+01	A	1.6E-03	W
Cobalt	7440-48-4	4.7E+02	N	1.2E+04	N	4.4E+03	L1	2.2E-01	N
Copper	7440-50-8	3.1E+02	N	8.2E+03	N	1.5E+03	S	1.3E+00	MCL
Cyanide (free)	57-12-5	1.5E+02	N	3.6E+03	N	4.0E+02	L1	2.0E-01	MCL
DDD	72-54-8	2.4E+00	C	1.6E+01	C	1.5E+00	A	2.8E-04	C
DDE	72-55-9	1.7E+00	C	1.1E+01	C	2.0E+00	A	2.0E-04	C
DDT	50-29-3	1.7E+00	C	1.2E+01	C	2.4E+01	A	3.0E-04	Q
Dibenz(a,h)anthracene	53-70-3	3.3E-01	Q	3.3E-01	Q	5.4E+02	A	2.5E-03	Q
Dibenzofuran	132-64-9	2.9E+01	N	1.5E+02	P	2.4E+01	A	1.0E-02	Q
Dibromo-3-chloropropane,1,2-	96-12-8	1.8E-01	N	1.6E+00	N	1.0E-02	Q	2.0E-04	MCL
Dichlorobenzene,1,2-	95-50-1	9.9E+01	N	3.8E+02	P	2.9E+01	A	6.0E-01	MCL
Dichlorobenzene,1,3-	541-73-1	2.1E+00	N	1.8E+01	N	2.1E+00	A	1.0E-02	Q
Dichlorobenzene,1,4-	106-46-7	6.7E+00	C	1.6E+01	C	5.7E+00	A	7.5E-02	MCL
Dichlorobenzidine,3,3-	91-94-1	9.7E-01	C	4.2E+00	C	1.8E+00	A	2.0E-02	Q
Dichloroethane,1,1-	75-34-3	6.6E+01	N	4.7E+02	N	7.5E+00	A	8.1E-02	N
Dichloroethane,1,2-	107-06-2	8.2E-01	C	1.8E+00	C	3.5E-02	A	5.0E-03	MCL
Dichloroethene,1,1-	75-35-4	1.3E+01	N	9.1E+01	N	8.5E-02	A	7.0E-03	MCL
Dichloroethene,cis,1,2-	156-59-2	4.8E+00	N	3.4E+01	N	4.9E-01	A	7.0E-02	MCL
Dichloroethene,trans,1,2-	156-60-5	6.9E+00	N	4.8E+01	N	7.7E-01	A	1.0E-01	MCL
Dichlorophenol,2,4-	120-83-2	1.6E+01	N	2.0E+02	N	1.2E+01	A	1.1E-02	N
Dichloropropane,1,2-	78-87-5	6.9E-01	N	1.8E+00	C	4.2E-02	A	5.0E-03	MCL
Dichloropropene,1,3-	542-75-6	3.1E+00	C	1.0E+01	C	4.0E-02	A	5.0E-03	Q
Dieldrin	60-57-1	3.0E-02	C	1.5E-01	C	7.6E+00	A	2.5E-03	Q
Diethylphthalate	84-66-2	6.7E+02	P	6.7E+02	P	3.6E+02	A	2.9E+00	N
Dimethylphenol,2,4-	105-67-9	9.3E+01	N	1.1E+03	N	2.0E+01	A	7.3E-02	N
Dimethylphthalate	131-11-3	1.5E+03	P	1.5E+03	P	1.5E+03	P	3.7E+01	N
Di-n-octylphthalate	117-84-0	2.4E+02	N	3.5E+03	N	1.0E+04	P	2.0E-02	W
Dinitrobenzene,1,3-	99-65-0	4.5E-01	N	5.0E+00	N	2.5E-01	Q	1.0E-02	Q
Dinitrophenol,2,4-	51-28-5	7.1E+00	N	6.9E+01	N	1.7E+00	Q	5.0E-02	Q
Dinitrotoluene,2,6-	606-20-2	4.3E+00	N	4.6E+01	N	3.9E-01	A	1.0E-02	Q
Dinitrotoluene,2,4-	121-14-2	8.9E+00	N	9.8E+01	N	1.0E+00	A	1.0E-02	Q
Dinoseb	88-85-7	4.7E+00	N	5.4E+01	N	1.4E-01	Q	7.0E-03	MCL
Endosulfan	115-29-7	3.4E+01	N	4.5E+02	N	5.4E+01	A	2.2E-02	N
Endrin	72-20-8	1.8E+00	N	2.5E+01	N	2.6E+00	A	2.0E-03	MCL
Ethyl benzene	100-41-4	1.6E+02	N	2.3E+02	P	1.9E+01	A	7.0E-01	MCL

NOTE: See end of Table for designation of letter symbols

LDEQ RECAP TABLE 1
SCREENING OPTION
SCREENING STANDARDS FOR SOIL AND GROUNDWATER

		SOIL_SSni		SOIL_SSi		SOIL_SSGW		GW_SS	
COMPOUND	CAS #	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/L)	NOTE
Fluoranthene	206-44-0	2.2E+02	N	2.9E+03	N	1.2E+03	A	1.5E-01	N
Fluorene	86-73-7	2.8E+02	N	5.4E+03	N	2.3E+02	A	2.4E-02	N
Heptachlor	76-44-8	1.6E-02	C	3.5E-02	C	5.0E-01	A	4.0E-04	MCL
Heptachlor epoxide	1024-57-3	5.3E-02	C	2.6E-01	C	2.0E+00	A	2.0E-04	MCL
Hexachlorobenzene	118-74-1	3.4E-01	C	2.0E+00	C	9.6E+00	A	1.0E-03	MCL
Hexachlorobutadiene	87-68-3	8.2E-01	N	8.6E+00	N	5.5E+00	A	7.3E-04	N
Hexachlorocyclohexane,alpha	319-84-6	8.2E-02	C	4.4E-01	C	6.4E-03	A	3.0E-05	Q
Hexachlorocyclohexane,beta	319-85-7	2.9E-01	C	1.6E+00	C	1.6E-02	A	6.0E-05	Q
Hexachlorocyclohexane,gamma	58-89-9	3.9E-01	C	2.0E+00	C	3.3E-02	A	2.0E-04	MCL
Hexachlorocyclopentadiene	77-47-4	1.4E+00	N	9.4E+00	N	1.2E+03	A	5.0E-02	MCL
Hexachloroethane	67-72-1	5.2E+00	N	6.8E+01	N	2.2E+00	A	1.0E-02	Q
Indeno(1,2,3-cd)pyrene	193-39-5	6.2E-01	C	2.9E+00	C	9.2E+00	A	3.7E-03	Q
Isobutyl alcohol	78-83-1	7.3E+02	N	6.2E+03	N	3.0E+01	A	1.1E+00	N
Isophorone	78-59-1	3.4E+02	C	1.1E+03	C	5.6E-01	A	7.0E-02	C
Lead (inorganic)	7439-92-1	4.0E+02	B	1.4E+03	B	1.0E+02	L	1.5E-02	MCL
Mercury (inorganic)	7487-94-7	2.3E+00	N	6.1E+01	N	4.0E+00	L	2.0E-03	MCL
Methoxychlor	72-43-5	3.0E+01	N	4.3E+02	N	3.8E+02	A	4.0E-02	MCL
Methylene chloride	75-09-2	1.9E+01	C	4.4E+01	C	1.7E-02	A	5.0E-03	MCL
Methyl ethyl ketone	78-93-3	5.9E+02	N	4.4E+03	N	5.0E+00	A	1.9E-01	N
Methyl isobutyl ketone	108-10-1	4.5E+02	N	3.1E+03	P	6.4E+00	A	2.0E-01	N
Methylnaphthalene,2-	91-57-6	2.2E+01	N	1.7E+02	N	1.7E+00	A	6.2E-04	N
MTBE (methyl tert-butyl ether)	1634-04-4	6.5E+02	N	4.7E+03	N	7.7E-02	A	2.0E-02	T/O
Naphthalene	91-20-3	6.2E+00	N	4.3E+01	N	1.5E+00	A	1.0E-02	Q
Nickel	7440-02-0	1.6E+02	N	4.1E+03	N	1.5E+03	L1	7.3E-02	N
Nitrate	14797-55-8	1.3E+04	N	3.3E+05	N	2.0E+04	L1	1.0E+01	MCL
Nitrite	14797-65-0	7.8E+02	N	2.0E+04	N	2.0E+03	L1	1.0E+00	MCL
Nitroaniline,2-	88-74-4	1.7E+00	Q	1.7E+00	Q	1.7E+00	Q	5.0E-02	Q
Nitroaniline,3-	99-09-2	1.3E+01	N	1.4E+02	N	1.7E+00	Q	5.0E-02	Q
Nitroaniline,4-	100-01-6	1.0E+01	N	1.0E+02	N	1.7E+00	Q	5.0E-02	Q
Nitrobenzene	98-95-3	2.2E+00	N	2.5E+01	N	3.3E-01	Q	1.9E-03	Q
Nitrophenol,4-	100-02-7	3.2E+01	N	3.3E+02	N	2.6E+00	A	5.0E-02	Q
Nitrosodi-n-propylamine,n-	621-64-7	3.3E-01	Q	3.3E-01	Q	3.3E-01	Q	1.0E-02	Q
N-nitrosodiphenylamine	86-30-6	9.0E+01	C	4.0E+02	C	2.1E+00	A	1.4E-02	C
Pentachlorophenol	87-86-5	2.8E+00	C	9.7E+00	C	1.7E+00	Q	1.0E-03	MCL
Phenanthrene	85-01-8	2.1E+03	N	4.3E+04	N	6.6E+02	A	1.8E-01	N
Phenol	108-95-2	1.3E+03	N	1.5E+04	N	1.1E+01	A	1.8E-01	N

NOTE: See end of Table for designation of letter symbols

LDEQ RECAP TABLE 1
SCREENING OPTION
SCREENING STANDARDS FOR SOIL AND GROUNDWATER

		SOIL_SSni		SOIL_SSi		SOIL_SSGW		GW_SS	
COMPOUND	CAS #	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/L)	NOTE
Polychlorinated biphenyls	1336-36-3	1.1E-01	N	9.0E-01	C	1.9E+01	A	5.0E-04	MCL
Pyrene	129-00-0	2.3E+02	N	5.6E+03	N	1.1E+03	A	1.8E-02	N
Selenium	7782-49-2	3.9E+01	N	1.0E+03	N	2.0E+01	L	5.0E-02	MCL
Silver	7440-22-4	3.9E+01	N	1.0E+03	N	1.0E+02	L	1.8E-02	N
Styrene	100-42-5	5.0E+02	N	1.7E+03	P	1.1E+01	A	1.0E-01	MCL
Tetrachlorobenzene,1,2,4,5-	95-94-3	1.2E+00	N	1.2E+01	N	6.9E+00	A	1.1E-03	N
Tetrachloroethane,1,1,1,2-	630-20-6	2.7E+00	C	5.9E+00	C	4.6E-02	A	5.0E-03	Q
Tetrachloroethane,1,1,2,2-	79-34-5	8.1E-01	C	2.0E+00	C	6.0E-03	A	5.0E-04	Q
Tetrachloroethylene	127-18-4	8.3E+00	C	3.5E+01	C	1.8E-01	A	5.0E-03	MCL
Tetrachlorophenol,2,3,4,6-	58-90-2	1.4E+02	N	1.4E+03	P	3.1E+01	A	1.1E-01	N
Thallium	7440-28-0	5.5E-01	N	1.4E+01	N	4.0E+00	L1	2.0E-03	MCL
Toluene	108-88-3	6.8E+01	N	4.7E+02	N	2.0E+01	A	1.0E+00	MCL
Toxaphene	8001-35-2	4.4E-01	C	2.2E+00	C	3.4E+01	A	3.0E-03	MCL
Trichlorobenzene,1,2,4-	120-82-1	6.6E+01	N	1.2E+03	N	1.4E+01	A	7.0E-02	MCL
Trichloroethane,1,1,1-	71-55-6	8.2E+01	N	7.0E+02	N	4.0E+00	A	2.0E-01	MCL
Trichloroethane,1,1,2-	79-00-5	1.9E+00	C	4.3E+00	C	5.8E-02	A	5.0E-03	MCL
Trichloroethene	79-01-6	1.0E-01	C	2.1E-01	C	7.3E-02	A	5.0E-03	MCL
Trichlorofluoromethane	75-69-4	3.8E+01	N	2.6E+02	N	3.7E+01	A	1.3E-01	N
Trichlorophenol,2,4,5-	95-95-4	5.3E+02	N	6.6E+03	N	3.2E+02	A	3.7E-01	N
Trichlorophenol,2,4,6-	88-06-2	4.0E+01	C	1.7E+02	C	1.3E+00	A	1.0E-02	Q
Vanadium	7440-62-2	5.5E+01	N	1.4E+03	N	5.2E+02	L1	2.6E-02	N
Vinyl chloride	75-01-4	2.4E-01	C	7.9E-01	C	1.3E-02	A	2.0E-03	MCL
Xylene(mixed)	1330-20-7	1.8E+01	N	1.2E+02	N	1.5E+02	P	1.0E+01	MCL
Zinc	7440-66-6	2.3E+03	N	6.1E+04	N	2.8E+03	S	1.1E+00	N
Aliphatics C6-C8	NA	1.2E+03	N	8.0E+03	N	1.0E+04	O,T	3.2E+00	N
Aliphatics >C8-C10	NA	1.2E+02	N	8.8E+02	N	5.3E+03	A	1.5E-01	Q
Aliphatics >C10-C12	NA	2.3E+02	N	2.0E+03	N	1.0E+04	O,T	1.5E-01	Q
Aliphatics >C12-C16	NA	3.7E+02	N	3.8E+03	N	1.0E+04	O,T	1.5E-01	Q
Aliphatics >C16-C35	NA	7.1E+03	N	1.0E+04	O,T	1.0E+04	O,T	7.3E+00	N
Aromatics >C8-C10	NA	6.5E+01	N	5.1E+02	N	6.5E+01	A	1.5E-01	Q
Aromatics >C10-C12	NA	1.2E+02	N	1.1E+03	N	1.0E+02	A	1.5E-01	Q
Aromatics >C12-C16	NA	1.8E+02	N	2.1E+03	N	2.0E+02	A	1.5E-01	Q
Aromatics >C16-C21	NA	1.5E+02	N	1.7E+03	N	2.1E+03	A	1.5E-01	Q
Aromatics >C21-C35	NA	1.8E+02	N	2.5E+03	N	1.0E+04	O,T	1.5E-01	Q

NOTE: See end of Table for designation of letter symbols

LDEQ RECAP TABLE 1
SCREENING OPTION
SCREENING STANDARDS FOR SOIL AND GROUNDWATER

		SOIL_SSni		SOIL_SSi		SOIL_SSGW		GW_SS	
COMPOUND	CAS #	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/kg)	NOTE	(mg/L)	NOTE
TPH-GRO	NA	6.5E+01	N,I	5.1E+02	N,I	6.5E+01	A	1.5E-01	Q
TPH-DRO	NA	6.5E+01	N,I	5.1E+02	N,I	6.5E+01	A	1.5E-01	Q
TPH-ORO	NA	1.8E+02	N,I	2.5E+03	N,I	1.0E+04	O,T	1.5E-01	Q
A - Based on algorithm contained in Appendix H									
B - Based on EPA's biokinetic and adult lead cleanup level models for lead									
C - Based on carcinogenic health effects									
D - DEQ established background level plus one standard deviation = 11.5									
I - TPH Standards are only applicable when used in conjunction with Standards for indicator compounds									
L - Soil level protective of groundwater for inorganic constituents based on leachability									
L1 - Soil level protective of groundwater for inorganic constituents based on GW 1 because TCLP value not listed									
M - Based on EPA's Maximum Contaminant Level (MCL) for drinking water									
N - Based on non-carcinogenic health effects									
O - Ceiling value based on aesthetic considerations									
P - Soil Saturation Limit is less than health based level thus default to soil saturation limit									
Q - Based on analytical quantitation limit									
S - Soil level protective of groundwater for inorganic constituents based on the maximum concentration for the									
beneficial use of sewage sludge									
T - TPH shall not exceed 10,000									
W - Solubility limit is less than health based limit thus default to solubility limit									
T/O - EPA taste/odor advisory value									

NOTE: See end of Table for designation of letter symbols

APPENDIX E

SITE INSPECTION REPORT – AMERICAN CREOSOTE DERIDDER

SITE INSPECTION REPORT
For
AMERICAN CREOSOTE DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana

CERCLIS Identification Number: LAN000604293

Prepared for

U.S. Environmental Protection Agency Region 6
1445 Ross Avenue
Dallas, Texas 75202

Date Prepared:

April 4, 2016

SITE INSPECTION REPORT
For
AMERICAN CREOSOTE DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana
CERCLIS Identification Number: LAN000604293

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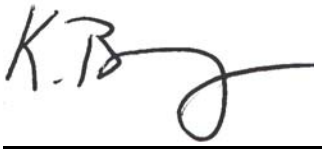

Karen Berecz
START-3, CSS-Dynamac
Project Manager

04/04/2016
Date

Steve Cowan
START-3, CSS-Dynamac
Program Manager

04/04/2016
Date

Brenda Nixon Cook
U.S. Environmental Protection Agency
Site Assessment Manager

04/04/2016
Date

PROJECT CONTACTS

Brenda Cook
Site Assessment Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-TR)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
(214) 665-7436

Steve Cowan
Program Manager - START-3
CSS-Dynamac
1323 Columbia Drive, Suite 307
Richardson, TX 75081
(214) 575-3344

Karen Berecz
Project Manager - START-3
CSS-Dynamac
1323 Columbia Drive, Suite 307
Richardson, TX 75081
(214) 575-3344

SITE INSPECTION REPORT
For
AMERICAN CREOSOTE-DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana
CERCLIS Number: LAN000604293

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Table 2 Soil Sample Results Summary
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Table 4 Surface Water and Groundwater Sample Results Summary

APPENDICES

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Appendix B Photographic Documentation
Appendix C Copy of START-3 Logbooks
Appendix D Chain-of-Custody Forms
Appendix E Global Positioning System (GPS) Sample Locations
Appendix F Access Agreements
Appendix G KAP Technologies Inc. Analytical Data
Appendix H CHEMTECH Consulting Group Analytical Data
Appendix I Quality Assurance Sampling Plan (QASP)
Appendix J Sampling Data Sheets
Appendix K Investigative Derived Waste Manifest
Appendix L Data Quality Reviews

ABBREVIATIONS AND ACRONYMS

AOC	Area of Concern
AOI	Area of Interest
ATSF	Atchison, Topeka and Santa Fe Railway
bgs	Below Ground Surface
BNSF	Burlington Northern Santa Fe
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CLP	Contract Laboratory Program
CMC	Central Manufacturing Company
COC	Contaminates of Concern
CRQL	Contract Required Quantitation Limit
DQO	Data Quality Objectives
EPA	United States Environmental Protection Agency
ft	Feet
GPS	Global Positioning System
HASP	Health and Safety Plan
HRS	Hazard Ranking System
IASD	Inactive and Abandoned Sites Division
IPC	International Paper Company
IDW	Investigation-Derived Waste
LCS	Laboratory Control Sample
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LSU	Louisiana State University
mg/kg	Milligram/kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSSL	Media Specific-Screening Levels
NPL	National Priorities List
PAH	Polycyclic Aromatic Hydrocarbons
PPE	Probable Point of Entry

QA/QC	Quality Assurance/Quality Control
QASP	Quality Assurance Sampling Plan
RA	Removal Action
RECAP	Risk Evaluation/Corrective Action Program
RI/FS	Remedial Investigation/Feasibility Study
ROW	Right-of-Way
RPD	Relative Percent Difference
SAM	Site Assessment Manager
SARA	Superfund Amendments and Reauthorization Act
SI	Site Inspection
SCDM	Superfund Chemical Data Matrix
SPRU	Soil Pile Remediation Unit
SSA	State Site Assessment
SQL	Sample Quantitation Limit
START	Superfund Technical Assessment and Response Team
SVOC	Semi-volatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TDL	Target Distance Limit
TPH	Total Petroleum Hydrocarbons
µg/kg	Microgram/kilogram
USDA	US Department of Agriculture
VOC	Volatile Organic Compound

1 INTRODUCTION

CSS-Dynamac, a Superfund Technical Assessment and Response Team (START-3) contractor, was tasked by the United States Environmental Protection Agency (EPA) Region 6, under Technical Direction Document (TDD) 9/Dynamac-077-15-003 (Appendix A), to conduct a Site Inspection (SI) for the American Creosote DeRidder site (CERCLIS No. LAN000604293) located at Post Plant Road, DeRidder, Beauregard Parish, Louisiana. See Figures 1 and 2 for the site location and areas of interest (AOI) at American Creosote DeRidder. This SI was conducted under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The purpose of this investigation was to collect information concerning conditions at the American Creosote DeRidder sufficient to:

- fill data gaps identified in the Preliminary Assessment report, including further characterization of on-site sources, and determination of impacts to on-site groundwater;
- assess the threat posed to human health and the environment by the site, and determine the potential for a release of hazardous constituents into the environment;
- determine the need for additional investigation under CERCLA or other authority, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL); and
- provide documentation necessary to support a decision by the EPA Region 6 Site Assessment Manager (SAM) regarding the need for further action under CERCLA and SARA.

The specific objectivities and tasks for the American Creosote DeRidder SI, as identified by the EPA SAM, are to:

1) develop a work plan/cost estimate for completing the SI;
2) develop a Quality Assurance Sampling Plan (QASP);
3) prepare a Health and Safety Plan (HASP);

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4) prepare documents for procurement of samples using the EPA-Houston or contract laboratory program (CLP) Laboratory;
5) collect and analyze samples from various waste streams and source material at the site;
6) conduct limited survey and sampling of the area surrounding the site to verify potential pathway targets and off-site conditions;
7) prepare an SI report for the site, including analytical tables comparing concentrations of contaminants with Louisiana Risk Evaluation/Corrective Action Program (RECAP) standards and EPA Media Specific-Screening Levels (MSSLs); and
8) prepare a Quick HRS Documentation Package to determine the site's eligibility for inclusion to the NPL.

To accomplish the objectives, START-3 collected soil samples at 10 locations at up to 15 feet (ft) below ground surface (bgs) to identify the source material and contamination at the site, collected groundwater samples at 3 off-site locations to assess the migration of contamination in the groundwater pathway, and collected 3 surface water and 4 sediment samples to assess migration of contamination in the surface water pathway.

The SI report is developed according to the EPA Guidance for Performing Site Inspection Under CERCLA (EPA540-R-92-021, Directive 9345.1-05), 40 CFR Part 300, Hazard Ranking System (HRS) Final Rule, the HRS Guidance Manual, and the Superfund Chemical Data Matrix (SCDM) (References 1 to 4).

Completion of the SI included reviewing existing site information, determining regional characteristics, collecting receptor information within the range of site influence, executing a sampling plan, and producing this report. The report is organized as follows:

- Section 1, Introduction – authority for performance of this work, goals for the project, and summary of the report contents;
- Section 2, Background – site description, site operations and waste characteristics, and a summary of investigation locations;
- Section 3, Field Activities and Analytical Protocol – summary of the field effort;

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- Section 4, Quality Assurance/Quality Control (QA/QC) – summary of the laboratory data;
- Section 5, Analytical Results Reporting and Background Samples – discussion of results reporting criteria and background sample locations and analytical results;
- Section 6, Potential Sources – discussion of site sources, sample locations, and analytical results;
- Section 7, Migration/Exposure Pathways and Receptors – discussion of the migration/exposure pathways, sample locations, and analytical results;
- Section 8, Summary and Conclusions – summary of the investigation and recommendation for the site based on the information gathered during the investigation;
- Section 9, References – alphabetical listing of the references cited throughout the text;
- Appendix A TDD 9/Dynamac-077-15-003, and Amendment 001;
- Appendix B Photographic Documentation – photographs taken during the sampling event and site visit;
- Appendix C Copy of Logbook – documenting field activities during the Site Inspection
- Appendix D Chain-of-Custody Forms – forms documenting sample chain-of-custody for the sampling event;
- Appendix E Global Positioning System (GPS) Coordinate – latitude and longitude coordinates of sample locations.
- Appendix F Access Agreements – for properties were samples were collected;
- Appendix G KAP Technologies Inc. Analytical Data – complete analytical results for all organic analysis of samples;
- Appendix H CHEMTECH Consulting Group Analytical Data – complete analytical results for all inorganic analysis of samples;
- Appendix I Quality Assurance Sampling Plan (QASP);
- Appendix J Sampling Data Sheets – sampling data collected during the Site Inspection sampling event;
- Appendix K Investigative Derived Waste Manifest; and
- Appendix L Data Quality Reviews

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2 SITE BACKGROUND

This section describes the background of the site including location, description, ownership history, operations and source characteristics, previous investigations, and a summary of the site investigation locations.

2.1 SITE LOCATION

Site Name:	American Creosote DeRidder
CERCLIS ID No.:	LAN000604293
Location:	Post Plant Road, approximately a half mile south of the intersection of Post Pole Road and the railroad crossing DeRidder, Beauregard Parish, Louisiana 70634 (Figure 1)
Latitude: Longitude:	30.830934^0 N -93.277876^0 W Location coordinates taken at approximately mid-site along the western property border at Location AC11 (Figure 5; Appendix E)
Legal Description:	Section 3, Township 3 South, Range 9 West of the Louisiana Meridian (Ref. 7, p.7; Ref. 9, p. 2)
Congressional District:	Louisiana's 4th congressional district
Site Owner:	Central Manufacturing Company, Inc. Post Office Box 877 Opelousas, Louisiana 0750-0877 (Ref. 9, pp. 1-5)
Site Contact:	Mr. James Lopez, Legal Council Central Manufacturing Company, Inc. Post Office Box 1329 Opelousas, Louisiana 70571 (Appendix F)

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2.2 SITE DESCRIPTION

The American Creosote DeRidder site is a 55-acre tract of land owned by Central Manufacturing Company (CMC) located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Beauregard Parish, Louisiana (Figure 1; Reference 9, pp. 1-5). The site is characterized by a gently rolling topography, mild winters and hot/humid summers, silty clayey sands and sandy silty clay soils (Ref. 7, p. 7). The average elevation of the site is 150 feet above mean sea level (Ref. 7, p. 7). The site area primarily consists of pine, however a variety of oak and cypress are present in the low bottom areas within which drainage tributaries meander (Ref. 7, p. 7). The site is bounded on the north by a rural roadway, to the east is heavy brush, to the south is undeveloped land, and to the west is the Burlington Northern Santa Fe (BNSF) Railroad spur, currently used by Mead Westvaco Corporation (Ref. 9, p. 5; Ref. 10, pp. 56 -57; Appendix F; Figure 2). The sites broader surroundings include commercial, industrial and residential uses (Figure 2). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin (Ref. 7, p. 7).

2.3 SITE OWNERSHIP HISTORY

Central Manufacturing Company (CMC) has been the primary owner of the 55-acre tract of land from September 1992 to present. In September 1992 First National Bank in Deridder, Deridder, Louisiana sold CMC the parcel of land (Ref. 6, pp. 17 & 64-65). Prior to 1992, First National Bank of DeRidder, by means of "dation en paiement" was conveyed the land on February 14, 1984 from Creighton and Frances Pugh to relieve them of mortgage and lien debt against the property. The Creighton's had formerly purchased the parcel of land on April 24, 1972 from Charles Holbrook for commercial purposes (Ref. 6, pp.17 & 59).

Charles Holbrook was the original owner of the parcel of land that is currently in CMC ownership. Prior to April 1963 the current tract of land was fundamentally three separate parcels of property acquired by Mr. Holbrook and incorporated into one single tract of land (Ref. 6, p. 17; Figure 3). On April 4, 1963, International Paper Company (IPC) sold Charles Holbrook

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one (Parcel B) of the three tracts of land which he incorporated into the two other tracts of land (Parcel E1 and E2) that he had purchased years earlier from American Creosoting Corporation on December 21, 1959 (Ref. 6, p. 30-32, 52-55; Figure 3).

In 1956, Union Camp Corporation acquired American Creosoting Company. Subsequent to the acquisition Union Camp renamed the operations to AmCre Corporation. In July 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation (Ref. 5, p.64).

The two tracts of land (Parcel E1 and E2) bought by Mr. Holbrook, that were later incorporated with the third tract of land (Parcel B) purchased from IPC, were purchased by American Creosoting Company in November 9, 1955 from Shreveport Creosoting Company, a Delaware Corporation (Ref. 6, pp. 24-29). From November 1928 to its sale in November 1955 both tracts of land (Parcel E1 and E2) were owned by Shreveport Creosoting Company, a Delaware Corporation which had previously purchased the properties from Shreveport Creosoting Company, an Indiana Corporation (Ref. 6, p.38).

Preceding both tracts of land being sold on November 15, 1928 by Shreveport Creosoting Companies, an Indiana Corporation, to Shreveport Creosoting Company, a Delaware Corporation, both tracts of land were acquired separately by Shreveport Creosoting Company in August 1918. One tract of land (Parcel E1) was sold by The Long Bell Lumber Company and the other tract of land (Parcel E2) was purchased from the Hudson River Lumber Company on the same date on August 5, 1918 by Shreveport Creosoting Company, an Indiana Corporation (Ref. 6, p. 33-37).

Historical ownership prior to 1956 for the tract of land (Parcel B) previous owned by IPC and sold to Mr. Charles Holbrook is currently unknown. Historical ownership previous to 1918 for the

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two tracts of land (Parcel E1 and E2) separately owned by The Long Bell Lumber Company and Hudson River Lumber Company is currently unknown.

2.4 SITE OPERATIONS AND SOURCE CHARACTERISTICS

The American Creosote DeRidder site has been impacted by creosote related compounds from historical timber treatment operations at the site. The Shreveport Creosoting Company doing business as an Indiana and later a Delaware Corporation operated a creosote timber treatment facility from the early 1920's to approximately 1945 on a parcel of land south of DeRidder, Beauregard Parish, Louisiana. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957 (Ref. 7, p. 8). From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992 who planned heavy industrial/commercial use (Ref. 8, p. 3-4).

The Shreveport Company's facilities and operations used creosote oil and coal tar solutions in the wood preserving pressure treatment process. The specific operations at the site consisted of dipping timber into creosote vats and the collection of spent creosote in an open pit and also the discharging of untreated process wastewater into an open pit. There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits (Ref. 7, p. 8).

The site is currently void of any of these operations and consists of heavy timber and thick shrub overgrowth. Abandoned wood treatment facilities of the previous operations currently remain at the site and consist of a concrete structure of a former retort house, concrete foundation of a former vat, an unlined wastewater pit and random areas of creosote solids and soil contamination (Ref. 10, pp. 61-69).

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2.4.1 Sources

There are four identified potential sources on the property of American Creosote:

- Concrete Structure
- Oil/water Separator
- Unlined Wastewater Pond
- Random Areas of Creosote Solids and Soil Contamination

Figure 5 provides the location of each source at the American Creosote site. A description of each source is provided below with information obtained during the PA and SI (Ref. 10, pp. 76-78; Appendix C).

Concrete Structure: The concrete structure is located on the central western boundary of the property (Figure 5). The concrete structure is the former retort house from previous operations at the site (Ref. 7, pp. 14 & 28). Due to the amount of pine forest and thick shrub overgrowth a complete survey of the concrete structure was not completed (Appendix C). The approximate dimensions of the concrete structure from observations made during the SI are 30 feet x 70 feet (Appendix C). There is approximately 24 inches of sediment on top of the concrete structure (Appendix C). Located within the concrete structure is a pit with a concrete bottom. The pit contains approximately five (5) feet of water and no sediment is present (Appendix C).

Oil/Water Separator: The oil/water separator is located just northwest and adjacent to the concrete structure (Figure 5). The oil/water separator is a concrete structure and measures approximately five (5) feet across with a center wall at approximately two and a half (2.5) feet (Appendix C). The concrete structure of the oil/water separator is completely covered in creosote solids, contains stagnant water, and approximately 5 -10 feet of vegetation to the bottom (Ref. 10, pp. 61- 66 & 76-77; Appendix C)

Unlined Wastewater Pond: The unlined wastewater pond is located just west of the concrete structure (Figure 5). The unlined wastewater pond measures approximately 100 feet x 50 feet,

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with hardened creosote flanking the pond and adjacent to pond (Ref. 10, p. 67-71 & 77). During the December 2014 preliminary assessment (PA) the depth of the wastewater pond was taken from the southwest corner and measured approximately 8 – 10 inches deep (Ref. 10, p. 77)

Random Areas of Creosote Solids and Soil Contamination: Random areas of creosote solids and soil contamination were observed at the site during the PA (Ref. 10, pp. 58-60 & 76-77). This observation confirmed what was reported in 2002 during Acadian Engineers & Environmental Consultants environmental site investigation (Ref. 7, pp. 14 & 32).

2.5 PREVIOUS INVESTIGATIONS

Historical site investigations at American Creosote DeRidder found contamination along the concrete foundation of the former retort house basin, abandoned waste pits, groundwater and soil in 1996. Contamination resulted from facility operations and waste handling practices at the site. Contaminates of concern (COC) identified at site are polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH) (Ref. 13, p. 15; Ref. 7, p. 19-20).

In 1991 the American Creosote site was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD). LDEQ IASD contacted Westvaco, a company nearby that was considering buying the property at the time, and had collected water and soil samples for analysis in February 1992. Westvaco indicated to Louisiana DEQ IASD that the laboratory results showed low levels (< 5 ppm) of phenol contamination in the soils, and the water samples analyzed were below detection limits for phenol (Ref. 18, p. 2). The soil samples collected by Westvaco in February 1992 indicated low levels, 4.0 to 5.7 ppm, of phenols detected (Ref. 16, p. 3, Ref. 19, p.1). During 1992 LDEQ IASD visited the site several times to assess the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, 0.5 to 1.08 percent, for eight of the target compound list (TCL) listed Creosote constituents were detected (Ref. 15, p 2). Analytical results from the October 1992 samples collected were found

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to high concentrations of PAHs per the West Paine Laboratory results (Ref. 14, pp.17-18). To date no remediation has taken place at the site or nearby railroad.

In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination were discovered in the unlined pit lying between the old Santa Fe railway track and the creosoting structure foundation. Low level Total Phenols concentrations were also discovered in soils and surface water sampled surrounding the old foundation (Ref. 16, p. 3). Louisiana DEQ IASD moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) at the site through a cooperative agreement with the responsible party identified at the time, CMC. In October 1993 LDEQ IASD realized the site compromised two distinct ownerships, due to creosote contamination migrating off-site to the adjacent property to the west. LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway (ATSF), who owned the railway right-of way corridor, and CMC who now owned the former wood treating facility. In late 1993 a cooperative agreement between LDEQ IASD, CMC and ATSF were entered into for a RI/FS (Ref. 17, p. 1).

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Dr. Portier of Louisiana State University (LSU) who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at site. The work plan proposed transporting of contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated to clean-up levels of less than 100 milligrams per kilogram (mg/kg) TPH. The SPRU would be located within the CMC property boundaries on an existing concrete slab covered with plastic. Leachate would be handled in the SPRU and soil remediation would be monitored, evaluated and modified to optimized biodegradation of creosotes and related petroleum hydrocarbon soil contamination (Ref. 11, pp. 3, 5-6). An approximate total of 1,250 cubic yards of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway right-of-way (ROW) were proposed to be processed in the SPRU (Ref. 11, p. 6). In April 1994 in cooperation with ATSF, CMC personnel collected four

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samples of creosote material from the site for TPH analyses at the ATSF contracted laboratory Radian Corporation. The four samples collected of tarry material were collected from the pit moving southwest toward the Santa Fe railway ROW. It was noted that the tarry material was only 1 – 2 inches thick and that the concentration decreased when moving from the pit to the southwest location of the ROW at the Santa Fe railway corridor (Ref. 11, p. 121). Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg (Ref. 11, p. 5).

By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with Louisiana DEQ to begin its own soil remediation strategy. In mid-1996 Kei Consultants hired by BNSF submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder. The estimated area of creosote impact to the BNSF railroad corridor extended 250 feet along the railway ROW and 25 feet wide. Impact from the former creosote operations at the adjacent site, were visually apparent by the surficial patches of asphaltic that had formed (Ref. 13, p. 5). The noted contaminate of concern was TPH (Ref .10, p. 15). The project objective was to excavate impacted soils from the BNSF property and transfer them to a suitable disposal site and perform site restoration at the excavated location (Ref. 13, p. 8).

In August 2002 Acadian Engineers on behalf of CMC performed a Limited Site Investigation at the American Creosote site to delineate the horizontal and vertical extent of creosote contamination to determine potential remediation strategies. Acadian personnel collected soil samples from 25 locations placed across previously identified areas of impact, and 10 groundwater samples from temporary groundwater monitoring wells to assess the impact to shallow groundwater (Ref. 12, pp. 5-6).

Late 2003 Acadian Engineers & Environmental Consultants submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media.

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The proposed methodology to address the impacted soil media was over excavation of impacted areas and on-site treatment of the impacted soil. No implementation of groundwater remediation was required, yet continued monitoring was recommended (Ref. 7, p.18). The limits of excavation proposed for the impacted soils were based on analytical results from soil samples collected during the Limited Site Investigation performed in 2002, and are as follows:

- Area of Concern (AOC) #1 Old Drip Area – Five soil samples were collected in AOC #1 and one sample contained elevated levels of benzopyrene (sic) in excess of RECAP screening standards for soil. The proposed limits of excavation consisted of a 100 feet x 8 feet area at a two foot depth, resulting in an in place volume of 59 cubic yards and an excavation/remediation volume of 77 cubic yards (Ref. 7, pp. 20-21, Fig. 7, p. 33).
- AOC #2 Wash Pit – Twelve soil boring samples was collected within AOC #2 and three contained elevated levels of benzopyrene in excess of RECAP screening standards for oil. The proposed limits of excavation consisted of approximately one (1) acre at two foot depth, resulting in a proposed excavation volume of 2,852 cubic yards and an estimated 3,710 cubic yards of soil to be remediated (Ref. 7, pp. 21 & 34).
- AOC #3 Former Waste Pits – Two soil borings samples were collected within AOC #3and both contained elevated levels of benzopyrene in excess of RECAP screening standards for soils. The proposed excavation is two separate excavation areas located within AOC #3. The first proposed depth of excavation was till hard pan impacted soils are encountered beneath the impacted media. The area of excavation is 3,300 square feet and the depth is estimated at three feet resulting in a proposed excavated volume of 367 cubic yards. The second proposed excavation is adjacent to the pit and consists of 7,710 cubic feet of excavatable area at a depth of two feet resulting in a volume of 527 cubic yards of proposed excavatable soil. The total proposed volume of excavation within AOC #3 is 894 cubic yards and 1,162 cubic yards of soil to be remediated (Ref. 7, pp. 22 & 35).
- AOC #4 Surface Soil – Eight soil borings were collected within AOC #4 and five revealed concentrations of benzopyrene (sic) in excess of RECAP screening standards for soil.

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The proposed excavation consists of 35,700 square feet (0.82 acres) at two feet depth resulting in a proposed excavation volume of 2,644 cubic yards or 3,438 cubic yards of soil to be remediated (Ref. 7, p. 22 & 36).

The excavated soils were proposed to be remediated on-site through biodegradation of the creosote related organic material. The proposed remediation of the soil from AOC #3 would be placed within the concrete retort structure adjacent to the abandoned earthen pit. Soils excavated from AOC #1, AOC #2 and AOC #4 would be placed within an earthen remediation cell adjacent to the concrete structure (Ref. 7, pp. 37-38). Select microbes intended to remediate creosote related organic compounds would be used to inoculate and treat the impacted media (Ref. 7, p.25).

In 2005 CMC had Acadian Engineers & Environmental Consultants submitted a Risk Evaluation Corrective Action Plan (RECAP) to LDEQ IASD. The RECAP was performed within the concept of the Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern at the site. CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval (Ref. 5, p. 64-88).

2.6 SUMMARY OF SI INVESTIGATION LOCATIONS

START developed a Quality Assurance Sampling Plan (QASP) for the sampling effort conducted at the site as part of the EPA Site Inspection (SI) (Appendix I). The QASP proposed the collection of subsurface soil samples from borings at 8 designated locations, up to 2 samples per location at depths to be determined in the field, to further characterize the soil as a source at the site; groundwater samples from the 3 off-site monitor wells; sediment samples on and off-site at 10 locations; and surface water samples on and off-site at 10 locations to assess the migration to the surface water pathway.

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It was determined during the SI that the nearest off-site surface water body is approximately 4,000 feet from the area of interest on site; therefore no off-site surface water samples were collected. Additional soil samples (ACS25 and ACS26) were collected from inside the concrete structure and from a pile of creosote. In summary, the following samples were collected during the SI:

- Ten (10) soil samples (AC03, AC05, AC07, AC10, AC11, AC13, AC14, AC25 and AC26) were collected, to include a background sample (AC01) (Figure 5).
- Three (3) groundwater samples (AC21, AC22 and AC23) were collected (Figure 5)
- Four (4) sediment samples (AC08, AC12 and AC15) were collected, to include a background sample (AC02) (Figure 5).
- Three (3) surface water samples (AC04, AC06 and AC08) were collected (Figure 5).

Locations of the samples collected are shown in Figure 5. Appendix J presents the samples, sample numbers and location descriptions. START performed photographic and written documentation of the sampling activities (Appendices B and C, respectively).

3 FIELD ACTIVITIES AND ANALYTICAL PROTOCOL

The QASP developed for the SI describes the sampling strategy, sampling methodology, and analytical program used to investigate potential hazardous substances, sources and potential receptors (Appendix I). With few exceptions, the field activities were conducted in accordance with the approved QASP. Deviations from the QASP are described when applicable, in this section and in the sampling location discussions in Section 5 (Analytical Results Reporting and Background Samples) and Section 6 (Potential Sources).

The field sampling event was conducted from June 8, 2015 through June 13, 2015. A total of 21 samples, to include 3 background samples (1 subsurface soil, 1 sediment, 1 groundwater), and 3 field blanks were collected during the sampling event. Sample types and methods of collection are described below. A list of all samples collected for laboratory analysis during this

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sampling event is in Appendix J. Photographic documentation of the field activities is included on Appendix B.

Alphanumeric identification numbers applied to each sample (e.g., ACS01 = American Creosote soil sample 01, ACSW01 = American Creosote surface water sample 01, ACSD01 = American Creosote sediment sample 01, ACGW01 = American Creosote groundwater sample 01) are used in the report as sample location identifiers. Sample locations are shown in Figure 5.

This section describes the sampling methodology, analytical protocol, global position system measurements, and investigation-derived waste.

3.1 SAMPLING METHODOLOGY

Grass leaves and other vegetative material, rocks, and other debris unsuitable for analysis were removed from samples before being placed into sample containers. Samples were stored on ice in coolers continuously maintained under the custody of field personnel. Sampling methods used for each sample type are described below.

3.1.1 Soil Sampling

Soil samples were collected at depths of up to 15 feet below ground surface (bgs) or until groundwater was encountered. START collected the subsurface soil samples from borings at 10 locations on site (Figure 5; Tables 1 and 2). Sample locations were focused on former activity areas that included the former retort house concrete structure, oil/water separator, wastewater pond, a former railroad spur, the drainage ditch along the railroad ROW, an on-site culvert, and from a background location.

Samples were collected using a direct push device to penetrate the surface and extended to a maximum depth of 15 feet bgs, or until groundwater was encountered (Appendix J). Soils in the cores were screened visually and with a photo-ionization detector (PID) on a RAE systems MultiRAE, those increments of the cores with the highest readings were selected for analysis.

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Stainless steel spoons were used to transfer the soil from the cores into the sample containers. A total of 25 soil samples were submitted for analysis including 2 field duplicate samples.

Samples were shipped to the designated CLP Laboratory for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metal/mercury chemical analysis (Appendix I).

3.1.2 Surface Water/Sediment Sampling

START collected surface water grab samples from 3 locations and sediment grab samples were collected from 4 locations (Figure 5).

Surface water samples were collected using a beaker on a metal pole and poured directly into the sample containers. Field parameters of pH, temperature, conductivity, turbidity, dissolved oxygen and salinity were collected for each surface water sample (Appendices J and K). Sediment Samples were collected using stainless steel spoons or a 3-feet direct push acetate sleeve (sample retrieval tube with a rubber-lined gasket top) and transferred directly to the sample containers. Any of the two sampling methods were used depending on access, and depth of the concrete structures, or the edge of the wastewater pond.

A total of 3 surface water and 4 sediment samples were submitted for analysis, including 1 field duplicate of sediment. No duplicate sample was collected for the surface water as the sample collected for groundwater was used as a duplicate for this matrix.

Samples were shipped to the designated CLP Laboratory for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metal/mercury chemical analysis (Appendix I).

3.1.3 Groundwater Sampling

START collected 3 groundwater samples from off-site monitor wells from the western portion of the property, along the railroad ROW (Figure 5). Groundwater samples were collected using

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low–flow technique through a peristatic pump at Monitor Wells 1, 2 and 3 (MW 1, MW 2, and MW3) directly into the sample containers. Prior to sample collection, the monitoring wells were purged until the indicator parameters of pH, conductivity, temperature and turbidity stabilized (Appendix J). A duplicate sample was collected for groundwater and also used as the duplicate matrix for the surface water.

Samples were shipped to the designated CLP Laboratory for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metal/mercury chemical analysis (Appendix I).

3.2 ANALYTICAL PROTOCOL

Samples were shipped to the designated CLP Laboratory for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metal/mercury chemical analysis (Appendix I). Organic analyses were performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis were performed by Chemtech Consulting Group located in Mountainside, New Jersey

Analysis conducted on each of the samples collected during the SI is presented in Tables 1 to 4. Analytical methodology is also presented in Appendix G and H. The following analysis was conducted:

- TCL SVOAs by EPA CLP SOM02.2:
    - 3 – surface water samples;
    - 4 – sediment samples;
    - 3 - groundwater samples; and
    - 27– soil samples, including QA/QC samples submitted to KAP Technologies Inc. located in The Woodlands, Texas
- TAL Total Metals + Mercury by EPA ISM02.2:
    - 3 – surface water samples;
    - 4 – sediment samples;

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- 3 - groundwater samples; and
- 27 – soil samples, including QA/QC samples were submitted to Chemtech Consulting Group located in Mountainside, New Jersey.

3.3 GLOBAL POSITIONING SYSTEM

An iPhone 5s using the iPhone application, GPS Tour (Version 1.2) was used to obtain global positioning system (GPS) coordinates for each of the sampling locations, except one. The GPS coordinates of location AC01 were obtained with an iPhone 5s using the Apple Map application. Coordinates of the sampling points are included in Appendix E.

3.4 INVESTIGATION-DERIVED WASTE

Investigation-Derived Waste (IDW) generated during the SI consisted of solids and liquids. Solid IDW consisted of used dedicated equipment, soil cuttings from the subsurface sampling, and paper waste. All waste was double bagged, sealed in a 55-gallon steel drum and labeled. Non-dedicated sampling equipment, such as the auger used for the direct push device, was decontaminated prior to use and between each use generating both solid and liquid waste. IDW generated from the decontamination procedures and the liquid was sealed in a 55-gallon drum and labeled. All IDW was picked up on August 12, 2015 and disposed of via Clean Harbors Environmental to an off-site disposal facility (Appendix K).

4 QUALITY ASSURANCE/QUALITY CONTROL

QA/QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of sampling equipment, glassware, and reagents. Specific QC requirements for laboratory analyses are incorporated in the *USEPA Contract Laboratory Program Statement of Work for Inorganics Analyses, Multi-Media, Multi-Concentration*. These QC requirements, or equivalent requirements, were followed for analytical work on the American Creosote DeRidder SI. This section describes the QA/QC

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measures taken for the SI and provides an evaluation of the usability of data presented in this report.

All samples were collected following the guidance of the QASP for the field activities. Organic water, soil and sediment samples were analyzed for semi-volatile organic compounds (SVOCS) by EPA CLP SOW SOM02.2, and inorganic water, soil and sediment were analyzed for metals/mercury by EPA CLP SOW ISM02.2. Organic analyses were performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis were performed by Chemtech Consulting Group located in Mountainside, New Jersey. All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory. START conducted a validation review of the data and completed a validation report (Appendices G, H and L). Data qualifiers were applied as necessary according to the following EPA guidance:

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*.

When necessary, laboratory- and method-specific QC criteria were applied to the data.

4.1 SATISFACTION OF DATA QUALITY OBJECTIVES

The following EPA guidance document was used to establish data quality objectives (DQOs) for this SI:

- *Data Quality Objectives Process for Superfund, Interim Final Guidance*, EPA 540-R-93-071.

The EPA Site Assessment Manager determined that definitive data without error and bias determination would be used for the sampling and analyses conducted during the field activities. The data quality achieved during fieldwork produced sufficient data that meet the DQOs stated in START designated American Creosote DeRidder QASP (Appendix I).

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A detailed discussion of the SI objectives that were accomplished is presented in the following sections.

4.2 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

Quality assurance (QA) samples (trip blanks and rinsate blanks) were not collected for this project. Volatile Organic compound (VOC) analysis was not part of this investigation. All equipment was dedicated equipment. Quality control (QC) samples included blind duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples. Blind duplicate samples were collected at a frequency of one in ten samples per matrix, and MS/MSD duplicate samples were collected at a frequency of one in every twenty samples per matrix. These QC samples were analyzed for TCL SVOAs and TAL Metals/Mercury.

4.3 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The inorganic and organic laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

4.3.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method.

MS/MSD was not requested for the organic laboratory data and not applicable (Appendix L). The RPD values were reviewed for all inorganic laboratory duplicate samples and/or MS/MSD

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samples. None of the inorganic data were qualified due to poor agreement between native and duplicate samples (Appendix L). Precision was acceptable.

4.3.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met.

The LCS for organic sample analysis was not analyzed and not applicable (Appendix L). The LCS %R values were reviewed for all appropriate inorganic sample analyses. None of the inorganic data were qualified based on LCS recoveries. Inorganic water sample ACSW-04 was designated for the matrix spike analysis and the antimony, copper, and zinc matrix spike recoveries were outside the QC limits for the water matrix. In inorganic water samples ACSW-06, ACSW-04, and ACSW-08, non-detected antimony results were qualified as estimated (UJ) and detected copper and zinc results were qualified as estimated (J) (Appendix H and L). No other failed QC criteria were noted with matrix spike. Inorganic laboratory accuracy was acceptable and the data is usable as qualified (Appendix L).

Some organic sample results from SDG F9DA0 were qualified as estimated (J) or (UJ) for all BNA (SVOC) samples and BNA (SVOC)-SIM sample ACSD02-06 because calibration was outside QC limits. Samples ACS05-02 and ACS07-58 had target analyte concentrations that exceeded the calibration range, but no further diluted re-analyses were performed (Appendix G and L). Therefore, the results of these analytes were qualified as estimated (J) (Appendix L).

For organic results from SDG F9DC1, 2-nitrophenol in BNA analysis did not meet the technical %D calibration criteria and the associated non-detected 2-nitrophenol results in samples ACSD12-06, ACSD15-06, and ACS01-10 were qualified as estimated (UJ). Three analytes in BNA-SIM analysis did not meet the technical %D calibration criteria (Appendix G and L).

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In organic results from SDG F9DD1, 2, 4-dinitrophenol did not meet the technical %D calibration criteria for one closing CCV. The associated non-detected 2, 4-dinitrophenol results in samples ACGW-21, ACGW-22, ACGW-23, and ACFB-24 were qualified as estimated (UJ) (Appendix G and L).

Some organic target compound results from SDG F9DA0 and F9DC1 were false positive for the following samples and the results were qualified as a false positive exists (F+) (Appendix G and L):

ACS01-25: 1,4 -dioxane and 2,6-dinitrotoluene
ACS13-02 (dilution): 1,4-dioxane
ACS07-58: benzaldehyde
ACS14-25: benzaldehyde
ACS14-25: benzaldehyde, N-nitrosodiphenylamine, and 3,3'-dichlorobenzidine
ACS07-02: 2,6-dinitrotoluene
ACS07-02 (dilution): 2,6-dinitrotoluene
ACS10-02 (dilution): 2,6-dinitrotoluene
ACS11-02 (dilution): 2,6-dinitrotoluene
ACS19-58 (dilution): 2,6-dinitrotoluene
ACS19-10: 2,4-dinitrotoluene
ACS10-02: 3,3'-dichlorobenzidine
ACSD08-06: benzaldehyde
ACS07-10: benzaldehyde
ACS10-10: benzaldehyde
ACSD08-06 (dilution): 4-chloroaniline

Diluted analysis of results were recommended for use for dibenzofuran in sample ACSD08-06 and benzo(a)anthracene in sample ACSD15-06 because they were not reported in their respective original analysis (Appendix G and L).

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Although both the full scan and SIM analysis results were available for samples ACSD02-06, ACSD08-06, ACSD12-06, and ACSD15-06, the SIM analysis results are designated for use only when the corresponding full scan analysis results were non-detects of below the quantitation limits (Appendix G and L). The results of high PAHs should be reported from the full scan of BNA (SVOC) analysis except the SIM analysis result of phenanthrene in sample ACSD15-06 (Appendix L).

For sample ACS11-35, results for two separate analyses were submitted. To minimize data qualification and favor positive results, the results from the analysis performed on 7/6/15 were used with the exceptions of benzo(b)fluoranthene and benzo(k)fluoranthene which were taken from the analysis performed on 7/3/15 (Appendix G and L).

4.3.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All inorganic and organic laboratory data was reviewed for usability, 98 percent was determined to be usable for SDG F9DA0, 99 percent was determined to be usable for SDG F9DC1 and F9DC1, and 100 percent was determined to be usable for SDG MF9DA0 and MF9DB6 (Appendix G, H and L). Data completeness is acceptable.

4.3.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

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4.3.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

4.4 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The inorganic and organic laboratory data was reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks. In addition, organic laboratory data was reviewed for surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

4.4.1 Holding Times

All organic and inorganic samples were analyzed within holding time limits.

4.4.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. No SVOCs were detected in the organic laboratory blanks above the reporting limits (Appendix L). However, inorganic blank concentrations affected some arsenic, cobalt, nickel, and thallium sample results in ICP-MS. The detected arsenic results in samples ACS19-10, ACSD02-06, ACS01-58, ACS07-10, ACSD12-06, ACSD15-06, and ACS11-58 were qualified as estimated high (J+). The detected nickel results in samples ACS19-58 and ACS11-58 were qualified as estimated high (J+). The detected cobalt results in samples ACSD02-06 and ACSD15-06 were qualified as estimated high (J+). The detected thallium result in sample ACS25-06 was qualified as estimated high (J+) (Appendix H and L). No other failed QC criteria were noted with the inorganic blanks

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4.4.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses (Appendix L). The serial dilution of inorganics detected aluminum results in water samples ACGW-21, ACGW-22, and ACGW-23 that were qualified as estimated (J) due to the aluminum serial dilution difference exceeding the technical QC limit in ICP-AES. Also, the detected arsenic results in soil and sediment samples ACS19-58, ACS19-10, ACSD02-06, ACS01-58, ACSD08-06, ACS07-10, ACSD12-06, ACSD15-06, ACS10-10, ACS11-58, ACS25-06, ACS26-06, and ACS01-10 were qualified as estimated (J) due to the arsenic serial dilution difference exceeding the expanded QC limit in ICP-MS (Appendix H and L). No other failed QC criteria were noted with the inorganic serial dilution.

4.4.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event. All sampling equipment was dedicated equipment.

4.4.5 Trip Blank

Trip blanks were not collected for this sampling event.

4.4.6 Field Blanks

Organic field blank, ACFB-24, was collected and the low levels of diethylphthalate (2.8 ug/L) and benzo(a)pyrene (1.6 ug/L) were detected in the field blank. The detected diethylphthalate result in sample ACGW-23 was qualified as estimated high (J+). The detected benzo(a)pyrene results in samples ACSW-04 and ACSW-08 were qualified as estimated high (J+) and the detected benzo(a)pyrene results in samples ACGW-21, ACGW-22, and ACGW-23 were qualified as non-detect (U) (Appendix G and L).

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One inorganic field blank, ACFB-24, was collected and a trace amount zinc (0.41 ug/L) was detected. The detected zinc result in sample ACGW-21 was qualified as estimated high (J+) (Appendix H and L).

4.4.7 Surrogates

Surrogate nitrobenzene-d5 recoveries were very low (<10%) in samples ACS-01-25 and ACS19-10 (Appendix G and L).

The non-detected results of acetophenone, N-nitroso-di-n-propylamine, hexachloroethane, nitrobenzene, 2,6-dinitrotoluene, 2,4-dinitrotoluene, and N-nitrosodiphenylamine were qualified as unusable (UR) (Appendix G and L).

Surrogate 4,6-dinitro-2-methylphenol-d2 recoveries were very low (<10%) in samples ACS11-02, ACS19-10, ACSD12-06, ACSD15-06, ACS26-06, ACS01-10, ACGW-22, ACGW-23, and ACFB-24. The non-detected results of 4,6-dinitro-2-methylphenol were qualified as unusable (UR). Surrogates 2-nitrophenol-d4, 2,4-dichlorophenol-d3, dimethylphthalate-d6, and anthracene-d10 recoveries were very low (<10%) in sample ACS19-10. The detected result of 1,1'-biphenyl was qualified as estimated (J) and the non-detected results of isophorone, 2-nitrophenol, 2,4-dichlorophenol, hexachlorobutadiene, hexachlorocyclopentadiene, 4-chloro-3-methylphenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, 1,2,4,5-tetrachlorobenzene, pentachlorophenol, 2,3,4,6-tetrachlorophenol, caprolactam, dimethyl phthalate, diethylphthalate, di-n-butylphthalate, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, hexachlorobenzene, and atrazine were qualified as unusable (UR) (Appendix G and L).

4.4.8 Internal Standards

Samples ACS01-25, ACS07-02 (dilution), ACS07-58, ACS10-02 (dilution), ACS10-58 (dilution), ACS13-24, and ACS19-10 had poor IS performance. The associated detected results were qualified as estimated (J) and the associated non-detected results were qualified as estimated (UJ). Sample ACSD15-06 had a low IS5 (chrysene-d12) response. The associated detected

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results were qualified as estimated (J) and the associated non-detected results were qualified as estimated (UJ) (Appendix G and L).

The initial analysis of sample ACS13-24 had a very low recovery of IS2 (naphthalene-d5, %R<20%). To minimize data qualification, the results for analytes associated with IS2 from diluted analysis of sample ACS13-24 were recommended for use (Appendix G and L). No other failed QC criteria were noted with internal standards.

5 ANALYTICAL RESULTS REPORTING AND BACKGROUND SAMPLES

This section describes the reporting and methods applied to analytical results presented in Sections 6 (Sources) and 7 (Receptors) of this report, and discusses background locations and sample results. Appendix J lists all samples collected for laboratory analysis.

5.1 ANALTICAL RESULTS EVALUATION CRITERIA

Analytical results presented in the analytical summary tables show all analytes/compounds detected above laboratory detection limits in bold type. Analytical results indicating significant/elevated concentrations of contaminants in source samples (Section 6) and target samples (Section 7) with respect to background concentrations are shown underlined and in bold type. For the purposes of this investigation, significant/elevated concentrations are those concentrations that are:

- Equal to or greater than the sample's Contract Required Quantitation Limit (CRQL) or the Sample Quantitation Limit (SQL) when a non-CLP laboratory was used; and
- Equal to or greater than the background sample's CRQL or SQL when the background concentration was below detection limits; or
- At least three times greater than the background concentration when the background concentration equals or exceeds the detection limits.

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In addition, detected concentrations will be compared to Louisiana Risk Evaluation/Corrective Action Program (RECAP) industrial standards and/or EPA Media Specific-Screening Levels (MSSLs) industrial standards. RECAP and MSSLs are incorporated into tables as applicable.

The analytical summary tables present all detected analytes/compounds, but only those detected analytes/compounds at potential sources and receptors meeting the significant/elevated concentration criteria are discussed in the report text. All detected concentrations are also discussed for the background samples. When samples were diluted for re-analysis at a laboratory, the dilution results were considered for evaluation and are provided in the tables.

5.2 BACKGROUND SAMPLES

Background samples were collected for each of the naturally occurring media from which American Creosote DeRidder samples were collected. These media are subsurface soil and sediment. Results for the appropriate background samples are shown in the first column of the analytical results summary tables for comparison against source or target results.

5.2.1 Background Subsurface Soil Samples

5.2.1.1 Sample Locations

Four (4) intervals from one on-site background subsurface soil location were collected by soil boring using direct push technology at ACS01, which is approximately 32 feet south of the Post Plant Road and approximately 80 feet west of the railroad tracks (Figure 5). Sample location AC01 is up gradient relative to groundwater flow. The GPS coordinate for location AC01 is 30.835414^{o} north latitude, -93.274983^{o} west longitude (Appendix E). The four (4) intervals from the background subsurface soil sample were collected at 2 ft or 3 ft intervals (Appendix J):

- ACS01-02 (0-2 ft bgs)

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- ACS01-25 (2-5 ft bgs)
- ACS01-58 (5-8 ft bgs)
- ACS01-10 (8-10 ft bgs)

5.2.1.2 Sample Results

Background Soil Sample AC01 detected concentrations above the analytical reporting limits for aluminum, anthracene, arsenic, barium, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, chromium, cobalt, copper, indeno (1,2,3-cd) pyrene, iron, lead, magnesium, manganese, nickel, vanadium and zinc. Levels detected were below the LA RECAP numbers, but the concentration of arsenic was detected in the 8-10 ft bgs interval above EPA MSSL levels (Table 1). Complete analytical results are included in Appendix G and H.

5.2.2 Background Sediment Samples

5.2.2.1 Sample Locations

One (1) background sediment sample (sample ACSD02) was collected on-site, at location AC02, north of the property near were Post Plant Road and the railroad tracks intersect (Appendix C; Figure 5). The sediment sample was collected 0 - 6 inches bgs (Appendix J). The GPS coordinate for location AC02 is 30.835333^{O} north latitude, -93.275212^{O} west longitude (Appendix E).

5.2.2.2 Sample Results

Background Sediment Sample ACSD02 detected concentrations above the analytical reporting limits for 2-methylnaphthalene, acenaphthene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, chromium, chrysene, cobalt, copper, fluoranthene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, naphthalene, nickel, phenanthrene, vanadium and zinc. Levels

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reported are below the LA RECAP numbers and the EPA MSSL levels (Table 3). Complete analytical results are included in Appendix G and H.

6 POTENTIAL SOURCES

This section describes potential sources, sample locations, and analytical results of American Creosote DeRidder samples obtained from potential sources. Laboratory data sheets of analytical results for all samples are provided in Appendix G and H. Analytical results are summarized in Tables 1, 2, 3 & 4. GPS locations for all samples are listed in Appendix E.

6.1 SOURCE - CONCRETE STRUCTURE

The concrete structure is located on the central western boundary of the property (Figure 5). The concrete structure is the former retort house from previous operations at the site (Ref. 7, pp. 14 & 28). Due to the amount of pine forest and thick shrub overgrowth a complete survey of the concrete structure was not completed (Appendix C). The approximate dimensions of the concrete structure from observations made during the SI are 30 feet x 70 feet (Appendix C). There is approximately 24 inches of sediment on top of the concrete structure (Appendix C). Located within the concrete structure is a pit with a concrete bottom. The pit contains approximately five (5) feet of water and no sediment is present (Appendix C).

6.1.1 Sample Locations

One (1) soil sample was collected from the concrete structure, and one (1) surface water sample was collected from the pit within the concrete structure. The following samples were collected (Table 2 & 4; Figure 5; Appendix B, C and J):

- Location AC06: GPS: 30.831316^{o} N, -93.277039^{o} W
    - Surface water sample number: ACSW06
- Location AC25: GPS: 30.831493^{o} N, -93.277017^{o} W
    - Soil sample number: ACS25-06

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6.1.2 Sample Results

Analysis of the surface water sample ACSW06 from the pit within the concrete structure detected various metals above the reporting limit such as: arsenic, barium, calcium, iron, manganese and zinc. Concentrations of the various metals detected in the pit are not above Louisiana RECAP screening levels for groundwater screening standards. The concentration of arsenic was detected above the EPA MSSL level. Results are summarized in Table 4.

Analysis of the soil sample ACS25-06 detected numerous SVOCs and metals above the reporting limit such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, cadmium, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, magnesium, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, thallium, vanadium and zinc. Concentrations for 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, cadmium, calcium, carbazole, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, lead, magnesium, manganese, naphthalene, nickel, phenanthrene, thallium, pyrene and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01) (Tables 1 and 2). The concentration of pyrene (13,000,000 µg/kg) was detected above the Louisiana RECAP screening level for industrial soils. Concentrations for arsenic (18.2 mg/kg), benzo (a) anthracene (5,400,000 µg/kg), benzo (a) pyrene (3,300,000 µg/kg), benzo (b) fluoranthene (4,500,000 µg/kg), benzo (k) fluoranthene (5,100,000 µg/kg), chrysene (7,100,000 µg/kg), dibenz (a,h) anthracene (23,000 µg/kg), fluoranthene (16,000,000 µg/kg), and indeno (1,2,3-cd) pyrene (53,000 µg/kg) were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. The concentration of naphthalene (30,000 µg/kg) was above the EPA MSSL level. Results are summarized in Table 2.

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6.2 SOURCE - OIL/WATER SEPARATOR

The oil/water separator is located just northwest and adjacent to the concrete structure (Figure 5). The oil/water separator is a concrete structure and measures approximately five (5) feet across with a center wall at approximately two and a half (2.5) feet (Appendix C). The concrete structure of the oil/water separator is completely covered in creosote soils and contains stagnant water and approximately 5 -10 feet of vegetation to the bottom (Ref. 10, pp. 61- 66 & 76-77; Appendix B, C and J).

6.2.1 Sample Locations

One (1) surface water sample was collected from the oil/water separator. The following sample was collected (Table 4; Figure 5; Appendix B, C and J):

- Location AC04: GPS: 30.831530^{o} N, -93.276990^{o} W
  - Surface water sample number: ACSW04

6.2.2 Sample Results

Analysis of the surface water sample ACSW04 from the oil/water separator detected various SVOCs and metals above the reporting limit such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, cadmium, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenzofuran, fluoranthene, fluorene, iron, lead, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, thallium, vanadium and zinc. Concentrations for 2-methylnaphthalene (110 µg/L), acenaphthene (75 µg/L), arsenic (17.4 µg/L), benzo (a) anthracene (13 µg/L), benzo (a) pyrene (6 µg/L), benzo (b) fluoranthene (7.5 µg/L), benzo (k) fluoranthene (7.9 µg/L), cadmium (10.8 µg/L), chrysene (14 µg/L), dibenzofuran (61 µg/L), fluorene (69 µg/L), lead (258 µg/L), mercury (7.4 µg/L), naphthalene (220 µg/L), pyrene (54 µg/L), thallium (8.6 µg/L), vanadium (34.7 µg/L), and zinc (1,490 µg/L) are detected above the Louisiana RECAP screening levels for groundwater screening standards (Table 4).

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Concentrations for arsenic, benzo (a) pyrene, cadmium, lead, mercury and thallium are above the EPA MCL level. Results are summarized in Table 4.

6.3 SOURCE - UNLINED WASTEWATER POND

The unlined wastewater pond is located just west of the concrete structure (Figure 5). The unlined wastewater pond measures approximately 100 feet x 50 feet, with hardened creosote flanking the pond and adjacent to pond (Ref. 10, p. 67-71 & 77). During the December 2014 preliminary assessment (PA) the depth of the wastewater pond was taken from the southwest corner and measured approximately 8 – 10 inches deep (Ref. 10, p. 77).

6.3.1 Sample Locations

One (1) sediment sample and one (1) surface water sample were collected from the unlined wastewater pond. The following samples were collected (Table 3 & 4; Figure 5; Appendix B, C and J):

- Location AC08: GPS: 30.831326^{o} N, -93.277288^{o} W
    - Surface water sample number: ACSW08
- Location AC08: GPS: 30.831326^{o} N, -93.277288^{o} W
    - Sediment sample number: ACSD08

6.3.2 Sample Results

Analysis of the surface water sample ACSW08 from the unlined wastewater pond detected various SVOCs and metals above the reporting limit such as: acenaphthene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, calcium, chromium, chrysene, cobalt, copper, fluoranthene, iron, lead, manganese, nickel, phenanthrene, pyrene and zinc. Concentrations of the benzo (a) anthracene (15 µg/L), benzo (a) pyrene (8.1 µg/L), benzo (b) fluoranthene (14 µg/L), benzo (k) fluoranthene (15 µg/L), chrysene (16 µg/L) and pyrene (36 µg/L) are detected above the

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Louisiana RECAP screening levels for groundwater screening standards. The concentrations for arsenic (5.9 µg/L) and benzo (a) pyrene (8.1 µg/L) were above the EPA MSSL level. Results are summarized in Table 4.

Analysis of the sediment sample ACSD08 detected numerous SVOCs and metals above the reporting limit and such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, cadmium, carbazole, chromium, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, naphthalene, manganese, mercury, nickel, phenanthrene, pyrene, thallium, vanadium and zinc. Concentrations of 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene acenaphthylene, anthracene, arsenic, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (b) fluoranthene, benzo (k) fluoranthene, cadmium, carbazole, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, lead, naphthalene, mercury, nickel, phenanthrene, pyrene, thallium and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01) (Tables 1 and 3). The concentrations of acenaphthene (6,400,000 µg/kg), fluorene (9,500,000 µg/kg), and pyrene (6,300,000 µg/kg) are above the Louisiana RECAP screening level for industrial soils. Concentrations for 2-methylnaphthalene (9,400,000 µg/kg), benzo (a) pyrene (34,000 µg/kg), benzo (b) fluoranthene (38,000 µg/kg), benzo (k) fluoranthene (38,000 µg/kg), dibenz (a,h) anthracene (3,300 µg/kg), dibenzofuran (7,100,000 µg/kg), fluoranthene (12,000,000 µg/kg), indeno (1,2,3-cd) pyrene (10,000 µg/L) and naphthalene (25,000,000 µg/kg) were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL levels. The concentration for arsenic (4.7 mg/kg) is above the EPA MSSL level. Results are summarized in Table 3.

6.4 SOURCE - RANDOM AREAS OF CREOSOTE SOLIDS AND SOIL CONTAMINATION

Random areas of creosote solids and soil contamination were observed at the site during the PA (Ref. 10, pp. 58-60 & 76-77). This observation confirmed what was reported in 2002 during

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Acadian Engineers & Environmental Consultants environmental site investigation (Ref. 7, pp. 14 & 32).

6.4.1 Sample Locations

Soil samples were collected from six (6) random areas of creosote solids and soil contamination. The two (2) or three (3) soil samples collected from each subsurface soil boring location were segmented at 2 feet or 3 feet intervals. The following samples were collected (Table 2; Figure 5; Appendix B, C and J):

- Location AC03: GPS: 30.831877° N, -93.276937° W
    - Soil sample number: ACS03-02 (0-2 ft bgs)
    - Soil sample number: ACS03-12 (10-12 ft bgs)

- Location AC05: GPS: 30.831562° N, -93.276954° W
    - Soil sample number: ACS05-02 (0-2 ft bgs)
    - Soil sample number: ACS05-25 (2-5 ft bgs)

- Location AC07: GPS: 30.831156° N, -93.277190° W
    - Soil sample number: ACS07-02 (0-2 ft bgs)
    - Soil sample number: ACS07-58 (5-8 ft bgs)
    - Soil sample number: ACS07-10 (8-10 ft bgs)

- Location AC10: GPS: 30.831251° N, -93.277381° W
    - Soil sample number: ACS10-02 (0-2 ft bgs)
    - Soil sample number: ACS10-58 (5-8 ft bgs)
    - Soil sample number: ACS10-10 (8-10 ft bgs)

- Location AC11: GPS: 30.830934° N, -93.277876° W
    - Soil sample number: ACS11-02 (0-2 ft bgs)

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- Soil sample number: ACS11-35 (3-5 ft bgs)
- Soil sample number: ACS11-58 (5-8 ft bgs)

- Location AC26: GPS: 30.831899° N, -93.276848° W
  - Soil sample number: ACS26-06 (0-2 ft bgs)

6.4.2 Sample Results

Analysis of soil sample ACS03 collected along the former railroad spur detected various metals above reporting limits such as: aluminum, arsenic, barium, calcium, chromium, cobalt, copper, iron, lead, manganese, nickel, vanadium and zinc. The concentration of arsenic (3.4 mg/kg) is above the EPA MSSL level. Results are summarized in Table 2.

Analysis of soil sample ACS05 collected east of the oil/water separator detected numerous SVOCS and metals above reporting limits such as: acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, mercury, naphthalene, nickel, phenanthrene, silver, vanadium and zinc. Concentrations of acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, indeno (1,2,3-cd) pyrene, manganese, mercury, naphthalene, nickel, phenanthrene, silver, and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01-02 and ACS01-25) (Tables 1 and 2). Concentrations of benzo (a) anthracene (8,100 µg/kg [0-2 ft bgs]), benzo (a) pyrene (22,000 µg/kg [0-2 ft bgs] and 330 µg/kg [2-5 ft bgs]), benzo (b) fluoranthene (35,000 µg/kg [0-2 ft bgs]), dibenz (a,h) anthracene (10,000 µg/kg [0-2 ft bgs]) and indeno (1,2,3-cd) pyrene (16,000 µg/kg [0-2 ft bgs]) were detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. The

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concentration for arsenic (3.3 mg/kg) was detected above the EPA MSSL level. Results are summarized in Table 2.

Analysis of soil sample ACS07 collected between the wastewater pond and oil/water separator detected numerous SVOCS and metals above reporting limits such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chromium, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, manganese, naphthalene, phenanthrene, pyrene and vanadium are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01-02, ACS01-58 and ACS01-10) (Tables 1 and 2). The concentration of phenanthrene (410 µg/kg [0-2 ft bgs], 900,000 µg/kg [5-8 ft bgs] and 94,000,000 µg/kg 8-10 ft bgs]) was detected above the Louisiana RECAP screening level for industrial soils. Concentrations of 2-methylnaphthalene (240,000 µg/kg [5-8 ft bgs] and 69,000,000 µg/kg [8-10 ft bgs]), acenaphthene (50,000,000 µg/kg [8-10 ft bgs]), benzo (a) anthracene (24,000 µg/kg [0-2 ft bgs], 22,000 µg/kg [5-8 ft bgs] and 140,000 µg/kg [8-10 ft bgs]), benzo (a) pyrene (16,000 µg/kg [0-2 ft bgs], 6,400 µg/kg [5-8 ft bgs] and 60,000 µg/kg [8-10 ft bgs]), benzo (b) fluoranthene (22,000 µg/kg [0-2 ft bgs], 15,000 µg/kg [5-8 ft bgs] and 74,000 µg/kg [8-10 ft bgs]), benzo (k) fluoranthene (58,000 µg/kg [8-10 ft bgs]), chrysene (13,000,000 µg/kg [8-10 ft bgs]), dibenz (a,h) anthracene(5,600 µg/kg [0-2 ft bgs], 2,300 µg/kg [5-8 ft bgs] and 6,800 µg/kg [8-10 ft bgs]), dibenzofuran (160,000 µg/kg [5-8 ft bgs] and 43,000,000 µg/kg [8-10 ft bgs]), fluoranthene (65,000,000 µg/kg [8-10 ft bgs]), fluorene (51,000,000 µg/kg [8-10 ft bgs]), indeno (1,2,3-cd) pyrene (7,800 µg/kg [0-2 ft bgs], 3,700 µg/kg [5-8 ft bgs] and 20,000 µg/kg [8-10 ft bgs]), naphthalene (450,000 µg/kg [5-8 ft bgs] and 140,000,000 µg/kg [8-10 ft

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bgs]) and pyrene (36,000,000 µg/kg [8-10 ft bgs]) were detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized in Table 2.

Analysis of sample ACS10 collected in an area of creosote located south of the wastewater pond detected numerous SVOCs and metals above reporting limits such as: 1,1'-biphenyl, 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzaldehyde, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 1,1'-biphenyl, 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, acenaphthylene, anthracene, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chromium, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, lead, manganese, mercury, naphthalene, phenanthrene, and pyrene, vanadium and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01-02, ACS01-58 and-10) (Tables 1 and 2). The concentrations of acenaphthene (21,000,000 µg/kg [8-10 ft bgs]), anthracene (60,000,000 [8-10 ft bgs]), phenanthrene (63,000,000 µg/kg [8-10 ft bgs]) and pyrene (15,000,000 µg/kg [8-10 ft bgs]) were detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of 2-methylnaphthalene (27,000,000 [8-10 ft bgs]), benzo (a) anthracene (19,000 µg/kg [0-2 ft bgs] and 6,400,000 µg/kg [8-10 ft bgs]), benzo (a) pyrene (13,000 µg/kg [0-2 ft bgs], 1,700 µg/kg [5-8 ft bgs] and 19,000 µg/kg [8-10 ft bgs]), benzo (b) fluoranthene (23,000 µg/kg [0-2 ft bgs], 2,500 µg/kg [5-8 ft bgs], and 21,000 µg/kg [8-10 ft bgs]), dibenz (a,h) anthracene (2,600 µg/kg [0-2 ft bgs], 420 µg/kg [5-8 ft bgs] and 2,200 µg/kg [8-10 ft bgs]), dibenzofuran (9,000,000 µg/kg [8-10 ft bgs]), fluoranthene (28,000,000 µg/kg [8-10 ft bgs]), fluorene (25,000,000 µg/kg [8-10 ft bgs]), indeno (1,2,3-cd) pyrene (8,600 µg/kg [0-2 ft bgs] and 6,700 µg/kg [8-10 ft bgs]) and naphthalene(110,000,000 µg/kg [8-10 ft bgs]) were

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detected above the Louisiana RECAP screening levels for industrial soils and are above the EPA MSSL level. Results are summarized in Table 2.

Analysis of sample ACS11 collected in an area south of the sources along the overland flow pathway detected numerous VOCs and metals above reporting limits such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, bis(2-ethylhexyl)phthalate, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, bis(2-ethylhexyl)phthalate, carbazole, chromium (9.2 mg/kg [5-8 ft bgs]), chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, phenanthrene, pyrene and vanadium are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01-02, ACS01-25 and ACS01-58) (Tables 1 and 2). The concentration of 2-methylnaphthalene (3,800,000 µg/kg [5-8 ft bgs]) was detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of benzo (a) anthracene (38,000 µg/kg [0-2 ft bgs] and 1,400,000 µg/kg [5-8 ft bgs]), benzo (a) pyrene (36,000 µg/kg [0-2 ft bgs] and 14,000 µg/kg [5-8 ft bgs]), benzo (b) fluoranthene (50,000 µg/kg [0-2 ft bgs] and 17,000 µg/kg [5-8 ft bgs]), benzo (k) fluoranthene (49,000 µg/kg [0-2 ft bgs]), dibenz (a,h) anthracene (11,000 µg/kg [0-2 ft bgs]), dibenzofuran (3,300,000 µg/kg [5-8 ft bgs]), fluoranthene (6,100,000 µg/kg [5-8 ft bgs]), indeno (1,2,3-cd) pyrene (18,000 µg/kg [0-2 ft bgs] and 5,800 µg/kg [5-8 ft bgs]) and naphthalene (6,000,000 µg/kg [5-8 ft bgs]) were detected above the Louisiana RECAP screening levels for industrial soils and are above the EPA MSSL level. The concentration of arsenic (3.1 mg/kg [0-2 ft bgs] and 2 mg/kg [3-5 ft bgs]) was detected above EPA MSSL level. Results are summarized in Table 2.

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Analysis of sample ACS26 collected from a creosote pile detected numerous SVOCs and metals above reporting limits such as: 2-methylnaphthalene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, iron, lead, magnesium, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 2-methylnaphthalene, anthracene, acenaphthylene, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, calcium, carbazole, chrysene, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, lead, magnesium, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01) (Tables 1 and 2). Concentrations of benzo (a) anthracene (16,000 µg/kg), benzo (a) pyrene (16,000 µg/kg), benzo (b) fluoranthene (26,000 µg/kg), and dibenz (a,h) anthracene (3,200 µg/kg) were detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. The concentration of benzo (k) fluoranthene (24,000 µg/kg) was detected above the EPA MSSL level. Results are summarized in Table 2.

7 MIGRATION/EXPOSURE PATHWAYS AND RECEPTORS

The following subsections describe migration pathways and potential receptors within the site's range of influence. This section discusses the groundwater migration pathway, the surface water migration pathway, the soil exposure pathway, and the air migration pathways.

7.1 GROUNDWATER MIGRATION PATHWAY

The Groundwater Migration Pathway assesses the potential for suspected contamination in the underlying aquifers. The primary emphasis of the groundwater migration pathway is the identification of drinking water wells and the aquifers that they draw from. The target distance

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limit (TDL) for the groundwater migration pathway is a 4-mile radius that extends from the sources at the site. Figure 6 depicts the groundwater 4-mile TDL.

7.1.1 Geologic Setting

Regional surface geology in Beauregard Parish is categorized by four physiographic areas (Ref. 18, p. 215). These are the early Pleistocene high terraces which make up the majority of the land area and are on level to nearly level uplands on the broad interfluve divides, on gently sloping uplands on narrow divides, and on moderately sloping uplands in areas that have maturely dissected streams; the middle Pleistocene intermediate terraces that are on very gently sloping to moderately steep uplands, that rest on top of superpose the high terraces; the late Deweyville terraces are located in western Beauregard Parish flanking the Sabine River and in the eastern sector of the parish flanking Bundick Creek; and the Holocene alluvial valleys on the flood plains of the Sabine River and smaller streams of Beauregard Parish(Ref. 18, p. 215 - 216). The total associated surface cover of terraces is about 16% and is composed of the Intermediate Terraces along with Prairie Terraces, High Terraces and the Deweyville Terraces, and consisting of clay or mud, silt, sand, and gravel. The alluvium surface covers about 8% of Beauregard Parish and is composed of clay or mud, sand, gravel and silt (Ref. 36).

The site is located over the Quaternary Bentley Formation (Ref. 5, p. 62). The Bentley Formation is comprised of approximately 50 feet of clay and silt which overlies large beds of sand and gravel (Ref. 5, p.62). The Bentley Formation is underlain by the Williana Formation (Ref. 5, p. 62). The shallow geology of the site consists primarily of silty clay and clayey silt from zero (0) to seven (7) feet bgs which overlies a silty clayey sand, silty sand or sand zone (Ref. 5, p. 62).

Beauregard Parish, Louisiana is located within the Gulf Coast Plain Physiographic Province (Ref. 20, p. 7). The area is underlain by thick multilayered sequences of unconsolidated sedimentary deposits that alternative among gravel, sand, silt and clay that a have a predominant dip to the south (Ref. 20, p. 7). Areal extensive zones of gravel and sand deposits,

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which form productive aquifers units, and the adjoining silt and clay deposits, which form confining units, are designated as the Chicot Aquifer system (Ref. 20, p. 7).

The soils within the Parish are classified as the Beauregard series and consist of very deep, moderately well drained, slowly permeable soils that formed in loamy alluvial sediments of the Pleistocene age. The soils are on a broad, nearly level and gently sloping Coastal Plain. They are saturated for short periods of time during winter and early spring, with a mean annual precipitation from 45 to 60 inches. The annual average rainfall in Beauregard Parish is 57.2 inches. Water runs off the surface at a slow to medium rate, and permeability is slow. The slope of the soil is predominantly 1 to 3 percent, but ranges from 0 to 5 percent (Ref. 21, p. 167-169; Ref. 22. p. 12-16).

7.1.2 Aquifer System

Beauregard Parish is endowed with a large quantity of good quality water, because of its accessibility and widespread distribution; groundwater is the predominant source of supply (Ref. 21, p. 14). The American Creosote DeRidder site lies above the Chicot Aquifer. The Chicot Aquifer system extends from eastern Texas to the Atchafalaya River and is the principal aquifer system of southwest Louisiana. In Beauregard Parish the Chicot aquifer is composed of two sand units, the shallow upper sands and the lower undifferentiated sands, and contains freshwater (Ref. 23, p. 2). The shallow, upper sands aquifer is present within a superficial clayey confining unit. The unit generally ranges in thickness from 40 feet in the north to 120-160 feet in the southwestern areas of the parish (Ref. 23, p. 2). The shallow sand is composed of scattered sand streaks and lenses, and layers that provide water for domestic purposes (Ref. 23, p. 2).

The lower undifferentiated sand unit of the Chicot Aquifer is present throughout Beauregard Parish and is the primary component of the aquifer within the parish (Ref. 23, p. 2). The lower undifferentiated unit is composed of beds of clay, silt, sands and gravel (Ref. 23, p. 2). The altitude of the base of the undifferentiated aquifer unit ranges from 0 feet below National Geodetic Vertical Datum (NGVD) 29 near the town of Deridder to about 400-500 feet below

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NGVD 29 along the southern parish line (Ref. 23, p. 2). The approximate base of the fresh groundwater within the Chicot Aquifer within Beauregard Parish is 1,000 feet to over 3,000 feet below the land surface (Ref. 23, p. 2). A properly designed well in Beauregard Parish can produce 1,500 gallons per minute (Ref. 21, p. 14).

In Beauregard Parish, wells screened in shallow sands are clustered in the DeRidder area (Ref. 20, p. 18). Well screens for all the shallow wells are less than 50 feet deep (Ref. 20, p. 18, Fig. 7, p. 21). Well screen depths range from 14 to 46 feet, with a mean depth of 34 feet (Ref. 20, p. 18, Fig. 7, p. 21, Table 1, p.16). Well logs in Beauregard Parish have a dispersed areal distribution Ref. 20, p. 18). Less than ten logs, mostly from wells located in the western half of the parish, indicate that shallow sands are present (Ref. 20, p. 18, Fig. 7, p. 21). The scarcity of shallow wells and well logs with shallow sands may indicate that shallow sands have a limited presence in the confining unit in Beauregard Parish (Ref. 20, p. 18).

The primary source of recharge of the lower undifferentiated unit of the Chicot Aquifer is from infiltration of precipitation in southern Vernon Parish and the northern half of Beauregard Parish (Ref. 23, p. 2). Secondary sources of recharge for the aquifer are from vertical leakage of water through clays (Ref. 23, p. 2). Water movement within the undifferentiated unit of the Chicot Aquifer in Beauregard Parish is generally southward from the recharge area or westward toward the Sabine River (Ref. 23, p. 2).

In 2005, about 30.6 million gallons per day (Mgal/d) of water was withdrawn from the Chicot Aquifer, including about 30.4 Mgal/d from groundwater and 0.1 Mgal/d from surface water (Ref. 23, p.1). Water withdrawn from the Chicot Aquifer within Beauregard Parish from groundwater resources is for industrial use, primarily for wood products, which accounted for approximately 72% of the total water removed (Ref. 23, p.1). Other sources of aquifer water use included public supply, rural domestic, livestock, irrigation and aquaculture (Ref. 23, p.1). A limited groundwater investigation occurred in 2005 with temporary monitoring wells, and seven contaminants of concern were identified: benzo(a)anthracene, benzo(a)pyrene,

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benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene and indo(1,2,3-cd)pyrene (Ref. 5, p. 87).

7.1.3 Drinking Water Receptors

A water well survey, within a 4-mile radius of the American Creosote site was conducted by START-3 utilizing the Louisiana Department of Natural Resources (LDNR) website (Ref. 24). The 4-mile water radius was constructed using the coordinates of the site entrance off Post Plant Road as a center (Figure 6). START-3 has identified that groundwater within the 4-mile radius of the site is used for the following purposes: as a public water supply, as a private drinking water source, for irrigation, for livestock, for heat pumps and for industrial supply (Ref. 23, p. 1; Ref. 24, pp. 6-14).

Domestic Drinking Water Receptors

According to the LDNR water well database, a total of 121 active domestic drinking water wells are located within the 4-mile radius (Ref. 24, pp. 6-14). There are two (2) active domestic water wells within the one mile radius, 26 active domestic water wells located within the two mile radius, 38 active domestic water wells located within the three mile radius and 55 active domestic water wells located within the 4-mile TDL of the facility (Ref. 24, pp. 6-14). Domestic or private water wells within the 4-mile radius include 105 wells drawing from the Chicot aquifer and 1 well drawing from the Evangeline aquifer (Ref. 24, pp. 6-14). Aquifers are not designated for 15 wells; however depths indicate that most of these wells are completed in the Chicot aquifer (Ref. 24, pp. 6-14). The domestic or private water wells range from 11 feet - 273 feet bgs, with water levels ranging between 0 – 80 feet bgs (Ref. 24, pp. 6-14). The average population per household in Beauregard Parish is 2.67 (Ref. 25, p .1).

Public Drinking Water Receptors

Two (2) of the three (3) municipal public supply wells and one (1) rural public supply well registered by the City of DeRidder, two (2) commercial public supply wells one (1) registered by

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Be Funeral Home and one (1) registered by J. L. Laurent, and one (1) registered rural public supply well owned by Green Acre Water are reported to be completed in the Chicot aquifer, at depths of 157 to 203 feet bgs (Ref. 24, pp. 6-14). An aquifer is not designated for one (1) City of DeRidder municipal public supply well (Ref. 24, pp. 6-14). The population for the City of DeRidder, Louisiana is 10,793 (Ref. 26, p. 1) and per Roy Keen, Water Plant Supervisor at the City Of DeRidder, the public supply wells for the City of DeRidder serve a population of approximately 12,000 (Ref. 27. p. 1).

Resource Usage

The LDNR water well survey indicates the presence of nine (9) registered irrigation wells, eight (8) registered heat pump holes, five (5) registered wells for industrial chemical manufacturing, two (2) registered wells for livestock, one (1) registered well for industrial use, and one (1) registered well for aquaculture (Ref. 24, pp. 6-14). Seventeen (17) registered resource use wells are screened in the Chicot Aquifer and one (1) in the Jasper Aquifer system within a 4-mile radius of the American Creosote Deridder site (Ref. 24, pp. 6-14). Eight (8) registered, active resource wells indicated as heat pump holes have “no well made” listed as the aquifer (Ref. 24, pp. 6-14).

Wellhead Protection Areas

The City of DeRidder and Beauregard Parish water system are located within a State approved wellhead protection area (Ref. 28, p.1).

7.1.4 Sample Locations and Results

Off-Site Monitor Wells

START collected groundwater from three (3) existing off-site monitor wells owned by BNSF Railroad. The existing off-site monitor wells are all located west of the property along the railroad ROW, along the railroad spur used by Timber Rock Railroad (Watco Companies) (Figure 5; Appendix F).

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Sample ACGW21 was collected from Monitor Well (MW) 1, and is located down gradient of former site activities, just north of the culvert/ditch. The GPS coordinate for location AC21 is 30.830347^{O} north latitude, -93.278253^{O} west longitude (Appendix E). The sample did not contain SVOCs detected above the reporting limits. The metals detected above the corresponding reporting limits included: arsenic, barium, calcium, chromium, iron, manganese and zinc. Concentrations of metals detected in sample ACSW21 were below the Louisiana RECAP screening levels for groundwater. The concentration of arsenic (1.1 µg/L) was detected above the EPA MSSL level. Results are summarized in Table 4.

Sample ACGW22 was collected from MW 2 located down gradient of former site activities. The GPS coordinate for location AC22 is 30.830874^{O} north latitude, -93.277789^{O} west longitude (Appendix E). The sample did not contain SVOCs detected above the reporting limits. Various metals were detected in the sample above reporting limits such as: aluminum, arsenic, barium, chromium, cobalt, iron, lead, manganese, nickel and zinc. The concentrations of metal detected in sample ACGW22 were below the Louisiana RECAP screening levels for groundwater. The concentration of arsenic (2.9 µg/L) was detected above the EPA MSSL level. Results are summarized in Table 4.

Sample ACGW23 was collected from MW 3 located on the west side of the railroad tracks. The GPS coordinate for location AC23 is 30.830678^{O} north latitude, -93.278152^{O} west longitude (Appendix E). Analysis of the groundwater sample collected from MW3 detected numerous SVOCs and metals above the corresponding reporting limits such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, aluminum, barium, calcium, dibenzofuran, diethylphthalate, fluorene, iron, manganese and naphthalene. Concentrations of 2-methylnaphthalene (20 µg/L), dibenzofuran (12 µg/L) and naphthalene (110 µg/L) were detected above the Louisiana RECAP screening levels for groundwater. Results are summarized in Table 4.

Domestic Wells

No domestic wells were sampled during the SI.

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7.2 SURFACE WATER MIGRATION PATHWAY

The surface water migration pathway TDL begins at the probable point of entry (PPE) of surface water runoff from the site to a surface water body and extends downstream for 15 miles. Figure 7 depicts the surface water 15-mile TDL.

The surface water migration pathway, overland/flood migration component assesses the potential for suspected contamination in perennial surface water bodies identified as part of the 15-mile downstream TDL. Identified perennial surface water bodies include streams, rivers, lakes, coastal tidal water and oceans. The pathway takes into account such factors as distance to the overland flow segment, the nearest surface water, flood frequencies, drainage area, surface soil type(s), the 2-year, 24-hour rainfall, the size of the source(s) being evaluated, the chemical constituents associated with the sources, and the associated surface water receptors identified within the 15-mile downstream TDL. Surface water migration pathway receptors include the location of the nearest drinking water intakes and associated population (Drinking Water Threat), fisheries and the consumption of aquatic human food chain organisms (Human Food Chain Threat), and sensitive environments (Environmental Threat) (Ref. 1-3). Figure 7 depicts the surface water 15-mile TDL.

7.2.1 Overland Route

Surface runoff from the site flows south along the western property boundary lateral to the railroad tracks, then through a culvert westerly under the railroad tracks, then follows a pathway southwesterly off site to Crosby Road, runoff then flows south approximately 0.60 miles to Palmetto Creek, the probable point of entry (PPE) into surface water. From Palmetto Creek the water flows southeasterly and merges into Bundick Creek. The 15-mile TDL ends in Bundick Creek. The two-year, 24-hour rainfall for the area of the site is approximately 5.0 – 5.5 inches (Ref. 29, p. 22, Fig. 6.1).

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According to the US Department of Agriculture (USDA), Web Soil Survey, four major soil classification types exist at the site (Ref. 22, p. 8). The four major soil classification types are Beauregard silt loam (BdB), Guyton silt loam (GtA), Malbis fine sandy loam (MbB) and the Malbis fine sandy loam (MbC) (Ref. 22, p. 10). The soil compromising the majority and present throughout the site is the BdB. Slope characteristics of the BdB soil is 1 to 3 percent and is moderately well drained (Ref. 22, p. 10). The depth to restrictive features is more than 80 inches (Ref. 22, p. 12). Generally, the depth to water table characteristics of the soil type is about 18 to 36 inches (Ref. 22, p. 12). The available water capacity characteristic is very high, about 12.6 inches (Ref. 22, p. 12). The typical Beauregard silt loam profile is 0 to 75 inches: silt loam; and 75 to 90 inches: silty clay loam (Ref. 22, p. 12).

The soil compromising a central oblong portion of the area of interest (AOI) is the MbB (Ref. 22, p. 8). Slope characteristics of the soil are 1 to 3 percent and are moderately well drained (Ref. 22, p. 14). The depth to restrictive features is more than 80 inches (Ref. 22, p. 14). Generally, the depth to the water table characteristic of the soil type is about 30 to 48 inches, and the available water capacity characteristic is very high, about 12.3 inches (Ref. 22, p. 14). The typical MbB profile is 0 to 30 inches: silt loam; and 30 to 74 inches: silty clay loam (Ref. 22, p. 14).

The soil compromising a small orbicular section along the south-western edge of the property, and adjacent to the railroad ROW of the AOI is compromised of the MbC and GtA (Ref. 22, p. 8). Slope characteristics of the MbC soil is 3 to 5 percent and are moderately well drained, and the GtA is occasionally flooded and is poorly drained (Ref. 22, pp. 13 & 16). The depth to restrictive features is more than 80 inches (Ref. 22, pp. 13 & 16). Generally, the depth to the water table characteristic of the soil type is 30 to 48 inches for the Malbis fine sandy loam and 0 to 18 inches for the Guyton silt loam (Ref. 22, pp. 13 & 16). The available water capacity characteristic is moderate in the Malbis fine sandy loam (about 8.3inches) and very high in the Guyton silt loam (about 12.3 inches) (Ref. 22, pp. 13 & 16). The typical Malbis fine sandy loam

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profile is 0 to 8 inches: fine sandy loam; 8 to 18 inches: loam; and 18 to 62 inches: clay loam, while a typical Guyton silt loam profile is 0 to 30 inches: silt loam; and 30 inches to 74 inches: silty clay loam (Ref. 22, pp.13 & 15).

Palmetto Creek, which lies approximately 0.60 miles south, is a flooding source for the American Creosote DeRidder site. Palmetto Creek is designated by the Flood Insurance Rate Map (FIRM) as flood zones A and AE, and considered a Special Flood Hazard Area (SFHA) (Ref. 30). The SFHA is an area that would be inundated by flooding having a one (1) percent chance of being equaled or exceeded base flood level in any given year (Ref. 30). Based on observations during the site reconnaissance, there are no containment features that would prevent or contain a release in the event that the site becomes flooded (Ref. 10, pp. 56-57 & 73).

7.2.1.1 Sample Locations and Results

Soil and sediment samples were collected from three locations along the culvert/ditch located south of former site activities (Figure 5). Sediment sample location AC12 and soil sample location AC13 were collected just north of the culvert/ditch along the railroad ROW at the 0 - 2 and 2 -4 feet interval, and soil sample location AC14 was collected on site along the culvert/ditch at the 0 - 2 feet and 2 - 5 feet interval. The GPS coordinate for sediment sample location AC12 is 30.830321^{O} north latitude, -93.278269^{O} west longitude, soil sample location AC13 is 30.830901^{O} north latitude, -93.277941^{O} west longitude and soil sample location AC14 is 30.830251^{O} north latitude, -93.278068^{O} west longitude (Appendix E).

Analysis of the sediment sample ACSD12 from the location just north of the culvert/ditch along the railroad ROW detected various SVOCs and metals above the reporting limit such as: 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, carbazole, chromium, chrysene, copper, dibenz (a,h) anthracene, dibenzofuran, di-n-butylphthalate, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of

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2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenz (a,h) anthracene, dibenzofuran, di-n-butylphthalate, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene, and pyrene are all reported above reporting limits and three times the concentration in background sediment levels (Table 3). The concentrations of benzo (a) anthracene (4,600 µg/kg), benzo (a) pyrene (2,200 µg/kg), benzo (b) fluoranthene (3,900 µg/kg), dibenz (a,h) anthracene (2,000 µg/kg) and indeno (1,2,3-cd) pyrene (4,100 µg/kg) are detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized in Table 3.

Analysis of soil samples ACS13 from the location just north of the culvert/ditch along the railroad ROW detected various SVOCs and metals above the reporting limit such as: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, carbazole, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 1,1'-biphenyl , 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, copper, dibenz (a,h) anthracene, dibenzofuran, fluorene, indeno (1,2,3-cd) pyrene, manganese, mercury, naphthalene, phenanthrene, pyrene and zinc are all reported above reporting limits and three times the concentration in background sediment levels (Background Sample ACS01-02 and ACS01-25) (Table 1 and 2). The concentrations of 2-methylnaphthalene (1,000,000 µg/kg [2-4 ft bgs]), dibenzofuran (510,000 µg/kg [2-4 ft bgs]), were detected above the Louisiana RECAP screening levels for industrial soils. The concentrations of benzo (a) anthracene (13,000 µg/kg [0-2 ft bgs], 140,000,000 µg/kg [2-4 ft bgs]), benzo (a) pyrene (20,000 µg/kg [0-2ft bgs], 220,000,000 µg/kg [2-4 ft bgs]), benzo (b) fluoranthene (23,000 µg/kg [0-2ft bgs], 270,000,000 µg/kg [2-4 ft bgs]), benzo (k) fluoranthene (23,000 µg/kg [0-2 ft bgs], 250,000,000 µg/kg [2-4 ft

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bgs]), chrysene (180,000,000 µg/kg [2-4 ft bgs]), dibenz (a,h) anthracene (2,400 µg/kg [0-2 ft bgs], 55,000,000 µg/kg [2-4ft bgs]), indeno (1,2,3-cd) pyrene (8,700 µg/kg [0-2 ft bgs], 92,000,000 µg/kg [2-4 ft bgs]), naphthalene (2,000,000 µg/kg [2-4 ft bgs]) and pyrene (170,000,000 µg/kg [2-4 ft bgs]) are detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized in Table 2.

Analysis of soil samples ACS14 from the location on site along the culvert/ditch detected various SVOCs and metals above the reporting limit such as: 1,1'-biphenyl, 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzaldehyde, benzo (a) anthracene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, cadmium, calcium, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, mercury, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of 1,1'-biphenyl, 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, acenaphthylene, anthracene, arsenic, benzaldehyde, benzo (a) anthracene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, cadmium, chrysene, copper, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, lead, manganese, mercury, naphthalene, phenanthrene, pyrene and zinc are all reported above reporting limits and three times the concentration in background soil levels (Background Sample ACS01-02 and ACS01-25) (Table 1 and 2). The concentrations of acenaphthene (17,000,000 µg/kg [0-2 ft bgs], 19,000,000 µg/kg [2-5 ft bgs]) and phenanthrene (93,000,000 µg/kg [0-2 ft bgs], 110,000,000 µg/kg [2-5 ft bgs) were detected above the Louisiana RECAP screening levels for industrial soils. The concentrations of 2-methylnaphthalene (12,000,000 µg/kg [2-5 ft bgs]), 3,3'-dichlorobenzidine (12,000 µg/kg [2-5 ft bgs]), benzo (a) anthracene (19,000,000 µg/kg [0-2 ft bgs], 12,000,000 µg/kg [2-5 ft bgs]), benzo (b) fluoranthene (23,000,000 µg/kg [0-2 ft bgs], 6,400,000 µg/kg [2-5 ft bgs]), benzo (k) fluoranthene (13,000,000 µg/kg [0-2 ft bgs], 7,400,000 µg/kg [2-5 ft bgs]), chrysene (21,000,000 µg/kg [0-2 ft bgs], 12,000,000 µg/kg [2-5 ft bgs]), dibenz (a,h) anthracene (34,000 µg/kg [0-2 ft bgs], 20,000 µg/kg [2-5 ft bgs]), dibenzofuran (11,000,000 µg/kg [0-2 ft bgs],16,000,000 µg/kg [2-5 ft bgs]), fluoranthene

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(110,000,000 µg/kg [0-2 ft bgs], 64,000,000 µg/kg [2-5 ft bgs]), fluorine (24,000,000 µg/kg [0-2 ft bgs], 28,000,000 µg/kg [2-5 ft bgs]), indeno (1,2,3-cd) pyrene (61,000 µg/kg [0-2 ft bgs], 46,000 µg/kg [2-5 ft bgs]), naphthalene (6,100,000 µg/kg [0-2 ft bgs], 28,000,000 µg/kg [2-5 ft bgs]) and pyrene (53,000,000 µg/kg [0-2 ft bgs], 37,000,000 µg/kg [2-5 ft bgs]) are detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. The concentration of arsenic (8.2 mg/kg [0-2 ft bgs], 4.9 mg/kg [2-5 ft bgs]) was detected above the EPA MMSL level. Results are summarized in Table 2.

A down gradient sediment sample, ACSD15, was collected southwest of the site boundary of the property. The GPS coordinate for location AC15 is location 30.827576^{O} north latitude, --93.280338^{O} west longitude (Appendix E).

Analysis of the sediment sample ACSD15 from the location southwest of the site boundary of the property detected various SVOCs and metals above the reporting limit such as: 2 – methylnaphthalene, acenaphthene, acenaphthylene, aluminum, anthracene, arsenic, barium, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, calcium, chromium, chrysene, cobalt, copper, dibenz (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, iron, lead, manganese, naphthalene, nickel, phenanthrene, pyrene, vanadium and zinc. Concentrations of acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene), benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, indeno (1,2,3-cd) pyrene and pyrene are all reported above reporting limits and three times the concentration in background sediment (Table 3). The concentration of benzo (a) pyrene (970 µg/kg) was detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Concentrations of benzo (a) anthracene (2,700 µg/kg) and dibenz (a,h) anthracene (250 µg/kg) were detected above the EPA MSSL level. Results are summarized in Table 3.

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7.2.2 Drinking Water Receptors

Surface water is not utilized for public water supply in the City of DeRidder or Beauregard Parish (Ref. 23, p. 5). The water from the 15-mile TDL of the Palmetto Creek and Bundick Creek is not being used as a drinking water resource.

Surface water in the City of DeRidder and Beauregard Parish is limited and underdeveloped because the majority of the parish is in the headwaters of the Calcasieu River Basin and small basins draining to the Sabine River (Ref. 21, p.14). Headwaters and small basins produce small flows with little potential for development of large surface water resources (Ref. 21, p.14). The surface water that is withdrawn from miscellaneous streams in Beauregard Parish is used for general irrigation and livestock (Ref. 23, p.5).

7.2.2.1 Sample Locations and Results

No samples were collected from drinking water receptors.

7.2.3 Human Food Chain Receptors

Fishing is common along Palmetto Creek and Bundick Creek, and recreational fishing is likely to exist (Ref. 31, p. 1). The information of the pounds of human food chain organisms caught for consumption is not known, however, it is assumed that at least 24 pounds or more are consumed annually within the 15-mile TDL (Ref. 32, p. 4).

7.2.3.1 Sample Locations and Results

No samples were collected from human food chain receptors.

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7.2.4 Environmental Receptors

According to the Louisiana Department of Wildlife and Fisheries, there are one (1) species of bird (red-cockaded woodpecker – *Picoides borealis*) and one (1) species of plant (American chaff seed – *Schwalbea americana*) that are either federally or state-designated endangered or threatened species in Beauregard Parish (Ref. 33, p. 3). The location of the critical habitats for these designated endangered or threatened species has not been identified at this time. There are no species of fish that is either federally or state-designated endangered or threatened in Beauregard Parish (Ref. 33, p. 3).

Freshwater forested and shrub wetland are present approximately one mile south of the site along Palmetto Creek and Bundick Creek within the TDL (Figure 7, Ref. 34, p. 4).

7.2.4.1 Sample Locations and Results

No samples were collected from environmental receptors.

7.3 SOIL EXPOSURE PATHWAY

The Soil Exposure Pathway assesses the threat to human health and the environment by direct exposure to hazardous substances and areas of suspected contamination. This pathway takes into account potential contact with in-place hazardous substances at a site, rather than the migration of substances from the site (Ref. 1). The following subsections will describe the various details associated with this pathway.

Likelihood of exposure is concerned with areas of suspected contamination and is not limited to soil, but any sources, areas of contamination or other material on the surface that can be considered as areas of suspected contamination.

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7.3.1 Site Setting and Exposed Sources

The 55-acre American Creosote DeRidder site ceased operations as a creosote treatment facility by 1957 and has remained dormant to present-day. Areas of random contaminated soil at the surface were noted during the December 8, 2014 reconnaissance site visit. The amount and extent of contaminated soil on site is not known at this time due to the extensive pine forest and thick shrub overgrowth on site. Access to the site is not restricted, with vehicular access being difficult due to the amount of pine forest and thick shrub overgrowth covering the site, but this does not restrict pedestrian access (Figure 2; Ref. 10, pp. 56, 57, 73 & 75 – 80).

7.3.2 Receptors

The site is currently inactive and there are no residences within 200 feet of suspected areas of contamination (Figure 1 and 2). No terrestrial resource usage (commercial agriculture, commercial silviculture, or commercial livestock grazing/production) has been documented within the site or within 200 feet of the site (Figure 1 and 2). The nearest resident is located approximately 0.3 miles east of the concrete structure area. Residential communities are located northeast, east and southeast of the site (Figure 2). Census data indicate that 29 people reside within the 0.25-mile radius, 392 people are located within the 0.25 to 0.50 mile radius, and 1,408 people are located within the 0.50 to 1.0-mile radius (Ref. 35, p. 5).

7.3.2.1 Sample Locations and Results

Soil samples were collected from 10 borings in areas where the former railroad spur was previously located, oil/water separator, concrete structure, and wastewater pond are located, from random areas of creosote solids and soil contamination, and from a background location (Figure 5; Tables 1 & 2).

Subsurface soil samples were collected using a direct push device to penetrate the surface and extended to a maximum depth of 15 feet bgs, or until groundwater was encountered (Appendix J). Soils in the cores were screened visually and with a photo-ionization detector (PID) on a

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RAE systems MultiRAE, those increments of the cores with the highest readings were selected for analysis. Stainless steel spoons were used to transfer the soil from the cores into the sample containers. Analytical results of the soil samples collected from 10 locations within the 15 foot soil horizon include:

- ACS03-02 (0-2 ft bgs) - The concentration of arsenic was detected above the EPA MSSL level. Results summarized in Table 2 and in Section 6.4.2.
- ACS03-12 (10-12 ft bgs) - No analytes were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized in Table 2 and in Section 6.4.2.
- ACS05-02 (0-2 ft bgs) – Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized in Table 2 and in Section 6.4.2.
- ACS05-25 (2-5 ft bgs) - Concentrations of benzo (a) pyrene were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized in Table 2 and in Section 6.4.2.
- ACS07-02 (0-2 ft bgs) - Concentrations benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene, were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS07-58 (5-8 ft bgs) - Concentrations of 2-methylnaphthalene and dibenzofuran were detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, , indeno (1,2,3-cd) pyrene and naphthalene are above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS07-10 (8-10 ft bgs) - Concentrations of acenaphthene and phenanthrene were detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of 2-methylnaphthalene, benzo (a) anthracene, benzo (a) pyrene, benzo

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(b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, and pyrene are above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.

- ACS10-02 (0-2 ft bgs) - Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS10-58 (5-8 ft bgs) - Concentrations of benzo (a) pyrene and dibenz (a,h) anthracene were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. The concentration of benzo (b) fluoranthene was detected above the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS10-10 (8-10 ft bgs) - Concentrations of acenaphthene, anthracene, phenanthrene and pyrene were detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of 2-methylnaphthalene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene and naphthalene are above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS11-02 (0-2 ft bgs) - Concentrations benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. The concentration of arsenic was detected above the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS11-35 (3-5 ft bgs) – No analytes were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.
- ACS11-58 (5-8 ft bgs) – The concentrations of 2-methylnaphthalene was detected above the Louisiana RECAP screening levels for industrial soils. Concentrations of benzo (a)

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anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenzofuran, fluoranthene, indeno (1,2,3-cd) pyrene and naphthalene were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.

- ACS13-02 (0-2 ft bgs) – Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene are detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. The concentration of benzo (k) fluoranthene was detected above the EPA MSSL level. Results are summarized on Table 2 and in Section 7.2.1.1.
- ACS13-24 (2-4 ft bgs) – The concentration of 2-methylnaphthalene and dibenzofuran are detected above the Louisiana RECAP screening level for industrial soils. Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene are detected above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized on Table 2 and in Section 7.2.1.1.
- ACS14-02 (0-2 ft bgs) – The concentration of acenaphthene and phenanthrene were detected above the Louisiana RECAP screening level for industrial soils. The concentration of arsenic was detected above the EPA MSSL level. Concentrations of benzo (a) anthracene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene are above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized on Table 2 and in Section 7.2.1.1.
- ACS14-25 (2-5 ft bgs) – The concentration of acenaphthene, and phenanthrene were detected above the Louisiana RECAP screening level for industrial soils. The concentration of arsenic was detected above the EPA MSSL level. Concentrations of 2-methylnaphthalene, 3,3'-dichlorobenzidine, benzo (a) anthracene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran,

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fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene are above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized on Table 2 and in Section 7.2.1.1.

- ACS19-58 (5-8 ft bgs) – The concentration of phenanthrene was detected above the Louisiana RECAP screening level for industrial soils. The concentration of benzo (k) fluoranthene was above the EPA MSSL level. The concentration of 2-methylnaphthalene, acenaphthene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene are above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized on Table 2.
- ACS19-10 (8-10 ft bgs) – The concentration of fluorene was detected above the Louisiana RECAP screening level for industrial soils. The concentration of 2-methylnaphthalene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, , dibenz (a,h) anthracene, dibenzofuran, fluoranthene, indeno (1,2,3-cd) pyrene and naphthalene are above the Louisiana RECAP screening levels for industrial soils and above the EPA MSSL level. Results are summarized on Table 2.
- ACS25-06 (0-2 ft bgs) – The concentration of naphthalene was detected above EPA MSSL level. Concentrations for arsenic, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, fluoranthene and indeno (1,2,3-cd) pyrene and pyrene are detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. Results are summarized on Table 2 and in Section 6.1.2.
- ACS26-06 (0-2 ft bgs) - Concentrations of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene and dibenz (a,h) anthracene and were detected above the Louisiana RECAP screening levels for industrial soils and the EPA MSSL level. The concentration of arsenic and benzo (k) fluoranthene was detected above the EPA MSSL level. Results are summarized on Table 2 and in Section 6.4.2.

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7.4 AIR MIGRATION PATHWAY

The Air Migration Pathway assesses the threat to human health and the environment through the threat of airborne releases of hazardous substances. The air migration pathway TDL is a 4-mile radius that extends from sources at the site (Figure 8).

7.4.1 Human Receptors

The site is the previous location of a creosote treatment plant which closed in 1957 (Ref. 7, p. 8). The potentially contaminated soils at the site are covered with heavy overgrowth of pine forest and shrub (Ref. 10, p. 27). Due to the thickness and amount of vegetative overgrowth on site the extent and amount of soil contamination is unknown at this time (Ref. 10, p.27).

The nearest resident is located approximately 0.3 miles east of the concrete structure area. Residential communities are located to the northeast, east and southeast of the site (Figure 2). Missouri Census Data indicate that 29 people reside within the 0.25-mile radius, 392 people are located within the 0.25 to 0.50 mile radius, 1,408 people are located within the 0.50 to 1.0 mile radius, 4,698 people are located within the 1.0 to 2.0 mile radius, 4,542 people are located within the 2.0 to 3.0 mile radius and 3,623 people are located within the 3.0 to 4.0-mile radius (Ref. 35, p. 5).

7.4.2 Environmental Receptors

Freshwater forested and shrub wetland acreage is located approximately one mile south of the site along Palmetto Creek (Ref. 34, p. 4) within the 4-mile TDL for the air migration pathway (Figure 8). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin (Ref. 7, p.7). The site is currently void of operations and consists of heavy timber and thick shrub overgrowth. It is not currently known if a release of material attributable to the facility can be documented.

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8 SUMMARY AND CONCLUSIONS

The American Creosote DeRidder site is a 55-acre property in DeRidder, Beauregard Parish, Louisiana that was used for the pressure treatment of wood from the early 1920's to approximately 1945. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957. From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992, who planned heavy industrial/commercial use. Since 1957 the property has remained inactive and currently void of any operations.

From June 8, 2015 through June 13, 2015, START collected a total of 25 samples, to include 3 background samples (1 subsurface soil, 1 sediment, 1 groundwater), and 3 field blanks were also collected during the sampling event. Soil samples were collected from 10 borings and from a background location at up to 15 feet bgs to identify source material and contamination at the site, groundwater was collected from 3 locations to assess the migration of contamination in the groundwater pathway, and 3 surface water samples and 4 sediment samples were collected to assess the migration of contamination in the surface water pathway.

Samples were shipped to the designated CLP Laboratory's for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metal/mercury chemical analysis. Organic analyses were performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis were performed by Chemtech Consulting Group located in Mountainside, New Jersey

Samples were submitted to KAP Technologies Inc. located in The Woodlands, Texas for the following analysis:

- TCL SVOAs by EPA CLP SOM02.2:
    - 3 – surface water samples;
    - 4 – sediment samples;

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- 3 - groundwater samples; and
- 27– soil samples, including QA/QC samples

Samples were submitted to Chemtech Consulting Group located in Mountainside, New Jersey for the following analysis:

- TAL Total Metals + Mercury by EPA ISM02.2:
  - 3 – surface water samples;
  - 4 – sediment samples;
  - 3 - groundwater samples; and
  - 27 – soil samples, including QA/QC samples

8.1 SOURCES

Sources that remain at American Creosote DeRidder include a concrete structure that was the former retort house from previous operations at the site, a concrete foundation of a former oil/water separator that is nearly completely covered in creosote solid and contains stagnant water, an unlined wastewater pit with hardened creosote bordering and nearby the pit, and random areas of creosote solids and soil contamination.

One (1) soil sample, ACS25-06, was collected from the concrete structure, and one (1) surface water sample, ACSW06, was collected from the pit within the concrete structure. Surface water sample ACS25-06 contained numerous polycyclic aromatic hydrocarbons (PAHs) to include: benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, fluoranthene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene. Inorganic analysis of ACS25-06 detected arsenic (Table 2).

One (1) surface water sample, ACSW04, was collected from the oil/water separator. Various PAHs and metals were detected such as: 2-methylnaphthalene, acenaphthene, arsenic, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, cadmium,

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chrysene, dibenzofuran, fluorene, lead, mercury, naphthalene, pyrene, thallium, vanadium and zinc (Table 4).

One (1) sediment sample, ACSD08 and one (1) surface water sample, ACSW08, were collected from the unlined wastewater pond. Analysis of the sediment sample (ACSD08) and surface water sample (ACSW08) from the unlined wastewater pond detected various PAHs such as: 2-methylnaphthalene, acenaphthene, arsenic, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene and pyrene (Table 3 & 4).

Soil samples (ACS03-02, ACS03-12, ACS05-02, ACS05-25, ACS07-02, ACS07-58, ACS07-10, ACS10-02, ACS10-58, ACS10-10, ACS11-02, ACS11-35, ACS11-58 and ACS26-06) were collected from six (6) random areas of creosote solids and soil contamination. The two (2) or three (3) soil samples collected from each subsurface soil boring were segmented at 2 feet or 3 feet intervals. Analysis of the soil samples from random areas of creosote solids and soil contamination detected numerous PAHs such as: 2-methylnaphthalene (5-10 ft bgs), acenaphthene (8-10 feet bgs), anthracene (8-10 feet bgs), benzo (a) anthracene (0-2 and 5-10 feet bgs), benzo (a) pyrene (0-10 feet bgs), benzo (b) fluoranthene (0-2 and 5-10 feet bgs), benzo (k) fluoranthene (0-2 and 8-10 feet bgs), chrysene (0-2 and 8-10 feet bgs), dibenz (a,h) anthracene (0-2 and 5-10 feet bgs), dibenzofuran (5-10 feet bgs), fluoranthene (0-2 and 5-10 feet bgs), fluorene (8-10 feet bgs), indeno (1,2,3-cd) pyrene (0-2 and 5-10 feet bgs), naphthalene (0-2 and 5-10 feet bgs), phenanthrene (8-10 feet bgs) and pyrene (0-2 and 8-10 feet bgs) (Table 2). Inorganic analysis of soil sample ACS25-06 detected arsenic at 0-2 feet bgs (Table 2).

The sources contain numerous polycyclic aromatic hydrocarbons (PAHs): 2-methylnaphthalene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene,

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benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene which are creosote components (Table 2, 3 and 4). In addition, the concrete structure contains the metal arsenic (Table 2, 3 and 4).

8.2 RECEPTORS

The groundwater sample from AC23 (MW-3) contained some of the same PAHs detected in the sources: 2-methylnaphthalene, dibenzofuran and naphthalene that meet observed release criteria. However, the groundwater sampled at AC23 (MW-3) is a monitor well located off-site and owned by BNSF, west of the property along the railway spur used by Timber Rock Railroad (Watco Companies). It is currently not known if a release of material attributable to the site can be documented.

Soil sample locations AC13 and AC14 from the culvert/ditch located south of the sources contained numerous PAHs detected in the sources that meet observed release criteria, to include: 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene. In addition, arsenic was detected at soil sample location AC14 in the 0-2 ft bgs interval. However, the site is currently inactive and there are no residences within 200 feet of suspected areas of contamination. No terrestrial resource usage (commercial agriculture, commercial silviculture, or commercial livestock grazing/production) has been documented within the site or within 200 feet of the site. The nearest resident is located approximately 0.3 miles east of the concrete structure area.

Sediment sample AC12, from the culvert/ditch located south of the sources contained benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene that meet observed release criteria. Additionally, sediment sample AC15

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located off-site and southwest of the property contained some of the same PAHs detected in the sources: benzo (a) anthracene, benzo (a) pyrene, and dibenz (a,h) anthracene. No surface water samples were collected. The surface water pathway appears to be the pathway of concern for this site.

8.3 CONCLUSIONS

The site inspection conducted by START-3 showed PAHs in the sources located at the site. An observed release of the same PAHs is detected in the groundwater, soil and surface water pathways. The groundwater target is located off-site and it is unknown if a release of material attributable to the site can be documented. The surface water pathway appears to be the pathway of concern for this site, due to the contaminated sediments located along the culvert/ditch located south of the site.

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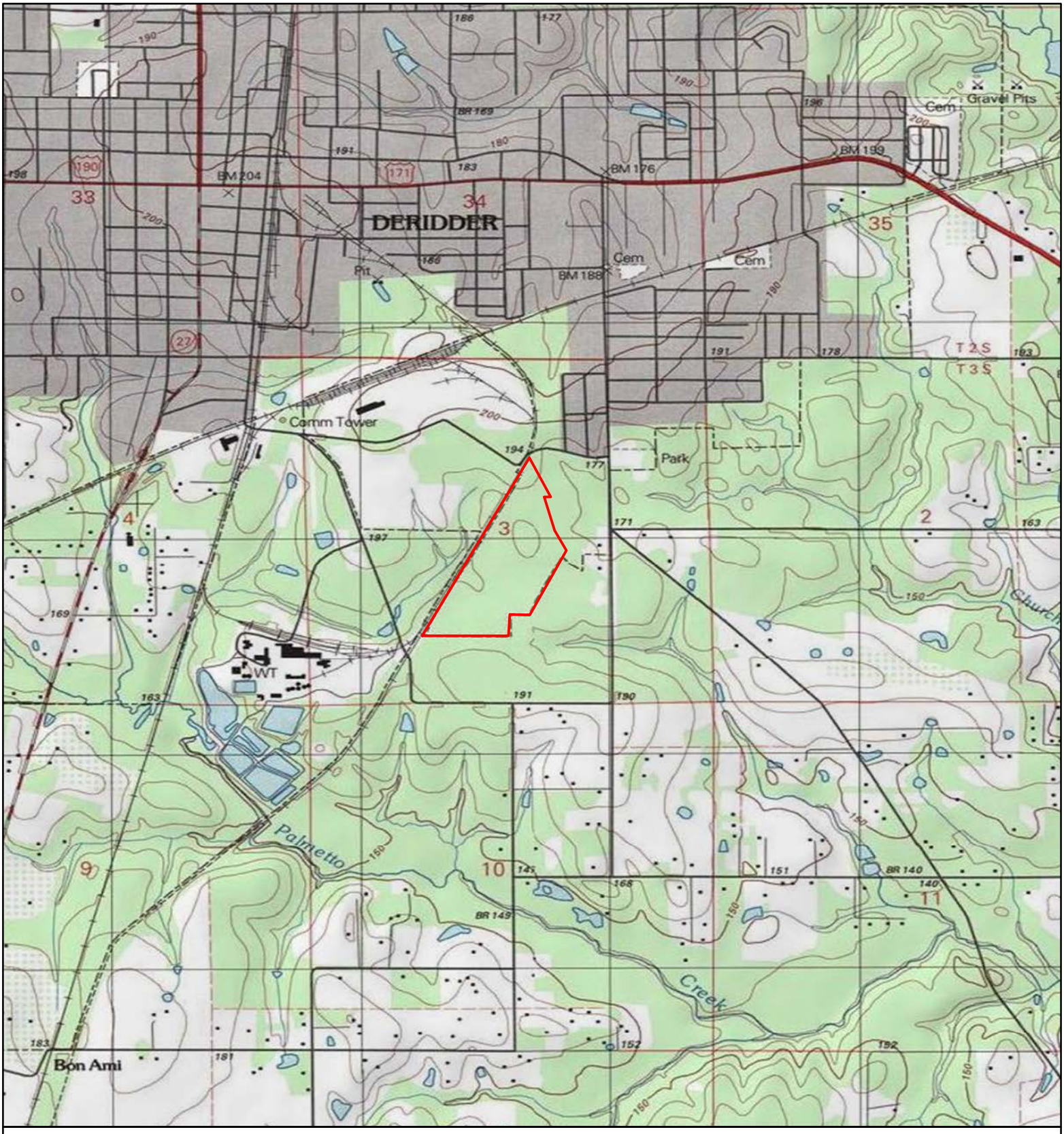
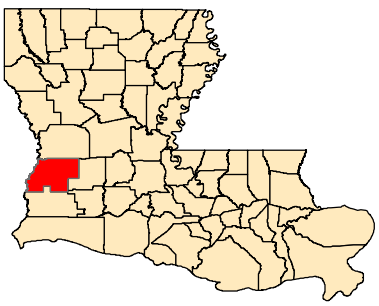
FIGURES



Map of Lousiana



Legend

Site Boundary

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1:24,000

0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

Figure 1. Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

07 080

Map of Lousiana

Legend

Site Boundary

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0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

Figure 2. Aerial Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

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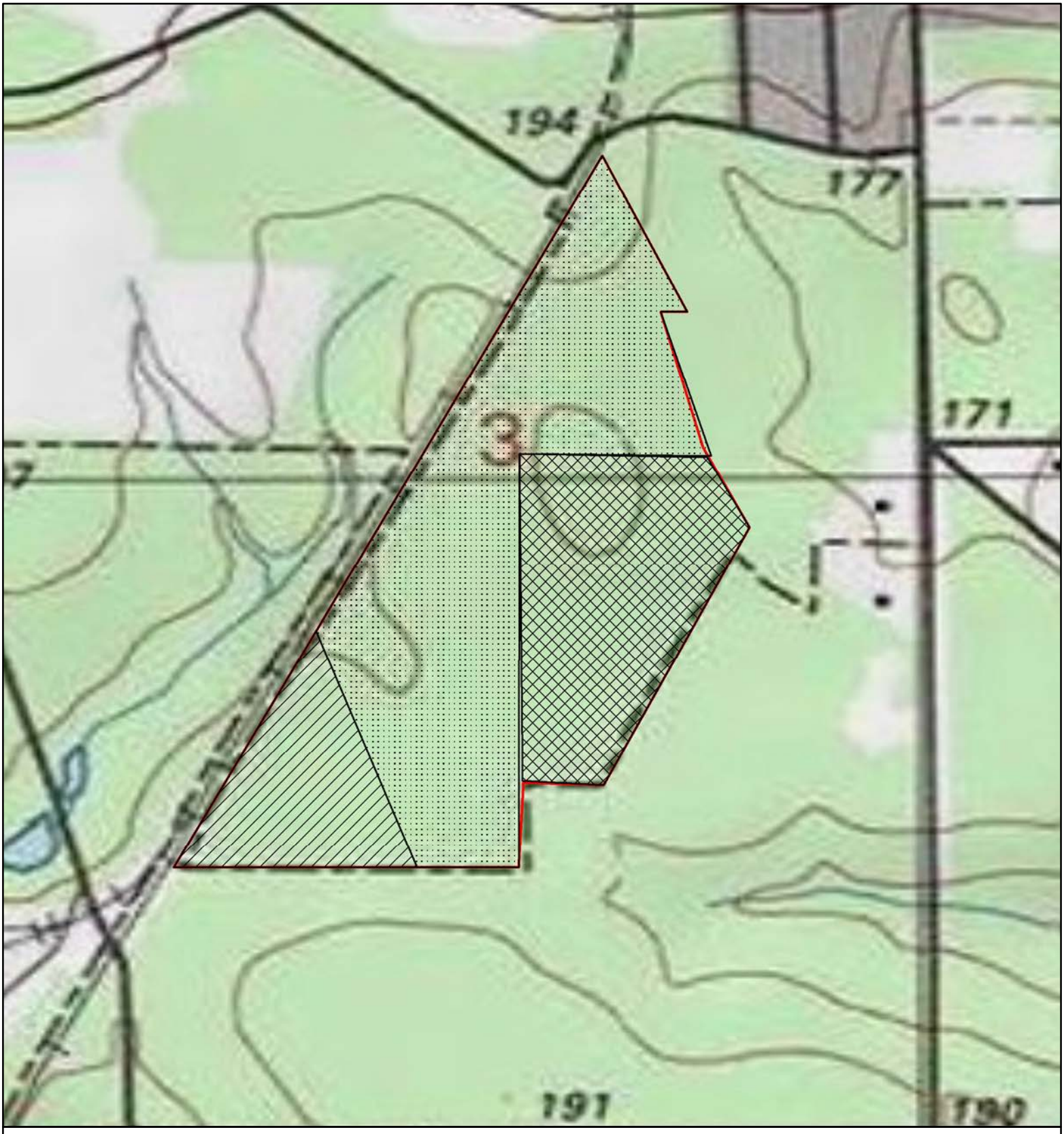
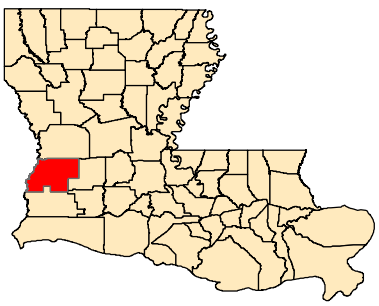


Map of Lousiana



Legend

- Site Boundary
- Parcel B
- Parcel E1
- Parcel E2

N
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0 250 500 1,000 Feet

US EPA Region 6
START-3

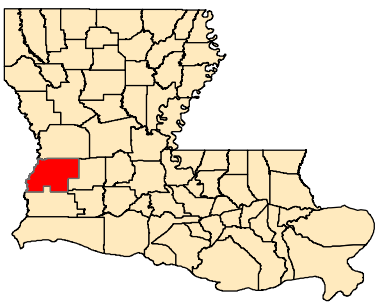
Figure 3. Site Land Parcel Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003

07 082

Source: Copyright:© 2013 National Geographic Society, i-cubed

Map of Lousiana



Legend

Site Boundary

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0 250 500 1,000 Feet

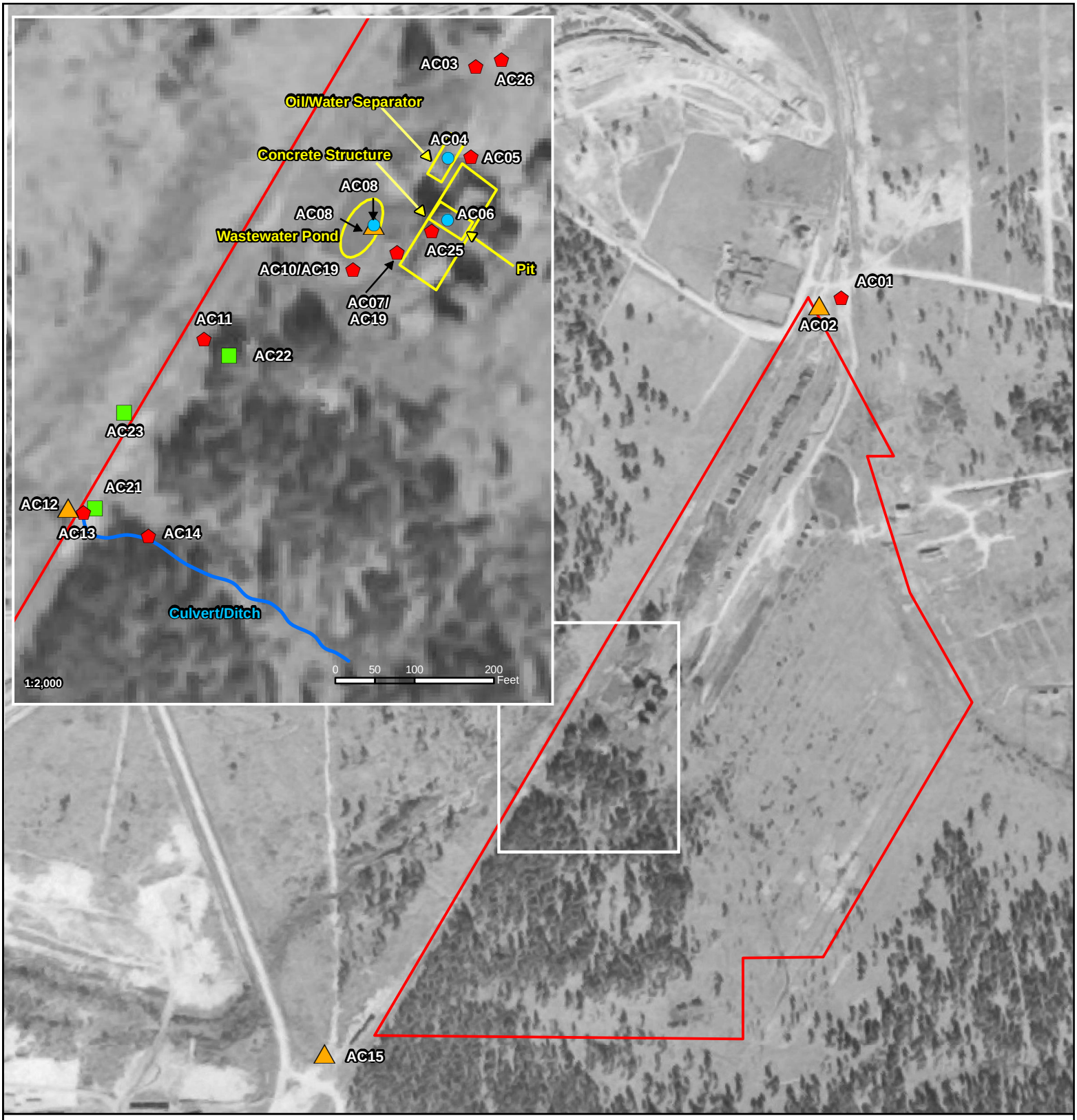
US EPA Region 6
START-3

Figure 4. Historical Aerial Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

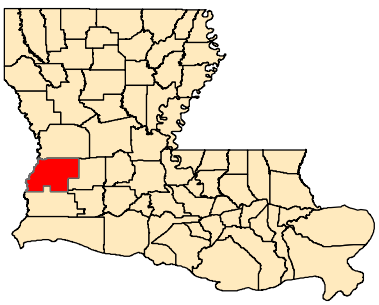
SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003

Source: USGS Aerial Photograph, 1954

07 083



Map of Lousiana



Legend

- Groundwater
- Sediment
- Soil
- Surface Water
- Site Boundary
- Culvert/Ditch
- Impoundments

1:6,000

N
W E
S

0 300 600 1,200 Feet

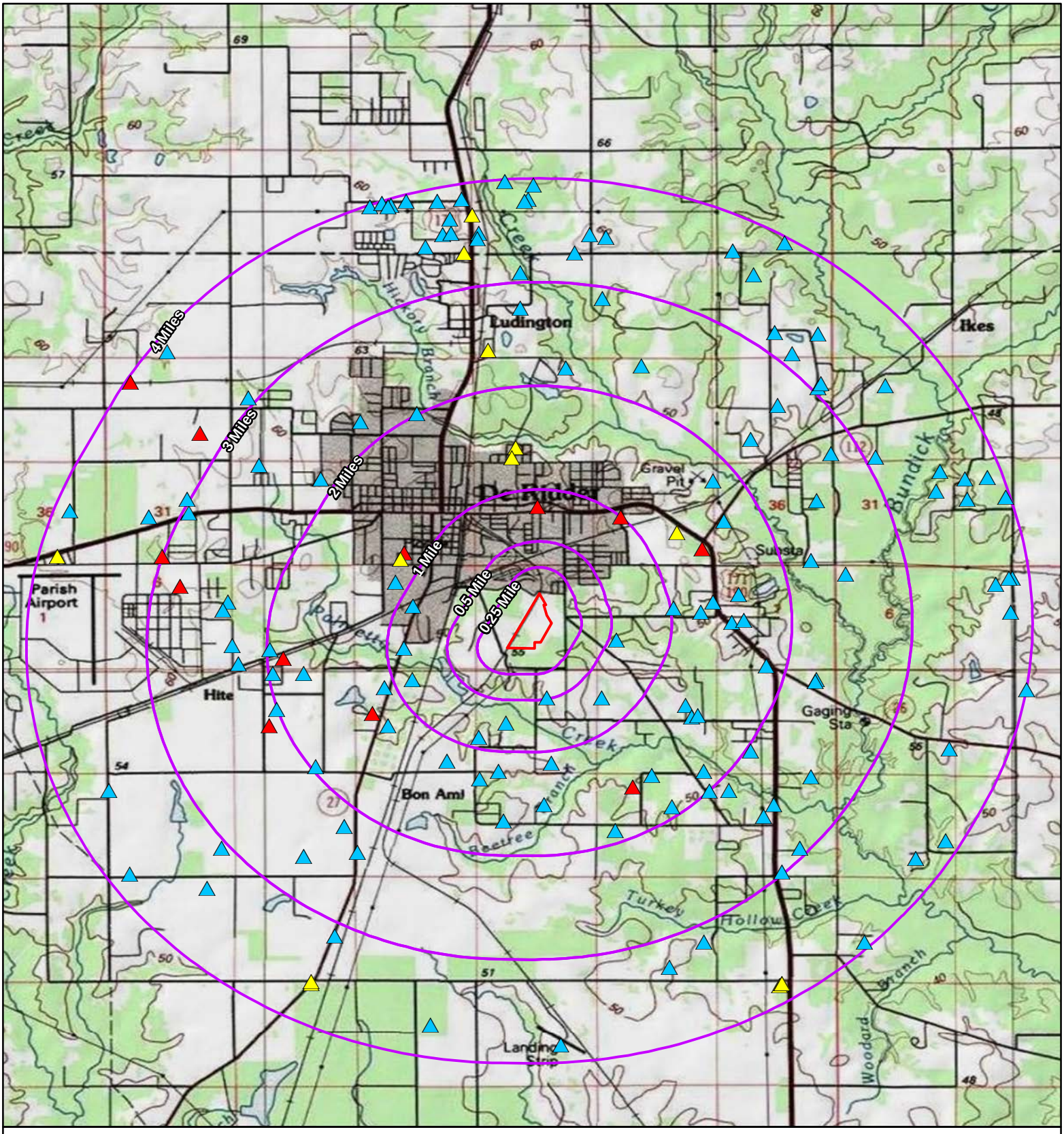
US EPA Region 6
START-3

Figure 5. Site Inspection Sampling Locations
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. TBD
TDD No. 9/DYNAMAC-077-15-002

Source: USGS Aerial Photograph, 1954

07 084



Map of Lousiana

Legend

LA DNR Registered Wells

- Domestic
- Public Supply
- Resource
- Site Boundary
- 4-Mile Radius

0 0.5 1 2 Miles

1:80,000

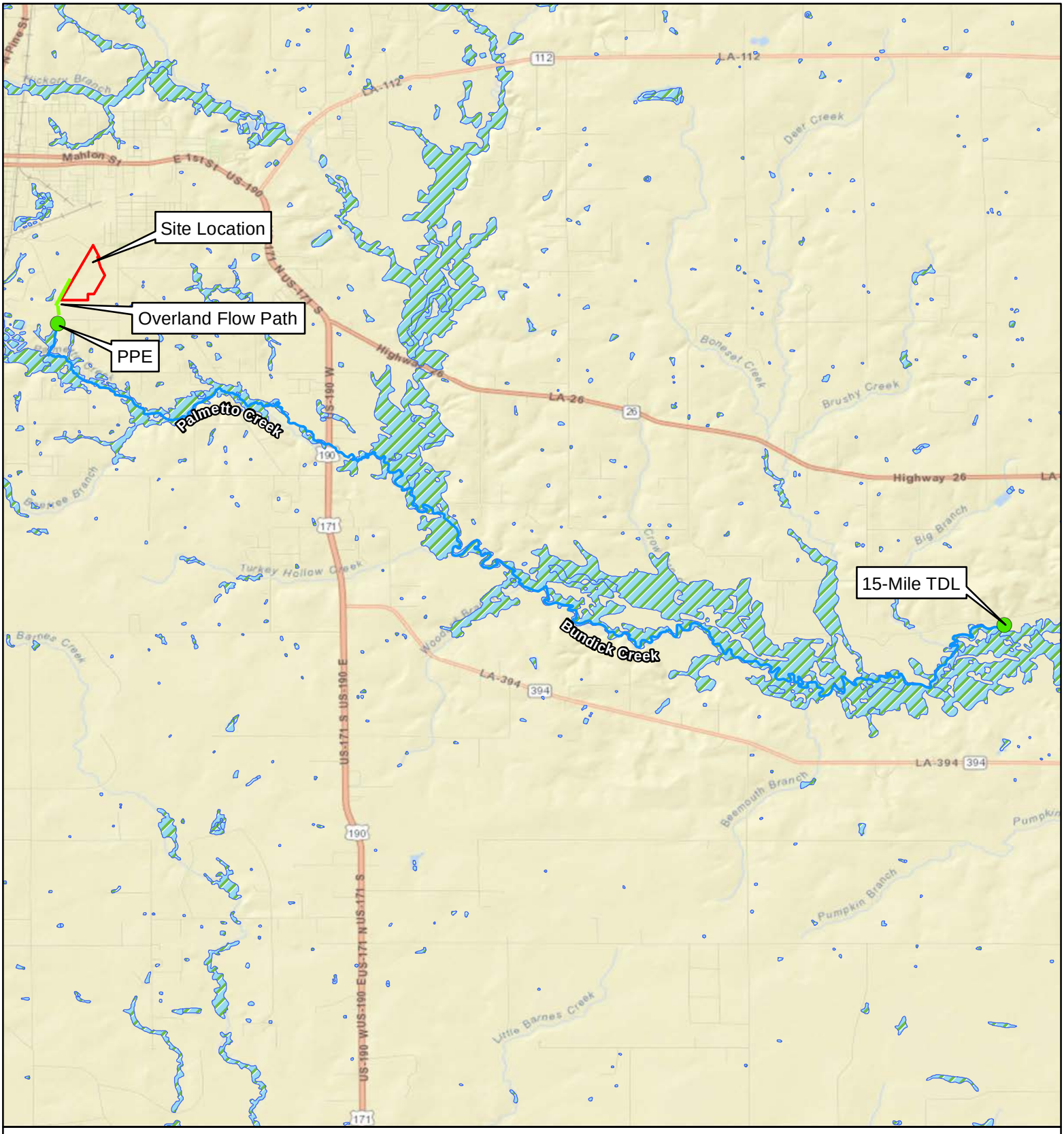
N W E S

US EPA Region 6
START-3

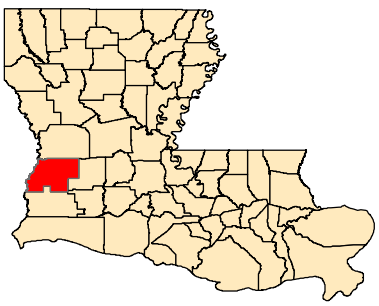
Figure 6. 4-Mile Radius Map
Groundwater Pathway
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

07 085



Map of Lousiana



Legend

- Surface Water Flow
- Overland Flow Path
- Site Boundary
- Wetlands

N
W E
S

0 0.5 1 2 Miles

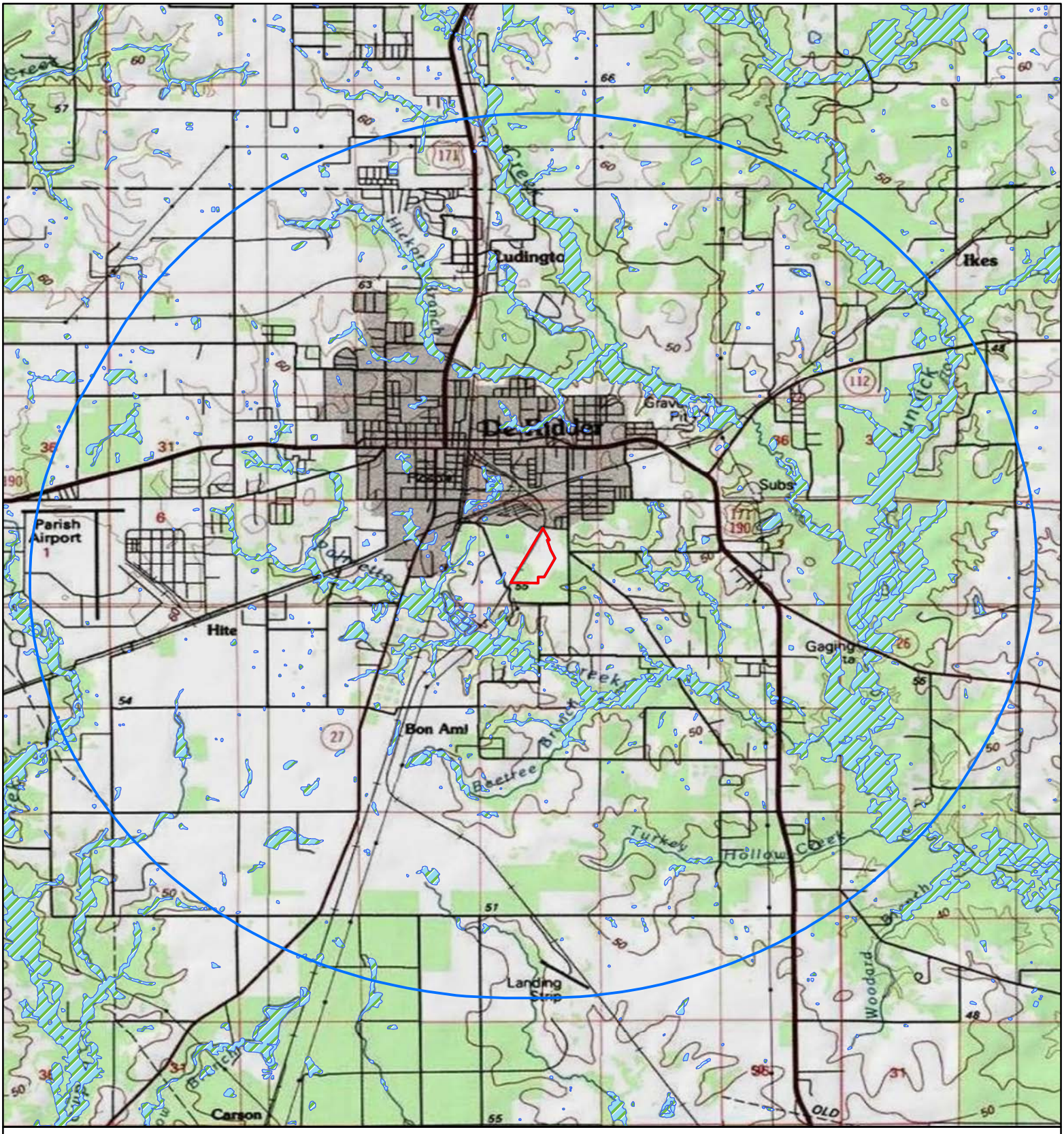
1:80,000

US EPA Region 6
START-3

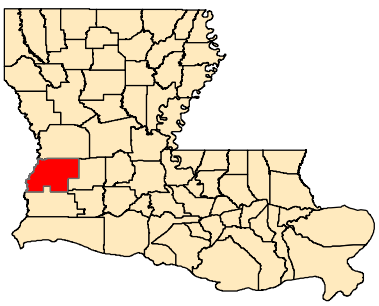
Figure 7. 15-Mile Surface Water Pathway Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

07 086



Map of Lousiana



Legend

- Site Boundary
- 4-Mile Radius

N
W E
S

1:80,000

0 3,350 6,700 13,400 Feet

US EPA Region 6
START-3

Figure 8. 4-Mile Radius Map - Air Pathway
American Creosote
DeRidder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/Dynamac-077-15-003
ESRI Street Map, National Hydrography Dataset, and National Wetlands Inventory

TABLES

Sample Number:			ACS01-02				ACS01-25				ACS01-58				ACS01-10			
EPA Sample Number:			F9DA0/MF9DA0				F9DA1/MF9DA1				F9DB9/MF9DB9				F9DE0/MF9DE0			
Sample Location:			AC01				AC01				AC01				AC01			
Sample Description			Background up gradient of site area				Background up gradient of site area				Background up gradient of site area				Background up gradient of site area			
Sample Depth			0 - 2 feet interval				2 - 5 feet interval				5 - 8 feet interval				8 - 10 feet interval			
	RECAP (industrial) µg/kg	MSSL (Industrial) µg/kg	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180(RL)	220	U	220	220 (RL)
2-Methylnaphthalene	170,000	4,100,000	200	UJ	200	200 (RL)	200	UJ	200	200 (RL)	180	UJ	180	180 (RL)	220	U	220	220 (RL)
2-Methylphenol		41,000,000	390	UJ	390	390 (RL)	390	UJ	390	390 (RL)	350	UJ	350	350(RL)	430	U	430	430 (RL)
3,3'-Dichlorobenzidine	4,200	5,100	390	U	390	390 (RL)	390	UJ	390	390 (RL)	350	U	350	350(RL)	430	U	430	430 (RL)
Acenaphthene	6,100,000	450,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	220	U	220	220 (RL)
Acenaphthylene	5,100,000		200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	220	U	220	220 (RL)
Anthracene	48,000,000	230,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	**440**		180	1,320 (3x)	220	U	220	220 (RL)
Benzaldehyde		120,000,000	390	U	390	390 (RL)	390	UJ	390	390 (RL)	350	U	350	350(RL)	430	U	430	430 (RL)
Benzo (a) anthracene	2,900	2,900	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	220	U	220	220 (RL)
Benzo (a) pyrene	330	290	200	UJ	200	200 (RL)	**310**	J	200	930 (3x)	110	LJ	180	330 (3x)	220	U	220	220 (RL)
Benzo (b) fluoranthene	2,900	2,900	200	UJ	200	200 (RL)	190	LJ	200	570 (3x)	170	LJ	180	510 (3x)	140	LJ	220	420 (3x)
Benzo (g,h,i) perylene			200	UJ	200	200 (RL)	**280**	J	200	840 (3x)	180	UJ	180	180 (RL)	220	U	220	220 (RL)
Benzo (k) fluoranthene	29,000	29,000	200	U	200	200 (RL)	**320**	J	200	960 (3x)	**180**		180	180 (RL)	220	U	220	220 (RL)
Bis(2-ethylhexyl)phthalate	170,000	160,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	120	LJ	220	360 (3x)
Carbazole			390	U	390	390 (RL)	390	UJ	390	390 (RL)	350	U	350	350(RL)	430	U	430	430 (RL)
Chrysene	290,000	290,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	120	LJ	180	360 (3x)	220	U	220	220 (RL)
Dibenz (a,h) anthracene	330	290	200	UJ	200	200 (RL)	200	UJ	200	200 (RL)	180	UJ	180	180 (RL)	220	U	220	220 (RL)
Dibenzofuran	150,000	1,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	220	U	220	220 (RL)
Fluoranthene	2,900,000	30,000,000	390	U	390	390 (RL)	390	UJ	390	390 (RL)	230	LJ	350	690 (3x)	430	U	430	430 (RL)
Fluorene	5,400,000	30,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	180	U	180	180 (RL)	220	U	220	220 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,900	200	U	200	200 (RL)	**320**	J	200	960 (3x)	180	U	180	180 (RL)	220	U	220	220 (RL)
Naphthalene	43,000	17,000	200	UJ	200	200 (RL)	200	UJ	200	200 (RL)	180	UJ	180	180 (RL)	220	U	220	220 (RL)
Phenanthrene	43,000,000		200	U	200	200 (RL)	200	UJ	200	200 (RL)	140	LJ	180	420 (3x)	220	U	220	220 (RL)
Pyrene	5,600,000	23,000,000	200	U	200	200 (RL)	200	UJ	200	200 (RL)	160	LJ	180	480 (3x)	220	U	220	220 (RL)
	RECAP (industrial) mg/kg	RSL (Industrial) mg/Kg	Result mg/kg	Flag	RL mg/kg	3x Bkgd or RL	Result mg/kg	Flag	RL mg/kg	3x Bkgd or RL	Result mg/kg	Flag	RL mg/kg	3x Bkgd or RL	Result mg/kg	Flag	RL mg/kg	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		1,100,000	**7300**		17.7	21,900 (3x)	**9330**		17.2	27,990 (3x)	**4210**		19.7	12,630 (3x)	**3020**		16.4	9,060 (3x)
Arsenic	12	3	**2.4**		0.44	7.2 (3x)	**2**		0.4	6 (3x)	**1.1**	J+	0.49	3.3 (3x)	**6.4**		0.41	19.2 (3x)
Barium	14,000	220,000	**23.7**		4.4	71.1 (3x)	**26.9**		4	80.7 (3x)	**47.9**		4.9	143.7 (3x)	**48**		4.1	144 (3x)
Cadmium	100		0.44	U	0.44	0.44 (RL)	0.4	J	0.4	0.4 (RL)	0.49	U	0.49	0.49 (RL)	0.41	U	0.41	0.41 (RL)
Calcium			**1070**		443	3,210 (3x)	342	LJ	429	1,026 (3x)	318	LJ	493	954 (3x)	368	LJ	410	1,104 (3x)
Chromium			**10.3**		0.89	30.9 (3x)	**10.3**		0.8	30.9 (3x)	**2.7**		0.98	8.1 (3x)	**4.2**		0.82	12.6 (3x)
Cobalt	12,000	350	**0.82**		0.44	2.46 (3x)	**1.1**		0.4	3.3 (3x)	**0.84**		0.49	2.52 (3x)	**1.2**		0.41	3.6 (3x)
Copper	8,200	47,000	**3.7**		0.89	11.1 (3x)	**3.7**		0.8	11.1 (3x)	**1.4**		0.98	4.2 (3x)	**1.5**		0.82	4.5 (3x)
Iron		820,000	**9,850**		8.9	29,550 (3x)	**19,200**		8.6	57,600 (3x)	**3,550**		9.9	10,650 (3x)	**7,690**		8.2	23,070 (3x)
Lead	1,400	800	**12.8**		0.44	38.4 (3x)	**5.9**		0.4	17.7 (3x)	**4.7**		0.49	14.1 (3x)	**5.3**		0.41	15.9 (3x)
Magnesium			211	LJ	443	633 (3x)	260	LJ	429	780 (3x)	463	LJ	493	1,389 (3x)	**440**		410	1,320 (3x)
Manganese		26,000	**18.9**		1.3	56.7 (3x)	**6.3**		1.3	18.9 (3x)	**3.9**		1.5	11.7 (3x)	**2.3**		1.2	6.9 (3x)
Mercury	61	40	0.02	LJ	0.11	0.11 (RL)	0.12	U	0.12	0.12 (RL)	0.12	U	0.12	0.12 (RL)	0.11	U	0.11	0.11 (RL)
Nickel	4,100	22,000	**1.4**		0.44	4.2 (3x)	**1.8**		0.4	5.4 (3x)	**0.96**		0.49	2.88 (3x)	**1.2**		0.41	3.6 (3x)
Potassium			443	U	443	443 (RL)	429	U	429	429 (RL)	493	U	493	493 (RL)	51.4	LJ	410	154.2 (3x)
Silver	1,000	5,800	0.44	U	0.44	0.44 (RL)	0.4	U	0.4	0.4 (RL)	0.49	U	0.49	0.49 (RL)	0.41	U	0.41	0.41 (RL)
Thallium	14	12	0.44	U	0.44	0.44 (RL)	0.4	U	0.4	0.4 (RL)	0.49	U	0.49	0.49 (RL)	0.41	U	0.41	0.41 (RL)
Vanadium	1,400	5,800	**20**		2.2	60 (3x)	**22.7**		2	68.1 (3x)	**5.3**		2.5	15.9 (3x)	**16.6**		2.1	49.8 (3x)
Zinc	61,000	350,000	**7.7**		0.89	23.1 (3x)	**3.7**		0.8	11.1 (3x)	**1.3**		0.98	3.9 (3x)	**1.8**		0.82	5.4 (3x)

Bold = detected above Reporting Limits

Highlighted = concentration exceeds EPA or State Risk Screening

RL = Reporting Limit

U = Not detected at reported quantitation limit

J = Estimated value

L = Reported concentration is below the contract required quantitation limit (CRQL)

+ = High biased

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Sample Number:			ACS03-02				ACS03-12				ACS05-02				ACS05-25			
EPA Sample Number:			F9DA2/MF9DA2				F9DA3/MF9DA3				F9DA4/MF9DA4				F9DA5/MF9DA5			
Sample Location:			AC03				AC03				AC05				AC05			
Sample Description			Former Railroad Spur				Former Railroad Spur				Concrete Struture				Concrete Struture			
Sample Depth			0 - 2 feet interval				10 - 12 feet interval				0 - 2 feet interval				2 - 5 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	230	U	230	200 (RL)	200	U	200	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	200	UJ	200	200 (RL)	200	UJ	200	220 (RL)	320	J	320	200 (RL)	200	UJ	200	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	380	U	380	390 (RL)	390	U	390	430 (RL)	440	U	440	390 (RL)	390	U	390	390 (RL)
Acenaphthene	6,100,000	33,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	**470**		230	200 (RL)	200	U	200	200 (RL)
Acenaphthylene	5,100,000		200	U	200	200 (RL)	200	U	200	220 (RL)	**2,900**		230	200 (RL)	200	U	200	200 (RL)
Anthracene	48,000,000	170,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	**1,900**		230	200 (RL)	200	U	200	200 (RL)
Benzaldehyde		100,000,000	380	U	380	390 (RL)	390	U	390	430 (RL)	440	U	440	390 (RL)	390	U	390	390 (RL)
Benzo (a) anthracene	2,900	2,100	200	U	200	200 (RL)	200	U	200	220 (RL)	**8,100**	J	230	200 (RL)	150	LJ	200	200 (RL)
Benzo (a) pyrene	330	210	200	UJ	200	200 (RL)	200	UJ	200	220 (RL)	**22,000**	J	230	200 (RL)	**330**	J	200	200 (RL)
Benzo (b) fluoranthene	2,900	2,100	100	LJ	200	200 (RL)	200	UJ	200	420 (3x)	**35,000**	J	230	200 (RL)	**470**	J	200	200 (RL)
Benzo (g,h,i) perylene			200	UJ	200	200 (RL)	200	UJ	200	220 (RL)	**16,000**	J	230	200 (RL)	**330**	J	200	200 (RL)
Benzo (k) fluoranthene	29,000	21,000	200	U	200	200 (RL)	200	U	200	220 (RL)	**12,000**	J	230	200 (RL)	**400**		200	200 (RL)
Bis(2-ethylhexyl)phthalate	170,000	120,000	200	U	200	200 (RL)	200	U	200	360 (3x)	230	U	230	200 (RL)	200	U	200	200 (RL)
Carbazole			380	U	380	390 (RL)	390	U	390	430 (RL)	**690**		440	390 (RL)	390	U	390	390 (RL)
Chrysene	290,000	210,000	200	U	200	200 (RL)	200	U	200	220 (RL)	**15,000**	J	230	200 (RL)	**280**		200	200 (RL)
Dibenz (a,h) anthracene	330	210	200	UJ	200	200 (RL)	200	UJ	200	220 (RL)	**10,000**	J	230	200 (RL)	150	LJ	200	200 (RL)
Dibenzofuran	150,000	1,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	**410**		230	200 (RL)	200	U	200	200 (RL)
Fluoranthene	2,900,000	2,200,000	380	U	380	390 (RL)	390	U	390	430 (RL)	**16,000**	J	440	390 (RL)	390	U	390	390 (RL)
Fluorene	5,400,000	22,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	230	U	230	200 (RL)	200	U	200	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	200	U	200	200 (RL)	200	U	200	220 (RL)	**16,000**	J	230	200 (RL)	**320**		200	200 (RL)
Naphthalene	43,000	18,000	200	UJ	200	200 (RL)	200	UJ	200	220 (RL)	**1,200**	J	230	200 (RL)	200	UJ	200	200 (RL)
Phenanthrene	43,000,000		200	U	200	200 (RL)	200	U	200	220 (RL)	**2,000**		230	200 (RL)	200	U	200	200 (RL)
Pyrene	5,600,000	17,000,000	200	U	200	200 (RL)	200	U	200	220 (RL)	230	U	230	200 (RL)	150	LJ	200	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		990,000	15,200		16.8	21,900 (3x)	**4,610**		17.6	9,060 (3x)	**3,330**		16.3	21,900 (3x)	**12,300**		17.7	27,990 (3x)
Arsenic	12	1.6	**3.4**		0.41	7.2 (3x)	**0.76**		0.4	19.2 (3x)	**3**		0.42	7.2 (3x)	**3.3**		0.42	6 (3x)
Barium	14,000	190,000	**36.9**		4.1	71.1 (3x)	**8.8**		4	144 (3x)	**31.6**		4.2	71.1 (3x)	**25**		4.2	80.7 (3x)
Cadmium	100	800	0.41	U	0.41	0.44 (RL)	0.4	U	0.4	0.41 (RL)	0.42	U	0.42	0.44 (RL)	0.42	U	0.42	0.4 (RL)
Calcium			**628**		419	3,210 (3x)	114	LJ	440	1,104 (3x)	**1,320**		409	3,210 (3x)	**626**		442	1,026 (3x)
Chromium			**18.5**		0.81	30.9 (3x)	**10.2**		0.8	12.6 (3x)	**9.5**		0.83	30.9 (3x)	**16.6**		0.84	30.9 (3x)
Cobalt	12,000	300	**1.1**		0.41	2.46 (3x)	0.4	U	0.4	3.6 (3x)	**1.9**		0.42	2.46 (3x)	**0.85**		0.42	3.3 (3x)
Copper	8,200	41,000	**4.2**		0.81	11.1 (3x)	**1.6**		0.8	4.5 (3x)	**24.5**		0.83	11.1 (3x)	**3.3**		0.84	11.1 (3x)
Iron		720,000	**16,700**		8.4	29,550 (3x)	**3,410**		8.8	23,070 (3x)	**13,700**		8.2	29,550 (3x)	**20,200**		8.9	57,600 (3x)
Lead	1,400	800	**9.5**		0.41	38.4 (3x)	**4.2**		0.4	15.9 (3x)	**22.2**		0.42	38.4 (3x)	**4.8**		0.42	17.7 (3x)
Magnesium			278	LJ	419	633 (3x)	109	LJ	440	1,320 (3x)	292	LJ	409	633 (3x)	206	LJ	442	780 (3x)
Mangenese		23,000	**26.1**		1.3	56.7 (3x)	**5.2**		1.3	6.9 (3x)	**254**		1.2	56.7 (3x)	**11.6**		1.3	18.9 (3x)
Mercury	61	34	0.039	LJ	0.098	0.11 (RL)	0.11	U	0.11	0.11 (RL)	**3.9**		0.51	0.11 (RL)	0.11	U	0.11	0.12 (RL)
Nickel	4,100	20,000	**2.7**		0.41	4.2 (3x)	**0.76**		0.4	3.6 (3x)	**5.7**		0.42	4.2 (3x)	**2.1**		0.42	5.4 (3x)
Potassium			419	U	419	443 (RL)	440	U	440	154.2 (3x)	409	U	409	443 (RL)	442	U	442	429 (RL)
Silver	1,000	5,100	0.41	U	0.41	0.44 (RL)	0.4	U	0.4	0.41 (RL)	**0.7**		0.42	0.44 (RL)	0.42	U	0.42	0.4 (RL)
Thallium	14		0.41	U	0.41	0.44 (RL)	0.4	U	0.4	0.41 (RL)	0.42	U	0.42	0.44 (RL)	0.42	U	0.42	0.4 (RL)
Vanadium	1,400	72	**30.6**		2	60 (3x)	**8.8**		2	49.8 (3x)	**11.9**		2.1	60 (3x)	**35.1**		2.1	68.1 (3x)
Zinc	61,000	310,000	**5**		0.81	23.1 (3x)	**1.6**		0.8	5.4 (3x)	**49.1**		0.83	23.1 (3x)	3.3		0.84	11.1 (3x)

Bold = detected above Reporting Limits

Underlined = concentration detected 3x above background or above background RL

Highlighted = concentration exceeds EPA or State Risk Screening

RL = Reporting Limit

U = Not detected at reported quantitation limit

J = Estimated value

UJ = Estimated quantitation limit

L = Reported concentration is below the contract required quantitation limit (CRQL)

R = Result is unusabe

F+ = A false positive exists

+ = High biased

^ = High bias

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Sample Number:			ACS07-02				ACS07-58				ACS07-10				ACS10-02			
EPA Sample Number:			F9DA6/MF9DA6				F9DA7/MF9DA7				F9DC2/MF9DC2				F9DA8/MF9DA8			
Sample Location:			AC07				AC07				AC07				AC10			
Sample Description			Between Pond & Concrete Structure				Between Pond & Concrete Structure				Between Pond & Concrete Structure				Creosote Area			
Sample Depth			0 - 2 feet interval				5 - 8 feet interval				8 - 10 feet interval				0 - 2 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	190	U	190	200 (RL)	**64,000**	J^	180	180(RL)	**86,000**	J	1,900	220 (RL)	210	U	210	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	160	UJ	190	200 (RL)	**240,000**	J^	180	180 (RL)	**69,000,000**		19,000,000	220 (RL)	**320**		210	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	370	U	370	390 (RL)	350	U	350	350(RL)	3,800	U	3,800	430 (RL)	**720**	F^	400	390 (RL)
Acenaphthene	6,100,000	33,000,000	190	U	190	200 (RL)	**200,000**	J^	180	180 (RL)	**50,000,000**		19,000,000	220 (RL)	**600**		210	200 (RL)
Acenaphthylene	5,100,000		**1,300**		190	200 (RL)	**8,400**	J^	180	180 (RL)	**13,000**		1,900	220 (RL)	**860**		210	200 (RL)
Anthracene	48,000,000	170,000,000	**2,800**			200 (RL)	**140,000**	J^	180	1,320 (3x)	**30,000,000**		19,000,000	220 (RL)	**4,200**	J	4,100	200 (RL)
Benzaldehyde		100,000,000	370	U	370	390 (RL)	520	F+	350	350(RL)	**9,000**	F+	3,800	430 (RL)	400	U	400	390 (RL)
Benzo (a) anthracene	2,900	2,100	**24,000**	J	3,800	200 (RL)	**22,000**	J	180	180 (RL)	**140,000**	J	1,900	220 (RL)	**19,000**	J	4,100	200 (RL)
Benzo (a) pyrene	330	210	**16,000**	J	3,800	200 (RL)	**6,400**	J	180	330 (3x)	**60,000**	J	1,900	220 (RL)	**13,000**	J	4,100	200 (RL)
Benzo (b) fluoranthene	2,900	2,100	**22,000**	J	3,800	200 (RL)	**15,000**	J	180	510 (3x)	**74,000**	J	1,900	420 (3x)	**23,000**	J	4,100	200 (RL)
Benzo (g,h,i) perylene			**6,200**	J	3,800	200 (RL)	**2,700**		180	180 (RL)	**16,000**		1,900	220 (RL)	**7,100**	J	4,100	200 (RL)
Benzo (k) fluoranthene	29,000	21,000	**20,000**	J	3,800	200 (RL)	**3,600**	J	180	180 (RL)	**58,000**	J	1,900	220 (RL)	**20,000**	J	4,100	200 (RL)
Bis(2-ethylhexyl)phthalate	170,000	120,000	190	U	190	200 (RL)	180	U	180	180 (RL)	1,900	U	1,900	360 (3x)	210	U	210	200 (RL)
Carbazole			280	UJ	370	390 (RL)	**240,000**	J^	350	350(RL)	22,000,000	UJ	38,000,000	430 (RL)	**860**		400	390 (RL)
Chrysene	290,000	210,000	**20,000**	J	3,800	200 (RL)	**14,000**	J	180	360 (3x)	**13,000,000**	UJ	19,000,000	220 (RL)	**22,000**	J	4,100	200 (RL)
Dibenz (a,h) anthracene	330	210	**5,600**	J	3,800	200 (RL)	**2,300**		180	180 (RL)	**6,800**		1,900	220 (RL)	**2,600**		210	200 (RL)
Dibenzofuran	150,000	1,000,000	160	UJ	190	200 (RL)	**160,000**	J^	180	180 (RL)	**43,000,000**		19,000,000	220 (RL)	**490**		210	200 (RL)
Fluoranthene	2,900,000	2,200,000	**35,000**		7,500	390 (RL)	**670,000**	J	350	690 (3x)	**65,000,000**		38,000,000	430 (RL)	**50,000**	J	8,000	390 (RL)
Fluorene	5,400,000	22,000,000	190	U	190	200 (RL)	**220,000**	J^	180	180 (RL)	**51,000,000**		19,000,000	220 (RL)	**420**		210	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	**7,800**	J	3,800	200 (RL)	**3,700**	J	180	180 (RL)	**20,000**		1,900	220 (RL)	**8,600**	J	4,100	200 (RL)
Naphthalene	43,000	18,000	**530**		190	200 (RL)	**450,000**	J^	180	180 (RL)	**140,000,000**		19,000,000	220 (RL)	**1,200**		210	200 (RL)
Phenanthrene	43,000,000		**410**		190	200 (RL)	**900,000**	J^	180	420 (3x)	**94,000,000**		19,000,000	220 (RL)	**4,800**	J	4,100	200 (RL)
Pyrene	5,600,000	17,000,000	**58,000**	J	3,800	200 (RL)	**38,000**	J	180	480 (3x)	**36,000,000**		19,000,000	220 (RL)	**42,000**	J	4,100	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		990,000	**6,560**		16.5	21,900 (3x)	**9,860**		16.6	12,630 (3x)	**3,120**		16.3	9,060 (3x)	**10,400**		16.1	21,900 (3x)
Arsenic	12	1.6	**3**		0.39	7.2 (3x)	**2.60**		0.44	3.3 (3x)	**1.2**	J+	0.4	19.2 (3x)	**5.4**		0.42	7.2 (3x)
Barium	14,000	190,000	**32.7**		3.9	71.1 (3x)	**20.9**		4.4	143.7 (3x)	**10.6**		4	144 (3x)	**35.7**		4.2	71.1 (3x)
Cadmium	100	800	0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.49 (RL)	0.4	U	0.4	0.41 (RL)	0.42	U	0.42	0.44 (RL)
Calcium			209	UJ	411	3,210 (3x)	257	UJ	415	954 (3x)	28.3	UJ	408	1,104 (3x)	**626**		402	3,210 (3x)
Chromium			**11**		0.79	30.9 (3x)	**11.4**		0.89	8.1 (3x)	**3**		0.8	12.6 (3x)	**18.8**		0.84	30.9 (3x)
Cobalt	12,000	300	**2.2**		0.39	2.46 (3x)	0.44	U	0.44	2.52 (3x)	0.4	U	0.4	3.6 (3x)	**1.3**		0.42	2.46 (3x)
Copper	8,200	41,000	**4.8**		0.79	11.1 (3x)	**2.80**		0.89	4.2 (3x)	0.63	UJ	0.8	4.5 (3x)	**10.2**		0.84	11.1 (3x)
Iron		720,000	**7,680**		8.2	29,550 (3x)	**10,100**		8.3	10,650 (3x)	**3,180**		8.2	23,070 (3x)	**13,600**		8	29,550 (3x)
Lead	1,400	800	**8.8**		0.39	38.4 (3x)	**5.1**		0.44	14.1 (3x)	**3.4**		0.4	15.9 (3x)	**39.1**		0.42	38.4 (3x)
Magnesium			172	UJ	411	633 (3x)	266	UJ	415	1,389 (3x)	115	UJ	408	1,320 (3x)	248	UJ	402	633 (3x)
Mangenese		23,000	**42.9**		1.2	56.7 (3x)	**13**		1.3	11.7 (3x)	**3.3**		1.2	6.9 (3x)	**96.4**		1.2	56.7 (3x)
Mercury	61	34	0.022	UJ	0.11	0.11 (RL)	0.11	U	0.11	0.12 (RL)	0.11	U	0.11	0.11 (RL)	**1.9**		0.11	0.11 (RL)
Nickel	4,100	20,000	**2.8**		0.39	4.2 (3x)	**0.92**		0.44	2.88 (3x)	0.4	U	0.4	3.6 (3x)	**3.1**		0.42	4.2 (3x)
Potassium			411	U	411	443 (RL)	415	U	415	493 (RL)	408	U	408	154.2 (3x)	402	U	402	443 (RL)
Silver	1,000	5,100	0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.49 (RL)	0.4	U	0.4	0.41 (RL)	0.42	U	0.42	0.44 (RL)
Thallium	14		0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.49 (RL)	0.4	U	0.4	0.41 (RL)	0.42	U	0.42	0.44 (RL)
Vanadium	1,400	72	**18.7**		2	60 (3x)	**28.2**		2.2	15.9 (3x)	**8.5**		2	49.8 (3x)	**28.8**		2.1	60 (3x)
Zinc	61,000	310,000	**14.5**		0.79	23.1 (3x)	**2.5**		0.89	3.9 (3x)	0.8	U	0.8	5.4 (3x)	**28.8**		0.84	23.1 (3x)

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Sample Number:			ACS10-58				ACS10-10				ACS11-02				ACS11-35			
EPA Sample Number:			F9DA9/MF9DA9				F9DC5/MF9DC5				F9DB0/MF9DB0				F9DB1/MF9DB1			
Sample Location:			AC10				AC10				AC11				AC11			
Sample Description			Creosote Area				Creosote Area				Creosote Area				Creosote Area			
Sample Depth			5 - 8 feet interval				8 - 10 feet interval				0 - 2 feet interval				3 - 5 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	**520**		200	180(RL)	**44,000**	J	2,100	220 (RL)	190	U	190	200 (RL)	220	U	220	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	**4,000**	J	2,000	180 (RL)	**27,000,000**		11,000,000	220 (RL)	140	LJ	190	200 (RL)	220	U	220	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	390	U	390	350(RL)	4,100	U	4,100	430 (RL)	370	U	370	390 (RL)	420	U	420	390 (RL)
Acenaphthene	6,100,000	33,000,000	**4,800**	J	2,000	180 (RL)	**21,000,000**		11,000,000	220 (RL)	**890**		190	200 (RL)	220	U	220	200 (RL)
Acenaphthylene	5,100,000		**290**		200	180 (RL)	**7,200**		2,100	220 (RL)	**2,100**		190	200 (RL)	220	U	220	200 (RL)
Anthracene	48,000,000	170,000,000	**5,000**	J	2,000	1,320 (3x)	**60,000,000**	J	11,000,000	220 (RL)	**12,000**		9,600	200 (RL)	220	U	220	200 (RL)
Benzaldehyde		100,000,000	390	U	390	350(RL)	**4,000**	F+	41,000	430 (RL)	370	U	370	390 (RL)	420	U	420	390 (RL)
Benzo (a) anthracene	2,900	2,100	**1,800**		200	180 (RL)	**6,400,000**	LJ	11,000,000	220 (RL)	**38,000**		9,600	200 (RL)	220	U	220	200 (RL)
Benzo (a) pyrene	330	210	**1,700**		200	330 (3x)	**19,000**		2,100	220 (RL)	**36,000**		9,600	200 (RL)	220	U	220	930 (3x)
Benzo (b) fluoranthene	2,900	2,100	**2,500**		200	510 (3x)	**21,000**		2,100	420 (3x)	**50,000**		9,600	200 (RL)	**340**	J	220	570 (3x)
Benzo (g,h,i) perylene			**920**		200	180 (RL)	**5,500**		2,100	220 (RL)	**14,000**		900	200 (RL)	220	U	220	840 (3x)
Benzo (k) fluoranthene	29,000	21,000	1,200		200	180 (RL)	**19,000**		2,100	220 (RL)	**49,000**		9,600	200 (RL)	**290**		220	960 (3x)
Bis(2-ethylhexyl)phthalate	170,000	120,000	110	LJ	200	180 (RL)	2,100	U	2,100	360 (3x)	**660**		190	200 (RL)	220	U	220	200 (RL)
Carbazole			**2,500**		390	350(RL)	**69,000**	J	4,100	430 (RL)	**1,700**		370	390 (RL)	420	U	420	390 (RL)
Chrysene	290,000	210,000	**1,800**		200	360 (3x)	**44,000**	J	2,100	220 (RL)	**34,000**		9,600	200 (RL)	220	U	220	200 (RL)
Dibenz (a,h) anthracene	330	210	**420**		200	180 (RL)	**2,200**		2,100	220 (RL)	**11,000**		9,600	200 (RL)	220	U	220	200 (RL)
Dibenzofuran	150,000	1,000,000	**5,300**	J	2,000	180 (RL)	**19,000,000**		11,000,000	220 (RL)	**790**		190	200 (RL)	220	U	220	200 (RL)
Fluoranthene	2,900,000	2,200,000	**11,000**	J	3,900	690 (3x)	**28,000,000**		20,000,000	430 (RL)	**85,000**	J	19,000	390 (RL)	420	UJ	420	390 (RL)
Fluorene	5,400,000	22,000,000	**5,400**	J	2,000	180 (RL)	**25,000,000**		11,000,000	220 (RL)	**950**		190	200 (RL)	220	U	220	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	**1,100**		200	180 (RL)	**6,700**		2,100	220 (RL)	**18,000**		9,600	200 (RL)	220	U	220	960 (3x)
Naphthalene	43,000	18,000	**7,100**	J	2,000	180 (RL)	**110,000,000**		11,000,000	220 (RL)	**200**		190	200 (RL)	220	U	220	200 (RL)
Phenanthrene	43,000,000		**19,000**	J	2,000	420 (3x)	**63,000,000**		11,000,000	220 (RL)	**35,000**		9,600	200 (RL)	220	U	220	200 (RL)
Pyrene	5,600,000	17,000,000	**6,300**	J	2,000	480 (3x)	**15,000,000**		11,000,000	220 (RL)	**140,000**		9,600	200 (RL)	220	U	220	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		990,000	**9,350**		16.3	12,630 (3x)	**3,840**		15.8	9,060 (3x)	**8,770**		15.8	21,900 (3x)	**7,250**		17.1	27,990 (3x)
Arsenic	12	1.6	**2.2**		0.4	3.3 (3x)	**1.4**	J	0.43	19.2 (3x)	**3.1**		0.39	7.2 (3x)	**2**		0.44	6 (3x)
Barium	14,000	190,000	**17.9**		4	143.7 (3x)	**11.1**		4.3	144 (3x)	**13.7**		3.9	71.1 (3x)	**15.2**		4.4	80.7 (3x)
Cadmium	100	800	0.4	U	0.4	0.49 (RL)	0.43	U	0.43	0.41 (RL)	0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.4 (RL)
Calcium			305	LJ	409	954 (3x)	**104**	LJ	395	1,104 (3x)	**476**		396	3,210 (3x)	266	LJ	442	1,026 (3x)
Chromium			**11.5**		0.81	8.1 (3x)	**4**		0.86	12.6 (3x)	**13.3**		0.79	30.9 (3x)	**8.2**		0.88	30.9 (3x)
Cobalt	12,000	300	**0.47**		0.4	2.52 (3x)	0.43	U	0.43	3.6 (3x)	**0.71**		0.39	2.46 (3x)	**0.53**		0.44	3.3 (3x)
Copper	8,200	41,000	**2.9**		0.81	4.2 (3x)	0.85	LJ	0.86	4.5 (3x)	**3.6**		0.79	11.1 (3x)	**2.3**		0.88	11.1 (3x)
Iron		720,000	**10,300**		8.2	10,650 (3x)	**5,380**		7.9	23,070 (3x)	**7,850**		7.9	29,550 (3x)	**8,220**		8.8	57,600 (3x)
Lead	1,400	800	**5.1**		0.4	14.1 (3x)	**3.6**		0.43	15.9 (3x)	**5.7**		0.39	38.4 (3x)	**4.2**		0.44	17.7 (3x)
Magnesium			250	LJ	409	1,389 (3x)	116	LJ	395	1,320 (3x)	195	LJ	396	633 (3x)	180	LJ	442	780 (3x)
Mangenese		23,000	**10.9**		1.2	11.7 (3x)	**6.1**		1.2	6.9 (3x)	**15.1**		1.2	56.7 (3x)	**13.9**		1.3	18.9 (3x)
Mercury	61	34	0.12	U	0.12	0.12 (RL)	0.095	U	0.095	0.11 (RL)	0.041	LJ	0.1	0.11 (RL)	0.11	U	0.11	0.12 (RL)
Nickel	4,100	20,000	**0.92**		0.4	2.88 (3x)	0.43	U	0.43	3.6 (3x)	**2.4**		0.39	4.2 (3x)	**1.3**		0.44	5.4 (3x)
Potassium			409	U	409	493 (RL)	15.1	LJ	395	154.2 (3x)	396	U	396	443 (RL)	442	U	442	429 (RL)
Silver	1,000	5,100	0.4	U	0.4	0.49 (RL)	0.43	U	0.43	0.41 (RL)	0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.4 (RL)
Thallium	14		0.4	U	0.4	0.49 (RL)	0.43	U	0.43	0.41 (RL)	0.39	U	0.39	0.44 (RL)	0.44	U	0.44	0.4 (RL)
Vanadium	1,400	72	**26.4**		2	15.9 (3x)	**11.8**		2.1	49.8 (3x)	**20.1**		2	60 (3x)	**17.1**		2.2	68.1 (3x)
Zinc	61,000	310,000	3.1		0.81	3.9 (3x)	0.86	U	0.86	5.4 (3x)	**11.6**		0.79	23.1 (3x)	2.4		0.88	11.1 (3x)

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Sample Number:			ACS11-58				ACS13-02				ACS13-24				ACS014-02			
EPA Sample Number:			F9DC6/MF9DC6				F9DB2/MF9DB2				F9DB3/MF9DB3				F9DB4/MF9DB4			
Sample Location:			AC11				AC13				AC13				AC14			
Sample Description			Creosote Area				Culvert/Ditch (South)				Culvert/Ditch (South)				Culvert/Ditch (South)			
Sample Depth			5 - 8 feet interval				0 - 2 feet interval				2 - 4 feet interval				0 - 2 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	**25,000**		2,400	180(RL)	220	U	220	200 (RL)	**220,000**	J	200	200 (RL)	**23,000**		2,100	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	**3,800,000**		1,200,000	180 (RL)	220	U	220	200 (RL)	**1,000,000**	J	200	200 (RL)	**100,000**	J	2,100	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	4,600	U	4,600	350(RL)	420	U	420	390 (RL)	390	U	390	390 (RL)	4,000	U	4,000	390 (RL)
Acenaphthene	6,100,000	33,000,000	**3,000,000**		1,200,000	180 (RL)	**650**		220	200 (RL)	**680,000**	J	200	200 (RL)	**17,000,000**		10,000,000	200 (RL)
Acenaphthylene	5,100,000		**4,900**		2,400	180 (RL)	**1,700**		220	200 (RL)	**22,000**	J	200	200 (RL)	**18,000**		2,100	200 (RL)
Anthracene	48,000,000	170,000,000	**1,900,000**		1,200,000	1,320 (3x)	**2,100**		220	200 (RL)	**43,000**	J	200	200 (RL)	**43,000,000**		10,000,000	200 (RL)
Benzaldehyde		100,000,000	4,600	U	4,600	350(RL)	420	U	420	390 (RL)	**1,600**		390	390 (RL)	4,000	U	4,000	390 (RL)
Benzo (a) anthracene	2,900	2,100	**1,400,000**		1,200,000	180 (RL)	**13,000**		4,300	200 (RL)	**140,000,000**		40,000,000	200 (RL)	**19,000,000**		10,000,000	200 (RL)
Benzo (a) pyrene	330	210	**14,000**		2,400	330 (3x)	**20,000**		4,300	200 (RL)	**220,000,000**		40,000,000	930 (3x)	6,700,000	LJ	10,000,000	200 (RL)
Benzo (b) fluoranthene	2,900	2,100	**17,000**		2,400	510 (3x)	**23,000**		4,300	200 (RL)	**270,000,000**		40,000,000	570 (3x)	**23,000,000**		10,000,000	200 (RL)
Benzo (g,h,i) perylene			**4,700**		2,400	180 (RL)	**2,500**		220	200 (RL)	**59,000,000**		40,000,000	840 (3x)	**41,000**	J	2,100	200 (RL)
Benzo (k) fluoranthene	29,000	21,000	**16,000**		2,400	180 (RL)	**23,000**		4,300	200 (RL)	**250,000,000**		40,000,000	960 (3x)	**13,000,000**		10,000,000	200 (RL)
Bis(2-ethylhexyl)phthalate	170,000	120,000	2,400	U	2,400	180 (RL)	220	U	220	200 (RL)	200	U	200	200 (RL)	2,100	U	2,100	200 (RL)
Carbazole			**23,000**		4,600	350(RL)	**500**		420	390 (RL)	**110,000**	J	390	390 (RL)	13,000,000	LJ	20,000,000	390 (RL)
Chrysene	290,000	210,000	**37,000**		2,400	360 (3x)	**15,000**		4,300	200 (RL)	**180,000,000**		40,000,000	200 (RL)	**21,000,000**		10,000,000	200 (RL)
Dibenz (a,h) anthracene	330	210	2,000	LJ	2,400	180 (RL)	**2,400**		220	200 (RL)	**55,000,000**		40,000,000	200 (RL)	**34,000**	J	2,100	200 (RL)
Dibenzofuran	150,000	1,000,000	**3,300,000**		1,200,000	180 (RL)	170	LJ	220	200 (RL)	**510,000**	J	200	200 (RL)	**11,000,000**		10,000,000	200 (RL)
Fluoranthene	2,900,000	2,200,000	**6,100,000**		2,300,000	690 (3x)	5,700	LJ	8,400	390 (RL)	6,100,000	LJ	77,000,000	390 (RL)	**110,000,000**	J	20,000,000	390 (RL)
Fluorene	5,400,000	22,000,000	**4,100,000**		1,200,000	180 (RL)	**360**		220	200 (RL)	**700,000**	J	200	200 (RL)	**24,000,000**		10,000,000	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	**5,800**		2,400	180 (RL)	**8,700**		4,300	200 (RL)	**92,000,000**		40,000,000	960 (3x)	**61,000**	J	2,100	200 (RL)
Naphthalene	43,000	18,000	**6,000,000**		1,200,000	180 (RL)	140	LJ	220	200 (RL)	**2,000,000**	J	200	200 (RL)	**6,100,000**	LJ	10,000,000	200 (RL)
Phenanthrene	43,000,000		**12,000,000**		1,200,000	420 (3x)	**590**		220	200 (RL)	**420,000**	J	200	200 (RL)	**93,000,000**		10,000,000	200 (RL)
Pyrene	5,600,000	17,000,000	**3,300,000**		1,200,000	480 (3x)	**15,000**		4,300	200 (RL)	**170,000,000**		40,000,000	200 (RL)	**53,000,000**		10,000,000	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		990,000	**5,380**		16.5	12,630 (3x)	**4,140**		17.5	21,900 (3x)	**6,870**		16.8	27,990 (3x)	**4,400**		19	21,900 (3x)
Arsenic	12	1.6	**1.2**	J+	0.41	3.3 (3x)	**2.3**		0.46	7.2 (3x)	**1.8**		0.4	6 (3x)	**8.2**		0.47	7.2 (3x)
Barium	14,000	190,000	**9**		4.1	143.7 (3x)	**27.8**		4.9	71.1 (3x)	**18.9**		4	80.7 (3x)	**54.1**		4.7	71.1 (3x)
Cadmium	100	800	0.41	U	0.41	0.49 (RL)	0.49	U	0.49	0.44 (RL)	0.4	U	0.4	0.4 (RL)	**1**		0.47	0.44 (RL)
Calcium			19.8	LJ	412	954 (3x)	**1,300**		437	3,210 (3x)	232	LJ	421	1,026 (3x)	**1,100**		476	3,210 (3x)
Chromium			**9.2**		0.82	8.1 (3x)	6.6			30.9 (3x)	**6.4**		0.8	30.9 (3x)	**5.8**		0.93	30.9 (3x)
Cobalt	12,000	300	0.41	U	0.41	2.52 (3x)	**1.1**		0.98	2.46 (3x)	**0.45**		0.4	3.3 (3x)	**2**		0.47	2.46 (3x)
Copper	8,200	41,000	**1.4**		0.82	4.2 (3x)	**17.2**		0.98	11.1 (3x)	**2.4**		0.8	11.1 (3x)	**27.9**		0.93	11.1 (3x)
Iron		720,000	**13,200**		8.2	10,650 (3x)	**3,610**		8.7	29,550 (3x)	**4,240**		8.4	57,600 (3x)	**5,820**		9.5	29,550 (3x)
Lead	1,400	800	**4.2**		0.41	14.1 (3x)	**33.2**		0.49	38.4 (3x)	**7.2**		0.4	17.7 (3x)	**39.7**		0.47	38.4 (3x)
Magnesium			126	LJ	412	1,389 (3x)	320	LJ	437	633 (3x)	137	LJ	421	780 (3x)	255	LJ	476	633 (3x)
Mangenese		23,000	**5.6**		1.2	11.7 (3x)	**60.3**		1.3	56.7 (3x)	**10.4**		1.3	18.9 (3x)	**127**		1.4	56.7 (3x)
Mercury	61	34	0.11	U	0.11	0.12 (RL)	**2.3**		0.62	0.11 (RL)	0.03	LJ	0.11	0.12 (RL)	**2**		0.12	0.11 (RL)
Nickel	4,100	20,000	**0.57**	J+	0.41	2.88 (3x)	**2.9**		0.49	4.2 (3x)	**1.4**		0.4	5.4 (3x)	**4.1**		0.47	4.2 (3x)
Potassium			412	U	412	493 (RL)	437	U	437	443 (RL)	421	U	421	429 (RL)	476	U	476	443 (RL)
Silver	1,000	5,100	0.41	U	0.41	0.49 (RL)	0.49	U	0.49	0.44 (RL)	0.4	U	0.4	0.4 (RL)	0.47	U	0.47	0.44 (RL)
Thallium	14		0.41	U	0.41	0.49 (RL)	0.49	U	0.49	0.44 (RL)	0.4	U	0.4	0.4 (RL)	0.47	U	0.47	0.44 (RL)
Vanadium	1,400	72	**24.8**		2.1	15.9 (3x)	**9.3**		2.5	60 (3x)	**12**		2	68.1 (3x)	**10**		2.3	60 (3x)
Zinc	61,000	310,000	0.82	U	0.82	3.9 (3x)	**32.9**		0.98	23.1 (3x)	**5.9**		0.8	11.1 (3x)	98.1		0.93	23.1 (3x)

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Highlighted = concentraction exceeds EPA or State Risk Screening

RL = Reporting Limit

U = Not detected at reported quantitation limit

J = Estimated value

UJ = Estimated quantitation limit

L = Reported concentration is below the contract required quantitation limit (CI

R = Result is unusabe

F+ = A false positive exists

+ = High biased

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Sample Number:			ACS14-25				ACS19-58 (Duplicate of ACS07-58)				ACS19-10 (Duplicate of ACS10-10)				ACS25-06			
EPA Sample Number:			F9DB5/MF9DB5				F9DB6/MF9DB6				F9DB7/MF9DB7				F9DC7/MF9DC7			
Sample Location:			AC14				AC19				AC19				AC25			
Sample Description			Culvert/Ditch (South)				Creosote Area				Creosote Area				Inside Concrete Structure			
Sample Depth			2 - 5 feet interval				5 - 8 feet interval				8 - 10 feet interval				0 - 2 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs																		
1,1'-Biphenyl	230,000	51,000,000	**91,000**	J	2,000	200 (RL)	**74,000**	J	2,000	180(RL)	**120,000**	J	190	220 (RL)	**6,500**		2,000	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	**12,000,000**		10,000,000	200 (RL)	**61,000,000**		39,000,000	180 (RL)	**6,000,000**		3,800,000	220 (RL)	**40,000**	J	2,000	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	**12,000**	F+	3,900	390 (RL)	3,800	U	3,800	350(RL)	360	UJ	360	430 (RL)	3,800	U	3,800	390 (RL)
Acenaphthene	6,100,000	33,000,000	**19,000,000**		10,000,000	200 (RL)	**60,000,000**		39,000,000	180 (RL)	**5,800,000**		3,800,000	220 (RL)	**12,000**		200	200 (RL)
Acenaphthylene	5,100,000		**19,000**		2,000	200 (RL)	**10,000**		2,000	180 (RL)	190	UJ	190	220 (RL)	**7,700**		2,000	200 (RL)
Anthracene	48,000,000	170,000,000	**25,000,000**		10,000,000	200 (RL)	**39,000,000**	LJ	39,000,000	1,320 (3x)	**3,800,000**		3,800,000	220 (RL)	**20,000,000**		3,900,000	200 (RL)
Benzaldehyde		100,000,000	**4,100**	F+	3,900	390 (RL)	3,800	U	3,800	350(RL)	360	UJ	360	430 (RL)	3,800	U	3,800	390 (RL)
Benzo (a) anthracene	2,900	2,100	**12,000,000**		10,000,000	200 (RL)	**81,000**	J	2,000	180 (RL)	**130,000**	J	190	220 (RL)	**5,400,000**		3,900,000	200 (RL)
Benzo (a) pyrene	330	210	5,400,000	LJ	10,000,000	930 (3x)	**34,000**	J	2,000	330 (3x)	**84,000**	J	190	220 (RL)	**3,300,000**	LJ	3,900,000	200 (RL)
Benzo (b) fluoranthene	2,900	2,100	**6,400,000**	LJ	10,000,000	570 (3x)	**58,000**	J	2,000	510 (3x)	**73,000**	J	190	420 (3x)	**4,500,000**		3,900,000	200 (RL)
Benzo (g,h,i) perylene			**31,000**		2,000	840 (3x)	**8,400**		2,000	180 (RL)	**13,000**	J	190	220 (RL)	**43,000**	J	2,000	200 (RL)
Benzo (k) fluoranthene	29,000	21,000	**7,400,000**	LJ	10,000,000	960 (3x)	**27,000**		2,000	180 (RL)	**51,000**	J	190	220 (RL)	**5,100,000**		3,900,000	200 (RL)
Bis(2-ethylhexyl)phthalate	170,000	120,000	2,000	U	2,000	200 (RL)	2,000	U	2,000	180 (RL)	190	UR	190	360 (3x)	2,000	U	2,000	200 (RL)
Carbazole			13,000,000	LJ	20,000,000	390 (RL)	**120,000**	J	3,800	350(RL)	**95,000**	J	360	430 (RL)	**6,700,000**	LJ	3,900,000	390 (RL)
Chrysene	290,000	210,000	**12,000,000**		10,000,000	200 (RL)	**69,000**	J	2,000	360 (3x)	**28,000**	J	190	220 (RL)	**7,100,000**		3,900,000	200 (RL)
Dibenz (a,h) anthracene	330	210	**20,000**		2,000	200 (RL)	**4,900**		2,000	180 (RL)	**9,200**	J	190	220 (RL)	**23,000**		2,000	200 (RL)
Dibenzofuran	150,000	1,000,000	**16,000,000**		10,000,000	200 (RL)	**54,000,000**		39,000,000	180 (RL)	**4,900,000**		3,800,000	220 (RL)	**45,000**	J	2,000	200 (RL)
Fluoranthene	2,900,000	2,200,000	**64,000,000**		20,000,000	390 (RL)	**93,000,000**	J	76,000,000	690 (3x)	**11,000,000**	J	360	430 (RL)	**16,000,000**		7,700,000	390 (RL)
Fluorene	5,400,000	22,000,000	**28,000,000**		10,000,000	200 (RL)	**62,000,000**		39,000,000	180 (RL)	**6,200,000**		3,800,000	220 (RL)	**110,000**	J	2,000	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	**46,000**	J	2,000	960 (3x)	**13,000**		2,000	180 (RL)	**16,000**	J	190	220 (RL)	**53,000**	J	2,000	200 (RL)
Naphthalene	43,000	18,000	**28,000,000**		10,000,000	200 (RL)	**290,000,000**		39,000,000	180 (RL)	**29,000,000**		3,800,000	220 (RL)	**30,000**		2,000	200 (RL)
Phenanthrene	43,000,000		**110,000,000**		10,000,000	200 (RL)	**170,000,000**		39,000,000	420 (3x)	**17,000,000**		3,800,000	220 (RL)	**8,000,000**		3,900,000	200 (RL)
Pyrene	5,600,000	17,000,000	**37,000,000**		10,000,000	200 (RL)	**41,000,000**		39,000,000	480 (3x)	**4,600,000**		3,800,000	220 (RL)	**13,000,000**		3,900,000	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS																		
Aluminum		990,000	**3,260**		17.1	27,990 (3x)	**8,630**		17.5	12,630 (3x)	**3,590**		15.6	9,060 (3x)	**2,700**		18.4	21,900 (3x)
Arsenic	12	1.6	**4.9**		0.44	6 (3x)	**3**	J	0.43	3.3 (3x)	**1.2**	J+	0.42	19.2 (3x)	**18.2**	J	0.46	7.2 (3x)
Barium	14,000	190,000	**31.7**		4.4	80.7 (3x)	**23.5**		4.3	143.7 (3x)	**10.6**		4.2	144 (3x)	**75**		4.6	71.1 (3x)
Cadmium	100	800	0.44	U	0.44	0.4 (RL)	0.43	U	0.43	0.49 (RL)	0.42	U	0.42	0.41 (RL)	**1.6**		0.46	0.44 (RL)
Calcium			385	LJ	428	1,026 (3x)	158	LJ	436	954 (3x)	46.5	LJ	391	1,104 (3x)	**7,290**		461	3,210 (3x)
Chromium			**4.8**		0.88	30.9 (3x)	**11.2**		0.87	8.1 (3x)	**4.5**		0.83	12.6 (3x)	**8.1**		0.93	30.9 (3x)
Cobalt	12,000	300	**1.4**		0.44	3.3 (3x)	0.43	U	0.43	2.52 (3x)	0.42	U	0.42	3.6 (3x)	**2.8**		0.46	2.46 (3x)
Copper	8,200	41,000	**11.6**		0.88	11.1 (3x)	**2.8**		0.87	4.2 (3x)	0.79	LJ	0.83	4.5 (3x)	**68.2**		0.93	11.1 (3x)
Iron		720,000	**3,080**		8.6	57,600 (3x)	**11,900**		8.7	10,650 (3x)	**4,710**		7.8	23,070 (3x)	**22,400**		9.2	29,550 (3x)
Lead	1,400	800	**16.6**		0.44	17.7 (3x)	**5.6**		0.43	14.1 (3x)	**3.3**		0.42	15.9 (3x)	**204**		0.46	38.4 (3x)
Magnesium			151	LJ	428	780 (3x)	266	LJ	436	1,389 (3x)	124	LJ	391	1,320 (3x)	**1,090**		461	633 (3x)
Mangenese		23,000	**41.6**		1.3	18.9 (3x)	**12.8**		1.3	11.7 (3x)	4.4		1.2	6.9 (3x)	**784**		1.4	56.7 (3x)
Mercury	61	34	**1.9**		0.1	0.12 (RL)	0.11	U	0.11	0.12 (RL)	0.1	U	0.1	0.11 (RL)	**28.3**		3	0.11 (RL)
Nickel	4,100	20,000	**2**		0.44	5.4 (3x)	**0.71**	J+	0.43	2.88 (3x)	0.42	U	0.42	3.6 (3x)	**8.8**		0.46	4.2 (3x)
Potassium			428	U	428	429 (RL)	436	U	436	493 (RL)	391	U	391	154.2 (3x)	381	LJ	461	443 (RL)
Silver	1,000	5,100	0.44	U	0.44	0.4 (RL)	0.43	U	0.43	0.49 (RL)	0.42	U	0.42	0.41 (RL)	0.46	U	0.46	0.44 (RL)
Thallium	14		0.44	U	0.44	0.4 (RL)	0.43	U	0.43	0.49 (RL)	0.42	U	0.42	0.41 (RL)	**0.68**	J+	0.46	0.44 (RL)
Vanadium	1,400	72	**7.6**		2.2	68.1 (3x)	**30.9**		2.2	15.9 (3x)	**11.9**		2.1	49.8 (3x)	**8.1**		2.3	60 (3x)
Zinc	61,000	310,000	**36**		0.88	11.1 (3x)	**1.6**		0.87	3.9 (3x)	**1.3**		0.83	5.4 (3x)	**180**		0.93	23.1 (3x)

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Sample Number:			ACS26-06			
EPA Sample Number:			F9DC8/MF9DC8			
Sample Location:			AC26			
Sample Description			Creosote Pile			
Sample Depth			0 - 2 feet interval			
	RECAP (industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL
ANALYTE: SVOCs						
1,1'-Biphenyl	230,000	51,000,000	210	U	210	200 (RL)
2-Methylnaphthalene	170,000	4,100,000	**300**		210	200 (RL)
3,3'-Dichlorobenzidine	4,200	3,800	410	U	410	390 (RL)
Acenaphthene	6,100,000	33,000,000	210	U	210	200 (RL)
Acenaphthylene	5,100,000		**1500**		210	200 (RL)
Anthracene	48,000,000	170,000,000	**2,900**			200 (RL)
Benzaldehyde		100,000,000	410	U	410	390 (RL)
Benzo (a) anthracene	2,900	2,100	**16,000**		10,000	200 (RL)
Benzo (a) pyrene	330	210	**16,000**		10,000	200 (RL)
Benzo (b) fluoranthene	2,900	2,100	**26,000**		10,000	200 (RL)
Benzo (g,h,i) perylene			8,600	LJ	10,000	200 (RL)
Benzo (k) fluoranthene	29,000	21,000	**24,000**		10,000	200 (RL)
Bis(2-ethylhexyl)phthalate	170,000	120,000	210	U	210	200 (RL)
Carbazole			**1,100**		410	390 (RL)
Chrysene	290,000	210,000	**25,000**		10,000	200 (RL)
Dibenz (a,h) anthracene	330	210	**3,200**		210	200 (RL)
Dibenzofuran	150,000	1,000,000	**540**		210	200 (RL)
Fluoranthene	2,900,000	2,200,000	**31,000**		20,000	390 (RL)
Fluorene	5,400,000	22,000,000	190	LJ	210	200 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,100	9,300	LJ	10,000	200 (RL)
Naphthalene	43,000	18,000	**960**		210	200 (RL)
Phenanthrene	43,000,000		**2,500**		210	200 (RL)
Pyrene	5,600,000	17,000,000	**32,000**		10,000	200 (RL)
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/Kg	Result	Flag	RL	3x Bkgd or RL
ANALYTE: TOTAL METALS						
Aluminum		990,000	**5,770**		15.6	21,900 (3x)
Arsenic	12	1.6	**5.8**	J	0.4	7.2 (3x)
Barium	14,000	190,000	**99.6**		4	71.1 (3x)
Cadmium	100	800	0.4	U	0.4	0.44 (RL)
Calcium			**3,430**		390	3,210 (3x)
Chromium			**4.4**		0.8	30.9 (3x)
Cobalt	12,000	300	**2.4**		0.4	2.46 (3x)
Copper	8,200	41,000	**48.8**		0.8	11.1 (3x)
Iron		720,000	**16,000**		7.8	29,550 (3x)
Lead	1,400	800	**67**		0.4	38.4 (3x)
Magnesium			**768**		390	633 (3x)
Mangenese		23,000	**254**		1.2	56.7 (3x)
Mercury	61	34	**0.26**		0.1	0.11 (RL)
Nickel	4,100	20,000	**5.3**		0.4	4.2 (3x)
Potassium			327	LJ	390	443 (RL)
Silver	1,000	5,100	0.4	U	0.4	0.44 (RL)
Thallium	14		0.4	U	0.4	0.44 (RL)
Vanadium	1,400	72	**15.6**		2	60 (3x)
Zinc	61,000	310,000	**57.8**		0.8	23.1 (3x)

Bold = detected above Reporting Limits

Underlined = concentration detected 3x above background or above backgroun

Highlighted = concentraction exceeds EPA or State Risk Screening

RL = Reporting Limit

U = Not detected at reported quantitation limit

J = Estimated value

UJ = Estimated quantitation limit

L = Reported concentration is below the contract required quantitation limit (Cl

R = Result is unusabe

F+ = A false positive exists

+ = High biased

^ = High bias

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Sample Number:			ACSD02				ACSD08			ACSD12			ACSD15		
EPA Saemple Number:			F9DB8/MF9DB8				F9DC1/MF9DC1			F9DC3/MF9DC3			F9DC4/MF9DC4		
Sampling Location:			AC02				AC08			AC12			AC15		
Sample Description			Sediment Background				Sediment from Wastewater Pit			Sediment from Culvert/Ditch			Sediment from SW Property Boundary		
	RECAP (Industrial) µg/Kg	MSSL (Industrial) µg/Kg	Result	Flag	RL	3x Bkgd or RL	Result	Flag	RL	Result	Flag	RL	Result	Flag	RL
ANALYTE: SVOCs															
1,1'-Biphenyl	230,000	51,000,000	170	U	170	170 (RL)	**67,000**	J	1,700	210	U	210	190	U	190
2-Methylnaphthalene	170,000	4,100,000	**23**		3.4	69 (3x)	**9,400,000**		3,500,000	**370**		210	**60**		3.7
Acenaphthene	6,100,000	33,000,000	**22**		3.4	66 (3x)	**6,400,000**		3,500,000	**510**		210	**24**		3.7
Acenaphthylene	5,100,000		3.4	UJ	3.4	3.4 (RL)	**4,700**		1,700	**1,100**		210	**29**	J	3.7
Anthracene	48,000,000	170,000,000	**27**	J	3.4	81 (3x)	**18,000,000**		3,500,000	**2,600**		210	**1,500**		190
Benzo (a) anthracene	2,900	2,100	**16**		3.4	48 (3x)	2,800,000	LJ	3,500,000	**4,600**		2,100	**2,700**		1,900
Benzo (a) pyrene	330	210	**39**		3.4	117 (3x)	**34,000**	J	1,700	**2,200**		2,100	**970**		190
Benzo (b) fluoranthene	2,900	2,100	**210**	J	170	630 (3x)	**38,000**	J	1,700	**3,900**		2,100	**2,000**		190
Benzo (g,h,i) perylene			**39**		3.4	117 (3x)	**7,200**		1,700	**3,500**		210	**480**		190
Benzo (k) fluoranthene	29,000	21,000	**190**		170	570 (3x)	**38,000**	J	1,700	**3,200**		2,100	**1,500**		190
Carbazole			340	U	340	340 (RL)	**9,700,000**		6,700,000	**710**		410	370	U	370
Chrysene	290,000	210,000	**28**		3.4	84 (3x)	2,900,000	LJ	3,500,000	**7,900**		2,100	**4,400**		1,900
Dibenz (a,h) anthracene	330	210	3.4	U	3.4	3.4 (RL)	**3,300**		1,700	**2,000**		210	**250**		190
Dibenzofuran	150,000	1,000,000	170	U	170	170 (RL)	**7,100,000**		3,500,000	**340**		210	190	U	190
Di-n-butylphthalate		62,000,000	170	U	170	170 (RL)	1,700	U	1,700	**350**		210	140	LJ	190
Fluoranthene	2,900,000	2,200,000	**170**	J	34	510 (3x)	**12,000,000**		6,700,000	**7,400**		4,100	**4,200**		3,700
Fluorene	5,400,000	22,000,000	170	U	170	170 (RL)	**9,500,000**		3,500,000	**520**		210	**32**		3.7
Indeno (1,2,3-cd) pyrene	2,900	2,100	**27**		3.4	81 (3x)	**10,000**		1,700	**4,100**		210	**580**		190
Naphthalene	43,000	18,000	**310**	J	34	930 (3x)	**25,000,000**		3,500,000	**1,200**		210	**560**		190
Phenanthrene	43,000,000		**210**		170	630 (3x)	**26,000,000**		3,500,000	**1,300**		210	**230**	J	37
Pyrene	5,600,000	17,000,000	44	J	3.4	132 (3x)	**6,300,000**		3,500,000	**9,100**		2,100	**5,300**		1,900
	RECAP (industrial) mg/kg	MSSL (Industrial) mg/kg	Result mg/kg	Flag	RL mg/kg	3x Bkgd or RL	Result mg/kg	Flag	RL mg/kg	Result mg/kg	Flag	RL mg/kg	Result mg/kg	Flag	RL mg/kg
ANALYTE: TOTAL METALS															
Aluminum		990,000	**7,890**		14.4	23,670 (3x)	**2650**		23.5	**2,560**		17.4	**5,450**		15.2
Arsenic	12	1.6	**0.81**	J+	0.35	2.43 (3x)	**4.7**	J	0.59	**1.8**	J+	0.42	**1.7**	J+	0.36
Barium	14,000	190,000	**20.3**		3.5	60.9 (3x)	**19.7**		5.9	**14**		4.2	**37.7**		3.6
Cadmium	100	800	0.35	U	0.35	0.35 (RL)	**0.75**		0.59	0.42	U	0.42	0.36	U	0.36
Calcium			**1970**		361	5,910 (3x)	425	LJ	586	**720**		434	**1,230**		381
Chromium			**5.9**		0.7	17.7 (3x)	**3.7**		1.2	**5.8**		0.85	**8.6**		0.71
Cobalt	12,000	300	**0.43**	J+	0.35	1.29 (3x)	**1.3**		0.59	0.42	U	0.42	**0.42**	J+	0.36
Copper	8,200	41,000	**5.7**		0.7	17.1 (3x)	**34.1**		1.2	**4.8**		0.85	**4.6**		0.71
Iron		720,000	**18,600**		7.2	55,800 (3x)	**4,100**		11.7	**5,810**		8.7	**12,800**		7.6
Lead	1,400	800	**7.7**		0.35	23.1 (3x)	**55.4**		0.59	**12.3**		0.42	**4.6**		0.36
Mangenese		23,000	**37.1**		1.1	111.3 (3x)	**19.5**		1.8	**33.5**		1.3	**34.7**		1.1
Mercury	61	34	0.029	LJ	0.086	0.086 (RL)	**3.4**		0.78	0.086	LJ	0.12	0.01	LJ	0.086
Nickel	4,100	20,000	**1.1**		0.35	3.3 (3x)	**3.6**		0.59	**0.89**		0.42	**0.97**		0.36
Thallium	14		0.35	U	0.35	0.35 (RL)	**1.3**		0.59	0.42	U	0.42	0.36	U	0.36
Vanadium	1,400	72	**9.3**		1.8	27.9 (3x)	**5.1**		2.9	**6.9**		2.1	**16.5**		1.8
Zinc	61,000	310,000	**17.1**		0.7	51.3 (3x)	**93.9**		1.2	**8.2**		0.85	**5.4**		0.71

Bold = detected above Reporting Limits
Underlined = concentration detected above background or background RL
Highlighted = concentraction exceeds EPA or State Risk Screening
RL = Reporting Limit
U = Not detected at reported quantitation limit
J = Estimated value
UJ = Estimated quantitation limit
L = Reported concentration is below the contract required quantitation limit (CRQL)
+ = High bias

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Sample Number:			ACSW04			ACSW06			ACSW08			ACGW21			ACGW22			ACGW23		
EPA Sample Number:			F9DD0/MF9DD0			F9DC9/MF9DC9			F9DE1/MF9DE1			F9DD1/MF9DD1			F9DD2/MF9DD2			F9DD3/MF9DD3		
Sampling Location:			AC04			AC06			AC08			AC21			AC22			AC23		
Sample Description			Surface Water From the Oil/Water Separator Within the Concrete Structure			Surface Water From the Pit Inside the Concrete Structure			Surface Water From the Wastewater Pond			Monitoring Well #1			Monitoring Well #2			Monitoring Well #3		
	RECAP (GW_SS) µg/L	MCL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L
ANALYTE: SVOCs																				
1,1'-Biphenyl	30		**12**		5	5	U	5	5	U	5	5	U	5	5	U	5	**5.5**		5
2-Methylnaphthalene	0.62		**110**		25	5	U	5	3.8	UJ	5	5	U	5	5	U	5	**20**		5
Acenaphthene	37		**75**		5	5	U	5	**6.6**		5	5	U	5	5	U	5	**22**		5
Anthracene	43		**42**		5	5	U	5	**6.7**		5	5	U	5	5	U	5	5	U	5
Benzo (a) anthracene	7.8		**13**		5	5	U	5	**15**		5	5	U	10	5	U	5	5	U	5
Benzo (a) pyrene	0.2	0.2	**6**		5	5	U	5	**8.1**		5	2.3	UJ	5	2	UJ	5	2.2	UJ	5
Benzo (b) fluoranthene	4.8		**7.5**		5	5	U	5	**14**		5	1.7	UJ	5	5	U	5	2.1	UJ	5
Benzo (k) fluoranthene	2.5		**7.9**		5	5	U	5	**15**		5	2.2	UJ	5	2.1	UJ	5	2.1	UJ	5
Carbazole			**34**		10	10	U	10	5.4	UJ	10	10	U	10	10	U	10	8.8	UJ	10
Chrysene	1.6		**14**		5	5	U	5	**16**		5	5	U	5	5	U	5	1.5	UJ	5
Dibenzofuran	10		**61**		5	5	U	5	3.6	UJ	5	5	U	5	5	U	5	**12**		5
Diethylphthalate	2,900		5	U	5	5	U	5	5	U	5	5	U	5	5	U	5	**5.2**		5
Fluoranthene	150		**91**		10	10	U	10	**33**		10	10	U	10	10	U	10	2.5	UJ	10
Fluorene	24		**69**		5	5	U	5	4.6	UJ	5	5	U	5	5	U	5	**14**		5
Naphthalene	10		**220**		25	5	U	5	5	UJ	5	5	U	5	5	U	5	**110**		25
Phenanthrene	180		**150**		25	5	U	5	**5.4**		5	5	U	5	5	U	5	4.5	UJ	5
Pyrene	18		**54**		5	5	U	5	**36**		5	5	U	5	5	U	5	1.7	UJ	5
	RECAP (GW_SS) µg/L	MCL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L
ANALYTE: Metals																				
Aluminum			**9,160**		200	45.2	UJ	200	**614**		200	190	UJ	200	**1,920**	J	200	1,700	J	200
Arsenic	10	1	**17.4**		1	**3.7**		1	**5.9**		1	**1.1**		1	**2.9**		1	1	U	1
Barium	2,000	2,000	**275**		10	**49.9**		10	**73.2**		10	**60.6**		10	**73.1**		10	**52.2**		10
Cadmium	5	5	**10.8**		1	1	U	1	0.44	UJ	1	1	U	1	1	U	1	1	U	1
Calcium			**97,100**		5,000	**34,000**		5,000	**10,000**		5,000	**6,580**		5,000	3,390	UJ	5,000	**5,180**		5,000
Chromium		100	**12.1**		2	0.96	UJ	2	**3**		2	2.8		2	**4**		2	2	U	2
Cobalt	220		**6.1**		1	1	U	1	**2.7**		1	0.64	UJ	1	**3**		1	1	UJ	1
Copper	1,300	1,300	**328**	J	2	1.8	UJ	2	**10.3**	J	2	2	U	2	**2**	UJ	2	2	U	2
Iron			**16,300**		100	**477**		100	**6,280**		100	**2,110**		100	**5,980**		100	**849**		100
Lead	15	15	**258**		1	0.6	UJ	1	**11.3**		1	0.29	UJ	1	**1.2**		1	0.36	UJ	1
Mangenese			**1,020**		15	**58.2**		15	**488**		15	**72.8**		15	**23.9**		15	**25**		15
Mercury	2	2	**7.4**		0.2	0.2	U	0.2	0.2	UJ	0.2	0.2	U	0.2	0.2	U	0.2	0.2	U	0.2
Nickel	73		**23.1**		1	1	UJ	1	**4.8**		1	0.7	UJ	1	**1.8**		1	0.81	UJ	1
Thallium	2	2	**8.6**		1	1	U	1	0.44	UJ	1	1	U	1	1	U	1	1	U	1
Vanadium	26		**34.7**		5	5	U	5	2.5	UJ	5	5	U	5	5	U	5	5	U	5
Zinc	1,100		**1,490**	J	2	**8.3**	J	2	**47.4**	J	2	**2.2**	J+	2	**9.2**		2	2	U	2

Bold = detected above Reporting Limits
Highlighted = concentraction exceeds EPA or State Risk Screening
RL = Reporting Limit
U = Not detected at reported quantitation limit

J = Estimated value
L = Reported concentration is below the contract required quantitation limit (CRQ
+ = High bias

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APPENDICES

APPENDIX A

Copy of TDD No.: 9/DYNAMAC-077-15-003

and

AMENDMENTS 001 to 006

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Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # :
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : TDD INITIATION
Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 04/13/2015
Completion Date : 07/05/2015
Effective Date : 04/10/2015

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$0.00	0.00
This Action :	$60,000.00	0.00
New Total :	$60,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	08	T	6A00	302DD2C	2505	06RQRS00	C001	086APLC026-*	CERCLA PIPELINE	$60,000.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # :
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard (Signature) (Date)	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**
Contracting Officer Representative : Brenda Cook (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**
Contract Specialist: Michael J. Pheeny (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 04/10/2015 (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Other Agency Official : (Signature) (Date)	**Branch Mail Code :** **Phone Number :** **Fax Number :**

Specific Elements: Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work: Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 001
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : EXTEND POP
Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 04/13/2015
Completion Date : 10/30/2015
Effective Date : 04/10/2015

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$60,000.00	0.00
This Action :	$0.00	0.00
New Total :	$60,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 001
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard (Signature) (Date)	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**	
Contracting Officer Representative : Brenda Cook (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**	
Contract Specialist: Michael J. Pheeny (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 06/23/2015 (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Other Agency Official : (Signature) (Date)	**Branch Mail Code :** **Phone Number :** **Fax Number :**	

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 002
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : EXTEND POP INCREMENTAL FUNDING

Verbal Date :
Start Date : 04/13/2015
Completion Date : 10/30/2015
Effective Date : 04/10/2015

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$60,000.00	0.00
This Action :	$9,000.00	0.00
New Total :	$69,000.00	0.00

Specific Elements :

See Schedule

Description of Work :

See Schedule

Region Specific :

CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	09	T	6A00	302DD2C	2505	06WQWQ00	C001	096APLC027-*	CERCLA PIPELINE	$11.30
2	07	T	6A00	302DD2C	2505	06WQWQ00	C001	076APLC022-001	CERCLA PIPELINE	$.74
3	07	T	6A00	302DD2C	2505	06WQWQ00	C001	076APLC022-*	CERCLA PIPELINE	$87.02
4	09	T	6A00	302DC6C	2505	06WQWQ00	C001	096ARVC012-001	REMOVAL SUPPORT	$.45
5	10	T	6A00	302DD2C	2505	06WQWQ00	C001	106APLC007-001	CERCLA PIPELINE	$4,908.84
6	10	T	6A00	302DD2C	2505	06WQWQ00	C001	106APLC015-001	CERCLA PIPELINE	$1,991.65

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 002
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard *(Signature)* *(Date)*	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**	
Contracting Officer Representative : Brenda Cook *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**	
Contract Specialist: Michael J. Pheeny *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 07/20/2015 *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Other Agency Official : *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** **Fax Number :**	

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 002
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 002 - Increase the TDD ceiling by $9,000 (for a new ceiling of $69,000) to allow work to continue.
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 003
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : EXTEND POP
Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 04/13/2015
Completion Date : 12/15/2015
Effective Date : 04/10/2015

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$69,000.00	0.00
This Action :	$0.00	0.00
New Total :	$69,000.00	0.00

Specific Elements :

See Schedule

Description of Work :

See Schedule

Region Specific :

CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 003
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard *(Signature)* *(Date)*	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**	
Contracting Officer Representative : Brenda Cook *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**	
Contract Specialist: Michael J. Pheeny *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 10/08/2015 *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Other Agency Official : *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** **Fax Number :**	

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 003
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 003 - Extended the POP to 12/15/2015 to allow time for report preparation due to analytical results being received by the EPA later than anticipated.
Amendment 002 - Increase the TDD ceiling by $9,000 (for a new ceiling of $69,000) to allow work to continue.
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 004
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : EXTEND POP
Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 04/13/2015
Completion Date : 03/01/2016
Effective Date : 04/10/2015

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$69,000.00	0.00
This Action :	$0.00	0.00
New Total :	$69,000.00	0.00

Specific Elements :

See Schedule

Description of Work :

See Schedule

Region Specific :

CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 004
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard *(Signature)* *(Date)*	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**	
Contracting Officer Representative : Brenda Cook *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**	
Contract Specialist: Michael J. Pheeny *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 12/02/2015 *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Other Agency Official : *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** **Fax Number :**	

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 004
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 004 - Extend the POP to 03/01/2016 to allow for draft submittal of report and review by EPA.
Amendment 003 - Extended the POP to 12/15/2015 to allow time for report preparation due to analytical results being received by the EPA later than anticipated.
Amendment 002 - Increase the TDD ceiling by $9,000 (for a new ceiling of $69,000) to allow work to continue.
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 005
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : INCREMENTAL FUNDING

Verbal Date :
Start Date : 04/13/2015
Completion Date : 03/01/2016
Effective Date : 04/10/2015

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$69,000.00	0.00
This Action :	$10,000.00	0.00
New Total :	$79,000.00	0.00

Specific Elements :

See Schedule

Description of Work :

See Schedule

Region Specific :

CERCLIS:

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp. Code	Budget Org.	Program Element	Object Class	Site Project	Cost Org.	DCN Line-ID	Funding Category	TDD Amount
1	13	T	6A00	303DD2	2505	06WQWQ00	C001	146APLC024-001	CERCLA PIPELINE	$10,000.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 005
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Project Officer : Will LaBombard (Signature) (Date)	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**	
Contracting Officer Representative : Brenda Cook (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**	
Contract Specialist: Michael J. Pheeny (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 12/15/2015 (Signature) (Date)	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**	
Other Agency Official : (Signature) (Date)	**Branch Mail Code :** **Phone Number :** **Fax Number :**	

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 005
Contract # : EP-W-06-077

Vendor : DYNAMAC CORPORATION

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 005 - TDD is being amended to increase the funding ceiling by $10,000 for additional data review and final report preparation.
Amendment 004 - Extend the POP to 03/01/2016 to allow for draft submittal of report and review by EPA.
Amendment 003 - Extended the POP to 12/15/2015 to allow time for report preparation due to analytical results being received by the EPA later than anticipated.
Amendment 002 - Increase the TDD ceiling by $9,000 (for a new ceiling of $69,000) to allow work to continue.
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

Technical Direction Document

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 006
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder SI
Purpose : INCREMENTAL FUNDING,EXTEND POP

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

Verbal Date :
Start Date : 04/13/2015
Completion Date : 07/01/2016
Effective Date : 04/10/2015

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code :
Activity : Site Inspection
Activity Code : SI
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$79,000.00	0.00
This Action :	$5,000.00	0.00
New Total :	$84,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS: :

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp.	Budget Org	Program Element	Object Class	Site Project	Cost Org	DCN Line-ID	Funding Category	TDD Amount
1	08	T	6A00	302DD2C	2505	06RQRS00	C001	086APLC026-*	CERCLA PIPELINE	$64,917.49
2	09	T	6A00	302DD2C	2505	06WQWQ00	C001	096APLC027-*	CERCLA PIPELINE	$11.30
3	07	T	6A00	302DD2C	2505	06WQWQ00	C001	076APLC022-001	CERCLA PIPELINE	$.74
4	07	T	6A00	302DD2C	2505	06WQWQ00	C001	076APLC022-*	CERCLA PIPELINE	$87.02
5	09	T	6A00	302DC6C	2505	06WQWQ00	C001	096ARVC012-001	REMOVAL SUPPORT	$.45
6	10	T	6A00	302DD2C	2505	06WQWQ00	C001	106APLC007-001	CERCLA PIPELINE	$4,908.84

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 006
Contract # : EP-W-06-077

Project Officer : Will LaBombard *(Signature)* *(Date)*	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**
Contracting Officer Representative Brenda Cook *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**
Contract Specialist: Michael J. Pheeny *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 03/02/2016 *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Other Agency Official *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** **Fax Number :**

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-15-003
Amendment # : 006
Contract # : EP-W-06-077

Specific Elements:
Base ORIG - Analyze -samples and prepare sample projection,Assist -in obtaining site access,Collect -Samples per approved work plan,Develop -Work plan for Site Inspection at American Creosote Deridder,Document -sample results with formal SI report,Perform -Site Inspection and HRS site score using Quickscore
Description of Work:
Amendment 006 - The TDD is being amended to increase the funding ceiling by $5,000 (for a new ceiling of $84,000)and to extend the POP to 07/01/2016, both to allow additional time for report preparation, EPA review, and coordination of the removal of on-site wastes.
Amendment 005 - TDD is being amended to increase the funding ceiling by $10,000 for additional data review and final report preparation.
Amendment 004 - Extend the POP to 03/01/2016 to allow for draft submittal of report and review by EPA.
Amendment 003 - Extended the POP to 12/15/2015 to allow time for report preparation due to analytical results being received by the EPA later than anticipated.
Amendment 002 - Increase the TDD ceiling by $9,000 (for a new ceiling of $69,000) to allow work to continue.
Amendment 001 - TDD is being amended to extend POP to 10/30/2015 to allow for receipt of analytical data and report preparation.
Base ORIG - Conduct a Site Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of various waste streams and source material at the site. It is estimated that no more than 25 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site conditions. An SI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The SI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA WAM, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.Meet with SAM Brenda Cook

Interim Dates

Draft workplan due May, 1, 2015
Conduct sampling by June 5, 2015

The initial TDD ceiling is $60,000.

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

APPENDIX B

START-3 PHOTOGRAPHIC DOCUMENTATION

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	0245
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/09/2015
Time	1305
Photographer	S. Cowan (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS01.

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	0246
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/09/2015
Time	1346
Photographer	S. Cowan (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Boring hole at sample location ACS01 plugged with bentonite.

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2101
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/09/2015
Time	1520
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS03.

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2102
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/09/2015
Time	1547
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring complete at sample location ACS03. Plugging boring hole with bentonite.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2105
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/10/2015
Time	1018
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Groundwater sampling at location ACGW22 (Monitoring Well #02).

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2106
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/10/2015
Time	1210
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)
Description: Groundwater sampling at location ACGW23 (Monitoring Well #03).	

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2107
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/10/2015
Time	1218
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

View of monitoring well at location ACGW23 (Monitoring Well #03).

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2108
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/10/2015
Time	1546
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Groundwater sampling at location ACGW21 (Monitoring Well #01).

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Logbook Photo #	2109
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/11/2015
Time	0816
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS05.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2115
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/11/2015
Time	0824
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)
Description: Surface water sampling at sample location ACSW08.	

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2116
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	0829
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)

Description:

Surface water sampling at sample location ACSW08.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2117
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/11/2015
Time	0840
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Sediment sampling at sample location ACSD08. Sample not collected at the time.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2123
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/11/2015
Time	1019
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)

Description:

Sediment sampling at sample location ACSD08.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2118
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Northwest
Date	6/11/2015
Time	0857
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS07.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2119
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	0916
Photographer	J. New (START-QRI)
Witness	J. Holewka (START-EPA)

Description:

Surface water sampling at sample location ACSW04 (Oil/Water Separator).

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Logbook Photo #	2120
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/11/2015
Time	0930
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS10.

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Logbook Photo #	2124
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	1045
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)

Description:

Soil sampling at sample location ACS25.

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Logbook Photo #	2125
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/11/2015
Time	1103
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Surface Water sampling at sample location ACSW06 (the pit).

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Logbook Photo #	2126
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Northwest
Date	6/11/2015
Time	1105
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

The Pit inside the concrete structure. Photograph taken from the south side of the pit.

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Logbook Photo #	2127
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Northeast
Date	6/11/2015
Time	1108
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

The Pit inside the concrete structure. Photograph taken from the south side of the pit.

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Logbook Photo #	2130
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/11/2015
Time	1131
Photographer	J. Holewka (START-EPA)
Witness	B. Cook (EPA-SAM)

Description:

The pit inside the concrete structure. Photograph taken from the north side of the pit.

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Logbook Photo #	2131
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	1131
Photographer	J. Holewka (START-EPA)
Witness	B. Cook (EPA-SAM)

Description:

The pit inside the concrete structure. Photograph taken from the north side of the pit.

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	2128
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/11/2015
Time	1128
Photographer	J. Holewka (START-EPA)
Witness	B. Cook (EPA-SAM)

Description:

Concrete foundation inside the concrete structure.

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Logbook Photo #	2129
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	1129
Photographer	J. Holewka (START-EPA)
Witness	B. Cook (EPA-SAM)

Description:

Concrete foundation inside the concrete structure.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2132
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Southeast
Date	6/11/2015
Time	1148
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)
Description: Soil sampling at sample location ACS26 (Creosote Piles).	

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Logbook Photo #	2133
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/11/2015
Time	1439
Photographer	J. Holewka (START-EPA)
Witness	M. VanShoubroek (START-QRI)

Description:

Soil boring at sample location ACS11.

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Logbook Photo #	2134
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Northeast
Date	6/11/2015
Time	1514
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)

Description:

Soil sampling with a hand auger at sample location ACS14.

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Logbook Photo #	2135
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/11/2015
Time	1550
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)
Description: Collecting sediment samples at sample location ACSD15.	

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Logbook Photo #	2136
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Southeast
Date	6/11/2015
Time	1610
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)

Description:

Sample location ACSD12. (Due to incline and terrain, photograph of sampling activities was not taken due to safety concerns).

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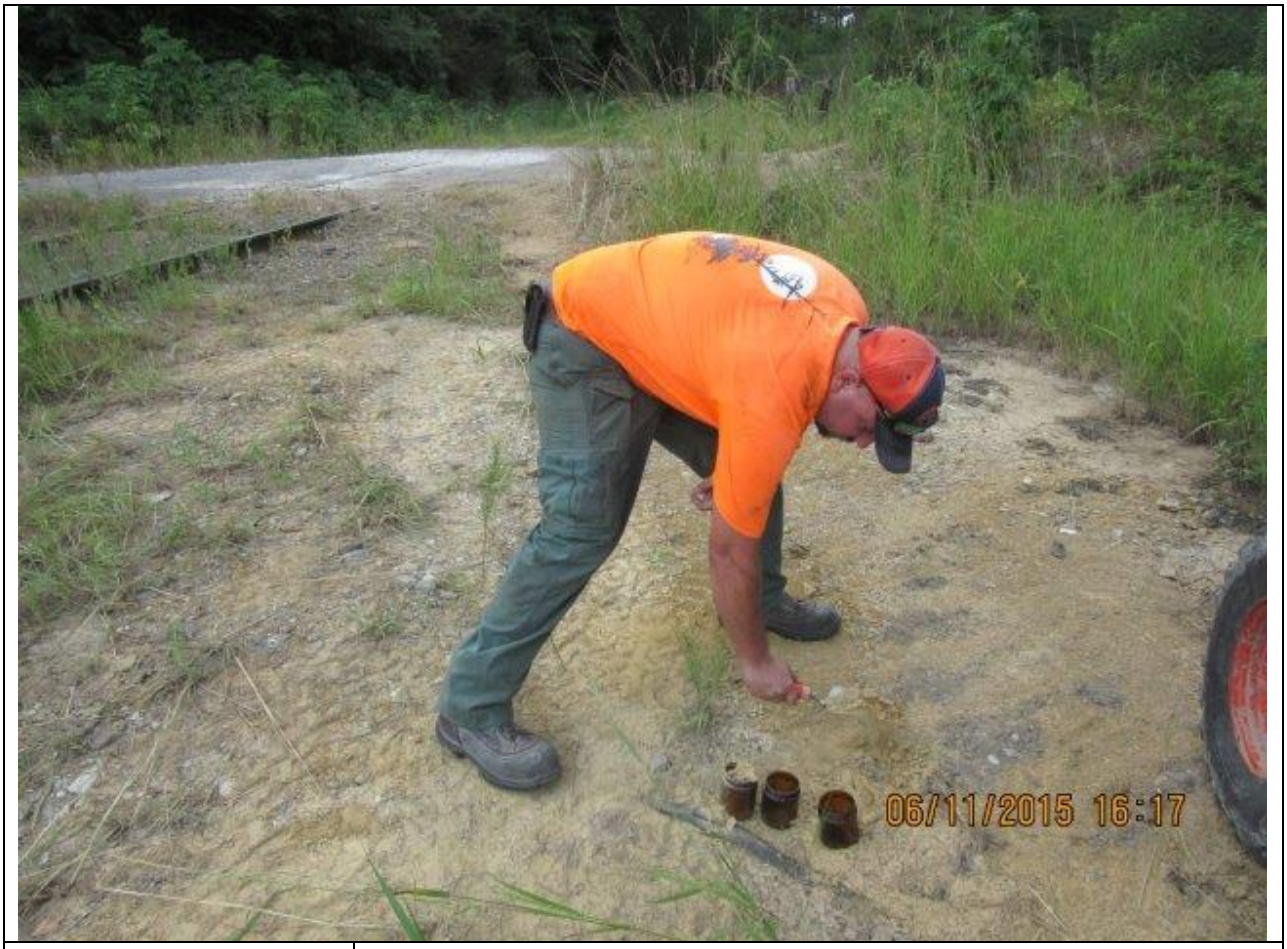

Logbook Photo #	2137
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/11/2015
Time	1617
Photographer	J. Holewka (START-EPA)
Witness	J. New (START-QRI)
Description: Collecting sediment samples at sample location ACSD02.	

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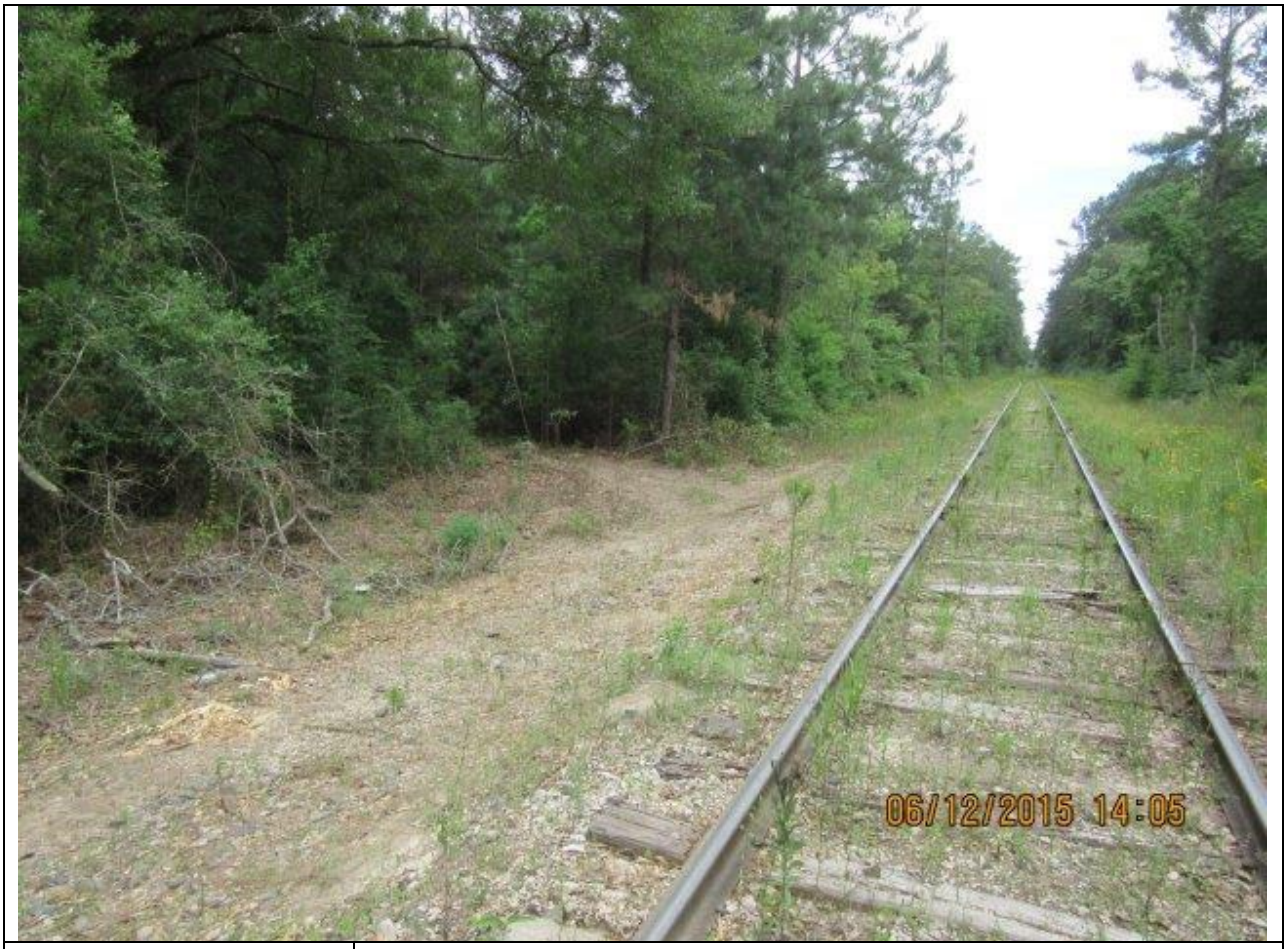

Logbook Photo #	2139
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1405
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Access point to the property, located on the east side of the railroad tracks south of Post Plant Road.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2140
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/12/2015
Time	1405
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

First access point to the property, located on the east side of the rail road tracks south of Post Plant Road.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2141
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/12/2015
Time	1405
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

First access point to property located on the east side of the railroad tracks south of Post Plant Road. Photograph taken from pathway facing the tracks to the west.

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2143
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/12/2015
Time	1410
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Second access point to the property, located on the east side of the railroad tracks south of Post Plant Road. This access point was used once by the mobile direct push equipment. Photograph taken from the pathway on the east side of the railroad tracks.

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Logbook Photo #	2144
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	East
Date	6/12/2015
Time	1411
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Second access point to the property, located on the east side of the railroad tracks south of Post Plant Road. This access point was used once by the mobile direct push equipment. Photograph taken from the railroad tracks.

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	2145
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1412
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	2146
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1412
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

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Logbook Photo #	2151
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1413
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

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Logbook Photo #	2147
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Northeast
Date	6/12/2015
Time	1412
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

Staging area for bulldozer along pathway constructed for access to property, located on the east side of the railroad tracks south of Post Plant Road.

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Logbook Photo #	2152
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1413
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

End of pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

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Logbook Photo #	2153
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	Southwest
Date	6/12/2015
Time	1413
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

End of pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

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Logbook Photo #	2154
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/12/2015
Time	1413
Photographer	J. Holewka (START-EPA)
Witness	N/A

Description:

End of pathway bulldozed on property for access, located on east side of railroad track south of Post Plant Road.

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Logbook Photo #	2155
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1453
Photographer	J. Holewka (START-EPA)
Witness	S. Cowan (START-EPA)

Description:

Staging area location along bulldozed pathway, situated east of railroad tracks south of Post Plant Road. Investigation derived waste drums stored on property along bulldozed pathway.

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Logbook Photo #	2158
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	North
Date	6/12/2015
Time	1453
Photographer	J. Holewka (START-EPA)
Witness	S. Cowan (START-EPA)

Description:

Staging area location along bulldozed pathway, situated east of railroad tracks south of Post Plant Road.

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	2159
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1453
Photographer	J. Holewka (START-EPA)
Witness	S. Cowan (START-EPA)
Description: Command post location, and location of investigation derived waste stored onsite.	

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Logbook Photo #	2156
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/12/2015
Time	1453
Photographer	J. Holewka (START-EPA)
Witness	S. Cowan (START-EPA)

Description:

Investigation derived waste drum containing purged groundwater.

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	2157
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	West
Date	6/12/2015
Time	1453
Photographer	J. Holewka (START-EPA)
Witness	S. Cowan (START-EPA)

Description:

Investigation derived waste drum containing soil cuttings.

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Logbook Photo #	2160
US EPA ID / Task Order Number	09/Dynamac-077-15-003
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, LA 70634
Parish	Beauregard
Direction/Orientation	South
Date	6/12/2015
Time	1457
Photographer	S. Cowan (START-EPA)
Witness	J. Holewka (START-EPA)

Description:

Site departure. Rail road tracks at Post Plant Road.

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APPENDIX B

LDEQ PHOTOGRAPHIC DOCUMENTATION

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Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 001 Date: 06/09/2015

Description: Looking SE at concrete containment area at former process area of American Creosote, note creosote residue.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 002 Date: 06/09/2015

Description: Looking NE at concrete containment area at former process area of American Creosote, note creosote residue.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 003 Date: 06/09/2015

Description: Looking south at concrete containment area at former process area of American Creosote, note creosote residue.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 004 Date: 06/09/2015

Description: Looking south at concrete separator/sump in former process area of American Creosote, note creosote residue and sheen on water.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 005 Date: 06/09/2015

Description: Looking east at Quaternary Resource Investigations (QRI) subcontractor making a soil boring in a potential drip area near the process area of American Creosote.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 006 Date: 06/09/2015

Description: Looking east at QRI subcontractor making a soil boring in a potential drip area near the process area of American Creosote.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 007 Date: 06/10/2015

Description: Looking SW at purging activities being conducted on Monitoring Well # 2 located on the former BNSF Railway ROW.

Site	**American Creosote/BNSF Railway - DeRidder**	Location:	Post Plant Road		
AI#	**44487 & 44036**				
City:	DeRidder	Parish:	Beauregard	Photographer	Keith Horn-USTRD

Photo #: 008 Date: 06/10/2015

Description: Looking NW at purging activities being conducted on Monitoring Well # 2 located on the former BNSF Railway ROW.

APPENDIX C

COPY OF START-3 LOGBOOKS

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INCH

MADE IN TACOMA
— SINCE 1916 —
Rite in the Rain®
— DEFYING MOTHER NATURE —

Name _____

_____

Address _____

_____

Phone _____

Project _____

_____

_____

_____

MADE USA · RITE GREEN · Archival paper

RiteintheRain.com

CONTENTS Site Logbook

PAGE	REFERENCE	DATE
	Site Name: American Creosote	
	Type of Activity:	
	Site Location:	
	CERCLA #: CAN000604293	
	SSID # A6KM	
	EPA	
	START TDD # 9/Dymmc-077-15-003	
	Logbook #1	
	Type of Documentation: Logbook of Activities on site	
	Contract #: EP-W-06-077	

START

6/09/2015
0800 START Jodi Holewska & START Steve Cowan arrive on site. Set up for the day. Also on site START / QRI Jason New and Micah Van Shoubroek. EPA Brenda Cook and LDEQ Keith Horne.
0845 Health & Safety meeting
Weather forecast! Sunny High 92°F
0900 Survey site for Access points & situational awareness
1000-1015 EPA Brenda Cook & LDEQ Keith Horne meet with Timber Rock Railroad rep.
1030 Setup command post near railroad tracks at Post plant Road. Command Post is at the beginning of the trail to the East of the tracks. Discuss Access points, sampling locations & logistics for the site
1034 Heavy Equipment Arrives on site UTV & bushwhacker
1300-1330 ACS01 drilling
1325 START New starts bushwhacking
1510-1535 ACS03 drilling
1730 All parties depart site

Rite in the Rain

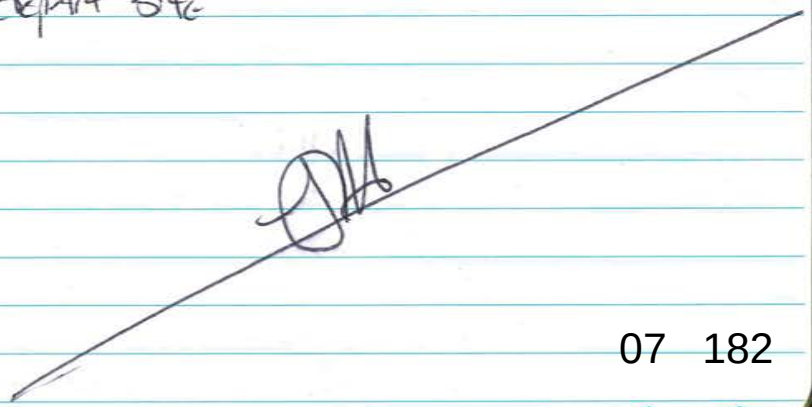
6/10/2015
0815 START Holewka & Cowan
Arrive on site. Also on site:
START / QRI New & Van Shoubroek
EPA Cook & LDEQ Horne
0850 Health & Safety meeting
Weather forecast: Sunny High 93°F
0942-1016 purge/sample ACGW-22
monitoring well #02
1122-1209 Purge/sample ACGW-23
monitoring well #03
1248 Bulldozer Arrives on site
1510-1545 purge/sample ACGW-21
monitoring well #01
1730 Depart site

6/11/2015
0715 START Holewka & Cowan
Arrive on site. Also on site:
START, New & Van Shoubroek
0720 Health & Safety meeting
Weather Forecast:
0800 EPA Cook Arrives on site
0808-0825 Drilling, soil boring ACS05
0823-0830 sample ACSW08
0830 could not sample ACSD08
need additional supplies/guidance.
will consult with EPA Cook
0855-0925 Drilling, soil boring ACS07
0910-0923 sample ACSW04
no sediment sample taken at ACSD04.
The oil/water separator is approximately
5' across with a center wall at
approximately 2.5'. It contains 5-10'
of vegetation to the bottom
0929-1005 Drilling, soil boring ACS10
1017-1023 sample ACSD08
1037-1050 sample ACS25
sample taken just inside the wall of the
concrete structure. Approximately 2.4" of
sediment on top of the concrete.

Rite in the Rain

6/11/2015 continued
1102-1110 sample ACSW06
water sample taken from inside of the pit located in the concrete structure
Approximately 5' of water in the pit.
The pit has a concrete bottom with no sediment.
1110-1130 START Holeckek and EPA Cook attempt to survey the entire concrete structure but it is heavily overgrown and difficult to maneuver around & determine it's shape and contents. From what we could survey we estimate the structure to be Approximately 30' x 70' with 5 additional concrete slabs to the South of the pit. More slabs are to the North but number is unknown.
Turtles are living inside the pit and unable to escape.
1146-1148 Sample ACS26- creosote plw
1432-1445 drilling. soil boring ACS11
boring site East of the tracks, closest to the command post. not on trail in woods
1503-1510 ACS13, no picture taken
hand Auger, sample taken continued

6/11/2015 continued
just outside the mouth of the culvert on the East side of the railroad tracks
1512-1521 ACS14 hand auger
Approximately 20 yards East of ACS13
1549 sample ACS015
southwest boundary of the site
1605-1610 sample ACSW02
sample taken near the mouth of the culvert on the West side of the tracks
1617 sample ACS002, northern boundary of the site, close to where the train tracks meet Post Plant Rd.
1630 START Lawn & EPA Cook depart site for Fedex
1745 START Holeckek, New & VanShoubrouck depart site



Rite in the Rain

6/12/2015

1000 START Holeuka & Cawn arrive on site. Health & Safety meeting

Weather forecast: High 89 Sunny, scattered storms possible

Setup and process samples

1030 EPA Cook arrives on site

1200 Clean Harbors representative arrives on site. Samples two IDW drums

1400 START Holeuka performs final site walk through, two IDW drums remain on site, photos taken.

1445 EPA Cook departs site

1500 START Holeuka & Cawn depart

1730 START Holeuka & Cawn arrive at federal. All site samples are shipped

Sample location	Latitude (°N)	Longitude (°W)
ACGW-21	30.830347	-93.278253
ACGW-22	30.830574	-93.277789
ACGW-23	30.830678	-93.278152
ACSO1*	30.835414	-93.274983
ACSO3	30.831877	-93.276937
ACSO5	30.831562	-93.276954
ACSO7	30.831156	-93.277190
ACSO9	30.831251	-93.277381
ACS11	30.830934	-93.27782
ACS13	30.830901	-93.277941
ACS14	30.830251	-93.278068
ACS19	Duplicate	Duplicate
ACS25	30.831493	-93.277017
ACS26	30.831899	-93.276848
ACSD02	30.835333	-93.275212
ACSD08	30.831326	-93.277288
ACSD12	30.830321	-93.278260
ACSD15	30.827576	-93.280338
ACSW04	30.831530	-93.276990
ACSW06	30.831316	-93.277039
ACSW08	30.831326	-93.277288

GPS point with * was taken by START Cawn using Iphone maps app. All other points taken by START Holeuka using Iphone App called GPS Tour, Version 1.2. ACS19 was a duplicate of ACS07-SS and ACS10-10

Rite in the Rain

GPS points for Concrete Structure

Southwest corner:
30.831283 -93.277248

North west Corner:
30.831608 -93.277004

Northeast Corner
30.831562 -93.276866

Photo Log

Date	Time	Photo #	Direction	Photographer / witness	Description
6-9-15	1305	0245	E	SL/mv	ACS01- Drilling
6-9-15	1346	0246	E	SL/mv	ACS01 complete
6-9-15	1513	2100	N	JH/mv	ACS03 drilling
6-9-15	1520	2101	N	JH/mv	ACS03 drilling
6-9-15	1547	2102	N	JH/mv	ACS03 complete
6-9-15	1547	2103	N	JH/mv	ACS03 complete
6-10-15	108	2104	W	JH/mv	ACGW22
6-10-15	108	2105	W	JH/mv	ACGW 22
6-10-15	1210	2106	W	JH/JN	ACGW23
6-10-15	1218	2107	W	JH/JN	ACGW23 - well cap
6-10-15	1546	2108	E	JH/mv	ACGW21
6-11-15	0816	2109	N	JH/mv	ACS05
6-11-15	0824	2115	W	JH/JN	ACSW08
6-11-15	0829	2116	E	JH/JN	ACSW08
6-11-15	0840	2117	W	JH/mv	ACSD08
6-11-15	0857	2118	NW	JH/mv	ACS07
6-11-15	0916	2119	E	JN/JH	ACSW04
6-11-15	0930	2120	S	JH/mv	ACS10
6-11-15	1018	2121	W	JH/JN	ACSD08
6-11-15	1018	2122	W	JH/JN	ACSD08
6-11-15	1019	2123	W	JH/JN	ACSD08
6-11-15	1045	2124	E	JH/JN	ACS25
6-11-15	1103	2125	W	JH/mv	ACSW06
6-11-15	1105	2126	NW	JH/mv	pit

Rite in the Rain

Photo log Continued

Date	Time	Photo #	Direction	Photographer/ Witness	Description
6-11-15	1108	2127	NE	JH/mv	Pit
6-11-15	1128	2128	S	JH/BC	inside concrete structure
6-11-15	1129	2129	E	JH/BC	inside concrete structure
6-11-15	1131	2130	W	JH/BC	pit
6-11-15	1131	2131	E	JH/BC	pit
6-11-15	1148	2132	SE	JH/JN	ACS 26
6-11-15	1439	2133	E	JH/mv	ACS 11
6-11-15	1514	2134	NE	JH/JN	ACS14
6-11-15	1550	2135	S	JH/JN	ACSD15
6-11-15	1610	2136	SE	JH/JN	ACSD 12
6-11-15	1617	2137	N	JH/JN	ACSD02
6-12-15	1405	2139	S	JH	train tracks
6-12-15	1405	2140	E	JH	1st Access point
6-12-15	1405	2141	W	JH	1st Access point
6-12-15	1410	2142	W	JH	2nd access point
6-12-15	1410	2143	W	JH	2nd access point
6-12-15	1411	2144	E	JH	2nd Access point
6-12-15	1412	2145	S	JH	trail
6-12-15	1412	2146	N	JH	trail
6-12-15	1412	2147	ENE	JH	trail
6-12-15	1412	2148	S	JH	trail
6-12-15	1412	2149	S	JH	trail
6-12-15	1413	2150	S	JH	trail
6-12-15	1413	2151	S	JH	trail

Photo log Continued

Date	Time	Photo #	Direction	Photographer/ Witness	Description
6-12-15	1413	2152	S	JH	trail
6-12-15	1413	2153	SW	JH	trail
6-12-15	1413	2154	N	JH	trail
6-12-15	1453	2155	S	JH/SC	Drums
6-12-15	1453	2156	W	JH/SC	Drums
6-12-15	1453	2157	W	JH/SC	Drums
6-12-15	1453	2158	N	JH/SC	Command Post
6-12-15	1453	2159	S	JH/SC	Command Post
6-12-15	1457	2160	S	SC/JH	site departure train tracks

Rite in the Rain

CLASS SCHEDULE DATE _____

NAME _____ SCHOOL _____

ADDRESS _____

PERIOD	MON.	RM.	TUES.	RM.	WED.	RM.	THURS.	RM.	FRI.	RM.
1										
2										
3										
4										
5										
6										
7										
8										
9										

6/5/15

1000hrs Call w/ NPL Coordinator Gods

ACSED4 - No sample
ACSW4 - 0910 to 0923
ACS05-02 : 0808
05-33 - 0825
ACSED06 - No Sed (In scribe drawing Location & Tags
ACSW06 - Sed Yes
ACS07-02 : 0855
07-33 - 0925
ACSED08 ~~0853~~
ACSW-06 ~~0855~~ 0823 : 0830.
ACS10-02 : ~~1010~~ 0929 ✓
-33 : 1042
✓ ACS25 : 1045 to 1050 hrs
ACS26

6/5/15

1000hrs Call w/ NPL Coordinator Gods

ACSED4 - No sample
ACSW4 - 0910 to 0923
ACS05-02 - 0808
05-?? - 0825
ACSED06 - No Sed (To scribe drawing Location Tags
ACSW06 - Sed Yes
ACS07-02 : 0855
07-?? - 0925
ACSED08
ACSW-08 : 0823 : 0830
ACS10-02 : 0929
-?? : 1042
ACS25 : 1045 to 1050 hrs
ACS26.

1245 hrs Begin drilling Soil core AC01.S== Soil Core Data Sheet

0815 Arrived Site. Set up
0850 HSS Meeting
0905 Sample Team depart to MW-03
ACGW-22 to Purge/collect
Groundwater sample.

Soil Sample/VOC Head
AC03-13-15: 0 ppm
9-10: 1.5 ppm
0-2: 1.1 ppm
4-5: .5 ppm
10-12: 3 ppm

AC03-02: 1.1 ppm
4-5: .5 ppm
9-10: 1.5 ppm
10-12: 3.0 ppm
13-15: 0 ppm

1030 Sample Team finishes collection for
ACGW-22 (MW-02) Purged 10 gallons

1050 Sample Team proceeds to MW-03 to collect groundwater sample for ACGW-22

1215 End sample time at MW-03.

ACS-25 (Creosote Piles)
ACS -26 (Inside Wall Area)

6/11/15

0715 Arrive at Site. Weather Clear
≅ 75°F Humid
0720 hrs H+S Meeting
0740 hrs Set up CP. Got ready
for operat.
0800 Soil Boring Team Proceeds to
ACS05 (Concrete Struct.)

ACS05

a) 0-5 90% recovery
0-1 Creosote
b) 5-10
8-10 moist, possible water

0-2: 3.3 ppm
2-5: 5.8 ppm
5-8: 4.4 ppm
8-10: 1.4 ppm

ACS07

A.) 0-5 90% recovery
0-1 possible creosote
2-5 silty clay
b) 5-10
5-8 hydrocarbon odor more sand
8-10 hydrocarbon odor creosote

0-2: 1.8 ppm
2-5: 1.3 ppm
5-8: 72.6
8-10: 175.5

ACS 10

A.) 0-5

0-1-1½ possible creosote

29" - 3'4" SAND WATER

last 4" moist sand

b.) 5-10

5-8 possible creosote
silty clay

8-10 creosote

0-2	1.2	ppm
2-5	.6 ???	ppm
5-8	14.8	ppm
8-10	157.4	ppm

APPENDIX D

CHAIN OF CUSTODY FORMS

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USEPA CLP COC (LAB COPY)

DateShipped: 6/11/2015

CarrierName: FedEx

AirbillNo: 773806255739

CHAIN OF CUSTODY RECORD

Case #: 45361

Cooler #: 1

No: 6-061015-194304-0002

Lab: Chemtech Consulting Group

Lab Contact: Snehal Mehta

Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-02	MF9DA0	Soil/ START	Grab	TM + Hg(21)	6-403975 (Wet ice) (1)	Background	06/09/2015 13:00	
ACS03-02	MF9DA2	Soil/ START	Grab	TM + Hg(21)	6-403979 (Wet ice) (1)	RR Spur	06/09/2015 15:10	
ACS03-12	MF9DA3	Soil/ START	Grab	TM + Hg(21)	6-403981 (Wet ice) (1)	RR Spur	06/09/2015 15:25	
ACGW-21	MF9DD1	Ground Water/ START	Grab	TM + Hg(21)	6-403802 (HNO3 pH<2) (1)	MW-01	06/10/2015 15:45	
ACGW-22	MF9DD2	Ground Water/ START	Grab	TM + Hg(21)	6-403805 (HNO3 pH<2), 6-403806 (HNO3 pH<2) (2)	MW-02	06/10/2015 10:16	
ACGW-23	MF9DD3	Ground Water/ START	Grab	TM + Hg(21)	6-403809 (HNO3 pH<2) (1)	MW-03	06/10/2015 12:09	
ACFB-24	MF9DD4	Water/ START	Grab	TM + Hg(21)	6-403812 (HNO3 pH<2) (1)	Field Blank	06/10/2015 16:10	

Sample(s) to be used for Lab QC: ACS03-12 Tag 403981, ACGW-22 Tag 403805, ACGW-22 Tag 403806	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #
Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Stan Lowe START	6/11/15 1830	FedEx		

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSW-08	MF9D1	Waste Water/ START	Grab	TM + Hg(21)	6-403824 (HNO3 pH<2) (1)	Wastewater Pit 1	06/11/2015 08:23	
ACS01-25	MF9DA1	Soil/ START	Grab	TM + Hg(21)	6-403977 (Wet ice) (1)	Background	06/09/2015 13:05	
ACS05-02	MF9DA4	Soil/ START	Grab	TM + Hg(21)	6-403983 (Wet ice) (1)	Concrete Structure	06/11/2015 08:08	
ACS05-25	MF9DA5	Soil/ START	Grab	TM + Hg(21)	6-403985 (Wet ice) (1)	Concrete Structure	06/11/2015 08:25	
ACS07-02	MF9DA6	Soil/ START	Discrete Interval	TM + Hg(21)	6-403987 (Wet ice) (1)	West - WWP	06/11/2015 08:55	
ACS07-58	MF9DA7	Soil/ START	Grab	TM + Hg(21)	6-403989 (Wet ice) (1)	West - WWP	06/11/2015 09:10	
ACS10-02	MF9DA8	Soil/ START	Grab	TM + Hg(21)	6-403991 (Wet ice) (1)	Creosote Area	06/11/2015 10:00	
ACS10-58	MF9DA9	Soil/ START	Grab	TM + Hg(21)	6-403993 (Wet ice) (1)	Creosote Area	06/11/2015 10:20	
ACS11-02	MF9DB0	Soil/ START	Grab	TM + Hg(21)	6-403995 (Wet ice) (1)	Creosote Area	06/11/2015 14:15	
ACS11-35	MF9DB1	Soil/ START	Grab	TM + Hg(21)	6-403997 (Wet ice) (1)	Creosote Area	06/11/2015 14:30	
ACS13-02	MF9DB2	Soil/ START	Discrete Interval	TM + Hg(21)	6-403999 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:05	
ACS13-24	MF9DB3	Soil/ START	Discrete Interval	TM + Hg(21)	6-472427 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:10	
ACS14-02	MF9DB4	Soil/ START	Discrete Interval	TM + Hg(21)	6-472429 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:12	

Special Instructions:	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[signature] (START)	6/12/15 1830	Fed Ex		

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS14-25	MF9DB5	Soil/ START	Discrete Interval	TM + Hg(21)	6-472431 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:21	
ACS19-58	MF9DB6	Soil/ START	Discrete Interval	TM + Hg(21)	6-472433 (Wet ice) (1)	West - WWP	06/11/2015 09:15	
ACS19-10	MF9DB7	Soil/ START	Grab	TM + Hg(21)	6-472435 (Wet ice) (1)	Creosote Area	06/11/2015 10:45	
ACSD02-06	MF9DB8	Sediment/ START	Grab	TM + Hg(21)	6-472438 (None) (1)	Background	06/11/2015 16:17	
ACS01-58	MF9DB9	Soil/ START	Discrete Interval	TM + Hg(21)	6-472433 (Wet ice) (1)	Background	06/09/2015 13:15	
ACSD08-06	MF9DC1	Sediment/ START	Grab	TM + Hg(21)	6-472447 (Wet ice) (1)	Wastewater Pit	06/11/2015 13:00	
ACS07-10	MF9DC2	Soil/ START	Discrete Interval	TM + Hg(21)	6-472481 (Wet ice) (1)	West - WWP	06/11/2015 09:25	
ACSD12-06	MF9DC3	Sediment/ START	Grab	TM + Hg(21)	6-472485 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 14:10	
ACSD15-06	MF9DC4	Sediment/ START	Grab	TM + Hg(21)	6-472488 (Wet ice) (1)	RR-ROW	06/11/2015 15:49	
ACS10-10	MF9DC5	Soil/ START	Discrete Interval	TM + Hg(21)	6-472490 (Wet ice) (1)	Creosote Area	06/11/2015 10:40	
ACS11-58	MF9DC6	Soil/ START	Discrete Interval	TM + Hg(21)	6-472493 (Wet ice) (1)	Creosote Area	06/11/2015 14:45	

Special Instructions:	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[signature] (START)	6/12/15 1830	FedEx		

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS25-06	MF9DC7	Soil/ START	Grab	TM + Hg(21)	6-472496 (Wet ice) (1)	Creosote Area	06/11/2015 10:37	
ACS26-06	MF9DC8	Soil/ START	Grab	TM + Hg(21)	6-420367 (Wet ice) (1)	Creosote Area	06/11/2015 11:46	
ACSW-06	MF9DC9	Waste Water/ START	Grab	TM + Hg(21)	6-403821 (HNO3 pH<2) (1)	Wastewater Pit 2	06/11/2015 11:30	
ACSW-04	MF9DD0	Surface Water/ START	Grab	TM + Hg(21)	6-420397 (HNO3 pH<2) (1)	Concrete Structure	06/11/2015 09:10	
ACS01-10	MF9DE0	Soil/ START	Discrete Interval	TM + Hg(21)	6-420392 (Wet ice) (1)	Background	06/09/2015 13:30	

Sample(s) to be used for Lab QC: ACSW-04 Tag 420397	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[illegible] (START)	6/12/15 1830	FedEx		

USEPA CLP COC (LAB COPY)
DateShipped: 6/11/2015
CarrierName: FedEx
AirbillNo: 773806239927

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 1

No: 6-061115-101320-0004
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-02	F9DA0	Soil/ START	Grab	SVOA(21)	6-403974 (Wet ice) (1)	Background	06/09/2015 13:00	
ACS03-02	F9DA2	Soil/ START	Grab	SVOA(21)	6-403978 (Wet ice) (1)	RR Spur	06/09/2015 15:10	
ACS03-12	F9DA3	Soil/ START	Grab	SVOA(21)	6-403980 (Wet ice) (1)	RR Spur	06/09/2015 15:25	
ACGW-21	F9DD1	Ground Water/ START	Grab	SVOA(21)	6-403800 (Wet ice), 6-403801 (Wet ice) (2)	MW-01	06/10/2015 15:45	
ACGW-22	F9DD2	Ground Water/ START	Grab	SVOA(21)	6-403803 (Wet ice), 6-403804 (Wet ice) (2)	MW-02	06/10/2015 10:16	
ACGW-23	F9DD3	Ground Water/ START	Grab	SVOA(21)	6-403807 (Wet ice), 6-403808 (Wet ice) (2)	MW-03	06/10/2015 12:09	
ACFB-24	F9DD4	Water/ START	Grab	SVOA(21)	6-403810 (Wet ice), 6-403811 (Wet ice) (2)	Field Blank	06/10/2015 16:10	

Special Instructions: Lab QC not required for SVOAs

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/11/15 1830	FedEx		

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818389814

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-155911-0005
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-25	F9DA1	Soil/ START	Grab	SVOA(21)	6-403976 (Wet ice) (1)	Background	06/09/2015 13:05	
ACS05-02	F9DA4	Soil/ START	Grab	SVOA(21)	6-403982 (Wet ice) (1)	Concrete Structure	06/11/2015 08:08	
ACS05-25	F9DA5	Soil/ START	Grab	SVOA(21)	6-403984 (Wet ice) (1)	Concrete Structure	06/11/2015 08:25	
ACS07-02	F9DA6	Soil/ START	Discrete Interval	SVOA(21)	6-403986 (Wet ice) (1)	West - WWP	06/11/2015 08:55	
ACS07-58	F9DA7	Soil/ START	Grab	SVOA(21)	6-403988 (Wet ice) (1)	West - WWP	06/11/2015 09:10	
ACS10-02	F9DA8	Soil/ START	Grab	SVOA(21)	6-403990 (Wet ice) (1)	Creosote Area	06/11/2015 10:00	
ACS10-58	F9DA9	Soil/ START	Grab	SVOA(21)	6-403992 (Wet ice) (1)	Creosote Area	06/11/2015 10:20	
ACS11-02	F9DB0	Soil/ START	Grab	SVOA(21)	6-403994 (Wet ice) (1)	Creosote Area	06/11/2015 14:15	
ACS11-35	F9DB1	Soil/ START	Grab	SVOA(21)	6-403996 (Wet ice) (1)	Creosote Area	06/11/2015 14:30	
ACS13-02	F9DB2	Soil/ START	Discrete Interval	SVOA(21)	6-403998 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:05	
ACS13-24	F9DB3	Soil/ START	Discrete Interval	SVOA(21)	6-472426 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:10	
ACS14-02	F9DB4	Soil/ START	Discrete Interval	SVOA(21)	6-472428 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:12	
ACS14-25	F9DB5	Soil/ START	Discrete Interval	SVOA(21)	6-472430 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:21	

Special Instructions: Lab QC Not required for SVOAs	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #
Analysis Key: SVOA=CLP Semivolatiles	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[illegible] (START)	6/12/15 1830	Fed Ex		

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818389814

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-155911-0005
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS19-58	F9DB6	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	West - WWP	06/11/2015 09:15	
ACS19-10	F9DB7	Soil/ START	Grab	SVOA(21)	6-472434 (Wet ice) (1)	Creosote Area	06/11/2015 10:45	
ACS01-58	F9DB9	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	Background	06/09/2015 13:15	
ACS07-10	F9DC2	Soil/ START	Discrete Interval	SVOA(21)	6-472480 (Wet ice) (1)	West - WWP	06/11/2015 09:25	
ACS10-10	F9DC5	Soil/ START	Discrete Interval	SVOA(21)	6-472489 (Wet ice) (1)	Creosote Area	06/11/2015 10:40	
ACS11-58	F9DC6	Soil/ START	Discrete Interval	SVOA(21)	6-472492 (Wet ice) (1)	Creosote Area	06/11/2015 14:45	
ACS25-06	F9DC7	Soil/ START	Grab	SVOA(21)	6-472495 (Wet ice) (1)	Creosote Area	06/11/2015 10:37	
ACS26-06	F9DC8	Soil/ START	Grab	SVOA(21)	6-420366 (Wet ice) (1)	Creosote Area	06/11/2015 11:46	
ACS01-10	F9DE0	Soil/ START	Discrete Interval	SVOA(21)	6-472494 (Wet ice) (1)	Background	06/09/2015 13:30	

Special Instructions: Lab QC Not required for SVOAs	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #
Analysis Key: SVOA=CLP Semivolatiles	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[illegible] (START)	6/12/15 1830	FedEx		

USEPA CLP COC (LAB COPY)

DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818421730

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 3

No: 6-061215-162836-0007

Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSD02-06	F9DB8	Sediment/ START	Grab	SVOA/SIM(21)	6-472436 (Wet ice), 6-472437 (Wet ice) (2)	Background	06/11/2015 16:17	
ACSD08-06	F9DC1	Sediment/ START	Grab	SVOA/SIM(21)	6-472445 (Wet ice), 6-472446 (Wet ice) (2)	Wastewater Pit	06/11/2015 13:00	
ACSD12-06	F9DC3	Sediment/ START	Grab	SVOA/SIM(21)	6-472483 (Wet ice), 6-472484 (Wet ice) (2)	Culvert/Ditch (South)	06/11/2015 14:10	
ACSD15-06	F9DC4	Sediment/ START	Grab	SVOA/SIM(21)	6-472486 (Wet ice), 6-472487 (Wet ice) (2)	RR-ROW	06/11/2015 15:49	
ACSW-06	F9DC9	Waste Water/ START	Grab	SVOA(21)	6-403819 (Wet ice), 6-403820 (Wet ice) (2)	Wastewater Pit 2	06/11/2015 11:30	
ACSW-04	F9DD0	Surface Water/ START	Grab	SVOA(21)	6-420395 (Wet ice), 6-420396 (Wet ice) (2)	Concrete Structure	06/11/2015 09:10	
ACSW-08	F9DE1	Waste Water/ START	Grab	SVOA(21)	6-403822 (Wet ice), 6-403823 (Wet ice) (2)	Wastewater Pit 1	06/11/2015 08:23	

Sample(s) to be used for Lab QC: ACSW-04 Tag 420395, ACSW-04 Tag 420396 - Special Instructions: No Lab QC for SVOAs

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA/SIM=CLP Semivolaties/PAHSIM, SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[illegible] (S-ART)	6/12/15 1830	FedEx		

APPENDIX E

GLOBAL POSITIONING SYSTEM (GPS) SAMPLE LOCATIONS

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

APPENDIX E

GLOBAL POSITIONING SYSTEM (GPS) COORDINATES OF SAMPLE LOCATIONS

LATITUDE (°N)	LONGITUDE (°W)	LOCATION ID	MATRIX	GPS DATE	RCVR TYPE	APP USED
30.835414	-93.274983	AC01	Soil	9-Jun-15	iPhone	Maps (TomTom), 2015
30.835333	-93.275212	AC02	Sediment	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831877	-93.276937	ACS3	Soil	9-Jun-15	iPhone	GPS Tour, Version 1.2
30.831530	-93.276990	AC04	Surface Water	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831562	-93.276954	AC05	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831316	-93.277039	AC06	Surface Water	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831156	-93.277190	AC07	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831326	-93.277288	AC08	SedimentSurface Water	11-Jun-15	iPhone	GPS Tour, Version 1.2
		AC09	Not Sampled			
30.831251	-93.277381	AC10	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.830934	-93.277876	AC11	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.830321	-93.278260	AC12	Sediment	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.830901	-93.277941	AC13	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.830251	-93.278068	AC14	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.827576	-93.280338	AC15	Sediment	11-Jun-15	iPhone	GPS Tour, Version 1.2
		AC16	Not Sampled			
		AC17	Not Sampled			
		AC18	Not Sampled			
		AC19	Duplicate of AC10 & AC07	11-Jun-15		
		AC20	Not Sampled			
30.830347	-93.278253	AC21	Groundwater	10-Jun-15	iPhone	GPS Tour, Version 1.2
30.830874	-93.277789	AC22	Groundwater	10-Jun-15	iPhone	GPS Tour, Version 1.2
30.830678	-93.278152	AC23	Groundwater	10-Jun-15	iPhone	GPS Tour, Version 1.2
		AC24	Field Blank			
30.831493	-93.277017	AC25	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2
30.831899	-93.276848	AC26	Soil	11-Jun-15	iPhone	GPS Tour, Version 1.2

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APPENDIX F

ACCESS AGREEMENTS

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

CONSENT FOR ACCESS TO PROPERTY

Name of Owner: Central Manufacturing Company, Inc.
Attn: Mr. James Lopez, Legal Council

Address/Description of Property: *(See attached Parcel Map)*

Physical Address: Post Plant Road, DeRidder, Beauregard Parish, Louisiana (30.831693 North, -93.276863 West)

Legal Description: Section 3, Township 3 South, Range 9 West of the Louisiana Meridian

I consent to the officers, employees, contractors, and authorize representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to my property for the taking of such soil, water, air and/or other samples as may be determined by the EPA to be necessary.

I recognize that these actions by the EPA are undertaken in accordance with its response and enforcement authorities contained in the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

I certify that I have the authority to grant this permission as the owner or the authorized representative of the owner of the property described above. This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

CENTRAL MANUFACTURING COMPANY, INC.

May 14, 2015 BY: G. Patricia B. James
Date Signature

G. Patricia B. James, President
Print Name / Title

James C. Lopez, Attorney (337) 948-8201
Phone Number

Analytical Results

Place a check mark in the appropriate space. Please note that if no selection is made, the EPA will assume that you do not wish to be provided with the analytical results.

(X) Please provide me with a copy of the analytical results for my property.

( ) I do not wish to receive a copy of the analytical results for my property.

05/05/2015 15:21 STAPLES 1250 PAGE 04

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

CONSENT FOR ACCESS TO PROPERTY

Name of Owner: **Timber Rock Railroad (Watco Companies)**
Attn: Douglas Marshall, General Manager

Address/Description of Property: ***(See attached Beauregard Parish Assessor Map)***

Physical Address: **Timber Rock Railroad Right-of-Way(ROW) between Post Plant Road to the North and Crosby Road to the South, DeRidder, Beauregard Parish, Louisiana (ROW adjacent to GPS 30.831693 North, -93.276863 West)**

Legal Description: **Timber Rock Railroad ROW in Section 3, Township 3 South, Range 9 West of the Louisiana Meridian**

I consent to the officers, employees, contractors, and authorize representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to my property for the taking of such soil, water, air and/or other samples as may be determined by the EPA to be necessary.

I recognize that these actions by the EPA are undertaken in accordance with its response and enforcement authorities contained in the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

I certify that I have the authority to grant this permission as the owner or the authorized representative of the owner of the property described above. This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

6-2-15
Date

Signature

Douglas Marshall / General Manager
Print Name / Title

409-385-6611
Phone Number

Analytical Results

Place a check mark in the appropriate space. Please note that if no selection is made, the EPA will assume that you do not wish to be provided with the analytical results.

(✓) Please provide me with a copy of the analytical results for my property.

( ) I do not wish to receive a copy of the analytical results for my property.

APPENDIX G

KAP TECHNOLOGIES INC ANALYTICAL DATA

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

August 18, 2015

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)

Site: **AMERICAN CREOSOTE DERIDDER**

Case#: **45361**

SDG#: **F9DA0**

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report. Due to poor surrogate recoveries in the BNA fraction, some results for four samples were flagged unusable.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: August 13, 2015

TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA

FROM: Wallace Doong, Data Reviewer, ESAT WD

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT DGJ

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-11
ESAT Doc. No.:	1502-211-0142
TDF No.:	6-15-321A
ESAT File No.:	O-1246

Attached is the data review summary for Case # 45361
SDG # F9DA0
Site American Creosote DeRidder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099
ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	45361	SITE	American Creosote DeRidder
LABORATORY	KAP	NO. OF SAMPLES	20
CONTRACT#	EP-W-14-031	MATRIX	19 Soil/1 Sediment
SDG#	F9DA0	REVIEWER (IF NOT ESB)	ESAT
SOW#	SOM02.2	REVIEWER'S NAME	Wallace Doong
SF#	303DD2A6KM	COMPLETION DATE	August 13, 2015

SAMPLE NO.					
	F9DA0	F9DA4	F9DA8	F9DB2	F9DB6
	F9DA1	F9DA5	F9DA9	F9DB3	F9DB7
	F9DA2	F9DA6	F9DB0	F9DB4	F9DB8
	F9DA3	F9DA7	F9DB1	F9DB5	F9DB9

DATA ASSESSMENT SUMMARY

	BNA	BNA-SIM
1. HOLDING TIMES	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O
3. CALIBRATIONS	M	M
4. BLANKS	O	O
5. DMC/SURROGATES	M	O
6. MATRIX SPIKE/DUPLICATE/LCS	N/A	N/A
7. OTHER QC	N/A	N/A
8. INTERNAL STANDARDS	M	O
9. COMPOUND ID/QUANTITATION	M	O
10. PERFORMANCE/COMPLETENESS	O	O
11. OVERALL ASSESSMENT	M	M

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS: Four BNA closing CCVs and one BNA-SIM closing CCV had %Ds that did not meet contractual calibration requirements. BNA samples F9DA7, F9DB0, and F9DB7 had more than contract-allowed number of SDMC recoveries outside the QC limits, but no reextraction was performed. Samples F9DA4 and F9DA7 had target analyte concentrations that exceeded the calibration range, but no further diluted reanalyses were performed. Samples F9DA1 and F9DA7 had poor IS responses, but no reanalyses were performed.

AREA OF CONCERN: **BNA** Twenty seven analytes did not meet the technical %D calibration criteria. Several target analyte concentrations exceeded the calibration range for seven samples. Four samples had outlying DMC recoveries, and several very low DMC recoveries (<10%) rendered some results unusable for three samples. Seven samples had low IS responses. Some target compound results were false positive for five samples. **BNA-SIM** Five analytes did not meet the technical %D calibration criteria.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 45361 **SDG** F9DA0 **SITE** American Creosote DeRidder **LAB** KAP

COMMENTS: This SDG consisted of 19 soil samples for BNA analysis only and 1 sediment sample for BNA and BNA-SIM analyses following CLP SOW SOM02.2. MS/MSD analyses were not requested for this SDG. All BNA samples were analyzed at the low level.

The SOW requires that the soil sample results be adjusted for moisture content as well as dilution when applicable. The adjusted CRQLs, higher than the CRQLs specified in the SOW, were reported by the laboratory and are referred to as SQLs in this report.

S4VEM Review was performed for this package as requested by the Region. Although both the full scan and SIM analysis results were available for BNA sample F9DB8, the SIM analysis results are designated for use only when the corresponding full scan analysis results were non-detects or below the SQLs. The target compounds of concern reported at concentrations above the SQLs were 1,1'-biphenyl, dibenzofuran, phthalates, carbazole, and/or PAHs in 15 samples. Because of very high PAH concentrations, ten BNA samples and BNA-SIM sample F9DB8 were either concentrated to a larger final extract volume and/or diluted and reanalyzed at dilutions (up to 200,000X).

BNA The very low SDMC6 in samples F9DA1 and F9DB7; SDMC14 in samples F9DB0 and F9DB7; and SDMC7, SDMC8, SDMC10, and SDMC15 in sample F9DB7 rendered some results unusable for these samples. Samples F9DA1, F9DA6DL, F9DA7, F9DA8DL, F9DA9DL, F9DB3, and F9DB7 had poor IS performance. To minimize data qualification, the results for analytes associated with IS2 from diluted analysis (F9DB3DL) were recommended for use because the original analysis (F9DB3) had very low IS responses (<20%). Results for two separate analyses were submitted for sample F9DB1. To minimize data qualification and favor positive results, the results from the analysis performed on 7/6/15 were used with the exceptions of benzo(b)fluoranthene and benzo(k)fluoranthene which were taken from the analysis performed on 7/3/15.

OVERALL ASSESSMENT: Some results were qualified for all BNA samples and BNA-SIM sample F9DB8 because of problems with calibration, DMC recovery, IS performance, and/or compound ID/quantitation. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory responded to the Region 6 Resubmission Request (page 31) and made the necessary resubmissions. The resubmitted pages were placed at the beginning of the data package and should be inserted into the package in the appropriate places.

The laboratory was contacted for some issues (Resubmission Request on pages 32 to 34). The laboratory response may affect the DST.

ORGANIC ACRONYMS

%D	Percent Difference
%RSD	Percent Relative Standard Deviation
ARO	Aroclors
BFB	4-Bromofluorobenzene
BNA	Base/Neutral and Acid
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenylphosphine
DMC	Deuterated Monitoring Compound
DST	Data Summary Table
EDM	EXES Data Manager
GC/ECD	Gas Chromatograph/Electron Capture Detector
GC/MS	Gas Chromatograph/Mass Spectrometer
GPC	Gel Permeation Chromatography
IC	Initial Calibration
INDA(B,C)	Individual Standard Mixture A(or B or C)
IS	Internal Standard
LCS	Laboratory Control Sample
LMVOA	Low/Medium Volatile Organic Analysis
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
OTR/COC	Organic Traffic Report/Chain of Custody
PAH	Polynuclear Aromatic Hydrocarbon
PE	Performance Evaluation
PEM	Performance Evaluation Mixture
PEST	Pesticides
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSCC	Regional Sample Control Center
RT	Retention Time
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SDMC	Semivolatile Deuterated Monitoring Compound
SIM	Selected Ion Monitoring
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
SVOA	Semivolatile Organic Analysis
TCL	Target Compound List
TCX	Tetrachloro-m-xylene
TIC	Tentatively Identified Compound
TVOA	Trace Volatile Organic Analysis
VDMC	Volatile Deuterated Monitoring Compound
VOA	Volatile Organic Analysis

HEADER DEFINITIONS FOR ORGANIC EXCEL DST

CASE: Case Number

SDG: SDG Number

EPASAMP: EPA Sample Number

LABID: Laboratory File/Sample ID

MATRIX: Sample Matrix

ANDATE: Sample Analysis Date

ANTIME: Sample Analysis Time

CASNUM: Compound CAS Number

ANALYTE: Compound Name

CONC: Compound Concentration

VALDQAL: Region 6 Organic Data Validation Qualifier (see Organic Data Qualifier Definitions on the next page)

UNITS: Concentration Units

ADJCRQL: Adjusted Contract Required Quantitation Limit Value

SMPDATE: Sampling Date

STATLOC: Station Location

Disclaimer: ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, VALDQAL, and ADJCRQL. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

L Reported concentration is below the CRQL.

M Reported concentration should be used as a raised quantitation limit because of interferences and/or laboratory contamination.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

C Identification of pesticide or Aroclor has been confirmed by Gas Chromatography/Mass Spectrometer (GC/MS).

X Identification of pesticide or Aroclor could not be confirmed by GC/MS when attempted.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	123-91-1	1,4-Dioxane	78	UJ	ug/kg	78	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	100-52-7	Benzaldehyde	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	108-95-2	Phenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	111-44-4	Bis(2-chloroethyl)ether	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	95-57-8	2-Chlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	95-48-7	2-Methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	98-86-2	Acetophenone	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	106-44-5	4-Methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	621-64-7	N-Nitroso-di-n-propylamine	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	67-72-1	Hexachloroethane	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	98-95-3	Nitrobenzene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	78-59-1	Isophorone	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	88-75-5	2-Nitrophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	105-67-9	2,4-Dimethylphenol	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	111-91-1	Bis(2-chloroethoxy)methane	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	120-83-2	2,4-Dichlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	91-20-3	Naphthalene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	106-47-8	4-Chloroaniline	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	87-68-3	Hexachlorobutadiene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	105-60-2	Caprolactam	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	59-50-7	4-Chloro-3-methylphenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	91-57-6	2-Methylnaphthalene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	77-47-4	Hexachlorocyclopentadiene	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	88-06-2	2,4,6-Trichlorophenol	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	95-95-4	2,4,5-Trichlorophenol	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	92-52-4	1,1'-Biphenyl	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	91-58-7	2-Chloronaphthalene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	88-74-4	2-Nitroaniline	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	131-11-3	Dimethylphthalate	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	606-20-2	2,6-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	208-96-8	Acenaphthylene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	99-09-2	3-Nitroaniline	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	83-32-9	Acenaphthene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	51-28-5	2,4-Dinitrophenol	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	100-02-7	4-Nitrophenol	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	132-64-9	Dibenzofuran	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	121-14-2	2,4-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	84-66-2	Diethylphthalate	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	86-73-7	Fluorene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	7005-72-3	4-Chlorophenyl-phenylether	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	100-01-6	4-Nitroaniline	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	534-52-1	4,6-Dinitro-2-methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	86-30-6	N-Nitrosodiphenylamine	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	101-55-3	4-Bromophenyl-phenylether	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	118-74-1	Hexachlorobenzene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	1912-24-9	Atrazine	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	87-86-5	Pentachlorophenol	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	85-01-8	Phenanthrene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	120-12-7	Anthracene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	86-74-8	Carbazole	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	84-74-2	Di-n-butylphthalate	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	206-44-0	Fluoranthene	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	129-00-0	Pyrene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	91-94-1	3,3'-Dichlorobenzidine	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	56-55-3	Benzo(a)anthracene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	218-01-9	Chrysene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	117-84-0	Di-n-octylphthalate	390	U	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	205-99-2	Benzo(b)fluoranthene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	207-08-9	Benzo(k)fluoranthene	200	U	ug/kg	200	06/09/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	50-32-8	Benzo(a)pyrene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	193-39-5	Indeno(1,2,3-cd)pyrene	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	53-70-3	Dibenzo(a,h)anthracene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	191-24-2	Benzo(g,h,i)perylene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA0	S-1021.01	S	07/03/2015	10:24:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	U	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	123-91-1	1,4-Dioxane	150	F+	ug/kg	78	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	100-52-7	Benzaldehyde	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	108-95-2	Phenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	111-44-4	Bis(2-chloroethyl)ether	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	95-57-8	2-Chlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	95-48-7	2-Methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	98-86-2	Acetophenone	390	UR	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	106-44-5	4-Methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	621-64-7	N-Nitroso-di-n-propylamine	200	UR	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	67-72-1	Hexachloroethane	200	UR	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	98-95-3	Nitrobenzene	200	UR	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	78-59-1	Isophorone	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	88-75-5	2-Nitrophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	105-67-9	2,4-Dimethylphenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	111-91-1	Bis(2-chloroethoxy)methane	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	120-83-2	2,4-Dichlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	91-20-3	Naphthalene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	106-47-8	4-Chloroaniline	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	87-68-3	Hexachlorobutadiene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	105-60-2	Caprolactam	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	59-50-7	4-Chloro-3-methylphenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	91-57-6	2-Methylnaphthalene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	77-47-4	Hexachlorocyclopentadiene	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	88-06-2	2,4,6-Trichlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	95-95-4	2,4,5-Trichlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	92-52-4	1,1'-Biphenyl	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	91-58-7	2-Chloronaphthalene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	88-74-4	2-Nitroaniline	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	131-11-3	Dimethylphthalate	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	606-20-2	2,6-Dinitrotoluene	290	F+	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	208-96-8	Acenaphthylene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	99-09-2	3-Nitroaniline	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	83-32-9	Acenaphthene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	51-28-5	2,4-Dinitrophenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	100-02-7	4-Nitrophenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	132-64-9	Dibenzofuran	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	121-14-2	2,4-Dinitrotoluene	200	UR	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	84-66-2	Diethylphthalate	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	86-73-7	Fluorene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	7005-72-3	4-Chlorophenyl-phenylether	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	100-01-6	4-Nitroaniline	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	534-52-1	4,6-Dinitro-2-methylphenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	86-30-6	N-Nitrosodiphenylamine	200	UR	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	101-55-3	4-Bromophenyl-phenylether	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	118-74-1	Hexachlorobenzene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	1912-24-9	Atrazine	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	87-86-5	Pentachlorophenol	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	85-01-8	Phenanthrene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	120-12-7	Anthracene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	86-74-8	Carbazole	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	84-74-2	Di-n-butylphthalate	250	J	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	206-44-0	Fluoranthene	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	129-00-0	Pyrene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	85-68-7	Butylbenzylphthalate	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	91-94-1	3,3'-Dichlorobenzidine	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	56-55-3	Benzo(a)anthracene	200	UJ	ug/kg	200	06/09/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	218-01-9	Chrysene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	117-84-0	Di-n-octylphthalate	390	UJ	ug/kg	390	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	205-99-2	Benzo(b)fluoranthene	190	LJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	207-08-9	Benzo(k)fluoranthene	320	J	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	50-32-8	Benzo(a)pyrene	310	J	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	193-39-5	Indeno(1,2,3-cd)pyrene	320	J	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	53-70-3	Dibenzo(a,h)anthracene	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	191-24-2	Benzo(g,h,i)perylene	280	J	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA1	S-1025.01	S	07/05/2015	01:07:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	UJ	ug/kg	200	06/09/2015	Background
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	123-91-1	1,4-Dioxane	76	UJ	ug/kg	76	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	100-52-7	Benzaldehyde	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	108-95-2	Phenol	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	111-44-4	Bis(2-chloroethyl)ether	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	95-57-8	2-Chlorophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	95-48-7	2-Methylphenol	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	108-60-1	2,2'-Oxybis(1-chloropropane)	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	98-86-2	Acetophenone	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	106-44-5	4-Methylphenol	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	621-64-7	N-Nitroso-di-n-propylamine	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	67-72-1	Hexachloroethane	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	98-95-3	Nitrobenzene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	78-59-1	Isophorone	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	88-75-5	2-Nitrophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	105-67-9	2,4-Dimethylphenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	111-91-1	Bis(2-chloroethoxy)methane	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	120-83-2	2,4-Dichlorophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	91-20-3	Naphthalene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	106-47-8	4-Chloroaniline	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	87-68-3	Hexachlorobutadiene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	105-60-2	Caprolactam	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	59-50-7	4-Chloro-3-methylphenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	91-57-6	2-Methylnaphthalene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	77-47-4	Hexachlorocyclopentadiene	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	88-06-2	2,4,6-Trichlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	95-95-4	2,4,5-Trichlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	92-52-4	1,1'-Biphenyl	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	91-58-7	2-Chloronaphthalene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	88-74-4	2-Nitroaniline	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	131-11-3	Dimethylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	606-20-2	2,6-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	208-96-8	Acenaphthylene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	99-09-2	3-Nitroaniline	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	83-32-9	Acenaphthene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	51-28-5	2,4-Dinitrophenol	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	100-02-7	4-Nitrophenol	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	132-64-9	Dibenzofuran	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	121-14-2	2,4-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	84-66-2	Diethylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	86-73-7	Fluorene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	7005-72-3	4-Chlorophenyl-phenylether	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	100-01-6	4-Nitroaniline	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	534-52-1	4,6-Dinitro-2-methylphenol	380	UJ	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	86-30-6	N-Nitrosodiphenylamine	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	101-55-3	4-Bromophenyl-phenylether	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	118-74-1	Hexachlorobenzene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	1912-24-9	Atrazine	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	87-86-5	Pentachlorophenol	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	85-01-8	Phenanthrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	120-12-7	Anthracene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	86-74-8	Carbazole	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	84-74-2	Di-n-butylphthalate	150	LJ	ug/kg	200	06/09/2015	RR Spur

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	206-44-0	Fluoranthene	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	129-00-0	Pyrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	91-94-1	3,3'-Dichlorobenzidine	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	56-55-3	Benzo(a)anthracene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	218-01-9	Chrysene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	117-84-0	Di-n-octylphthalate	380	U	ug/kg	380	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	205-99-2	Benzo(b)fluoranthene	100	LJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	207-08-9	Benzo(k)fluoranthene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	50-32-8	Benzo(a)pyrene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	193-39-5	Indeno(1,2,3-cd)pyrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	53-70-3	Dibenzo(a,h)anthracene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	191-24-2	Benzo(g,h,i)perylene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA2	S-1021.02	S	07/03/2015	11:07:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	123-91-1	1,4-Dioxane	79	UJ	ug/kg	79	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	100-52-7	Benzaldehyde	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	108-95-2	Phenol	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	111-44-4	Bis(2-chloroethyl)ether	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	95-57-8	2-Chlorophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	95-48-7	2-Methylphenol	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	98-86-2	Acetophenone	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	106-44-5	4-Methylphenol	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	621-64-7	N-Nitroso-di-n-propylamine	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	67-72-1	Hexachloroethane	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	98-95-3	Nitrobenzene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	78-59-1	Isophorone	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	88-75-5	2-Nitrophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	105-67-9	2,4-Dimethylphenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	111-91-1	Bis(2-chloroethoxy)methane	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	120-83-2	2,4-Dichlorophenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	91-20-3	Naphthalene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	106-47-8	4-Chloroaniline	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	87-68-3	Hexachlorobutadiene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	105-60-2	Caprolactam	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	59-50-7	4-Chloro-3-methylphenol	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	91-57-6	2-Methylnaphthalene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	77-47-4	Hexachlorocyclopentadiene	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	88-06-2	2,4,6-Trichlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	95-95-4	2,4,5-Trichlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	92-52-4	1,1'-Biphenyl	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	91-58-7	2-Chloronaphthalene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	88-74-4	2-Nitroaniline	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	131-11-3	Dimethylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	606-20-2	2,6-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	208-96-8	Acenaphthylene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	99-09-2	3-Nitroaniline	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	83-32-9	Acenaphthene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	51-28-5	2,4-Dinitrophenol	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	100-02-7	4-Nitrophenol	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	132-64-9	Dibenzofuran	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	121-14-2	2,4-Dinitrotoluene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	84-66-2	Diethylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	86-73-7	Fluorene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	7005-72-3	4-Chlorophenyl-phenylether	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	100-01-6	4-Nitroaniline	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	534-52-1	4,6-Dinitro-2-methylphenol	390	UJ	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	86-30-6	N-Nitrosodiphenylamine	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	101-55-3	4-Bromophenyl-phenylether	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	118-74-1	Hexachlorobenzene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	1912-24-9	Atrazine	390	U	ug/kg	390	06/09/2015	RR Spur

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	87-86-5	Pentachlorophenol	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	85-01-8	Phenanthrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	120-12-7	Anthracene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	86-74-8	Carbazole	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	84-74-2	Di-n-butylphthalate	170	LJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	206-44-0	Fluoranthene	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	129-00-0	Pyrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	91-94-1	3,3'-Dichlorobenzidine	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	56-55-3	Benzo(a)anthracene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	218-01-9	Chrysene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	117-84-0	Di-n-octylphthalate	390	U	ug/kg	390	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	205-99-2	Benzo(b)fluoranthene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	207-08-9	Benzo(k)fluoranthene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	50-32-8	Benzo(a)pyrene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	193-39-5	Indeno(1,2,3-cd)pyrene	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	53-70-3	Dibenzo(a,h)anthracene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	191-24-2	Benzo(g,h,i)perylene	200	UJ	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA3	S-1021.03	S	07/03/2015	11:45:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	U	ug/kg	200	06/09/2015	RR Spur
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	123-91-1	1,4-Dioxane	88	UJ	ug/kg	88	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	100-52-7	Benzaldehyde	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	108-95-2	Phenol	440	UJ	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	111-44-4	Bis(2-chloroethyl)ether	440	UJ	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	95-57-8	2-Chlorophenol	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	95-48-7	2-Methylphenol	440	UJ	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	108-60-1	2,2'-Oxybis(1-chloropropane)	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	98-86-2	Acetophenone	440	UJ	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	106-44-5	4-Methylphenol	440	UJ	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	621-64-7	N-Nitroso-di-n-propylamine	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	67-72-1	Hexachloroethane	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	98-95-3	Nitrobenzene	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	78-59-1	Isophorone	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	88-75-5	2-Nitrophenol	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	105-67-9	2,4-Dimethylphenol	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	111-91-1	Bis(2-chloroethoxy)methane	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	120-83-2	2,4-Dichlorophenol	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	91-20-3	Naphthalene	1200	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	106-47-8	4-Chloroaniline	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	87-68-3	Hexachlorobutadiene	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	105-60-2	Caprolactam	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	59-50-7	4-Chloro-3-methylphenol	230	UJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	91-57-6	2-Methylnaphthalene	320	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	77-47-4	Hexachlorocyclopentadiene	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	88-06-2	2,4,6-Trichlorophenol	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	95-95-4	2,4,5-Trichlorophenol	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	92-52-4	1,1'-Biphenyl	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	91-58-7	2-Chloronaphthalene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	88-74-4	2-Nitroaniline	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	131-11-3	Dimethylphthalate	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	606-20-2	2,6-Dinitrotoluene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	208-96-8	Acenaphthylene	2900		ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	99-09-2	3-Nitroaniline	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	83-32-9	Acenephthene	470		ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	51-28-5	2,4-Dinitrophenol	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	100-02-7	4-Nitrophenol	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	132-64-9	Dibenzofuran	410		ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	121-14-2	2,4-Dinitrotoluene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	84-66-2	Diethylphthalate	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	86-73-7	Fluorene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	7005-72-3	4-Chlorophenyl-phenylether	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	100-01-6	4-Nitroaniline	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	534-52-1	4,6-Dinitro-2-methylphenol	440	UJ	ug/kg	440	06/11/2015	Concrete Structure

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	86-30-6	N-Nitrosodiphenylamine	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	95-94-3	1,2,4,5-Tetrachlorobenzene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	101-55-3	4-Bromophenyl-phenylether	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	118-74-1	Hexachlorobenzene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	1912-24-9	Atrazine	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	87-86-5	Pentachlorophenol	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	85-01-8	Phenanthrene	2000		ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	120-12-7	Anthracene	1900		ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	86-74-8	Carbazole	690		ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	84-74-2	Di-n-butylphthalate	200	LJ	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	206-44-0	Fluoranthene	16000	J	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	129-00-0	Pyrene	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	85-68-7	Butylbenzylphthalate	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	91-94-1	3,3'-Dichlorobenzidine	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	56-55-3	Benzo(a)anthracene	8100	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	218-01-9	Chrysene	15000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	117-81-7	Bis(2-ethylhexyl)phthalate	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	117-84-0	Di-n-octylphthalate	440	U	ug/kg	440	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	205-99-2	Benzo(b)fluoranthene	35000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	207-08-9	Benzo(k)fluoranthene	12000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	50-32-8	Benzo(a)pyrene	22000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	193-39-5	Indeno(1,2,3-cd)pyrene	16000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	53-70-3	Dibenzo(a,h)anthracene	10000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	191-24-2	Benzo(g,h,i)perylene	16000	J	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA4	S-1025.02	S	07/03/2015	13:00:00	58-90-2	2,3,4,6-Tetrachlorophenol	230	U	ug/kg	230	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	123-91-1	1,4-Dioxane	78	UJ	ug/kg	78	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	100-52-7	Benzaldehyde	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	108-95-2	Phenol	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	111-44-4	Bis(2-chloroethyl)ether	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	95-57-8	2-Chlorophenol	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	95-48-7	2-Methylphenol	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	98-86-2	Acetophenone	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	106-44-5	4-Methylphenol	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	621-64-7	N-Nitroso-di-n-propylamine	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	67-72-1	Hexachloroethane	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	98-95-3	Nitrobenzene	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	78-59-1	Isophorone	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	88-75-5	2-Nitrophenol	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	105-67-9	2,4-Dimethylphenol	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	111-91-1	Bis(2-chloroethoxy)methane	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	120-83-2	2,4-Dichlorophenol	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	91-20-3	Naphthalene	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	106-47-8	4-Chloroaniline	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	87-68-3	Hexachlorobutadiene	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	105-60-2	Caprolactam	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	59-50-7	4-Chloro-3-methylphenol	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	91-57-6	2-Methylnaphthalene	200	UJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	77-47-4	Hexachlorocyclopentadiene	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	88-06-2	2,4,6-Trichlorophenol	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	95-95-4	2,4,5-Trichlorophenol	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	92-52-4	1,1'-Biphenyl	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	91-58-7	2-Chloronaphthalene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	88-74-4	2-Nitroaniline	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	131-11-3	Dimethylphthalate	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	606-20-2	2,6-Dinitrotoluene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	208-96-8	Acenaphthylene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	99-09-2	3-Nitroaniline	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	83-32-9	Acenaphthene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	51-28-5	2,4-Dinitrophenol	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	100-02-7	4-Nitrophenol	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	132-64-9	Dibenzofuran	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	121-14-2	2,4-Dinitrotoluene	200	U	ug/kg	200	06/11/2015	Concrete Structure

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	84-66-2	Diethylphthalate	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	86-73-7	Fluorene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	7005-72-3	4-Chlorophenyl-phenylether	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	100-01-6	4-Nitroaniline	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	534-52-1	4,6-Dinitro-2-methylphenol	390	UJ	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	86-30-6	N-Nitrosodiphenylamine	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	101-55-3	4-Bromophenyl-phenylether	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	118-74-1	Hexachlorobenzene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	1912-24-9	Atrazine	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	87-86-5	Pentachlorophenol	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	85-01-8	Phenanthrene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	120-12-7	Anthracene	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	86-74-8	Carbazole	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	84-74-2	Di-n-butylphthalate	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	206-44-0	Fluoranthene	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	129-00-0	Pyrene	150	LJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	91-94-1	3,3'-Dichlorobenzidine	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	56-55-3	Benzo(a)anthracene	150	LJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	218-01-9	Chrysene	280		ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	117-84-0	Di-n-octylphthalate	390	U	ug/kg	390	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	205-99-2	Benzo(b)fluoranthene	470	J	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	207-08-9	Benzo(k)fluoranthene	400		ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	50-32-8	Benzo(a)pyrene	330	J	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	193-39-5	Indeno(1,2,3-cd)pyrene	320		ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	53-70-3	Dibenzo(a,h)anthracene	150	LJ	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	191-24-2	Benzo(g,h,i)perylene	330	J	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA5	S-1025.03	S	07/03/2015	13:38:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	U	ug/kg	200	06/11/2015	Concrete Structure
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	123-91-1	1,4-Dioxane	75	U	ug/kg	75	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	100-52-7	Benzaldehyde	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	108-95-2	Phenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	111-44-4	Bis(2-chloroethyl)ether	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	95-57-8	2-Chlorophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	95-48-7	2-Methylphenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	108-60-1	2,2'-Oxybis(1-chloropropane)	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	98-86-2	Acetophenone	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	106-44-5	4-Methylphenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	621-64-7	N-Nitroso-di-n-propylamine	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	67-72-1	Hexachloroethane	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	98-95-3	Nitrobenzene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	78-59-1	Isophorone	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	88-75-5	2-Nitrophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	105-67-9	2,4-Dimethylphenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	111-91-1	Bis(2-chloroethoxy)methane	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	120-83-2	2,4-Dichlorophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	91-20-3	Naphthalene	530		ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	106-47-8	4-Chloroaniline	200	LJ	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	87-68-3	Hexachlorobutadiene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	105-60-2	Caprolactam	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	59-50-7	4-Chloro-3-methylphenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	91-57-6	2-Methylnaphthalene	160	LJ	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	77-47-4	Hexachlorocyclopentadiene	370	UJ	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	88-06-2	2,4,6-Trichlorophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	95-95-4	2,4,5-Trichlorophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	92-52-4	1,1'-Biphenyl	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	91-58-7	2-Chloronaphthalene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	88-74-4	2-Nitroaniline	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	131-11-3	Dimethylphthalate	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	606-20-2	2,6-Dinitrotoluene	270	F+	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	208-96-8	Acenaphthylene	1300		ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	99-09-2	3-Nitroaniline	370	UJ	ug/kg	370	06/11/2015	West - WWP

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	83-32-9	Acenaphthene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	51-28-5	2,4-Dinitrophenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	100-02-7	4-Nitrophenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	132-64-9	Dibenzofuran	160	LJ	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	121-14-2	2,4-Dinitrotoluene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	84-66-2	Diethylphthalate	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	86-73-7	Fluorene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	7005-72-3	4-Chlorophenyl-phenylether	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	100-01-6	4-Nitroaniline	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	534-52-1	4,6-Dinitro-2-methylphenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	86-30-6	N-Nitrosodiphenylamine	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	101-55-3	4-Bromophenyl-phenylether	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	118-74-1	Hexachlorobenzene	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	1912-24-9	Atrazine	370	UJ	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	87-86-5	Pentachlorophenol	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	85-01-8	Phenanthrene	410		ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	120-12-7	Anthracene	2800		ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	86-74-8	Carbazole	280	LJ	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	84-74-2	Di-n-butylphthalate	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	206-44-0	Fluoranthene	35000		ug/kg	7500	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	129-00-0	Pyrene	58000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	85-68-7	Butylbenzylphthalate	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	91-94-1	3,3'-Dichlorobenzidine	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	56-55-3	Benzo(a)anthracene	24000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	218-01-9	Chrysene	20000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	117-81-7	Bis(2-ethylhexyl)phthalate	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	117-84-0	Di-n-octylphthalate	370	U	ug/kg	370	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	205-99-2	Benzo(b)fluoranthene	22000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	207-08-9	Benzo(k)fluoranthene	20000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	50-32-8	Benzo(a)pyrene	16000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	193-39-5	Indeno(1,2,3-cd)pyrene	7800	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	53-70-3	Dibenzo(a,h)anthracene	5600	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/05/2015	01:45:00	191-24-2	Benzo(g,h,i)perylene	6200	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DA6	S-1025.04	S	07/04/2015	14:46:00	58-90-2	2,3,4,6-Tetrachlorophenol	190	U	ug/kg	190	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	123-91-1	1,4-Dioxane	70	U	ug/kg	70	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	100-52-7	Benzaldehyde	520	F+	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	108-95-2	Phenol	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	111-44-4	Bis(2-chloroethyl)ether	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	95-57-8	2-Chlorophenol	180	U	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	95-48-7	2-Methylphenol	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	108-60-1	2,2'-Oxybis(1-chloropropane)	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	98-86-2	Acetophenone	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	106-44-5	4-Methylphenol	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	621-64-7	N-Nitroso-di-n-propylamine	180	U	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	67-72-1	Hexachloroethane	180	U	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	98-95-3	Nitrobenzene	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	78-59-1	Isophorone	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	88-75-5	2-Nitrophenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	105-67-9	2,4-Dimethylphenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	111-91-1	Bis(2-chloroethoxy)methane	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	120-83-2	2,4-Dichlorophenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	91-20-3	Naphthalene	450000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	106-47-8	4-Chloroaniline	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	87-68-3	Hexachlorobutadiene	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	105-60-2	Caprolactam	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	59-50-7	4-Chloro-3-methylphenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	91-57-6	2-Methylnaphthalene	240000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	77-47-4	Hexachlorocyclopentadiene	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	88-06-2	2,4,6-Trichlorophenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	95-95-4	2,4,5-Trichlorophenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	92-52-4	1,1'-Biphenyl	64000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	91-58-7	2-Chloronaphthalene	180	UJ	ug/kg	180	06/11/2015	West - WWP

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	88-74-4	2-Nitroaniline	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	131-11-3	Dimethylphthalate	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	606-20-2	2,6-Dinitrotoluene	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	208-96-8	Acenaphthylene	8400	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	99-09-2	3-Nitroaniline	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	83-32-9	Acenaphthene	200000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	51-28-5	2,4-Dinitrophenol	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	100-02-7	4-Nitrophenol	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	132-64-9	Dibenzofuran	160000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	121-14-2	2,4-Dinitrotoluene	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	84-66-2	Diethylphthalate	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	86-73-7	Fluorene	220000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	7005-72-3	4-Chlorophenyl-phenylether	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	100-01-6	4-Nitroaniline	350	UJ	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	534-52-1	4,6-Dinitro-2-methylphenol	350	UR	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	86-30-6	N-Nitrosodiphenylamine	180	UR	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	95-94-3	1,2,4,5-Tetrachlorobenzene	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	101-55-3	4-Bromophenyl-phenylether	180	UR	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	118-74-1	Hexachlorobenzene	180	UR	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	1912-24-9	Atrazine	350	UR	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	87-86-5	Pentachlorophenol	350	UR	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	85-01-8	Phenanthrene	900000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	120-12-7	Anthracene	140000	J^	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	86-74-8	Carbazole	240000	J^	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	84-74-2	Di-n-butylphthalate	180	UR	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	206-44-0	Fluoranthene	670000	J	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	129-00-0	Pyrene	38000	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	85-68-7	Butylbenzylphthalate	180	U	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	91-94-1	3,3'-Dichlorobenzidine	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	56-55-3	Benzo(a)anthracene	22000	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	218-01-9	Chrysene	14000	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	117-81-7	Bis(2-ethylhexyl)phthalate	180	U	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	117-84-0	Di-n-octylphthalate	350	U	ug/kg	350	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	205-99-2	Benzo(b)fluoranthene	15000	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	207-08-9	Benzo(k)fluoranthene	3600	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	50-32-8	Benzo(a)pyrene	6400	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	193-39-5	Indeno(1,2,3-cd)pyrene	3700	J	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	53-70-3	Dibenzo(a,h)anthracene	2300		ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	191-24-2	Benzo(g,h,i)perylene	2700		ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA7	S-1025.05	S	07/04/2015	15:23:00	58-90-2	2,3,4,6-Tetrachlorophenol	180	UJ	ug/kg	180	06/11/2015	West - WWP
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	123-91-1	1,4-Dioxane	80	U	ug/kg	80	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	100-52-7	Benzaldehyde	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	108-95-2	Phenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	111-44-4	Bis(2-chloroethyl)ether	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	95-57-8	2-Chlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	95-48-7	2-Methylphenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	108-60-1	2,2'-Oxybis(1-chloropropane)	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	98-86-2	Acetophenone	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	106-44-5	4-Methylphenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	621-64-7	N-Nitroso-di-n-propylamine	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	67-72-1	Hexachloroethane	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	98-95-3	Nitrobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	78-59-1	Isophorone	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	88-75-5	2-Nitrophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	105-67-9	2,4-Dimethylphenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	111-91-1	Bis(2-chloroethoxy)methane	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	120-83-2	2,4-Dichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	91-20-3	Naphthalene	1200		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	106-47-8	4-Chloroaniline	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	87-68-3	Hexachlorobutadiene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	105-60-2	Caprolactam	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	59-50-7	4-Chloro-3-methylphenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	91-57-6	2-Methylnaphthalene	320		ug/kg	210	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	77-47-4	Hexachlorocyclopentadiene	400	UJ	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	88-06-2	2,4,6-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	95-95-4	2,4,5-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	92-52-4	1,1'-Biphenyl	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	91-58-7	2-Chloronaphthalene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	88-74-4	2-Nitroaniline	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	131-11-3	Dimethylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	606-20-2	2,6-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	208-96-8	Acenaphthylene	860		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	99-09-2	3-Nitroaniline	400	UJ	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	83-32-9	Acenaphthene	600		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	51-28-5	2,4-Dinitrophenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	100-02-7	4-Nitrophenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	132-64-9	Dibenzofuran	490		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	121-14-2	2,4-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	84-66-2	Diethylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	86-73-7	Fluorene	420		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	7005-72-3	4-Chlorophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	100-01-6	4-Nitroaniline	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	534-52-1	4,6-Dinitro-2-methylphenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	86-30-6	N-Nitrosodiphenylamine	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	95-94-3	1,2,4,5-Tetrachlorobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	101-55-3	4-Bromophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	118-74-1	Hexachlorobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	1912-24-9	Atrazine	400	UJ	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	87-86-5	Pentachlorophenol	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	85-01-8	Phenanthrene	4800	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	120-12-7	Anthracene	4200	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	86-74-8	Carbazole	860		ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	84-74-2	Di-n-butylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	206-44-0	Fluoranthene	50000	J	ug/kg	8000	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	129-00-0	Pyrene	42000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	85-68-7	Butylbenzylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	91-94-1	3,3'-Dichlorobenzidine	720	F^	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	56-55-3	Benzo(a)anthracene	19000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	218-01-9	Chrysene	22000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	117-81-7	Bis(2-ethylhexyl)phthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	117-84-0	Di-n-octylphthalate	400	U	ug/kg	400	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	205-99-2	Benzo(b)fluoranthene	23000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	207-08-9	Benzo(k)fluoranthene	20000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	50-32-8	Benzo(a)pyrene	13000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	193-39-5	Indeno(1,2,3-cd)pyrene	8600	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	53-70-3	Dibenzo(a,h)anthracene	2600		ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/05/2015	02:22:00	191-24-2	Benzo(g,h,i)perylene	7100	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DA0	F9DA8	S-1025.06	S	07/04/2015	16:01:00	58-90-2	2,3,4,6-Tetrachlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	123-91-1	1,4-Dioxane	77	U	ug/kg	77	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	100-52-7	Benzaldehyde	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	108-95-2	Phenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	111-44-4	Bis(2-chloroethyl)ether	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	95-57-8	2-Chlorophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	95-48-7	2-Methylphenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	98-86-2	Acetophenone	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	106-44-5	4-Methylphenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	621-64-7	N-Nitroso-di-n-propylamine	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	67-72-1	Hexachloroethane	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	98-95-3	Nitrobenzene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	78-59-1	Isophorone	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	88-75-5	2-Nitrophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	105-67-9	2,4-Dimethylphenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	111-91-1	Bis(2-chloroethoxy)methane	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	120-83-2	2,4-Dichlorophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	91-20-3	Naphthalene	7100	J	ug/kg	2000	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	106-47-8	4-Chloroaniline	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	87-68-3	Hexachlorobutadiene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	105-60-2	Caprolactam	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	59-50-7	4-Chloro-3-methylphenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	91-57-6	2-Methylnaphthalene	4000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	77-47-4	Hexachlorocyclopentadiene	390	UJ	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	88-06-2	2,4,6-Trichlorophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	95-95-4	2,4,5-Trichlorophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	92-52-4	1,1'-Biphenyl	520		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	91-58-7	2-Chloronaphthalene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	88-74-4	2-Nitroaniline	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	131-11-3	Dimethylphthalate	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	606-20-2	2,6-Dinitrotoluene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	208-96-8	Acenaphthylene	290		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	99-09-2	3-Nitroaniline	390	UJ	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	83-32-9	Acenaphthene	4800	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	51-28-5	2,4-Dinitrophenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	100-02-7	4-Nitrophenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	132-64-9	Dibenzofuran	5300	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	121-14-2	2,4-Dinitrotoluene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	84-66-2	Diethylphthalate	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	86-73-7	Fluorene	5400	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	7005-72-3	4-Chlorophanyl-phenylether	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	100-01-6	4-Nitroaniline	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	534-52-1	4,6-Dinitro-2-methylphenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	86-30-6	N-Nitrosodiphenylamine	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	101-55-3	4-Bromophenyl-phenylether	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	118-74-1	Hexachlorobenzene	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	1912-24-9	Atrazine	390	UJ	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	87-86-5	Pentachlorophenol	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	85-01-8	Phenanthrene	19000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	120-12-7	Anthracene	5000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	86-74-8	Carbazole	2500		ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	84-74-2	Di-n-butylphthalate	330		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	206-44-0	Fluoranthene	11000	J	ug/kg	3900	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/05/2015	03:00:00	129-00-0	Pyrene	6300	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	91-94-1	3,3'-Dichlorobenzidine	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	56-55-3	Benzo(a)anthracene	1800		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	218-01-9	Chrysene	1800		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	117-81-7	Bis(2-ethylhexyl)phthalate	110	LJ	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	117-84-0	Di-n-octylphthalate	390	U	ug/kg	390	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	205-99-2	Benzo(b)fluoranthene	2500		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	207-08-9	Benzo(k)fluoranthene	1200		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	50-32-8	Benzo(a)pyrene	1700		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	193-39-5	Indeno(1,2,3-cd)pyrene	1100		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	53-70-3	Dibenzo(a,h)anthracene	420		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	191-24-2	Benzo(g,h,i)perylene	920		ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DA9	S-1025.07	S	07/04/2015	16:39:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	U	ug/kg	200	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	123-91-1	1,4-Dioxane	75	U	ug/kg	75	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	100-52-7	Benzaldehyde	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	108-95-2	Phenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	111-44-4	Bis(2-chloroethyl)ether	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	95-57-8	2-Chlorophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	95-48-7	2-Methylphenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	108-60-1	2,2'-Oxybis(1-chloropropane)	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	98-86-2	Acetophenone	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	106-44-5	4-Methylphenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	621-64-7	N-Nitroso-di-n-propylamine	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	67-72-1	Hexachloroethane	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	98-95-3	Nitrobenzene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	78-59-1	Isophorone	190	U	ug/kg	190	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	88-75-5	2-Nitrophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	105-67-9	2,4-Dimethylphenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	111-91-1	Bis(2-chloroethoxy)methane	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	120-83-2	2,4-Dichlorophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	91-20-3	Naphthalene	200		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	106-47-8	4-Chloroaniline	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	87-68-3	Hexachlorobutadiene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	105-60-2	Caprolactam	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	59-50-7	4-Chloro-3-methylphenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	91-57-6	2-Methylnaphthalene	140	LJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	77-47-4	Hexachlorocyclopentadiene	370	UJ	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	88-06-2	2,4,6-Trichlorophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	95-95-4	2,4,5-Trichlorophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	92-52-4	1,1'-Biphenyl	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	91-58-7	2-Chloronaphthalene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	88-74-4	2-Nitroaniline	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	131-11-3	Dimethylphthalate	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	606-20-2	2,6-Dinitrotoluene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	208-96-8	Acenaphthylene	2100		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	99-09-2	3-Nitroaniline	370	UJ	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	83-32-9	Acenaphthene	890		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	51-28-5	2,4-Dinitrophenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	100-02-7	4-Nitrophenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	132-64-9	Dibenzofuran	790		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	121-14-2	2,4-Dinitrotoluene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	84-66-2	Diethylphthalate	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	86-73-7	Fluorene	950		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	7005-72-3	4-Chlorophenyl-phenylether	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	100-01-6	4-Nitroaniline	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	534-52-1	4,6-Dinitro-2-methylphenol	370	UR	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	86-30-6	N-Nitrosodiphenylamine	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	101-55-3	4-Bromophenyl-phenylether	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	118-74-1	Hexachlorobenzene	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	1912-24-9	Atrazine	370	UJ	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	87-86-5	Pentachlorophenol	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	85-01-8	Phenanthrene	35000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	120-12-7	Anthracene	12000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	86-74-8	Carbazole	1700		ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	84-74-2	Di-n-butylphthalate	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	206-44-0	Fluoranthene	85000	J	ug/kg	19000	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	129-00-0	Pyrene	140000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	85-68-7	Butylbenzylphthalate	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	91-94-1	3,3'-Dichlorobenzidine	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	56-55-3	Benzo(a)anthracene	38000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	218-01-9	Chrysene	34000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	117-81-7	Bis(2-ethylhexyl)phthalate	660		ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	117-84-0	Di-n-octylphthalate	370	U	ug/kg	370	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	205-99-2	Benzo(b)fluoranthene	50000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	207-08-9	Benzo(k)fluoranthene	49000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	50-32-8	Benzo(a)pyrene	36000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	193-39-5	Indeno(1,2,3-cd)pyrene	18000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	53-70-3	Dibenzo(a,h)anthracene	11000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/06/2015	08:11:00	191-24-2	Benzo(g,h,i)perylene	14000		ug/kg	9600	06/11/2015	Creosote Area
45361	F9DA0	F9DB0	S-1025.08	S	07/04/2015	17:16:00	58-90-2	2,3,4,6-Tetrachlorophenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	123-91-1	1,4-Dioxane	84	U	ug/kg	84	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	100-52-7	Benzaldehyde	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	108-95-2	Phenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	111-44-4	Bis(2-chloroethyl)ether	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	95-57-8	2-Chlorophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	95-48-7	2-Methylphenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	108-60-1	2,2'-Oxybis(1-chloropropane)	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	98-86-2	Acetophenone	420	U	ug/kg	420	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	106-44-5	4-Methylphenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	621-64-7	N-Nitroso-di-n-propylamine	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	67-72-1	Hexachloroethane	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	98-95-3	Nitrobenzene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	78-59-1	Isophorone	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	88-75-5	2-Nitrophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	105-67-9	2,4-Dimethylphenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	111-91-1	Bis(2-chloroethoxy)methane	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	120-83-2	2,4-Dichlorophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	91-20-3	Naphthalene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	106-47-8	4-Chloroaniline	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	87-68-3	Hexachlorobutadiene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	105-60-2	Caprolactam	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	59-50-7	4-Chloro-3-methylphenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	91-57-6	2-Methylnaphthalene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	77-47-4	Hexachlorocyclopentadiene	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	88-06-2	2,4,6-Trichlorophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	95-95-4	2,4,5-Trichlorophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	92-52-4	1,1'-Biphenyl	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	91-58-7	2-Chloronaphthalene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	88-74-4	2-Nitroaniline	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	131-11-3	Dimethylphthalate	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	606-20-2	2,6-Dinitrotoluene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	208-96-8	Acenaphthylene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	99-09-2	3-Nitroaniline	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	83-32-9	Acenaphthene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	51-28-5	2,4-Dinitrophenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	100-02-7	4-Nitrophenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	132-64-9	Dibenzofuran	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	121-14-2	2,4-Dinitrotoluene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	84-66-2	Diethylphthalate	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	86-73-7	Fluorene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	7005-72-3	4-Chlorophenyl-phenylether	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	100-01-6	4-Nitroaniline	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	534-52-1	4,6-Dinitro-2-methylphenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	86-30-6	N-Nitrosodiphenylamine	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	95-94-3	1,2,4,5-Tetrachlorobenzene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	101-55-3	4-Bromophenyl-phenylether	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	118-74-1	Hexachlorobenzene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	1912-24-9	Atrazine	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	87-86-5	Pentachlorophenol	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	85-01-8	Phenanthrene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	120-12-7	Anthracene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	86-74-8	Carbazole	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	84-74-2	Di-n-butylphthalate	160	LJ	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	206-44-0	Fluoranthene	420	UJ	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	129-00-0	Pyrene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	85-68-7	Butylbenzylphthalate	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	91-94-1	3,3'-Dichlorobenzidine	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	56-55-3	Benzo(a)anthracene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	218-01-9	Chrysene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	117-81-7	Bis(2-ethylhexyl)phthalate	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	117-84-0	Di-n-octylphthalate	420	U	ug/kg	420	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/03/2015	14:17:00	205-99-2	Benzo(b)fluoranthene	340	J	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/03/2015	14:17:00	207-08-9	Benzo(k)fluoranthene	290		ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	50-32-8	Benzo(a)pyrene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	193-39-5	Indeno(1,2,3-cd)pyrene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	53-70-3	Dibenzo(a,h)anthracene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	191-24-2	Benzo(g,h,i)perylene	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB1	S-1025.09	S	07/06/2015	08:51:00	58-90-2	2,3,4,6-Tetrachlorophenol	220	U	ug/kg	220	06/11/2015	Creosote Area
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	123-91-1	1,4-Dioxane	84	U	ug/kg	84	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	100-52-7	Benzaldehyde	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	108-95-2	Phenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	111-44-4	Bis(2-chloroethyl)ether	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	95-57-8	2-Chlorophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	95-48-7	2-Methylphenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	108-60-1	2,2'-Oxybis(1-chloropropane)	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	98-86-2	Acetophenone	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	106-44-5	4-Methylphenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	621-64-7	N-Nitroso-di-n-propylamine	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	67-72-1	Hexachloroethane	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	98-95-3	Nitrobenzene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	78-59-1	Isophorone	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	88-75-5	2-Nitrophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	105-67-9	2,4-Dimethylphenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	111-91-1	Bis(2-chloroethoxy)methane	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	120-83-2	2,4-Dichlorophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	91-20-3	Naphthalene	140	LJ	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	106-47-8	4-Chloroaniline	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	87-68-3	Hexachlorobutadiene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	105-60-2	Caprolactam	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	59-50-7	4-Chloro-3-methylphenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	91-57-6	2-Methylnaphthalene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	77-47-4	Hexachlorocyclopentadiene	420	UJ	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	88-06-2	2,4,6-Trichlorophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	95-95-4	2,4,5-Trichlorophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	92-52-4	1,1'-Biphenyl	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	91-58-7	2-Chloronaphthalene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	88-74-4	2-Nitroaniline	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	131-11-3	Dimethylphthalate	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	606-20-2	2,6-Dinitrotoluene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	208-96-8	Acenaphthylene	1700		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	99-09-2	3-Nitroaniline	420	UJ	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	83-32-9	Acenaphthene	650		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	51-28-5	2,4-Dinitrophenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	100-02-7	4-Nitrophenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	132-64-9	Dibenzofuran	170	LJ	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	121-14-2	2,4-Dinitrotoluene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	84-66-2	Diethylphthalate	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	86-73-7	Fluorene	360		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	7005-72-3	4-Chlorophenyl-phenylether	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	100-01-6	4-Nitroaniline	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	534-52-1	4,6-Dinitro-2-methylphenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	86-30-6	N-Nitrosodiphenylamine	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	95-94-3	1,2,4,5-Tetrachlorobenzene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	101-55-3	4-Bromophenyl-phenylether	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	118-74-1	Hexachlorobenzene	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	1912-24-9	Atrazine	420	UJ	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	87-86-5	Pentachlorophenol	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	85-01-8	Phenanthrene	590		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	120-12-7	Anthracene	2100		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	86-74-8	Carbazole	500		ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	84-74-2	Di-n-butylphthalate	170	LJ	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	206-44-0	Fluoranthene	5700	LJ	ug/kg	8400	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	129-00-0	Pyrene	15000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	85-68-7	Butylbenzylphthalate	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	91-94-1	3,3'-Dichlorobenzidine	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	56-55-3	Benzo(a)anthracene	13000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	218-01-9	Chrysene	15000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	117-81-7	Bis(2-ethylhexyl)phthalate	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	117-84-0	Di-n-octylphthalate	420	U	ug/kg	420	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	205-99-2	Benzo(b)fluoranthene	23000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	207-08-9	Benzo(k)fluoranthene	23000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	50-32-8	Benzo(a)pyrene	20000		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/05/2015	04:15:00	193-39-5	Indeno(1,2,3-cd)pyrene	8700		ug/kg	4300	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	53-70-3	Dibenzo(a,h)anthracene	2400		ug/kg	220	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	191-24-2	Benzo(g,h,i)perylene	2500		ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB2	S-1025.10	S	07/04/2015	18:30:00	58-90-2	2,3,4,6-Tetrachlorophenol	220	U	ug/kg	220	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	123-91-1	1,4-Dioxane	78	U	ug/kg	78	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	100-52-7	Benzaldehyde	1600		ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	108-95-2	Phenol	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	111-44-4	Bis(2-chloroethyl)ether	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	95-57-8	2-Chlorophenol	200	U	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	95-48-7	2-Methylphenol	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	108-60-1	2,2'-Oxybis(1-chloropropane)	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	98-86-2	Acetophenone	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	106-44-5	4-Methylphenol	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	621-64-7	N-Nitroso-di-n-propylamine	200	U	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	67-72-1	Hexachloroethane	200	U	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	98-95-3	Nitrobenzene	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	78-59-1	Isophorone	150	LJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	88-75-5	2-Nitrophenol	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	105-67-9	2,4-Dimethylphenol	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	111-91-1	Bis(2-chloroethoxy)methane	240	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	120-83-2	2,4-Dichlorophenol	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	91-20-3	Naphthalene	2000000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	106-47-8	4-Chloroaniline	77000000	U	ug/kg	77000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	87-68-3	Hexachlorobutadiene	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	105-60-2	Caprolactam	77000000	U	ug/kg	77000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	59-50-7	4-Chloro-3-methylphenol	40000000	U	ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	91-57-6	2-Methylnaphthalene	1000000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	77-47-4	Hexachlorocyclopentadiene	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	88-06-2	2,4,6-Trichlorophenol	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	95-95-4	2,4,5-Trichlorophenol	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	92-52-4	1,1'-Biphenyl	220000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	91-58-7	2-Chloronaphthalene	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	88-74-4	2-Nitroaniline	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	131-11-3	Dimethylphthalate	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	606-20-2	2,6-Dinitrotoluene	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	208-96-8	Acenaphthylene	22000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	99-09-2	3-Nitroaniline	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	83-32-9	Acenaphthene	680000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	51-28-5	2,4-Dinitrophenol	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	100-02-7	4-Nitrophenol	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	132-64-9	Dibenzofuran	510000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	121-14-2	2,4-Dinitrotoluene	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	84-66-2	Diethylphthalate	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	86-73-7	Fluorene	700000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	7005-72-3	4-Chlorophenyl-phenylether	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	100-01-6	4-Nitroaniline	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	534-52-1	4,6-Dinitro-2-methylphenol	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	86-30-6	N-Nitrosodiphenylamine	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	95-94-3	1,2,4,5-Tetrachlorobenzene	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	101-55-3	4-Bromophenyl-phenylether	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	118-74-1	Hexachlorobenzene	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	1912-24-9	Atrazine	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	87-86-5	Pentachlorophenol	390	UJ	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	85-01-8	Phenanthrene	420000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	120-12-7	Anthracene	43000	J	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	86-74-8	Carbazole	110000	J	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	84-74-2	Di-n-butylphthalate	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	206-44-0	Fluoranthene	6100000	LJ	ug/kg	77000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	129-00-0	Pyrene	170000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	85-68-7	Butylbenzylphthalate	200	U	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	91-94-1	3,3'-Dichlorobenzidine	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	56-55-3	Benzo(a)anthracene	140000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	218-01-9	Chrysene	160000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	U	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	117-84-0	Di-n-octylphthalate	390	U	ug/kg	390	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	205-99-2	Benzo(b)fluoranthene	270000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	207-08-9	Benzo(k)fluoranthene	250000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	50-32-8	Benzo(a)pyrene	220000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	193-39-5	Indeno(1,2,3-cd)pyrene	92000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	53-70-3	Dibenzo(a,h)anthracene	55000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/06/2015	13:01:00	191-24-2	Benzo(g,h,i)perylene	59000000		ug/kg	40000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB3	S-1025.11	S	07/04/2015	22:00:00	58-90-2	2,3,4,6-Tetrachlorophenol	200	UJ	ug/kg	200	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	123-91-1	1,4-Dioxane	810	U	ug/kg	810	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	100-52-7	Benzaldehyde	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	108-95-2	Phenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	111-44-4	Bis(2-chloroethyl)ether	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	95-57-8	2-Chlorophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	95-48-7	2-Methylphenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	108-60-1	2,2'-Oxybis(1-chloropropane)	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	98-86-2	Acetophenone	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	106-44-5	4-Methylphenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	621-64-7	N-Nitroso-di-n-propylamine	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	67-72-1	Hexachloroethane	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	98-95-3	Nitrobenzene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	78-59-1	Isophorone	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	88-75-5	2-Nitrophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	105-67-9	2,4-Dimethylphenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	111-91-1	Bis(2-chloroethoxy)methane	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	120-83-2	2,4-Dichlorophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	91-20-3	Naphthalene	6100000	LJ	ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	106-47-8	4-Chloroaniline	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	87-68-3	Hexachlorobutadiene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	105-60-2	Caprolactam	1400	LJ	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	59-50-7	4-Chloro-3-methylphenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	91-57-6	2-Methylnaphthalene	100000	J	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	77-47-4	Hexachlorocyclopentadiene	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	88-06-2	2,4,6-Trichlorophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	95-95-4	2,4,5-Trichlorophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	92-52-4	1,1'-Biphenyl	23000		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	91-58-7	2-Chloronaphthalene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	88-74-4	2-Nitroaniline	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	131-11-3	Dimethylphthalate	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	606-20-2	2,6-Dinitrotoluene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	208-96-8	Acenaphthylene	18000		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	99-09-2	3-Nitroaniline	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	83-32-9	Acenaphthene	17000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	51-28-5	2,4-Dinitrophenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	100-02-7	4-Nitrophenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	132-64-9	Dibenzofuran	11000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	121-14-2	2,4-Dinitrotoluene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	84-66-2	Diethylphthalate	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	86-73-7	Fluorene	24000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	7005-72-3	4-Chlorophenyl-phenylether	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	100-01-6	4-Nitroaniline	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	534-52-1	4,6-Dinitro-2-methylphenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	86-30-6	N-Nitrosodiphenylamine	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	101-55-3	4-Bromophenyl-phenylether	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	118-74-1	Hexachlorobenzene	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	1912-24-9	Atrazine	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	87-86-5	Pentachlorophenol	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	85-01-8	Phenanthrene	93000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	120-12-7	Anthracene	43000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	86-74-8	Carbazole	13000000	LJ	ug/kg	20000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	84-74-2	Di-n-butylphthalate	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	206-44-0	Fluoranthene	110000000	J	ug/kg	20000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	129-00-0	Pyrene	53000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	85-68-7	Butylbenzylphthalate	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	91-94-1	3,3'-Dichlorobenzidine	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	56-55-3	Benzo(a)anthracene	19000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	218-01-9	Chrysene	21000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	117-81-7	Bis(2-ethylhexyl)phthalate	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	117-84-0	Di-n-octylphthalate	4000	U	ug/kg	4000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	205-99-2	Benzo(b)fluoranthene	23000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	207-08-9	Benzo(k)fluoranthene	13000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/06/2015	11:18:00	50-32-8	Benzo(a)pyrene	6700000	LJ	ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	193-39-5	Indeno(1,2,3-cd)pyrene	61000	J	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	53-70-3	Dibenzo(a,h)anthracene	34000	J	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	191-24-2	Benzo(g,h,i)perylene	41000	J	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB4	S-1025.12	S	07/04/2015	22:37:00	58-90-2	2,3,4,6-Tetrachlorophenol	2100	U	ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	123-91-1	1,4-Dioxane	780	U	ug/kg	780	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	100-52-7	Benzaldehyde	4100	F+	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	108-95-2	Phenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	111-44-4	Bis(2-chloroethyl)ether	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	95-57-8	2-Chlorophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	95-48-7	2-Methylphenol	2200	LJ	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	108-60-1	2,2'-Oxybis(1-chloropropane)	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	98-86-2	Acetophenone	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	106-44-5	4-Methylphenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	621-64-7	N-Nitroso-di-n-propylamine	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	67-72-1	Hexachloroethane	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	98-95-3	Nitrobenzene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	78-59-1	Isophorone	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	88-75-5	2-Nitrophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	105-67-9	2,4-Dimethylphenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	111-91-1	Bis(2-chloroethoxy)methane	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	120-83-2	2,4-Dichlorophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	91-20-3	Naphthalene	28000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	106-47-8	4-Chloroaniline	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	87-68-3	Hexachlorobutadiene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	105-60-2	Caprolactam	2700	LJ	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	59-50-7	4-Chloro-3-methylphenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	91-57-6	2-Methylnaphthalene	12000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	77-47-4	Hexachlorocyclopentadiene	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	88-06-2	2,4,6-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	95-95-4	2,4,5-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	92-52-4	1,1'-Biphenyl	91000	J	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	91-58-7	2-Chloronaphthalene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	88-74-4	2-Nitroaniline	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	131-11-3	Dimethylphthalate	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	606-20-2	2,6-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	208-96-8	Acenaphthylene	19000		ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	99-09-2	3-Nitroaniline	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	83-32-9	Acenaphthene	19000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	51-28-5	2,4-Dinitrophenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	100-02-7	4-Nitrophenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	132-64-9	Dibenzofuran	16000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	121-14-2	2,4-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	84-66-2	Diethylphthalate	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	86-73-7	Fluorene	28000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	7005-72-3	4-Chlorophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	100-01-6	4-Nitroaniline	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	534-52-1	4,6-Dinitro-2-methylphenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	86-30-6	N-Nitrosodiphenylamine	13000	F+	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	101-55-3	4-Bromophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	118-74-1	Hexachlorobenzene	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	1912-24-9	Atrazine	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	87-86-5	Pentachlorophenol	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	85-01-8	Phenanthrene	110000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	120-12-7	Anthracene	25000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	86-74-8	Carbazole	13000000	LJ	ug/kg	20000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	84-74-2	Di-n-butylphthalate	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	206-44-0	Fluoranthene	64000000		ug/kg	20000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	129-00-0	Pyrene	37000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	85-68-7	Butylbenzylphthalate	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	91-94-1	3,3'-Dichlorobenzidine	12000	F+	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	56-55-3	Benzo(a)anthracene	12000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	218-01-9	Chrysene	12000000		ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	117-81-7	Bis(2-ethylhexyl)phthalate	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	117-84-0	Di-n-octylphthalate	3900	U	ug/kg	3900	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	205-99-2	Benzo(b)fluoranthene	6400000	LJ	ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	207-08-9	Benzo(k)fluoranthene	7400000	LJ	ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/06/2015	11:04:00	50-32-8	Benzo(a)pyrene	5400000	LJ	ug/kg	10000000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	193-39-5	Indeno(1,2,3-cd)pyrene	46000	J	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	53-70-3	Dibenzo(a,h)anthracene	20000		ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	191-24-2	Benzo(g,h,i)perylene	31000		ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB5	S-1025.13	S	07/04/2015	23:15:00	58-90-2	2,3,4,6-Tetrachlorophenol	2000	U	ug/kg	2000	06/11/2015	Culvert/Ditch (South)
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	123-91-1	1,4-Dioxane	760	U	ug/kg	760	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	100-52-7	Benzaldehyde	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	108-95-2	Phenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	111-44-4	Bis(2-chloroethyl)ether	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	95-57-8	2-Chlorophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	95-48-7	2-Methylphenol	3800	UJ	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	108-60-1	2,2'-Oxybis(1-chloropropane)	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	98-86-2	Acetophenone	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	106-44-5	4-Methylphenol	3800	UJ	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	621-64-7	N-Nitroso-di-n-propylamine	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	67-72-1	Hexachloroethane	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	98-95-3	Nitrobenzene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	78-59-1	Isophorone	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	88-75-5	2-Nitrophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	105-67-9	2,4-Dimethylphenol	2000	UJ	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	111-91-1	Bis(2-chloroethoxy)methane	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	120-83-2	2,4-Dichlorophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	91-20-3	Naphthalene	290000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	106-47-8	4-Chloroaniline	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	87-68-3	Hexachlorobutadiene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	105-60-2	Caprolactam	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	59-50-7	4-Chloro-3-methylphenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	91-57-6	2-Methylnaphthalene	61000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	77-47-4	Hexachlorocyclopentadiene	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	88-06-2	2,4,6-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	95-95-4	2,4,5-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	92-52-4	1,1'-Biphenyl	74000	J	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	91-58-7	2-Chloronaphthalene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	88-74-4	2-Nitroaniline	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	131-11-3	Dimethylphthalate	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	606-20-2	2,6-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	208-96-8	Acenaphthylene	10000		ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	99-09-2	3-Nitroaniline	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	83-32-9	Acenaphthene	60000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	51-28-5	2,4-Dinitrophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	100-02-7	4-Nitrophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	132-64-9	Dibenzofuran	54000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	121-14-2	2,4-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	84-66-2	Diethylphthalate	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	86-73-7	Fluorene	62000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	7005-72-3	4-Chlorophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	100-01-6	4-Nitroaniline	3800	UJ	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	534-52-1	4,6-Dinitro-2-methylphenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	86-30-6	N-Nitrosodiphenylamine	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	101-55-3	4-Bromophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	West - WWP

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	118-74-1	Hexachlorobenzene	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	1912-24-9	Atrazine	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	87-86-5	Pentachlorophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	85-01-8	Phenanthrene	170000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	120-12-7	Anthracene	39000000	LJ	ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	86-74-8	Carbazole	120000	J	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	84-74-2	Di-n-butylphthalate	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	206-44-0	Fluoranthene	93000000	J	ug/kg	76000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	11:56:00	129-00-0	Pyrene	41000000		ug/kg	39000000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	85-68-7	Butylbenzylphthalate	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	91-94-1	3,3'-Dichlorobenzidine	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	56-55-3	Benzo(a)anthracene	81000	J	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	218-01-9	Chrysene	69000	J	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	117-81-7	Bis(2-ethylhexyl)phthalate	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	117-84-0	Di-n-octylphthalate	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	205-99-2	Benzo(b)fluoranthene	58000	J	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	207-08-9	Benzo(k)fluoranthene	27000		ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	50-32-8	Benzo(a)pyrene	34000	J	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	193-39-5	Indeno(1,2,3-cd)pyrene	13000		ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	53-70-3	Dibenzo(a,h)anthracene	4900		ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	191-24-2	Benzo(g,h,i)perylene	8400		ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB6	S-1025.14	S	07/06/2015	09:28:00	58-90-2	2,3,4,6-Tetrachlorophenol	2000	U	ug/kg	2000	06/11/2015	West - WWP
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	123-91-1	1,4-Dioxane	73	UJ	ug/kg	73	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	100-52-7	Benzaldehyde	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	108-95-2	Phenol	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	111-44-4	Bis(2-chloroethyl)ether	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	95-57-8	2-Chlorophenol	190	UJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	95-48-7	2-Methylphenol	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	108-60-1	2,2'-Oxybis(1-chloropropane)	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	98-86-2	Acetophenone	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	106-44-5	4-Methylphenol	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	621-64-7	N-Nitroso-di-n-propylamine	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	67-72-1	Hexachloroethane	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	98-95-3	Nitrobenzene	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	78-59-1	Isophorone	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	88-75-5	2-Nitrophenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	105-67-9	2,4-Dimethylphenol	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	111-91-1	Bis(2-chloroethoxy)methane	190	U	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	120-83-2	2,4-Dichlorophenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	91-20-3	Naphthalene	29000000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	106-47-8	4-Chloroaniline	360	U	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	87-68-3	Hexachlorobutadiene	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	105-60-2	Caprolactam	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	59-50-7	4-Chloro-3-methylphenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	91-57-6	2-Methylnaphthalene	6000000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	77-47-4	Hexachlorocyclopentadiene	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	88-06-2	2,4,6-Trichlorophenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	95-95-4	2,4,5-Trichlorophenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	92-52-4	1,1'-Biphenyl	120000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	91-58-7	2-Chloronaphthalene	190	UJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	88-74-4	2-Nitroaniline	190	UJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	131-11-3	Dimethylphthalate	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	606-20-2	2,6-Dinitrotoluene	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	208-96-8	Acenaphthylene	190	UJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	99-09-2	3-Nitroaniline	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	83-32-9	Acenaphthene	5800000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	51-28-5	2,4-Dinitrophenol	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	100-02-7	4-Nitrophenol	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	132-64-9	Dibenzofuran	4900000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	121-14-2	2,4-Dinitrotoluene	190	F+	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	84-66-2	Diethylphthalate	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	86-73-7	Fluorene	6200000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	7005-72-3	4-Chlorophenyl-phenylether	190	UJ	ug/kg	190	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	100-01-6	4-Nitroaniline	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	534-52-1	4,6-Dinitro-2-methylphenol	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	86-30-6	N-Nitrosodiphenylamine	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	95-94-3	1,2,4,5-Tetrachlorobenzene	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	101-55-3	4-Bromophenyl-phenylether	190	UJ	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	118-74-1	Hexachlorobenzene	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	1912-24-9	Atrazine	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	87-86-5	Pentachlorophenol	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	85-01-8	Phenanthrene	17000000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	120-12-7	Anthracene	3800000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	86-74-8	Carbazole	95000	J	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	84-74-2	Di-n-butylphthalate	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	206-44-0	Fluoranthene	11000000	J	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/06/2015	10:41:00	129-00-0	Pyrene	4600000		ug/kg	3800000	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	85-68-7	Butylbenzylphthalate	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	91-94-1	3,3'-Dichlorobenzidine	360	UJ	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	56-55-3	Benzo(a)anthracene	130000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	218-01-9	Chrysene	28000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	117-81-7	Bis(2-ethylhexyl)phthalate	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	117-84-0	Di-n-octylphthalate	360	UR	ug/kg	360	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	205-99-2	Benzo(b)fluoranthene	73000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	207-08-9	Benzo(k)fluoranthene	51000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	50-32-8	Benzo(a)pyrene	84000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	193-39-5	Indeno(1,2,3-cd)pyrene	16000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	53-70-3	Dibenzo(a,h)anthracene	9200	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	191-24-2	Benzo(g,h,i)perylene	13000	J	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB7	S-1025.15	S	07/04/2015	23:52:00	58-90-2	2,3,4,6-Tetrachlorophenol	190	UR	ug/kg	190	06/11/2015	Creosote Area
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	123-91-1	1,4-Dioxane	68	UJ	ug/kg	68	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	100-52-7	Benzaldehyde	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	108-95-2	Phenol	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	111-44-4	Bis(2-chloroethyl)ether	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	95-57-8	2-Chlorophenol	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	95-48-7	2-Methylphenol	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	108-60-1	2,2'-Oxybis(1-chloropropane)	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	98-86-2	Acetophenone	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	106-44-5	4-Methylphenol	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	621-64-7	N-Nitroso-di-n-propylamine	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	67-72-1	Hexachloroethane	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	98-95-3	Nitrobenzene	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	78-59-1	Isophorone	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	88-75-5	2-Nitrophenol	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	105-67-9	2,4-Dimethylphenol	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	111-91-1	Bis(2-chloroethoxy)methane	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	120-83-2	2,4-Dichlorophenol	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	91-20-3	Naphthalene	170	*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	106-47-8	4-Chloroaniline	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	87-68-3	Hexachlorobutadiene	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	105-60-2	Caprolactam	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	59-50-7	4-Chloro-3-methylphenol	170	UJ	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	91-57-6	2-Methylnaphthalene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	77-47-4	Hexachlorocyclopentadiene	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	88-06-2	2,4,6-Trichlorophenol	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	95-95-4	2,4,5-Trichlorophenol	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	92-52-4	1,1'-Biphenyl	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	91-58-7	2-Chloronaphthalene	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	88-74-4	2-Nitroaniline	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	131-11-3	Dimethylphthalate	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	606-20-2	2,6-Dinitrotoluene	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	208-96-8	Acenaphthylene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	99-09-2	3-Nitroaniline	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	83-32-9	Acenaphthene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	51-28-5	2,4-Dinitrophenol	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	100-02-7	4-Nitrophenol	340	U	ug/kg	340	06/11/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	132-64-9	Dibenzofuran	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	121-14-2	2,4-Dinitrotoluene	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	84-66-2	Diethylphthalate	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	86-73-7	Fluorene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	7005-72-3	4-Chlorophenyl-phenylether	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	100-01-6	4-Nitroaniline	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	534-52-1	4,6-Dinitro-2-methylphenol	340	UJ	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	86-30-6	N-Nitrosodiphenylamine	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	95-94-3	1,2,4,5-Tetrachlorobenzene	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	101-55-3	4-Bromophenyl-phenylether	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	118-74-1	Hexachlorobenzene	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	1912-24-9	Atrazine	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	87-86-5	Pentachlorophenol	340	U*	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	85-01-8	Phenanthrene	210		ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	120-12-7	Anthracene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	86-74-8	Carbazole	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	84-74-2	Di-n-butylphthalate	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	206-44-0	Fluoranthene	180	*	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	129-00-0	Pyrene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	85-68-7	Butylbenzylphthalate	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	91-94-1	3,3'-Dichlorobenzidine	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	56-55-3	Benzo(a)anthracene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	218-01-9	Chrysene	110	*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	117-81-7	Bis(2-ethylhexyl)phthalate	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	117-84-0	Di-n-octylphthalate	340	U	ug/kg	340	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	205-99-2	Benzo(b)fluoranthene	210	J	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	207-08-9	Benzo(k)fluoranthene	190		ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	50-32-8	Benzo(a)pyrene	120	*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	193-39-5	Indeno(1,2,3-cd)pyrene	120	*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	53-70-3	Dibenzo(a,h)anthracene	170	U*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	191-24-2	Benzo(g,h,i)perylene	120	*	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8	S-1025.16	S	07/03/2015	14:54:00	58-90-2	2,3,4,6-Tetrachlorophenol	170	U	ug/kg	170	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	91-20-3	Naphthalene	69	*	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	91-57-6	2-Methylnaphthalene	23		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	208-96-8	Acenaphthylene	3.4	UJ	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	83-32-9	Acenaphthene	22		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	86-73-7	Fluorene	26		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	87-86-5	Pentachlorophenol	6.9	U	ug/kg	6.9	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	85-01-8	Phenanthrene	80	*	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	120-12-7	Anthracene	27	J	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	206-44-0	Fluoranthene	55	*	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	129-00-0	Pyrene	44	J	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	56-55-3	Benzo(a)anthracene	16		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	218-01-9	Chrysene	28		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	205-99-2	Benzo(b)fluoranthene	54	*	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	207-08-9	Benzo(k)fluoranthene	53	*	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	50-32-8	Benzo(a)pyrene	39		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	193-39-5	Indeno(1,2,3-cd)pyrene	27		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	53-70-3	Dibenzo(a,h)anthracene	3.4	U	ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8 (SIM)	S-1025.16	S	7/4/2015	17:05:00	191-24-2	Benzo(g,h,i)perylene	39		ug/kg	3.4	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	91-20-3	Naphthalene	310	J	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	91-57-6	2-Methylnaphthalene	160	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	208-96-8	Acenaphthylene	34	U*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	83-32-9	Acenaphthene	130	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	86-73-7	Fluorene	160	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	87-86-5	Pentachlorophenol	69	U*	ug/kg	69	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	85-01-8	Phenanthrene	300	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	120-12-7	Anthracene	460	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	206-44-0	Fluoranthene	170	J	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	129-00-0	Pyrene	150	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	56-55-3	Benzo(a)anthracene	56	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	218-01-9	Chrysene	83	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	205-99-2	Benzo(b)fluoranthene	69	*	ug/kg	34	06/11/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	207-08-9	Benzo(k)fluoranthene	50	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	50-32-8	Benzo(a)pyrene	55	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	193-39-5	Indeno(1,2,3-cd)pyrene	45	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	53-70-3	Dibenzo(a,h)anthracene	34	U*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB8DL (SIM)	S-1025.16	S	7/4/2015	19:41:00	191-24-2	Benzo(g,h,i)perylene	47	*	ug/kg	34	06/11/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	123-91-1	1,4-Dioxane	70	UJ	ug/kg	70	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	100-52-7	Benzaldehyde	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	108-95-2	Phenol	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	111-44-4	Bis(2-chloroethyl)ether	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	95-57-8	2-Chlorophenol	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	95-48-7	2-Methylphenol	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	108-60-1	2,2'-Oxybis(1-chloropropane)	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	98-86-2	Acetophenone	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	106-44-5	4-Methylphenol	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	621-64-7	N-Nitroso-di-n-propylamine	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	67-72-1	Hexachloroethane	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	98-95-3	Nitrobenzene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	78-59-1	Isophorone	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	88-75-5	2-Nitrophenol	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	105-67-9	2,4-Dimethylphenol	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	111-91-1	Bis(2-chloroethoxy)methane	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	120-83-2	2,4-Dichlorophenol	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	91-20-3	Naphthalene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	106-47-8	4-Chloroaniline	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	87-68-3	Hexachlorobutadiene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	105-60-2	Caprolactam	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	59-50-7	4-Chloro-3-methylphenol	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	91-57-6	2-Methylnaphthalene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	77-47-4	Hexachlorocyclopentadiene	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	88-06-2	2,4,6-Trichlorophenol	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	95-95-4	2,4,5-Trichlorophenol	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	92-52-4	1,1'-Biphenyl	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	91-58-7	2-Chloronaphthalene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	88-74-4	2-Nitroaniline	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	131-11-3	Dimethylphthalate	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	606-20-2	2,6-Dinitrotoluene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	208-96-8	Acenaphthylene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	99-09-2	3-Nitroaniline	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	83-32-9	Acenaphthene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	51-28-5	2,4-Dinitrophenol	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	100-02-7	4-Nitrophenol	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	132-64-9	Dibenzofuran	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	121-14-2	2,4-Dinitrotoluene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	84-66-2	Diethylphthalate	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	86-73-7	Fluorene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	7005-72-3	4-Chlorophenyl-phenylether	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	100-01-6	4-Nitroaniline	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	534-52-1	4,6-Dinitro-2-methylphenol	350	UJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	86-30-6	N-Nitrosodiphenylamine	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	95-94-3	1,2,4,5-Tetrachlorobenzene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	101-55-3	4-Bromophenyl-phenylether	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	118-74-1	Hexachlorobenzene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	1912-24-9	Atrazine	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	87-86-5	Pentachlorophenol	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	85-01-8	Phenanthrene	140	LJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	120-12-7	Anthracene	440		ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	86-74-8	Carbazole	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	84-74-2	Di-n-butylphthalate	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	206-44-0	Fluoranthene	230	LJ	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	129-00-0	Pyrene	160	LJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	85-68-7	Butylbenzylphthalate	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	91-94-1	3,3'-Dichlorobenzidine	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	56-55-3	Benzo(a)anthracene	180	U	ug/kg	180	06/09/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	218-01-9	Chrysene	120	LJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	117-81-7	Bis(2-ethylhexyl)phthalate	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	117-84-0	Di-n-octylphthalate	350	U	ug/kg	350	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	205-99-2	Benzo(b)fluoranthene	170	LJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	207-08-9	Benzo(k)fluoranthene	180		ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	50-32-8	Benzo(a)pyrene	110	LJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	193-39-5	Indeno(1,2,3-cd)pyrene	180	U	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	53-70-3	Dibenzo(a,h)anthracene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	191-24-2	Benzo(g,h,i)perylene	180	UJ	ug/kg	180	06/09/2015	Background
45361	F9DA0	F9DB9	S-1025.17	S	07/03/2015	15:32:00	58-90-2	2,3,4,6-Tetrachlorophenol	180	U	ug/kg	180	06/09/2015	Background

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 45361 SDG No. F9DA0 SDG Nos. To Follow Mod. Ref No. Date Rec 7/7/15

EPA Lab ID: KAP

Lab Location: The Woodlands, TX

Region: 6 Audit No.: 45361/F9DA0

Re_Submitted CSF? Yes No X

Box No(s): 1

COMMENTS:

Item Description

4. Pages 1854-1857 were not listed on Form DC-2-6. The reviewer made the appropriate entries.

14/15. Sample tags were not used for this SDG.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
TRAFFIC REPORT /CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
AIRBILLS/AIRBILL STICKER			
11. Present?	X		
12. Signed?	X		
13. Dated?	X		
SAMPLE TAGS			
14. Does DC-1 list tags as being included?			X
15. Present?			X
OTHER DOCUMENTS			
16. Complete?	X		
17. Legible?	X		
18. Original?		X	
18a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Wallace Doong Wallace Doong / ESAT Data Reviewer Date 8/3/15

Audited by: Date

Signature Printed Name/Title

DC-2__

In Reference To Case No(s):
45361 SDG: F9DA0 (O-1246)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	KAP
Lab Contact:	Rao Alsakani
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Wallace Doong - ESAT

In reference to data for the fraction(s):

CSF

Summary of Questions/Issues:

Pages 20 to 23 were omitted. Please submit this time.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 except for replacement pages (SOM02.2, p. B-10, sec. 2.2). Custody seals are required only for regular mail shipments.

Please respond to the above items **ASAP** by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

In Reference To Case No(s):
45361 SDG: F9DA0 (O-1246)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	KAP
Lab Contact:	Rao Alsakani
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Wallace Doong - ESAT

In reference to data for the fraction(s):

BNA BNA-SIM

Summary of Questions/Issues:

A. BNA

1. Form 2 (pages 20 and 21): The DMC number is not the same as stated in the SOW. DMC7 is nitrobenzene-d5 on Table 3, D-65/SVOA, but laboratory reported DMC6 as nitrobenzene-d5. Please report the DMC number according to SOW for future cases.

2. Form 8A (page 33 to 42): For future cases, please enter IS1 AREA, IS2 AREA, … IS6 AREA in the top row of the table; not just "IS AREA" for all IS's.

3. The following results appeared to be false positives, please verify and make necessary correction and resubmission.

   1,4-dioxane in samples F9DA1 and F9DB2DL;

   benzaldehyde in sample F9DA7 and F9DB5;

   2,6-dinitrotoluene in samples F9DA1, F9DA6, F9DA6DL, F9DA8DL, F9DB0DL, and F9DB6DL;

   2,4-dinitrotoluene in sample F9DB7;

   N-nitrosodiphenylamine in sample F9DB5; and

   3,3'-dichlorobenzidine in samples F9DA8 and F9DB5.

4. Sample F9DB1: The laboratory reported two analyses (7/3/15 and 7/6/15) with the same sample ID. Please correct the sample ID and resubmit raw data and Forms 2, 4, 5, and 8.

5. SSTD02041 (F56758): Please submit the omitted Form 7. The analysis time on raw data (7/4/15 20:26) doesn't agree with Form 5 (page 30). Please correct and resubmit Form 5 and/or raw data.

6. F9DB3DL: The sample ID was F9DB6DL on the raw data. Please correct and resubmit raw data with the corrected sample ID.

7. F9DB5DL: The sample ID was F9DC4DL on the raw data. Please correct and resubmit raw data with the corrected sample ID.

8. The same peak was used for the quantitation of the following analytes. Please correct and resubmit the necessary data and reporting forms.

   benzo(b)fluoranthene and benzo(k)fluoranthene for samples F9DA6DL, F9DB4DL, F9DB6DL, and SSTD02043 (page 1600);

   phenanthrene and anthracene for sample F9DA4;

   benzo(a)anthracene and chrysene for sample F9DB0DL;

9. Please submit the EICP for the manual integrations of the following ISs, DMCs, and analytes:

   pyrene-d10 for samples F9DA6 and F9DA8;

   4,6-dinitro-2-methylphenol for sample F9DA7;

   phenanthrene-d10 for sample F9DB3;

   phenanthrene-d10 and anthracene-d10 for samples F9DB4 and F9DB5; and

   naphthalene-d10, phenanthrene-d10, chrysene-d12, perylene-d12, pyrene-d10, and benzo(a)pyrene-d12 for sample F9DB7;

   phenol-d5 and indeno(1,2,30cd)pyrene for SSTD020PE (pages 1514 and 1515) and SSTD020PF (pages 1524-1525); and

   perylene-d12 for SSTD02048 (page 1534).

B. BNA-SIM

1. Form 8A (pages 1711 to 1714): For future cases, please enter IS1 AREA, IS2 AREA, … IS6 AREA in the top row of the table; not just "IS AREA" for all IS's.

2. The same peak was used for the quantitation of benzo(a)anthracene and chrysene for SSTD0.4PD (page 1780). Please correct and resubmit the necessary data and reporting forms.

Resubmission Request

Continuation Page: 3
Laboratory/Contact: KAP/Rao Alsakani
In Reference to Case No. 45361 **SDG:** F9DA0

3. Please submit the EICP for the manual integrations of the following ISs and analytes:

   perylene-d12 for sample F9DB8 (page 1716);

   naphthalene, benzo(a)fluoranthene, and benzo(g,h,i)perylene for SSTD0.4PD (page 1780); phenanthrene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene for SSTD0.4PE (page 1784); and

   benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene for SSTD0.4PF (page 1788).

4. Sample F9DB8: The reported DMC recoveries, analysis date, and/or time on raw data (7/2/15 18:18) don't agree with Form 2 (page 1706A), Form 4 (page 1707), Form 5 (page 1710), and Form 8 (page 1713 and 1714). It appears that incorrect analysis data were submitted for the sample (should be the analysis performed on 7/4/15 17:05, file ID C21583). Please correct and resubmit Forms 2, 4, 5, and 8 and raw data.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 except for replacement pages (SOM02.2, p. B-10, sec. 2.2). Custody seals are required only for regular mail shipments.

Please respond to the above items **within 5 business days** (SOM02.2, p. B-11, sec. 2.2.2) by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/11/2015
CarrierName: FedEx
AirbillNo: 773806239927

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 1
SDG: F9DA1

No: 6-061115-101320-0004
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-02	F9DA0	Soil/ START	Grab	SVOA(21)	6-403974 (Wet ice) (1)	Background	06/09/2015 13:00	
ACS03-02	F9DA2	Soil/ START	Grab	SVOA(21)	6-403978 (Wet ice) (1)	RR Spur	06/09/2015 15:10	
ACS03-12	F9DA3	Soil/ START	Grab	SVOA(21)	6-403980 (Wet ice) (1)	RR Spur	06/09/2015 15:25	
ACGW-21	F9DD1	Ground Water/ START	Grab	SVOA(21)	6-403800 (Wet ice), 6-403801 (Wet ice) (2)	MW-01	06/10/2015 15:45	S-1022.01
ACGW-22	F9DD2	Ground Water/ START	Grab	SVOA(21)	6-403803 (Wet ice), 6-403804 (Wet ice) (2)	MW-02	06/10/2015 10:16	.02
ACGW-23	F9DD3	Ground Water/ START	Grab	SVOA(21)	6-403807 (Wet ice), 6-403808 (Wet ice) (2)	MW-03	06/10/2015 12:09	.03
ACFB-24	F9DD4	Water/ START	Grab	SVOA(21)	6-403810 (Wet ice), 6-403811 (Wet ice) (2)	Field Blank	06/10/2015 16:10	.04

Special Instructions: Lab QC not required for SVOAs

Temp: 2.7°C/3.1°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/11/15 1830	FedEx		
				6/12/15 08:45	Intact

KAP Technologies

ORIGINAL
Case 45361 SDG F9DA0
Samples S-1021

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818389814

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2
SDG: F9DA0

No: 6-061215-155911-0005
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-25	F9DA1	Soil/ START	Grab	SVOA(21)	6-403976 (Wet ice) (1)	Background	06/09/2015 13:05	S-1025.01
ACS05-02	F9DA4	Soil/ START	Grab	SVOA(21)	6-403982 (Wet ice) (1)	Concrete Structure	06/11/2015 08:08	.02
ACS05-25	F9DA5	Soil/ START	Grab	SVOA(21)	6-403984 (Wet ice) (1)	Concrete Structure	06/11/2015 08:25	.03
ACS07-02	F9DA6	Soil/ START	Discrete Interval	SVOA(21)	6-403986 (Wet ice) (1)	West - WWP	06/11/2015 08:55	.04
ACS07-58	F9DA7	Soil/ START	Grab	SVOA(21)	6-403988 (Wet ice) (1)	West - WWP	06/11/2015 09:10	.05
ACS10-02	F9DA8	Soil/ START	Grab	SVOA(21)	6-403990 (Wet ice) (1)	Creosote Area	06/11/2015 10:00	.06
ACS10-58	F9DA9	Soil/ START	Grab	SVOA(21)	6-403992 (Wet ice) (1)	Creosote Area	06/11/2015 10:20	.07
ACS11-02	F9DB0	Soil/ START	Grab	SVOA(21)	6-403994 (Wet ice) (1)	Creosote Area	06/11/2015 14:15	.08
ACS11-35	F9DB1	Soil/ START	Grab	SVOA(21)	6-403996 (Wet ice) (1)	Creosote Area	06/11/2015 14:30	.09
ACS13-02	F9DB2	Soil/ START	Discrete Interval	SVOA(21)	6-403998 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:05	.10
ACS13-24	F9DB3	Soil/ START	Discrete Interval	SVOA(21)	6-472426 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:10	.11
ACS14-02	F9DB4	Soil/ START	Discrete Interval	SVOA(21)	6-472428 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:12	.12
ACS14-25	F9DB5	Soil/ START	Discrete Interval	SVOA(21)	6-472430 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:21	.13

Special Instructions: Lab QC Not required for SVOAs

Temp: 3.3°C/3.7°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830			
				6/13/15 09:53	Intact For Technologies

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818421730

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 3
SDG: F9DC1

No: 6-061215-162836-0007
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSD02-06	F9DB8	Sediment/ START	Grab	SVOA/SIM(21)	6-472436 (Wet ice), 6-472437 (Wet ice) (2)	Background	06/11/2015 16:17	
ACSD08-06	F9DC1	Sediment/ START	Grab	SVOA/SIM(21)	6-472445 (Wet ice), 6-472446 (Wet ice) (2)	Wastewater Pit	06/11/2015 13:00	S-1026.01
ACSD12-06	F9DC3	Sediment/ START	Grab	SVOA/SIM(21)	6-472483 (Wet ice), 6-472484 (Wet ice) (2)	Culvert/Ditch (South)	06/11/2015 14:10	.03
ACSD15-06	F9DC4	Sediment/ START	Grab	SVOA/SIM(21)	6-472486 (Wet ice), 6-472487 (Wet ice) (2)	RR-ROW	06/11/2015 15:49	.04
ACSW-06	F9DC9	Waste Water/ START	Grab	SVOA(21)	6-403819 (Wet ice), 6-403820 (Wet ice) (2)	Wastewater Pit 2	06/11/2015 11:30	
ACSW-04	F9DD0	Surface Water/ START	Grab	SVOA(21)	6-420395 (Wet ice), 6-420396 (Wet ice) (2)	Concrete Structure	06/11/2015 09:10	
ACSW-08	F9DE1	Waste Water/ START	Grab	SVOA(21)	6-403822 (Wet ice), 6-403823 (Wet ice) (2)	Wastewater Pit 1	06/11/2015 08:23	

Sample(s) to be used for Lab QC: ACSW-04 Tag 420395, ACSW-04 Tag 420396 - Special Instructions: No Lab QC for SVOAs
Temp: 3.1°C/3.3°C

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: SVOA/SIM=CLP Semivolatiles/PAHSIM, SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830	FedEx		
				6/13/15 09:53	F9DC3 - 1-8oz Jar Broken F9DD0 - 1-1L Amber Broken All Remaining Samples Intact.

ORIGINAL
Case 45361 SDG F9DC1
Episode S-1025 init/date 6/13/15

KAP Technologies

07 248

EPW11031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818389814

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2
SDG: F9DC1

No: 6-061215-155911-0005
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS19-58	F9DB6	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	West - WWP	06/11/2015 09:15	
ACS19-10	F9DB7	Soil/ START	Grab	SVOA(21)	6-472434 (Wet ice) (1)	Creosote Area	06/11/2015 10:45	
ACS01-58	F9DB9	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	Background	06/09/2015 13:15	
ACS07-10	F9DC2	Soil/ START	Discrete Interval	SVOA(21)	6-472480 (Wet ice) (1)	West - WWP	06/11/2015 09:25	S-1026.02
ACS10-10	F9DC5	Soil/ START	Discrete Interval	SVOA(21)	6-472489 (Wet ice) (1)	Creosote Area	06/11/2015 10:40	.05
ACS11-58	F9DC6	Soil/ START	Discrete Interval	SVOA(21)	6-472492 (Wet ice) (1)	Creosote Area	06/11/2015 14:45	.06
ACS25-06	F9DC7	Soil/ START	Grab	SVOA(21)	6-472495 (Wet ice) (1)	Creosote Area	06/11/2015 10:37	.07
ACS26-06	F9DC8	Soil/ START	Grab	SVOA(21)	6-420366 (Wet ice) (1)	Creosote Area	06/11/2015 11:46	.08
ACS01-10	F9DE0	Soil/ START	Discrete Interval	SVOA(21)	6-472494 (Wet ice) (1)	Background	06/09/2015 13:30	.09
								* SDG - FINAL SAMPLE *

Special Instructions: Lab QC Not required for SVOAs

Temp 3.3°C/3.7°C

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830	FedEx		
				6/13/15 09:53	Intact

ORIGINAL
Case 45361 SDG F9DAD
Episode S-1025 Init/date 6/13/15

KAP Technologies

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

August 19, 2015

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)

Site: **AMERICAN CREOSOTE DERIDDER**

Case#: **45361**

SDG#: **F9DC1**

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report. One BNA target result was flagged unusable due to low surrogate recovery in four samples.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: August 18, 2015

TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA

FROM: Wallace Doong, Data Reviewer, ESAT WD

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT DGJ

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-11
ESAT Doc. No.:	1502-211-0147
TDF No.:	6-15-322A
ESAT File No.:	O-1252

Attached is the data review summary for Case # 45361
SDG # F9DC1
Site American Creosote DeRidder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099
ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	45361	SITE	American Creosote DeRidder
LABORATORY	KAP	NO. OF SAMPLES	9
CONTRACT#	EP-W-14-031	MATRIX	6 Soil/3 Sediment
SDG#	F9DC1	REVIEWER (IF NOT ESB)	ESAT
SOW#	SOM02.2	REVIEWER'S NAME	Wallace Doong
SF#	303DD2A6KM	COMPLETION DATE	August 18, 2015

SAMPLE NO.					
	F9DC1	F9DC5	F9DE0		
	F9DC2	F9DC6			
	F9DC3	F9DC7			
	F9DC4	F9DC8			

DATA ASSESSMENT SUMMARY

	BNA	BNA-SIM
1. HOLDING TIMES	O	O
2. GC/MS TUNE/INSTR. PERFORM.	O	O
3. CALIBRATIONS	M	M
4. BLANKS	O	O
5. DMC/SURROGATES	M	O
6. MATRIX SPIKE/DUPLICATE/LCS	N/A	N/A
7. OTHER QC	N/A	N/A
8. INTERNAL STANDARDS	M	O
9. COMPOUND ID/QUANTITATION	M	O
10. PERFORMANCE/COMPLETENESS	O	O
11. OVERALL ASSESSMENT	M	M

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS: Two BNA closing CCVs and two BNA-SIM closing CCVs had %Ds that did not meet contractual calibration requirements. BNA sample F9DC4 and BNA-SIM samples F9DC1, F9DC3, and F9DC4 had poor IS responses, but no reanalyses were performed. BNA samples F9DC4 and F9DE0 had zero percent SDMC14 recoveries, but the contract-required re-extraction was not performed.

AREA OF CONCERN: **BNA** The 2-nitrophenol did not meet the technical %D calibration criteria. Several target analyte concentrations exceeded the calibration range for five samples. Four samples had very low SDMC14 recoveries (<10%), rendering the 4,6-dinitro-2-methylphenol results unusable for these samples. Sample F9DC4 had a low IS5 response. Some target compound results were false positive for two samples. The same peak was used for the quantitation of phenanthrene and anthracene for sample F9DC5DL. **BNA-SIM** Three analytes did not meet the technical %D calibration criteria.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 45361 **SDG** F9DC1 **SITE** American Creosote DeRidder **LAB** KAP

COMMENTS: This SDG consisted of six soil samples for BNA analysis only and three sediment samples for BNA and BNA-SIM analyses following CLP SOW SOM02.2. MS/MSD analyses were not requested for this SDG. All samples were analyzed at the low level.

The SOW requires that the soil sample results be adjusted for moisture content as well as dilution when applicable. The adjusted CRQLs, higher than the CRQLs specified in the SOW, were reported by the laboratory and are referred to as SQLs in this report.

The target compounds reported at concentrations above the SQLs were 1,1'-biphenyl, dibenzofuran, di-n-butylphthalate, carbazole, and/or PAHs in all samples except BNA sample F9DE0. Although both the full scan and SIM analysis results were available for three samples, the SIM analysis results are designated for use only when the corresponding full scan analysis results were non-detects or below the SQLs. Because of very high PAH concentrations, all samples, except BNA sample F9DE0, were either concentrated to a larger final extract volume and/or diluted and reanalyzed at dilutions (up to 100,000X).

BNA The very low SDMC14 in samples F9DC3, F9DC4, F9DC8, and F9DE0 rendered the 4,6-dinitro-2-methylphenol results unusable for these samples. Diluted analysis results were recommended for use for dibenzofuran in sample F9DC1 and benzo(a)anthracene in sample F9DC4 because they were not reported in their respective original analyses.

S3VEM Review was performed for this package as requested by the Region. For this review option, laboratory contractual compliance and technical usability of the sample results are primarily determined by the EDM CCS Defect Report and NFG Data Review Results Report, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the EDM reports. The NFG Data Review Results Report for the SDG is attached to this report as an addendum for additional information.

OVERALL ASSESSMENT: Some results were qualified for eight BNA samples and BNA-SIM sample F9DC4 because of problems with calibration, DMC recovery, IS performance, and/or compound ID/quantitation. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory was contacted for some issues (Resubmission Request on pages 20 and 21). The laboratory response may affect the DST.

ORGANIC ACRONYMS

%D	Percent Difference
%RSD	Percent Relative Standard Deviation
ARO	Aroclors
BFB	4-Bromofluorobenzene
BNA	Base/Neutral and Acid
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenylphosphine
DMC	Deuterated Monitoring Compound
DST	Data Summary Table
EDM	EXES Data Manager
GC/ECD	Gas Chromatograph/Electron Capture Detector
GC/MS	Gas Chromatograph/Mass Spectrometer
GPC	Gel Permeation Chromatography
IC	Initial Calibration
INDA(B,C)	Individual Standard Mixture A(or B or C)
IS	Internal Standard
LCS	Laboratory Control Sample
LMVOA	Low/Medium Volatile Organic Analysis
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
OTR/COC	Organic Traffic Report/Chain of Custody
PAH	Polynuclear Aromatic Hydrocarbon
PE	Performance Evaluation
PEM	Performance Evaluation Mixture
PEST	Pesticides
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSCC	Regional Sample Control Center
RT	Retention Time
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SDMC	Semivolatile Deuterated Monitoring Compound
SIM	Selected Ion Monitoring
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
SVOA	Semivolatile Organic Analysis
TCL	Target Compound List
TCX	Tetrachloro-m-xylene
TIC	Tentatively Identified Compound
TVOA	Trace Volatile Organic Analysis
VDMC	Volatile Deuterated Monitoring Compound
VOA	Volatile Organic Analysis

HEADER DEFINITIONS FOR ORGANIC EXCEL DST

CASE:	Case Number
SDG:	SDG Number
EPASAMP:	EPA Sample Number
LABID:	Laboratory File/Sample ID
MATRIX:	Sample Matrix
ANDATE:	Sample Analysis Date
ANTIME:	Sample Analysis Time
CASNUM:	Compound CAS Number
ANALYTE:	Compound Name
CONC:	Compound Concentration
VALDQAL:	Region 6 Organic Data Validation Qualifier (see Organic Data Qualifier Definitions on the next page)
UNITS:	Concentration Units
ADJCRQL:	Adjusted Contract Required Quantitation Limit Value
SMPDATE:	Sampling Date
STATLOC:	Station Location

Disclaimer: ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, VALDQAL, and ADJCRQL. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

L Reported concentration is below the CRQL.

M Reported concentration should be used as a raised quantitation limit because of interferences and/or laboratory contamination.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

C Identification of pesticide or Aroclor has been confirmed by Gas Chromatography/Mass Spectrometer (GC/MS).

X Identification of pesticide or Aroclor could not be confirmed by GC/MS when attempted.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	123-91-1	1,4-Dioxane	670	U	ug/kg	670	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	100-52-7	Benzaldehyde	2500	F+	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	108-95-2	Phenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	111-44-4	Bis(2-chloroethyl)ether	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	95-57-8	2-Chlorophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	95-48-7	2-Methylphenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	108-60-1	2,2'-Oxybis(1-chloropropane)	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	98-86-2	Acetophenone	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	106-44-5	4-Methylphenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	621-64-7	N-Nitroso-di-n-propylamine	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	67-72-1	Hexachloroethane	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	98-95-3	Nitrobenzene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	78-59-1	Isophorone	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	88-75-5	2-Nitrophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	105-67-9	2,4-Dimethylphenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	111-91-1	Bis(2-chloroethoxy)methane	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	120-83-2	2,4-Dichlorophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	91-20-3	Naphthalene	25000000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	106-47-8	4-Chloroaniline	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	87-68-3	Hexachlorobutadiene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	105-60-2	Caprolactam	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	59-50-7	4-Chloro-3-methylphenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	91-57-6	2-Methylnaphthalene	9400000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	77-47-4	Hexachlorocyclopentadiene	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	88-06-2	2,4,6-Trichlorophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	95-95-4	2,4,5-Trichlorophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	92-52-4	1,1'-Biphenyl	67000	J	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	91-58-7	2-Chloronaphthalene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	88-74-4	2-Nitroaniline	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	131-11-3	Dimethylphthalate	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	606-20-2	2,6-Dinitrotoluene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	208-96-8	Acenaphthylene	4700		ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	99-09-2	3-Nitroaniline	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	83-32-9	Acenaphthene	6400000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	51-28-5	2,4-Dinitrophenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	100-02-7	4-Nitrophenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	132-64-9	Dibenzofuran	7100000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	121-14-2	2,4-Dinitrotoluene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	84-66-2	Diethylphthalate	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	86-73-7	Fluorene	9500000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	7005-72-3	4-Chlorophenyl-phenylether	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	100-01-6	4-Nitroaniline	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	534-52-1	4,6-Dinitro-2-methylphenol	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	86-30-6	N-Nitrosodiphenylamine	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	95-94-3	1,2,4,5-Tetrachlorobenzene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	101-55-3	4-Bromophenyl-phenylether	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	118-74-1	Hexachlorobenzene	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	1912-24-9	Atrazine	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	87-86-5	Pentachlorophenol	3400	U*	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	85-01-8	Phenanthrene	26000000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	120-12-7	Anthracene	18000000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	86-74-8	Carbazole	9700000		ug/kg	6700000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	84-74-2	Di-n-butylphthalate	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	206-44-0	Fluoranthene	12000000		ug/kg	6700000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	129-00-0	Pyrene	6300000		ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	85-68-7	Butylbenzylphthalate	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	91-94-1	3,3'-Dichlorobenzidine	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	56-55-3	Benzo(a)anthracene	2800000	LJ	ug/kg	3500000	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	21:44:00	218-01-9	Chrysene	2900000	LJ	ug/kg	3500000	06/11/2015	Wastewater Pit

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	117-81-7	Bis(2-ethylhexyl)phthalate	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	117-84-0	Di-n-octylphthalate	3400	U	ug/kg	3400	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	205-99-2	Benzo(b)fluoranthene	38000	J	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	207-08-9	Benzo(k)fluoranthene	38000	J	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	50-32-8	Benzo(a)pyrene	34000	J	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	193-39-5	Indeno(1,2,3-cd)pyrene	10000		ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	53-70-3	Dibenzo(a,h)anthracene	3300		ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	191-24-2	Benzo(g,h,i)perylene	7200		ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1	S-1026.01	S	07/05/2015	12:42:00	58-90-2	2,3,4,6-Tetrachlorophenol	1700	U	ug/kg	1700	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	91-20-3	Naphthalene	1900	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	91-57-6	2-Methylnaphthalene	400	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	208-96-8	Acenaphthylene	56	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	83-32-9	Acenaphthene	2200	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	86-73-7	Fluorene	1700	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	18:38:00	87-86-5	Pentachlorophenol	4.7	LJ	ug/kg	6.8	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	85-01-8	Phenanthrene	490	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	120-12-7	Anthracene	840	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	206-44-0	Fluoranthene	130	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	129-00-0	Pyrene	14	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	56-55-3	Benzo(a)anthracene	120	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	218-01-9	Chrysene	160	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	205-99-2	Benzo(b)fluoranthene	270	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	207-08-9	Benzo(k)fluoranthene	170	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	50-32-8	Benzo(a)pyrene	190	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	193-39-5	Indeno(1,2,3-cd)pyrene	230	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	53-70-3	Dibenzo(a,h)anthracene	200	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC1 (SIM)	S-1026.01	S	07/04/2015	19:09:00	191-24-2	Benzo(g,h,i)perylene	210	*	ug/kg	3.4	06/11/2015	Wastewater Pit
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	123-91-1	1,4-Dioxane	760	U	ug/kg	760	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	100-52-7	Benzaldehyde	9000	F+	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	108-95-2	Phenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	111-44-4	Bis(2-chloroethyl)ether	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	95-57-8	2-Chlorophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	95-48-7	2-Methylphenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	108-60-1	2,2'-Oxybis(1-chloropropane)	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	98-86-2	Acetophenone	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	106-44-5	4-Methylphenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	621-64-7	N-Nitroso-di-n-propylamine	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	67-72-1	Hexachloroethane	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	98-95-3	Nitrobenzene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	78-59-1	Isophorone	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	88-75-5	2-Nitrophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	105-67-9	2,4-Dimethylphenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	111-91-1	Bis(2-chloroethoxy)methane	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	120-83-2	2,4-Dichlorophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	91-20-3	Naphthalene	140000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	106-47-8	4-Chloroaniline	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	87-68-3	Hexachlorobutadiene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	105-60-2	Caprolactam	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	59-50-7	4-Chloro-3-methylphenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	91-57-6	2-Methylnaphthalene	69000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	77-47-4	Hexachlorocyclopentadiene	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	88-06-2	2,4,6-Trichlorophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	95-95-4	2,4,5-Trichlorophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	92-52-4	1,1'-Biphenyl	86000	J	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	91-58-7	2-Chloronaphthalene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	88-74-4	2-Nitroaniline	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	131-11-3	Dimethylphthalate	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	606-20-2	2,6-Dinitrotoluene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	208-96-8	Acenaphthylene	13000		ug/kg	1900	06/11/2015	West - WWP

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	99-09-2	3-Nitroaniline	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	83-32-9	Acenaphthene	50000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	51-28-5	2,4-Dinitrophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	100-02-7	4-Nitrophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	132-64-9	Dibenzofuran	43000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	121-14-2	2,4-Dinitrotoluene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	84-66-2	Diethylphthalate	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	86-73-7	Fluorene	51000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	7005-72-3	4-Chlorophenyl-phenylether	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	100-01-6	4-Nitroaniline	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	534-52-1	4,6-Dinitro-2-methylphenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	86-30-6	N-Nitrosodiphenylamine	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	95-94-3	1,2,4,5-Tetrachlorobenzene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	101-55-3	4-Bromophenyl-phenylether	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	118-74-1	Hexachlorobenzene	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	1912-24-9	Atrazine	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	87-86-5	Pentachlorophenol	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	85-01-8	Phenanthrene	94000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	120-12-7	Anthracene	30000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	86-74-8	Carbazole	22000000	LJ	ug/kg	38000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	84-74-2	Di-n-butylphthalate	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	206-44-0	Fluoranthene	65000000		ug/kg	38000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	129-00-0	Pyrene	36000000		ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	85-68-7	Butylbenzylphthalate	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	91-94-1	3,3'-Dichlorobenzidine	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	56-55-3	Benzo(a)anthracene	140000	J	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/06/2015	01:05:00	218-01-9	Chrysene	13000000	LJ	ug/kg	19000000	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	117-81-7	Bis(2-ethylhexyl)phthalate	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	117-84-0	Di-n-octylphthalate	3800	U	ug/kg	3800	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	205-99-2	Benzo(b)fluoranthene	74000	J	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	207-08-9	Benzo(k)fluoranthene	58000	J	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	50-32-8	Benzo(a)pyrene	60000	J	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	193-39-5	Indeno(1,2,3-cd)pyrene	20000		ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	53-70-3	Dibenzo(a,h)anthracene	6800		ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	191-24-2	Benzo(g,h,i)perylene	16000		ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC2	S-1026.02	S	07/05/2015	13:23:00	58-90-2	2,3,4,6-Tetrachlorophenol	1900	U	ug/kg	1900	06/11/2015	West - WWP
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	123-91-1	1,4-Dioxane	83	U	ug/kg	83	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	100-52-7	Benzaldehyde	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	108-95-2	Phenol	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	111-44-4	Bis(2-chloroethyl)ether	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	95-57-8	2-Chlorophenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	95-48-7	2-Methylphenol	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	108-60-1	2,2'-Oxybis(1-chloropropane)	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	98-86-2	Acetophenone	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	106-44-5	4-Methylphenol	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	621-64-7	N-Nitroso-di-n-propylamine	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	67-72-1	Hexachloroethane	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	98-95-3	Nitrobenzene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	78-59-1	Isophorone	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	88-75-5	2-Nitrophenol	210	UJ	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	105-67-9	2,4-Dimethylphenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	111-91-1	Bis(2-chloroethoxy)methane	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	120-83-2	2,4-Dichlorophenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	91-20-3	Naphthalene	1200		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	106-47-8	4-Chloroaniline	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	87-68-3	Hexachlorobutadiene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	105-60-2	Caprolactam	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	59-50-7	4-Chloro-3-methylphenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	91-57-6	2-Methylnaphthalene	370		ug/kg	210	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALQUAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	77-47-4	Hexachlorocyclopentadiene	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	88-06-2	2,4,6-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	95-95-4	2,4,5-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	92-52-4	1,1'-Biphenyl	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	91-58-7	2-Chloronaphthalene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	88-74-4	2-Nitroaniline	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	131-11-3	Dimethylphthalate	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	606-20-2	2,6-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	208-96-8	Acenaphthylene	1100		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	99-09-2	3-Nitroaniline	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	83-32-9	Acenaphthene	510		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	51-28-5	2,4-Dinitrophenol	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	100-02-7	4-Nitrophenol	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	132-64-9	Dibenzofuran	340		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	121-14-2	2,4-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	84-66-2	Diethylphthalate	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	86-73-7	Fluorene	520		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	7005-72-3	4-Chlorophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	100-01-6	4-Nitroaniline	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	534-52-1	4,6-Dinitro-2-methylphenol	410	UR	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	86-30-6	N-Nitrosodiphenylamine	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	95-94-3	1,2,4,5-Tetrachlorobenzene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	101-55-3	4-Bromophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	118-74-1	Hexachlorobenzene	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	1912-24-9	Atrazine	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	87-86-5	Pentachlorophenol	410	U*	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	85-01-8	Phenanthrene	1300		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	120-12-7	Anthracene	2600		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	86-74-8	Carbazole	710		ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	84-74-2	Di-n-butylphthalate	350		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	206-44-0	Fluoranthene	7400		ug/kg	4100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	129-00-0	Pyrene	9100		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	85-68-7	Butylbenzylphthalate	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	91-94-1	3,3'-Dichlorobenzidine	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	56-55-3	Benzo(a)anthracene	4600		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	218-01-9	Chrysene	7900		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	117-81-7	Bis(2-ethylhexyl)phthalate	200	LJ	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	117-84-0	Di-n-octylphthalate	410	U	ug/kg	410	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	205-99-2	Benzo(b)fluoranthene	3900		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	207-08-9	Benzo(k)fluoranthene	3200		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/04/2015	19:25:00	50-32-8	Benzo(a)pyrene	2200		ug/kg	2100	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	193-39-5	Indeno(1,2,3-cd)pyrene	4100	J	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	53-70-3	Dibenzo(a,h)anthracene	2000		ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	191-24-2	Benzo(g,h,i)perylene	3500	J	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3	S-1026.03	S	07/03/2015	15:00:00	58-90-2	2,3,4,6-Tetrachlorophenol	210	U	ug/kg	210	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	91-20-3	Naphthalene	400	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	91-57-6	2-Methylnaphthalene	130	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	208-96-8	Acenaphthylene	400	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	83-32-9	Acenaphthene	160	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	86-73-7	Fluorene	120	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	87-86-5	Pentachlorophenol	8.4	U	ug/kg	8.4	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	85-01-8	Phenanthrene	380	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	120-12-7	Anthracene	710	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	206-44-0	Fluoranthene	3400	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	129-00-0	Pyrene	1900	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	56-55-3	Benzo(a)anthracene	1800	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	218-01-9	Chrysene	1800	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	205-99-2	Benzo(b)fluoranthene	23000	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	207-08-9	Benzo(k)fluoranthene	7700	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	50-32-8	Benzo(a)pyrene	12000	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	193-39-5	Indeno(1,2,3-cd)pyrene	9700	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	53-70-3	Dibenzo(a,h)anthracene	9400	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC3 (SIM)	S-1026.03	S	07/04/2015	17:36:00	191-24-2	Benzo(g,h,i)perylene	9100	*	ug/kg	4.1	06/11/2015	Culvert/Ditch (South)
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	123-91-1	1,4-Dioxane	75	U	ug/kg	75	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	100-52-7	Benzaldehyde	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	108-95-2	Phenol	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	111-44-4	Bis(2-chloroethyl)ether	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	95-57-8	2-Chlorophenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	95-48-7	2-Methylphenol	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	108-60-1	2,2'-Oxybis(1-chloropropane)	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	98-86-2	Acetophenone	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	106-44-5	4-Methylphenol	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	621-64-7	N-Nitroso-di-n-propylamine	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	67-72-1	Hexachloroethane	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	98-95-3	Nitrobenzene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	78-59-1	Isophorone	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	88-75-5	2-Nitrophenol	190	UJ	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	105-67-9	2,4-Dimethylphenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	111-91-1	Bis(2-chloroethoxy)methane	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	120-83-2	2,4-Dichlorophenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	91-20-3	Naphthalene	560		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	106-47-8	4-Chloroaniline	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	87-68-3	Hexachlorobutadiene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	105-60-2	Caprolactam	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	59-50-7	4-Chloro-3-methylphenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	91-57-6	2-Methylnaphthalene	120	*	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	77-47-4	Hexachlorocyclopentadiene	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	88-06-2	2,4,6-Trichlorophenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	95-95-4	2,4,5-Trichlorophenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	92-52-4	1,1'-Biphenyl	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	91-58-7	2-Chloronaphthalene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	88-74-4	2-Nitroaniline	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	131-11-3	Dimethylphthalate	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	606-20-2	2,6-Dinitrotoluene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	208-96-8	Acenaphthylene	190	U*	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	99-09-2	3-Nitroaniline	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	83-32-9	Acenaphthene	190	U*	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	51-28-5	2,4-Dinitrophenol	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	100-02-7	4-Nitrophenol	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	132-64-9	Dibenzofuran	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	121-14-2	2,4-Dinitrotoluene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	84-66-2	Diethylphthalate	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	86-73-7	Fluorene	190	U*	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	7005-72-3	4-Chlorophenyl-phenylether	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	100-01-6	4-Nitroaniline	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	534-52-1	4,6-Dinitro-2-methylphenol	370	UR	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	86-30-6	N-Nitrosodiphenylamine	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	101-55-3	4-Bromophenyl-phenylether	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	118-74-1	Hexachlorobenzene	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	1912-24-9	Atrazine	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	87-86-5	Pentachlorophenol	370	U*	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	85-01-8	Phenanthrene	130	*	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	120-12-7	Anthracene	1500		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	86-74-8	Carbazole	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	84-74-2	Di-n-butylphthalate	140	LJ	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/06/2015	12:25:00	206-44-0	Fluoranthene	4200		ug/kg	3700	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/06/2015	12:25:00	129-00-0	Pyrene	5300		ug/kg	1900	06/11/2015	RR-ROW

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALQUAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	85-68-7	Butylbenzylphthalate	190	UJ	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	91-94-1	3,3'-Dichlorobenzidine	370	UJ	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/06/2015	12:25:00	56-55-3	Benzo(a)anthracene	2700		ug/kg	1900	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/06/2015	12:25:00	218-01-9	Chrysene	4400		ug/kg	1900	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	117-81-7	Bis(2-ethylhexyl)phthalate	190	UJ	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	117-84-0	Di-n-octylphthalate	370	U	ug/kg	370	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	205-99-2	Benzo(b)fluoranthene	2000		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	207-08-9	Benzo(k)fluoranthene	1500		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	50-32-8	Benzo(a)pyrene	970		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	193-39-5	Indeno(1,2,3-cd)pyrene	580		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	53-70-3	Dibenzo(a,h)anthracene	250		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	191-24-2	Benzo(g,h,i)perylene	480		ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4	S-1026.04	S	07/03/2015	12:06:00	58-90-2	2,3,4,6-Tetrachlorophenol	190	U	ug/kg	190	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	91-20-3	Naphthalene	270	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	91-57-6	2-Methylnaphthalene	60		ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	208-96-8	Acenaphthylene	29	J	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	83-32-9	Acenaphthene	24		ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	86-73-7	Fluorene	32		ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	87-86-5	Pentachlorophenol	7.6	U	ug/kg	7.6	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	20:43:00	85-01-8	Phenanthrene	230	J	ug/kg	37	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	120-12-7	Anthracene	800	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	206-44-0	Fluoranthene	1800	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	129-00-0	Pyrene	1900	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	56-55-3	Benzo(a)anthracene	1200	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	218-01-9	Chrysene	1500	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	205-99-2	Benzo(b)fluoranthene	2800	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	207-08-9	Benzo(k)fluoranthene	1200	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	50-32-8	Benzo(a)pyrene	1100	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	193-39-5	Indeno(1,2,3-cd)pyrene	700	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	53-70-3	Dibenzo(a,h)anthracene	530	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC4 (SIM)	S-1026.04	S	07/04/2015	18:07:00	191-24-2	Benzo(g,h,i)perylene	670	*	ug/kg	3.7	06/11/2015	RR-ROW
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	123-91-1	1,4-Dioxane	820	U	ug/kg	820	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	100-52-7	Benzaldehyde	4000	F+	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	108-95-2	Phenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	111-44-4	Bis(2-chloroethyl)ether	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	95-57-8	2-Chlorophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	95-48-7	2-Methylphenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	108-60-1	2,2'-Oxybis(1-chloropropane)	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	98-86-2	Acetophenone	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	106-44-5	4-Methylphenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	621-64-7	N-Nitroso-di-n-propylamine	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	67-72-1	Hexachloroethane	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	98-95-3	Nitrobenzene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	78-59-1	Isophorone	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	88-75-5	2-Nitrophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	105-67-9	2,4-Dimethylphenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	111-91-1	Bis(2-chloroethoxy)methane	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	120-83-2	2,4-Dichlorophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	91-20-3	Naphthalene	110000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	106-47-8	4-Chloroaniline	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	87-68-3	Hexachlorobutadiene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	105-60-2	Caprolactam	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	59-50-7	4-Chloro-3-methylphenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	91-57-6	2-Methylnaphthalene	27000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	77-47-4	Hexachlorocyclopentadiene	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	88-06-2	2,4,6-Trichlorophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	95-95-4	2,4,5-Trichlorophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	92-52-4	1,1'-Biphenyl	44000	J	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	91-58-7	2-Chloronaphthalene	2100	U	ug/kg	2100	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	88-74-4	2-Nitroaniline	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	131-11-3	Dimethylphthalate	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	606-20-2	2,6-Dinitrotoluene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	208-96-8	Acenaphthylene	7200		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	99-09-2	3-Nitroaniline	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	83-32-9	Acenaphthene	21000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	51-28-5	2,4-Dinitrophenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	100-02-7	4-Nitrophenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	132-64-9	Dibenzofuran	19000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	121-14-2	2,4-Dinitrotoluene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	84-66-2	Diethylphthalate	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	86-73-7	Fluorene	25000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	7005-72-3	4-Chlorophenyl-phenylether	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	100-01-6	4-Nitroaniline	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	534-52-1	4,6-Dinitro-2-methylphenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	86-30-6	N-Nitrosodiphenylamine	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	101-55-3	4-Bromophenyl-phenylether	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	118-74-1	Hexachlorobenzene	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	1912-24-9	Atrazine	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	87-86-5	Pentachlorophenol	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	85-01-8	Phenanthrene	63000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	120-12-7	Anthracene	60000000	J	ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	86-74-8	Carbazole	69000	J	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	84-74-2	Di-n-butylphthalate	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	206-44-0	Fluoranthene	28000000		ug/kg	20000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	129-00-0	Pyrene	15000000		ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	85-68-7	Butylbenzylphthalate	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	91-94-1	3,3'-Dichlorobenzidine	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	23:05:00	56-55-3	Benzo(a)anthracene	6400000	LJ	ug/kg	11000000	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	218-01-9	Chrysene	44000	J	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	117-81-7	Bis(2-ethylhexyl)phthalate	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	117-84-0	Di-n-octylphthalate	4100	U	ug/kg	4100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	205-99-2	Benzo(b)fluoranthene	21000		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	207-08-9	Benzo(k)fluoranthene	19000		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	50-32-8	Benzo(a)pyrene	19000		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	193-39-5	Indeno(1,2,3-cd)pyrene	6700		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	53-70-3	Dibenzo(a,h)anthracene	2200		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	191-24-2	Benzo(g,h,i)perylene	5500		ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC5	S-1026.05	S	07/05/2015	14:04:00	58-90-2	2,3,4,6-Tetrachlorophenol	2100	U	ug/kg	2100	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	123-91-1	1,4-Dioxane	930	U	ug/kg	930	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	100-52-7	Benzaldehyde	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	108-95-2	Phenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	111-44-4	Bis(2-chloroethyl)ether	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	95-57-8	2-Chlorophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	95-48-7	2-Methylphenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	108-60-1	2,2'-Oxybis(1-chloropropane)	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	98-86-2	Acetophenone	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	106-44-5	4-Methylphenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	621-64-7	N-Nitroso-di-n-propylamine	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	67-72-1	Hexachloroethane	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	98-95-3	Nitrobenzene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	78-59-1	Isophorone	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	88-75-5	2-Nitrophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	105-67-9	2,4-Dimethylphenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	111-91-1	Bis(2-chloroethoxy)methane	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	120-83-2	2,4-Dichlorophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	91-20-3	Naphthalene	6000000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	106-47-8	4-Chloroaniline	4600	U	ug/kg	4600	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALQUAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	87-68-3	Hexachlorobutadiene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	105-60-2	Caprolactam	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	59-50-7	4-Chloro-3-methylphenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	91-57-6	2-Methylnaphthalene	3800000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	77-47-4	Hexachlorocyclopentadiene	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	88-06-2	2,4,6-Trichlorophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	95-95-4	2,4,5-Trichlorophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	92-52-4	1,1'-Biphenyl	25000		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	91-58-7	2-Chloronaphthalene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	88-74-4	2-Nitroaniline	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	131-11-3	Dimethylphthalate	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	606-20-2	2,6-Dinitrotoluene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	208-96-8	Acenaphthylene	4900		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	99-09-2	3-Nitroaniline	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	83-32-9	Acenaphthene	3000000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	51-28-5	2,4-Dinitrophenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	100-02-7	4-Nitrophenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	132-64-9	Dibenzofuran	3300000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	121-14-2	2,4-Dinitrotoluene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	84-66-2	Diethylphthalate	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	86-73-7	Fluorene	4100000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	7005-72-3	4-Chlorophenyl-phenylether	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	100-01-6	4-Nitroaniline	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	534-52-1	4,6-Dinitro-2-methylphenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	86-30-6	N-Nitrosodiphenylamine	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	101-55-3	4-Bromophenyl-phenylether	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	118-74-1	Hexachlorobenzene	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	1912-24-9	Atrazine	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	87-86-5	Pentachlorophenol	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	85-01-8	Phenanthrene	12000000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	120-12-7	Anthracene	1900000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	86-74-8	Carbazole	23000		ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	84-74-2	Di-n-butylphthalate	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	206-44-0	Fluoranthene	6100000		ug/kg	2300000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	129-00-0	Pyrene	3300000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	85-68-7	Butylbenzylphthalate	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	91-94-1	3,3'-Dichlorobenzidine	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	18:09:00	56-55-3	Benzo(a)anthracene	1400000		ug/kg	1200000	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	218-01-9	Chrysene	37000		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	117-81-7	Bis(2-ethylhexyl)phthalate	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	117-84-0	Di-n-octylphthalate	4600	U	ug/kg	4600	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	205-99-2	Benzo(b)fluoranthene	17000		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	207-08-9	Benzo(k)fluoranthene	16000		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	50-32-8	Benzo(a)pyrene	14000		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	193-39-5	Indeno(1,2,3-cd)pyrene	5800		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	53-70-3	Dibenzo(a,h)anthracene	2000	UJ	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	191-24-2	Benzo(g,h,i)perylene	4700		ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC6	S-1026.06	S	07/05/2015	14:45:00	58-90-2	2,3,4,6-Tetrachlorophenol	2400	U	ug/kg	2400	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	123-91-1	1,4-Dioxane	770	U	ug/kg	770	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	100-52-7	Benzaldehyde	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	108-95-2	Phenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	111-44-4	Bis(2-chloroethyl)ether	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	95-57-8	2-Chlorophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	95-48-7	2-Methylphenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	108-60-1	2,2'-Oxybis(1-chloropropane)	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	98-86-2	Acetophenone	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	106-44-5	4-Methylphenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	621-64-7	N-Nitroso-di-n-propylamine	2000	U	ug/kg	2000	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	67-72-1	Hexachloroethane	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	98-95-3	Nitrobenzene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	78-59-1	Isophorone	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	88-75-5	2-Nitrophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	105-67-9	2,4-Dimethylphenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	111-91-1	Bis(2-chloroethoxy)methane	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	120-83-2	2,4-Dichlorophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	91-20-3	Naphthalene	30000		ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	106-47-8	4-Chloroaniline	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	87-68-3	Hexachlorobutadiene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	105-60-2	Caprolactam	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	59-50-7	4-Chloro-3-methylphenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	91-57-6	2-Methylnaphthalene	40000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	77-47-4	Hexachlorocyclopentadiene	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	88-06-2	2,4,6-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	95-95-4	2,4,5-Trichlorophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	92-52-4	1,1'-Biphenyl	6500		ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	91-58-7	2-Chloronaphthalene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	88-74-4	2-Nitroaniline	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	131-11-3	Dimethylphthalate	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	606-20-2	2,6-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	208-96-8	Acenaphthylene	7700		ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	99-09-2	3-Nitroaniline	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	83-32-9	Acenaphthene	12000		ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	51-28-5	2,4-Dinitrophenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	100-02-7	4-Nitrophenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	132-64-9	Dibenzofuran	45000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	121-14-2	2,4-Dinitrotoluene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	84-66-2	Diethylphthalate	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	86-73-7	Fluorene	110000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	7005-72-3	4-Chlorophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	100-01-6	4-Nitroaniline	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	534-52-1	4,6-Dinitro-2-methylphenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	86-30-6	N-Nitrosodiphenylamine	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	95-94-3	1,2,4,5-Tetrachlorobenzene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	101-55-3	4-Bromophenyl-phenylether	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	118-74-1	Hexachlorobenzene	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	1912-24-9	Atrazine	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	87-86-5	Pentachlorophenol	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	85-01-8	Phenanthrene	8000000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	120-12-7	Anthracene	20000000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	86-74-8	Carbazole	6700000	LJ	ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	84-74-2	Di-n-butylphthalate	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	206-44-0	Fluoranthene	16000000		ug/kg	7700000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	129-00-0	Pyrene	13000000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	85-68-7	Butylbenzylphthalate	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	91-94-1	3,3'-Dichlorobenzidine	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	56-55-3	Benzo(a)anthracene	5400000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	218-01-9	Chrysene	7100000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	117-81-7	Bis(2-ethylhexyl)phthalate	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	117-84-0	Di-n-octylphthalate	3800	U	ug/kg	3800	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	205-99-2	Benzo(b)fluoranthene	4500000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	207-08-9	Benzo(k)fluoranthene	5100000		ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	23:45:00	50-32-8	Benzo(a)pyrene	3300000	LJ	ug/kg	3900000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	193-39-5	Indeno(1,2,3-cd)pyrene	53000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	53-70-3	Dibenzo(a,h)anthracene	23000		ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	191-24-2	Benzo(g,h,i)perylene	43000	J	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC7	S-1026.07	S	07/05/2015	15:25:00	58-90-2	2,3,4,6-Tetrachlorophenol	2000	U	ug/kg	2000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	123-91-1	1,4-Dioxane	81	U	ug/kg	81	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALQUAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	100-52-7	Benzaldehyde	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	108-95-2	Phenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	111-44-4	Bis(2-chloroethyl)ether	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	95-57-8	2-Chlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	95-48-7	2-Methylphenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	108-60-1	2,2'-Oxybis(1-chloropropane)	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	98-86-2	Acetophenone	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	106-44-5	4-Methylphenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	621-64-7	N-Nitroso-di-n-propylamine	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	67-72-1	Hexachloroethane	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	98-95-3	Nitrobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	78-59-1	Isophorone	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	88-75-5	2-Nitrophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	105-67-9	2,4-Dimethylphenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	111-91-1	Bis(2-chloroethoxy)methane	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	120-83-2	2,4-Dichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	91-20-3	Naphthalene	960		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	106-47-8	4-Chloroaniline	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	87-68-3	Hexachlorobutadiene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	105-60-2	Caprolactam	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	59-50-7	4-Chloro-3-methylphenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	91-57-6	2-Methylnaphthalene	300		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	77-47-4	Hexachlorocyclopentadiene	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	88-06-2	2,4,6-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	95-95-4	2,4,5-Trichlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	92-52-4	1,1'-Biphenyl	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	91-58-7	2-Chloronaphthalene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	88-74-4	2-Nitroaniline	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	131-11-3	Dimethylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	606-20-2	2,6-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	208-96-8	Acenaphthylene	1500		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	99-09-2	3-Nitroaniline	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	83-32-9	Acenaphthene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	51-28-5	2,4-Dinitrophenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	100-02-7	4-Nitrophenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	132-64-9	Dibenzofuran	540		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	121-14-2	2,4-Dinitrotoluene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	84-66-2	Diethylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	86-73-7	Fluorene	190	LJ	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	7005-72-3	4-Chlorophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	100-01-6	4-Nitroaniline	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	534-52-1	4,6-Dinitro-2-methylphenol	410	UR	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	86-30-6	N-Nitrosodiphenylamine	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	95-94-3	1,2,4,5-Tetrachlorobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	101-55-3	4-Bromophenyl-phenylether	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	118-74-1	Hexachlorobenzene	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	1912-24-9	Atrazine	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	87-86-5	Pentachlorophenol	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	85-01-8	Phenanthrene	2500		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	120-12-7	Anthracene	2900		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	86-74-8	Carbazole	1100		ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	84-74-2	Di-n-butylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	206-44-0	Fluoranthene	31000		ug/kg	20000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	129-00-0	Pyrene	32000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	85-68-7	Butylbenzylphthalate	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	91-94-1	3,3'-Dichlorobenzidine	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	56-55-3	Benzo(a)anthracene	16000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	218-01-9	Chrysene	25000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	117-81-7	Bis(2-ethylhexyl)phthalate	210	U	ug/kg	210	06/11/2015	Creosote Area

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	117-84-0	Di-n-octylphthalate	410	U	ug/kg	410	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	205-99-2	Benzo(b)fluoranthene	26000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	207-08-9	Benzo(k)fluoranthene	24000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	50-32-8	Benzo(a)pyrene	16000		ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	193-39-5	Indeno(1,2,3-cd)pyrene	9300	LJ	ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	53-70-3	Dibenzo(a,h)anthracene	3200		ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/06/2015	00:25:00	191-24-2	Benzo(g,h,i)perylene	8600	LJ	ug/kg	10000	06/11/2015	Creosote Area
45361	F9DC1	F9DC8	S-1026.08	S	07/05/2015	12:01:00	58-90-2	2,3,4,6-Tetrachlorophenol	210	U	ug/kg	210	06/11/2015	Creosote Area
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	123-91-1	1,4-Dioxane	86	U	ug/kg	86	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	100-52-7	Benzaldehyde	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	108-95-2	Phenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	111-44-4	Bis(2-chloroethyl)ether	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	95-57-8	2-Chlorophenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	95-48-7	2-Methylphenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	108-60-1	2,2'-Oxybis(1-chloropropane)	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	98-86-2	Acetophenone	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	106-44-5	4-Methylphenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	621-64-7	N-Nitroso-di-n-propylamine	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	67-72-1	Hexachloroethane	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	98-95-3	Nitrobenzene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	78-59-1	Isophorone	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	88-75-5	2-Nitrophenol	220	UJ	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	105-67-9	2,4-Dimethylphenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	111-91-1	Bis(2-chloroethoxy)methane	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	120-83-2	2,4-Dichlorophenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	91-20-3	Naphthalene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	106-47-8	4-Chloroaniline	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	87-68-3	Hexachlorobutadiene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	105-60-2	Caprolactam	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	59-50-7	4-Chloro-3-methylphenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	91-57-6	2-Methylnaphthalene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	77-47-4	Hexachlorocyclopentadiene	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	88-06-2	2,4,6-Trichlorophenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	95-95-4	2,4,5-Trichlorophenol	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	92-52-4	1,1'-Biphenyl	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	91-58-7	2-Chloronaphthalene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	88-74-4	2-Nitroaniline	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	131-11-3	Dimethylphthalate	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	606-20-2	2,6-Dinitrotoluene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	208-96-8	Acenaphthylene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	99-09-2	3-Nitroaniline	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	83-32-9	Acenaphthene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	51-28-5	2,4-Dinitrophenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	100-02-7	4-Nitrophenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	132-64-9	Dibenzofuran	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	121-14-2	2,4-Dinitrotoluene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	84-66-2	Diethylphthalate	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	86-73-7	Fluorene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	7005-72-3	4-Chlorophenyl-phenylether	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	100-01-6	4-Nitroaniline	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	534-52-1	4,6-Dinitro-2-methylphenol	430	UR	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	86-30-6	N-Nitrosodiphenylamine	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	95-94-3	1,2,4,5-Tetrachlorobenzene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	101-55-3	4-Bromophenyl-phenylether	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	118-74-1	Hexachlorobenzene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	1912-24-9	Atrazine	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	87-86-5	Pentachlorophenol	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	85-01-8	Phenanthrene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	120-12-7	Anthracene	220	U	ug/kg	220	06/09/2015	Background

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALQUAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	86-74-8	Carbazole	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	84-74-2	Di-n-butylphthalate	180	LJ	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	206-44-0	Fluoranthene	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	129-00-0	Pyrene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	85-68-7	Butylbenzylphthalate	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	91-94-1	3,3'-Dichlorobenzidine	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	56-55-3	Benzo(a)anthracene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	218-01-9	Chrysene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	117-81-7	Bis(2-ethylhexyl)phthalate	120	LJ	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	117-84-0	Di-n-octylphthalate	430	U	ug/kg	430	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	205-99-2	Benzo(b)fluoranthene	140	LJ	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	207-08-9	Benzo(k)fluoranthene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	50-32-8	Benzo(a)pyrene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	193-39-5	Indeno(1,2,3-cd)pyrene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	53-70-3	Dibenzo(a,h)anthracene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	191-24-2	Benzo(g,h,i)perylene	220	U	ug/kg	220	06/09/2015	Background
45361	F9DC1	F9DE0	S-1026.09	S	07/03/2015	12:57:00	58-90-2	2,3,4,6-Tetrachlorophenol	220	U	ug/kg	220	06/09/2015	Background

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 45361 SDG No. F9DC1 SDG Nos. To Follow Mod. Ref No. Date Rec 7/6/15

EPA Lab ID: KAP

Lab Location: The Woodlands, TX

Region: 6 Audit No.: 45361/F9DC1

Re_Submitted CSF? Yes No X

Box No(s): 1

COMMENTS:

Item Description

3/ 4. The laboratory submitted the BNA-SIM data in a separated package with incorrect paging sequence. The reviewer made the appropriate corrections on the associated Forms DC-2.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?		X	
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
TRAFFIC REPORT /CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
AIRBILLS/AIRBILL STICKER			
11. Present?	X		
12. Signed?	X		
13. Dated?	X		
SAMPLE TAGS			
14. Does DC-1 list tags as being included?	X		
15. Present?	X		
OTHER DOCUMENTS			
16. Complete?	X		
17. Legible?	X		
18. Original?		X	
18a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Wallace Doong / ESAT Data Reviewer Date 8/11/15

Audited by: Date

Signature Printed Name/Title

DC-2__

In Reference To Case No(s):
45361 SDG: F9DC1 (O-1252)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	KAP
Lab Contact:	Rao Alsakani
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Wallace Doong - ESAT

In reference to data for the fraction(s):

BNA BNA-SIM

Summary of Questions/Issues:

A. BNA

1. Results for the following compounds were inconsistent between the original and diluted analyses: dibenzofuran for samples F9DC1 and F9DC1DL and benzo(a)anthracene for samples F9DC4 and F9DC4DL. Please verify and make necessary correction and resubmission.

2. The same peak was used for the quantitation of the following isomers. Please correct and resubmit the necessary data and reporting forms:

   benzo(b)fluoranthene and benzo(k)fluoranthene for analyses F9DC2DL and SSTD020NW (page 814),

   phenanthrene and anthracene for analysis F9DC5DL, and

   benzo(a)anthracene and chrysene for analysis SSTD020NX (page 826).

3. Please submit the EICP for the manual integrations of the following ISs, DMCs, and analytes:

   chrysene-d12 for sample F9DC3,

   perylene-d12 for sample F9DC4,

   phenol-d5 and indeno(1,2,3-cd)pyrene for SSTD0205N (pages 792 and 793),

   phenol-d5 for SSTD020NW (page 814) and SSTD020NY (page 839), and

   indeno(1,2,3-cd)pyrene for SSTD020PB (page 876).

4. The following results appeared to be false positives, please verify and make necessary correction and resubmission:

   benzaldehyde in samples F9DC1, F9DC2, and F9DC5 and

   4-chloroaniline for sample F9DC1DL.

B. BNA-SIM

1. The same peak was used for the quantitations of benzo(a)anthracene and chrysene for analyses F9DC3DL and SSTD0.4PD (page 1166). Please correct and resubmit the necessary data and reporting forms.

2. Please submit the EICP for the manual integrations of the following ISs and analytes:

   naphthalene-d8, chrysene-d12, and perylene-d12 in sample F9DC1 (page 1047);

   perylene-d12 in samples F9DC4 and F9DC4DL (pages 1104 and 1118));

   naphthalene, benzo(b)fluoranthene, and benzo(g,h,i)perylene for SSTD0.4PD (page 1166);

   phenanthrene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene for SSTD0.4PE (page 1170); and

   benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene for SSTD0.4PF (page 1174).

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 except for replacement pages (SOM02.2, p. B-10, sec. 2.2). Custody seals are required only for regular mail shipments.

Please respond to the above items **within 5 business days** (SOM02.2, p. B-11, sec. 2.2.1) by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818421730

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 3
SDG: F9DC1

No: 6-061215-162836-0007
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSD02-06	F9DB8	Sediment/ START	Grab	SVOA/SIM(21)	6-472436 (Wet ice), 6-472437 (Wet ice) (2)	Background	06/11/2015 16:17	
ACSD08-06	F9DC1	Sediment/ START	Grab	SVOA/SIM(21)	6-472445 (Wet ice), 6-472446 (Wet ice) (2)	Wastewater Pit	06/11/2015 13:00	S-1026.01
ACSD12-06	F9DC3	Sediment/ START	Grab	SVOA/SIM(21)	6-472483 (Wet ice), 6-472484 (Wet ice) (2)	Culvert/Ditch (South)	06/11/2015 14:10	.03
ACSD15-06	F9DC4	Sediment/ START	Grab	SVOA/SIM(21)	6-472486 (Wet ice), 6-472487 (Wet ice) (2)	RR-ROW	06/11/2015 15:49	.04
ACSW-06	F9DC9	Waste Water/ START	Grab	SVOA(21)	6-403819 (Wet ice), 6-403820 (Wet ice) (2)	Wastewater Pit 2	06/11/2015 11:30	
ACSW-04	F9DD0	Surface Water/ START	Grab	SVOA(21)	6-420395 (Wet ice), 6-420396 (Wet ice) (2)	Concrete Structure	06/11/2015 09:10	
ACSW-08	F9DE1	Waste Water/ START	Grab	SVOA(21)	6-403822 (Wet ice), 6-403823 (Wet ice) (2)	Wastewater Pit 1	06/11/2015 08:23	

Sample(s) to be used for Lab QC: ACSW-04 Tag 420395, ACSW-04 Tag 420396 - Special Instructions: No Lab QC for SVOAs
Temp: 3.1°C/3.3°C

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: SVOA/SIM=CLP Semivolatiles/PAHSIM, SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830	FedEx		
				6/13/15 09:53	F9DC3 - 1-8oz Jar Broken F9DD0 - 1-1L Amber Broken All Remaining Samples Intact.

ORIGINAL
Case 45361 SDG F9DA0
Episode S-1025 init/date 6/13/15

KAP Technologies

07 273

EPW11031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818389814

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2
SDG: F9DC1

No: 6-061215-155911-0005
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS19-58	F9DB6	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	West - WWP	06/11/2015 09:15	
ACS19-10	F9DB7	Soil/ START	Grab	SVOA(21)	6-472434 (Wet ice) (1)	Creosote Area	06/11/2015 10:45	
ACS01-58	F9DB9	Soil/ START	Discrete Interval	SVOA(21)	6-472432 (Wet ice) (1)	Background	06/09/2015 13:15	
ACS07-10	F9DC2	Soil/ START	Discrete Interval	SVOA(21)	6-472480 (Wet ice) (1)	West - WWP	06/11/2015 09:25	S-1026.02
ACS10-10	F9DC5	Soil/ START	Discrete Interval	SVOA(21)	6-472489 (Wet ice) (1)	Creosote Area	06/11/2015 10:40	.05
ACS11-58	F9DC6	Soil/ START	Discrete Interval	SVOA(21)	6-472492 (Wet ice) (1)	Creosote Area	06/11/2015 14:45	.06
ACS25-06	F9DC7	Soil/ START	Grab	SVOA(21)	6-472495 (Wet ice) (1)	Creosote Area	06/11/2015 10:37	.07
ACS26-06	F9DC8	Soil/ START	Grab	SVOA(21)	6-420366 (Wet ice) (1)	Creosote Area	06/11/2015 11:46	.08
ACS01-10	F9DE0	Soil/ START	Discrete Interval	SVOA(21)	6-472494 (Wet ice) (1)	Background	06/09/2015 13:30	.09
								* SDG - FINAL SAMPLE *

Special Instructions: Lab QC Not required for SVOAs

Temp 3.3°C/3.7°C

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830	FedEx		
				6/13/15 09:53	Intact

ORIGINAL
Case 45361 SDG F9DAD
Episode S-1025 init/date 6/13/15

KAP Technologies

ADDENDUM

Data Validation Report

Data Review Results

Tue, 28 Jul 2015 09:56:27

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

HoldingTimes_Preservation

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

InitialCalibration

NONE FOUND

Data Validation Report

Data Review Results

Tue, 28 Jul 2015 09:56:27

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

ContinuingCalibrationVerification

Method - Semivolatiles

Test Name: EXES-1208
Defect Message: The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detecteds are qualified as estimated J. Nondetects are qualified as estimated UJ.

Associated Samples: F9DC3, F9DC4, F9DE0

2-Nitrophenol	SSTD020NW, SSTD020NY

Method - Semivolatiles by SIM

Test Name: EXES-1208
Defect Message: The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detecteds are qualified as estimated J. Nondetects are qualified as estimated UJ.

Associated Samples: F9DC1, F9DC3, F9DC4, SBLK94

Phenanthrene	SSTD0.4PE
Pyrene	SSTD0.4PE
Benzo(a)anthracene	SSTD0.4PC

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

Blanks

NONE FOUND

Data Validation Report

Data Review Results

Tue, 28 Jul 2015 09:56:27

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

DMC_Surrogate

Method - Semivolatiles

Test Name: EXES-792
Defect Message: The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimnm criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Associated Samples: F9DC5, F9DC6

4,6-Dinitro-2-methylphenol-d2	F9DC6, F9DC5

Test Name: EXES-973
Defect Message: The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified. Use professional judgment to qualify data.

Associated Samples: SBLK94

Phenol-d5	SBLK94

Test Name: EXES-982
Defect Message: The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

Associated Samples: F9DC1, F9DC2, F9DC3, F9DC5, F9DC6, F9DC7, F9DC8

1,4-Dioxane-d8	F9DC3, F9DC8
Phenol-d5	F9DC6
Bis(2-chloroethyl)ether-d8	F9DC5, F9DC2, F9DC6, F9DC1
2-Chlorophenol-d4	F9DC3, F9DC6
4-Methylphenol-d8	F9DC3, F9DC6
4-Chloroaniline-d4	F9DC1, F9DC3, F9DC7, F9DC2, F9DC5, F9DC6
Nitrobenzene-d5	F9DC2, F9DC1, F9DC6
2,4-Dichlorophenol-d3	F9DC6
Dimethylphthalate-d6	F9DC3, F9DC6, F9DC1, F9DC5
Acenaphthylene-d8	F9DC7, F9DC1, F9DC5, F9DC6, F9DC3

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

Test Name: EXES-982
Defect Message: The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

Associated Samples: F9DC1, F9DC2, F9DC3, F9DC5, F9DC6, F9DC7, F9DC8

4-Nitrophenol-d4	F9DC6
Fluorene-d10	F9DC6, F9DC5, F9DC3, F9DC1, F9DC7, F9DC2
Anthracene-d10	F9DC2, F9DC6, F9DC5, F9DC7, F9DC3, F9DC1
Pyrene-d10	F9DC5, F9DC6, F9DC7, F9DC2, F9DC1, F9DC3
Benzo(a)pyrene-d12	F9DC6, F9DC1, F9DC7, F9DC3, F9DC8, F9DC2, F9DC5

Method - Semivolatiles by SIM

Test Name: EXES-982
Defect Message: The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

Associated Samples: F9DC1

Fluoranthene-d10	F9DC1

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

MatrixSpikes

NONE FOUND

Data Validation Report

Data Review Results

Tue, 28 Jul 2015 09:56:27

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

InternalStandard

Method - Semivolatiles

Test Name: EXES-1523
Defect Message: The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

Associated Samples: F9DC4

Chrysene-d12	F9DC4

Method - Semivolatiles by SIM

Test Name: EXES-1522
Defect Message: The following samples have internal standard area response less than expanded minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as unusable R.

Associated Samples: F9DC1

Acenaphthene-d10	F9DC1
Phenanthrene-d10	F9DC1
Chrysene-d12	F9DC1
Perylene-d12	F9DC1

Test Name: EXES-1523
Defect Message: The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

Associated Samples: F9DC1

Naphthalene-d8	F9DC1

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

Test Name: EXES-1524
Defect Message: The following samples have internal standard area response greater than maximum criteria. Detected compounds are qualified estimated J-. Nondetects are not qualified.

Associated Samples: F9DC1, F9DC3, F9DC4

Naphthalene-d8	F9DC1
Chrysene-d12	F9DC4, F9DC3

Data Validation Report
Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

PercentSolids

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

SampleAnalysis

NONE FOUND

Data Validation Report

Data Review Results

Tue, 28 Jul 2015 09:56:27

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

DetectionLimit

Method - Semivolatiles

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: F9DC1, F9DC3, F9DC4, F9DC5, F9DC6, F9DC8, F9DE0

Benzaldehyde	F9DC5, F9DC1
2-Methylnaphthalene	F9DC4
Fluorene	F9DC8
Phenanthrene	F9DC4
Di-n-butylphthalate	F9DC4, F9DE0
Bis(2-ethylhexyl)phthalate	F9DE0, F9DC3
Benzo(b)fluoranthene	F9DE0
Dibenzo(a,h)anthracene	F9DC6

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.
Associated Samples: F9DC1, F9DC3, F9DC4, F9DC5, F9DC6, F9DC8, F9DE0

Benzaldehyde	F9DC5, F9DC1
2-Methylnaphthalene	F9DC4
Fluorene	F9DC8
Phenanthrene	F9DC4
Di-n-butylphthalate	F9DC4, F9DE0
Bis(2-ethylhexyl)phthalate	F9DE0, F9DC3
Benzo(b)fluoranthene	F9DE0
Dibenzo(a,h)anthracene	F9DC6

Method - Semivolatiles by SIM

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DC1	Contract: EPW14031	Submission Group Id: 30067921
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: F9DC1

Pentachlorophenol	F9DC1

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.
Associated Samples: F9DC1

Pentachlorophenol	F9DC1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

August 19, 2015

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)

Site: **AMERICAN CREOSOTE DERIDDER**

Case#: **45361**

SDG#: **F9DD1**

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report. One BNA target result was flagged unusable due to low surrogate recovery in three samples.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
1062S Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: August 18, 2015

TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA

FROM: Ying-Ping Hsieh, Data Reviewer, ESAT YPH

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT DGJ

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-11
ESAT Doc. No.:	1502-211-0146
TDF No.:	6-15-323A
ESAT File No.:	O-1253

Attached is the data review summary for Case # 45361
SDG # F9DD1
Site American Creosote DeRidder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099
ORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	45361	SITE	American Creosote DeRidder
LABORATORY	KAP	NO. OF SAMPLES	7
CONTRACT#	EP-W-14-031	MATRIX	Water
SDG#	F9DD1	REVIEWER (IF NOT ESB)	ESAT
SOW#	SOM02.2	REVIEWER'S NAME	Ying-Ping Hsieh
SF#	303DD2A6KM	COMPLETION DATE	August 18, 2015

SAMPLE NO.					
	F9DC9	F9DD3			
	F9DD0	F9DD4			
	F9DD1	F9DE1			
	F9DD2				

DATA ASSESSMENT SUMMARY

		BNA
1.	HOLDING TIMES	O
2.	GC/MS TUNE/INSTR. PERFORM.	O
3.	CALIBRATIONS	M
4.	BLANKS	O
5.	DMC/SURROGATES	M
6.	MATRIX SPIKE/DUPLICATE/LCS	N/A
7.	OTHER QC	N/A
8.	INTERNAL STANDARDS	O
9.	COMPOUND ID/QUANTITATION	O
10.	PERFORMANCE/COMPLETENESS	O
11.	OVERALL ASSESSMENT	M

O = Data had no problems.
M = Data qualified because of major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS: One closing CCV (SSTD020NT) failed the contractual %D calibration criteria. Sample F9DD2 had a zero percent recovery for SDMC14 (4,6-dinitro-2-methylphenol-d2), but the contract required re-extraction was not performed.

AREA OF CONCERN: The 2,4-dinitrophenol failed the technical %D calibration criteria for one closing CCV. Three samples had extremely low (<10%) SDMC14 recoveries, rendering the 4,6-dinitro-2-methylphenol results unusable for these samples.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 45361 **SDG** F9DD1 **SITE** American Creosote DeRidder **LAB** KAP

COMMENTS: This SDG consisted of seven water samples for BNA analysis following CLP SOW SOM02.2. The sampler designated sample F9DD4 as a field blank. MS/MSD analyses were not required.

The target compounds reported at concentrations above the CRQLs were 1,1'-biphenyl, dibenzofuran, diethylphthalate, carbazole, and/or PAHs in three samples. Because of high PAH concentrations, samples F9DD0 and F9DD3 were diluted 5X and reanalyzed. BNA samples F9DD2, F9DD3, and F9DD4 had extremely low (<10%) SDMC14 recoveries, rendering the 4,6-dinitro-2-methylphenol results unusable for these samples.

S3VEM Review was performed for this package as requested by the Region. For this review option, laboratory contractual compliance and technical usability of the sample results are primarily determined by the EDM CCS Defect Report and NFG Data Review Results Report, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the EDM reports. The NFG Data Review Results Report for the SDG is attached to this report as an addendum for additional information.

OVERALL ASSESSMENT: Some results were qualified for four samples because of problems with calibration and/or DMC recovery. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory was contacted for a CSF issue (see Resubmission Request). The laboratory resubmission will not impact the DST, so the DST included in this report is the final version.

ORGANIC ACRONYMS

%D	Percent Difference
%RSD	Percent Relative Standard Deviation
ARO	Aroclors
BFB	4-Bromofluorobenzene
BNA	Base/Neutral and Acid
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CF	Calibration Factor
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DCB	Decachlorobiphenyl
DFTPP	Decafluorotriphenylphosphine
DMC	Deuterated Monitoring Compound
DST	Data Summary Table
EDM	EXES Data Manager
GC/ECD	Gas Chromatograph/Electron Capture Detector
GC/MS	Gas Chromatograph/Mass Spectrometer
GPC	Gel Permeation Chromatography
IC	Initial Calibration
INDA(B,C)	Individual Standard Mixture A(or B or C)
IS	Internal Standard
LCS	Laboratory Control Sample
LMVOA	Low/Medium Volatile Organic Analysis
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
OTR/COC	Organic Traffic Report/Chain of Custody
PAH	Polynuclear Aromatic Hydrocarbon
PE	Performance Evaluation
PEM	Performance Evaluation Mixture
PEST	Pesticides
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RIC	Reconstructed Ion Chromatogram
RPD	Relative Percent Difference
RRF	Relative Response Factor
RRT	Relative Retention Time
RSCC	Regional Sample Control Center
RT	Retention Time
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SDMC	Semivolatile Deuterated Monitoring Compound
SIM	Selected Ion Monitoring
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
SVOA	Semivolatile Organic Analysis
TCL	Target Compound List
TCX	Tetrachloro-m-xylene
TIC	Tentatively Identified Compound
TVOA	Trace Volatile Organic Analysis
VDMC	Volatile Deuterated Monitoring Compound
VOA	Volatile Organic Analysis

HEADER DEFINITIONS FOR ORGANIC EXCEL DST

CASE:	Case Number
SDG:	SDG Number
EPASAMP:	EPA Sample Number
LABID:	Laboratory File/Sample ID
MATRIX:	Sample Matrix
ANDATE:	Sample Analysis Date
ANTIME:	Sample Analysis Time
CASNUM:	Compound CAS Number
ANALYTE:	Compound Name
CONC:	Compound Concentration
VALDQAL:	Region 6 Organic Data Validation Qualifier (see Organic Data Qualifier Definitions on the next page)
UNITS:	Concentration Units
ADJCRQL:	Adjusted Contract Required Quantitation Limit Value
SMPDATE:	Sampling Date
STATLOC:	Station Location

Disclaimer: ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, VALDQAL, and ADJCRQL. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

ORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

N Identification is tentative.

J Estimated value.

L Reported concentration is below the CRQL.

M Reported concentration should be used as a raised quantitation limit because of interferences and/or laboratory contamination.

R Unusable.

^ High biased. Actual concentration may be lower than the concentration reported.

v Low biased. Actual concentration may be higher than the concentration reported.

F+ A false positive exists.

F- A false negative exists.

UJ Estimated quantitation limit.

T Identification is questionable because of absence of other commonly coexisting pesticides.

C Identification of pesticide or Aroclor has been confirmed by Gas Chromatography/Mass Spectrometer (GC/MS).

X Identification of pesticide or Aroclor could not be confirmed by GC/MS when attempted.

***** Result not recommended for use because of associated QA/QC performance inferior to that from other analysis.

CASE	SDG	EPASAMP	LABID	MATRIX	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	STATLOC
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	123-91-1	1,4-Dioxane	2.0	U	ug/L	2.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	100-52-7	Benzaldehyde	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	108-95-2	Phenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	111-44-4	Bis(2-chloroethyl)ether	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	95-57-8	2-Chlorophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	95-48-7	2-Methylphenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	98-86-2	Acetophenone	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	106-44-5	4-Methylphenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	67-72-1	Hexachloroethane	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	98-95-3	Nitrobenzene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	78-59-1	Isophorone	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	88-75-5	2-Nitrophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	105-67-9	2,4-Dimethylphenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	120-83-2	2,4-Dichlorophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	91-20-3	Naphthalene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	106-47-8	4-Chloroaniline	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	87-68-3	Hexachlorobutadiene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	105-60-2	Caprolactam	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	59-50-7	4-Chloro-3-methylphenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	91-57-6	2-Methylnaphthalene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	77-47-4	Hexachlorocyclopentadiene	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	88-06-2	2,4,6-Trichlorophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	95-95-4	2,4,5-Trichlorophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	92-52-4	1,1'-Biphenyl	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	91-58-7	2-Chloronaphthalene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	88-74-4	2-Nitroaniline	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	131-11-3	Dimethylphthalate	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	606-20-2	2,6-Dinitrotoluene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	208-96-8	Acenaphthylene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	99-09-2	3-Nitroaniline	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	83-32-9	Acenaphthene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	51-28-5	2,4-Dinitrophenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	100-02-7	4-Nitrophenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	132-64-9	Dibenzofuran	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	121-14-2	2,4-Dinitrotoluene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	84-66-2	Diethylphthalate	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	86-73-7	Fluorene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	100-01-6	4-Nitroaniline	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	534-52-1	4,6-Dinitro-2-methylphenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	86-30-6	N-Nitrosodiphenylamine	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	101-55-3	4-Bromophenyl-phenylether	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	118-74-1	Hexachlorobenzene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	1912-24-9	Atrazine	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	87-86-5	Pentachlorophenol	10	U	ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	85-01-8	Phenanthrene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 2

45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	120-12-7	Anthracene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	86-74-8	Carbazole	10	U		ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	84-74-2	Di-n-butylphthalate	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	206-44-0	Fluoranthene	10	U		ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	129-00-0	Pyrene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	85-68-7	Butylbenzylphthalate	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	91-94-1	3,3'-Dichlorobenzidine	10	U		ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	56-55-3	Benzo(a)anthracene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	218-01-9	Chrysene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	117-81-7	Bis(2-ethylhexyl)phthalate	1.8	LJ		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	117-84-0	Di-n-octylphthalate	10	U		ug/L	10	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	205-99-2	Benzo(b)fluoranthene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	207-08-9	Benzo(k)fluoranthene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	50-32-8	Benzo(a)pyrene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	191-24-2	Benzo(g,h,i)perylene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DC9	S-1027.01	W	07/01/2015	19:18:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 2
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	123-91-1	1,4-Dioxane	2.0	U		ug/L	2.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	100-52-7	Benzaldehyde	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	108-95-2	Phenol	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	111-44-4	Bis(2-chloroethyl)ether	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	95-57-8	2-Chlorophenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	95-48-7	2-Methylphenol	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	98-86-2	Acetophenone	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	106-44-5	4-Methylphenol	7.3	LJ		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	67-72-1	Hexachloroethane	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	98-95-3	Nitrobenzene	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	78-59-1	Isophorone	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	88-75-5	2-Nitrophenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	105-67-9	2,4-Dimethylphenol	4.5	LJ		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	91-20-3	Naphthalene	220			ug/L	25	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	105-60-2	Caprolactam	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	91-57-6	2-Methylnaphthalene	110			ug/L	25	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	92-52-4	1,1'-Biphenyl	12			ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/11/2015	Concrete Structure

45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	83-32-9	Acenaphthene	75		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	51-28-5	2,4-Dinitrophenol	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	100-02-7	4-Nitrophenol	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	132-64-9	Dibenzofuran	61		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	121-14-2	2,4-Dinitrotoluene	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	84-66-2	Diethylphthalate	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	86-73-7	Fluorene	69		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	100-01-6	4-Nitroaniline	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	534-52-1	4,6-Dinitro-2-methylphenol	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	86-30-6	N-Nitrosodiphenylamine	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	101-55-3	4-Bromophenyl-phenylether	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	118-74-1	Hexachlorobenzene	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	1912-24-9	Atrazine	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	87-86-5	Pentachlorophenol	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	85-01-8	Phenanthrene	150		ug/L	25	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	120-12-7	Anthracene	42		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	86-74-8	Carbazole	34		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	84-74-2	Di-n-butylphthalate	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	206-44-0	Fluoranthene	91		ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	129-00-0	Pyrene	54		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	85-68-7	Butylbenzylphthalate	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	91-94-1	3,3'-Dichlorobenzidine	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	56-55-3	Benzo(a)anthracene	13		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	218-01-9	Chrysene	14		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	117-84-0	Di-n-octylphthalate	10	U	ug/L	10	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	205-99-2	Benzo(b)fluoranthene	7.5		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	207-08-9	Benzo(k)fluoranthene	7.9		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	50-32-8	Benzo(a)pyrene	6.0		ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	193-39-5	Indeno(1,2,3-cd)pyrene	2.2	LJ	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	191-24-2	Benzo(g,h,i)perylene	2.3	LJ	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD0	S-1027.02	W	07/01/2015	19:58:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U	ug/L	5.0	06/11/2015	Concrete Structure
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	123-91-1	1,4-Dioxane	2.0	U	ug/L	2.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	100-52-7	Benzaldehyde	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	108-95-2	Phenol	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	111-44-4	Bis(2-chloroethyl)ether	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	95-57-8	2-Chlorophenol	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	95-48-7	2-Methylphenol	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	98-86-2	Acetophenone	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	106-44-5	4-Methylphenol	10	U	ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	67-72-1	Hexachloroethane	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	98-95-3	Nitrobenzene	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	78-59-1	Isophorone	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	88-75-5	2-Nitrophenol	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	105-67-9	2,4-Dimethylphenol	5.0	U	ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U	ug/L	5.0	06/10/2015	MW-01

45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	91-20-3	Naphthalene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	105-60-2	Caprolactam	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	91-57-6	2-Methylnaphthalene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	92-52-4	1,1'-Biphenyl	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	83-32-9	Acenaphthene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	51-28-5	2,4-Dinitrophenol	10	UJ		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	100-02-7	4-Nitrophenol	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	132-64-9	Dibenzofuran	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	121-14-2	2,4-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	84-66-2	Diethylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	86-73-7	Fluorene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	100-01-6	4-Nitroaniline	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	534-52-1	4,6-Dinitro-2-methylphenol	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	86-30-6	N-Nitrosodiphenylamine	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	101-55-3	4-Bromophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	118-74-1	Hexachlorobenzene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	1912-24-9	Atrazine	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	87-86-5	Pentachlorophenol	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	85-01-8	Phenanthrene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	120-12-7	Anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	86-74-8	Carbazole	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	84-74-2	Di-n-butylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	206-44-0	Fluoranthene	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	129-00-0	Pyrene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	85-68-7	Butylbenzylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	91-94-1	3,3'-Dichlorobenzidine	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	56-55-3	Benzo(a)anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	218-01-9	Chrysene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	117-84-0	Di-n-octylphthalate	10	U		ug/L	10	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	205-99-2	Benzo(b)fluoranthene	1.7	LJ		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	207-08-9	Benzo(k)fluoranthene	2.2	LJ		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	50-32-8	Benzo(a)pyrene	2.3	LJ		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-01
45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	191-24-2	Benzo(g,h,i)perylene	5.0	U		ug/L	5.0	06/10/2015	MW-01

45361	F9DD1	F9DD1	S-1022.01	W	07/02/2015	02:48:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U		ug/L	5.0	06/10/2015 MW-01
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	123-91-1	1,4-Dioxane	2.0	U		ug/L	2.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	100-52-7	Benzaldehyde	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	108-95-2	Phenol	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	111-44-4	Bis(2-chloroethyl)ether	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	95-57-8	2-Chlorophenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	95-48-7	2-Methylphenol	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	98-86-2	Acetophenone	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	106-44-5	4-Methylphenol	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	67-72-1	Hexachloroethane	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	98-95-3	Nitrobenzene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	78-59-1	Isophorone	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	88-75-5	2-Nitrophenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	105-67-9	2,4-Dimethylphenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	91-20-3	Naphthalene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	105-60-2	Caprolactam	4.3	LJ		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	91-57-6	2-Methylnaphthalene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	92-52-4	1,1'-Biphenyl	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	83-32-9	Acenaphthene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	51-28-5	2,4-Dinitrophenol	10	UJ		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	100-02-7	4-Nitrophenol	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	132-64-9	Dibenzofuran	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	121-14-2	2,4-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	84-66-2	Diethylphthalate	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	86-73-7	Fluorene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	100-01-6	4-Nitroaniline	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	534-52-1	4,6-Dinitro-2-methylphenol	10	UR		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	86-30-6	N-Nitrosodiphenylamine	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	101-55-3	4-Bromophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	118-74-1	Hexachlorobenzene	5.0	U		ug/L	5.0	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	1912-24-9	Atrazine	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	87-86-5	Pentachlorophenol	10	U		ug/L	10	06/10/2015 MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	85-01-8	Phenanthrene	5.0	U		ug/L	5.0	06/10/2015 MW-02

45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	120-12-7	Anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	86-74-8	Carbazole	10	U		ug/L	10	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	84-74-2	Di-n-butylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	206-44-0	Fluoranthene	10	U		ug/L	10	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	129-00-0	Pyrene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	85-68-7	Butylbenzylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	91-94-1	3,3'-Dichlorobenzidine	10	U		ug/L	10	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	56-55-3	Benzo(a)anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	218-01-9	Chrysene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	117-84-0	Di-n-octylphthalate	10	U		ug/L	10	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	205-99-2	Benzo(b)fluoranthene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	207-08-9	Benzo(k)fluoranthene	2.1	LJ		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	50-32-8	Benzo(a)pyrene	2.0	LJ		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	191-24-2	Benzo(g,h,i)perylene	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD2	S-1022.02	W	07/02/2015	05:28:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-02
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	123-91-1	1,4-Dioxane	2.0	U		ug/L	2.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	100-52-7	Benzaldehyde	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	108-95-2	Phenol	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	111-44-4	Bis(2-chloroethyl)ether	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	95-57-8	2-Chlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	95-48-7	2-Methylphenol	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	98-86-2	Acetophenone	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	106-44-5	4-Methylphenol	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	67-72-1	Hexachloroethane	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	98-95-3	Nitrobenzene	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	78-59-1	Isophorone	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	88-75-5	2-Nitrophenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	105-67-9	2,4-Dimethylphenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	91-20-3	Naphthalene	110			ug/L	25	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	105-60-2	Caprolactam	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	91-57-6	2-Methylnaphthalene	20			ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	92-52-4	1,1'-Biphenyl	5.5			ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/10/2015	MW-03

45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	83-32-9	Acenaphthene	22		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	51-28-5	2,4-Dinitrophenol	10	UJ	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	100-02-7	4-Nitrophenol	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	132-64-9	Dibenzofuran	12		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	121-14-2	2,4-Dinitrotoluene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	84-66-2	Diethylphthalate	5.2		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	86-73-7	Fluorene	14		ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	100-01-6	4-Nitroaniline	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	534-52-1	4,6-Dinitro-2-methylphenol	10	UR	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	86-30-6	N-Nitrosodiphenylamine	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	101-55-3	4-Bromophenyl-phenylether	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	118-74-1	Hexachlorobenzene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	1912-24-9	Atrazine	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	87-86-5	Pentachlorophenol	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	85-01-8	Phenanthrene	4.5	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	120-12-7	Anthracene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	86-74-8	Carbazole	8.8	LJ	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	84-74-2	Di-n-butylphthalate	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	206-44-0	Fluoranthene	2.5	LJ	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	129-00-0	Pyrene	1.7	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	85-68-7	Butylbenzylphthalate	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	91-94-1	3,3'-Dichlorobenzidine	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	56-55-3	Benzo(a)anthracene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	218-01-9	Chrysene	1.5	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	117-84-0	Di-n-octylphthalate	10	U	ug/L	10	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	205-99-2	Benzo(b)fluoranthene	2.1	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	207-08-9	Benzo(k)fluoranthene	2.1	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	50-32-8	Benzo(a)pyrene	2.2	LJ	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	191-24-2	Benzo(g,h,i)perylene	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD3	S-1022.03	W	07/02/2015	04:07:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U	ug/L	5.0	06/10/2015	MW-03
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	123-91-1	1,4-Dioxane	2.0	U	ug/L	2.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	100-52-7	Benzaldehyde	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	108-95-2	Phenol	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	111-44-4	Bis(2-chloroethyl)ether	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	95-57-8	2-Chlorophenol	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	95-48-7	2-Methylphenol	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	98-86-2	Acetophenone	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	106-44-5	4-Methylphenol	10	U	ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	67-72-1	Hexachloroethane	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	98-95-3	Nitrobenzene	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	78-59-1	Isophorone	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	88-75-5	2-Nitrophenol	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	105-67-9	2,4-Dimethylphenol	5.0	U	ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U	ug/L	5.0	06/10/2015	Field Blank

45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	91-20-3	Naphthalene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	105-60-2	Caprolactam	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	91-57-6	2-Methylnaphthalene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	92-52-4	1,1'-Biphenyl	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	83-32-9	Acenaphthene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	51-28-5	2,4-Dinitrophenol	10	UJ		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	100-02-7	4-Nitrophenol	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	132-64-9	Dibenzofuran	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	121-14-2	2,4-Dinitrotoluene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	84-66-2	Diethylphthalate	2.8	LJ		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	86-73-7	Fluorene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	100-01-6	4-Nitroaniline	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	534-52-1	4,6-Dinitro-2-methylphenol	10	UR		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	86-30-6	N-Nitrosodiphenylamine	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	101-55-3	4-Bromophenyl-phenylether	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	118-74-1	Hexachlorobenzene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	1912-24-9	Atrazine	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	87-86-5	Pentachlorophenol	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	85-01-8	Phenanthrene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	120-12-7	Anthracene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	86-74-8	Carbazole	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	84-74-2	Di-n-butylphthalate	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	206-44-0	Fluoranthene	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	129-00-0	Pyrene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	85-68-7	Butylbenzylphthalate	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	91-94-1	3,3'-Dichlorobenzidine	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	56-55-3	Benzo(a)anthracene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	218-01-9	Chrysene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	117-84-0	Di-n-octylphthalate	10	U		ug/L	10	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	205-99-2	Benzo(b)fluoranthene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	207-08-9	Benzo(k)fluoranthene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	50-32-8	Benzo(a)pyrene	1.6	LJ		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	191-24-2	Benzo(g,h,i)perylene	5.0	U		ug/L	5.0	06/10/2015	Field Blank

45361	F9DD1	F9DD4	S-1022.04	W	07/02/2015	04:48:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U		ug/L	5.0	06/10/2015	Field Blank
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	123-91-1	1,4-Dioxane	2.0	U		ug/L	2.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	100-52-7	Benzaldehyde	5.3		LJ	ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	108-95-2	Phenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	111-44-4	Bis(2-chloroethyl)ether	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	95-57-8	2-Chlorophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	95-48-7	2-Methylphenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	108-60-1	2,2'-Oxybis(1-chloropropane)	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	98-86-2	Acetophenone	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	106-44-5	4-Methylphenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	621-64-7	N-Nitroso-di-n-propylamine	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	67-72-1	Hexachloroethane	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	98-95-3	Nitrobenzene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	78-59-1	Isophorone	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	88-75-5	2-Nitrophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	105-67-9	2,4-Dimethylphenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	111-91-1	Bis(2-chloroethoxy)methane	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	120-83-2	2,4-Dichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	91-20-3	Naphthalene	5.0		LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	106-47-8	4-Chloroaniline	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	87-68-3	Hexachlorobutadiene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	105-60-2	Caprolactam	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	59-50-7	4-Chloro-3-methylphenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	91-57-6	2-Methylnaphthalene	3.8		LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	77-47-4	Hexachlorocyclopentadiene	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	88-06-2	2,4,6-Trichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	95-95-4	2,4,5-Trichlorophenol	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	92-52-4	1,1'-Biphenyl	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	91-58-7	2-Chloronaphthalene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	88-74-4	2-Nitroaniline	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	131-11-3	Dimethylphthalate	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	606-20-2	2,6-Dinitrotoluene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	208-96-8	Acenaphthylene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	99-09-2	3-Nitroaniline	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	83-32-9	Acenaphthene	6.6			ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	51-28-5	2,4-Dinitrophenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	100-02-7	4-Nitrophenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	132-64-9	Dibenzofuran	3.6		LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	121-14-2	2,4-Dinitrotoluene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	84-66-2	Diethylphthalate	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	86-73-7	Fluorene	4.6		LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	7005-72-3	4-Chlorophenyl-phenylether	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	100-01-6	4-Nitroaniline	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	534-52-1	4,6-Dinitro-2-methylphenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	86-30-6	N-Nitrosodiphenylamine	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	95-94-3	1,2,4,5-Tetrachlorobenzene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	101-55-3	4-Bromophenyl-phenylether	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	118-74-1	Hexachlorobenzene	5.0	U		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	1912-24-9	Atrazine	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	87-86-5	Pentachlorophenol	10	U		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	85-01-8	Phenanthrene	5.4			ug/L	5.0	06/11/2015	Wastewater Pit 1

45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	120-12-7	Anthracene	6.7		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	86-74-8	Carbazole	5.4	LJ	ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	84-74-2	Di-n-butylphthalate	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	206-44-0	Fluoranthene	33		ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	129-00-0	Pyrene	36		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	85-68-7	Butylbenzylphthalate	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	91-94-1	3,3'-Dichlorobenzidine	10	U	ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	56-55-3	Benzo(a)anthracene	15		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	218-01-9	Chrysene	16		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	117-81-7	Bis(2-ethylhexyl)phthalate	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	117-84-0	Di-n-octylphthalate	10	U	ug/L	10	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	205-99-2	Benzo(b)fluoranthene	14		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	207-08-9	Benzo(k)fluoranthene	15		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	50-32-8	Benzo(a)pyrene	8.1		ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	193-39-5	Indeno(1,2,3-cd)pyrene	3.4	LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	53-70-3	Dibenzo(a,h)anthracene	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	191-24-2	Benzo(g,h,i)perylene	3.2	LJ	ug/L	5.0	06/11/2015	Wastewater Pit 1
45361	F9DD1	F9DE1	S-1027.03	W	07/01/2015	20:38:00	58-90-2	2,3,4,6-Tetrachlorophenol	5.0	U	ug/L	5.0	06/11/2015	Wastewater Pit 1

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 45361 SDG No. F9DD1 SDG Nos. To Follow Mod. Ref No. Date Rec 7/6/15

EPA Lab ID: KAP

Lab Location: The Woodlands, TX

Region: 6 Audit No.: 45361/F9DD1

Re_Submitted CSF? Yes No X

Box No(s): 1

COMMENTS:

Item Description

3. The auditor corrected some "from" and "to" page number errors on Form DC-2-6.

7. EPA sample # F9DE1 was omitted from Form DC-1s (pp. 8 and 552). The laboratory was contacted for correction.

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?		X	
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?		X	
8. Accurate?	X		
TRAFFIC REPORT /CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
AIRBILLS/AIRBILL STICKER			
11. Present?	X		
12. Signed?	X		
13. Dated?	X		
SAMPLE TAGS			
14. Does DC-1 list tags as being included?	X		
15. Present?	X		
OTHER DOCUMENTS			
16. Complete?	X		
17. Legible?	X		
18. Original?		X	
18a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: Ying-Ping Hsieh / ESAT Data Reviewer Date 8/17/15

Audited by: Date

Signature Printed Name/Title

DC-2__

In Reference To Case No(s):
45361 SDG: F9DD1 (O-1253)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	KAP
Lab Contact:	Rao Alsakani
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Ying-Ping Hsieh - ESAT

In reference to data for the fraction(s):

CSF Deliverables

Summary of Questions/Issues:

EPA sample # F9DE1 was omitted from Form DC-1s (pp. 8 and 552). Please correct and resubmit these pages.

NOTE: Any laboratory resubmission should be submitted either as an addendum to the original CSF with a revised Form DC-2 or submitted as a new CSF with a new Form DC-2 except for replacement pages (SOM02.2, p. B-10, sec. 2.2). Custody seals are required only for regular mail shipments.

Please respond to the above items **within 5 business days** by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/11/2015
CarrierName: FedEx
AirbillNo: 773806239927

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 1
SDG: F9DA1

No: 6-061115-101320-0004
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-02	F9DA0	Soil/ START	Grab	SVOA(21)	6-403974 (Wet ice) (1)	Background	06/09/2015 13:00	
ACS03-02	F9DA2	Soil/ START	Grab	SVOA(21)	6-403978 (Wet ice) (1)	RR Spur	06/09/2015 15:10	
ACS03-12	F9DA3	Soil/ START	Grab	SVOA(21)	6-403980 (Wet ice) (1)	RR Spur	06/09/2015 15:25	
ACGW-21	F9DD1	Ground Water/ START	Grab	SVOA(21)	6-403800 (Wet ice), 6-403801 (Wet ice) (2)	MW-01	06/10/2015 15:45	S-1022.01
ACGW-22	F9DD2	Ground Water/ START	Grab	SVOA(21)	6-403803 (Wet ice), 6-403804 (Wet ice) (2)	MW-02	06/10/2015 10:16	.02
ACGW-23	F9DD3	Ground Water/ START	Grab	SVOA(21)	6-403807 (Wet ice), 6-403808 (Wet ice) (2)	MW-03	06/10/2015 12:09	.03
ACFB-24	F9DD4	Water/ START	Grab	SVOA(21)	6-403810 (Wet ice), 6-403811 (Wet ice) (2)	Field Blank	06/10/2015 16:10	.04

Special Instructions: Lab QC not required for SVOAs

Temp: 2.7°C/3.1°C

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/11/15 1830	FedEx		
				6/12/15 08:45	Intact

KAP Technologies

ORIGINAL
Case 45361 SDG F9DA0
Samples S-1021

EPW14031

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818421730

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 3
SDG: F9DC9 6/13/15 Dal

No: 6-061215-162836-0007
Lab: KAP Technologies Inc
Lab Contact: Vishnu Davlapur
Lab Phone: 281-367-0065

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSD02-06	F9DB8	Sediment/ START	Grab	SVOA/SIM(21)	6-472436 (Wet ice), 6-472437 (Wet ice) (2)	Background	06/11/2015 16:17	
ACSD08-06	F9DC1	Sediment/ START	Grab	SVOA/SIM(21)	6-472445 (Wet ice), 6-472446 (Wet ice) (2)	Wastewater Pit	06/11/2015 13:00	
ACSD12-06	F9DC3	Sediment/ START	Grab	SVOA/SIM(21)	6-472483 (Wet ice), 6-472484 (Wet ice) (2)	Culvert/Ditch (South)	06/11/2015 14:10	
ACSD15-06	F9DC4	Sediment/ START	Grab	SVOA/SIM(21)	6-472486 (Wet ice), 6-472487 (Wet ice) (2)	RR-ROW	06/11/2015 15:49	
ACSW-06	F9DC9	Waste Water/ START	Grab	SVOA(21)	6-403819 (Wet ice), 6-403820 (Wet ice) (2)	Wastewater Pit 2	06/11/2015 11:30	S-1027. 01
ACSW-04	F9DD0	Surface Water/ START	Grab	SVOA(21)	6-420395 (Wet ice), 6-420396 (Wet ice) (2)	Concrete Structure	06/11/2015 09:10	.02
ACSW-08	F9DE1	Waste Water/ START	Grab	SVOA(21)	6-403822 (Wet ice), 6-403823 (Wet ice) (2)	Wastewater Pit 1	06/11/2015 08:23	.03

Sample(s) to be used for Lab QC: ACSW-04 Tag 420395, ACSW-04 Tag 420396 - Special Instructions: No Lab QC for SVOAs
Temp: 3.1°C/3.5°C

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

Analysis Key: SVOA/SIM=CLP Semivolaties/PAHSIM, SVOA=CLP Semivolatiles

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	START	6/12/15 1830	FedEx		
	ORIGINAL Case 45361 SDG F9DA0 Episode S-1025 init/date 4/13/15			6/13/15 09:53	F9DC3-1-8oz Jar Broken F9DD0-1-1L Amber Broken All remaining samples Intact. KAP Technologies

07 313

ADDENDUM

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

HoldingTimes_Preservation

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

InitialCalibration

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

ContinuingCalibrationVerification

Method - Semivolatiles

Test Name: EXES-1208
Defect Message: The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detecteds are qualified as estimated J. Nondetects are qualified as estimated UJ.

Associated Samples: F9DD3

2-Nitrophenol	SSTD020NW

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

Blanks

Method - Semivolatiles

Test Name: EXES-1169

Defect Message: The following samples have the same tentatively identified compounds (TIC) detected as in the associated method blank. TIC results reported in the associated method blank exceed concentration criteria. Detects are not qualified. Nondetects are not qualified. Use professional judgement to qualify data.

Associated Samples: F9DC9, F9DD1, F9DD2, F9DD3, F9DD4, F9DE1

Unknown-01	F9DE1, F9DC9, F9DD3, F9DD4, F9DD1, F9DD2

Data Validation Report

Data Review Results

Fri, 10 Jul 2015 19:17:38

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

DMC_Surrogate

Method - Semivolatiles

Test Name: EXES-973
Defect Message: The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified. Use professional judgment to qualify data.

Associated Samples: SBLK99

1,4-Dioxane-d8	SBLK99
4-Chloroaniline-d4	SBLK99

Test Name: EXES-982
Defect Message: The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

Associated Samples: F9DC9, F9DD0, F9DD1, F9DD2, F9DD3, F9DD4, F9DE1

1,4-Dioxane-d8	F9DC9, F9DD4, F9DD1, F9DD2, F9DD0, F9DD3, F9DE1
4-Chloroaniline-d4	F9DD4, F9DD0, F9DD3, F9DE1, F9DC9, F9DD1, F9DD2

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

MatrixSpikes

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

InternalStandard

Method - Semivolatiles

Test Name: EXES-1523
Defect Message: The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

Associated Samples: F9DD3

1,4-Dichlorobenzene-d4	F9DD3

Data Validation Report

Data Review Results

Fri, 10 Jul 2015 19:17:38

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

PercentSolids

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

SampleAnalysis

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: KAP	SDG: F9DD1	Contract: EPW14031	Submission Group Id: 30061180
Lab Name: KAP Technologies Inc	Case: 45361	Client: EPA Region 6	SOW: SOM02.2

DetectionLimit

Method - Semivolatiles

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: F9DC9, F9DD0, F9DD1, F9DD2, F9DD3, F9DD4, F9DE1

Benzaldehyde	F9DE1
4-Methylphenol	F9DD0
2,4-Dimethylphenol	F9DD0
Caprolactam	F9DD2
2-Methylnaphthalene	F9DE1
Dibenzofuran	F9DE1
Diethylphthalate	F9DD4
Fluorene	F9DE1
Phenanthrene	F9DD3
Carbazole	F9DE1, F9DD3
Fluoranthene	F9DD3
Pyrene	F9DD3
Chrysene	F9DD3
Bis(2-ethylhexyl)phthalate	F9DC9
Benzo(b)fluoranthene	F9DD1, F9DD3
Benzo(k)fluoranthene	F9DD1, F9DD3, F9DD2
Benzo(a)pyrene	F9DD2, F9DD3, F9DD1, F9DD4
Indeno(1,2,3-cd)pyrene	F9DD0, F9DE1
Benzo(g,h,i)perylene	F9DE1, F9DD0

APPENDIX H

CHEMTECH CONSULTING GROUP ANALYTICAL DATA

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

July 23, 2015

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)

Site: AMERICAN CREOSOTE DERIDDER

Case#: 45361

SDG#: MF9DA0

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: July 22, 2015

TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA

FROM: Sonya Meekins, Data Reviewer, ESAT

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT DGJ

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-12
ESAT Doc. No.:	1502-212-0016
TDF No.:	6-15-316A
ESAT File No.:	I-0670

Attached is the data review summary for Case # 45361
SDG # MF9DA0
Site American Creosote Deridder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 45361	SITE American Creosote Deridder
LABORATORY CHEM	NO. OF SAMPLES 20
CONTRACT# EP-W-14-030	MATRIX 16 Soil/4 Water
SDG# MF9DA0	REVIEWER (IF NOT ESB) ESAT
SOW# ISM02.2	REVIEWER'S NAME Sonya Meekins
SF# 303DD2A6KM	COMPLETION DATE July 22, 2015

SAMPLE NO.					
	MF9DA0	MF9DA4	MF9DA8	MF9DB2	MF9DD1
	MF9DA1	MF9DA5	MF9DA9	MF9DB3	MF9DD2
	MF9DA2	MF9DA6	MF9DB0	MF9DB4	MF9DD3
	MF9DA3	MF9DA7	MF9DB1	MF9DB5	MF9DD4

DATA ASSESSMENT SUMMARY

	ICP-AES	ICP-MS	HG
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	O	O	O
3. BLANKS	O	M	O
4. MATRIX SPIKES	O	O	O
5. DUPLICATE ANALYSIS	O	O	O
6. ICP QC	M	O	
7. LCS	O	O	
8. SAMPLE VERIFICATION	O	O	O
9. OTHER QC	N/A	N/A	N/A
10. OVERALL ASSESSMENT	M	M	O

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: **ICP-AES** The aluminum serial dilution difference exceeded the technical QC limit. **ICP-MS** One zinc result was affected by field blank contamination.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 45361 **SDG** MF9DA0 **SITE** American Creosote Deridder **LAB** CHEM

COMMENTS: This SDG consisted of 16 soil and 4 water samples for total metals (by ICP-AES and ICP-MS) and mercury analyses following SOW ISM02.2. The sampler designated samples MF9DA3 and MF9DD2 for QC analyses and sample MF9DD4 as a field blank.

The SOW requires that the soil sample results be adjusted for moisture content, which raised the adjusted QLs above the CRQLs specified in the SOW. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

S4VEM Review was performed for this data package as requested by the Region. The laboratory diluted (5X) and reanalyzed HG samples MF9DA4 and MF9DB2 because of high mercury concentrations. Most analytes were reported at concentrations above the CRQLs/SQLs in the samples.

OVERALL ASSESSMENT: Some results were qualified for four ICP-AES samples and one ICP-MS sample because of problems with a serial dilution difference and field contamination, respectively. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory was contacted for some reporting issues (see Resubmission Request). The laboratory resubmission will not impact the DST, so the DST included is the final version.

INORGANIC ACRONYMS

CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CN	Cyanide
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DST	Data Summary Table
EDM	EXES Data Manager
HG	Mercury
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
NFG	National Functional Guidelines
PE	Performance Evaluation
%D	Percent Difference
%R	Percent Recovery
%RI	Percent Relative Intensity
%RSD	Percent Relative Standard Deviation
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RPD	Relative Percent Difference
RSCC	Regional Sample Control Center
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
TAL	Target Analyte List

HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number
SDG: SDG Number
EPASAMP: EPA Sample Number
LABID: Laboratory File/Sample ID
MATRIX: Sample Matrix
QCCOD: Sample QC Code
SMPQUAL: Sample Qualifier
ANDATE: Sample Analysis Date
ANTIME: Sample Analysis Time
CASNUM: Compound CAS Number
ANALYTE: Compound Name
CONC: Compound Concentration
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see Inorganic Data Qualifier Definitions on the next page)
UNITS: Concentration Units
ADJCRQL: Adjusted Contract Required Quantitation Limit Value
SMPDATE: Sampling Date
PRPDATE: Sample Preparation Date
LRDATE: Laboratory Receipt Date
LEVEL: Sample Level
PERSOLD: Sample Percent Solids
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water Samples)
FINLVOL: Final Sample Volume
METHOD: Method of Analysis
STATLOC: Station Location

Disclaimer: **ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.**

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

L Reported concentration is between the MDL and the CRQL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.

+ High biased. Actual concentration may be lower than the concentration reported.

- Low biased. Actual concentration may be higher than the concentration reported.

W The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

CASE	SDG	EPASAMP	LABID	MATRI	QCCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	PRPDATE	LRDATE	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-36-0	Antimony	2.0	U	ug/L	2.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-38-2	Arsenic	1.0	U	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-39-3	Barium	52.2		ug/L	10.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-41-7	Beryllium	1.0	U	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-43-9	Cadmium	1.0	U	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-47-3	Chromium	2.0	U	ug/L	2.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-48-4	Cobalt	1.0	LJ	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-50-8	Copper	2.0	U	ug/L	2.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7439-92-1	Lead	0.36	LJ	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-02-0	Nickel	0.81	LJ	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-28-0	Thallium	1.0	U	ug/L	1.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-62-2	Vanadium	5.0	U	ug/L	5.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	14:57:00	7440-66-6	Zinc	2.0	U	ug/L	2.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	MS	MW-03
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-36-0	Antimony	2.0	U	ug/L	2.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-38-2	Arsenic	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-39-3	Barium	10	U	ug/L	10.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-41-7	Beryllium	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-43-9	Cadmium	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-47-3	Chromium	0.17	LJ	ug/L	2.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-48-4	Cobalt	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-50-8	Copper	0.52	LJ	ug/L	2.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7439-92-1	Lead	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-02-0	Nickel	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-28-0	Thallium	1.0	U	ug/L	1.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-62-2	Vanadium	0.051	LJ	ug/L	5.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	15:04:00	7440-66-6	Zinc	0.41	LJ	ug/L	2.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	MS	Field Blank
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-36-0	Antimony	0.80	U	mg/kg	0.80	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-38-2	Arsenic	2.0		mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-39-3	Barium	26.9		mg/kg	4.00	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-41-7	Beryllium	0.40	U	mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-43-9	Cadmium	0.40	U	mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-47-3	Chromium	10.3		mg/kg	0.80	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-48-4	Cobalt	1.1		mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-50-8	Copper	3.7		mg/kg	0.80	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7439-92-1	Lead	5.9		mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-02-0	Nickel	1.8		mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7782-49-2	Selenium	2.0	U	mg/kg	2.00	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-22-4	Silver	0.40	U	mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-28-0	Thallium	0.40	U	mg/kg	0.40	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-62-2	Vanadium	22.7		mg/kg	2.0	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	23:25:00	7440-66-6	Zinc	3.7		mg/kg	0.80	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.49	500	MS	Background
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-36-0	Antimony	0.83	U	mg/kg	0.83	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-38-2	Arsenic	4.0		mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-39-3	Barium	31.6		mg/kg	4.2	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-41-7	Beryllium	0.42	U	mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-43-9	Cadmium	0.42	U	mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-47-3	Chromium	9.5		mg/kg	0.83	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-48-4	Cobalt	1.9		mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-50-8	Copper	24.5		mg/kg	0.83	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7439-92-1	Lead	22.2		mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-02-0	Nickel	5.7		mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-22-4	Silver	0.7		mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-28-0	Thallium	0.42	U	mg/kg	0.42	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-62-2	Vanadium	11.9		mg/kg	2.1	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	23:56:00	7440-66-6	Zinc	49.1		mg/kg	0.83	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.38	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-36-0	Antimony	0.84	U	mg/kg	0.84	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-38-2	Arsenic	3.3		mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-39-3	Barium	25.0		mg/kg	4.2	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-41-7	Beryllium	0.42	U	mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-43-9	Cadmium	0.42	U	mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-47-3	Chromium	16.6		mg/kg	0.84	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-48-4	Cobalt	0.85		mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-50-8	Copper	3.3		mg/kg	0.84	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7439-92-1	Lead	4.8		mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-02-0	Nickel	2.1		mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure

45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-22-4	Silver	0.42	U	mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-28-0	Thallium	0.42	U	mg/kg	0.42	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-62-2	Vanadium	35.1		mg/kg	2.1	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/17/2015	00:04:00	7440-66-6	Zinc	3.3		mg/kg	0.84	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.43	500	MS	Concrete Structure
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-36-0	Antimony	0.79	U	mg/kg	0.79	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-38-2	Arsenic	3.0		mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-39-3	Barium	32.7		mg/kg	3.9	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-41-7	Beryllium	0.39	U	mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-43-9	Cadmium	0.39	U	mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-47-3	Chromium	11.0		mg/kg	0.79	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-48-4	Cobalt	2.2		mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-50-8	Copper	4.8		mg/kg	0.79	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7439-92-1	Lead	8.8		mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-02-0	Nickel	2.8		mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-22-4	Silver	0.39	U	mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-28-0	Thallium	0.39	U	mg/kg	0.39	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-62-2	Vanadium	18.7		mg/kg	2.0	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/17/2015	00:12:00	7440-66-6	Zinc	14.5		mg/kg	0.79	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.44	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-36-0	Antimony	0.89	U	mg/kg	0.89	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-38-2	Arsenic	2.6		mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-39-3	Barium	20.9		mg/kg	4.4	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-41-7	Beryllium	0.44	U	mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-43-9	Cadmium	0.44	U	mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-47-3	Chromium	11.4		mg/kg	0.89	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-48-4	Cobalt	0.44	U	mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-50-8	Copper	2.8		mg/kg	0.89	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7439-92-1	Lead	5.1		mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-02-0	Nickel	0.92		mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7782-49-2	Selenium	2.2	U	mg/kg	2.2	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-22-4	Silver	0.44	U	mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-28-0	Thallium	0.44	U	mg/kg	0.44	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-62-2	Vanadium	28.2		mg/kg	2.2	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/17/2015	00:20:00	7440-66-6	Zinc	2.5		mg/kg	0.89	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.3	500	MS	West - WWP
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-36-0	Antimony	0.84	U	mg/kg	0.84	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-38-2	Arsenic	5.4		mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-39-3	Barium	35.7		mg/kg	4.2	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-41-7	Beryllium	0.42	U	mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-43-9	Cadmium	0.42	U	mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-47-3	Chromium	18.8		mg/kg	0.84	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-48-4	Cobalt	1.3		mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-50-8	Copper	10.2		mg/kg	0.84	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7439-92-1	Lead	39.1		mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-02-0	Nickel	3.1		mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-22-4	Silver	0.42	U	mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-28-0	Thallium	0.42	U	mg/kg	0.42	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-62-2	Vanadium	28.8		mg/kg	2.1	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/17/2015	00:28:00	7440-66-6	Zinc	28.8		mg/kg	0.84	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.42	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-36-0	Antimony	0.81	U	mg/kg	0.81	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-38-2	Arsenic	2.2		mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-39-3	Barium	17.9		mg/kg	4.0	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-41-7	Beryllium	0.40	U	mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-43-9	Cadmium	0.40	U	mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-47-3	Chromium	11.5		mg/kg	0.81	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-48-4	Cobalt	0.47		mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-50-8	Copper	2.9		mg/kg	0.81	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7439-92-1	Lead	5.1		mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-02-0	Nickel	0.92		mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-22-4	Silver	0.40	U	mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-28-0	Thallium	0.40	U	mg/kg	0.40	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-62-2	Vanadium	26.4		mg/kg	2.0	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/17/2015	00:36:00	7440-66-6	Zinc	3.1		mg/kg	0.81	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.48	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-36-0	Antimony	0.79	U	mg/kg	0.79	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-38-2	Arsenic	3.1		mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-39-3	Barium	13.7		mg/kg	3.9	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-41-7	Beryllium	0.39	U	mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-43-9	Cadmium	0.39	U	mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-47-3	Chromium	13.3		mg/kg	0.79	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area

45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-48-4	Cobalt	0.71		mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-50-8	Copper	3.6		mg/kg	0.79	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7439-92-1	Lead	5.7		mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-02-0	Nickel	2.4		mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7782-49-2	Selenium	2	U	mg/kg	2	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-22-4	Silver	0.39	U	mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-28-0	Thallium	0.39	U	mg/kg	0.39	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-62-2	Vanadium	20.1		mg/kg	2	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/17/2015	00:43:00	7440-66-6	Zinc	11.6		mg/kg	0.79	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.44	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-36-0	Antimony	0.88	U	mg/kg	0.88	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-38-2	Arsenic	2.0		mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-39-3	Barium	15.2		mg/kg	4.4	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-41-7	Beryllium	0.44	U	mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-43-9	Cadmium	0.44	U	mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-47-3	Chromium	8.2		mg/kg	0.88	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-48-4	Cobalt	0.53		mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-50-8	Copper	2.3		mg/kg	0.88	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7439-92-1	Lead	4.2		mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-02-0	Nickel	1.3		mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7782-49-2	Selenium	2.2	U	mg/kg	2.2	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-22-4	Silver	0.44	U	mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-28-0	Thallium	0.44	U	mg/kg	0.44	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-62-2	Vanadium	17.1		mg/kg	2.2	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/17/2015	00:51:00	7440-66-6	Zinc	2.4		mg/kg	0.88	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.36	500	MS	Creosote Area
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-36-0	Antimony	0.98	U	mg/kg	0.98	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-38-2	Arsenic	2.3		mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-39-3	Barium	27.8		mg/kg	4.9	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-41-7	Beryllium	0.49	U	mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-43-9	Cadmium	0.49	U	mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-47-3	Chromium	6.6		mg/kg	0.98	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-48-4	Cobalt	1.1		mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-50-8	Copper	17.2		mg/kg	0.98	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7439-92-1	Lead	33.2		mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-02-0	Nickel	2.9		mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7782-49-2	Selenium	2.5	U	mg/kg	2.5	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-22-4	Silver	0.49	U	mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-28-0	Thallium	0.49	U	mg/kg	0.49	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-62-2	Vanadium	9.3		mg/kg	2.5	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/17/2015	00:59:00	7440-66-6	Zinc	32.9		mg/kg	0.98	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.32	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-36-0	Antimony	0.8	U	mg/kg	0.8	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-38-2	Arsenic	1.8		mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-39-3	Barium	18.9		mg/kg	4.0	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-41-7	Beryllium	0.4	U	mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-43-9	Cadmium	0.4	U	mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-47-3	Chromium	6.4		mg/kg	0.8	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-48-4	Cobalt	0.45		mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-50-8	Copper	2.4		mg/kg	0.8	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7439-92-1	Lead	7.2		mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-02-0	Nickel	1.4		mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7782-49-2	Selenium	2	U	mg/kg	2.0	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-22-4	Silver	0.4	U	mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-28-0	Thallium	0.4	U	mg/kg	0.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-62-2	Vanadium	12.0		mg/kg	2.0	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/17/2015	01:07:00	7440-66-6	Zinc	5.9		mg/kg	0.8	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.47	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-36-0	Antimony	0.93	U	mg/kg	0.93	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-38-2	Arsenic	8.2		mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-39-3	Barium	54.1		mg/kg	4.7	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-41-7	Beryllium	0.47	U	mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-43-9	Cadmium	1.0		mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-47-3	Chromium	5.8		mg/kg	0.93	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-48-4	Cobalt	2.0		mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-50-8	Copper	27.9		mg/kg	0.93	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7439-92-1	Lead	39.7		mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-02-0	Nickel	4.1		mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7782-49-2	Selenium	2.3	U	mg/kg	2.3	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-22-4	Silver	0.47	U	mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-28-0	Thallium	0.47	U	mg/kg	0.47	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-62-2	Vanadium	10.0		mg/kg	2.3	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/17/2015	01:54:00	7440-66-6	Zinc	98.1		mg/kg	0.93	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.37	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-36-0	Antimony	0.88	U	mg/kg	0.88	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-38-2	Arsenic	4.9		mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)

45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-39-3	Barium	31.7		mg/kg	4.4	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-41-7	Beryllium	0.44	U	mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-43-9	Cadmium	0.44	U	mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-47-3	Chromium	4.8		mg/kg	0.88	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-48-4	Cobalt	1.4		mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-50-8	Copper	11.6		mg/kg	0.88	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7439-92-1	Lead	16.6		mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-02-0	Nickel	2.0		mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7782-49-2	Selenium	2.2	U	mg/kg	2.2	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-22-4	Silver	0.44	U	mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-28-0	Thallium	0.44	U	mg/kg	0.44	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-62-2	Vanadium	7.6		mg/kg	2.2	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/17/2015	02:02:00	7440-66-6	Zinc	36.0		mg/kg	0.88	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.33	500	MS	Culvert/Ditch (South)
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-36-0	Antimony	0.89	U	mg/kg	0.89	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-38-2	Arsenic	2.4		mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-39-3	Barium	23.7		mg/kg	4.4	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-41-7	Beryllium	0.44	U	mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-43-9	Cadmium	0.44	U	mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-47-3	Chromium	10.3		mg/kg	0.89	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-48-4	Cobalt	0.82		mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-50-8	Copper	3.7		mg/kg	0.89	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7439-92-1	Lead	12.8		mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-02-0	Nickel	1.4		mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7782-49-2	Selenium	2.2	U	mg/kg	2.2	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-22-4	Silver	0.44	U	mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-28-0	Thallium	0.44	U	mg/kg	0.44	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-62-2	Vanadium	20.0		mg/kg	2.2	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	22:30:00	7440-66-6	Zinc	7.7		mg/kg	0.89	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	500	MS	Background
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-36-0	Antimony	0.81	U	mg/kg	0.81	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-38-2	Arsenic	3.4		mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-39-3	Barium	36.9		mg/kg	4.1	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-41-7	Beryllium	0.41	U	mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-43-9	Cadmium	0.41	U	mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-47-3	Chromium	18.5		mg/kg	0.81	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-48-4	Cobalt	1.1		mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-50-8	Copper	4.2		mg/kg	0.81	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7439-92-1	Lead	9.5		mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-02-0	Nickel	2.7		mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-22-4	Silver	0.41	U	mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-28-0	Thallium	0.41	U	mg/kg	0.41	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-62-2	Vanadium	30.6		mg/kg	2.0	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	22:38:00	7440-66-6	Zinc	5.0		mg/kg	0.81	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.42	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-36-0	Antimony	0.8	U	mg/kg	0.8	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-38-2	Arsenic	0.76		mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-39-3	Barium	8.8		mg/kg	4.0	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-41-7	Beryllium	0.4	U	mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-43-9	Cadmium	0.4	U	mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-47-3	Chromium	10.2		mg/kg	0.8	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-48-4	Cobalt	0.4	U	mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-50-8	Copper	1.6		mg/kg	0.8	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7439-92-1	Lead	4.2		mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-02-0	Nickel	0.76		mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-22-4	Silver	0.4	U	mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-28-0	Thallium	0.4	U	mg/kg	0.4	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-62-2	Vanadium	8.8		mg/kg	2.0	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	22:46:00	7440-66-6	Zinc	1.6		mg/kg	0.8	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.44	500	MS	RR Spur
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-36-0	Antimony	2	U	ug/L	2.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-38-2	Arsenic	1.1		ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-39-3	Barium	60.6		ug/L	10.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-41-7	Beryllium	1	U	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-43-9	Cadmium	1	U	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-47-3	Chromium	2.8		ug/L	2.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-48-4	Cobalt	0.64	LJ	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-50-8	Copper	2	U	ug/L	2.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7439-92-1	Lead	0.29	LJ	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-02-0	Nickel	0.7	LJ	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-28-0	Thallium	1.0	U	ug/L	1.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01

45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-62-2	Vanadium	5.0	U		ug/L	5.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	14:18:00	7440-66-6	Zinc	2.2	J+		ug/L	2.0	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	MS	MW-01
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-36-0	Antimony	2.0	U		ug/L	2.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-38-2	Arsenic	2.9			ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-39-3	Barium	73.1			ug/L	10.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-41-7	Beryllium	1.0	U		ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-43-9	Cadmium	1.0	U		ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-47-3	Chromium	4.0			ug/L	2.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-48-4	Cobalt	3.0			ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-50-8	Copper	2.0	LJ		ug/L	2.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7439-92-1	Lead	1.2			ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-02-0	Nickel	1.8			ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7782-49-2	Selenium	5.0	U		ug/L	5.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-22-4	Silver	1.0	U		ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-28-0	Thallium	1.0	U		ug/L	1.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-62-2	Vanadium	5.0	U		ug/L	5.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	14:25:00	7440-66-6	Zinc	9.2			ug/L	2.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	MS	MW-02
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7429-90-5	Aluminum	9330			mg/kg	17.2	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7440-70-2	Calcium	342	LJ		mg/kg	429	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7439-89-6	Iron	19200			mg/kg	8.6	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7439-95-4	Magnesium	260	LJ		mg/kg	429	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7439-96-5	Manganese	6.3			mg/kg	1.3	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7440-09-7	Potassium	429	U		mg/kg	429	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	14:16:00	7440-23-5	Sodium	429	U		mg/kg	429	06/09/2015 13:05:00	06/16/2015	06/13/2015	83.8	1.39	100	P	Background
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7429-90-5	Aluminum	3330			mg/kg	16.3	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7440-70-2	Calcium	1320			mg/kg	409	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7439-89-6	Iron	13700			mg/kg	8.2	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7439-95-4	Magnesium	292	LJ		mg/kg	409	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7439-96-5	Manganese	254			mg/kg	1.2	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7440-09-7	Potassium	409	U		mg/kg	409	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	14:20:00	7440-23-5	Sodium	54.3	LJ		mg/kg	409	06/11/2015 08:08:00	06/16/2015	06/13/2015	87.4	1.4	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7429-90-5	Aluminum	12300			mg/kg	17.7	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7440-70-2	Calcium	626			mg/kg	442	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7439-89-6	Iron	20200			mg/kg	8.9	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7439-95-4	Magnesium	206	LJ		mg/kg	442	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7439-96-5	Manganese	11.6			mg/kg	1.3	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7440-09-7	Potassium	442	U		mg/kg	442	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	14:24:00	7440-23-5	Sodium	442	U		mg/kg	442	06/11/2015 08:25:00	06/16/2015	06/13/2015	83.7	1.35	100	P	Concrete Structure
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7429-90-5	Aluminum	6560			mg/kg	16.5	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7440-70-2	Calcium	209	LJ		mg/kg	411	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7439-89-6	Iron	7680			mg/kg	8.2	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7439-95-4	Magnesium	172	LJ		mg/kg	411	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7439-96-5	Manganese	42.9			mg/kg	1.2	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7440-09-7	Potassium	411	U		mg/kg	411	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	14:28:00	7440-23-5	Sodium	20.6	LJ		mg/kg	411	06/11/2015 08:55:00	06/16/2015	06/13/2015	88.1	1.38	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7429-90-5	Aluminum	9860			mg/kg	16.6	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7440-70-2	Calcium	257	LJ		mg/kg	415	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7439-89-6	Iron	10100			mg/kg	8.3	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7439-95-4	Magnesium	266	LJ		mg/kg	415	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7439-96-5	Manganese	13.0			mg/kg	1.3	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7440-09-7	Potassium	415	U		mg/kg	415	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	14:32:00	7440-23-5	Sodium	415	U		mg/kg	415	06/11/2015 09:10:00	06/16/2015	06/13/2015	86.6	1.39	100	P	West - WWP
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7429-90-5	Aluminum	10400			mg/kg	16.1	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7440-70-2	Calcium	626			mg/kg	402	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7439-89-6	Iron	13600			mg/kg	8	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7439-95-4	Magnesium	248	LJ		mg/kg	402	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7439-96-5	Manganese	96.4			mg/kg	1.2	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7440-09-7	Potassium	402	U		mg/kg	402	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	14:36:00	7440-23-5	Sodium	402	U		mg/kg	402	06/11/2015 10:00:00	06/16/2015	06/13/2015	83.5	1.49	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7429-90-5	Aluminum	9350			mg/kg	16.3	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7440-70-2	Calcium	305	LJ		mg/kg	409	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7439-89-6	Iron	10300			mg/kg	8.2	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7439-95-4	Magnesium	250	LJ		mg/kg	409	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7439-96-5	Manganese	10.9			mg/kg	1.2	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7440-09-7	Potassium	409	U		mg/kg	409	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	14:40:00	7440-23-5	Sodium	409	U		mg/kg	409	06/11/2015 10:20:00	06/16/2015	06/13/2015	83.8	1.46	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7429-90-5	Aluminum	8770			mg/kg	15.8	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7440-70-2	Calcium	476			mg/kg	396	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7439-89-6	Iron	7850			mg/kg	7.9	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7439-95-4	Magnesium	195	LJ		mg/kg	396	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7439-96-5	Manganese	15.1			mg/kg	1.2	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area

45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7440-09-7	Potassium	396	U	mg/kg	396	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	14:44:00	7440-23-5	Sodium	396	U	mg/kg	396	06/11/2015 14:15:00	06/16/2015	06/13/2015	88.4	1.43	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7429-90-5	Aluminum	7250		mg/kg	17.7	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7440-70-2	Calcium	266	LJ	mg/kg	442	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7439-89-6	Iron	8220		mg/kg	8.8	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7439-95-4	Magnesium	180	LJ	mg/kg	442	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7439-96-5	Manganese	13.9		mg/kg	1.3	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7440-09-7	Potassium	442	U	mg/kg	442	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	14:48:00	7440-23-5	Sodium	442	U	mg/kg	442	06/11/2015 14:30:00	06/16/2015	06/13/2015	83.8	1.35	100	P	Creosote Area
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7429-90-5	Aluminum	4140		mg/kg	17.5	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7440-70-2	Calcium	1300		mg/kg	437	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7439-89-6	Iron	3610		mg/kg	8.7	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7439-95-4	Magnesium	320	LJ	mg/kg	437	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7439-96-5	Manganese	60.3		mg/kg	1.3	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7440-09-7	Potassium	437	U	mg/kg	437	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	14:52:00	7440-23-5	Sodium	437	U	mg/kg	437	06/11/2015 15:05:00	06/16/2015	06/13/2015	77.3	1.48	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7429-90-5	Aluminum	6870		mg/kg	16.8	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7440-70-2	Calcium	232	LJ	mg/kg	421	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7439-89-6	Iron	4240		mg/kg	8.4	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7439-95-4	Magnesium	137	LJ	mg/kg	421	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7439-96-5	Manganese	10.4		mg/kg	1.3	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7440-09-7	Potassium	421	U	mg/kg	421	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	14:56:00	7440-23-5	Sodium	421	U	mg/kg	421	06/11/2015 15:10:00	06/16/2015	06/13/2015	84.9	1.4	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7429-90-5	Aluminum	4400		mg/kg	19	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7440-70-2	Calcium	1100		mg/kg	476	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7439-89-6	Iron	5820		mg/kg	9.5	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7439-95-4	Magnesium	255	LJ	mg/kg	476	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7439-96-5	Manganese	127		mg/kg	1.4	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7440-09-7	Potassium	476	U	mg/kg	476	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:01:00	7440-23-5	Sodium	34.8	LJ	mg/kg	476	06/11/2015 15:12:00	06/16/2015	06/13/2015	78.4	1.34	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7429-90-5	Aluminum	3260		mg/kg	17.1	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7440-70-2	Calcium	385	LJ	mg/kg	428	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7439-89-6	Iron	3080		mg/kg	8.6	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7439-95-4	Magnesium	151	LJ	mg/kg	428	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7439-96-5	Manganese	41.6		mg/kg	1.3	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7440-09-7	Potassium	428	U	mg/kg	428	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:05:00	7440-23-5	Sodium	428	U	mg/kg	428	06/11/2015 15:21:00	06/16/2015	06/13/2015	85.2	1.37	100	P	Culvert/Ditch (South)
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7429-90-5	Aluminum	7300		mg/kg	17.7	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7440-70-2	Calcium	1070		mg/kg	443	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7439-89-6	Iron	9850		mg/kg	8.9	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7439-95-4	Magnesium	211	LJ	mg/kg	443	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7439-96-5	Manganese	18.9		mg/kg	1.3	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7440-09-7	Potassium	443	U	mg/kg	443	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	13:52:00	7440-23-5	Sodium	443	U	mg/kg	443	06/09/2015 13:00:00	06/16/2015	06/12/2015	82.9	1.36	100	P	Background
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7429-90-5	Aluminum	15200		mg/kg	16.8	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7440-70-2	Calcium	628		mg/kg	419	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7439-89-6	Iron	16700		mg/kg	8.4	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7439-95-4	Magnesium	278	LJ	mg/kg	419	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7439-96-5	Manganese	26.1		mg/kg	1.3	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7440-09-7	Potassium	419	U	mg/kg	419	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	13:56:00	7440-23-5	Sodium	419	U	mg/kg	419	06/09/2015 15:10:00	06/16/2015	06/12/2015	86.5	1.38	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7429-90-5	Aluminum	4610		mg/kg	17.6	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7440-70-2	Calcium	114	LJ	mg/kg	440	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7439-89-6	Iron	3410		mg/kg	8.8	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7439-95-4	Magnesium	109	LJ	mg/kg	440	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7439-96-5	Manganese	5.2		mg/kg	1.3	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7440-09-7	Potassium	440	U	mg/kg	440	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	14:00:00	7440-23-5	Sodium	440	U	mg/kg	440	06/09/2015 15:25:00	06/16/2015	06/12/2015	86.8	1.31	100	P	RR Spur
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7429-90-5	Aluminum	190	LJ	ug/L	200	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7440-70-2	Calcium	6580		ug/L	5000	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7439-89-6	Iron	2110		ug/L	100	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7439-95-4	Magnesium	1410	LJ	ug/L	5000	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7439-96-5	Manganese	72.8		ug/L	15	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7440-09-7	Potassium	5000	U	ug/L	5000	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/15/2015	19:41:00	7440-23-5	Sodium	4120	LJ	ug/L	5000	06/10/2015 15:45:00	06/15/2015	06/12/2015		50	50	P	MW-01
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7429-90-5	Aluminum	1920	j	ug/L	200	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7440-70-2	Calcium	3390	LJ	ug/L	5000	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7439-89-6	Iron	5980		ug/L	100	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7439-95-4	Magnesium	2050	LJ	ug/L	5000	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7439-96-5	Manganese	23.9		ug/L	15.0	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7440-09-7	Potassium	5000	U	ug/L	5000	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02

45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/15/2015	19:45:00	7440-23-5	Sodium	2970	LJ	ug/L	5000	06/10/2015 10:16:00	06/15/2015	06/12/2015		50	50	P	MW-02
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7429-90-5	Aluminum	1700	J	ug/L	200	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7440-70-2	Calcium	5180		ug/L	5000	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7439-89-6	Iron	849		ug/L	100	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7439-95-4	Magnesium	1800	LJ	ug/L	5000	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7439-96-5	Manganese	25.0		ug/L	15.0	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7440-09-7	Potassium	5000	U	ug/L	5000	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/15/2015	20:01:00	7440-23-5	Sodium	2370	LJ	ug/L	5000	06/10/2015 12:09:00	06/15/2015	06/12/2015		50	50	P	MW-03
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7429-90-5	Aluminum	200	U	ug/L	200	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7440-70-2	Calcium	5000	U	ug/L	5000	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7439-89-6	Iron	23.4	LJ	ug/L	100	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7439-95-4	Magnesium	5000	U	ug/L	5000	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7439-96-5	Manganese	15	U	ug/L	15.0	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7440-09-7	Potassium	5000	U	ug/L	5000	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/15/2015	20:05:00	7440-23-5	Sodium	5000	U	ug/L	5000	06/10/2015 16:10:00	06/15/2015	06/12/2015		50	50	P	Field Blank
45361	MF9DA0	MF9DA0	G2641-01	S	Field_Sample	06/16/2015	15:04:00	7439-97-6	Mercury	0.02	LJ	mg/kg	0.11	06/09/2015 13:00:00	06/15/2015	06/12/2015	82.9	0.57	100	CV	Background
45361	MF9DA0	MF9DA2	G2641-02	S	Field_Sample	06/16/2015	15:06:00	7439-97-6	Mercury	0.039	LJ	mg/kg	0.098	06/09/2015 15:10:00	06/15/2015	06/12/2015	86.5	0.59	100	CV	RR Spur
45361	MF9DA0	MF9DA3	G2641-03	S	Field_Sample	06/16/2015	15:08:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/09/2015 15:25:00	06/15/2015	06/12/2015	86.8	0.53	100	CV	RR Spur
45361	MF9DA0	MF9DD1	G2641-06	W	Field_Sample	06/16/2015	13:16:00	7439-97-6	Mercury	0.2	U	ug/L	0.2	06/10/2015 15:45:00	06/15/2015	06/12/2015		100	100	CV	MW-01
45361	MF9DA0	MF9DD2	G2641-07	W	Field_Sample	06/16/2015	13:18:00	7439-97-6	Mercury	0.2	U	ug/L	0.2	06/10/2015 10:16:00	06/15/2015	06/12/2015		100	100	CV	MW-02
45361	MF9DA0	MF9DD3	G2641-10	W	Field_Sample	06/16/2015	13:32:00	7439-97-6	Mercury	0.2	U	ug/L	0.2	06/10/2015 12:09:00	06/15/2015	06/12/2015		100	100	CV	MW-03
45361	MF9DA0	MF9DD4	G2641-11	W	Field_Sample	06/16/2015	13:35:00	7439-97-6	Mercury	0.2	U	ug/L	0.2	06/10/2015 16:10:00	06/15/2015	06/12/2015		100	100	CV	Field Blank
45361	MF9DA0	MF9DA1	G2641-12	S	Field_Sample	06/16/2015	15:14:00	7439-97-6	Mercury	0.12	U	mg/kg	0.12	06/09/2015 13:05:00	06/15/2015	06/13/2015	83.8	0.51	100	CV	Background
45361	MF9DA0	MF9DA4	G2641-13	S	Field_Sample	06/16/2015	15:50:00	7439-97-6	Mercury	3.9		mg/kg	0.51	06/11/2015 08:08:00	06/15/2015	06/13/2015	87.4	0.56	100	CV	Concrete Structure
45361	MF9DA0	MF9DA5	G2641-14	S	Field_Sample	06/16/2015	15:18:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/11/2015 08:25:00	06/15/2015	06/13/2015	83.7	0.57	100	CV	Concrete Structure
45361	MF9DA0	MF9DA6	G2641-15	S	Field_Sample	06/16/2015	15:21:00	7439-97-6	Mercury	0.022	UJ	mg/kg	0.11	06/11/2015 08:55:00	06/15/2015	06/13/2015	88.1	0.52	100	CV	West - WWP
45361	MF9DA0	MF9DA7	G2641-16	S	Field_Sample	06/16/2015	15:23:00	7439-97-6	Mercury	0.11	LJ	mg/kg	0.11	06/11/2015 09:10:00	06/15/2015	06/13/2015	86.6	0.53	100	CV	West - WWP
45361	MF9DA0	MF9DA8	G2641-17	S	Field_Sample	06/16/2015	15:25:00	7439-97-6	Mercury	1.9		mg/kg	0.11	06/11/2015 10:00:00	06/15/2015	06/13/2015	83.5	0.53	100	CV	Creosote Area
45361	MF9DA0	MF9DA9	G2641-18	S	Field_Sample	06/16/2015	15:27:00	7439-97-6	Mercury	0.12	U	mg/kg	0.12	06/11/2015 10:20:00	06/15/2015	06/13/2015	83.8	0.5	100	CV	Creosote Area
45361	MF9DA0	MF9DB0	G2641-19	S	Field_Sample	06/16/2015	15:29:00	7439-97-6	Mercury	0.041	LJ	mg/kg	0.1	06/11/2015 14:15:00	06/15/2015	06/13/2015	88.4	0.55	100	CV	Creosote Area
45361	MF9DA0	MF9DB1	G2641-20	S	Field_Sample	06/16/2015	15:31:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/11/2015 14:30:00	06/15/2015	06/13/2015	83.8	0.56	100	CV	Creosote Area
45361	MF9DA0	MF9DB2	G2641-21	S	Field_Sample	06/16/2015	15:52:00	7439-97-6	Mercury	2.3		mg/kg	0.62	06/11/2015 15:05:00	06/15/2015	06/13/2015	77.3	0.52	100	CV	Culvert/Ditch (South)
45361	MF9DA0	MF9DB3	G2641-22	S	Field_Sample	06/16/2015	15:35:00	7439-97-6	Mercury	0.03	LJ	mg/kg	0.11	06/11/2015 15:10:00	06/15/2015	06/13/2015	84.9	0.54	100	CV	Culvert/Ditch (South)
45361	MF9DA0	MF9DB4	G2641-23	S	Field_Sample	06/16/2015	15:38:00	7439-97-6	Mercury	2.0		mg/kg	0.12	06/11/2015 15:12:00	06/15/2015	06/13/2015	78.4	0.55	100	CV	Culvert/Ditch (South)
45361	MF9DA0	MF9DB5	G2641-24	S	Field_Sample	06/16/2015	15:40:00	7439-97-6	Mercury	1.9		mg/kg	0.1	06/11/2015 15:21:00	06/15/2015	06/13/2015	85.2	0.58	100	CV	Culvert/Ditch (South)

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 45361 SDG No. MF9DA0 SDG Nos. To Follow Mod. Ref. No. Date Rec 07/06/15

EPA Lab ID: CHEM

Lab location: Mountainside, NJ

Region: 6 Audit No.: 45361/MF9DA0

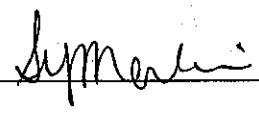
Resubmitted CSF? Yes ____ No X

Box No(s): 1

COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
AIRBILLS/AIRBILL STICKER			
11. Present?	X		
12. Signed?	X		
13. Dated?	X		
SAMPLE TAGS			
14. Does DC-1 list tags as being included?	X		
15. Present?	X		
OTHER DOCUMENTS			
16. Complete?	X		
17. Legible?	X		
18. Original?	X		
18a. If "NO", does the copy indicate where original documents are located?			X

Audited by:  Sonya Meekins/ESAT Data Reviewer Date 07/17/15

Audited by: _____ _____ Date _____

Signature Printed Name/Title

DC-2_

In Reference To Case No(s):
45361 SDG: MF9DA0 (I-0670)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	CHEM
Lab Contact:	Mildred Reyes
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Sonya Meekins - ESAT

In reference to data for the following fractions:

ICP-AES ICP-MS

Summary of Questions/Issues:

ICP-AES

On the Form 3 on page 45, for the analytes with negative instrument readings, UG/L concentrations were reported for PBS002 instead of the MG/KG concentrations. Please correct the concentration and "Q" columns for PBS002 and resubmit page 45.

ICP-MS

On the Form 3 on page 391, the negative concentration in UG/L was reported for zinc for PBS008 instead of the MG/KG concentration. Please correct the concentration for PBS008 and resubmit page 391.

NOTE: Any submitted laboratory resubmission should be clearly marked as "Additional Data" with a cover letter included describing what data is being delivered, which Case the data pertains, and who requested the data (ISM02.2, p. B-9, sec. 2.2.1). Custody seals are required only for regular mail shipments.

Please respond to the above item **within 5 business days (ISM02.2, p. B-9, sec. 2.2.1)** by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

SDG #: MF9DA0

USEPA CLP COC (LAB COPY)
DateShipped: 6/11/2015
CarrierName: FedEx
AirbillNo: 773806255739

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 1

No: 6-061015-194304-0002
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS01-02	MF9DA0	Soil/ START	Grab	TM + Hg(21)	6-403975 (Wet ice) (1)	Background	06/09/2015 13:00	
ACS03-02	MF9DA2	Soil/ START	Grab	TM + Hg(21)	6-403979 (Wet ice) (1)	RR Spur	06/09/2015 15:10	
ACS03-12	MF9DA3	Soil/ START	Grab	TM + Hg(21)	6-403981 (Wet ice) (1)	RR Spur	06/09/2015 15:25	
ACGW-21	MF9DD1	Ground Water/ START	Grab	TM + Hg(21)	6-403802 (HNO3 pH<2) (1)	MW-01	06/10/2015 15:45	
ACGW-22	MF9DD2	Ground Water/ START	Grab	TM + Hg(21)	6-403805 (HNO3 pH<2), 6-403806 (HNO3 pH<2) (2)	MW-02	06/10/2015 10:16	
ACGW-23	MF9DD3	Ground Water/ START	Grab	TM + Hg(21)	6-403809 (HNO3 pH<2) (1)	MW-03	06/10/2015 12:09	
ACFB-24	MF9DD4	Water/ START	Grab	TM + Hg(21)	6-403812 (HNO3 pH<2) (1)	Field Blank	06/10/2015 16:10	

Sample(s) to be used for Lab QC: ACS03-12 Tag 403981, ACGW-22 Tag 403805, ACGW-22 Tag 403806

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Steve Caron START	6/11/15 1830	FedEx		
			George Negron	6/12/15 920	4°C

2

SDG #: MF9DA0

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACSW-08	MF9D1	Waste Water/ START	Grab	TM + Hg(21)	6-403824 (HNO3 pH<2) (1)	Wastewater Pit 1	06/11/2015 08:23	
ACS01-25	MF9DA1	Soil/ START	Grab	TM + Hg(21)	6-403977 (Wet ice) (1)	Background	06/09/2015 13:05	
ACS05-02	MF9DA4	Soil/ START	Grab	TM + Hg(21)	6-403983 (Wet ice) (1)	Concrete Structure	06/11/2015 08:08	
ACS05-25	MF9DA5	Soil/ START	Grab	TM + Hg(21)	6-403985 (Wet ice) (1)	Concrete Structure	06/11/2015 08:25	
ACS07-02	MF9DA6	Soil/ START	Discrete Interval	TM + Hg(21)	6-403987 (Wet ice) (1)	West - WWP	06/11/2015 08:55	
ACS07-58	MF9DA7	Soil/ START	Grab	TM + Hg(21)	6-403989 (Wet ice) (1)	West - WWP	06/11/2015 09:10	
ACS10-02	MF9DA8	Soil/ START	Grab	TM + Hg(21)	6-403991 (Wet ice) (1)	Creosote Area	06/11/2015 10:00	
ACS10-58	MF9DA9	Soil/ START	Grab	TM + Hg(21)	6-403993 (Wet ice) (1)	Creosote Area	06/11/2015 10:20	
ACS11-02	MF9DB0	Soil/ START	Grab	TM + Hg(21)	6-403995 (Wet ice) (1)	Creosote Area	06/11/2015 14:15	
ACS11-35	MF9DB1	Soil/ START	Grab	TM + Hg(21)	6-403997 (Wet ice) (1)	Creosote Area	06/11/2015 14:30	
ACS13-02	MF9DB2	Soil/ START	Discrete Interval	TM + Hg(21)	6-403999 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:05	
ACS13-24	MF9DB3	Soil/ START	Discrete Interval	TM + Hg(21)	6-472427 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:10	
ACS14-02	MF9DB4	Soil/ START	Discrete Interval	TM + Hg(21)	6-472429 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:12	

Special Instructions:

Shipment for Case Complete? Y
Samples Transferred From Chain of Custody #

Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Steve Cava START	6/12/15 1830	FedEx		
			Deepak Parmar	6/13/15 10:00	onice

Temp. 4°C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE RD.
HOUSTON, TEXAS 77099

July 23, 2015

MEMORANDUM

SUBJECT: Contract Laboratory Program Data Review

FROM: Raymond Flores, Alternate ESAT Regional Project Officer
Environmental Services Branch (6MD-HL)

TO: Brenda Cook, Superfund Project Manager (6SF-TR)

Site: **AMERICAN CREOSOTE DERIDDER**

Case#: **45361**

SDG#: **MF9DB6**

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

ENVIRONMENTAL SERVICES ASSISTANCE TEAM

ESAT Region 6
10625 Fallstone Road
Houston, TX 77099

Alion Science and Technology

MEMORANDUM

DATE: July 22, 2015

TO: Marvelyn Humphrey, ESAT PO, Region 6 EPA

FROM: Sonya Meekins, Data Reviewer, ESAT

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT DGJ

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-12
ESAT Doc. No.:	1502-212-0017
TDF No.:	6-15-317A
ESAT File No.:	I-0671

Attached is the data review summary for Case # 45361
SDG # MF9DB6
Site American Creosote Deridder

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
HOUSTON BRANCH
10625 FALLSTONE ROAD
HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO. 45361	SITE American Creosote Deridder
LABORATORY CHEM	NO. OF SAMPLES 16
CONTRACT# EP-W-14-030	MATRIX 9 Soil/3 Water/4 sediment
SDG# MF9DB6	REVIEWER (IF NOT ESB) ESAT
SOW# ISM02.2	REVIEWER'S NAME Sonya Meekins
SF# 303DD2A6KM	COMPLETION DATE July 22, 2015

SAMPLE NO.				
MF9DB6	MF9DC1	MF9DC5	MF9DC9	
MF9DB7	MF9DC2	MF9DC6	MF9DD0	
MF9DB8	MF9DC3	MF9DC7	MF9DE0	
MF9DB9	MF9DC4	MF9DC8	MF9DE1	

DATA ASSESSMENT SUMMARY

	ICP-AES	ICP-MS	HG
1. HOLDING TIMES	O	O	O
2. CALIBRATIONS	O	O	O
3. BLANKS	O	M	O
4. MATRIX SPIKES	O	M	O
5. DUPLICATE ANALYSIS	O	O	O
6. ICP QC	O	M	
7. LCS	O	O	
8. SAMPLE VERIFICATION	O	O	O
9. OTHER QC	N/A	N/A	N/A
10. OVERALL ASSESSMENT	O	M	O

O = Data had no problems.
M = Data qualified due to major or minor problems.
Z = Data unacceptable.
NA = Not applicable.

ACTION ITEMS:

AREAS OF CONCERN: **ICP-MS** Blank concentrations affected some arsenic, cadmium, cobalt, nickel, and thallium sample results. The antimony, copper, and zinc matrix spike recoveries were outside the QC limits for the water matrix. The arsenic serial dilution differences exceeded the expanded QC limit for the soil and sediment matrices.

COMMENTS/CLARIFICATIONS
REGION 6 CLP QA REVIEW

CASE 45361 **SDG** MF9DB6 **SITE** American Creosote Deridder **LAB** CHEM

COMMENTS: This SDG consisted of nine soil, four sediment, and three water samples for total metals (by ICP-AES and ICP-MS) and mercury analyses following SOW ISM02.2. The sampler designated sample MF9DD0 for QC analyses for the water matrix. After contacting SMO, the laboratory chose samples MF9DB6 and MF9DC1 for QC analyses for soil and sediment matrices, respectively.

The SOW requires that the soil sample results be adjusted for moisture content, which raised the adjusted QLs above the CRQLs specified in the SOW. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

The laboratory diluted (up to 25X) and reanalyzed HG samples MF9DC1 and MF9DC7 because of high mercury concentrations. Most analytes were reported at concentrations above the CRQLs/SQLs in the samples.

S3VEM Review was performed for this data package as requested by the TDF. For this review option, laboratory contractual compliance and technical usability of the sample results are primarily determined by the EDM CCS Defect Report and NFG Data Review Results Report, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the EDM reports. The NFG Data Review Results Report for the SDG is attached to this report as an addendum for additional information.

OVERALL ASSESSMENT: Some results were qualified for all ICP-MS samples because of problems with laboratory blank reading, matrix spike recoveries, and serial dilution differences. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory was contacted for a reporting issue (see Resubmission Request). The laboratory resubmission will not impact the DST, so the DST included is the final version.

INORGANIC ACRONYMS

CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CN	Cyanide
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DST	Data Summary Table
EDM	EXES Data Manager
HG	Mercury
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
NFG	National Functional Guidelines
PE	Performance Evaluation
%D	Percent Difference
%R	Percent Recovery
%RI	Percent Relative Intensity
%RSD	Percent Relative Standard Deviation
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RPD	Relative Percent Difference
RSCC	Regional Sample Control Center
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
TAL	Target Analyte List

HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number
SDG: SDG Number
EPASAMP: EPA Sample Number
LABID: Laboratory File/Sample ID
MATRIX: Sample Matrix
QCCOD: Sample QC Code
SMPQUAL: Sample Qualifier
ANDATE: Sample Analysis Date
ANTIME: Sample Analysis Time
CASNUM: Compound CAS Number
ANALYTE: Compound Name
CONC: Compound Concentration
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see Inorganic Data Qualifier Definitions on the next page)
UNITS: Concentration Units
ADJCRQL: Adjusted Contract Required Quantitation Limit Value
SMPDATE: Sampling Date
PRPDATE: Sample Preparation Date
LRDATE: Laboratory Receipt Date
LEVEL: Sample Level
PERSOLD: Sample Percent Solids
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water Samples)
FINLVOL: Final Sample Volume
METHOD: Method of Analysis
STATLOC: Station Location

Disclaimer: **ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.**

INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

U Not detected at reported quantitation limit.

L Reported concentration is between the MDL and the CRQL.

J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.

R Result is unusable.

F A possibility of a false negative exists.

UC Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.

+ High biased. Actual concentration may be lower than the concentration reported.

- Low biased. Actual concentration may be higher than the concentration reported.

W The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

CASE	SDG	EPASAMP	LABID	MATRIX	QCCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRQL	SMPDATE	PRPDATE	LRDATE	LEVEL	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-36-0	Antimony	0.67	U	mg/kg	0.67	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-38-2	Arsenic	3.0	J	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-39-3	Barium	23.5		mg/kg	4.3	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-41-7	Beryllium	0.43	U	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-43-9	Cadmium	0.43	U	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-47-3	Chromium	11.2		mg/kg	0.87	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-48-4	Cobalt	0.43	U	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-50-8	Copper	2.8		mg/kg	0.67	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7439-92-1	Lead	5.6		mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-02-0	Nickel	0.71	J+	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7782-49-2	Selenium	2.2	U	mg/kg	2.2	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-22-4	Silver	0.43	U	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-28-0	Thallium	0.43	U	mg/kg	0.43	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-62-2	Vanadium	30.9		mg/kg	2.2	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:37:00	7440-66-6	Zinc	1.6		mg/kg	0.87	06/11/2015 09:15:00	06/17/2015	06/13/2015		86.8	1.33	500	MS	West - WWP
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-36-0	Antimony	0.83	U	mg/kg	0.83	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-38-2	Arsenic	1.2	J+	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-39-3	Barium	10.6		mg/kg	4.2	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-41-7	Beryllium	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-43-9	Cadmium	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-47-3	Chromium	4.5		mg/kg	0.83	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-48-4	Cobalt	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-50-8	Copper	0.79	LJ	mg/kg	0.83	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7439-92-1	Lead	3.3		mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-02-0	Nickel	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-22-4	Silver	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-28-0	Thallium	0.42	U	mg/kg	0.42	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-62-2	Vanadium	11.9		mg/kg	2.1	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	17:40:00	7440-66-6	Zinc	1.3		mg/kg	0.83	06/11/2015 10:45:00	06/17/2015	06/13/2015		88.9	1.35	500	MS	Creosote Area
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-36-0	Antimony	0.70	UJ	mg/kg	0.70	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB6	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-38-2	Arsenic	0.81	J+	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-39-3	Barium	20.3		mg/kg	3.5	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-41-7	Beryllium	0.35	U	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-43-9	Cadmium	0.35	U	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-47-3	Chromium	5.9		mg/kg	0.7	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-48-4	Cobalt	0.43	J+	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-50-8	Copper	5.7		mg/kg	0.7	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7439-92-1	Lead	7.7		mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-02-0	Nickel	1.1		mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7782-49-2	Selenium	1.8	U	mg/kg	1.8	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-22-4	Silver	0.35	U	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-28-0	Thallium	0.35	U	mg/kg	0.35	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-62-2	Vanadium	9.3		mg/kg	1.8	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	17:48:00	7440-66-6	Zinc	17.1		mg/kg	0.7	06/11/2015 16:17:00	06/17/2015	06/13/2015		96.9	1.47	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-36-0	Antimony	0.98	U	mg/kg	0.98	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-38-2	Arsenic	1.1	J+	mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-39-3	Barium	47.9		mg/kg	4.9	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-41-7	Beryllium	0.49	U	mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-43-9	Cadmium	0.49	U	mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-47-3	Chromium	2.7		mg/kg	0.98	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-48-4	Cobalt	0.84		mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-50-8	Copper	1.4		mg/kg	0.98	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7439-92-1	Lead	4.7		mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-02-0	Nickel	0.96		mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7782-49-2	Selenium	2.5	U	mg/kg	2.5	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-22-4	Silver	0.49	U	mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-28-0	Thallium	0.49	U	mg/kg	0.49	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-62-2	Vanadium	5.3		mg/kg	2.5	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	18:09:00	7440-66-6	Zinc	1.3		mg/kg	0.98	06/09/2015 13:15:00	06/17/2015	06/13/2015		75.1	1.36	500	MS	Background
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-36-0	Antimony	1.2	U	mg/kg	1.2	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-38-2	Arsenic	4.7	J	mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-39-3	Barium	19.7		mg/kg	5.9	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-41-7	Beryllium	0.59	U	mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-43-9	Cadmium	0.75		mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-47-3	Chromium	3.7		mg/kg	1.2	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-48-4	Cobalt	1.3		mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-50-8	Copper	34.1		mg/kg	1.2	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7439-92-1	Lead	55.4		mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-02-0	Nickel	3.6		mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7782-49-2	Selenium	2.9	U	mg/kg	2.9	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-22-4	Silver	0.59	U	mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-28-0	Thallium	1.3		mg/kg	0.59	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-62-2	Vanadium	5.1		mg/kg	2.9	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	17:09:00	7440-66-6	Zinc	93.9		mg/kg	1.2	06/11/2015 13:00:00	06/17/2015	06/13/2015		60.9	1.4	500	MS	Wastewater Pit
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-36-0	Antimony	0.80	U	mg/kg	0.8	06/11/2015 09:25:00	06/17/2015	06/13/2015		88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-38-2	Arsenic	1.2	J+	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015		88.8	1.41	500	MS	West - WWP

45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-39-3	Barium	10.6		mg/kg	4.0	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-41-7	Beryllium	0.4	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-43-9	Cadmium	0.4	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-47-3	Chromium	3.0		mg/kg	0.8	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-48-4	Cobalt	0.40	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-50-8	Copper	0.63	LJ	mg/kg	0.8	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7439-92-1	Lead	3.4		mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-02-0	Nickel	0.4	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-22-4	Silver	0.4	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-28-0	Thallium	0.4	U	mg/kg	0.4	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-62-2	Vanadium	8.5		mg/kg	2.0	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	18:17:00	7440-66-6	Zinc	0.80	U	mg/kg	0.8	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.41	500	MS	West - WWP
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-36-0	Antimony	0.85	U	mg/kg	0.85	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-38-2	Arsenic	1.8	J+	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-39-3	Barium	14.0		mg/kg	4.2	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-41-7	Beryllium	0.42	U	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-43-9	Cadmium	0.42	U	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-47-3	Chromium	5.8		mg/kg	0.85	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-48-4	Cobalt	0.42	U	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-50-8	Copper	4.8		mg/kg	0.85	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7439-92-1	Lead	12.3		mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-02-0	Nickel	0.89		mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-22-4	Silver	0.42	U	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-28-0	Thallium	0.42	U	mg/kg	0.42	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-62-2	Vanadium	6.9		mg/kg	2.1	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	18:25:00	7440-66-6	Zinc	8.2		mg/kg	0.85	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.48	500	MS	Culvert/Ditch (South)
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-36-0	Antimony	0.71	U	mg/kg	0.71	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-38-2	Arsenic	1.7	J+	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-39-3	Barium	37.7		mg/kg	3.6	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-41-7	Beryllium	0.36	U	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-43-9	Cadmium	0.36	U	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-47-3	Chromium	8.6		mg/kg	0.71	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-48-4	Cobalt	0.42	J+	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-50-8	Copper	4.6		mg/kg	0.71	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7439-92-1	Lead	4.6		mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-02-0	Nickel	0.97		mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7782-49-2	Selenium	1.8	U	mg/kg	1.8	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-22-4	Silver	0.36	U	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-28-0	Thallium	0.36	U	mg/kg	0.36	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-62-2	Vanadium	16.5		mg/kg	1.8	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	18:33:00	7440-66-6	Zinc	5.4		mg/kg	0.71	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.46	500	MS	RR-ROW
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-36-0	Antimony	0.86	U	mg/kg	0.86	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-38-2	Arsenic	1.4	J	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-39-3	Barium	11.1		mg/kg	4.3	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-41-7	Beryllium	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-43-9	Cadmium	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-47-3	Chromium	4.0		mg/kg	0.86	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-48-4	Cobalt	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-50-8	Copper	0.85	LJ	mg/kg	0.86	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7439-92-1	Lead	3.6		mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-02-0	Nickel	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-22-4	Silver	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-28-0	Thallium	0.43	U	mg/kg	0.43	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-62-2	Vanadium	11.8		mg/kg	2.1	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	18:41:00	7440-66-6	Zinc	0.86	U	mg/kg	0.86	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-36-0	Antimony	0.82	U	mg/kg	0.82	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-38-2	Arsenic	1.2	J+	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-39-3	Barium	9.0		mg/kg	4.1	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-41-7	Beryllium	0.41	U	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-43-9	Cadmium	0.41	U	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-47-3	Chromium	9.2		mg/kg	0.82	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-48-4	Cobalt	0.41	U	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-50-8	Copper	1.4		mg/kg	0.82	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7439-92-1	Lead	4.2		mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-02-0	Nickel	0.57	J+	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-22-4	Silver	0.41	U	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-28-0	Thallium	0.41	U	mg/kg	0.41	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-62-2	Vanadium	24.8		mg/kg	2.1	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	18:49:00	7440-66-6	Zinc	0.82	U	mg/kg	0.82	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.45	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-36-0	Antimony	0.93	U	mg/kg	0.93	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-38-2	Arsenic	18.2	J	mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-39-3	Barium	75.0		mg/kg	4.6	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-41-7	Beryllium	0.46	U	mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-43-9	Cadmium	1.6		mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area

45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-47-3	Chromium	8.1		mg/kg	0.93	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-48-4	Cobalt	2.8		mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-50-8	Copper	68.2		mg/kg	0.93	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7439-92-1	Lead	204		mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-02-0	Nickel	8.8		mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7782-49-2	Selenium	2.3	U	mg/kg	2.3	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-22-4	Silver	0.46	U	mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-28-0	Thallium	0.68	J+	mg/kg	0.46	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-62-2	Vanadium	8.1		mg/kg	2.3	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	18:56:00	7440-66-6	Zinc	180		mg/kg	0.93	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.33	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-36-0	Antimony	0.80	U	mg/kg	0.80	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-38-2	Arsenic	5.8	J	mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-39-3	Barium	99.6		mg/kg	4.0	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-41-7	Beryllium	0.40	U	mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-43-9	Cadmium	0.40	U	mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-47-3	Chromium	4.4		mg/kg	0.80	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-48-4	Cobalt	2.4		mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-50-8	Copper	48.8		mg/kg	0.80	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7439-92-1	Lead	67.0		mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-02-0	Nickel	5.3		mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7782-49-2	Selenium	2.0	U	mg/kg	2.0	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-22-4	Silver	0.4	U	mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-28-0	Thallium	0.4	U	mg/kg	0.40	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-62-2	Vanadium	15.6		mg/kg	2.0	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	19:12:00	7440-66-6	Zinc	57.8		mg/kg	0.80	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.38	500	MS	Creosote Area
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-36-0	Antimony	2.0	UJ	ug/L	2.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-38-2	Arsenic	3.7		ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-39-3	Barium	49.9		ug/L	10.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-41-7	Beryllium	1.0	U	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-43-9	Cadmium	1.0	U	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-47-3	Chromium	0.96	LJ	ug/L	2.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-48-4	Cobalt	1.0	U	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-50-8	Copper	1.8	LJ	ug/L	2.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7439-92-1	Lead	0.6	LJ	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-02-0	Nickel	1.0	LJ	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-28-0	Thallium	1.0	U	ug/L	1.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-62-2	Vanadium	5.0	U	ug/L	5.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	15:23:00	7440-66-6	Zinc	8.3	J	ug/L	2.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 2
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-36-0	Antimony	2.0	UJ	ug/L	2.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-38-2	Arsenic	17.4		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-39-3	Barium	275		ug/L	10.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-41-7	Beryllium	0.55	LJ	ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-43-9	Cadmium	10.8		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-47-3	Chromium	12.1		ug/L	2.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-48-4	Cobalt	6.1		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-50-8	Copper	328	J	ug/L	2.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7439-92-1	Lead	258		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-02-0	Nickel	23.1		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-28-0	Thallium	8.6		ug/L	1.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-62-2	Vanadium	34.7		ug/L	5.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	15:31:00	7440-66-6	Zinc	1490	J	ug/L	2.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	MS	Concrete Structure
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-36-0	Antimony	0.027	U	mg/kg	0.82	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-38-2	Arsenic	6.4	J	mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-39-3	Barium	48.0		mg/kg	4.1	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-41-7	Beryllium	0.41	U	mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-43-9	Cadmium	0.41	U	mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-47-3	Chromium	4.2		mg/kg	0.82	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-48-4	Cobalt	1.2		mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-50-8	Copper	1.5		mg/kg	0.82	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7439-92-1	Lead	5.3		mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-02-0	Nickel	1.2		mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7782-49-2	Selenium	2.1	U	mg/kg	2.1	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-22-4	Silver	0.41	U	mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-28-0	Thallium	0.41	U	mg/kg	0.41	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-62-2	Vanadium	16.6		mg/kg	2.1	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	19:20:00	7440-66-6	Zinc	1.8		mg/kg	0.82	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	500	MS	Background
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-36-0	Antimony	2.0	UJ	ug/L	2.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-38-2	Arsenic	5.9		ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-39-3	Barium	73.2		ug/L	10.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-41-7	Beryllium	0.14	LJ	ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-43-9	Cadmium	0.44	LJ	ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-47-3	Chromium	3.0		ug/L	2.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-48-4	Cobalt	2.7		ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-50-8	Copper	10.3	J	ug/L	2.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1

45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7439-92-1	Lead	11.3		ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-02-0	Nickel	4.8		ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7782-49-2	Selenium	5.0	U	ug/L	5.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-22-4	Silver	1.0	U	ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-28-0	Thallium	0.44	UJ	ug/L	1.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-62-2	Vanadium	2.5	UJ	ug/L	5.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	16:02:00	7440-66-6	Zinc	47.4	J	ug/L	2.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	MS	Wastewater Pit 1
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/18/2015	16:02:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	0.52	100	CV	West - WWP
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/18/2015	16:09:00	7439-97-6	Mercury	0.10	U	mg/kg	0.10	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	0.54	100	CV	Creosote Area
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/18/2015	16:11:00	7439-97-6	Mercury	0.029	UJ	mg/kg	0.086	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	0.6	100	CV	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/18/2015	16:13:00	7439-97-6	Mercury	0.12	U	mg/kg	0.12	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	0.54	100	CV	Background
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/18/2015	16:50:00	7439-97-6	Mercury	3.4		mg/kg	0.78	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	0.53	100	CV	Wastewater Pit
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/18/2015	16:27:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	0.52	100	CV	West - WWP
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/18/2015	16:29:00	7439-97-6	Mercury	0.086	UJ	mg/kg	0.12	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	0.54	100	CV	Culvert/Ditch (South)
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/18/2015	16:31:00	7439-97-6	Mercury	0.01	UJ	mg/kg	0.086	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	0.6	100	CV	RR-ROW
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/18/2015	16:33:00	7439-97-6	Mercury	0.095	U	mg/kg	0.095	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	0.6	100	CV	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/18/2015	16:35:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	0.52	100	CV	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/18/2015	17:01:00	7439-97-6	Mercury	28.3		mg/kg	3.0	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	0.51	100	CV	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/18/2015	16:39:00	7439-97-6	Mercury	0.26		mg/kg	0.1	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	0.55	100	CV	Creosote Area
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/18/2015	14:46:00	7439-97-6	Mercury	0.2	U	ug/L	0.2	06/11/2015 11:30:00	06/17/2015	06/13/2015		100	100	CV	Wastewater Pit 2
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/18/2015	14:48:00	7439-97-6	Mercury	7.4		ug/L	0.2	06/11/2015 09:10:00	06/17/2015	06/13/2015		100	100	CV	Concrete Structure
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/18/2015	16:41:00	7439-97-6	Mercury	0.11	U	mg/kg	0.11	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	0.56	100	CV	Background
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/18/2015	15:00:00	7439-97-6	Mercury	0.2	UJ	ug/L	0.2	06/11/2015 08:23:00	06/17/2015	06/13/2015		100	100	CV	Wastewater Pit 1
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7429-90-5	Aluminum	8630		mg/kg	17.5	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7440-70-2	Calcium	158	LJ	mg/kg	436	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7439-89-6	Iron	11900		mg/kg	8.7	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7439-95-4	Magnesium	266	LJ	mg/kg	436	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7439-96-5	Manganese	12.8		mg/kg	1.3	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7440-09-7	Potassium	436	U	mg/kg	436	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB6	G2654-02	S	Field_Sample	06/17/2015	15:33:00	7440-23-5	Sodium	46.1	UJ	mg/kg	436	06/11/2015 09:15:00	06/17/2015	06/13/2015	86.6	1.32	100	P	West - WWP
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7429-90-5	Aluminum	3590		mg/kg	15.6	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7440-70-2	Calcium	46.5	UJ	mg/kg	391	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7439-89-6	Iron	4710		mg/kg	7.8	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7439-95-4	Magnesium	124	LJ	mg/kg	391	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7439-96-5	Manganese	4.4		mg/kg	1.2	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7440-09-7	Potassium	391	U	mg/kg	391	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB7	G2654-05	S	Field_Sample	06/17/2015	15:50:00	7440-23-5	Sodium	29.9	UJ	mg/kg	391	06/11/2015 10:45:00	06/17/2015	06/13/2015	88.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7429-90-5	Aluminum	7890		mg/kg	14.4	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7440-70-2	Calcium	1970		mg/kg	361	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7439-89-6	Iron	18600		mg/kg	7.2	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7439-95-4	Magnesium	595		mg/kg	361	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7439-96-5	Manganese	37.1		mg/kg	1.1	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7440-09-7	Potassium	78.7	UJ	mg/kg	361	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB8	G2654-06	S	Field_Sample	06/17/2015	15:54:00	7440-23-5	Sodium	96.7	UJ	mg/kg	361	06/11/2015 16:17:00	06/17/2015	06/13/2015	96.9	1.43	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7429-90-5	Aluminum	4210		mg/kg	19.7	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7440-70-2	Calcium	318	LJ	mg/kg	493	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7439-89-6	Iron	3550		mg/kg	9.9	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7439-95-4	Magnesium	463	LJ	mg/kg	493	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7439-96-5	Manganese	3.9		mg/kg	1.5	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7440-09-7	Potassium	493	U	mg/kg	493	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DB9	G2654-07	S	Field_Sample	06/17/2015	15:58:00	7440-23-5	Sodium	78.9	UJ	mg/kg	493	06/09/2015 13:15:00	06/17/2015	06/13/2015	75.1	1.35	100	P	Background
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7429-90-5	Aluminum	2650		mg/kg	23.5	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7440-70-2	Calcium	425	LJ	mg/kg	586	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7439-89-6	Iron	4100		mg/kg	11.7	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7439-95-4	Magnesium	220	LJ	mg/kg	586	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7439-96-5	Manganese	19.5		mg/kg	1.8	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7440-09-7	Potassium	586	U	mg/kg	586	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC1	G2654-08	S	Field_Sample	06/17/2015	16:02:00	7440-23-5	Sodium	56.6	UJ	mg/kg	586	06/11/2015 13:00:00	06/17/2015	06/13/2015	60.9	1.4	100	P	Wastewater Pit
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7429-90-5	Aluminum	3120		mg/kg	16.3	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7440-70-2	Calcium	28.3	LJ	mg/kg	408	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7439-89-6	Iron	3180		mg/kg	8.2	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7439-95-4	Magnesium	115	LJ	mg/kg	408	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7439-96-5	Manganese	3.3		mg/kg	1.2	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7440-09-7	Potassium	408	U	mg/kg	408	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC2	G2654-11	S	Field_Sample	06/17/2015	16:26:00	7440-23-5	Sodium	26.2	LJ	mg/kg	408	06/11/2015 09:25:00	06/17/2015	06/13/2015	88.8	1.38	100	P	West - WWP
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7429-90-5	Aluminum	2560		mg/kg	17.4	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7440-70-2	Calcium	720		mg/kg	434	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7439-89-6	Iron	5810		mg/kg	8.7	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7439-95-4	Magnesium	83.0	LJ	mg/kg	434	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7439-96-5	Manganese	33.5		mg/kg	1.3	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7440-09-7	Potassium	434	U	mg/kg	434	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC3	G2654-12	S	Field_Sample	06/17/2015	16:30:00	7440-23-5	Sodium	23.3	LJ	mg/kg	434	06/11/2015 14:10:00	06/17/2015	06/13/2015	80	1.44	100	P	Culvert/Ditch (South)
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7429-90-5	Aluminum	5450		mg/kg	15.2	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7440-70-2	Calcium	1230		mg/kg	381	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7439-89-6	Iron	12800		mg/kg	7.6	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7439-95-4	Magnesium	245	LJ	mg/kg	381	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7439-96-5	Manganese	34.7		mg/kg	1.1	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7440-09-7	Potassium	21.4	LJ	mg/kg	381	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW

45361	MF9DB6	MF9DC4	G2654-13	S	Field_Sample	06/17/2015	16:34:00	7440-23-5	Sodium	35.4	LJ	mg/kg	381	06/11/2015 15:49:00	06/17/2015	06/13/2015	96.6	1.36	100	P	RR-ROW
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7429-90-5	Aluminum	3840		mg/kg	15.8	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7440-70-2	Calcium	104	LJ	mg/kg	395	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7439-89-6	Iron	5360		mg/kg	7.9	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7439-95-4	Magnesium	116	LJ	mg/kg	395	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7439-96-5	Manganese	6.1		mg/kg	1.2	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7440-09-7	Potassium	15.1	LJ	mg/kg	395	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC5	G2654-14	S	Field_Sample	06/17/2015	16:38:00	7440-23-5	Sodium	18.7	LJ	mg/kg	395	06/11/2015 10:40:00	06/17/2015	06/13/2015	87.9	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7429-90-5	Aluminum	5380		mg/kg	16.5	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7440-70-2	Calcium	19.8	LJ	mg/kg	412	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7439-89-6	Iron	13200		mg/kg	8.2	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7439-95-4	Magnesium	126	LJ	mg/kg	412	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7439-96-5	Manganese	5.6		mg/kg	1.2	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7440-09-7	Potassium	412	U	mg/kg	412	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC6	G2654-15	S	Field_Sample	06/17/2015	16:42:00	7440-23-5	Sodium	27.8	LJ	mg/kg	412	06/11/2015 14:45:00	06/17/2015	06/13/2015	84.3	1.44	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7429-90-5	Aluminum	2700		mg/kg	18.4	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7440-70-2	Calcium	7290		mg/kg	461	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7439-89-6	Iron	22400		mg/kg	9.2	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7439-95-4	Magnesium	1090		mg/kg	461	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7439-96-5	Manganese	784		mg/kg	1.4	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7440-09-7	Potassium	381	LJ	mg/kg	461	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC7	G2654-16	S	Field_Sample	06/17/2015	16:46:00	7440-23-5	Sodium	99.2	LJ	mg/kg	461	06/11/2015 10:37:00	06/17/2015	06/13/2015	81	1.34	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7429-90-5	Aluminum	5770		mg/kg	15.6	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7440-70-2	Calcium	3430		mg/kg	390	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7439-89-6	Iron	16000		mg/kg	7.8	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7439-95-4	Magnesium	768		mg/kg	390	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7439-96-5	Manganese	254		mg/kg	1.2	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7440-09-7	Potassium	327	LJ	mg/kg	390	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC8	G2654-17	S	Field_Sample	06/17/2015	16:50:00	7440-23-5	Sodium	339	LJ	mg/kg	390	06/11/2015 11:46:00	06/17/2015	06/13/2015	90.4	1.42	100	P	Creosote Area
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7429-90-5	Aluminum	45.2	LJ	ug/L	200	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7440-70-2	Calcium	34000		ug/L	5000	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7439-89-6	Iron	477		ug/L	100	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7439-95-4	Magnesium	1050	LJ	ug/L	5000	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7439-96-5	Manganese	58.2		ug/L	15.0	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7440-09-7	Potassium	5000	U	ug/L	5000	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DC9	G2654-18	W	Field_Sample	06/17/2015	14:59:00	7440-23-5	Sodium	1560	LJ	ug/L	5000	06/11/2015 11:30:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 2
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7429-90-5	Aluminum	9160		ug/L	200	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7440-70-2	Calcium	97100		ug/L	5000	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7439-89-6	Iron	16300		ug/L	100	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7439-95-4	Magnesium	3710	LJ	ug/L	5000	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7439-96-5	Manganese	1020		ug/L	15.0	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7440-09-7	Potassium	4410	LJ	ug/L	5000	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DD0	G2654-19	W	Field_Sample	06/17/2015	15:03:00	7440-23-5	Sodium	1820	LJ	ug/L	5000	06/11/2015 09:10:00	06/17/2015	06/13/2015		50	50	P	Concrete Structure
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7429-90-5	Aluminum	3020		mg/kg	16.4	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7440-70-2	Calcium	368	LJ	mg/kg	410	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7439-89-6	Iron	7690		mg/kg	6.2	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7439-95-4	Magnesium	440		mg/kg	410	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7439-96-5	Manganese	2.3		mg/kg	1.2	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7440-09-7	Potassium	51.4	LJ	mg/kg	410	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE0	G2654-22	S	Field_Sample	06/17/2015	16:54:00	7440-23-5	Sodium	68.3	LJ	mg/kg	410	06/09/2015 13:30:00	06/17/2015	06/13/2015	84.6	1.44	100	P	Background
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7429-90-5	Aluminum	614		ug/L	200	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7440-70-2	Calcium	10000		ug/L	5000	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7439-89-6	Iron	6280		ug/L	100	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7439-95-4	Magnesium	1460	LJ	ug/L	5000	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7439-96-5	Manganese	488		ug/L	15.0	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7440-09-7	Potassium	804	LJ	ug/L	5000	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1
45361	MF9DB6	MF9DE1	G2654-23	W	Field_Sample	06/17/2015	15:21:00	7440-23-5	Sodium	1830	LJ	ug/L	5000	06/11/2015 08:23:00	06/17/2015	06/13/2015		50	50	P	Wastewater Pit 1

INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST

Case No. 45361 SDG No. MF9DB6 SDG Nos. To Follow Mod. Ref. No. Date Rec 07/06/15

EPA Lab ID: CHEM

Lab location: Mountainside, NJ

Region: 6 Audit No.: 45361/MF9DB6

Resubmitted CSF? Yes ____ No X

Box No(s): 1

COMMENTS:

Over for additional comments.

ORIGINALS	YES	NO	N/A
CUSTODY SEALS			
1. Present on package?	X		
2. Intact upon receipt?	X		
FORM DC-2			
3. Numbering scheme accurate?	X		
4. Are enclosed documents listed?	X		
5. Are listed documents enclosed?	X		
FORM DC-1			
6. Present?	X		
7. Complete?	X		
8. Accurate?	X		
TRAFFIC REPORT/CHAIN-OF-CUSTODY RECORD(s)			
9. Signed?	X		
10. Dated?	X		
AIRBILLS/AIRBILL STICKER			
11. Present?	X		
12. Signed?	X		
13. Dated?	X		
SAMPLE TAGS			
14. Does DC-1 list tags as being included?	X		
15. Present?	X		
OTHER DOCUMENTS			
16. Complete?	X		
17. Legible?	X		
18. Original?		X	
18a. If "NO", does the copy indicate where original documents are located?	X		

Audited by: _____ Sonya Meekins/ESAT Data Reviewer Date 07/22/15

Audited by: _____ Date _____

Signature Printed Name/Title

DC-2_

In Reference To Case No(s):
45361 SDG: MF9DB6 (I-0671)

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name:	CHEM
Lab Contact:	Mildred Reyes
Region:	6
Regional Contact:	Raymond Flores - EPA
ESAT Reviewer:	Sonya Meekins - ESAT

In reference to data for the following fractions:

ICP-AES

Summary of Questions/Issues:

ICP-AES

On the Form 3 on page 36, the negative instrument reading in ug/L was reported for potassium for PBS002 instead of the mg/kg concentration. Please correct the concentration for PBS002 and resubmit page 36.

NOTE: Any submitted laboratory resubmission should be clearly marked as "Additional Data" with a cover letter included describing what data is being delivered, which Case the data pertains, and who requested the data (ISM02.2, p. B-9, sec. 2.2.1). Custody seals are required only for regular mail shipments.

Please respond to the above item **within 5 business days (ISM02.2, p. B-9, sec. 2.2.1)** by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

SDG #: MF9DA0

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS14-25	MF9DB5	Soil/ START	Discrete Interval	TM + Hg(21)	6-472431 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 15:21	
ACS19-58	MF9DB6	Soil/ START	Discrete Interval	TM + Hg(21)	6-472433 (Wet ice) (1)	West - WWP	06/11/2015 09:15	
ACS19-10	MF9DB7	Soil/ START	Grab	TM + Hg(21)	6-472435 (Wet ice) (1)	Creosote Area	06/11/2015 10:45	
ACSD02-06	MF9DB8	Sediment/ START	Grab	TM + Hg(21)	6-472438 (None) (1)	Background	06/11/2015 16:17	
ACS01-58	MF9DB9	Soil/ START	Discrete Interval	TM + Hg(21)	6-472433 (Wet ice) (1)	Background	06/09/2015 13:15	
ACSD08-06	MF9DC1	Sediment/ START	Grab	TM + Hg(21)	6-472447 (Wet ice) (1)	Wastewater Pit	06/11/2015 13:00	
ACS07-10	MF9DC2	Soil/ START	Discrete Interval	TM + Hg(21)	6-472481 (Wet ice) (1)	West - WWP	06/11/2015 09:25	
ACSD12-06	MF9DC3	Sediment/ START	Grab	TM + Hg(21)	6-472485 (Wet ice) (1)	Culvert/Ditch (South)	06/11/2015 14:10	
ACSD15-06	MF9DC4	Sediment/ START	Grab	TM + Hg(21)	6-472488 (Wet ice) (1)	RR-ROW	06/11/2015 15:49	
ACS10-10	MF9DC5	Soil/ START	Discrete Interval	TM + Hg(21)	6-472490 (Wet ice) (1)	Creosote Area	06/11/2015 10:40	
ACS11-58	MF9DC6	Soil/ START	Discrete Interval	TM + Hg(21)	6-472493 (Wet ice) (1)	Creosote Area	06/11/2015 14:45	

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Steve Cover START	6/12/15 1830	FedEx		
			Deepak Pammar	6/13/15 10:00	Onice

Temp 4°C

SDG #: MF9DA0

USEPA CLP COC (LAB COPY)
DateShipped: 6/12/2015
CarrierName: FedEx
AirbillNo: 773818470690

CHAIN OF CUSTODY RECORD

Case #: 45361
Cooler #: 2

No: 6-061215-161936-0006
Lab: Chemtech Consulting Group
Lab Contact: Snehal Mehta
Lab Phone: 908-789-8900

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
ACS25-06	MF9DC7	Soil/ START	Grab	TM + Hg(21)	6-472496 (Wet ice) (1)	Creosote Area	06/11/2015 10:37	
ACS26-06	MF9DC8	Soil/ START	Grab	TM + Hg(21)	6-420367 (Wet ice) (1)	Creosote Area	06/11/2015 11:46	
ACSW-06	MF9DC9	Waste Water/ START	Grab	TM + Hg(21)	6-403821 (HNO3 pH<2) (1)	Wastewater Pit 2	06/11/2015 11:30	
ACSW-04	MF9DD0	Surface Water/ START	Grab	TM + Hg(21)	6-420397 (HNO3 pH<2) (1)	Concrete Structure	06/11/2015 09:10	
ACS01-10	MF9DE0	Soil/ START	Discrete Interval	TM + Hg(21)	6-420392 (Wet ice) (1)	Background	06/09/2015 13:30	

Sample(s) to be used for Lab QC: ACSW-04 Tag 420397	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #

Analysis Key: TM + Hg=CLP Total Metals/Mercury-ICP-AES+MS

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[signature] START	6/12/15 1830	FedEx		
			Deepak Parman	6/13/15 10:00	on ice

Temp. 4°C

5

ADDENDUM

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

HoldingTimes_Preservation

NONE FOUND

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

TUNE

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

InitialCalibration

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

ContinuingCalibrationVerification

NONE FOUND

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

Blanks

Method - Metals by ICP-MS

Test Name: EXES-476
Defect Message: The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Antimony	MF9DD0, MF9DB8, MF9DC2, MF9DC9, MF9DB9, MF9DC3, MF9DC6, MF9DE1, MF9DC8, MF9DC4, MF9DE0, MF9DC5, MF9DC1, MF9DB7, MF9DB6, MF9DC7
Beryllium	MF9DC6, MF9DC5, MF9DB9, MF9DC7, MF9DB8, MF9DD0, MF9DB6, MF9DE0, MF9DC3, MF9DC8, MF9DB7, MF9DC2, MF9DC1, MF9DC4, MF9DE1
Cadmium	MF9DC6, MF9DB6, MF9DB9, MF9DC3, MF9DB7, MF9DC4, MF9DE1, MF9DE0, MF9DC8, MF9DB8
Chromium	MF9DC9
Cobalt	MF9DB6, MF9DB7, MF9DC6, MF9DC2, MF9DC5, MF9DC3
Copper	MF9DC5, MF9DB7, MF9DC9, MF9DC2
Lead	MF9DC9
Nickel	MF9DC9, MF9DC2, MF9DC5, MF9DB7
Selenium	MF9DB9, MF9DC4, MF9DC1, MF9DE0, MF9DE1, MF9DC8, MF9DD0, MF9DB7, MF9DC5, MF9DC3, MF9DB8, MF9DC7, MF9DB6, MF9DC2
Silver	MF9DC5, MF9DC3, MF9DD0, MF9DB7, MF9DC4, MF9DB8, MF9DC7, MF9DC1, MF9DE1, MF9DB6, MF9DC6, MF9DC9, MF9DC2, MF9DC8, MF9DB9
Thallium	MF9DB7, MF9DB8, MF9DC6, MF9DC3, MF9DC5, MF9DB9, MF9DC4, MF9DC2, MF9DE0, MF9DC8, MF9DB6, MF9DE1
Vanadium	MF9DE1
Zinc	MF9DC5, MF9DC6, MF9DC2

Test Name: EXES-478
Defect Message: The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Arsenic	MF9DC1, MF9DE1, MF9DC6, MF9DC2, MF9DB9, MF9DC7, MF9DC4, MF9DC8, MF9DB8, MF9DE0, MF9DC3, MF9DC5, MF9DD0, MF9DC9, MF9DB6, MF9DB7
Barium	MF9DC8, MF9DC6, MF9DE0, MF9DB8, MF9DC7, MF9DB9, MF9DC5, MF9DB7, MF9DC9, MF9DC4, MF9DD0, MF9DC3, MF9DE1, MF9DC1, MF9DB6, MF9DC2
Cadmium	MF9DC7, MF9DD0, MF9DC1
Chromium	MF9DC3, MF9DC7, MF9DC2, MF9DB9, MF9DC4, MF9DC8, MF9DD0, MF9DB7, MF9DC5, MF9DB6, MF9DC1, MF9DB8, MF9DE0, MF9DC6, MF9DE1

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

Test Name: EXES-478
Defect Message: The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Cobalt	MF9DC4, MF9DB8, MF9DD0, MF9DB9, MF9DE1, MF9DC1, MF9DE0, MF9DC7, MF9DC8
Copper	MF9DC4, MF9DB8, MF9DE0, MF9DC8, MF9DC6, MF9DE1, MF9DC7, MF9DC1, MF9DD0, MF9DB6, MF9DC3, MF9DB9
Lead	MF9DC7, MF9DC3, MF9DC8, MF9DB6, MF9DC4, MF9DE1, MF9DC6, MF9DE0, MF9DC1, MF9DB8, MF9DC2, MF9DD0, MF9DC5, MF9DB7, MF9DB9
Nickel	MF9DC6, MF9DE0, MF9DD0, MF9DC8, MF9DC1, MF9DE1, MF9DC7, MF9DB6, MF9DC3, MF9DC4, MF9DB8, MF9DB9
Thallium	MF9DD0, MF9DC7, MF9DC1
Vanadium	MF9DC2, MF9DB6, MF9DE0, MF9DC4, MF9DC6, MF9DC3, MF9DB8, MF9DB9, MF9DC8, MF9DC5, MF9DD0, MF9DB7, MF9DC7, MF9DC1
Zinc	MF9DC3, MF9DC7, MF9DD0, MF9DE0, MF9DB6, MF9DB9, MF9DC1, MF9DB8, MF9DC9, MF9DE1, MF9DC4, MF9DB7, MF9DC8

Test Name: EXES-479
Defect Message: The following samples have analyte results greater than CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Arsenic	MF9DC1, MF9DE1, MF9DC6, MF9DC2, MF9DB9, MF9DC7, MF9DC4, MF9DC8, MF9DB8, MF9DE0, MF9DC3, MF9DC5, MF9DD0, MF9DC9, MF9DB6, MF9DB7
Barium	MF9DC8, MF9DC6, MF9DE0, MF9DC7, MF9DB8, MF9DB9, MF9DC5, MF9DB7, MF9DC4, MF9DC9, MF9DD0, MF9DC3, MF9DE1, MF9DC1, MF9DB6, MF9DC2
Cadmium	MF9DC7, MF9DD0, MF9DC1
Chromium	MF9DC3, MF9DC7, MF9DC2, MF9DB9, MF9DC4, MF9DC8, MF9DD0, MF9DB7, MF9DC5, MF9DB6, MF9DC1, MF9DB8, MF9DE0, MF9DC6, MF9DE1
Cobalt	MF9DC4, MF9DB8, MF9DD0, MF9DB9, MF9DE1, MF9DC8, MF9DE0, MF9DC7, MF9DC1
Copper	MF9DC4, MF9DE0, MF9DB8, MF9DC6, MF9DC8, MF9DE1, MF9DC7, MF9DC1, MF9DD0, MF9DB6, MF9DC3, MF9DB9
Lead	MF9DC7, MF9DC3, MF9DC8, MF9DB6, MF9DC4, MF9DE1, MF9DC6, MF9DE0, MF9DC1, MF9DC2, MF9DB8, MF9DD0, MF9DC5, MF9DB7, MF9DB9
Nickel	MF9DD0, MF9DE0, MF9DC8, MF9DC1, MF9DC7, MF9DB9, MF9DC4, MF9DB8, MF9DE1, MF9DC6, MF9DB6, MF9DC3
Thallium	MF9DC1, MF9DD0, MF9DC7
Vanadium	MF9DB8, MF9DB6, MF9DC6, MF9DC8, MF9DC4, MF9DC3, MF9DC2, MF9DB9, MF9DC5, MF9DB7, MF9DE0, MF9DC1, MF9DD0, MF9DC7
Zinc	MF9DC3, MF9DC7, MF9DD0, MF9DE0, MF9DB6, MF9DB9, MF9DC1, MF9DB8, MF9DC9, MF9DE1, MF9DC4, MF9DC8, MF9DB7

Test Name: EXES-508
Defect Message: The following samples have analyte results greater than CRQLs. The associated PB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Arsenic	MF9DC1, MF9DE1, MF9DC6, MF9DC2, MF9DB9, MF9DC7, MF9DC4, MF9DC8, MF9DB8, MF9DE0, MF9DC3, MF9DC5, MF9DD0, MF9DC9, MF9DB6,

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

Test Name: EXES-508
Defect Message: The following samples have analyte results greater than CRQLs. The associated PB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

	MF9DB7

Method - Mercury by Cold Vapor

Test Name: EXES-478
Defect Message: The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DC1, MF9DC7, MF9DC8, MF9DD0

Mercury	MF9DC7, MF9DC8, MF9DC1, MF9DD0

Test Name: EXES-479
Defect Message: The following samples have analyte results greater than CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.
Associated Samples: MF9DC1, MF9DC7, MF9DC8, MF9DD0

Mercury	MF9DC7, MF9DC8, MF9DC1, MF9DD0

Test Name: EXES-480
Defect Message: The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than or equal to (-CRQLs). Use Professional Judgement to qualify detects and nondetects.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DE0, MF9DE1

Mercury	MF9DE1, MF9DC4, MF9DC6, MF9DC7, MF9DC5, MF9DC9, MF9DD0, MF9DB9, MF9DC3, MF9DB7, MF9DC1, MF9DB8, MF9DB6, MF9DE0, MF9DC8, MF9DC2

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

InterferenceCheckSample

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

LaboratoryControlSample

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

MatrixSpikes

NONE FOUND

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

SerialDilution

Method - Metals by ICP-MS

Test Name: EXES-1334
Defect Message: The following samples are associated to the Serial Dilution sample with analyte %D >10% and the original sample result is > 50xMDL. Detects are qualified as estimated J. Non-detects are qualified estimated UJ.
Associated Samples: MF9DB6, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DE0

Cadmium	MF9DC1L
Cobalt	MF9DB6L

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

InternalStandard

NONE FOUND

Data Validation Report

Data Review Results

Wed, 8 Jul 2015 16:27:51

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

DetectionLimit

Method - Metals by ICP-AES

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: MF9DB6, MF9DB6L, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC1L, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DD0L, MF9DE0, MF9DE1

Aluminum	MF9DC9
Calcium	MF9DB6, MF9DC5, MF9DC1D, MF9DB7, MF9DE0, MF9DC1, MF9DB6D, MF9DC2, MF9DC1L, MF9DB6L, MF9DB9, MF9DC6
Magnesium	MF9DC4, MF9DE1, MF9DC1L, MF9DC6, MF9DD0D, MF9DC1D, MF9DB7, MF9DC9, MF9DB6, MF9DB6L, MF9DD0, MF9DC1, MF9DC5, MF9DB6D, MF9DC2, MF9DC3, MF9DD0L, MF9DB9
Sodium	MF9DC5, MF9DD0, MF9DC6, MF9DE1, MF9DB7, MF9DD0L, MF9DB6D, MF9DD0D, MF9DC7, MF9DC8, MF9DC4, MF9DC9, MF9DE0, MF9DC2, MF9DB6, MF9DC1D, MF9DC3, MF9DC1, MF9DB8, MF9DB9
Potassium	MF9DB8, MF9DC5, MF9DE1, MF9DD0, MF9DC8, MF9DD0L, MF9DD0D, MF9DC4, MF9DC7, MF9DE0

Method - Metals by ICP-MS

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: MF9DB6, MF9DB6L, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC1L, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DD0L, MF9DE0, MF9DE1, PBS008, PBW007

Antimony	MF9DE0, PBS008, MF9DB6D, MF9DC4, MF9DC5, MF9DC1, MF9DB7, MF9DC1L, MF9DE1, MF9DC3, MF9DD0, PBW007, MF9DC7, MF9DD0L, MF9DC2, MF9DB6L, MF9DC1D, MF9DB9, MF9DC6, MF9DB6, MF9DB8, MF9DD0D, MF9DC8, MF9DC9
Arsenic	PBS008, PBW007
Beryllium	MF9DB7, MF9DC2, MF9DE0, MF9DB6, MF9DD0, MF9DC1D, MF9DB8, MF9DC7, MF9DB9, MF9DC5, MF9DC6, MF9DE1, MF9DC1L, MF9DC4, MF9DB6D, MF9DC1, MF9DD0D, MF9DB6L, MF9DC3
Cadmium	MF9DC3, MF9DB9, MF9DB6, MF9DB8, MF9DC8, MF9DB6D, MF9DE1, MF9DC6, MF9DC4, MF9DC1L, MF9DB7, MF9DE0
Chromium	MF9DC9

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: MF9DB6, MF9DB6L, MF9DB7, MF9DB8, MF9DB9, MF9DC1, MF9DC1L, MF9DC2, MF9DC3, MF9DC4, MF9DC5, MF9DC6, MF9DC7, MF9DC8, MF9DC9, MF9DD0, MF9DD0L, MF9DE0, MF9DE1, PBS008, PBW007

Cobalt	MF9DB6, MF9DC5, MF9DB6D, MF9DC6, MF9DB6L, MF9DC3, MF9DB7, MF9DC2
Copper	MF9DC9, MF9DC2, MF9DB7, MF9DC5
Lead	MF9DC9
Nickel	MF9DC2, MF9DB7, MF9DC5
Selenium	MF9DB9, MF9DC8, MF9DB7, MF9DB8, MF9DC7, MF9DB6L, MF9DD0L, PBW007, PBS008, MF9DC1L, MF9DC4, MF9DB6D, MF9DC1, MF9DD0, MF9DC3, MF9DC2, MF9DE1, MF9DC1D, MF9DE0, MF9DD0D, MF9DB6, MF9DC5
Silver	MF9DC4, MF9DC7, MF9DB6L, MF9DC1, MF9DE1, MF9DB6, MF9DC6, MF9DD0L, MF9DB6D, MF9DC1D, MF9DC2, MF9DC9, MF9DC8, MF9DB9, MF9DC5, MF9DD0D, PBS008, MF9DC3, MF9DB8, MF9DB7, MF9DD0, MF9DC1L
Thallium	MF9DC6, MF9DB8, MF9DC4, MF9DE1, MF9DC3, MF9DC5, MF9DB9, MF9DC2, MF9DB7, MF9DC8, MF9DB6D, MF9DB6, MF9DB6L, MF9DE0
Vanadium	MF9DE1
Zinc	MF9DC5, MF9DC6, MF9DC2

Method - Mercury by Cold Vapor

Test Name: EXES-790
Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: MF9DB8, MF9DC3, MF9DC4

Mercury	MF9DC3, MF9DC4, MF9DB8

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

Duplicates

NONE FOUND

Data Validation Report

Data Review Results

Lab Code: CHEM	SDG: MF9DB6	Contract: EPW14030	Submission Group Id: 30059343
Lab Name: Chemtech Consulting Group	Case: 45361	Client: EPA Region 6	SOW: ISM02.2

SampleAnalysis

NONE FOUND

APPENDIX I

QUALITY ASSURANCE SAMPLING PLAN (QASP)

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QUALITY ASSURANCE SAMPLING PLAN
FOR
AMERICAN CREOSOTE DeRIDDER
DERIDDER, BEAUREGARD PARISH, LOUISIANA

Prepared For

U.S. Environmental Protection Agency Region 6
1445 Ross Ave.
Dallas, Texas 75202

Date Prepared
June 23, 2015

Prepared by

CSS-Dynamac
1323 Columbia Drive, Ste. 307
Richardson, Texas 75081

QUALITY ASSURANCE SAMPLING PLAN
FOR
AMERICAN CREOSOTE DeRIDDER
DeRIDDER, BEAUREGARD PARISH, LOUISIANA

Date Prepared
June 23, 2015

Reference Numbers

Contract No:	EP-W-06-077
TDD Number:	9/Dynamac-077-15-003
CERCLIS No:	LAN000604293
EPA SAM:	Brenda Nixon Cook
START PM:	Karen Berecz

Signatures:

Karen Berecz
CSS-Dynamac START Project Manager

Brenda Nixon Cook
U.S. EPA Site Assessment Manager

Debra Pandak
CSS-Dynamac START Program Manager

QUALITY ASSURANCE SAMPLING PLAN FOR AMERICAN CREOSOTE DeRIDDER DeRIDDER, BEAUREGARD PARISH, LOUISIANA TABLE OF CONTENTS

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Figure 3 Site Land Parcel Map

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Table 1 Sample Collection Summary

Table 2 Sampling and Analysis Summary

Table 3 Proposed Sample Locations

Table 4 Data Quality Objectives

APPENDICES

Appendix A EPA ERT SOP # 2013 – Surface Water Sampling

Appendix B EPA ERT SOP # 2016 – Sediment Sampling

Appendix C EPA ERT SOP # 2012 – Soil Sampling

Appendix D EPA ERT SOP # 2003 – Sample Storage, Preservation and Handling

Appendix E EPA ERT SOP # 2004 – Sample Packaging Shipment

Appendix F EPA ERT SOP # 2049 – Investigation-Derived Waste Management

Appendix G EPA ERT SOP # 2006 – Sampling Equipment Decontamination

Appendix H EPA ERT SOP # 2002 – Sample Documentation

Appendix I EPA ERT SOP # 2007 – Groundwater Well Sampling

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1.0 INTRODUCTION

CSS-Dynamac Superfund Technical Assessment and Response Team (START) is tasked by the U.S. Environmental Protection Agency (EPA), Region 6, under Technical Direction Document (TDD) No. 9/DYNAMAC-077-15-003, to conduct a Site Inspection (SI) at American Creosote DeRidder (CERCLIS No. LAN000604293), located in DeRidder, Beauregard Parish, Louisiana (LA). See Figure 1 for the site location.

This Quality Assurance Sampling Plan (QASP) is prepared in partial fulfillment of the TDD. This QASP is designed to guide field operations during collection of surface water, groundwater, sediment and soil samples, and describe Quality Assurance (QA) measures that will be implemented during the course of the SI field activities.

2.0 OBJECTIVES

The objectives of the SI, per the EPA Site Assessment Manager (SAM) are to:

1) coordinate a site inspection with the Louisiana Department of Environmental Quality (LDEQ) and the various property owners;

2) collect on-site surface water, groundwater, sediment and soil samples for chemical analysis to document contamination at the site; and

3) collect off-site surface water and sediment samples for chemical analysis to document if a release to surface water has or is occurring.

To accomplish the above-mentioned objectives, START will collect eight (8) soil samples from on-site (to include a background location); collect groundwater samples from three (3) existing on-site monitoring wells; collect two (2) water and two (2) sediment samples from surface impoundments on site; collect surface water and sediment samples, if obtainable, from (to include a background location) along the surface water drainage pathway adjacent to the railroad right-of-way; and collect one (1) surface and sediment sample from the culvert/ditch. START

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will also collect surface water and sediment samples from three (3) off-site locations, one (1) from Palmetto Creek (background location), one (1) from the drainage/overland flow pathway to Palmetto Creek, and one (1) at the point where site runoff discharges into Palmetto Creek.

3.0 BACKGROUND

3.1 Site Location

The American Creosote DeRidder site is a 55-acre tract of land owned by Central Manufacturing Company (CMC) located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Louisiana and Post Plant Road (Figure 1). The coordinates of the site are 30.831693 north latitude and -93.276863 west longitude as measured from the site entrance. The site is characterized by a gently rolling topography, mild winters and hot/humid summers, silty clayey sands and sandy silty clay soils. The average elevation of the site is 150 feet above mean sea level. The site area primarily consists of pine, however a variety of oak and cypress are present in the low bottom areas within which drainage tributaries meander. The site is bounded on the north by a rural roadway, to the east is heavy brush, to the south is undeveloped land, and to the west is the Burlington Northern Santa Fe (BNSF) Railroad spur, currently used by Mead Westvaco Corporation. The site's broader surroundings include commercial, industrial and residential uses (Figure 2). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin.

3.2 Site Description/Ownership

Central Manufacturing Company (CMC) has been the primary owner of the 55-acre tract of land from September 1992 to present when it was sold by First National Bank in DeRidder, Louisiana. Prior to 1992, First National Bank of DeRidder, by means of "dation en paiement" conveyed the land in 1984 from Creighton and Frances Pugh to relieve them of mortgage and lien debt against the property. The Creighton's had formerly purchased the parcel of land in 1972 from Charles Holbrook for commercial purposes.

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Charles Holbrook was the original owner of the parcel of land that is currently in CMC ownership. Prior to 1963 the current tract of land was fundamentally three separate parcels (Parcel B, E1 and E2) of property acquired by Mr. Holbrook and incorporated into one single tract of land (Figure 3). In April of 1963, International Paper Company (IPC) sold Charles Holbrook, Parcel B, one of the three tracts of land which he incorporated into the two other tracts of land, Parcel E1 and E2, which he had purchased years earlier from American Creosoting Corporation in 1959.

In 1956, Union Camp Corporation acquired American Creosoting Company. Subsequent to the acquisition Union Camp renamed the operations to AmCre Corporation. In 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation.

The two tracts of land, Parcel E1 and E2, bought by Mr. Holbrook, that were later incorporated with the third tract of land purchased from (IPC), were purchased by American Creosoting Company in 1955 from Shreveport Creosoting Company, a Delaware Corporation. From 1928 to its sale in 1955 both tracts of land were owned by Shreveport Creosoting Company, a Delaware Corporation which had previously purchased the properties from Shreveport Creosoting Company, an Indiana Corporation.

Preceding both tracts of land being sold in 1928 by Shreveport Creosoting Company, an Indiana Corporation to Shreveport Creosoting Company, a Delaware Corporation both tracts of land were acquired separately by Shreveport Creosoting Company in 1918. One tract of land was sold by The Long Bell Lumber Company and the other tract of land was purchased from the Hudson River Lumber Company on the same date in 1918 by Shreveport Creosoting Company, an Indiana Corporation.

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Historical ownership prior to 1956 for the tract of land, Parcel B, previous owned by IPC and sold to Mr. Charles Holbrook is currently unknown. Historical ownership previous to 1918 for the two tracts of land, Parcel E1 and E2, separately owned by The Long Bell Lumber Company and Hudson River Lumber Company is also currently unknown

3.3 Site Operations

The American Creosote DeRidder site has been impacted by creosote related compounds from historical timber treatment operations at the site. The Shreveport Creosoting Company doing business as an Indiana and later a Delaware Corporation operated a creosote timber treatment facility from the early 1920's to approximately 1945 on a parcel of land at the site. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957. From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992, who planned heavy industrial/commercial use.

The Shreveport Company's facilities and operations for the timber treatment process were located approximately a half mile south of the intersection of Post Pole Road and the railroad corridor on the western portion of the property (Figure 4). Creosote oil and coal tar solutions were used in the wood preserving pressure treatment process. The specific operations at the site consisted of dipping timber into creosote vats and the collection of spent creosote in an open pit and also the discharging of untreated process wastewater into an open pit. There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits.

In 1991 the American Creosote site was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD). LDEQ IASD contacted Westvaco, a company nearby that was considering buying the property at

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the time, and had collected water and soil samples for analysis in February 1992. During 1992 LDEQ IASD visited the site several times to assess the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples.

In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) at the site through a cooperative agreement with the responsible party identified at the time, CMC. In October 1993 LDEQ IASD realized the site compromised two distinct ownerships, due to creosote contamination migrating off-site to the adjacent property to the west. LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway Company (ATSF), who owned the railway right-of way corridor, and CMC who now owned the former wood treating facility. In late 1993 a cooperative agreement between LDEQ IASD, CMC and ATSF was entered into for a RI/FS.

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Dr. Portier of Louisiana State University (LSU) who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at site. The work plan proposed transporting of contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated to clean-up levels of less than 100 mg/kg TPH. An approximate total of 1,250 cubic yards of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway right-of-way (ROW) were proposed to be processed in the SPRU.

In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote material from the site for TPH analyses at the ATSF contracted laboratory Radian Corporation. The four samples collected of tarry material were collected from the pit moving southwest toward the Santa Fe railway ROW. Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg.

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By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with LDEQ to begin its own soil remediation strategy. In mid-1996 Kei Consultants hired by BNSF submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder. The estimated area of creosote impact to the BNSF railroad corridor extended 250 feet along the railway ROW and 25 feet wide. The noted contaminate of concern was TPH.

In August 2002 Acadian Engineers on behalf of CMC performed a Limited Site Investigation at the American Creosote site to delineate the horizontal and vertical extent of creosote contamination to determine potential remediation strategies. Acadian personnel collected soil samples and groundwater samples from temporary groundwater monitoring wells to assess the impact to shallow groundwater.

Late 2003 Acadian Engineers & Environmental Consultants submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media. The proposed methodology to address the impacted soil media was over excavation of impacted areas and on-site treatment of the impacted soil. No implementation of groundwater remediation was required, yet continued groundwater monitoring was recommended.

In 2005 CMC had Acadian Engineers & Environmental Consultants submit a Risk Evaluation Corrective Action Plan (RECAP) to LDEQ IASD. The RECAP was performed within the concept of the Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern at the site. CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval. To date no remediation has taken place at the site or nearby railroad.

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The site is currently void of any operations and consists of heavy timber and thick shrub overgrowth. Abandoned wood treatment facilities of the previous operations currently remain at the site and consist of a concrete foundation of a former vat, an unlined wastewater pit and random areas of creosote solids and soil contamination. One surface water runoff pathways exist at the facility, south along the western property boundary lateral to the railroad tracks right-of-way.

3.4 Waste Characterization

Historical site investigations at American Creosote DeRidder found contamination along the concrete foundation of the former retort house basin, abandoned waste pits, groundwater and soil. Contamination resulted from facility operations and waste handling practices at the site. Contaminates of concern (COC) identified at the site are polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH).

Westvaco, a company nearby that was considering buying the property at the time and had collected water and soil samples in February 1992, indicated to Louisiana DEQ IASD that the laboratory results showed low levels (< 5 ppm) of phenol contamination in the soils, and the water samples analyzed were below detection limits for phenol. The soil samples collected by Westvaco indicated low levels, 4.0 to 5.7 ppm, of phenols detected.

During the site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, 0.5 to 1.08 percent, for eight of the TCL listed Creosote constituents were detected. Analytical results from the October 1992 samples collected were found to have high concentrations of PAH per the West Paine Laboratory results. In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination were discovered in the unlined pit lying between the old Santa Fe railway track and the creosoting structure

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foundation. Low level Total Phenols concentrations were also discovered in soils and surface water sampled surrounding the old foundation.

In April 1994 in cooperation with ATSF, CMC personnel collected four samples of tarry material from the pit moving southwest toward the Santa Fe railroad ROW for TPH analyses at the ATSF contracted laboratory Radian Corporation. It was noted that the tarry material was only 1 – 2 inches thick and that the concentration decreased when moving from the pit to the southwest location of the ROW at the Santa Fe railway corridor. Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg.

4.0 FIELD OPERATIONS

4.1 Concept of Operations

4.1.1 Schedule

Field work will tentatively occur during the week of June 8, 2015 and is anticipated to require approximately six (6) days to complete, including mobilization and demobilization.

4.1.2 Health and Safety

START will develop a site-specific Health and Safety Plan (HASP) for the sampling at the former American Creosote DeRidder site. Field activities will be conducted in accordance with EPA Standard Operating Procedures (SOPs), the Generic QAPP, and the site specific Health and Safety Plan (HASP).

4.1.3 Site Access and Logistics

Site access to the site and surrounding properties will be obtained through the EPA SAM and START. SI activities will be coordinated with the EPA SAM, LDEQ and property owners.

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4.2 Sampling Design

START has designed this QASP to collect surface water, groundwater, soil and sediment to characterize potential sources at the site and to characterize the surface water migration of contamination from the site to the 15-mile downstream target distance limit located in Palmetto Creek, the nearest perennial surface water. Surface water, groundwater, sediment and soil samples will be collected to characterize on-site and off-site contamination. Table 1 presents the anticipated number of samples, location descriptions, and proposed laboratory analyses. Dedicated sampling equipment will be used wherever possible in an effort to eliminate any potential cross contamination concerns. All sampling activities will be documented in a logbook and photographically using EPA ERT SOP #2002 as guidance.

4.2.1 On-site Surface Water, Groundwater, Soil and Sediment Sampling

Soil samples will be collected from five areas on-site likely to have been contaminated during processing and treating of the timber, and from a background location (Figure 5; Table 3). These areas include: the approximate location of the former railway spur; areas of former residual weathered creosote; area surrounding the concrete structure; area surrounding the wastewater pit; and the area down gradient of the culvert/ditch. Groundwater samples will be collected from existing, on-site monitoring wells located by LDEQ, and sampled using low flow technique. Sixteen soil samples, two soil samples from eight locations, will be collected from these areas using a direct push device at depths to be determined in the field. The EPA SAM will assist in setting sampling criteria, which may include: visual signs of contamination, and/or elevated readings on a multi-RAE meter etc. Soil samples will be collected using trowels and spoons and placed into the sample containers. Target compounds and analytes, with the reporting limits, are from the current Contract Laboratory Program (CLP) low concentration statement of work.

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Six sediment and surface water samples, if available, will be collected from four locations on-site, including the common drainage area along the railroad right-of-way, from the concrete structure, from the wastewater pit and from the culvert/ditch. A background sediment and water sample will also be collected from an up gradient location from the common drainage area along the railroad right-of-way (Figure 5, Table 3). Water samples will be collected directly into the sample containers. Sediment samples will be collected at a depth of approximately 0-6 inches below ground surface (bgs). Sediment samples will be collected using trowels and spoons and placed into the sample containers. Target analytes and reporting limits are from the current CLP low concentration statement of work.

Groundwater samples will be collected from three existing, on-site monitor wells owned by BNSF and located by LDEQ. The groundwater samples will be collected using low flow technique directly into the sample containers.

The samples collected will be sequentially labeled with the site identifier and a sequential sample number, e.g., ACS01 = American Creosote soil sample 01, ACSW01 = American Creosote surface water sample 01, ACSD01 = American Creosote sediment sample 01, ACGW01 = American Creosote groundwater sample 01.

The water, sediment and soil sampling will be conducted in accordance with SOPs; specifically, the EPA ERT SOP #2013 Surface Water Sampling (Appendix A), SOP # 2007 Groundwater Well Sampling (Appendix I), SOP #2016 Sediment Sampling (Appendix B) and SOP #2012 Soil Sampling (Appendix C). Water quality parameters of pH, temperature, conductivity, dissolved oxygen and turbidity will be collected for each on-site surface water and groundwater sample and recorded into the site-specific logbook.

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The samples will be shipped to the Houston EPA or designated CLP laboratory for Target Compound List (TCL) semi-volatile organic compounds and Target Analyte List (TAL) total metals/mercury chemical analyses.

4.2.2 Off-site Surface Water and Sediment Sampling

START will collect off-site surface water and sediment samples from the surface water overland flow migration route to the nearest perennial surface water, Palmetto Creek. Specific off-site surface water and sediment sample locations will be determined in the field. Location ACSW/SD16 will be up gradient in Palmetto Creek and will provide background concentrations. Location ACSW/SD17 will be collected from the drainage/overland flow pathway to Palmetto Creek, and Location ACSW/SD18 will be collected where site runoff (overland flow discharges into the probable point of entry (PPE) into Palmetto Creek (Table 3).

All samples will be grab samples. Sediment samples will be collected at a depth of approximately 0-6 inches below ground surface (bgs). Sediment samples will be collected using trowels and spoons and transferred into sample containers. Water samples will be placed directly into the sample containers. TCL and TAL analytes and reporting limits are found in the current Contract Laboratory Program (CLP) low concentration statement of work. The samples collected will be sequentially labeled with the site, type of sample and number, e.g., ACSW01 = American Creosote surface water sample 01, ACSD01 = American Creosote sediment sample 01.

The surface water and sediment sampling will be conducted in accordance with standard operating procedures (SOP); specifically, the EPA Environmental Response Team (ERT) SOP #2013 Surface Water Sampling (Appendix A) and SOP #2016 Sediment Sampling (Appendix B). Water quality parameters of pH, temperature, conductivity, dissolved oxygen and turbidity will be collected for each off-site surface water sample and recorded into the site-specific logbook.

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The surface water and sediment samples will be shipped to the Houston EPA or designated CLP laboratory for TCL semi-volatile organic compounds and TAL total metals/mercury chemical analyses.

4.3 Analytical Parameters

Water, groundwater, soil and sediment samples will undergo chemical analysis by the Houston EPA laboratory or a CLP laboratory for TCL SVOCs and TAL total metals/mercury using EPA or CLP SOW methods. The requested turn-around time for analytical results and corresponding Staged Electronic Data Deliverable (SEDD) will 30 – 35 calendar days. The analytical methods are specified in Table 2.

4.4 Sample Preservation

Sample preservation will be conducted utilizing procedures in the *Contract Laboratory Program Guidance for Field Samplers, August 2004* or EPA ERT SOP # 2003 Sample Storage, Preservation and Handling (Appendix D). Water samples for TAL total metals/mercury will be preserved with nitric acid (HNO_3) to a pH of less than 2. START will utilize pre-preserved sample containers. All of the collected samples will be stored at less than 4º C.

4.5 Sample Packaging and Shipping

START will package and ship all samples collected utilizing procedures in the *Contract Laboratory Program Guidance for Field Samplers, August 2004* or EPA ERT SOP # 2004 Sample Packaging and Shipment (Appendix E). After the samples have been collected, the sampling data (station number, time collected, sampler, GPS coordinates, etc.,) and field measurements will be entered into the U.S. EPA's ERT SCRIBE software. SCRIBE will be used to generate sample labels and Chain-of-Custody (COC)/Traffic Reports (TR) forms for the collected samples to be shipped to the designated EPA, CLP, or procured laboratory for chemical analysis. The SCRIBE database will be uploaded into the EPA's SCRIBE

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Enterprise software which will serve as the sampling database for all the samples collected during the SI field activities.

All designated samples for chemical analysis will be packaged in appropriate sample containers. At a minimum, each sample container will contain a completed custody seal, bubble-wrapped, and placed in an individual plastic baggie. The packaged samples will then be placed into shipping coolers for shipment to the designated laboratory. Ice will be placed in the shipping cooler to preserve the collected samples to 4º C during transport to the laboratory. Completed custody seals will be placed on the outside of the shipping cooler in order to maintain the chain of custody of the collected samples.

4.6 Control of Contaminated Materials

Any investigation derived waste (IDW) generated through sampling operations will be contained in accordance with EPA ERT SOP #2049 IDW Management (Appendix F). It is anticipated that IDW will consist of PPE and used sampling equipment. Dedicated sampling equipment will be used in order to eliminate the generation of decontamination solutions and the collection of rinsate samples. All IDW will be disposed of at the direction of the EPA SAM. The IDW will be disposed of at a permitted facility.

Should non-dedicated sampling equipment be utilized, it will be decontaminated prior to use and between each use using EPA ERT SOP #2006 Sampling Equipment Decontamination (Appendix G). Basic decontamination will consist of brushing gross particulate off sampling equipment with tap water and/or a scrub brush, followed by washing equipment with a soap solution of Liquinox® or Alconox® and tap water, and a final rinse using distilled or de-ionized water. After decontamination, the equipment will be allowed to gravity drain and air dry. The equipment will be wrapped in aluminum foil to minimize potential contamination if not immediately used.

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5.0 QUALITY CONTROL

5.1 Laboratory Quality Control

Specific QC criteria have been developed to ensure that the Data Quality Objectives (DQOs) summarized in Table 4 in this QASP are met. The analytical methods for sample analysis has been selected on the basis of the required detection limits, known contaminants existing in the study area, and the range of analytes to be determined. Table 2 includes method numbers and reference guidance, sample containers, sample volume requirements, and sample preservatives.

5.2 Field Quality Control

The pH/conductivity/temperature dissolved oxygen and turbidity meters will be calibrated using manufacture's procedures by START prior to use in the field each day.

5.3 Quality Assurance Samples

For Quality Assurance (QA) purposes, matrix spike/matrix spike duplicate (MS/MSD) samples will be collected on a frequency of 5%, per sample matrix. MS/MSD samples measure the performance of the method used, relative to the sample matrix, and the precision of analysis in terms of relative percent difference (RPD). It is anticipated that one MS/MSD sample will be designated for the soil samples, one MS/MSD for the sediment samples, and one MS/MSD sample for the water samples.

Field duplicate samples, which are homogenized aliquots of a single sample used to assess the quality of sampling methods, sample handling, and laboratory procedures, will be collected on a frequency of 1 per 10 for the all matrices (10%). It is anticipated that at a minimum, three (3) duplicate samples (one [1] soil, one [1] water, and one [1] sediment) will be collected during the SI field activities.

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5.4 Chain of Custody

After sample collection and identification, all samples to be shipped to the EPA Houston Regional Laboratory or a CLP Laboratory, and will be handled in strict accordance with chain-of-custody protocol, per EPA ERT SOP #2002, Sample Documentation (Appendix H). All sampling data will be entered into the U.S. EPA's ERT SCRIBE software, which will provide a database of all sample collection data and prepare the necessary chain-of-custody (COC) forms and sample labels. A chain-of-custody record will be maintained from the time the sample is taken to its final deposition. Every transfer of samples and custody will be noted and signed for, and a copy of this record kept by each individual/organization who has signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container sealed with a custody seal.

The Chain of Custody record should include (at minimum) the following:

- Sample identification number
- Sample information
- Sample location
- Sample date
- Name(s) and signature(s) of sampler(s)
- Signature(s) of any individual(s) with control over samples

6.0 RECONCILIATION WITH DATA QUALITY OBJECTIVES

The sample data will be assessed for accuracy, precision, completeness, representativeness, and comparability. Data assessment criteria are presented in the CSS-Dynamac START Generic QAPP, Section 4.0 "Assessment and Oversight" and Section 5.0, "Data Validation and Usability." Generally, data that do not meet the established acceptance criteria are cause for re-sampling and re-analysis. However, in some cases, data that do not meet acceptance criteria are usable with specified limitations. Data that are indicated as usable with limitations will be included in the final report, but will be clearly indicated as having limited usability. Indicators of data limitations include data qualifiers, quantitative evaluations, and narrative statements

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regarding potential bias. The EPA ESAT contractor will conduct the data validation activities on the received CLP laboratory analytical data packages. START will review the validation report from ESAT and enter the data into SCRIBE Enterprise.

7.0 DELIVERABLES AND PROJECT ORGANIZATION

Upon completion of the inspection, a report will be prepared documenting all pertinent field and sampling activities, detailed site sketch/map, potential environmental receptors, and the results of sample laboratory analyses.

The EPA SAM, Brenda Cook, will provide overall direction for this project and will identify sampling needs, determine the sampling schedule, and coordinate community relations.

The START Task Leader (TL), Karen Berecz is the primary contact with the EPA. The START TL is responsible for project team organization, supervision of all project tasks, monitoring, and documenting the quality of all work produced by the project team, determining deviations from the QASP, and assisting with the overall sampling effort.

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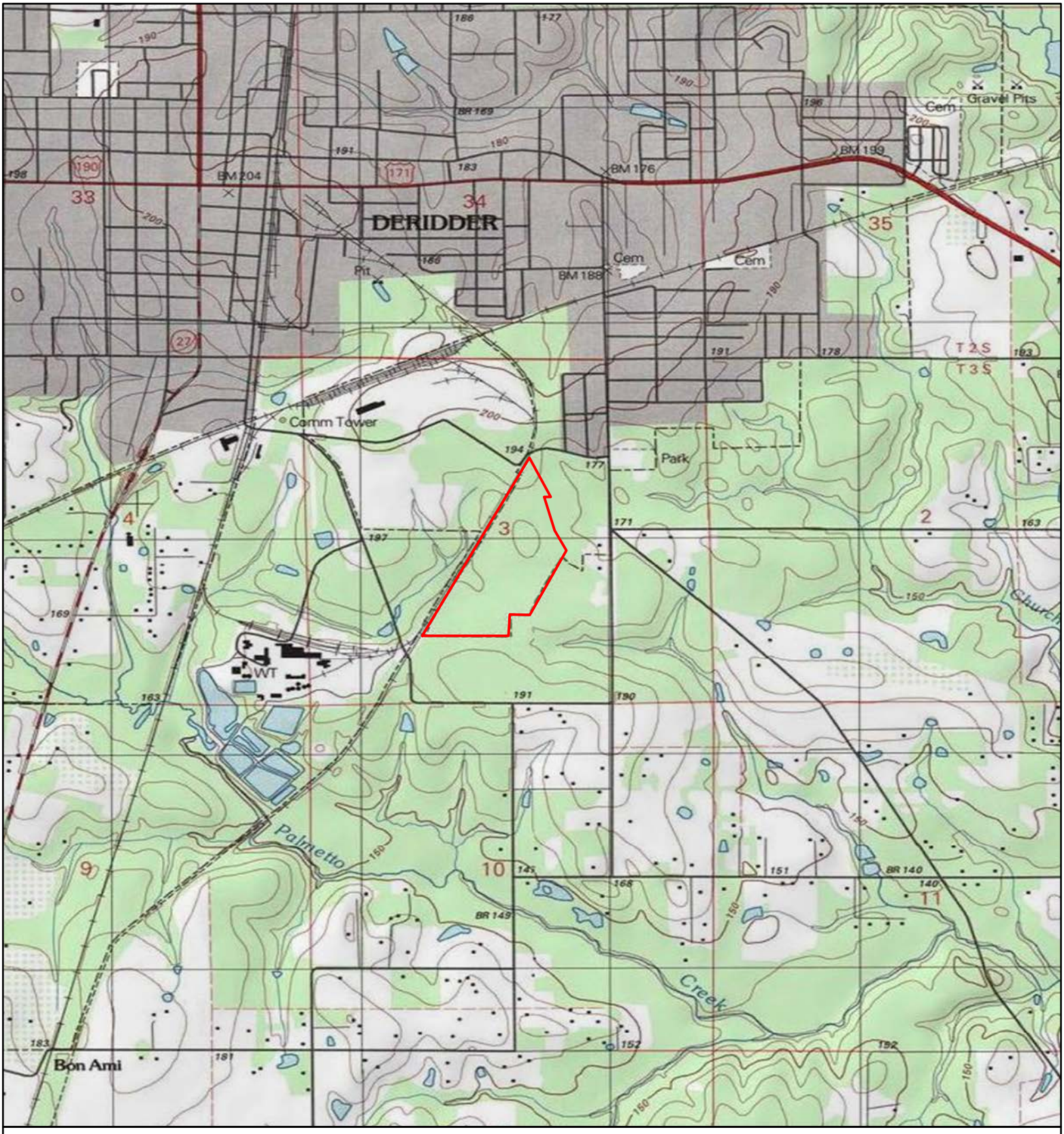
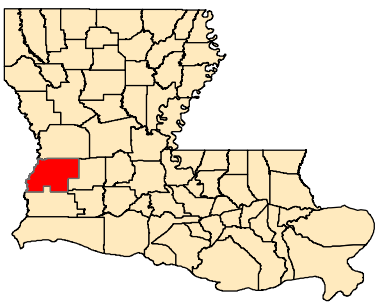
FIGURES



Map of Lousiana



Legend

Site Boundary

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S

1:24,000

0 1,000 2,000 4,000 Feet

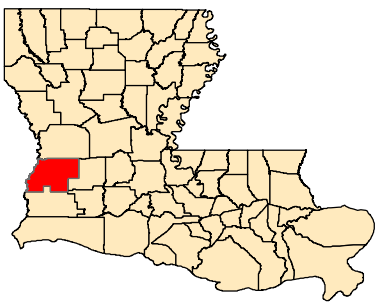
US EPA Region 6
START-3

Figure 1. Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

07 403

Map of Lousiana



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Site Boundary

N
W E
S

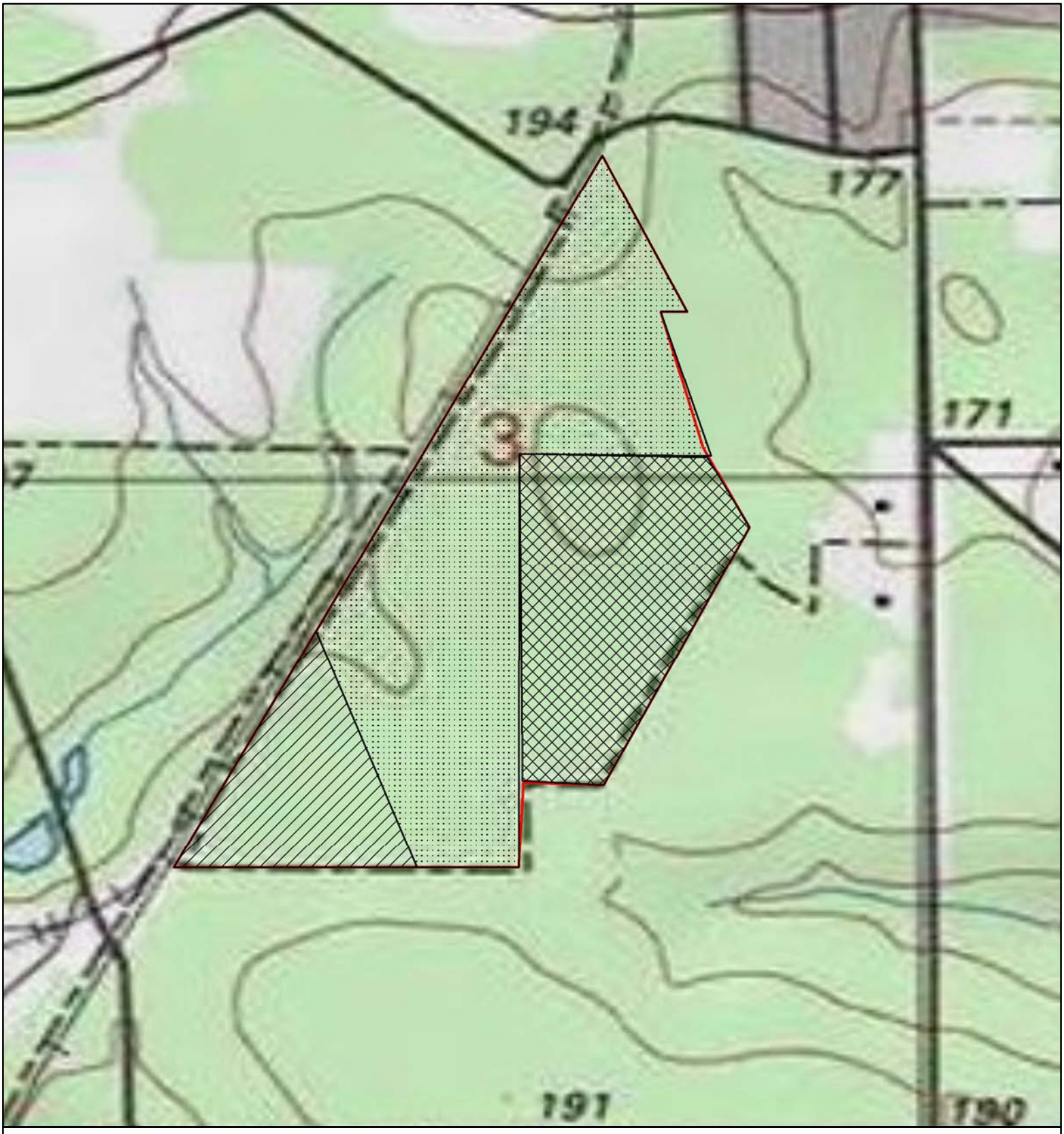
1:24,000

0 1,000 2,000 4,000 Feet

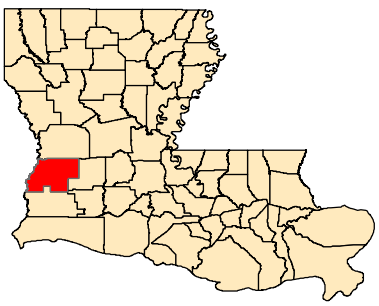
US EPA Region 6
START-3

Figure 2. Aerial Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory



Map of Lousiana



Legend

- Site Boundary
- Parcel B
- Parcel E1
- Parcel E2

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1:6,000

0 250 500 1,000 Feet

US EPA Region 6
START-3

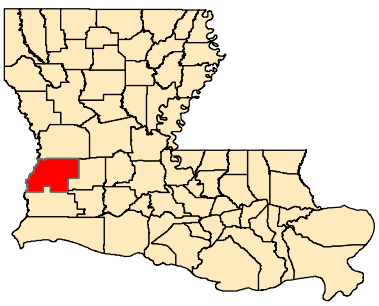
Figure 3. Site Land Parcel Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003

07 405

Source: Copyright:© 2013 National Geographic Society, i-cubed

Map of Lousiana



Legend

Site Boundary

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0 250 500 1,000 Feet

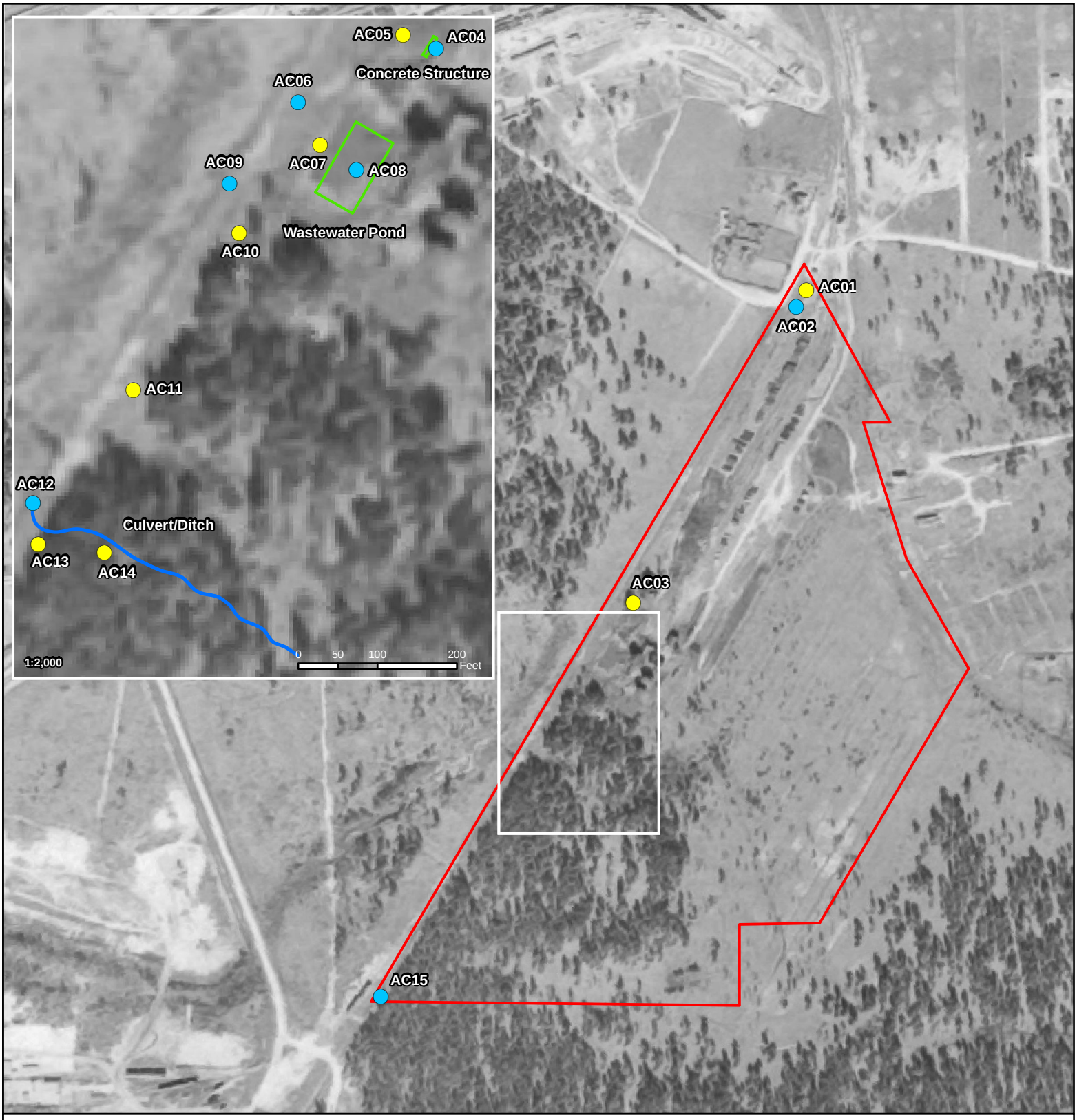
US EPA Region 6
START-3

Figure 4. Historical Aerial Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-15-003

Source: USGS Aerial Photograph, 1954

07 406



Map of Lousiana

Legend

- Site Boundary
- Impoundments
- Culvert/Ditch
- Proposed Boring Location
- Proposed Surface Water/Sediment Sample Location

N
W E
S

1:6,000

0 300 600 1,200
Feet

US EPA Region 6
START-3

Figure 5. Proposed Sample Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. TBD
TDD No. 9/DYNAMAC-077-15-003

Source: USGS Aerial Photograph, 1954

TABLES

TABLE 1
Sample Collection Summary

Sample Matrix	Sample Location	Analyses	Composites or Grab Samples	Trip Blank Samples	MS/MSD	Field Duplicates	Rinsates
Off-site Surface water	3 locations (Figure 3)	TAL metals + mercury, SVOA	Grab	1 per shipment to laboratory	1 per 20 samples	1 per 10 samples	NA
Off-site Sediment	3 locations (Figure 3)	TAL metals + mercury, SVOA	Grab	1 per shipment to laboratory	1 per 20 samples	1 per 10 samples	NA
On-site Surface Water	7 locations (Figure 3)	TAL metals + mercury, SVOA	Grab	1 per shipment to laboratory	1 per 20 samples	1 per 10 samples	NA
On-site Sediment	7 locations (Figure 3)	TAL metals + mercury, SVOA	Grab	1 per shipment to laboratory	1 per 20 samples	1 per 10 samples	NA
On-site Groundwater	3 Locations (Figure 5)	TAL metals + mercury, TCL SVOCs	Grab	1 per day to laboratory	Included with Surface Water	Included with Surface Water	NA
Soil	8 locations (Figure 3)	TAL metals + mercury, SVOA	Grab	1 per shipment to laboratory	1 per 20 samples	1 per 10 samples	NA

KEY
MS/MSD – Matrix Spike/Matrix Spike Duplicate
NA – Not applicable
TAL – Target Analyte List

TABLE 2
SAMPLING and ANALYSIS SUMMARY

Matrix	Analytical Parameter	Analytical Method	Containers (Number, Size, and Type)	Preservation Requirements	No. of Samples	No. Field Duplicates	No. MS/MSD Pairs	No. of Equipment Rinsate Samples	No. of Trip Blanks	Total Number of Samples to Lab*
Surface Water	TAL Total Metals + mercury	EPA Regional Laboratory or current CLP SOW	1, one liter poly bottle	Metals – HNO3 to pH < 2; Cool all to 4°C	10	1	1	0	0	11
Surface Water	TCL SVOA	EPA Regional Laboratory or current CLP SOW	2, one liter amber glass bottle	Cool to 4°C	10	1	1	0	0	11
Groundwater	TAL Total Metals + mercury	EPA Regional Laboratory or current CLP SOW	1, one liter poly bottle	Metals – HNO3 to pH < 2; Cool all to 4°C	3	1	0	0	0	4
Groundwater	TCL SVOCs	EPA Regional Laboratory or current CLP SOW	2, one liter amber glass bottle	Cool to 4°C	3	1	0	0	0	4
Sediments	TAL Total Metals + mercury	EPA Regional Laboratory or current CLP SOW	1, 8 oz. jar	Cool to 4°C	10	1	1	0	0	11
Sediments	TCL SVOA	EPA Regional Laboratory or current CLP SOW	1, 8 oz. jar	Cool to 4°C	10	1	1	0	0	11
Soil	TAL Total Metals + mercury	EPA Regional Laboratory or current CLP SOW	1, 8 oz. jar	Cool to 4°C	16	2	1	0	0	18
Soil	TCL SVOA	EPA Regional Laboratory or current CLP SOW	1, 8 oz. jar	Cool to 4°C	16	2	1	0	0	18

Notes:
*Total number of samples to the laboratory does not include MS/MSD samples. However, please note that MS/MSD or spike/duplicate analysis may require additional sample volume.

KEY
° - Degrees Celsius
HNO3 – Nitric Acid
MS/MSD – Matrix Spike/Matrix Spike Duplicate
N/A – Not applicable
SOW – Statement of Work
TAL – Target Analyte List

TABLE 3
Proposed Sample Locations
American Creosote DeRidder

	Sample ID	Sample Location	Sample Type
1	ACS01	Background, up gradient of site area	Soil
2	ACSD02/ACSW02	Background, Common Drainage, up gradient of site area	Sediment/Water
3	ACS03	Approximate location of the former railway spur	Soil
4	ACSD04/ACSW04	Concrete Structure	Sediment/Water
5	ACS05	West of concrete structure	Soil
6	ACSD06/ACSW06	Common Drainage along railroad ROW, down gradient of wastewater pit area	Sediment/Water
7	ACS07	West of wastewater pit	Soil
8	ACSD08/ACSW08	Wastewater Pit	Sediment/Water
9	ACSD09/ACSW09	Common Drainage along railroad ROW, down gradient of wastewater pit area	Sediment/Water
10	ACS10	Former area of residual weathered creosote	Soil
11	ACS11	Former area of residual weathered creosote	Soil
12	ACSD12/ACSW12	Culvert/Ditch	Sediment/Water
13	ACS13	South of culvert/ditch	Soil
14	ACS14	South of culvert/ditch	Soil
15	ACSD15/ACSW15	Common Drainage along railroad ROW, at property boundary	Sediment/Water
16	ACSD16/ACSW16	Background location, Palmetto Creek	Sediment/Water
17	ACSD17/ACSW17	Drainage/overland flow pathway to Palmetto Creek	Sediment/Water
18	ACSD18/ACSW18	Palmetto Creek	Sediment/Water
19	ACGWS19	Monitor Well # 1	Groundwater
20	ACGW20	Monitor Well # 2	Groundwater
21	ACGW 21	Monitor Well # 3	Groundwater
22	ACS22	Duplicate (location to be determined in field)	Soil Field Duplicate
23	ACSD23/ACSW23	Duplicate (location to be determined in field)	Sediment/Surface Water Field Duplicate

Key:
ACSW – American Creosote Surface Water Sample
ACS – American Creosote Soil Sample
ACSD – American Creosote Sediment Sample

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder	
STEP 1. STATE THE PROBLEM	
Determine if CERCLA hazardous substances are present in the waters, sediments and soils at the site and if they are migrating from the site to surface waters.	
STEP 2. IDENTIFY THE DECISION	
If CERCLA hazardous substances are present in waters, sediments and soils at the site, the site is eligible for HRS consideration. If CERCLA hazardous substances are present in the drainage ditch or Palmetto Creek, potential or actual releases to the HRS surface water pathway can be documented.	
IDENTIFY THE ALTERNATIVE ACTIONS THAT MAY BE TAKEN BASED ON THE DECISIONS.	If CERCLA hazardous substances are found in the waters, sediments or soils at the site, HRS evaluation of the site can be conducted. If CERCLA hazardous substances are found in the water or sediment of Palmetto Creek, an observed release is documented. If not a potential release will be used for HRS evaluation.
STEP 3. IDENTIFY INPUTS TO THE DECISION	
IDENTIFY THE INFORMATIONAL INPUTS NEEDED TO RESOLVE A DECISION.	Water, sediment and soil samples from the site, surface water and sediment samples from drainage from the site. HRS Rule
IDENTIFY THE SOURCES FOR EACH INFORMATIONAL INPUT AND LIST THE INPUTS THAT ARE OBTAINED THROUGH ENVIRONMENTAL MEASUREMENTS.	HRS Rule is published. All sample results are environmental measurements
BASIS FOR THE CONTAMINANT SPECIFIC ACTION LEVELS.	HRS rule, background concentrations, sample CRQLs
IDENTIFY POTENTIAL SAMPLING TECHNIQUES AND APPROPRIATE ANALYTICAL METHODS.	On-Site waters and soils – Water samples will be collected using dippers or low flow technique, soil samples will be collected using spoons. Samples will be analyzed for total metals and semi-volatile organics using EPA methods utilized by the Houston EPA Lab or current CLP SOWs. Off-Site surface waters and sediments – Water samples will be collected directly into sample bottles, soil samples will be collected using trowels. Samples will be analyzed for total metals/mercury and semi-volatile organics using EPA methods utilized by the Houston EPA Lab or current CLP SOWs.
STEP 4. DEFINE THE BOUNDARIES OF THE STUDY	
DEFINE THE DOMAIN OR GEOGRAPHICAL AREA WITHIN WHICH ALL DECISIONS MUST APPLY.	The 55 acres that comprise the facility. The drainage pathways into the Palmetto Creek (the probable point of entry). The probable point of entry and extending 15 miles downstream, including Palmetto Creek, Bundick Creek and the adjoining wetlands.
SPECIFY THE CHARACTERISTICS THAT DEFINE THE POPULATION OF	The primary population of interest is the users of surface water and ecological receptors within the 15 mile HRS target distance

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder	
INTEREST.	for the surface water pathway. The secondary population of interest is the users of drinking water receptors within the 4 mile target radius distance limit for the ground water pathway.
DEFINE THE SCALE OF THE DECISION MAKING.	Bounds of the samples collected.
DETERMINE THE TIMEFRAME TO WHICH THE DATA APPLY.	Results from this and subsequent potential investigations.
DETERMINE WHEN TO COLLECT THE DATA.	Sample collection will be conducted the week of June 8, 2015.
IDENTIFY PRACTICAL CONSTRAINTS ON DATA COLLECTION.	START/EPA must obtain access agreements from property owners before sampling.
STEP 5. DEVELOP A DECISION RULE	
SPECIFY THE PARAMETER THAT CHARACTERIZES THE POPULATION OF INTEREST.	Metals and semi-volatile organics within the waters, sediments and/or soils at the site.
SPECIFY THE ACTION LEVEL FOR THE DECISION.	Contaminates present in the samples of soil, sediment and water at the site. Concentration greater than SQL if not detected in the background samples, greater than 3 times the background concentration if detected in background samples.
DEVELOP A DECISION RULE.	If CERCLA hazardous substances are present at concentrations greater than their SQLs in the water, sediment and/or soil samples collected at the site, sources will be evaluated using the HRS model. If the concentration of a hazardous substance at the site is greater than its SQL in the off-site surface water or sediments samples and the substance is not detected in background samples, a release to that pathway will be evaluated, or if a hazardous substance at the site is detected in the background sample and its concentration in the off-site surface water or sediment samples is greater than its SQL and 3 times greater that the concentration in the background sample, a release to that pathway will be evaluated, else no release can be documented.
STEP 6. SPECIFY THE LIMITS ON DECISION ERRORS	
DETERMINE THE POSSIBLE RANGE OF THE PARAMETER OF INTEREST.	Concentrations may range from less than SQL/reporting limit to greater than 10,000 ppm.
DEFINE BOTH TYPES OF DECISION ERRORS AND IDENTIFY THE POTENTIAL CONSEQUENCES OF EACH.	1. Deciding that the concentrations are below HRS criteria when they are actually greater. 2. Deciding that the concentrations are above HRS criteria when they are actually lower.
ESTABLISH THE TRUE STATE OF NATURE FOR EACH DECISION RULE.	1. Concentrations are greater than HRS criteria 2. Concentration are less than HRS criteria

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder	
DEFINE THE TRUE STATE OF NATURE FOR THE MORE SEVERE DECISION ERROR AS THE BASELINE CONDITION OR THE NULL HYPOTHESIS (H_o), AND DEFINE THE TRUE STATE FOR THE LESS SEVERE DECISION ERROR AS THE ALTERNATIVE HYPOTHESIS (H_a).	The more sever decision error is to decide that the concentrations are below HRS criteria when they are actually above criteria, Ho – Null hypothesis. Alternate hypothesis – H1 – concentrations are above HRS criteria when they are actually below criteria.
ASSIGN THE TERMS "FALSE POSITIVE" AND "FALSE NEGATIVE" TO THE PROPER DECISION ERRORS.	Ho = false negative H1 = false positive
ASSIGN THE PROBABILITY VALUES TO POINTS ABOVE AND BELOW THE ACTION LEVEL THAT REFLECT THE ACCEPTABLE PROBABILITY FOR THE OCCURENCES OF DECISION ERRORS.	Probability values not assigned at this time.
STEP 7. OPTIMIZE THE DESIGN	
REVIEW THE DQOs.	
DEVELOP GENERAL SAMPLING AND ANALYSIS DESIGN. The QASP that these DQOs are attached to reflect the sample and analysis design to meet these objectives.	

APPENDICES

APPENDIX A

EPA ERT SOP No. 2013 – Surface Water Sampling

(Document not Generated by START)

SURFACE WATER SAMPLING

SOP#: 2013
DATE: 11/17/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

This standard operating procedure (SOP) is applicable to the collection of representative liquid samples, both aqueous and non-aqueous from streams, rivers, lakes, ponds, lagoons, and surface impoundments. It includes samples collected from depth, as well as samples collected from the surface.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure or other procedure limitations. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sampling situations vary widely, therefore, no universal sampling procedure can be recommended. However, sampling of both aqueous and non-aqueous liquids from the above mentioned sources is generally accomplished through the use of one of the following samplers or techniques:

- Kemmerer bottle
- Bacon bomb sampler
- Dip sampler
- Direct method

These sampling techniques will allow for the collection of representative samples from the majority of surface waters and impoundments encountered.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Once samples have been collected, the following procedure should be followed:

1. Transfer the sample(s) into suitable, labeled sample containers.

2. Preserve the sample if appropriate, or use pre-preserved sample bottles. Do not overfill bottles if they are pre-preserved.

3. Cap the container, place in a ziploc plastic bag and cool to 4°C.

4. Record all pertinent data in the site logbook and on field data sheets.

5. Complete the Chain of Custody record.

6. Attach custody seals to cooler prior to shipment.

7. Decontaminate all sampling equipment prior to the collection of additional samples with that sampling device.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems with surface water sampling. These include cross contamination of samples and improper sample collection.

1. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Refer to the Sampling Equipment Decontamination SOP.

2. Improper sample collection can involve using contaminated equipment, disturbance of the stream or impoundment substrate, and sampling in an obviously disturbed area.

Following proper decontamination procedures and minimizing disturbance of the sample site will eliminate these problems.

5.0 EQUIPMENT/APPARATUS

Equipment needed for collection of surface water samples may include (depending on technique chosen):

- Kemmerer bottles
- Bacon bomb sampler
- Dip sampler
- Line and messengers
- Sample bottles/preservatives
- Ziploc bags
- Ice
- Coolers
- Chain of Custody records, custody seals
- Field data sheets
- Decontamination equipment
- Maps/plot plan
- Safety equipment
- Compass
- Tape measure
- Survey stakes, flags, or buoys and anchors
- Camera and film
- Logbook/waterproof pen
- Sample bottle labels

6.0 REAGENTS

Reagents will be utilized for preservation of samples and for decontamination of sampling equipment. The preservatives required are specified by the analysis to be performed.

7.0 PROCEDURES

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies needed.

2. Obtain the necessary sampling and monitoring equipment.

3. Decontaminate or pre-clean equipment, and ensure that it is in working order.

4. Prepare scheduling and coordinate with staff, clients, and regulatory agency, if appropriate.

5. Perform a general site survey prior to site entry, in accordance with the site specific Health and Safety Plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. If required the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. If collecting sediment samples, this procedure may disturb the bottom.

7.2 Representative Sampling Considerations

In order to collect a representative sample, the hydrology and morphometrics of a stream or impoundment should be determined prior to sampling. This will aid in determining the presence of phases or layers in lagoons, or impoundments, flow patterns in streams, and appropriate sample locations and depths.

Water quality data should be collected in impoundments, and to determine if stratification is present. Measurements of dissolved oxygen, pH, and temperature can indicate if strata exist which would effect analytical results. Measurements should be collected at one-meter intervals from the substrate to the surface using the appropriate instrument (i.e., a Hydrolab or equivalent).

Water quality measurements such as dissolved oxygen, pH, temperature, conductivity, and oxidation-reduction potential can assist in the interpretation of analytical data and the selection of sampling sites and depths when surface water samples are collected.

Generally, the deciding factors in the selection of a sampling device for sampling liquids in streams, rivers, lakes, ponds, lagoons, and surface impoundments are:

1. Will the sample be collected from shore or from a boat?

2. What is the desired depth at which you wish to collect the sample?

3. What is the overall depth and flow direction of river or stream?

4. What type of sample will be collected (i.e., water or lagoon liquids)?

7.2.1 Sampler Composition

The appropriate sampling device must be of a proper composition. Selection of samplers constructed of glass, stainless steel, PVC or PFTE (Teflon) should be based upon the analyses to be performed.

7.3 Sample Collection

7.3.1 Kemmerer Bottle

A Kemmerer bottle (Figure 1, Appendix A) may be used in most situations where site access is from a boat or structure such as a bridge or pier, and where samples at depth are required. Sampling procedures are as follows:

1. Use a properly decontaminated Kemmerer bottle. Set the sampling device so that the sampling end pieces (upper and lower stoppers) are pulled away from the sampling tube (body), allowing the substance to be sampled to pass through this tube.

2. Lower the pre-set sampling device to the predetermined depth. Avoid bottom disturbance.

3. When the Kemmerer bottle is at the required depth, send down the messenger, closing the sampling device.

4. Retrieve the sampler and discharge from the bottom drain the first 10-20 mL to clear any potential contamination of the valve. Transfer the sample to the appropriate sample container.

7.3.2 Bacon Bomb Sampler

A bacon bomb sampler (Figure 2, Appendix A) may be used in situations similar to those outlined for the Kemmerer bottle. Sampling procedures are as follows:

1. Lower the bacon bomb sampler carefully to the desired depth, allowing the line for the trigger to remain slack at all times. When the desired depth is reached, pull the trigger line until taut. This will allow the sampler to fill.

2. Release the trigger line and retrieve the sampler.

3. Transfer the sample to the appropriate sample container by pulling up on the trigger.

7.3.3 Dip Sampler

A dip sampler (Figure 3, Appendix A) is useful in situations where a sample is to be recovered from an outfall pipe or along a lagoon bank where direct access is limited. The long handle on such a device allows access from a discrete location. Sampling procedures are as follows:

1. Assemble the device in accordance with the manufacturer's instructions.

2. Extend the device to the sample location and collect the sample by dipping the sampler into the substance.

3. Retrieve the sampler and transfer the sample to the appropriate sample container.

7.3.4 Direct Method

For streams, rivers, lakes, and other surface waters, the direct method may be utilized to collect water samples from the surface directly into the sample bottle. This method is not to be used for sampling lagoons or other impoundments where contact with contaminants is a concern.

Using adequate protective clothing, access the sampling station by appropriate means. For shallow stream stations, collect the sample under the water surface while pointing the sample container upstream; the container must be upstream of the collector. Avoid disturbing the substrate. For lakes and other impoundments, collect the sample under the water surface avoiding surface debris and the boat wake.

When using the direct method, do not use pre-preserved sample bottles as the collection method may dilute the concentration of preservative necessary for proper sample preservation.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following general QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

More specifically, when sampling lagoons or surface impoundments containing known or suspected hazardous substances, adequate precautions must be taken to ensure the safety of sampling personnel. The sampling team member collecting the sample should not get too close to the edge of the impoundment, where bank failure may cause him/her to lose his/her balance. The person performing the sampling should be on a lifeline and be wearing adequate protective equipment. When conducting sampling from a boat in an impoundment or flowing waters, appropriate boating safety procedures should be followed.

12.0 REFERENCES

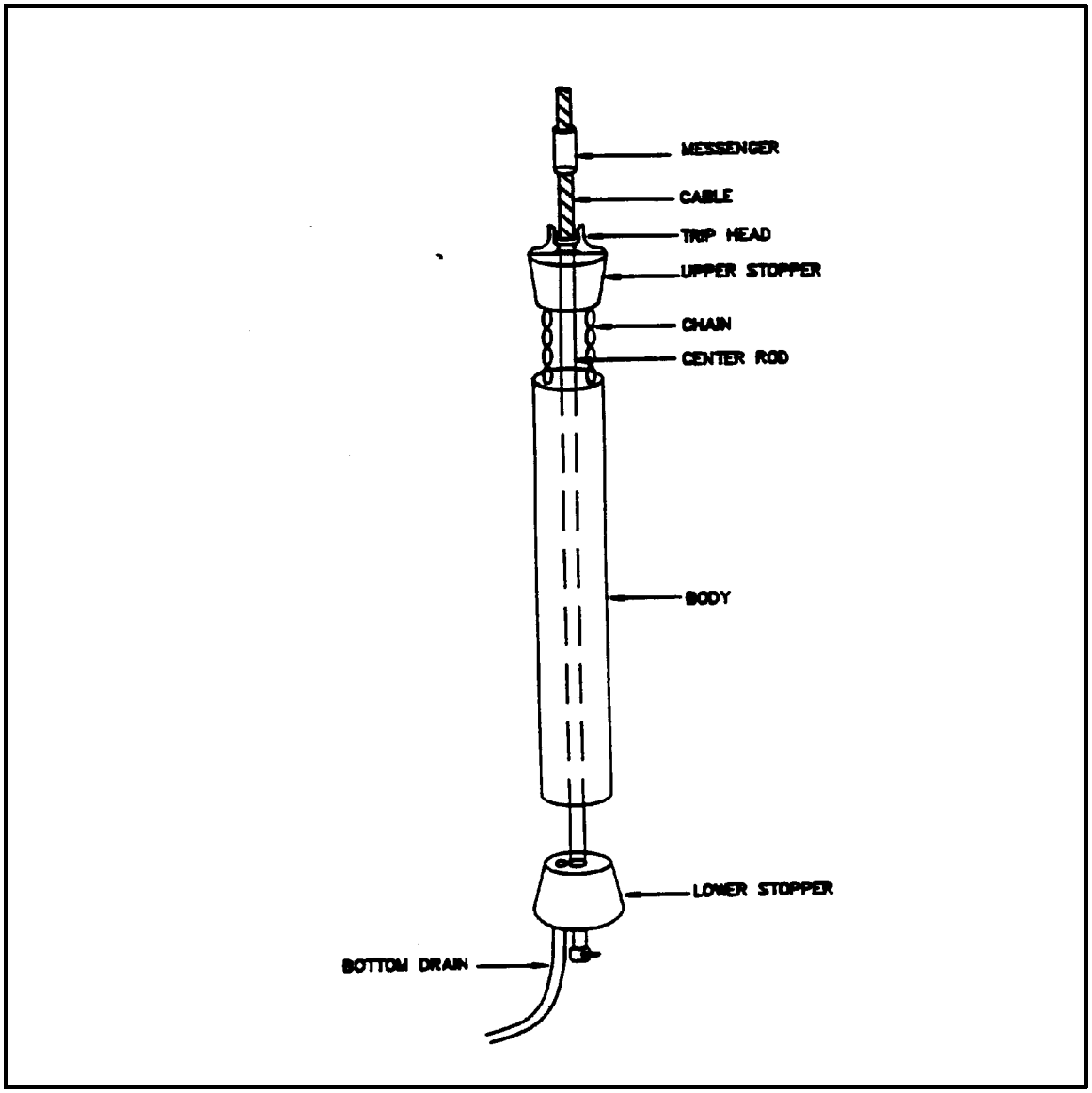
U.S. Geological Survey. 1977. National Handbook or Recommended Methods for Water Data Acquisition. Office of Water Data Coordination Reston, Virginia. (Chapter Updates available).

U.S. Environmental Protection Agency. 1984. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. EPA/600/4-84-076.

APPENDIX A

Figures

FIGURE 1. Kemmerer Bottle



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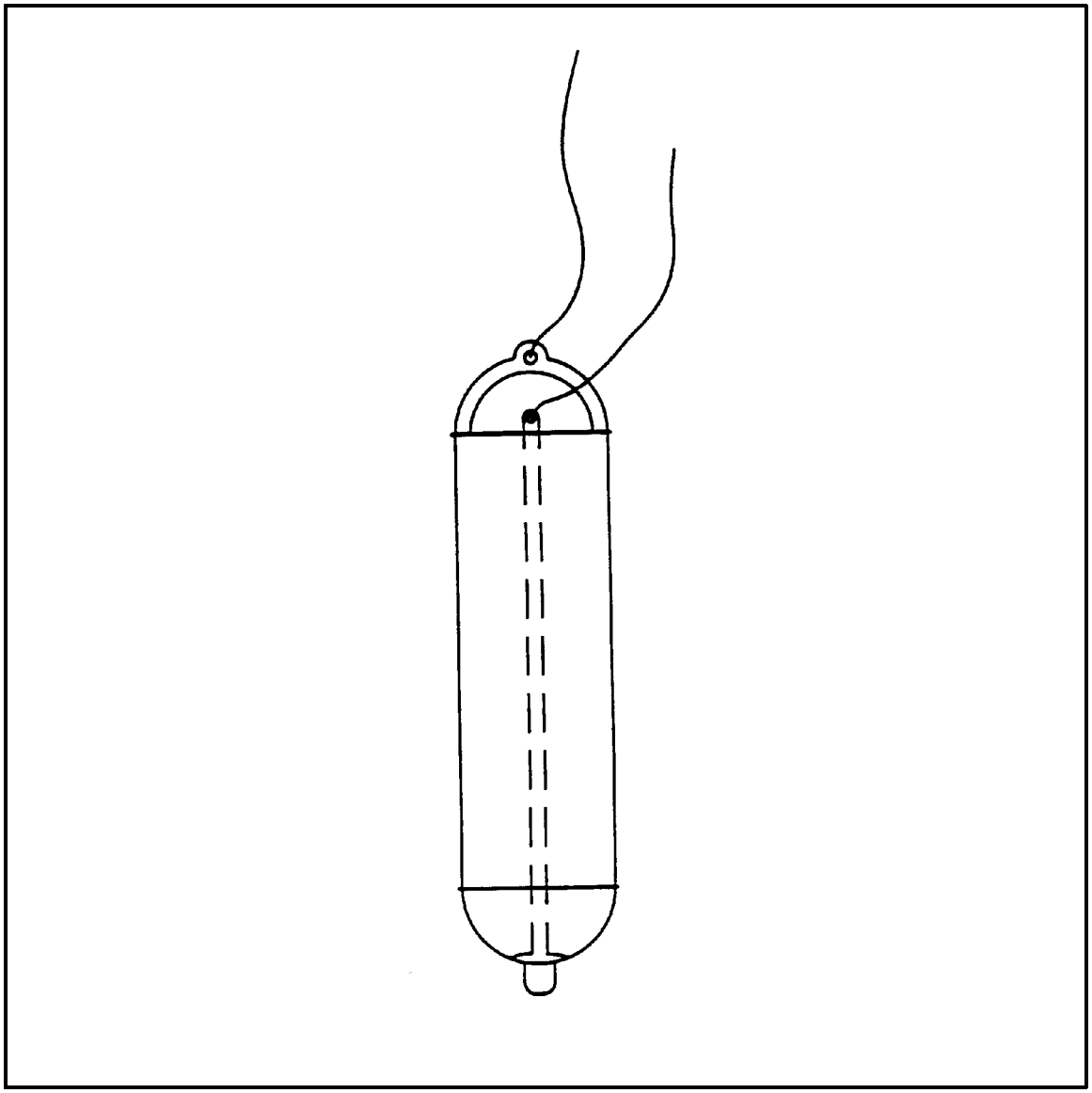
APPENDIX A (Cont'd)

Figures

FIGURE 2. Bacon Bomb Sampler



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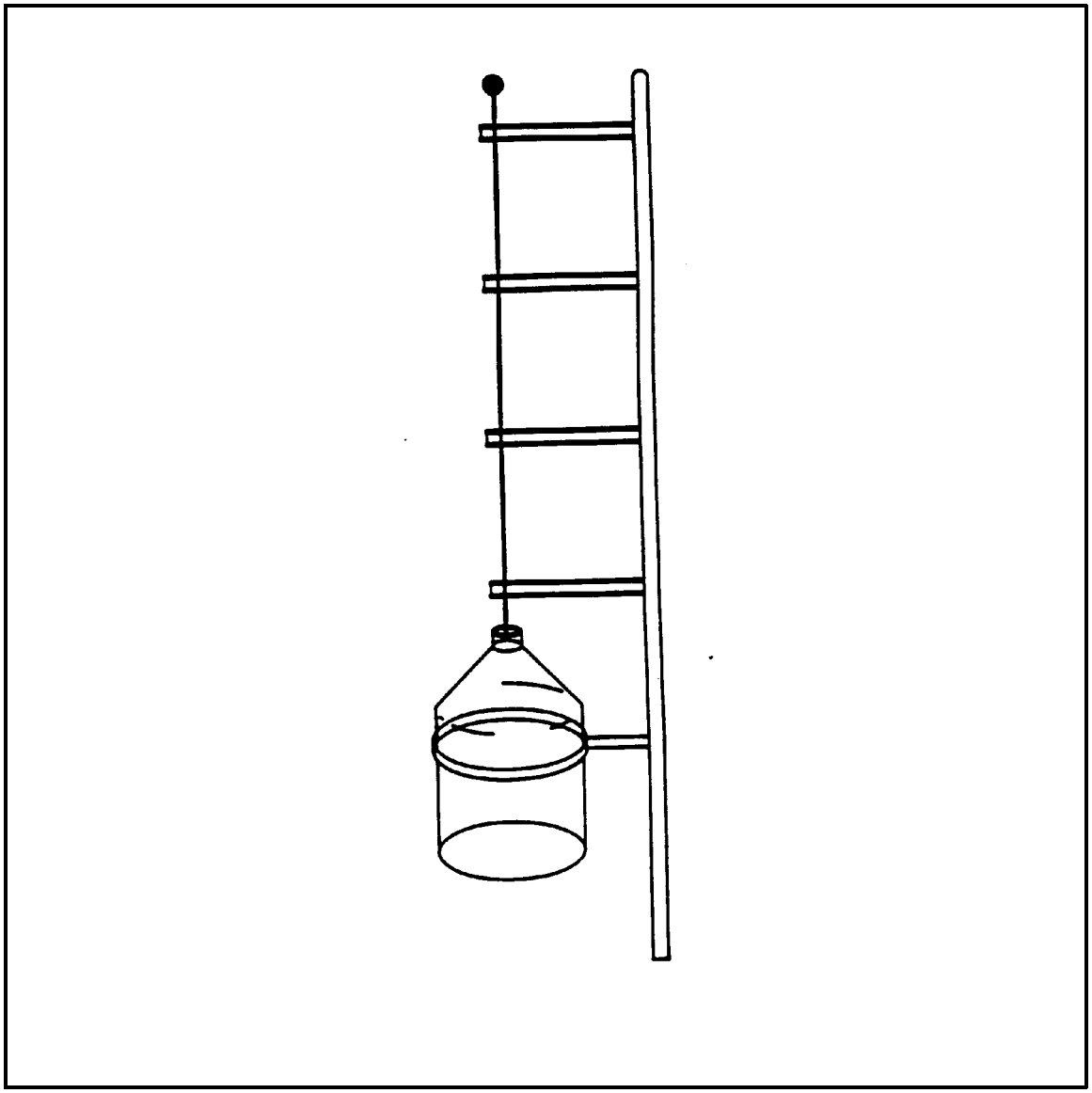
APPENDIX A (Cont'd)

Figures

FIGURE 3. Dip Sampler



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APPENDIX B

EPA ERT SOP No. 2016 – Sediment Sampling

(Document not Generated by START)

SEDIMENT SAMPLING

SOP#: 2016
DATE: 11/17/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

This standard operating procedure (SOP) is applicable to the collection of representative sediment samples. Analysis of sediment may be biological, chemical, or physical in nature and may be used to determine the following:

- toxicity;
- biological availability and effects of contaminants;
- benthic biota;
- extent and magnitude of contamination;
- contaminant migration pathways and source;
- fate of contaminants;
- grain size distribution.

The methodologies discussed in this SOP are applicable to the sampling of sediment in both flowing and standing water. They are generic in nature and may be modified in whole or part to meet the handling and analytical requirements of the contaminants of concern, as well as the constraints presented by site conditions and equipment limitations. However, if modifications occur, they should be documented in a site or personal logbook and discussed in reports summarizing field activities and analytical results.

For the purposes of this procedure, sediments are those mineral and organic materials situated beneath an aqueous layer. The aqueous layer may be either static, as in lakes, ponds, and impoundments; or flowing, as in rivers and streams.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sediment samples may be collected using a variety of methods and equipment, depending on the depth of the aqueous layer, the portion of the sediment profile required (surface vs. subsurface), the type of sample required (disturbed vs. undisturbed), contaminants present, and sediment type.

Sediment is collected from beneath an aqueous layer either directly, using a hand held device such as a shovel, trowel, or auger; or indirectly, using a remotely activated device such as an Ekman or Ponar dredge. Following collection, sediment is transferred from the sampling device to a sample container of appropriate size and construction for the analyses requested. If composite sampling techniques are employed, multiple grabs are placed into a container constructed of inert material, homogenized, and transferred to sample containers appropriate for the analyses requested. The homogenization procedure should not be used if sample analysis includes volatile organics; in this case, sediment, or multiple grabs of sediment, should be transferred directly from the sample collection device or homogenization container to the sample container.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

1. Chemical preservation of solids is generally not recommended. Cooling to 4°C is usually the best approach, supplemented by the appropriate holding time for the analyses requested.

2. Wide mouth glass containers with Teflon lined caps are utilized for sediment samples. The sample volume is a function of the analytical requirements and will be specified in the Work Plan.

3. If analysis of sediment from a discrete depth or location is desired, sediment is transferred directly from the sampling device to a labeled sample container(s) of appropriate size and construction for the analyses

requested. Transfer is accomplished with a stainless steel or plastic lab spoon or equivalent.

4. If composite sampling techniques or multiple grabs are employed, equal portions of sediment from each location are deposited into a stainless steel, plastic, or other appropriate composition (e.g., Teflon) containers. The sediment is homogenized thoroughly to obtain a composite representative of the area sampled. The composite sediment sample is transferred to a labeled container(s) of appropriate size and construction for the analyses requested. Transfer of sediment is accomplished with a stainless steel or plastic lab spoon or equivalent. Samples for volatile organic analysis must be transferred directly from the sample collection device or pooled from multiple areas in the homogenization container prior to mixing. This is done to minimize loss of contaminant due to volatilization during homogenization.

5. All sampling devices should be decontaminated, then wrapped in aluminum foil. The sampling device should remain in this wrapping until it is needed. Each sampling device should be used for only one sample. Disposable sampling devices for sediment are generally impractical due to cost and the large number of sediment samples which may be required. Sampling devices should be cleaned in the field using the decontamination procedure described in the Sampling Equipment Decontamination SOP.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

Substrate particle size and organic matter content are a direct consequence of the flow characteristics of a waterbody. Contaminants are more likely to be concentrated in sediments typified by fine particle size and a high organic matter content. This type of sediment is most likely to be collected from depositional zones. In contrast, coarse sediments with low organic matter content do not typically concentrate pollutants and are generally found in erosional zones. The selection of a sampling location can, therefore, greatly influence the analytical results and should be justified and specified in the Work Plan.

5.0 EQUIPMENT/APPARATUS

Equipment needed for collection of sediment samples may include:

- Maps/plot plan
- Safety equipment
- Compass
- Tape measure
- Survey stakes, flags, or buoys and anchors
- Camera and film
- Stainless steel, plastic, or other appropriate composition bucket
- 4-oz., 8-oz., and one-quart wide mouth jars w/Teflon lined lids
- Ziploc plastic bags
- Logbook
- Sample jar labels
- Chain of Custody records, field data sheets
- Cooler(s)
- Ice
- Decontamination supplies/equipment
- Spade or shovel
- Spatula
- Scoop
- Trowel
- Bucket auger
- Tube auger
- Extension rods
- "T" handle
- Sediment coring device (tube, drive head, eggshell check value, nosecone, acetate tube, extension rods, "T" handle)
- Ponar dredge
- Ekman dredge
- Nylon rope or steel cable
- Messenger device

6.0 REAGENTS

Reagents are not used for preservation of sediment samples. Decontamination solutions are specified in the Sampling Equipment Decontamination SOP.

7.0 PROCEDURES

7.1 Preparation

1. Determine the objective(s) and extent of the sampling effort. The sampling methods to be employed, and the types and amounts of equipment and supplies required will be a function of site characteristics and objectives of the study.

2. Obtain the necessary sampling and monitoring equipment.

3. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.

4. Decontaminate or preclean equipment, and ensure that it is in working order.

5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. Specific site factors including flow regime, basin morphometry, sediment characteristics, depth of overlying aqueous layer, contaminant source, and extent and nature of contamination should be considered when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions.

7.2 Sample Collection

Selection of a sampling device is most often contingent upon: (1) the depth of water at the sampling location, and (2) the physical characteristics of the sediment to be sampled. The following procedures may be utilized:

7.2.1 Sampling Surface Sediment with a Trowel or Scoop from Beneath a Shallow Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth and a shallow aqueous layer is considered to range from 0 to 12 inches in depth. Collection of surface sediment from beneath a shallow aqueous layer can be accomplished with tools such as spades, shovels, trowels, and scoops. Although this method can be used to collect both unconsolidated/consolidated sediment, it is limited somewhat by the depth and movement of the aqueous layer. Deep and rapidly flowing water render this method less accurate than others discussed below. However, representative samples can be collected with this procedure in shallow sluggish water provided care is demonstrated by the sample team member. A stainless steel or plastic sampling implement will suffice in most applications. Care should be exercised to avoid the use of devices plated with chrome or other materials; plating is particularly common with garden trowels.

The following procedure will be used to collect sediment with a scoop, shovel, or trowel:

1. Using a decontaminated sampling implement, remove the desired thickness and volume of sediment from the sampling area.

2. Transfer the sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

3. Surface water should be decanted from the sample or homogenization container prior to sealing or transfer; care should be taken to retain the fine sediment fraction during this procedure.

7.2.2 Sampling Surface Sediment with a Bucket Auger or Tube Auger from Beneath a Shallow Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches in depth. Collection of surface sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of bucket auger or tube auger, a series of extensions, and a "T" handle (Figure 1, Appendix A). The use of additional extensions in conjunction with a bucket auger can increase the depth of water from which sediment can be collected from 24 inches to 10 feet or more. However, sample handling and manipulation increases

in difficulty with increasing depth of water. The bucket auger or tube auger is driven into the sediment and used to extract a core. The various depths represented by the core are homogenized or a subsample of the core is taken from the appropriate depth.

The following procedure will be used to collect sediment samples with a bucket auger or tube auger:

1. An acetate core may be inserted into the bucket auger or tube auger prior to sampling if characteristics of the sediments or waterbody warrant. By using this technique, an intact core can be extracted.

2. Attach the auger head to the required length of extensions, then attach the "T" handle to the upper extension.

3. Clear the area to be sampled of any surface debris.

4. Insert the bucket auger or tube auger into the sediment at a 0º to 20º angle from vertical. This orientation minimizes spillage of the sample from the sampler upon extraction from the sediment and water.

5. Rotate the auger to cut a core of sediment.

6. Slowly withdraw the auger; if using a tube auger, make sure that the slot is facing upward.

7. Transfer the sample or a specified aliquot of sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

7.2.3 Sampling Deep Sediment with a Bucket Auger or Tube Auger from Beneath a Shallow Aqueous Layer

For the purpose of this method, deep sediment is considered to range from six to greater than 18 inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches. Collection of deep sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of a bucket auger, a tube auger, a series of extensions and a "T" handle. The use of additional extensions can increase the depth of water from which sediment can be collected from 24 inches to five feet or more. However, water clarity must be high enough to permit the sampler to directly observe the sampling operation. In addition, sample handling and manipulation increases in difficulty with increasing depth of water. The bucket auger is used to bore a hole to the upper range of the desired sampling depth and then withdrawn. The tube auger is then lowered down the borehole, and driven into the sediment to the lower range of the desired sampling depth. The tube is then withdrawn and the sample recovered from the tube. This method can be used to collect firmly consolidated sediments, but is somewhat limited by the depth of the aqueous layer, and the integrity of the initial borehole.

The following procedure will be used to collect deep sediment samples with a bucket auger and a tube auger:

1. Attach the bucket auger bit to the required lengths of extensions, then attach the "T" handle to the upper extension.

2. Clear the area to be sampled of any surface debris.

3. Begin augering, periodically removing any accumulated sediment (i.e., cuttings) from the auger bucket. Cuttings should be disposed of far enough from the sampling area to minimize cross contamination of various depths.

4. After reaching the upper range of the desired depth, slowly and carefully remove bucket auger from the boring.

5. Attach the tube auger bit to the required lengths of extensions, then attach the "T" handle to the upper extension.

6. Carefully lower tube auger down borehole using care to avoid making contact with the borehole sides and, thus, cross contaminating the sample. Gradually force tube auger into sediment to the lower range of the desired sampling depth. Hammering of the tube auger to facilitate coring should be avoided as the vibrations may cause the boring walls

to collapse.

7. Remove tube auger from the borehole, again taking care to avoid making contact with the borehole sides and, thus, cross contaminating the sample.

8. Discard the top of core (approximately 1 inch); as this represents material collected by the tube auger before penetration to the layer of concern.

9. Transfer sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

7.2.4 Sampling Surface Sediment with an Ekman or Ponar Dredge from Beneath a Shallow or Deep Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth. Collection of surface sediment can be accomplished with a system consisting of a remotely activated device (dredge) and a deployment system. This technique consists of lowering a sampling device (dredge) to the surface of the sediment by use of a rope, cable, or extended handle. The mechanism is activated, and the device entraps sediment in spring loaded or lever operated jaws.

An Ekman dredge is a lightweight sediment sampling device with spring activated jaws. It is used to collect moderately consolidated, fine textured sediment. The following procedure will be used for collecting sediment with an Ekman dredge (Figure 2, Appendix A):

1. Attach a sturdy nylon rope or stainless steel cable through the hole on the top of the bracket, or secure the extension handle to the bracket with machine bolts.

2. Attach springs to both sides of the jaws. Fix the jaws so that they are in open position by placing trip cables over the release studs. Ensure that the hinged doors on the dredge top are free to open.

3. Lower the sampler to a point 4 to 6 inches above the sediment surface.

4. Drop the sampler to the sediment.

5. Trigger the jaw release mechanism by lowering a messenger down the line, or by depressing the button on the upper end of the extension handle.

6. Raise the sampler and slowly decant any free liquid through the top of the sampler. Care should be taken to retain the fine sediment fraction during this procedure.

7. Open the dredge jaws and transfer the sample into a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment grabs until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenize and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

A Ponar dredge is a heavyweight sediment sampling device with weighted jaws that are lever or spring activated. It is used to collect consolidated fine to coarse textured sediment. The following procedure will be used for collecting sediment with a Ponar dredge (Figure 3, Appendix A):

1. Attach a sturdy nylon rope or steel cable to the ring provided on top of the dredge.

2. Arrange the Ponar dredge with the jaws in the open position, setting the trip bar so the sampler remains open when lifted from the top. If the dredge is so equipped, place the spring loaded pin into the aligned holes in the trip bar.

3. Slowly lower the sampler to a point approximately two inches above the sediment.

4. Drop the sampler to the sediment. Slack on

the line will release the trip bar or spring loaded pin; pull up sharply on the line closing the dredge.

5. Raise the dredge to the surface and slowly decant any free liquid through the screens on top of the dredge. Care should be taken to retain the fine sediment fraction during this operation.

6. Open the dredge and transfer the sediment to a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenized and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

7.2.5 Sampling Subsurface Sediment with a Coring Device from Beneath a Shallow Aqueous Layer

For purposes of this method, subsurface sediment is considered to range from 6 to 24 inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches in depth. Collection of subsurface sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of a tube sampler, acetate tube, eggshell check valve, nosecone, extensions, and "T" handle, or drivehead. The use of additional extensions can increase the depth of water from which sediment can be collected from 24 inches to 10 feet or more. This sampler may be used with either a drive hammer for firm sediment, or a "T" handle for soft sediment. However, sample handling and manipulation increases in difficulty with increasing depth of water.

The following procedure describes the use of a sample coring device (Figure 4, Appendix A) used to collect subsurface sediments.

1. Assemble the coring device by inserting the acetate core into the sampling tube.

2. Insert the "egg shell" check valve into the lower end of the sampling tube with the convex surface positioned inside the acetate core.

3. Screw the nosecone onto the lower end of the sampling tube, securing the acetate tube and eggshell check valve.

4. Screw the handle onto the upper end of the sampling tube and add extension rods as needed.

5. Place the sampler in a perpendicular position on the sediment to be sampled.

6. If the "T" handle is used, place downward pressure on the device until the desired depth is reached. After the desired depth is reached, rotate the sampler to shear off the core at the bottom. Slowly withdraw the sampler from the sediment and proceed to Step 15.

7. If the drive hammer is selected, insert the tapered handle (drive head) of the drive hammer through the drive head.

8. Drive the sampler into the sediment to the desired depth.

9. Record the length of the tube that penetrated the sample material, and the number of blows required to obtain this depth.

10. Remove the drive hammer and fit the keyhole-like opening on the flat side of the hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.

11. Rotate the sampler to shear off the core at the bottom.

12. Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head, and rotate about 90°.

13. Slowly withdraw the sampler from the sediment. If the drivehead was used, pull the hammer upwards and dislodge the sampler from the sediment.

14. Carefully remove the coring device from the water.

15. Unscrew the nosecone and remove the eggshell check valve.

16. Slide the acetate core out of the sampler tube. Decant surface water, using care to retain the fine sediment fraction. If head space is present in the upper end, a hacksaw may be used to shear the acetate tube off at the sediment surface. The acetate core may then be capped at both ends. Indicate on the acetate tube the appropriate orientation of the sediment core using a waterproof marker. The sample may be used in this fashion, or the contents transferred to a sample or homogenization container.

17. Open the acetate tube and transfer the sediment to a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenize and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA/OSHA and Corporate health and safety procedures.

More specifically, when sampling sediment from waterbodies, physical hazards must be identified and adequate precautions must be taken to ensure the safety of the sampling team. The team member collecting the sample should not get too close to the edge of the waterbody, where bank failure may cause loss of balance. To prevent this, the person performing the sampling should be on a lifeline, and be wearing adequate protective equipment. If sampling from a vessel is determined to be necessary, appropriate protective measures must be implemented.

12.0 REFERENCES

Mason, B.J., Preparation of Soil Sampling Protocol: Technique and Strategies. 1983 EPA-600/4-83-020.

Barth, D.S. and B.J. Mason, Soil Sampling Quality Assurance User's Guide. 1984 EPA-600/4-84-043.

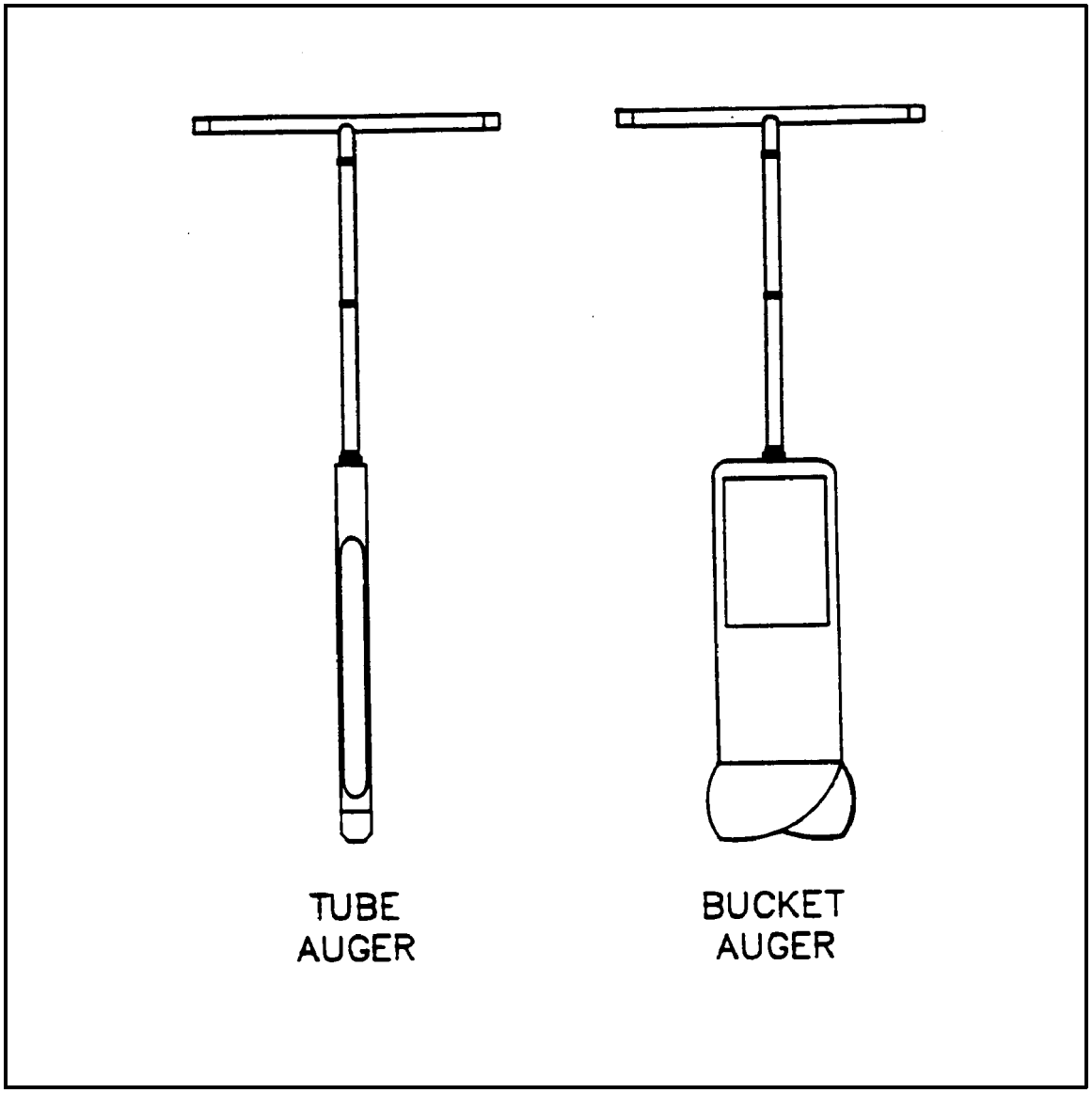
U.S. EPA. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. 1984 EPA-600/4-84-076.

de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. Samplers and Sampling Procedures for Hazardous Waste Streams. 1980 EPA-600/2-80-018.

APPENDIX A

Figures

FIGURE 1. Sampling Auger



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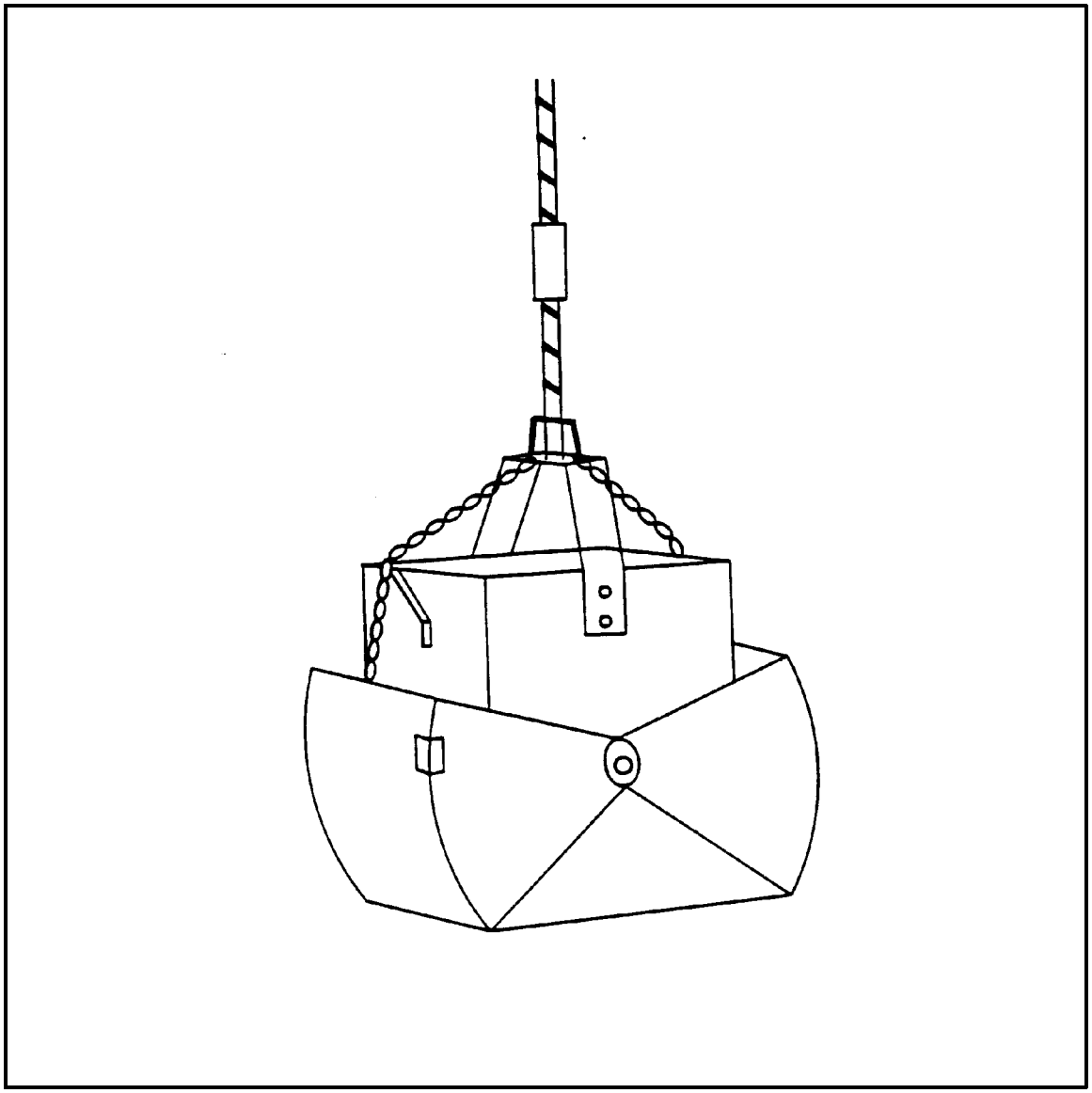
APPENDIX A (Cont'd)

Figures

FIGURE 2. Ekman Dredge



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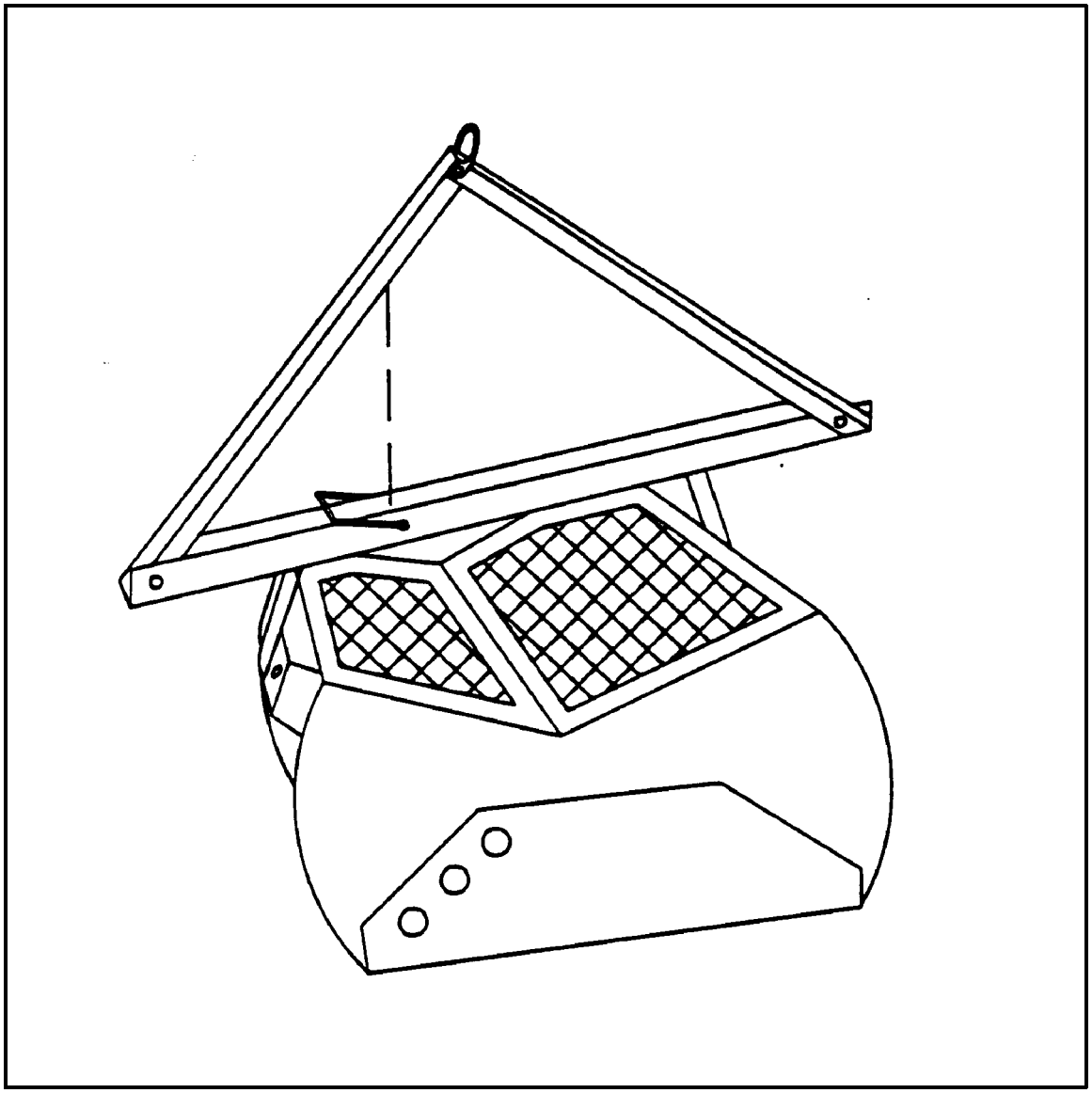
APPENDIX A (Cont'd)

Figures

FIGURE 3. Ponar Dredge



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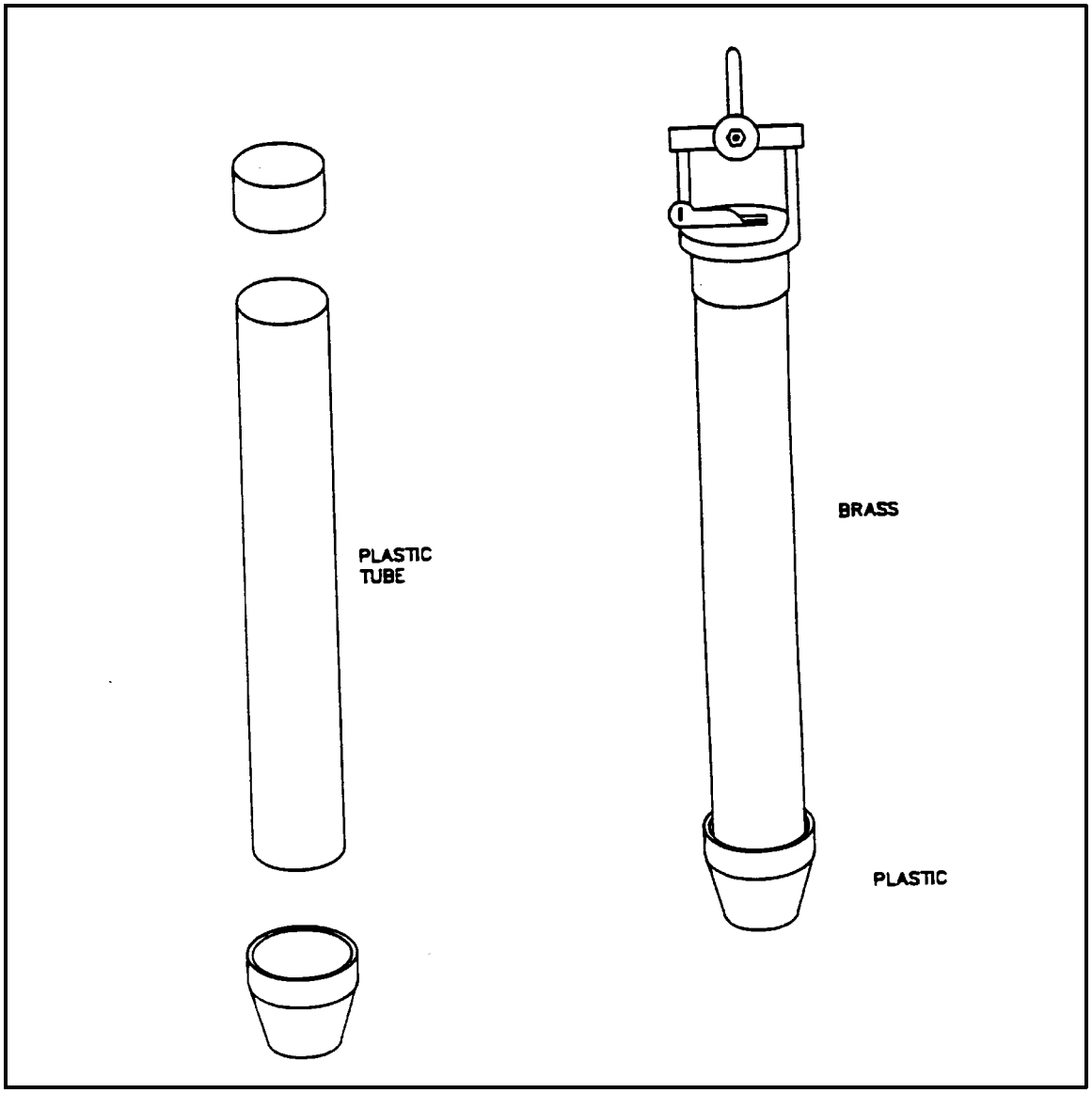
APPENDIX A (Cont'd)

Figures

FIGURE 4. Sample Coring Device



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APPENDIX C

EPA ERT SOP No. 2012 – Soil Sampling

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SOIL SAMPLING

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1.0 SCOPE AND APPLICATION

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7.0 PROCEDURES

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  - 7.2.4 Sampling at Depth with a Split Spoon (Barrel) Sampler
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8.0 CALCULATIONS

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Figures

SUPERCEDES: SOP #2012; Revision 0.0; 11/16/94; U.S. EPA Contract 68-C4-0022.

1.0 SCOPE AND APPLICATION

The purpose of this standard operating procedure (SOP) is to describe the procedures for the collection of representative soil samples. Sampling depths are assumed to be those that can be reached without the use of a drill rig, direct-push, or other mechanized equipment (except for a back-hoe). Analysis of soil samples may determine whether concentrations of specific pollutants exceed established action levels, or if the concentrations of pollutants present a risk to public health, welfare, or the environment.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the actual procedures used should be documented and described in an appropriate site report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Soil samples may be collected using a variety of methods and equipment depending on the depth of the desired sample, the type of sample required (disturbed vs. undisturbed), and the soil type. Near-surface soils may be easily sampled using a spade, trowel, and scoop. Sampling at greater depths may be performed using a hand auger, continuous flight auger, a trier, a split-spoon, or, if required, a backhoe.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Chemical preservation of solids is not generally recommended. Samples should, however, be cooled and protected from sunlight to minimize any potential reaction. The amount of sample to be collected and proper sample container type are discussed in ERT/REAC SOP #2003 Rev. 0.0 08/11/94, *Sample Storage, Preservation and Handling*.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary potential problems associated with soil sampling - cross contamination of samples and improper sample collection. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Improper sample collection can involve using contaminated equipment, disturbance of the matrix resulting in compaction of the sample, or inadequate homogenization of the samples where required, resulting in variable, non-representative results.

5.0 EQUIPMENT

Soil sampling equipment includes the following:

- Maps/plot plan
- Safety equipment, as specified in the site-specific Health and Safety Plan
- Survey equipment or global positioning system (GPS) to locate sampling points
- Tape measure
- Survey stakes or flags
- Camera and film
- Stainless steel, plastic, or other appropriate homogenization bucket, bowl or pan
- Appropriate size sample containers
- Ziplock plastic bags
- Logbook
- Labels
- Chain of Custody records and custody seals
- Field data sheets and sample labels
- Cooler(s)
- Ice
- Vermiculite
- Decontamination supplies/equipment
- Canvas or plastic sheet
- Spade or shovel
- Spatula
- Scoop
- Plastic or stainless steel spoons
- Trowel(s)
- Continuous flight (screw) auger
- Bucket auger
- Post hole auger
- Extension rods
- T-handle
- Sampling trier
- Thin wall tube sampler
- Split spoons
- Vehimeyer soil sampler outfit
  - Tubes
  - Points
  - Drive head
  - Drop hammer
  - Puller jack and grip
- Backhoe

6.0 REAGENTS

Reagents are not used for the preservation of soil samples. Decontamination solutions are specified in ERT/REAC SOP #2006 Rev. 0.0 08/11/94, *Sampling Equipment Decontamination*, and the site specific work plan.

7.0 PROCEDURES

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies required.

2. Obtain necessary sampling and monitoring equipment.

3. Decontaminate or pre-clean equipment, and ensure that it is in working order.

4. Prepare schedules and coordinate with staff, client, and regulatory agencies, if appropriate.

5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. Specific site factors, including extent and nature of contaminant, should be considered when selecting sample location. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. All staked locations should be utility-cleared by the property owner or the On-Scene-Coordinator (OSC) prior to soil sampling; and utility clearance should always be confirmed before beginning work.

7.2 Sample Collection

7.2.1 Surface Soil Samples

Collection of samples from near-surface soil can be accomplished with tools such as spades, shovels, trowels, and scoops. Surface material is removed to the required depth and a stainless steel or plastic scoop is then used to collect the sample.

This method can be used in most soil types but is limited to sampling at or near the ground surface. Accurate, representative samples can be collected with this procedure depending on the care and precision demonstrated by the sample team member. A flat, pointed mason trowel to cut a block of the desired soil is helpful when undisturbed profiles are required. Tools plated with chrome or other materials should not be used. Plating is particularly common with garden implements such as potting trowels.

The following procedure is used to collect surface soil samples:

1. Carefully remove the top layer of soil or debris to the desired sample depth with a pre-cleaned spade.

2. Using a pre-cleaned, stainless steel scoop, plastic spoon, or trowel, remove and discard a thin layer of soil from the area which came in contact with the spade.

3. If volatile organic analysis is to be performed, transfer the sample directly into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval or location into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.2 Sampling at Depth with Augers and Thin Wall Tube Samplers

This system consists of an auger, or a thin-wall tube sampler, a series of extensions, and a "T" handle (Figure 1, Appendix A). The auger is used to bore a hole to a desired sampling depth, and is then withdrawn. The sample may be collected directly from the auger. If a core sample is to be collected, the auger tip is then replaced with a thin wall tube sampler. The system is then lowered down the borehole, and driven into the soil to the completion depth. The system is withdrawn and the core is collected from the thin wall tube sampler.

Several types of augers are available; these include: bucket type, continuous flight (screw), and post-hole augers. Bucket type augers are better for direct sample recovery because they provide a large volume of sample in a short time. When continuous flight augers are used, the sample can be collected directly from the flights. The continuous flight augers are satisfactory when a composite of the complete soil column is desired. Post-hole augers have limited utility for sample collection as they are designed to cut through fibrous, rooted, swampy soil and cannot be used below a depth of approximately three feet.

The following procedure is used for collecting soil samples with the auger:

1. Attach the auger bit to a drill rod extension, and attach the "T" handle to the drill rod.

2. Clear the area to be sampled of any surface debris (e.g., twigs, rocks, litter). It may be advisable to remove the first three to six inches of surface soil for an area approximately six inches in radius around the drilling location.

3. Begin augering, periodically removing and depositing accumulated soils onto a plastic sheet spread near the hole. This prevents accidental brushing of loose material back down the borehole when removing the auger or adding drill rods. It also facilitates refilling the hole, and avoids possible contamination of the surrounding area.

4. After reaching the desired depth, slowly and carefully remove the auger from the hole. When sampling directly from the auger, collect the sample after the auger is removed from the hole and proceed to Step 10.

5. Remove auger tip from the extension rods and replace with a pre-cleaned thin wall tube sampler. Install the proper cutting tip.

6. Carefully lower the tube sampler down the borehole. Gradually force the tube sampler into the soil. Do not scrape the borehole sides. Avoid hammering the rods as the vibrations may cause the boring walls to collapse.

7. Remove the tube sampler, and unscrew the drill rods.

8. Remove the cutting tip and the core from the device.

9. Discard the top of the core (approximately 1 inch), as this possibly represents material collected before penetration of the layer of concern. Place the remaining core into the appropriate labeled sample container. Sample homogenization is not required.

10. If volatile organic analysis is to be performed, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly.

    When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

11. If another sample is to be collected in the same hole, but at a greater depth, reattach the auger bit to the drill and assembly, and follow steps 3 through 11, making sure to decontaminate the auger and tube sampler between samples.

12. Abandon the hole according to applicable state regulations. Generally, shallow holes can simply be backfilled with the removed soil material.

7.2.3 Sampling with a Trier

The system consists of a trier, and a "T" handle. The auger is driven into the soil to be sampled and used to extract a core sample from the appropriate depth.

The following procedure is used to collect soil samples with a sampling trier:

1. Insert the trier (Figure 2, Appendix A) into the material to be sampled at a 0° to 45° angle from horizontal. This orientation minimizes the spillage of sample.

2. Rotate the trier once or twice to cut a core of material.

3. Slowly withdraw the trier, making sure that the slot is facing upward.

4. If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7.2.4 Sampling at Depth with a Split Spoon (Barrel) Sampler

Split spoon sampling is generally used to collect undisturbed soil cores of 18 or 24 inches in length. A series of consecutive cores may be extracted with a split spoon sampler to give a complete soil column profile, or an auger may be used to drill down to the desired depth for sampling. The split spoon is then driven to its sampling depth through the bottom of the augured hole and the core extracted.

When split spoon sampling is performed to gain geologic information, all work should

be performed in accordance with ASTM D1586-98, "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils".

The following procedures are used for collecting soil samples with a split spoon:

1. Assemble the sampler by aligning both sides of barrel and then screwing the drive shoe on the bottom and the head piece on top.

2. Place the sampler in a perpendicular position on the sample material.

3. Using a well ring, drive the tube. Do not drive past the bottom of the head piece or compression of the sample will result.

4. Record in the site logbook or on field data sheets the length of the tube used to penetrate the material being sampled, and the number of blows required to obtain this depth.

5. Withdraw the sampler, and open by unscrewing the bit and head and splitting the barrel. The amount of recovery and soil type should be recorded on the boring log. If a split sample is desired, a cleaned, stainless steel knife should be used to divide the tube contents in half, longitudinally. This sampler is typically available in 2 and 3 1/2 inch diameters. A larger barrel may be necessary to obtain the required sample volume.

6. Without disturbing the core, transfer it to appropriate labeled sample container(s) and seal tightly.

7.2.5 Test Pit/Trench Excavation

A backhoe can be used to remove sections of soil, when detailed examination of soil characteristics are required. This is probably the most expensive sampling method because of the relatively high cost of backhoe operation.

The following procedures are used for collecting soil samples from test pits or trenches:

1. Prior to any excavation with a backhoe, it is important to ensure that all sampling locations are clear of overhead and buried utilities.

2. Review the site specific Health & Safety plan and ensure that all safety precautions including appropriate monitoring equipment are installed as required.

3. Using the backhoe, excavate a trench approximately three feet wide and approximately one foot deep below the cleared sampling location. Place excavated soils on plastic sheets. Trenches greater than five feet deep must be sloped or protected by a shoring system, as required by OSHA regulations.

4. A shovel is used to remove a one to two inch layer of soil from the vertical face of the pit where sampling is to be done.

5. Samples are taken using a trowel, scoop, or coring device at the desired intervals. Be sure to scrape the vertical face at the point of sampling to remove any soil that may have fallen from above, and to expose fresh soil for sampling. In many instances, samples can be collected directly from the backhoe bucket.

6. If volatile organic analyses are required, transfer the sample into an appropriate, labeled sample container with a stainless steel lab spoon, or equivalent and secure the cap tightly. Place the remainder of the sample into a stainless steel, plastic, or other appropriate homogenization container, and mix thoroughly to obtain a homogenous sample representative of the entire sampling interval. Then, either place the sample into appropriate, labeled containers and secure the caps tightly; or, if composite samples are to be collected, place a sample from another sampling interval into the homogenization container and mix thoroughly. When compositing is complete, place the sample into appropriate, labeled containers and secure the caps tightly.

7. Abandon the pit or excavation according to applicable state regulations. Generally, shallow excavations can simply be backfilled with the removed soil material.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration

activities must occur prior to sampling/operation, and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OHSA and corporate health and safety procedures, in addition to the procedures specified in the site specific Health & Safety Plan..

12.0 REFERENCES

Mason, B.J. 1983. Preparation of Soil Sampling Protocol: Technique and Strategies. EPA-600/4-83-020.

Barth, D.S. and B.J. Mason. 1984. Soil Sampling Quality Assurance User's Guide. EPA-600/4-84-043.

U.S. Environmental Protection Agency. 1984 Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. EPA-600/4-84-076.

de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. 1980. Samplers and Sampling Procedures for Hazardous Waste Streams. EPA-600/2-80-018.

ASTM D 1586-98, ASTM Committee on Standards, Philadelphia, PA.

APPENDIX A
Figures
SOP #2012
February 2000

FIGURE 1. Sampling Augers

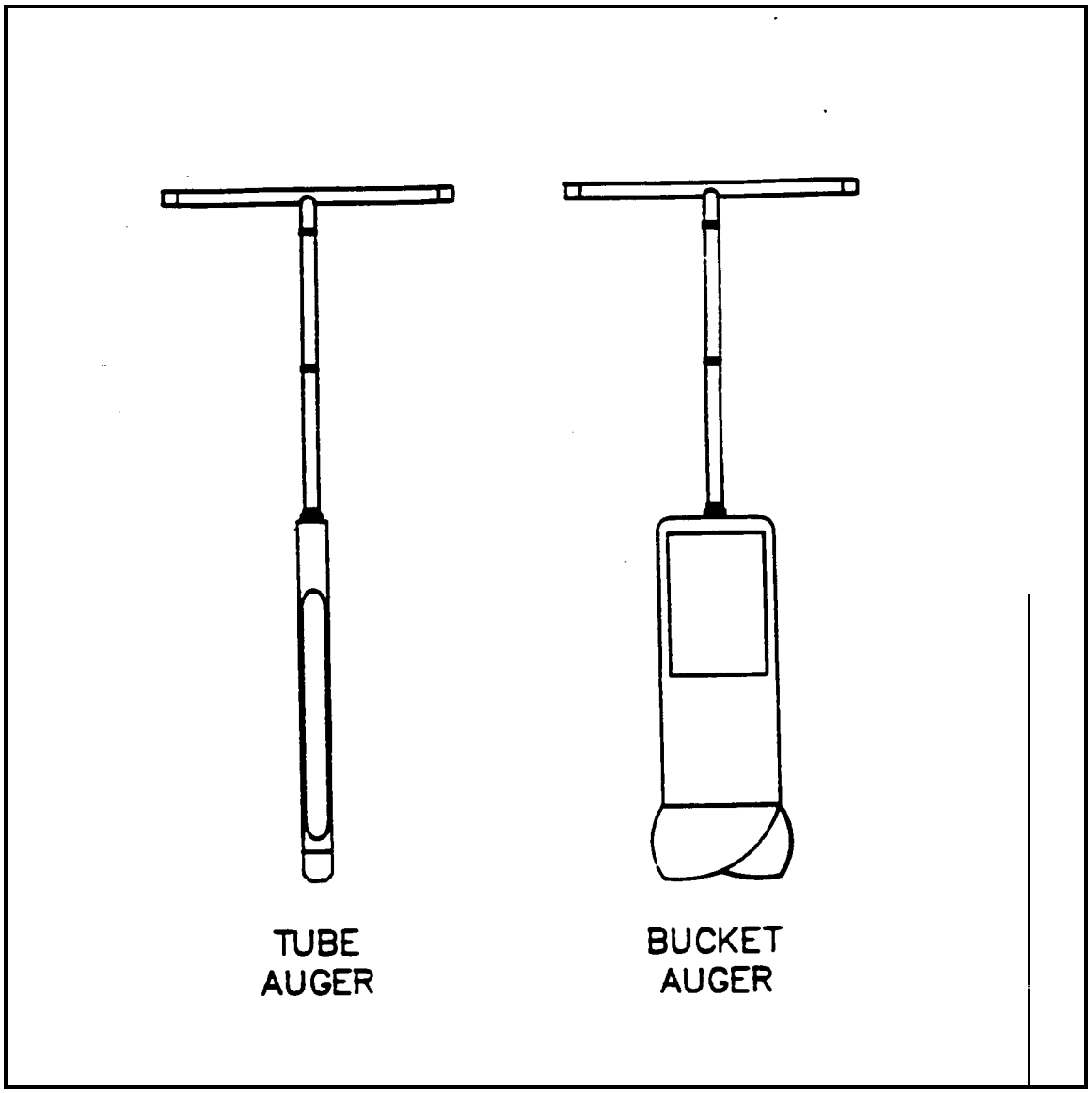
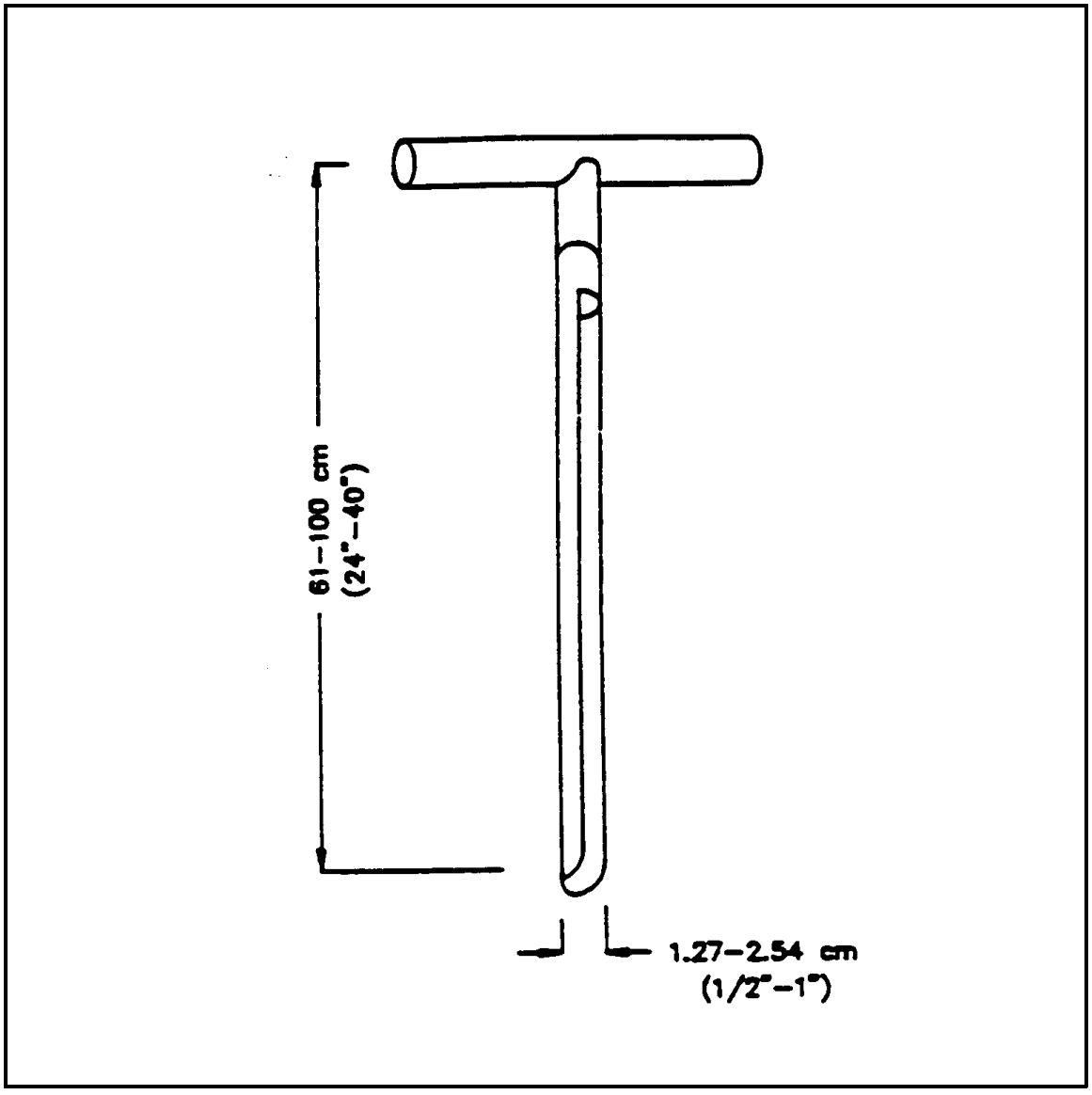


FIGURE 2. Sampling Trier



APPENDIX D

EPA ERT SOP # 2003 – Sample Storage, Preservation and Handling

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U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SAMPLE STORAGE, PRESERVATION AND HANDLING

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*These sections affected by Revision 0.0.

SUPERCEDES: SOP #2003; Revision 2.0; 01/09/92; U.S. EPA Contract 68-03-3482.

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide general guidelines for the storage and preservation of water and soil/sediment samples. Requirements for sample volume, matrix spike/matrix spike duplicate (MS/MSD) sample volume, container type, and preservation techniques are presented for both individual parameters and groups of parameters. Specific requirements for sample storage, preservation and handling must be established in the Quality Assurance (QA) Work Plan prior to sample collection.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U. S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

This SOP is applicable to all water or soil/sediment samples collected by ERT/REAC personnel. For handling, storage and preservation requirements for waste and air samples, refer to the specific SOPs for waste and air sampling techniques.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

3.1 Sample Storage and Preservation

Samples should be collected using equipment and procedures appropriate to the matrix, parameters and sampling objective. The volume of the sample collected must be sufficient to perform the analysis requested. Sample containers must not be pre-rinsed with the sample prior to sample collection.

Table 1 (Appendix A) contains a list of parameters which are typically of interest in ERT/REAC activations. Table 1 also indicates sample volumes to be collected by matrix and parameter. Samples must be stored in the proper types of containers and preserved in a manner appropriate to the analysis to be performed. This information is also provided in Table 1. To prevent leakage during shipping, sample containers should be no more than 90% full. If air space would affect sample integrity (i.e., samples for VOA analysis), fill the sample container completely and place the container in a second container to meet the 90% requirement.

All samples must be cooled to 4°C from the time of collection until analysis. When a preservative other than cooling is used, the preservative is generally added after the sample is collected, unless the sample container has been pre-preserved by the laboratory. If necessary, the pH must be adjusted to the appropriate level and checked with pH paper in a manner which will not contaminate the sample.

Depending on the arrangements for sample analysis and the amount of sample required for the analysis, it is possible that aliquots for several analyses may be taken from the same sample container. This should be verified with the laboratory performing the analyses prior to sample collection.

All sample containers must be labelled appropriately. The exterior of the sample containers must be wiped clean and dry prior to sample packaging. All samples must be packaged according to the requirements of U.S. Department of Transportation (U.S. DOT) or International Air Transportation Association (IATA).

3.2 Special Analytical Requests

If a parameter or group of parameters is not included in Table 1 (Appendix A), the laboratory performing the analysis should be contacted to determine the appropriate sample containers, volumes and preservatives. This information shall be documented in the QA Work Plan.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

The following are interferences or potential problems associated with sample storage, preservation and handling:

1. Samples should be protected from sunlight which may initiate photodegradation of sample components.

2. Delaying sample preservation may cause chemical reactions to occur, altering original sample composition.

3. Improper sample preservation may adversely affect sample results.

4. Inadequate sample volume may prohibit the appropriate analyses from being performed.

5.0 EQUIPMENT/APPARATUS

The equipment/apparatus required to collect samples must be determined on a site specific basis. Due to the wide variety of sampling equipment available, refer to the specific SOPs for sampling techniques which include lists of the equipment/apparatus required for sampling.

The following specific equipment/apparatus may be required for proper sample preservation:

- pipettes (various sizes)
- bulb
- pH paper
- safety equipment

6.0 REAGENTS

Reagents required for preservation of samples are specified in Table 1 (Appendix A). The preservatives required are specified by the analyses to be performed. Decontamination solutions are specified in ERT/REAC SOP #2006, Sampling Equipment Decontamination.

7.0 PROCEDURES

Once aqueous samples are collected, add the appropriate preservative to reach the desired pH. For non-aqueous samples, cool samples to 4°C immediately after collection. For handling, storage and preservation requirements for waste and air samples, refer to the specific SOPs.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

Refer to the specific SOPs for the type and frequency of QA/Quality Control (QC) samples to be analyzed, the acceptance criteria for the QA/QC samples, and any other QC activities which are associated with sampling techniques. All data associated with sampling must be documented on Field Data Sheets or within site logbooks.

10.0 DATA VALIDATION

Refer to the specific SOPs for data validation activities that are associated with sampling techniques.

11.0 HEALTH AND SAFETY

When working with potential hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

12.0 REFERENCES

This section is not applicable to this SOP.

APPENDIX A
Table
SOP #2003
August, 1994

TABLE 1. Sample Containers, Volumes to be Collected, and Preservatives by Parameter and Matrix[1]

Parameter	Matrix[2]	Container[3]	Volume to be Collected	Preservative
Acidity/Alkalinity	W	P or G	1 liter	Cool (4°C)
Acidity/Alkalinity	S	P or G	8 oz	Cool (4°C)
BNA[4]	W	G (amber)	2 x 1 liter	Cool (4°C)
BNA	S	G	8 oz	Cool (4°C)
BOD	W	G	1 liter	Cool (4°C)
COD	W	P or G	1 liter	Cool (4°C),H_2SO_4,pH<2
Cr^{+6}	W	P	200 ml	Cool (4°C)
Creosotes[4]	W	G	2 x 1 liter	Cool (4°C)
Creosotes	S	G	8 oz	Cool (4°C)
Cyanide[4]	W	P	1 liter	Cool (4°C),NaOH,pH>12
Cyanide	S	G	8 oz	Cool (4°C)
Dioxin/Furans	W	G	2 x 1 liter	Cool (4°C)
Dioxin/Furans	S	G	16 oz	Cool (4°C)
Herbicides[4]	W	G	2 x 1 liter	Cool (4°C)
Herbicides	S	G	8 oz	Cool (4°C)
Metals	W	P or G	1 liter	Cool (4°C),HNO_3, pH<2
Metals	S	G	8 oz	Cool (4°C)
Oil & Grease[4]	W	G	2 x 1 liter	Cool (4°C),H_2SO_4,pH<2
Oil & Grease	S	G	8 oz	Cool (4°C)
Petroleum Hydrocarbons[4]	W	G	2 x 1 liter	Cool (4°C),H_2SO_4pH<2
Petroleum Hydrocarbons	S	G	8 oz	Cool (4°C)
Pesticides/PCBs[4]	W	G (amber)	2 x 1 liter	Cool (4°C)
Pesticides/PCBs	S	G	8 oz	Cool (4°C)
Phenols	W	G	1 liter	Cool (4°C),H_2SO_4,pH<2
Phenols	S	G	8 oz	Cool (4°C)
Polynuclear Aromatic Hydrocarbons[4]	W	G	2 x 1 liter	Cool (4°C)
Polynuclear Aromatic Hydrocarbons	S	G	8 oz	Cool (4°C)
Reactivity (RCRA) (Cyanide)	W	P	1 liter	Cool (4°C),NaOH,pH>12
Reactivity (RCRA) (Sulfide)	W	P	1 liter	Cool (4°C),4.0 ml zinc acetate solution
Reactivity (RCRA) (Cyanide/Sulfide)	S	G (amber)	8 oz	Cool (4°C)
Corrosivity (RCRA)	W	P	500 ml	Cool (4°C)
Ignitibility (RCRA)	W	G (amber)	500 ml	Cool (4°C)
Ignitibility (RCRA)	S	G (amber)	8 oz	Cool (4°C)

TABLE 1. Sample Containers, Volumes to be Collected, and Preservatives by Parameter and Matrix[1] (Continued)

Parameter	Matrix[2]	Container[3]	Volume to be Collected	Preservative
TCLP-VOAs[6]	W	G	3 x 40 ml vial	Cool (4°C)
TCLP-BNAs	W	G (amber)	2 x 1 liter	Cool (4°C)
TCLP-Pesticides/Herbicides	W	G (amber)	2 x 1 liter	Cool (4°C)
TCLP-Inorganics	W	P	1 liter	Cool (4°C),HNO_3,pH<2
TCLP-Non-Volatile Extraction[5]	S	G	16 oz	Cool (4°C)
TCLP-Volatile Extraction[5]	S	G	16 oz	Cool (4°C)
TOC	W	P or G	500 ml	Cool (4°C), H_2SO_4,pH<2
TOC	S	G	8 oz	Cool (4°C)
TOX	W	G	300 ml	Cool (4°C)
TOX	S	G	8 oz	Cool (4°C)
VOAs[6]	W	G	3 x 40 ml vial	Cool (4°C)[7]
VOAs	S	G	40 ml vial	Cool (4°C)

(1) ERT/REAC requirements. Subcontract laboratory requirements may vary. Verify prior to sample collection.
(2) W - water, S - soil/sediment
(3) P - polyethylene, G - glass
(4) For 1 sample of every batch of 10 (or less) samples, collect 2 additional 1 liter volumes for MS/MSD analysis.
(5) For 1 sample of every batch of 10 (or less) samples, collect 2 additional 16 oz volumes for MS/MSD analysis.
(6) Avoid excessive turbulence when filling the sample container. The container must be sealed so that no air bubbles are entrapped. No headspace allowed.
(7) For drinking water samples, if residual chlorine is present, the sample should be preserved with 0.008% sodium thiosulfate. EPA Methods 330.4 and 330.5 may be used for measurement of residual chlorine. Field test kits are commercially available for this purpose.

APPENDIX E

EPA ERT SOP # 2004 Sample Packaging and Shipment

(Document not Generated by START)

U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SAMPLE PACKAGING AND SHIPMENT

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- 3.2 Environmental Samples versus Hazardous Material Samples*
- 3.3 Environmental Samples
  - 3.3.1 Packaging
  - 3.3.2 Marking/Labeling of Shipping Containers and Shipping Papers*
  - 3.3.3 Transportation
- 3.4 Hazardous Material Samples
  - 3.4.1 Determination of Transportation Category*
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  - 3.4.3 Marking/Labeling of Shipping Containers and Shipping Papers
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- A - Figures
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6.0 REFERENCES

*These sections affected by Revision 0.0.

SUPERCEDES: SOP #2004; Revision 0.0; 08/11/94; U.S. EPA Contract 68-C4-0022.

1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to summarize requirements for the packaging, marking/labeling, and shipping of environmental and hazardous materials samples.

2.0 APPLICABILITY

This SOP is applicable to all Response, Engineering, and Analytical Contract (REAC) personnel when packaging, marking/labeling, and shipping environmental and hazardous material samples.

3.0 DESCRIPTION

3.1 General

Samples collected by REAC personnel are typically shipped to the REAC laboratory or a subcontract laboratory for analysis. Samples must be transported in a manner that will ensure their integrity, guard the samples from the detrimental effects of sample leakage or breakage and protect the health and safety of shipping/receiving personnel. Regulations for packaging, marking/labeling, and shipping of hazardous materials and wastes are promulgated by the U.S. Department of Transportation (U.S. DOT). Air carriers which transport hazardous materials, in particular Federal Express, require compliance with the current edition of the International Air Transport Association (IATA) *Dangerous Goods Regulations*, which applies to shipment and transportation of hazardous materials samples by air carrier. Following current IATA regulations will ensure compliance with U.S. DOT.

Employees should be aware that regulatory agencies with jurisdiction have the authority to levy substantial fines and penalties to violators. Failure on the part of any employee to comply with the requirements of these procedures may be cause for disciplinary action, including discharge.

3.2 Environmental Samples versus Hazardous Material Samples

Samples collected by REAC personnel are classified as either environmental or hazardous material samples. In general, environmental samples (soils, sediments, surface and ground waters) are those collected from off-site areas and are not expected to contain high concentrations of contaminants considered to be hazardous. Soils, sediments, surface and ground waters collected from on-site areas may be classified as hazardous material samples if they contain hazardous levels of contaminants. On-site materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are generally considered hazardous material samples. It should be noted that the sample collection location (on-site versus off-site) is not the dominant factor in determining whether the sample is an environmental or hazardous waste sample, but rather the concentration of the contaminants and the nature of the matrix. The following are examples of the types of information that the Task Leader may use to determine if a matrix should be considered either an environmental or hazardous material samples:

- proximity of the sampling location to the suspected source of contamination

- field screening results (HNu, OVA, XRF, etc.)
- environmental indicators such as living biota (vegetation, fish, etc.), staining, matrix characteristics (i.e., does the soil or water appear "normal"?)
- historic sampling and analytical results
- type of site and activities conducted on the site

Distinctions must be made between environmental and hazardous material samples:

- To determine the IATA requirements for the transportation of samples. If there is any doubt, a sample should be considered hazardous and shipped accordingly.
- To protect the health and safety of sample receiving personnel. Special precautions may be necessary when samples other than those of an environmental nature are received.

3.3 Environmental Samples

3.3.1 Packaging

Environmental samples must be packaged as follows:

1. The sample jars should be properly labeled in accordance with ERT/REAC SOP #2002, *Sample Documentation*, and the exteriors of the sample jars should be wiped clean and dried, if necessary. The sealed sample jars should be placed in a polyethylene bag (one sample per bag), and the bag should be sealed.

2. The sample jars may be placed in a U.S. DOT-approved fiberboard box or cooler (shipping container) which has been lined with a large polyethylene bag or plastic sheeting.

3. The shipping container must be packed with enough noncombustible, absorbent, cushioning material to minimize the possibility of sample jar breakage, and to absorb any material that may have leaked. If there are multiple sample jars, there must be sufficient cushioning material between them to prevent breakage if the shipping container is dropped or severely shocked.

4. If maintenance of the sample jars at 4°C is necessary, wet or blue ice must be placed into two sealable polyethylene bags which must be sealed and placed in the shipping container. Additional absorbent material may be added, if necessary.

   NOTE: If dry ice is used, it should be limited to 4 pounds or less per shipping container. Use of more than 4 pounds of dry ice will require the completion of the Federal Express Air bill for Dangerous Goods Shipments. In addition, the shipping

container must be vented to allow for escape of carbon dioxide gas. It is recommended to use a dry ice shipping container.

5. The Chain of Custody Record, completed in accordance with ERT/REAC SOP #4005, *Chain of Custody Procedures*, must be placed in a polyethylene bag which must be sealed and taped to the inside of the shipping container lid.

6. The shipping container must be closed and sealed with duct or strapping tape.

3.3.2 Marking/Labeling of Shipping Containers and Shipping Papers

1. Sample jars must have completed sample labels, and the shipping container must be marked "Environmental Samples" (Appendix A, Figure 1). When liquid samples are included in the shipping container, two sides of the shipping container must be marked "This End Up" or arrow labels (Appendix A, Figure 2) should be affixed. No IATA marking or labeling are required. However, the shipping container must be labeled with the names and addresses of both the sender and the receiver. At least two custody seals must be placed across the shipping container openings as per ERT/REAC SOP #4005, *Chain of Custody Procedures*.

2. No IATA shipping papers are required.

3.3.3 Transportation

1. There are no IATA restrictions on the mode of transportation.

2. In general, Federal Express is used for all overnight sample shipment. Due to holding time restrictions, this is highly recommended unless the samples personally can be transported to the appropriate laboratory for analysis.

3. When environmental samples are shipped by Federal Express, a Federal Express Airbill (Appendix A, Figure 3) must be completed. If Federal Express service is not available for a particular location, the REAC Shipping/Receiving Department must be contacted to determine the appropriate overnight carrier and make arrangements for shipment.

3.4 Hazardous Material Samples

3.4.1 Determination of Hazard Class

Prior to mobilization in the field and any sampling activities, the following steps must be taken to determine the Hazard Class(es) of the materials to be shipped.

1. The Task Leader or designee shall identify the material for which samples are being collected and analyzed. If it is a class of materials (i.e., BNAs, VOAs, etc.), the

specific compound/analyte considered to be the most hazardous should be identified.

2. The Task Leader or designee shall provide the REAC Shipping/Receiving Department with the proper shipping name (usually the chemical name or a synonym) of the material to be shipped. If the material is not included in the IATA List of Dangerous Goods, the Task Leader, or designee, shall assist the Shipping/Receiving personnel in determining the appropriate Hazard Class and Packing Group, if applicable. This is usually dependent on the physical properties of the hazardous material.

   The appropriate Hazard Class and Packing Group for hazardous material samples can be determined through professional judgement and logical elimination of inappropriate classes for the material being shipped. Definitions of the nine Hazard Classes specified by the IATA *Dangerous Goods Regulations*(1) are included in Appendix B.

3. The Shipping/Receiving personnel will consult the IATA *Dangerous Goods Regulations* (current edition) for packing, marking and labeling, and documentation instructions. REAC personnel will implement the "Limited Quantities" regulations unless they are not applicable.

4. Instructions provided by the Shipping/Receiving Department must be documented in the site specific Work Plan.

3.4.2 Packaging

Unless otherwise directed by the IATA *Dangerous Goods Regulations*, samples must be packaged as described in Section 3.3.1 of this SOP.

3.4.3 Marking/Labeling of Shipping Containers and Shipping Papers

Shipping containers must be marked, labeled and shipping documentation completed as described in the IATA *Dangerous Goods Regulations.* Shipping containers must be labeled with the names and addresses of both the sender and the receiver, and at least two custody seals must be placed across the shipping container openings.

3.4.4 Transportation

1. Generally, Federal Express is used for all overnight shipment of samples. Due to holding time constraints, this is highly recommended unless the samples can be personally transported to the appropriate laboratory for analysis.

2. When hazardous material samples are shipped by Federal Express, a Federal Express Airbill (Appendix A, Figure 3) in conjunction with a Shipper's Declaration for Dangerous Goods (Appendix A, Figure 4) must be completed. If Federal Express service is not available for a particular location, the REAC Shipping/Receiving Department must be contacted to determine the appropriate overnight carrier and to make arrangements for shipment.

3.5 Training Requirements

All personnel responsible for packing and shipping samples shall be trained as required by 40 CFR 171-177, as follows:

3.5.1 Initial Training Requirements

- Training for employees employed after November 15, 1992, shall be completed within 90 days of their employment.
- Employees who change job functions shall complete training within 90 days after the change if packing and shipping samples are to be part of the employee's new responsibilities.
- Employees employed after November 15, 1992, or have changed job functions may perform sample packing and shipping functions prior to the completion of training provided they are supervised by properly trained and knowledgeable employees.

3.5.2 Recurrent Training Requirements

- Employees shall receive training in packing and shipping samples as required by 40 CFR 171-177 at least once every three years.

4.0 RESPONSIBILITIES

4.1 Field Personnel

Field personnel are responsible for packaging and shipping samples in accordance with this SOP and the IATA *Dangerous Goods Regulations.* Field personnel must attend initial and recurrent training as described above.

4.2 Task Leaders

Task Leaders are responsible for assuring samples are packaged and shipped in accordance with this SOP and the IATA *Dangerous Goods Regulations,* for obtaining packaging and shipping information, when required, from the REAC Shipping/Receiving Department and assuring that all field personnel have the required training.

4.3 Shipping/Receiving Department

The REAC Shipping/Receiving Department is responsible for providing appropriate packaging and shipping information when requested by Task Leaders or field personnel. The REAC Shipping/Receiving Department in conjunction with Health and Safety are responsible for providing initial and recurrent training as described above.

4.4 Section Leaders and the QA Office

The Section Leaders and the QA Office are responsible for assuring this SOP is implemented.

5.0 APPENDICES

A - Figures
B - IATA Hazard Class Definitions

6.0 REFERENCES

(1) International Air Transport Association (IATA). 2000. *Dangerous Goods Regulations.* Montreal, Quebec, Canada.

APPENDIX A
Figures
SOP #2004
November 2000

FIGURE 1. Environmental Samples Label

FIGURE 2. Arrow Labels

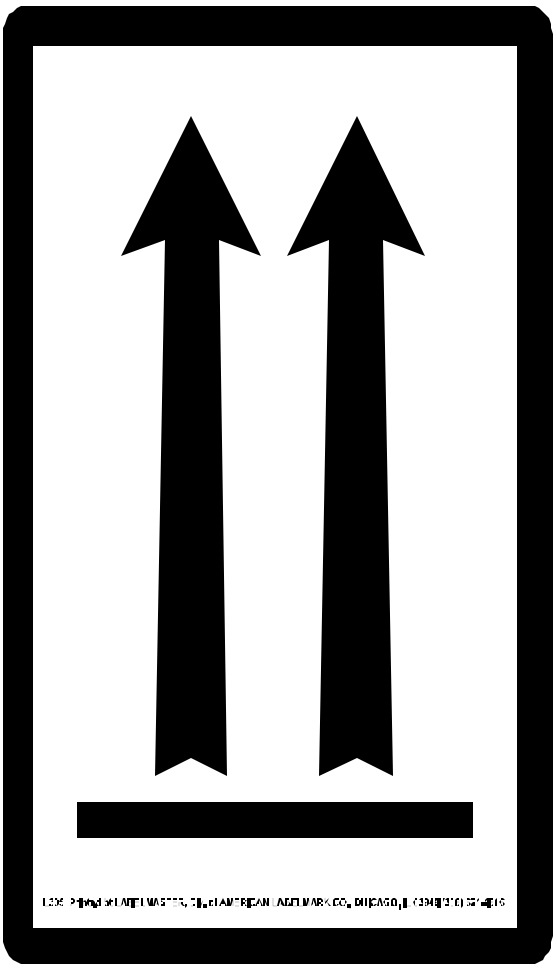


FIGURE 3. Federal Express Airbill

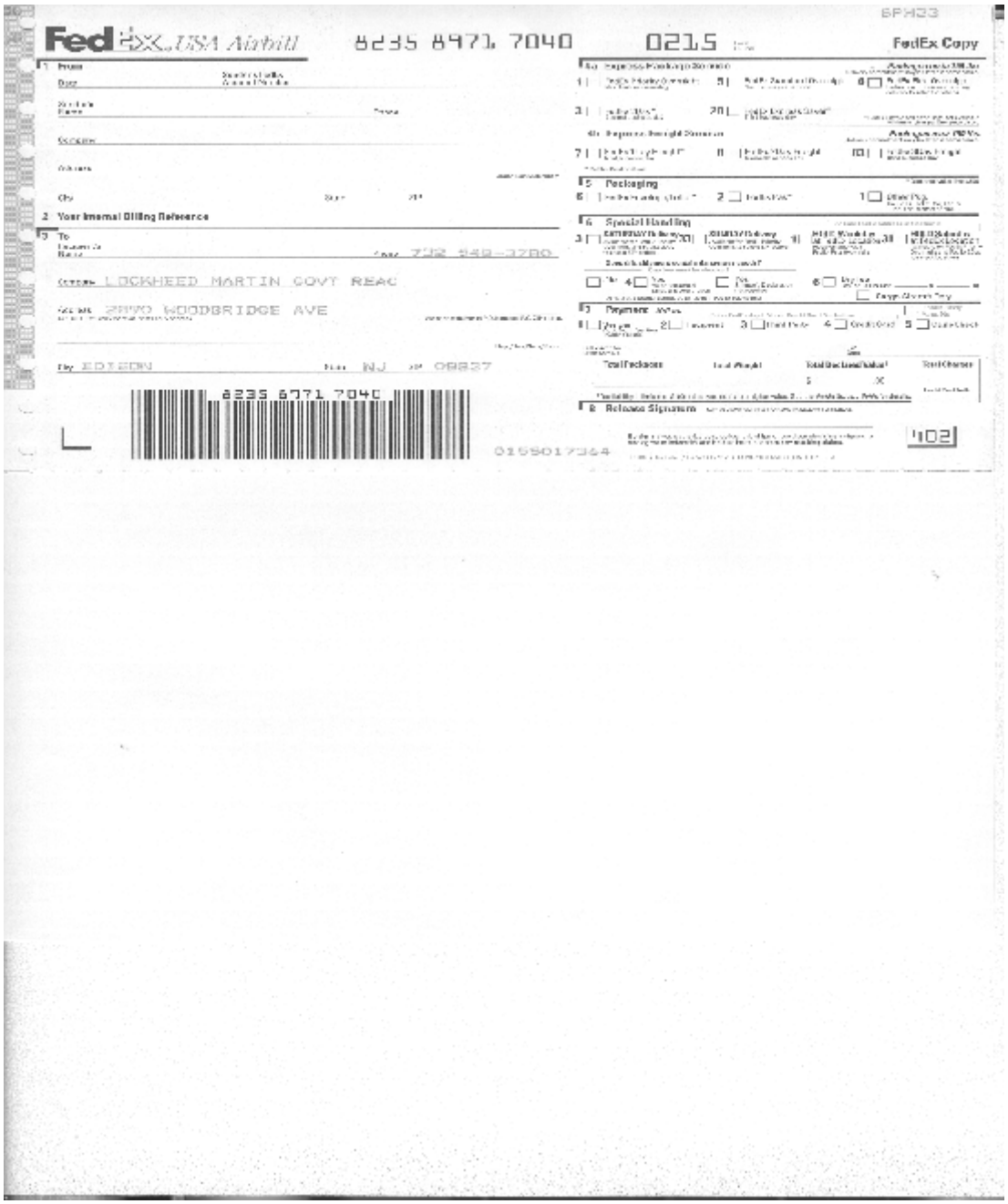
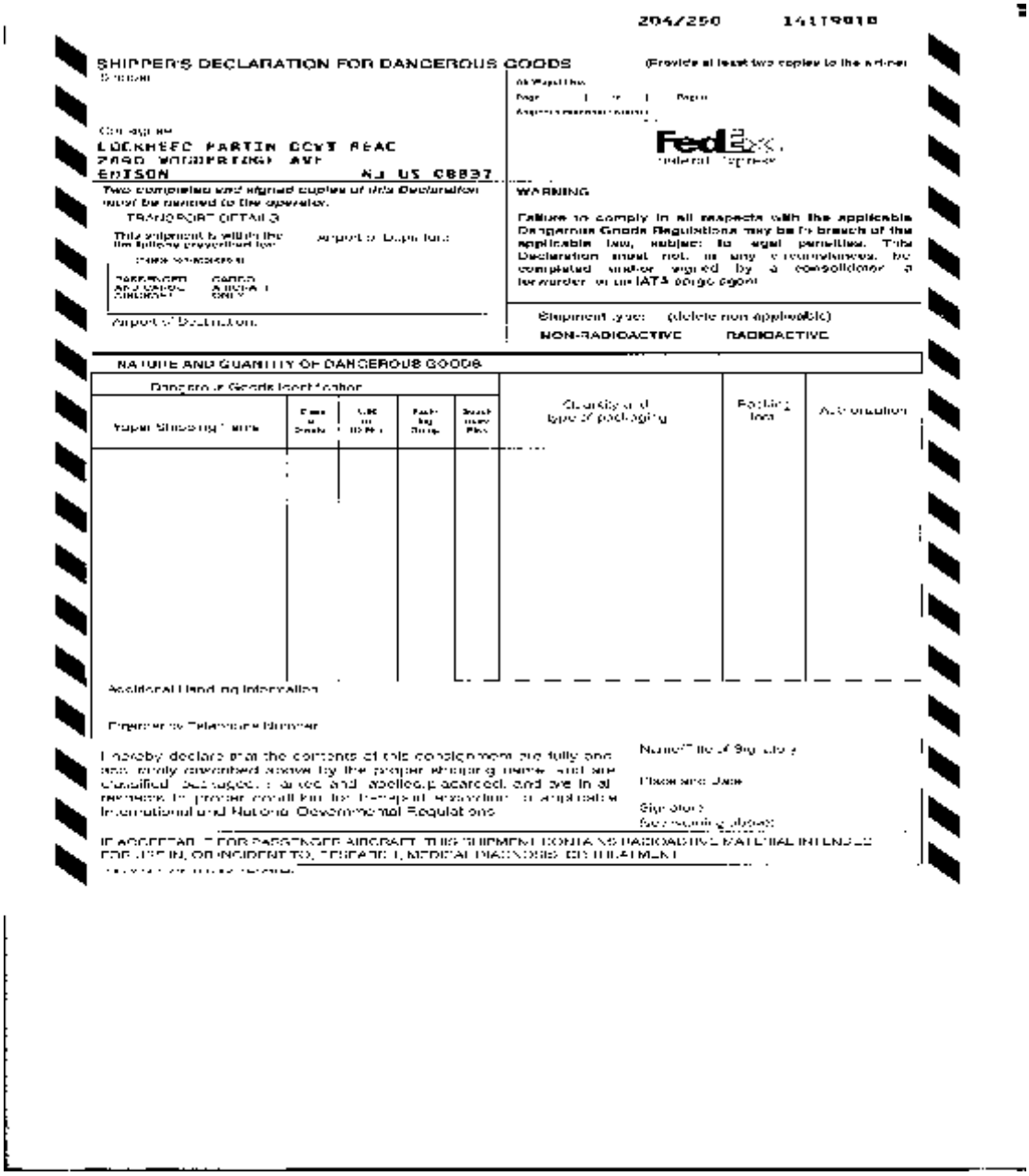


FIGURE 4. Shipper's Declaration for Dangerous Goods



204/250 1411/9010

SHIPPER'S DECLARATION FOR DANGEROUS GOODS (Provide at least two copies to the airline)

Consigned
LOCKHEED MARTIN GOVT REAC
2890 WOODBRIDGE AVE
EDISON NJ US 08837

Two completed and signed copies of this Declaration must be handed to the operator.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for (delete non-applicable)

PASSENGER AND CARGO AIRCRAFT / CARGO AIRCRAFT ONLY

Airport of Departure:

Airport of Destination:

FedEx Federal Express

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator or forwarder or an IATA cargo agent.

Shipment type: (delete non-applicable)
NON-RADIOACTIVE RADIOACTIVE

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification						
Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and type of packaging	Packing Inst.	Authorization

Additional Handling Information

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 labelled/placarded, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations

Name/Title of Signatory

Place and Date

Signature
(See reverse)

IF ACCEPTED FOR PASSENGER AIRCRAFT THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT

APPENDIX B
IATA Hazard Class Definitions
SOP #2004
November 2000

IATA Hazard Class Definitions

Class 1 - Explosives

This class includes:

(a) Explosive substances, except those whose predominant hazard should be in another class.

(b) Explosive articles, except devices containing explosive substances in such a limited quantity or of such a character that their inadvertent or accidental ignition or initiation, during transport, will not cause any manifestation of projection, fire, smoke, heat, or loud noise external to the device.

(c) Articles and substances not mentioned above which are manufactured with a view to producing a practical explosion or pyrotechnic effect.

Class 2 - Gases

This class comprises compressed gases, liquefied gases, gases in solution, refrigerated liquefied gases, mixtures of gases, mixtures of one or more gases with one or more vapors of substances of other classes, articles charged with a gas, tellurium hexafluoride, and aerosols.

Class 3 - Flammable Liquids

This class comprises liquids or mixtures of liquids or liquids containing solids in solution or in suspension which give off a flammable vapor at temperatures of not more than 60.5°C (141°F) closed-cup test or not more than 65.6°C (150°F) open-cup test.

Class 4 - Flammable Solids

Class 4 is divided into three divisions as follows:

Division 4.1 - Flammable Solids

Flammable solids are readily combustible solids and those which may cause fire through friction. Readily combustible solids are powdered, granular, or pasty substances which are dangerous if they can be easily ignited by brief contact with an ignition source, such as a burning match, and if the flame spreads rapidly. The danger may not only come from the fire but also from the toxic combustion products. Metal powders are especially dangerous because of the difficulty of extinguishing a fire since normal extinguishing agents such as carbon dioxide or water can increase the hazard.

Division 4.2 - Substances Liable to Spontaneous Combustion

Substances which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being then liable to catch fire.

Division 4.3 - Substances Which, on Contact With Water, Emit Flammable Gases (Dangerous When Wet)

Substances which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Class 5 - Oxidizing Substances and Organic Peroxides

Oxidizing substances are substances which, in themselves are not necessarily combustible, but may generally cause or contribute to the combustion of other material by yielding oxygen.

Organic peroxides are organic substances which contain the bivalent structure -O-O- and may be considered derivatives of hydrogen peroxide in which one or both of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are thermally unstable substances which may undergo exothermic, self-accelerating decomposition. In addition, they may have one or more of the following properties:

- Be liable to explosive decomposition
- Burn rapidly
- Be sensitive to impact or friction
- React dangerously with other substances
- Cause damage to the eyes

Class 6 - Poisonous (Toxic) and Infectious Substances

Poisonous (toxic) substances are substances which are liable to cause death or injury or harm to human health if swallowed, inhaled, or contacted by the skin.

Infectious substances are substances containing viable micro-organisms including a bacterium, virus, rickettsia, parasite, fungus, or a recombinant, hybrid, or mutant, that are known or reasonably believed to cause disease in humans or animals.

Genetically modified organisms or micro-organisms

Biological products

Diagnostic specimens

Class 7 - Radioactive Material

For the purpose of these regulations, a radioactive material is any article or substance with a specific activity greater than 70 kBq/kg (0.002 uCi/g).

Class 8 - Corrosives

Substances which, in the event of leakage, can cause severe damage by chemical action when in contact with living tissue or can materially damage other freight or the means of transport.

Class 9 - Miscellaneous Dangerous Goods

Substances and articles which during air transport present a danger not covered by other classes. Included in this class are: other regulated substances, magnetized material, and miscellaneous articles and substances.

Other regulated substances are liquids or solids which have anaesthetic, noxious, or other similar properties which could cause extreme annoyance or discomfort to passengers and/or flight crew members.

Magnetized material is any material, which, when packed for air transport, has a magnetic field strength of 0.159 A/m (0.002 gauss) or more at a distance of 2.1 m (7 ft) from any point on the surface of the assembled package.

Examples of miscellaneous articles and substances are as follows:

- Asbestos
- Dry ice
- Environmentally hazardous substances
- Polymeric beads
- Zinc dithionite

APPENDIX F

EPA ERT SOP #2049 Investigation-Derived Waste Management

(Document not Generated by START)

U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

INVESTIGATION-DERIVED WASTE MANAGEMENT

CONTENTS

1.0 SCOPE AND APPLICATION

2.0 METHOD SUMMARY

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

5.0 EQUIPMENT/APPARATUS

- 5.1 Waste Disposal
- 5.2 Decontamination Equipment

6.0 REAGENTS

7.0 PROCEDURES

- 7.1 Regulatory Background and Options for Management of IDW
- 7.2 Identification of IDW
- 7.3 Management of IDW
  - 7.3.1 Waste Minimization
  - 7.3.2 Types, Hazards, and Quantities of IDW
  - 7.3.3 On-Site IDW Handling Options
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8.0 CALCULATIONS

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10.0 DATA VALIDATION

11.0 HEALTH AND SAFETY

12.0 REFERENCES

SUPERCEDES: SOP #2170; Revision 0.0; 03/22/94; U.S. EPA Contract 68-03-3482.

1.0 SCOPE AND APPLICATION

The objective of this standard operating procedure (SOP) is to provide general reference information on management of investigation-derived wastes (IDW) generated during REAC site investigations. IDW includes soil cuttings, drilling muds, purged groundwater, decontamination fluids (water and other fluids), disposable sampling equipment, and disposable personal protective equipment (PPE).

This SOP is applicable only if the U.S. Environmental Protection Agency (U.S. EPA) On-Scene Coordinator, Remedial Project Manager, or other Regional Manager does not have procedures in place for IDW management.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Prior to site activities, the Task Leader should determine if the On-Scene Coordinator, Remedial Project Manager, or other Regional Manager has procedures in place for IDW management. This should be done by contacting the Work Assignment Manager.

If it is determined that procedures are not in place, then the Task Leader should evaluate IDW handling and management options based on:

- The site contaminants and their concentrations, and total projected volume of IDW.
- Media potentially affected (e.g., groundwater, soil) by management options.
- Location of the nearest population(s) and likelihood and/or degree of site access.
- Potential exposure to workers.
- Potential environmental impacts.

Every effort must be made to ensure the selection of investigation method(s) that minimize the generation of IDW, contact with contaminants, and cost of disposal. Efforts made to characterize IDW shall be consistent with the scope and purpose of the site investigation.

The QA Work Plan describing the anticipated approach and procedures for IDW management shall be clear, detailed, and concise. Any deviation or modification due to unexpected and unforeseen field conditions will be noted in the site logbook.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

This section is not applicable to this SOP.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

IDW can be contaminated with various hazardous substances. To handle IDW in compliance with regulations, reasonable efforts should be made to characterize the wastes.

5.0 EQUIPMENT/APPARATUS

Equipment, materials, and supplies needed for containerizing IDW are generally selected based on waste characteristics or constituents. Other considerations include the case of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, 5-gallon buckets, plastic bags, etc. can help segregate contaminated materials. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

5.1 Waste Disposal

- Trash bags
- Trash containers
- 55-gallon drums or 5-gallon pails
- Metal/plastic buckets/containers for storage and disposal of decontamination solutions

5.2 Decontamination Equipment

- Drop cloths of plastic or other suitable materials
- Large galvanized tubs
- Wash solutions
- Rinse solutions
- Long-handled, soft-bristled brushes
- Paper or cloth towels
- Metal or plastic cans or drums
- Soap or wash solution

6.0 REAGENTS

There are no reagents used in this procedure aside from decontamination solutions. In general, the following solvents are typically utilized for decontamination purposes:

- 10% nitric acid
- Acetone (pesticide grade)
- Hexane (pesticide grade)
- Methanol

7.0 PROCEDURES

7.1 Regulatory Background and Options for Management of IDW

This SOP is based on the following guidance document:

OERR Directive 9345.3-02, "Management of Investigation-Derived Wastes During Site Inspections," May 1991.

The guidance document presents a general regulatory background and options for management of IDW generated during Superfund site activities. IDW includes soil cuttings, drilling muds, purged groundwater, decontamination fluids (water and other fluids), disposable sampling equipment and disposable PPE. The National Contingency Plan (NCP) requires that management of IDW generated during site investigations complies with all applicable or relevant and appropriate requirements (ARARs) to the extent practicable. In addition, other legal and practical considerations may affect the handling of IDW.

IDW from site inspections may contain hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Some CERCLA hazardous substances are hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA), while other substances are regulated by other federal laws such as the Safe Drinking Water Act (SDWA), Clean Air Act (CAA), Toxic Substances Control Act (TSCA), and the Clean Water Act (CWA). The U.S. EPA estimates that RCRA hazardous IDW have been generated at fewer than 15% of CERCLA sites. However, RCRA regulations, and in particular the RCRA Land Disposal Restrictions, are very important as potential ARARs since they regulate treatment, storage, and disposal of many of the most toxic and hazardous materials.

The U.S. EPA's strategy for managing RCRA hazardous IDW is based on:

- The NCP directive that site investigations comply with ARARs to the extent practicable.
- The area of contamination (AOC) unit concept.

The most important general elements of managing IDW are as follows:

- Leaving a site in no worse condition than existed prior to the investigation.
- Removing those wastes that pose an immediate threat to human health or the environment.
- Leaving on site those wastes that do not require off-site disposal or long-term above-ground containerization.
- Complying with federal and state ARARs to the extent practicable.
- Planning and coordination for IDW management.
- Minimizing the quantity of wastes generated.

The specific elements of the approach are as follows:

- Characterizing IDW through the use of existing information (manifests, Material Safety Data Sheets, previous test results, knowledge of the waste generation process, and other relevant records) and best professional judgement.
- Delineating an AOC unit for leaving RCRA hazardous soil cuttings within the unit.
- Containerizing and disposing of RCRA hazardous groundwater, decontamination fluids, PPE, and disposable sampling equipment (if generated in excess of 100 kg/month) at RCRA Subtitle C facilities.
- Leaving on site RCRA nonhazardous soil cuttings, groundwater, and decontamination fluids preferably without containerization and testing.

The U.S. EPA does not recommend the removal of wastes from all sites and, in particular, from those sites where IDW does not pose any immediate threat to human health or the environment.

Based on this information and the guidelines included in the following sections, the REAC Task Leader should include a plan for handling IDW in the QA Work Plan. Any deviations from or modifications to the plan due to unexpected or unforeseen field conditions must be noted in the site logbook.

7.2 Identification of IDW

To handle IDW properly, the Task Leader must know whether it contains CERCLA hazardous substances and whether these substances are RCRA hazardous wastes or contaminants regulated under other statutes. To handle IDW in compliance with regulations, reasonable efforts should be made to characterize them. However, these efforts should be consistent with the scope and purpose of the site investigation.

In particular, extensive testing is not warranted in most cases; instead, the nature of the wastes should be assessed by applying professional judgement, using readily available information about the site (such as manifests, storage reports, preliminary assessments, and results of earlier studies), as well as direct observation of the wastes for discoloration, odor, or other indicators of contamination. Similarly, RCRA procedures for determining whether a waste exhibits RCRA hazardous characteristics do not require testing if the decision can be made by applying knowledge of the

characteristic in light of the materials or process used. In most instances, a determination may be made based on available information and professional judgement. This does not mean that IDW can be assumed to be nonhazardous unless clearly proven otherwise. Given the limited information available, the Task Leader, in conjunction with the Work Assignment Manager, must determine whether it more likely than not that the wastes are hazardous.

Even if the IDW do not contain RCRA hazardous waste, the Task Leader should determine whether they contain other CERCLA hazardous substances. CERCLA hazardous substances include, in addition to RCRA hazardous wastes, substances, elements, compounds, solutions, or mixtures designated as hazardous or toxic under CERCLA itself or under the authority of other laws such as TSCA, CWA, CAA, and SDWA. Therefore, even if RCRA is not applicable, one of these statutes may be.

IDW may include, but is not limited to, the following items:

Solid Waste

- Soil
- Sediment
- Sludge/slag
- Drum solids
- Drill cuttings
- Used glassware
- Dedicated/expendable equipment (bailers, fitters, hose, buckets, XRF cups, etc.)
- Biological tissue
- Clean trash
- PPE
- Decontamination equipment (buckets, brushes, clothing, tools, etc.)
- Field analytics waste (immunoassay, chlor-n-oil, chlor-in-soil, HACH kits, sample extracts, etc.)

Aqueous Waste

- Drilling fluids
- Purge water
- Development water
- Decontamination fluids

7.3 Management of IDW

7.3.1 Waste Minimization

The Task Leader should select site investigation methods that minimize the generation of IDW, particularly RCRA hazardous wastes. The site investigation team should limit contact

with contaminants and use drilling and decontamination methods (such as steam cleaning) that minimize PPE, disposable equipment, decontamination fluids, and soil cuttings. In particular, the inspection team should minimize the amounts of solvents used for decontamination or eliminate solvents altogether. Minimizing the amount of wastes generated reduces the number of IDW handling problems and costs of disposal.

7.3.2 Types, Hazards, and Quantities of IDW

To handle IDW properly, the Task Leader must determine the types (such as soil cuttings, groundwater, decontamination fluids, PPE, or disposable equipment), characteristics (whether RCRA hazardous or containing other CERCLA hazardous substances), and quantities of anticipated wastes. As discussed previously, testing will generally not be required to characterize waste.

Upon determining the types of anticipated IDW, the Task Leader should determine IDW characteristics, in particular whether it is expected to be RCRA hazardous or to contain high concentrations of PCBs. For RCRA hazardous IDW, the Task Leader should determine whether it poses an increased hazard to human health and the environment relative to conditions that existed prior to the site investigation. Field analytical screening results, if available, may be helpful indicators of IDW characteristics. However, the Task Leader must remember that these are not RCRA tests and that the test results usually do not identify RCRA hazardous wastes. The Task Leader must also determine the exact properties of RCRA nonhazardous IDW to select an appropriate disposal facility when the off-site disposal is required.

Upon determining the type and characteristics of IDW to be generated, the Task Leader must assess the anticipated quantities of waste. This should be done based on past experience with site investigations of similar scope.

7.3.3 On-Site IDW Handling Options

In planning the scope of work, the Task Leader must decide if IDW can be left on site or if it must be disposed off site.

Handling of RCRA hazardous IDW and IDW with high PCB concentrations (greater than 50 ppm) may involve either moving the IDW within an AOC unit, or containerization, storage, testing, treatment, and off-site disposal. Handling of RCRA nonhazardous IDW usually involves various methods of on-site disposal. It is preferable to leave both RCRA hazardous and nonhazardous IDW on site whenever it complies with regulations and does not pose any immediate threat to human health and the environment.

If IDW are RCRA nonhazardous soil or water, they should be left on site unless other circumstances, such as state ARARs or a high probability of serious community concerns, require off-site disposal. RCRA hazardous soil also may be left on site within an AOC unit.

The Task Leader must determine procedures for handling IDW on site in conjunction with the Work Assignment Manager.

The on-site handling options available to the Task Leader when IDW are RCRA nonhazardous are listed below.

For soil cuttings:

1. Spread around the well.
2. Put back into the boring.
3. Put into a pit within the AOC.
4. Dispose of at the site's operating treatment/disposal unit (TDU).

For groundwater:

1. Pour onto ground next to well to allow infiltration.
2. Dispose of at the site's TDU.

For decontamination fluids:

1. Pour onto ground (from containers) to allow infiltration.
2. Dispose of at the site's TDU.

For decontaminated PPE and disposable equipment:

1. Double bag and deposit in the site or U.S. EPA dumpster, or in any municipal landfill.
2. Dispose of at the site's TDU.

If IDW are considered RCRA nonhazardous due to lack of information on the waste hazard, the Task Leader should have an alternate plan for handling IDW if field conditions indicate that these wastes are hazardous. In such a case, there should be an adequate number of containers available for collecting groundwater, decontamination water, soil cuttings, etc.

If IDW consists of RCRA hazardous soils that pose no immediate threat to human health and the environment, the Task Leader should plan on leaving it on site within a delineated AOC unit. However, the Task Leader must consider the proximity of residents and workers in the surrounding area and use best professional judgement to make these decisions. Planning for leaving RCRA hazardous waste on site involves:

- Delineating the AOC unit.
- Determining pit locations close to the borings within the AOC unit for waste burial.
- Covering hazardous IDW in the pits with surficial soil.
- Not containerizing and testing wastes designated to be left on site.

Another alternative for handling RCRA hazardous soil is disposal in a TDU located on the same property as the AOC under investigation. If the TDU is outside the AOC, it must comply with the off-site policy. If any decontamination fluids are generated which are RCRA hazardous wastes, they should be disposed of off site in compliance with the off-site policy or in compliance with the conditionally exempt small quantity generator exemption. Small quantities (i.e., no more than 100 kg/month) of decontamination fluids may be containerized prior to delivery to a hazardous waste facility.

7.3.4 Off-Site Disposal of IDW Options

IDW should be disposed of off site in the following situations:

- When they are RCRA hazardous water.
- When they are RCRA hazardous soil that may pose a substantial risk if left at the site.
- When they are RCRA hazardous PPE and disposable equipment.
- If leaving them on site would create increased risks at the site.

RCRA nonhazardous wastes could be disposed of off-site at appropriate RCRA nonhazardous facilities that are in compliance with CERCLA section 121(d)(3) and off-site policy when it is necessary to comply with legally enforceable requirements such as state ARARs that preclude on-site disposal. IDW designated for off-site disposal must be properly containerized, tested, and stored before pick up and disposal. Decontaminated PPE and disposable equipment should be double-bagged if sent to an off-site dumpster or municipal landfill.

Planning for off-site disposal should include the following guidelines:

- Informing the Work Assignment Manager that containerized IDW may be temporarily stored on site while awaiting pick up for off-site disposal.
- Initiating the procurement process for IDW testing, pick up and disposal.
- Coordinating IDW testing and pick-up activities.
- Preparing adequate numbers and types of containers. Drums should be used for collecting small amounts of IDW. Larger amounts of soil and water can be contained in Baker tanks, poly tanks, and bins. PPE and disposable equipment should be double-bagged for disposal at a municipal landfill or collected in drums for disposal at a hazardous waste facility.
- Designating a storage area (either within the site's existing storage facility, existing fenced area, or within a temporary fence constructed for the site investigation). No humans, children in particular, may have access to the storage area.

All IDW shipped off site, whether RCRA hazardous or not, must go to facilities that comply with the RCRA disposal policy, and the Task Leader, in conjunction with the REAC Purchasing Department, must verify that the facilities operate in accordance with this policy.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

There are no specific quality assurance activities which apply to the implementation of these procedures. However all IDW disposal information must be documented within site logbooks. Additionally, all shipping and transport of hazardous and nonhazardous samples will comply with Department of Transportation (DOT) and International Air Transport Association (IATA) regulations. For additional information regarding sample handling procedures refer to ERT/REAC SOP #2003, Sample Storage, Preservation, and Handling.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

12.0 REFERENCES

U.S. EPA, Guide to Management of Investigation Derived Wastes, OERR Directive 9345.3.03FS, January 1992.

U.S. EPA, Management of Investigations - Derived Wastes During Site Inspections, OERR Directive 9345.3-02, May 1991.

Code of Federal Regulations (CFR), Title 40, Part 261, Section 23, Section 11 (a) (3), and Section 24 (a) (b).

CFR Proposed Criteria: 51 FR 21685, June 30,1986 and 51 FR 21450, May 20, 1992.

APPENDIX G

EPA ERT SOP #2006 Sampling Equipment Decontamination

(Document not Generated by START)

SAMPLING EQUIPMENT DECONTAMINATION

SOP#: 2006
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide a description of the methods used for preventing, minimizing, or limiting cross-contamination of samples due to inappropriate or inadequate equipment decontamination and to provide general guidelines for developing decontamination procedures for sampling equipment to be used during hazardous waste operations as per 29 Code of Federal Regulations (CFR) 1910.120. This SOP does not address personnel decontamination.

These are standard (i.e. typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitation, or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The first step, a soap and water wash, removes all visible particulate matter and residual oils and grease. This may be preceded by a steam or high pressure water wash to facilitate residuals removal. The second step involves a tap water rinse and a distilled/deionized water rinse to remove the detergent. An acid rinse provides a low pH media for trace metals removal and is included in the decontamination process if metal samples are to be collected. It is followed by another distilled/deionized water rinse. If sample analysis does not include metals, the acid rinse step can be omitted. Next, a high purity solvent rinse is performed for trace organics removal if organics are a concern at the site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. Acetone is typically chosen because it is an excellent solvent, miscible in water, and not a target analyte on the Priority Pollutant List. If acetone is known to be a contaminant of concern at a given site or if Target Compound List analysis (which includes acetone) is to be performed, another solvent may be substituted. The solvent must be allowed to evaporate completely and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent.

The decontamination procedure described above may be summarized as follows:

1. Physical removal
2. Non-phosphate detergent wash
3. Tap water rinse
4. Distilled/deionized water rinse
5. 10% nitric acid rinse
6. Distilled/deionized water rinse
7. Solvent rinse (pesticide grade)
8. Air dry
9. Distilled/deionized water rinse

If a particular contaminant fraction is not present at the site, the nine (9) step decontamination procedure specified above may be modified for site specificity. For example, the nitric acid rinse may be eliminated if metals are not of concern at a site. Similarly, the solvent rinse may be eliminated if organics are not of

concern at a site. Modifications to the standard procedure should be documented in the site specific work plan or subsequent report.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest.

More specifically, sample collection and analysis of decontamination waste may be required before beginning proper disposal of decontamination liquids and solids generated at a site. This should be determined prior to initiation of site activities.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

- The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free (specifically for the contaminants of concern).

- The use of an untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal or industrial water treatment system.

- If acids or solvents are utilized in decontamination they raise health and safety, and waste disposal concerns.

- Damage can be incurred by acid and solvent washing of complex and sophisticated sampling equipment.

5.0 EQUIPMENT/APPARATUS

Decontamination equipment, materials, and supplies are generally selected based on availability. Other considerations include the ease of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, soft-bristle scrub brushes or long-handled bottle brushes can be used to remove contaminants. Large galvanized wash tubs, stock tanks, or buckets can hold wash and rinse solutions. Children's wading pools can also be used. Large plastic garbage cans or other similar containers lined with plastic bags can help segregate contaminated equipment. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

The following standard materials and equipment are recommended for decontamination activities:

5.1 Decontamination Solutions

- Non-phosphate detergent
- Selected solvents (acetone, hexane, nitric acid, etc.)
- Tap water
- Distilled or deionized water

5.2 Decontamination Tools/Supplies

- Long and short handled brushes
- Bottle brushes
- Drop cloth/plastic sheeting
- Paper towels
- Plastic or galvanized tubs or buckets
- Pressurized sprayers (H_2O)
- Solvent sprayers
- Aluminum foil

5.3 Health and Safety Equipment

Appropriate personal protective equipment (i.e., safety glasses or splash shield, appropriate gloves, aprons or coveralls, respirator, emergency eye wash)

5.4 Waste Disposal

- Trash bags
- Trash containers
- 55-gallon drums
- Metal/plastic buckets/containers for storage and disposal of decontamination solutions

6.0 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions. Table 1 (Appendix A) lists solvent rinses which may be required for elimination of particular chemicals. In

general, the following solvents are typically utilized for decontamination purposes:

- 10% nitric acid is typically used for inorganic compounds such as metals. An acid rinse may not be required if inorganics are not a contaminant of concern.
- Acetone (pesticide grade)[(1)]
- Hexane (pesticide grade)[(1)]
- Methanol[(1)]

[(1)] - Only if sample is to be analyzed for organics.

7.0 PROCEDURES

As part of the health and safety plan, a decontamination plan should be developed and reviewed. The decontamination line should be set up before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- The number, location, and layout of decontamination stations.
- Decontamination equipment needed.
- Appropriate decontamination methods.
- Methods for disposal of contaminated clothing, equipment, and solutions.
- Procedures can be established to minimize the potential for contamination. This may include: (1) work practices that minimize contact with potential contaminants; (2) using remote sampling techniques; (3) covering monitoring and sampling equipment with plastic, aluminum foil, or other protective material; (4) watering down dusty areas; (5) avoiding laying down equipment in areas of obvious contamination; and (6) use of disposable sampling equipment.

7.1 Decontamination Methods

All samples and equipment leaving the contaminated area of a site must be decontaminated to remove any contamination that may have adhered to equipment. Various decontamination methods will remove contaminants by: (1) flushing or other physical action, or (2) chemical complexing to inactivate contaminants by neutralization, chemical reaction, disinfection, or sterilization.

Physical decontamination techniques can be grouped into two categories: abrasive methods and non-abrasive methods, as follows:

7.1.1 Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The mechanical abrasive cleaning methods are most commonly used at hazardous waste sites. The following abrasive methods are available:

Mechanical

Mechanical methods of decontamination include using metal or nylon brushes. The amount and type of contaminants removed will vary with the hardness of bristles, length of time brushed, degree of brush contact, degree of contamination, nature of the surface being cleaned, and degree of contaminant adherence to the surface.

Air Blasting

Air blasting equipment uses compressed air to force abrasive material through a nozzle at high velocities. The distance between nozzle and surface cleaned, air pressure, time of application, and angle at which the abrasive strikes the surface will dictate cleaning efficiency. Disadvantages of this method are the inability to control the amount of material removed and the large amount of waste generated.

Wet Blasting

Wet blast cleaning involves use of a suspended fine abrasive. The abrasive/water mixture is delivered by compressed air to the contaminated area. By using a very fine abrasive, the amount of materials removed can be carefully controlled.

7.1.2 Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off a surface with pressure. In general, the equipment surface is not removed using non-abrasive methods.

Low-Pressure Water

This method consists of a container which is filled with water. The user pumps air out of the container to create a vacuum. A slender nozzle and hose allow the user to spray in hard-to-reach places.

High-Pressure Water

This method consists of a high-pressure pump, an operator controlled directional nozzle, and a high-pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) and flow rates usually range from 20 to 140 liters per minute.

Ultra-High-Pressure Water

This system produces a water jet that is pressured from 1,000 to 4,000 atmospheres. This ultra-high-pressure spray can remove tightly-adhered surface films. The water velocity ranges from 500 meters/second (m/s) (1,000 atm) to 900 m/s (4,000 atm). Additives can be used to enhance the cleaning action.

Rinsing

Contaminants are removed by rinsing through dilution, physical attraction, and solubilization.

Damp Cloth Removal

In some instances, due to sensitive, non-waterproof equipment or due to the unlikelihood of equipment being contaminated, it is not necessary to conduct an extensive decontamination procedure. For example, air sampling pumps hooked on a fence, placed on a drum, or wrapped in plastic bags are not likely to become heavily contaminated. A damp cloth should be used to wipe off contaminants which may have adhered to equipment through airborne contaminants or from surfaces upon which the equipment was set.

Disinfection/Sterilization

Disinfectants are a practical means of inactivating infectious agents. Unfortunately, standard sterilization methods are impractical for large equipment. This method of decontamination is typically performed off-site.

7.2 Field Sampling Equipment Decontamination Procedures

The decontamination line is setup so that the first station is used to clean the most contaminated item. It progresses to the last station where the least contaminated item is cleaned. The spread of contaminants is further reduced by separating each decontamination station by a minimum of three (3) feet. Ideally, the contamination should decrease as the equipment progresses from one station to another farther along in the line.

A site is typically divided up into the following boundaries: Hot Zone or Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and the Support or Safe Zone (SZ). The decontamination line should be setup in the Contamination Reduction Corridor (CRC) which is in the CRZ. Figure 1 (Appendix B) shows a typical contaminant reduction zone layout. The CRC controls access into and out of the exclusion zone and confines decontamination activities to a limited area. The CRC boundaries should be conspicuously marked. The far end is the hotline, the boundary between the exclusion zone and the contamination reduction zone. The size of the decontamination corridor depends on the number of stations in the decontamination process, overall dimensions of the work zones, and amount of space available at the site. Whenever possible, it should be a straight line.

Anyone in the CRC should be wearing the level of protection designated for the decontamination crew. Another corridor may be required for the entry and exit of heavy equipment. Sampling and monitoring equipment and sampling supplies are all maintained outside of the CRC. Personnel don their equipment away from the CRC and enter the exclusion zone through a separate access control point at the hotline. One person (or more) dedicated to decontaminating equipment is recommended.

7.2.1 Decontamination Setup

Starting with the most contaminated station, the decontamination setup should be as follows:

Station 1: Segregate Equipment Drop

Place plastic sheeting on the ground (Figure 2, Appendix B). Size will depend on amount of

equipment to be decontaminated. Provide containers lined with plastic if equipment is to be segregated. Segregation may be required if sensitive equipment or mildly contaminated equipment is used at the same time as equipment which is likely to be heavily contaminated.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

As indicated in 7.1.2, a high-pressure wash may be required for compounds which are difficult to remove by washing with brushes. The elevated temperature of the water from the high-pressure washers is excellent at removing greasy/oily compounds. High pressure washers require water and electricity.

A decontamination pad may be required for the high-pressure wash area. An example of a wash pad may consist of an approximately 1 1/2 foot-deep basin lined with plastic sheeting and sloped to a sump at one corner. A layer of sand can be placed over the plastic and the basin is filled with gravel or shell. The sump is also lined with visqueen and a barrel is placed in the hole to prevent collapse. A sump pump is used to remove the water from the sump for transfer into a drum.

Typically heavy machinery is decontaminated at the end of the day unless site sampling requires that the machinery be decontaminated frequently. A separate decontamination pad may be required for heavy equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Prior to setting up Station 3, place plastic sheeting on the ground to cover areas under Station 3 through Station 10.
Fill a wash basin, a large bucket, or child's swimming pool with non-phosphate detergent and tap water. Several bottle and bristle brushes to physically remove contamination should be dedicated to this station . Approximately 10 - 50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 4: Water Basin

Fill a wash basin, a large bucket, or child's swimming pool with tap water. Several bottle and bristle brushes should be dedicated to this station. Approximately 10-50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 5: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to contain the water during the rinsing process. Approximately 10-20 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 6: Nitric Acid Sprayers

Fill a spray bottle with 10% nitric acid. An acid rinse may not be required if inorganics are not a contaminant of concern. The amount of acid will depend on the amount of equipment to be decontaminated. Provide a 5-gallon bucket or basin to collect acid during the rinsing process.

Station 7: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 8: Organic Solvent Sprayers

Fill a spray bottle with an organic solvent. After each solvent rinse, the equipment should be rinsed with distilled/deionized water and air dried. Amount of solvent will depend on the amount of equipment to decontaminate. Provide a 5-gallon bucket or basin to collect the solvent during the rinsing process.

Solvent rinses may not be required unless organics are a contaminant of concern, and may be eliminated from the station sequence.

Station 9: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 10: Clean Equipment Drop

Lay a clean piece of plastic sheeting over the bottom

plastic layer. This will allow easy removal of the plastic in the event that it becomes dirty. Provide aluminum foil, plastic, or other protective material to wrap clean equipment.

7.2.2 Decontamination Procedures

Station 1: Segregate Equipment Drop

Deposit equipment used on-site (i.e., tools, sampling devices and containers, monitoring instruments radios, clipboards, etc.) on the plastic drop cloth/sheet or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross contamination. Loose leaf sampling data sheets or maps can be placed in plastic zip lock bags if contamination is evident.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

Use high pressure wash on grossly contaminated equipment. Do not use high- pressure wash on sensitive or non-waterproof equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Scrub equipment with soap and water using bottle and bristle brushes. Only sensitive equipment (i.e., radios, air monitoring and sampling equipment) which is waterproof should be washed. Equipment which is not waterproof should have plastic bags removed and wiped down with a damp cloth. Acids and organic rinses may also ruin sensitive equipment. Consult the manufacturers for recommended decontamination solutions.

Station 4: Equipment Rinse

Wash soap off of equipment with water by immersing the equipment in the water while brushing. Repeat as many times as necessary.

Station 5: Low-Pressure Rinse

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 6: Nitric Acid Sprayers (required only if metals are a contaminant of concern)

Using a spray bottle rinse sampling equipment with nitric acid. Begin spraying (inside and outside) at one end of the equipment allowing the acid to drip to the other end into a 5-gallon bucket. A rinsate blank may be required at this station. Refer to Section 9.

Station 7: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 8: Organic Solvent Sprayers

Rinse sampling equipment with a solvent. Begin spraying (inside and outside) at one end of the equipment allowing the solvent to drip to the other end into a 5-gallon bucket. Allow the solvent to evaporate from the equipment before going to the next station. A QC rinsate sample may be required at this station.

Station 9: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure washer.

Station 10 : Clean Equipment Drop

Lay clean equipment on plastic sheeting. Once air dried, wrap sampling equipment with aluminum foil, plastic, or other protective material.

7.2.3 Post Decontamination Procedures

1. Collect high-pressure pad and heavy equipment decontamination area liquid and waste and store in appropriate drum or container. A sump pump can aid in the collection process. Refer to the Department of Transportation (DOT) requirements for appropriate containers based on the contaminant of concern.

2. Collect high-pressure pad and heavy equipment decontamination area solid waste and store in appropriate drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

3. Empty soap and water liquid wastes from basins and buckets and store in appropriate

drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

4. Empty acid rinse waste and place in appropriate container or neutralize with a base and place in appropriate drum. pH paper or an equivalent pH test is required for neutralization. Consult DOT requirements for appropriate drum for acid rinse waste.

5. Empty solvent rinse sprayer and solvent waste into an appropriate container. Consult DOT requirements for appropriate drum for solvent rinse waste.

6. Using low-pressure sprayers, rinse basins, and brushes. Place liquid generated from this process into the wash water rinse container.

7. Empty low-pressure sprayer water onto the ground.

8. Place all solid waste materials generated from the decontamination area (i.e., gloves and plastic sheeting, etc.) in an approved DOT drum. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

9. Write appropriate labels for waste and make arrangements for disposal. Consult DOT regulations for the appropriate label for each drum generated from the decontamination process.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITYASSURANCE/ QUALITY CONTROL

A rinsate blank is one specific type of quality control sample associated with the field decontamination process. This sample will provide information on the effectiveness of the decontamination process employed in the field.

Rinsate blanks are samples obtained by running analyte free water over decontaminated sampling equipment to test for residual contamination. The blank water is collected in sample containers for handling, shipment, and analysis. These samples are treated identical to samples collected that day. A rinsate blank is used to assess cross contamination brought about by improper decontamination procedures. Where dedicated sampling equipment is not utilized, collect one rinsate blank per day per type of sampling device samples to meet QA2 and QA3 objectives.

If sampling equipment requires the use of plastic tubing it should be disposed of as contaminated and replaced with clean tubing before additional sampling occurs.

10.0 DATA VALIDATION

Results of quality control samples will be evaluated for contamination. This information will be utilized to qualify the environmental sample results in accordance with the project's data quality objectives.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow OSHA, U.S. EPA, corporate, and other applicable health and safety procedures.

Decontamination can pose hazards under certain circumstances. Hazardous substances may be incompatible with decontamination materials. For example, the decontamination solution may react with contaminants to produce heat, explosion, or toxic products. Also, vapors from decontamination solutions may pose a direct health hazard to workers by inhalation, contact, fire, or explosion.

The decontamination solutions must be determined to be acceptable before use. Decontamination materials may degrade protective clothing or equipment; some solvents can permeate protective clothing. If decontamination materials do pose a health hazard, measures should be taken to protect personnel or substitutions should be made to eliminate the hazard. The choice of respiratory protection based on contaminants of concern from the site may not be appropriate for solvents used in the decontamination process.

Safety considerations should be addressed when using abrasive and non-abrasive decontamination

equipment. Maximum air pressure produced by abrasive equipment could cause physical injury. Displaced material requires control mechanisms.

Material generated from decontamination activities requires proper handling, storage, and disposal. Personal Protective Equipment may be required for these activities.

Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard (i.e., acetone, alcohol, and trisodiumphosphate).

In some jurisdictions, phosphate containing detergents (i.e., TSP) are banned.

12.0 REFERENCES

Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, February, 1988.

A Compendium of Superfund Field Operations Methods, EPA 540/p-87/001.

Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, April 1, 1986.

Guidelines for the Selection of Chemical Protective Clothing, Volume 1, Third Edition, American Conference of Governmental Industrial Hygienists, Inc., February, 1987.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October, 1985.

APPENDIX A

Table

Table 1. Soluble Contaminants and Recommended Solvent Rinse

TABLE 1 Soluble Contaminants and Recommended Solvent Rinse		
SOLVENT[1]	EXAMPLES OF SOLVENTS	SOLUBLE CONTAMINANTS
Water	Deionized water Tap water	Low-chain hydrocarbons Inorganic compounds Salts Some organic acids and other polar compounds
Dilute Acids	Nitric acid Acetic acid Boric acid	Basic (caustic) compounds (e.g., amines and hydrazines)
Dilute Bases	Sodium bicarbonate (e.g., soap detergent)	Acidic compounds Phenol Thiols Some nitro and sulfonic compounds
Organic Solvents [2]	Alcohols Ethers Ketones Aromatics Straight chain alkalines (e.g., hexane) Common petroleum products (e.g., fuel, oil, kerosene)	Nonpolar compounds (e.g., some organic compounds)
Organic Solvent[2]	Hexane	PCBs

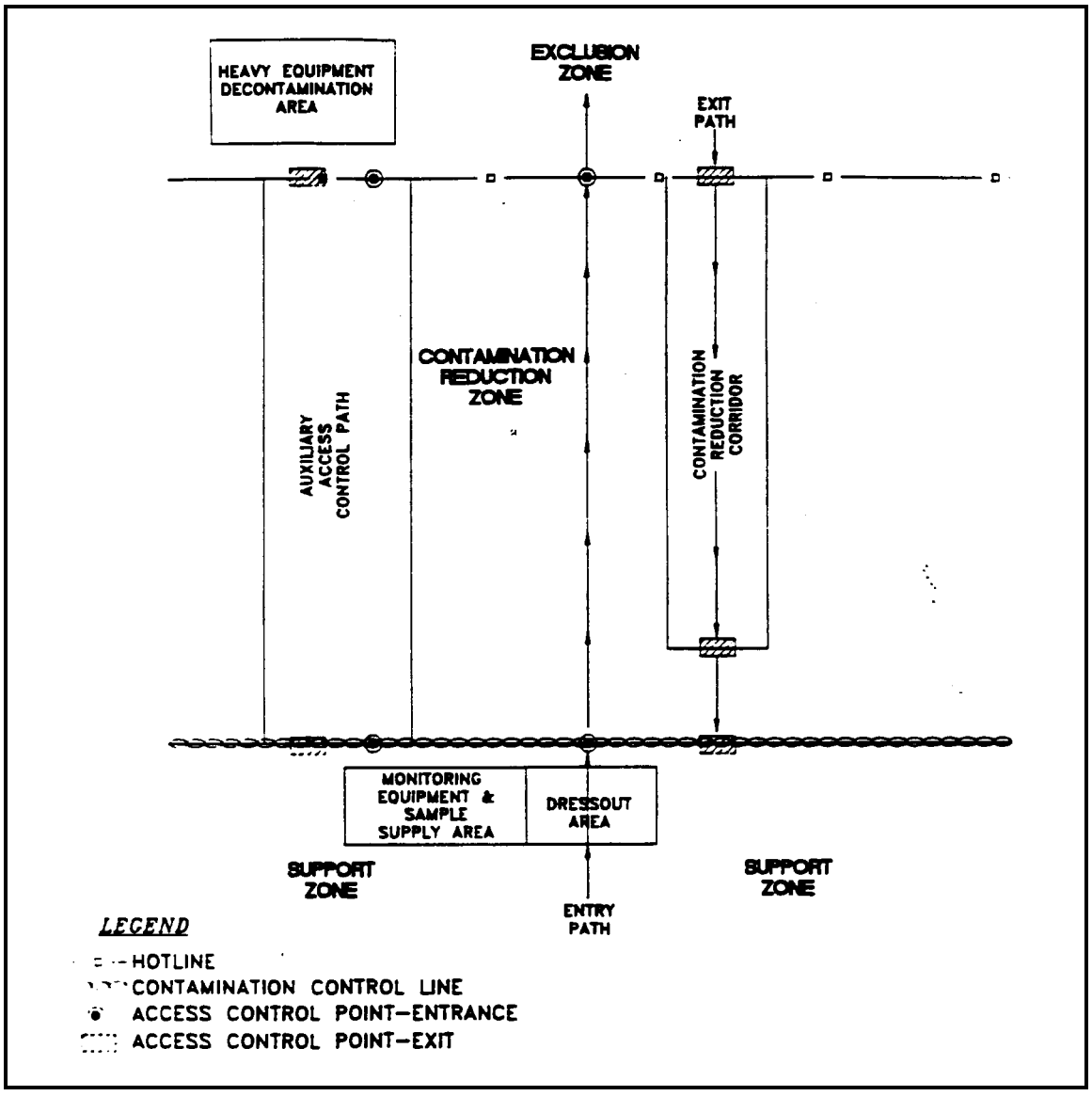
[1] - Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard

[2] - WARNING: Some organic solvents can permeate and/or degrade the protective clothing

APPENDIX B

Figures

Figure 1. Contamination Reduction Zone Layout



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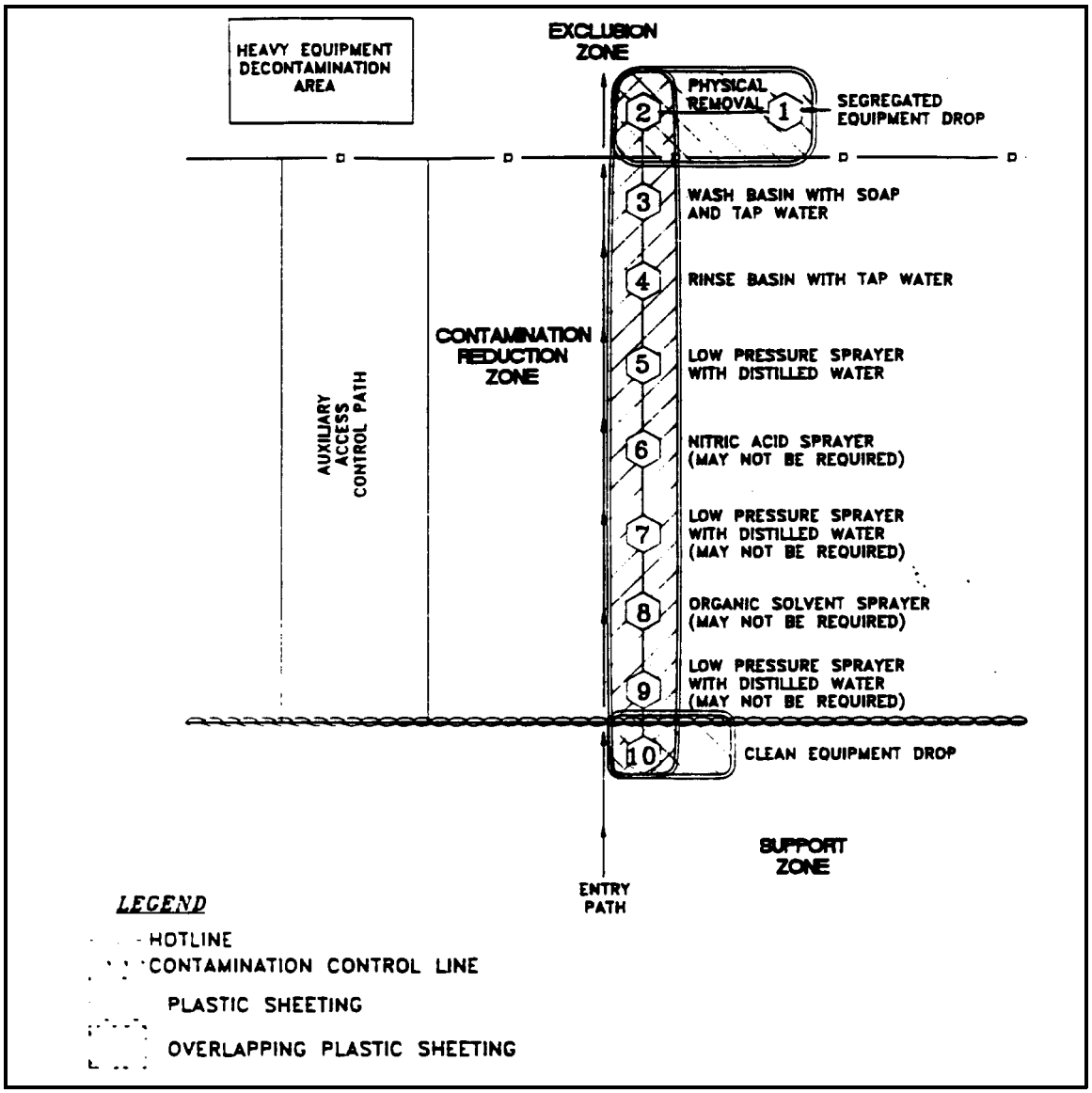
APPENDIX B (Cont'd.)

Figures

Figure 2. Decontamination Layout



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APPENDIX H

EPA ERT SOP #2002 Sample Documentation

(Document not Generated by START)

U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SAMPLE DOCUMENTATION

CONTENTS

1.0 OBJECTIVE

2.0 APPLICABILITY

3.0 DESCRIPTION

- 3.1 General
- 3.2 Site Logbooks*
- 3.3 Personal Logbooks
- 3.4 Field Data Sheets and Sample Labels*
  - 3.4.1 Field Data Sheets and Sample Labels
  - 3.4.2 Soil Gas Sampling Data Sheets and Sample Labels
  - 3.4.3 Air Sampling Work Sheets and Sample Labels
  - 3.4.4 Specialized Field Data Sheets
- 3.5 Chain of Custody*
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4.0 RESPONSIBILITIES

- 4.1 Task Leaders and Field Staff
- 4.2 Group Leaders and Section Leaders*
- 4.3 Quality Assurance Office

5.0 APPENDIX

- A - Figures

* These sections affected by Revision 0.0.

SUPERCEDES: SOP #2002; Revision 2.0; 05/17/93; U.S. EPA Contract 68-03-3482.

1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to define the procedures for preparing and maintaining documentation which provides the details of field sampling activities. The sample documentation discussed in this procedure includes: site and personal logbooks, Field Data Sheets and labels, and Chain of Custody records and Custody seals.

2.0 APPLICABILITY

This SOP is applicable to all REAC field activities which involve the generation of environmental measurements.

3.0 DESCRIPTION

3.1 General

Accurate sample documentation is essential for proper site evaluation. A clear traceable paper trail must follow each sample from its point of origin to the Final Report (or other appropriate report). It is important that specific procedures be adopted so that the desired degree of accuracy is achieved.

All sample documents must be completed legibly and in ink. Any corrections or revisions must be made by lining through the incorrect entry and initialing the error.

3.2 Site Logbook

The site logbook is used to record data and observations so that an accurate account of field operations can be reconstructed in the writer's absence. There is the potential, especially on Superfund sites, for site logs to be used as legal evidence sometime in the future. The site logbook is essentially a descriptive notebook detailing site activities and observations. All entries should be dated and signed by the individual(s) making the entries. Site logbooks should contain at a minimum, the following information:

- Site name and location on inside cover
- Date and location of field work
- Times (military times preferred, or reference a.m. or p.m.)
- Names and addresses of field contacts
- Site sketches and photographic references
- Weather conditions (Optional if provided on Field Data Sheets. See Section 3.1.)
- Sample descriptions, locations, times taken, identification numbers (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Chain of Custody information, shipping paper identification number, recipient address, and phone number, etc.

- Field observations and discussion (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Field measurements (i.e., pH, temperature, surface water flow rates, etc.) (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Instructions issued by the Work Assignment Manager
- Field activities by all REAC personnel on site

Entries may be made in site logbooks by any ERT or REAC personnel on site and should detail the activities of all personnel involved in the field operations. Each entry should be signed by the person making the entry and should relate to previous entries or have sufficient background detail. The sequence of site activities should be clear to a reader who was not at the site.

When a site logbook is completed, no longer needed for site documentation, or after a project is finished, the site logbook must be transmitted to the appropriate Work Assignment folder of the Central File. If the site logbook is transmitted to the ERT, documentation of the transmittal must be prepared and maintained in the Central File.

3.3 Personal Logbooks

When involved in field operations, all REAC personnel will maintain a personal logbook. The personal logbook will be a chronological compilation of the individual's daily field activities. Personal logbooks are to be maintained, even if a REAC member is entering information in a site log. The personal logbook may reference the site logbook, but must also identify what, if any, work was performed when not on site. In the absence of a dedicated site logbook, the personal logbook must detail all site related activities that would typically be entered in a site logbook.

If personal logbooks are used for site-related information in lieu of a dedicated site logbook, the REAC Task Leader must obtain copies of the site notes from each individual field member and transmit the notes under a standard cover memo (Figure 1, Appendix A) to the Central File. This must be done within 10 working days of completion of field activities.

Personal logbooks may be maintained for the individual's daily office activities at the discretion of the individual. When a REAC member is in the office, the personal logbook should contain, at a minimum, meetings attended and meeting notes, telephone conversations, and detail of any work performed that relates to a particular site. Any task related entries should include the Work Assignment number. Entries should include, but are not limited to, the following:

- Field and project-related activities performed
- Directives from Work Assignment Manager
- Verbal instructions from U.S. EPA personnel
- Personal injuries or potential exposures
- Phone conversations relevant to Work Assignments

When a personal logbook is completed or the person to whom it is assigned leaves REAC, the personal logbook shall be returned to the Quality Assurance (QA) Office. People who must access information in a personal logbook may obtain photocopies from the person to whom the logbook is assigned.

3.4 Field Data Sheets and Sample Labels

Field Data Sheets and corresponding sample labels are used to identify samples and document field sampling conditions and activities. There are several different Field Data Sheets and sample labels used within the REAC project.

Field Data Sheets will be maintained by the Task Leader or designee. Task Leaders are responsible for conveying original Field Data Sheets to the corresponding Central File folder upon completion of the Trip or Final Report. Field Data Sheets may be transmitted to the Central File as an attachment to these reports or as a stand alone document.

3.4.1 Field Data Sheets and Sample Labels

Prenumbered Field Data Sheets and corresponding, prenumbered sample labels (Figures 2 and 3, Appendix A) are used for all types of samples except soil gas and air samples (see Sections 3.4.2 and 3.4.3).

Upon sample collection at a particular sampling location, Field Data Sheet(s) shall be completed with the following information:

1. Site name, sampling location, date and time of sampling, name(s) of sampler(s), Chain of Custody record number, REAC Task Leader's name, U.S. EPA Work Assignment Manager's name, and the Work Assignment number.

2. Site description and, as applicable, soil type, surface water, stream, and bottom information.

3. Sample type, sampling device, sample information (e.g., color, odor, temperature, pH, etc.) and weather parameters.

4. Analyses to be performed and sample preparation information.

Also upon sample collection, the corresponding prenumbered sample labels must be completed and securely affixed to the sample container(s).

Because samples are often collected from the same location in more than one container (for more than one analysis), the sample label consists of several parts (Figure 3, Appendix A). The largest part of the sample label consists of the project name and U.S. EPA contract number, the unique sample identification number consisting of the prefix "A" followed by a five-digit number (A01001), and spaces for inserting the following information: site name,

work order number, date and time of collection, the analysis requested, and the preservative. Other parts of the sample label include additional sample labels numbered with the same sample identification number and consecutive letter prefixes (B01001 to L01001).

When a sample is collected in only one container, the largest part of the sample label is completed and affixed to the sample container. When the sample is collected in multiple containers, the largest part of the sample label is completed and affixed to one of the sample containers, and the additional labels, beginning with letter prefix "B," are affixed to the additional containers in a consecutive order. If more than 12 containers are included in a sample set, then the sampler may use blank labels and insert the sample identification number beginning with letter prefix "M" (M01001).

If duplicates or blanks are collected at a sampling location, the sample sets must be treated as being unique from the original sample and labeled with different sample identification numbers. When collecting samples for parameters which require extra volume for matrix spike/matrix spike duplicate (MS/MSD) analysis, the original sample container(s) and the MS/MSD containers are labeled with the same sample identification number and consecutive letter prefixes. For example, a water sample for BNA analysis that also requires MS/MSD analysis would be collected in four sample containers which would be labeled A01003 through D01003. Required volumes for MS/MSD analysis for typical parameters are specified in ERT/REAC SOP #4005, Chain of Custody.

3.4.2 Soil Gas Sampling Data Sheets and Sample Labels

Soil Gas Sampling Data Sheets and prenumbered sample labels (Figure 4 and 5, Appendix A) are used for all soil gas sampling activities.

The heading of the data sheets shall be completed with the following information: site name, samplers, date, REAC Task Leader, U.S. EPA Work Assignment Manager, the project number, and the weather parameters.

After the soil gas well is screened with field instrument(s), the location identification, pertinent remarks, time, depth, and the instrument reading(s) are recorded in the first available column on the Soil Gas Sampling Data Sheet. A total of five (5) columns are available to record data from five sampling points on each Data Sheet.

If a soil gas sample was collected at that particular location, "Y" is circled to indicate this. The soil gas sample label is completed with the site name, sample location, date, time, remarks, and instrument readings; then the label is affixed to the sample container. A corresponding sample label (with sample identification number only) is inserted on the sample number line in the appropriate column on the soil gas sampling data sheet. If a soil gas sample was not collected at that particular location, "N" is circled to indicate this.

If necessary, the additional sample label (with the sample identification number only) can be inserted in the logbook used for documenting sampling activities, or it can be used for

additional sample containers if the sample is collected in multiple containers. Blank sample labels are also provided so that sample numbers can be written in, when needed. Trip standards, field blanks, and samples containing spikes must be assigned unique sample identification numbers. Soil Gas Sampling Data Sheets and sample labels will be prepared and maintained for these types of samples in the same manner as other sample matrices.

3.4.3 Air Sampling Work Sheets and Sample Labels

Air Sampling Work Sheets and prenumbered sample labels (Figures 6 and 7, Appendix A, respectively) are used for all air sampling activities.

The heading of the Air Sampling Worksheet is completed with the following information: site name, samplers, date, Work Assignment number, the name of the U.S. EPA Work Assignment Manager, and the REAC Task Leader.

When air sampling is initiated, the following information is recorded in the first available column on the Air Sampling Worksheet: sample number, location, pump number media, analysis/method and time/counter start. At the end of the sampling period the following information is recorded: time/counter stop, total time, pumpfault (indicate by using "Y" or "N"), flow rate start, flow rate stop, flow rate average, and volume, are recorded. A total of five columns are available to record data from five sampling locations on each air sampling worksheet.

The total sampling time is calculated by subtracting the start time/counter value from the stop time/counter value. The flow rate average is calculated from the start and stop flow rates. The volume sampled is calculated by multiplying the total sampling time by the average flow rate. All calculated values, along with the analysis requested, are recorded in the appropriate location on the air sampling worksheets.

If real-time air monitoring instruments are used at a particular sample location, the instrument readings are recorded on an Air Monitoring Work Sheet (Figure 8, Appendix A). If air samples are collected outdoors, then the appropriate weather parameters are also recorded on the Air Monitoring Work Sheet.

The prenumbered air sample label (Figure 7, Appendix A) consists of several parts. The largest part includes the project name, the contract number, the sample identification number, and space for the following information: the site name, volume of air, date, time, requested analysis, and remarks. Other parts include two additional sample labels with only the sample identification number.

When a sample is collected, the largest part of the sample label is completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. If samples are collected from a single sampling location in more than one sample media, separate sample numbers are used for each different sample medium used. The blank space at the end of the sample identification number is used to indicate the media. The small

sample labels are affixed to the additional sample containers. If available, the small sample labels may be inserted in the sample number space in the appropriate column on the Air Sampling Work Sheet. Blank sample labels are provided for use as necessary.

Alternatively, at the Task Leader's discretion, separate sample numbers may be used for each media in which samples are collected at a single sampling location. In this case, the largest part of the sample label will be completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. The small sample labels (with sample identification number only) will be affixed to the Air Sampling Worksheet and the logbook.

Quality Control (QC) samples must be assigned unique sample identification numbers. Air Sampling Work Sheets and prenumbered sample labels will be prepared and maintained in the same manner as for other sample matrices.

3.4.4 Specialized Field Data Sheets

Task Leaders, with the approval of the Group Leader, the Work Assignment Manager, and the QA Officer, may develop specialized Field Data Sheets if none of the three types described above meet the specific needs of the project. At a minimum, the Field Data Sheet must include space for recording the name(s) of the sampler(s), the sample number(s), the location of the sample, the date and time that the sample was taken, and any pertinent field conditions. The following information will be included in the header of the data sheet: (Matrix) Data Sheet, Roy F. Weston, Inc., REAC, Edison, NJ, U.S. EPA Contract: 68-C4-0022.

3.5 Chain of Custody

A Chain of Custody record (Figure 9, Appendix A) must be maintained from the time a sample is collected to its final deposition. The Chain of Custody record shall contain, at a minimum, the following information: project name, project number, the REAC contact, and the contact telephone number. For each sample collected, the Chain of Custody record shall include the sample number, sampling location, sample matrix, date collected, number of bottles, container/preservative, the analysis requested, and special instructions, if any are applicable.

Chain of Custody records must be completed legibly, with all required information, so that miscommunication with, or misunderstanding by, the receiving laboratory is prevented.

If samples collected during a sampling event are being forwarded to more than one laboratory, then a separate Chain of Custody record, indicating which samples are being sent to that particular laboratory, must be completed.

The Chain of Custody provides a means by which the entire path and life of a sample can be traced. Every transfer of custody must be noted and signed for on the Chain of Custody record. If a sample or group of samples is not under direct control or observation of the individual responsible for the

samples, then they must be stored in a locked container that has been sealed with a Custody Seal (Section 3.6). A copy of the Chain of Custody record should be kept by each individual who has signed it. The final copy should be included with the Analytical Report.

3.6 Custody Seals

Custody Seals (Figure 10, Appendix A) demonstrate that a sample container has not been opened or tampered with during transport or storage. Two seals should be affixed in such a manner that the shipping container cannot be opened without breaking the seal. The person in direct possession of the samples shall sign and date the seal. The name of the individual signing the seal and a description of the packaging shall be noted in the site logbook.

4.0 RESPONSIBILITIES

4.1 Task Leaders and Field Staff

Task Leaders and field staff are responsible for preparing and maintaining sample documentation in accordance with this SOP.

4.2 Group Leaders and Section Leaders

Group Leaders and Section Leaders are responsible for ensuring implementation of the procedures outlined in this SOP.

4.3 QA Office

The QA Office is responsible for ensuring compliance with this SOP by auditing reports prepared by REAC personnel.

APPENDIX A
Figures
SOP #2002
September 1994

FIGURE 1. Cover Memo - Transmittal of Site Notes

DATE:

TO: Central File # _____

FROM: _____, Task Leader

SUBJECT: LOGBOOK NOTES
SITE NAME, DATE(s)

Attached please find copies of field-related personal logbook records for activities performed at the above- referenced site. Individuals involved included:

NAME	LOGBOOK NUMBER
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

w/Attachments

FIGURE 2. Field Data Sheet

FIELD DATA SHEET 26880

Roy F. Weston, Inc.
REAC, Edison, N.J.
EPA Contract 68-C4-0022

Chain of Custody No. _____
Samplers: _____ REAC Task Leader: _____
Date: _____ Site Name: _____ EPA WAM _____
Time: _____ Sample Location: _____ Work Assignment No.: _____

SITE DESCRIPTION			SOIL TYPE		SURFACE WATER	STREAM	BOTTOM	
landfill	old field	upland palustrine	rock	clay	color _____	width _____	rock	silt
industrial	wooded	lowland riverine	gravel	muck	odor _____	depth _____	rubble	clay
commercial	farmland	lacustrine	sand	loam	flow _____	velocity _____ cm/s	gravel	organic
residential	gully		silt	peat	direction _____	pools _____ %	shell	other _____
hedgegrows	floodplain		color _____			riffles _____ %	sand	

SAMPLE TYPE		DEVICE		SAMPLE INFORMATION		WEATHER PARAMETERS
surface water	effluent	kemmerer	ponar	color _____	pH _____	ambient temp _____
groundwater	sludge	trowel	other _____	odor _____	ORP _____	barometric pressure _____
potable water	leachate	bucket		temp _____	salinity _____	relative humidity _____
sediment	waste	auger		DO _____	sample depth _____	weather conditions _____
soil	other _____	ekman		cond _____	tide stage _____	_____

ANALYSES TO BE PERFORMED

ORGANICS
- A. halogenated & aromatic volatiles
- B. volatiles
- C. trihalomethanes
- D. pesticides/PCB
- E. PCB
- F. base neutral/acid extractables
- G. pesticides, drinking water
- H. herbicides, drinking water
- I. other _____

INORGANICS
- A. metals, priority pollutant
- B. metals, TAL
- C. metals scan (ICP)
- D. metals, other _____

RCRA
- A. TCLP
- B. Ignitability
- C. corrosivity _____ pH _____
- D. reactivity
- E. other _____

ORGANICS
- A. total cyanide
- B. total phenol
- C. petroleum hydrocarbons
- D. pH
- E. alkalinity
- F. hardness
- G. total dissolved solids
- H. total suspended solids
- I. sulfate
- J. TOC
- K. grain size
- L. other _____
- M. other _____

SAMPLE PREPARATION

CONTAINER	PRESERVATIVES
glass jar	HNO_3
plastic jar	NaOH
acetate core	Zn Acetate
plastic bag	HCl
plastic bucket	Na_2SO_4
other _____	other _____

STORAGE
- wet ice
- dry ice
- ambient

COMMENTS:

FIGURE 3. Sample Labels

ROY F. WESTON, INC. REAC, EDISON, NJ EPA Contract 68-C4-0022	SAMPLE NO. A 26880
SITE NAME:	DATE:
WORK ORDER NO:	TIME:
ANALYSIS REQUESTED:	
PRESERVATIVE: ☐ NONE ☐ SULFURIC ACID ☐ OTHER (Specify:) ☐ COOL (4°C) ☐ SODIUM HYDROXIDE ☐ NITRIC ACID ☐ SODIUM THIOSULFATE	

B 26880
C 26880
D 26880
E 26880
F 26880
G 26880
H 26880
I 26880
J 26880
K 26880
L 26880

FIGURE 4. Soil Gas Sampling Data Sheet

SOIL GAS SAMPLING SHEET

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site Name: _____ REAC Task Leader: _____

Samplers: _____ EPA Work Assignment Manager: _____

Date: _____ Work Assignment No.: _____

Weather Parameters: ambient temp. _____ relative humidity _____
barometric pressure _____ weather conditions _____

Sample No.:					
Location ID.:					
Remarks:					
Time:					
Sample Depth:					
Sample Taken:	Y/N	Y/N	Y/N	Y/N	Y/N
Instrument Readings:					
HNU					
OVA					
LEL					
% O_2					
Soil Temp.					
Other					

General Comments:

FIGURE 5. Soil Gas Sample Labels

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02951
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02952
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02951
SG 02951
SG 02952
SG 02952
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02953
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02954
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02953
SG 02953
SG 02954
SG 02954
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02955
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02956
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02955
SG 02955
SG 02956
SG 02956
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02957
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02958
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02957
SG 02957
SG 02958
SG 02958
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02959
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02960
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02959
SG 02959
SG 02960
SG 02960
SG0

FIGURE 6. Air Sampling Work Sheet

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Page ___ of ___

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Samplers: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Sample #					
Location					
Pump #					
Media					
Analysis/Method					
Time/Counter (Start)					
Time/Counter (Stop)					
Total Time					
Pump Fault	Y / N	Y / N	Y / N	Y / N	Y / N
Flow Rate (Start)					
Flow Rate (Stop)					
Flow Rate (Average)					
Volume					

MET Station On-site? Y / N

General Comments:

FIGURE 7. Air Sample Labels

Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07091_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07092_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07091_ 07091_ 07092_ 07092_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07093_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07094_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07093_ 07093_ 07094_ 07094_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07095_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07096_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07095_ 07095_ 07096_ 07096_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07097_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07098_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07097_ 07097_ 07098_ 07098_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07099_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07100_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07099_ 07099_ 07100_ 07100_ 0 _

FIGURE 8. Air Monitoring Work Sheet

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Page ___ of ___

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Prepared By: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Instrument	EPA #	Location/Description	Reading	Time

General Comments:

FIGURE 9. Chain of Custody Record/Lab Work Request

CHAIN OF CUSTODY RECORD / LAB WORK REQUEST No. 10387

Roy F. Weston, Inc.
REAC, Edison, N.J.
EPA Contract 68-C4-0022

Project Name: _____
Project Number: _____
RFW Contact: _____ Phone: _____

Sheet ____ of ____

SAMPLE IDENTIFICATION						ANALYSES REQUESTED				
REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/ Preservative				

Matrix:
SD - Sediment PW - Potable Water S - Soil
DS - Drum Solids GW - Ground Water W - Water
DL - Drum Liquids SW - Surface Water O - Oil
X - Other SL - Sludge A - Air

Special Instructions:

FOR SUBCONTRACT USE ONLY
FROM CHAIN OF
CUSTODY #

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time

FIGURE 10. Custody Seals

WESTON MANAGERS DESIGNERS/CONSULTANTS

CUSTODY SEAL

Date

Signature

WESTON MANAGERS DESIGNERS/CONSULTANTS

CUSTODY SEAL

Date

Signature

APPENDIX I

EPA ERT SOP #2007 Groundwater Well Sampling

(Document not Generated by START)

GROUNDWATER WELL SAMPLING

SOP#: 2007
DATE: 01/26/95
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The objective of this standard operating procedure (SOP) is to provide general reference information on sampling of ground water wells. This guideline is primarily concerned with the collection of water samples from the saturated zone of the subsurface. Every effort must be made to ensure that the sample is representative of the particular zone of water being sampled. These procedures are designed to be used in conjunction with analyses for the most common types of ground water contaminants (e.g., volatile and semi-volatile organic compounds, pesticides, metals, biological parameters).

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

In order to obtain a representative groundwater sample for chemical analysis it is important to remove stagnant water in the well casing and the water immediately adjacent to the well before collection of the sample. This may be achieved with one of a number of instruments. The most common of these are the bailer, submersible pump, non-contact gas bladder pump, inertia pump and suction pump. At a minimum, three well volumes should be purged, if possible. Equipment must be decontaminated prior to use and between wells. Once purging is completed and the correct laboratory-cleaned sample containers have been prepared, sampling may proceed. Sampling may be conducted with any of the above instruments, and need not be the same as the device used for purging. Care should be taken when choosing the sampling device as some will affect the integrity of the sample. Sampling should occur in a progression from the least to most contaminated well, if this information is known.

The growing concern over the past several years over low levels of volatile organic compounds in water supplies has led to the development of highly sophisticated analytical methods that can provide detection limits at part per trillion levels. While the laboratory methods are extremely sensitive, well controlled and quality assured, they cannot compensate for a poorly collected sample. The collection of a sample should be as sensitive, highly developed and quality assured as the analytical procedures.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The type of analysis for which a sample is being collected determines the type of bottle, preservative, holding time, and filtering requirements. Samples should be collected directly from the sampling device into appropriate laboratory cleaned containers. Check that a Teflon liner is present in the cap, if required. Attach a sample identification label. Complete a field data sheet, a chain of custody form, and record all pertinent data in the site logbook.

Samples shall be appropriately preserved, labelled, logged, and placed in a cooler to be maintained at 4EC. Samples must be shipped well before the holding time is up and ideally should be shipped within 24 hours of sample collection. It is imperative that samples be shipped or delivered daily to the analytical laboratory in order to maximize the time available for the laboratory to perform the analyses. The bottles should be shipped with adequate packing and cooling to ensure that they arrive intact.

Sample retrieval systems suitable for the valid collection of volatile organic samples are: positive displacement bladder pumps, gear driven submersible pumps, syringe samplers and bailers (Barcelona, 1984; Nielsen, 1985). Field conditions and other constraints will limit the choice of appropriate systems. The focus of concern must remain to provide a valid sample for analysis, one which has been subjected to the least amount of turbulence possible.

Treatment of the sample with sodium thiosulfate preservative is required only if there is residual chlorine in the water that could cause free radical chlorination and change the identity of the original contaminants. It should not be used if there is no chlorine in the water.

Holding time for volatiles analysis is seven days. It is imperative that the sample be shipped or delivered daily to the analytical laboratory. The bottles must be shipped on their sides to aid in maintaining the airtight seal during shipment, with adequate packing and cooling to ensure that they arrive intact.

For collection of volatile organic samples, refer to the work plan to ensure that 40 mL glass sample vials with Teflon lined septa are ordered and in sufficient numbers. Check sampling supplies; field kit for chlorine, preservatives, Parafilm, foam sleeves and coolers. Due to the extreme trace levels at which volatile organics are detectable, cross contamination and introduction of contaminants must be avoided. Trip blanks are incorporated into the shipment package to provide a check against cross contamination.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

4.1 General

The primary goal in performing ground water sampling is to obtain a representative sample of the ground water body. Analysis can be compromised by field personnel in two primary ways: (1) taking an unrepresentative sample, or (2) by incorrect handling of the sample. There are numerous ways of introducing foreign contaminants into a sample, and these must be avoided by following strict sampling procedures and utilizing trained field personnel.

4.2 Purging

In a nonpumping well, there will be little or no vertical mixing of the water, and stratification will occur. The well water in the screened section will mix with the ground water due to normal flow patterns, but the well water above the screened section will remain isolated, become stagnant, and may lack the contaminants representative of the ground water. Persons sampling should realize that stagnant water may contain foreign material inadvertently or deliberately introduced from the surface, resulting in an unrepresentative sample. To safeguard against collecting nonrepresentative stagnant water, the following guidelines and techniques should be adhered to during sampling:

1. As a general rule, all monitor wells should be pumped or bailed prior to sampling. Purge water should be containerized on site or handled as specified in the site specific project plan. Evacuation of a minimum of one volume of water in the well casing, and preferably three to five volumes, is recommended for a representative sample. In a high-yielding ground water formation and where there is no stagnant water in the well above the screened section, evacuation prior to sample withdrawal is not as critical. However, in all cases where the monitoring data is to be used for enforcement actions, evacuation is recommended.

2. When purging with a pump (not a bailer), the pump should be set at the screened interval, or if the well is an open-rock well, it should be set at the same depth the sample will be collected. When sampling a screened well, the sample should also be collected from the same depth the pump was set at.

3. The well should be sampled as soon as possible after purging.

4. Analytical parameters typically dictate whether the sample should be collected through the purging device, or through a separate sampling instrument.

5. For wells that can be pumped or bailed to dryness with the equipment being used, the well should be evacuated and allowed to recover prior to collecting a sample. If the recovery rate is fairly rapid and time allows, evacuation of more than one volume of water

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is preferred. If recovery is slow, sample the well upon recovery after one evacuation.

6. A non-representative sample can also result from excessive pre-pumping of the monitoring well. Stratification of the leachate concentration in the ground water formation may occur, or heavier-than-water compounds may sink to the lower portions of the aquifer. Excessive pumping can dilute or increase the contaminant concentrations from what is representative of the sampling point of interest.

4.3 Materials

Materials of construction for samplers and evacuation equipment (bladders, pump, bailers, tubing, etc.) should be limited to stainless steel, Teflon^{R}, and glass in areas where concentrations are expected to be at or near the detection limit. The tendency of organics to leach into and out of many materials make the selection of materials critical for trace analyses. The use of plastics, such as PVC or polyethylene, should be avoided when analyzing for organics. However, PVC may be used for evacuation equipment as it will not come in contact with the sample, and in highly contaminated wells, disposable equipment (i.e., polypropylene bailers) may be appropriate to avoid cross-contamination.

Materials of construction (bladders/ pumps, bailers, tubing, etc.) suitable for collecting and handling Volatile Organic Samples should be limited to stainless steel, Teflon and glass in areas which detection limit range concentrations are expected. The tendency of organics to leach into and out of many materials, make the selection of materials critical for these trace analyses. The use of plastics, e.g., PVC etc., should be avoided. There are numerous ways of introducing foreign contaminants into a sample, and these must be avoided by following strict sampling procedures and utlization of trained personnel.

4.4 Advantages/Disadvantages of Certain Equipment

4.4.1 Bailers

Advantages

C Only practical limitations on size and materials

C No power source needed

C Portable

C Inexpensive, so it can be dedicated and hung in a well, thereby reducing the chances of cross contamination

C Minimal outgassing of volatile organics while sample is in bailer

C Readily available

C Removes stagnant water first

C Rapid, simple method for removing small volumes of purge water

Disadvantages

C Time-consuming to flush a large well of stagnant water

C Transfer of sample may cause aeration

C Stoppers at the bottom of the bailer usually leak thus the bailer must be brought to the surface rapidly

C If the bailer is allowed to hit the bottom of the well boring, gravel can displace the ball valve not allowing the bailer to hold water

4.4.2 Submersible Pumps

Advantages

C Portable and can be transported to several wells

C Depending upon the size of the pump and the pumping depths, relatively high pumping rates are possible

C Generally very reliable and does not require priming

Disadvantages

- Potential for effects on analysis of trace organics
- Heavy and cumbersome to deal with, particularly in deeper wells
- Expensive
- Power source needed
- Sediment in water may cause problems with the pumps
- Impractical in low yielding or shallow wells

4.4.3 Non-Contact Gas Bladder Pumps

Advantages

- Maintains integrity of sample
- Easy to use
- Can sample from discrete locations within the monitor well

Disadvantages

- Difficulty in cleaning, though dedicated tubing and bladder may be used
- Only useful to about 100 feet
- Supply of gas for operation, gas bottles and/or compressors are often difficult to obtain and are cumbersome
- Relatively low pumping rates
- Requires air compressor or pressurized gas source and control box

4.4.4 Suction Pumps

Advantages

- Portable, inexpensive, and readily available

Disadvantages

- Restricted to areas with water levels within 20 to 25 feet of the ground surface
- Vacuum can cause loss of dissolved gasses and volatile organics
- Pump must be primed and vacuum is often difficult to maintain during initial stages of pumping

4.4.5 Inertia Pumps

Advantages

- Portable, inexpensive, and readily available
- Offers a rapid method for purging relatively shallow wells

Disadvantages

- Restricted to areas with water levels within 70 feet of the ground surface
- May be time consuming to purge wells with these manual pumps
- Labor intensive
- WaTerra pumps are only effective in 2-inch diameter wells

5.0 EQUIPMENT APPARATUS

5.1 Equipment Checklist

5.1.1 General

- Water level indicator
  - electric sounder
  - steel tape
  - transducer
  - reflection sounder
  - airline
- Depth sounder
- Appropriate keys for well cap locks
- Steel brush
- HNU or OVA (whichever is most appropriate)
- Logbook
- Calculator
- Field data sheets and samples labels
- Chain of custody records and seals
- Sample containers
- Engineer's rule

- C Sharp knife (locking blade)
- C Tool box (to include at least: screwdrivers, pliers, hacksaw, hammer, flashlight, adjustable wrench)
- C Leather work gloves
- C Appropriate Health & Safety gear
- C 5-gallon pail
- C Plastic sheeting
- C Shipping containers
- C Packing materials
- C Bolt cutters
- C Ziploc plastic bags
- C Containers for evacuation liquids
- C Decontamination solutions
- C Tap water
- C Non phosphate soap
- C Several brushes
- C Pails or tubs
- C Aluminum foil
- C Garden sprayer
- C Preservatives
- C Distilled or deionized water
- C Fire extinguisher (if using a generator for your power source)

5.1.2 Bailers

- C Clean, decontaminated bailers of appropriate size and construction material
- C Nylon line, enough to dedicate to each well
- C Teflon coated bailer wire
- C Sharp knife
- C Aluminum foil (to wrap clean bailers)
- C Five gallon bucket

5.1.3 Submersible Pump

- C Pump(s)
- C Generator (110, 120, or 240 volt) or 12 volt battery if inaccessible to field vehicle - amp meter is useful
- C 1" black PVC coil tubing - enough to dedicate to each well
- C Hose clamps
- C Safety cable
- C Tool box supplement
  - pipe wrenches
  - wire strippers
  - electrical tape
  - heat shrink
  - hose connectors
  - Teflon tape
- C Winch, pulley or hoist
- C Gasoline for generator/gas can
- C Flow meter with gate valve
- C 1" nipples and various plumbing (i.e., pipe connectors)
- C Control box (if necessary)

5.1.4 Non-Gas Contact Bladder Pump

- C Non-gas contact bladder pump
- C Compressor or nitrogen gas tank
- C Batteries and charger
- C Teflon tubing - enough to dedicate to each well
- C Swagelock fitting
- C Toolbox supplements - same as submersible pump
- C Control box (if necessary)

5.1.5 Suction Pump

- C Pump
- C 1" black PVC coil tubing - enough to dedicate to each well
- C Gasoline - if required
- C Toolbox
- C Plumbing fittings
- C Flow meter with gate valve

5.1.6 Inertia Pump

- C Pump assembly (WaTerra pump, piston pump)
- C Five gallon bucket

6.0 REAGENTS

Reagents may be utilized for preservation of samples and for decontamination of sampling equipment. The preservatives required are specified by the analysis to be performed. Decontamination solutions are specified in ERT SOP #2006, Sampling Equipment Decontamination.

7.0 PROCEDURE

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and

supplies needed (i.e, diameter and depth of wells to be sampled).

2. Obtain necessary sampling and monitoring equipment, appropriate to type of contaminant being investigated. For collection of volatile organic samples, refer to the work plan to ensure that 40 mL glass sample vials with Teflon lined septa are ordered and in sufficient numbers. Check sampling supplies; field kit for chlorine, preservatives, Parafilm, foam sleeves and coolers. Due to extreme trace levels at which volatile organics are detectable, cross contamination and introduction of contaminants must be avoided. Trip blanks are incorporated into the shipment package to provide a check against cross contamination.

3. Decontaminate or preclean equipment, and ensure that it is in working order.

4. Prepare scheduling and coordinate with staff, clients, and regulatory agency, if appropriate.

5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.

6. Identify and mark all sampling locations.

7.2 Field Preparation

1. Start at the least contaminated well, if known.

2. Lay plastic sheeting around the well to minimize likelihood of contamination of equipment from soil adjacent to the well.

3. Remove locking well cap, note location, time of day, and date in field notebook or appropriate log form.

4. Remove well casing cap.

5. Screen headspace of well with an appropriate monitoring instrument to determine the presence of volatile organic compounds and record in site logbook.

6. Lower water level measuring device or equivalent (i.e., permanently installed transducers or airline) into well until water surface is encountered.

7. Measure distance from water surface to reference measuring point on well casing or protective barrier post and record in site logbook. Alternatively, if no reference point, note that water level measurement is from top of steel casing, top of PVC riser pipe, from ground surface, or some other position on the well head.

   If floating organics are of concern, this can be determined by measuring the water level with an oil/water interface probe which measures floating organics.

8. Measure total depth of well (at least twice to confirm measurement) and record in site logbook or on field data sheet.

9. Calculate the volume of water in the well and the volume to be purged using the calculations in Section 8.0.

10. Select the appropriate purging and sampling equipment.

11. If residual chlorine is suspected, use the Hach Field Test Kit for chlorine to determine if there is residual chlorine in the water to be sampled. If there is, treat the sample vial with a crystal of sodium thiosulfate prior to sample collection.

7.3 Purging

The amount of flushing a well receives prior to sample collection depends on the intent of the monitoring program as well as the hydrogeologic conditions. Programs where overall quality determination of water resources are involved may require long pumping periods to obtain a sample that is representative of a large volume of that aquifer. The pumped volume can be determined prior to sampling so that the sample is a collected after a known volume of the water is evacuated from the aquifer, or the well can be pumped until the stabilization of parameters such as temperature, electrical conductance, pH, or turbidity has occurred.

However, monitoring for defining a contaminant plume requires a representative sample of a small volume of the aquifer. These circumstances require that the well be pumped enough to remove the stagnant water but not enough to induce flow from other areas. Generally, three well volumes are considered effective, or calculations can be made to determine, on the basis of the aquifer parameters and well dimensions, the appropriate volume to remove prior to sampling.

During purging, water level measurements may be taken regularly at 15-30 second intervals. This data may be used to compute aquifer transmissivity and other hydraulic characteristics. The following well evacuation devices are most commonly used. Other evacuation devices are available, but have been omitted in this discussion due to their limited use.

7.3.1 Bailers

Bailers are the simplest purging device used and have many advantages. They generally consist of a rigid length of tube, usually with a ball check-valve at the bottom. A line is used to lower the bailer into the well and retrieve a volume of water. The three most common types of bailer are PVC, Teflon, and stainless steel.

This manual method of purging is best suited to shallow or narrow diameter wells. For deep, larger diameter wells which require evacuation of large volumes of water, other mechanical devices may be more appropriate.

7.3.1.1 Operation

Equipment needed will include a clean decontaminated bailer, Teflon or nylon line, a sharp knife, and plastic sheeting.

1. Determine the volume of water to be purged as described in 8.0, calculations.

2. Lay plastic sheeting around the well to prevent contamination of the bailer line with foreign materials.

3. Attach the line to the bailer and slowly lower until the bailer is completely submerged, being careful not to drop the bailer to the water, causing turbulence and the possible loss of volatile organic contaminants.

4. Pull bailer out ensuring that the line either falls onto a clean area of plastic sheeting or never touches the ground.

5. Empty the bailer into a pail until full to determine the number of bails necessary to achieve the required purge volume.

6. Thereafter, pour the water into a container and dispose of purge waters as specified in the site specific sampling plan.

7.3.2 Submersible Pumps

The use of submersible pumps for sample collection is permissible provided they are constructed of suitably noncontaminating materials. The chief drawback, however, is the difficulty avoiding cross-contamination between wells. Although some units can be disassembled easily to allow surfaces contacted by contaminants to be cleaned, field decontamination may be difficult and require solvents that can affect sample analysis. The use of submersible pumps in multiple well-sampling programs, therefore, should be carefully considered against other sampling mechanisms (bailers, bladder pumps). In most cases, a sample can be collected by bailer after purging with a submersible pump, however, submersible pumps may be the only practical sampling device for extremely deep wells (greater than 300 feet of water). Under those conditions, dedicated pump systems should be installed to eliminate the potential for cross-contamination of well samples.

Submersible pumps generally use one of two types of power supplies, either electric or compressed gas or air. Electric powered pumps can run off a 12 volt DC rechargeable battery, or a 110 or 220 volt AC power supply. Those units powered by compressed air normally use a small electric or gas-powered air compressor. They may also utilize compressed gas (i.e., nitrogen) from bottles. Different size pumps are available for different depth or diameter monitoring wells.

7.3.2.1 Operation

1. Determine the volume of water to be purged as described in 8.0 Calculations.

2. Lay plastic sheeting around the well to prevent contamination of pumps, hoses or lines with foreign materials.

3. Assemble pump, hoses and safety cable, and lower the pump into the well. Make sure the pump is deep enough so all the water is not evacuated. (Running the pump without water may cause damage.)

4. Attach flow meter to the outlet hose to measure the volume of water purged.

5. Use a ground fault circuit interrupter (GFCI) or ground the generator to avoid possible electric shock.

6. Attach power supply, and purge the well until the specified volume of water has been

evacuated (or until field parameters, such as temperature, pH, conductivity, etc, have stabilized). Do not allow the pump to run dry. If the pumping rate exceeds the well recharge rate, lower the pump further into the well, and continue pumping.

7. Collect and dispose of purge waters as specified in the site specific sampling plan.

7.3.3 Non-Contact Gas Bladder Pumps

For this procedure, an all stainless-steel and Teflon Middleburg-squeeze bladder pump (e.g., IEA, TIMCO, Well Wizard, Geoguard, and others) is used to provide the least amount of material interference to the sample (Barcelona, 1985). Water comes into contact with the inside of the bladder (Teflon) and the sample tubing, also Teflon, that may be dedicated to each well. Some wells may have permanently installed bladder pumps, (i.e., Well Wizard, Geoguard), that will be used to sample for all parameters.

7.3.3.1 Operation

1. Assemble Teflon tubing, pump and charged control box.

2. Procedure for purging with a bladder pump is the same as for a submersible pump (Section 7.3.2.1).

3. Be sure to adjust flow rate to prevent violent jolting of the hose as sample is drawn in.

7.3.4 Suction Pumps

There are many different types of suction pumps. They include: centrifugal, peristaltic and diaphragm. Diaphragm pumps can be used for well evacuation at a fast pumping rate and sampling at a low pumping rate. The peristaltic pump is a low volume pump that uses rollers to squeeze the flexible tubing thereby creating suction. This tubing can be dedicated to a well to prevent cross contamination. Peristaltic pumps, however, require a power source.

7.3.4.1 Operation

1. Assembly of the pump, tubing, and power source if necessary.

2. Procedure for purging with a suction pump is exactly the same as for a submersible pump (Section 7.3.2.1).

7.3.5 Inertia Pumps

Inertia pumps such as the WaTerra pump and piston pump, are manually operated. They are most appropriate to use when wells are too deep to bail by hand, or too shallow or narrow (or inaccessible) to warrant an automatic (submersible, etc.) pump. These pumps are made of plastic and may be either decontaminated or discarded.

7.3.5.1 Operation

1. Determine the volume of water to be purged as described in 8.0, Calculations.

2. Lay plastic sheeting around the well to prevent contamination of pumps or hoses with foreign materials.

3. Assemble pump and lower to the appropriate depth in the well.

4. Begin pumping manually, discharging water into a 5 gallon bucket (or other graduated vessel). Purge until specified volume of water has been evacuated (or until field parameters such as temperature, pH, conductivity, etc. have stabilized).

5. Collect and dispose of purge waters as specified in the site specific project plan.

7.4 Sampling

Sample withdrawal methods require the use of pumps, compressed air, bailers, and samplers. Ideally, purging and sample withdrawal equipment should be completely inert, economical to manufacture, easily cleaned, sterilized, reusable, able to operate at remote sites in the absence of power resources, and capable of delivering variable rates for sample collection.

There are several factors to take into consideration when choosing a sampling device. Care should be taken when reviewing the advantages or disadvantages of any one device. It may be appropriate to use a different device to sample than that which was used to purge. The most common example of this is the use of a submersible pump to purge and a bailer to sample.

7.4.1 Bailers

The positive-displacement volatile sampling bailer is perhaps the most appropriate for collection of water samples for volatile analysis. Other bailer types (messenger, bottom fill, etc.) are less desirable, but may be mandated by cost and site conditions.

7.4.1.1 Operation

1. Surround the monitor well with clean plastic sheeting. If using the GPI bailer, insert a vial into the claim and assemble the unit.

2. Attach a line to a clean decontaminated bailer.

3. Lower the bailer slowly and gently into the well, taking care not to shake the casing sides or to splash the bailer into the water. Stop lowering at a point adjacent to the screen.

4. Allow bailer to fill and then slowly and gently retrieve the bailer from the well avoiding contact with the casing, so as not to knock flakes of rust or other foreign materials into the bailer. If using the GPI bailer for collecting volatile organic samples, once at the surface, remove the bailer from the cable. Carefully open the GPI bailer unit and remove the vial. Begin slowly pouring from the bailer, and collect the duplicate samples from the midstream sample.

5. Remove the cap from the sample container and place it on the plastic sheet or in a location where it won't become contaminated. See Section 7.7 for special considerations on VOA samples.

6. Begin slowly pouring from the bailer.

7. Filter and preserve samples as required by sampling plan.

8. Cap the sample container tightly and place prelabeled sample container in a carrier.

9. Replace the well cap.

10. Log all samples in the site logbook and on field data sheets and label all samples.

11. Package samples and complete necessary

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paperwork.

12. Transport sample to decontamination zone for preparation for transport to analytical laboratory.

7.4.2 Submersible Pumps

Although it is recommended that samples not be collected with a submersible pump due to the reasons stated in Section 4.4.2, there are some situations where they may be used.

7.4.2.1 Operation

1. Allow the monitor well to recharge after purging, keeping the pump just above screened section.

2. Attach gate valve to hose (if not already fitted), and reduce flow of water to a manageable sampling rate.

3. Assemble the appropriate bottles.

4. If no gate valve is available, run the water down the side of a clean jar and fill the sample bottles from the jar.

5. Cap the sample container tightly and place prelabeled sample container in a carrier.

6. Replace the well cap.

7. Log all samples in the site logbook and on the field data sheets and label all samples.

8. Package samples and complete necessary paperwork.

9. Transport sample to decontamination zone for preparation for transport to the analytical laboratory.

10. Upon completion, remove pump and assembly and fully decontaminate prior to setting into the next sample well. Dedicate the tubing to the hole.

7.4.3 Non-Contact Gas Bladder Pumps

The use of a non-contact gas positive displacement bladder pump is often mandated by the use of dedicated pumps installed in wells. These pumps are also suitable for shallow (less than 100 feet) wells. They are somewhat difficult to clean, but may be used with dedicated sample tubing to avoid cleaning. These pumps require a power supply and a compressed gas supply (or compressor). They may be operated at variable flow and pressure rates making them ideal for both purging and sampling.

Barcelona (1984) and Nielsen (1985) report that the non-contact gas positive displacement pumps cause the least amount of alteration in sample integrity as compared to other sample retrieval methods.

7.4.3.1 Operation

1. Allow well to recharge after purging.

2. Assemble the appropriate bottles.

3. Turn pump on, increase the cycle time and reduce the pressure to the minimum that will allow the sample to come to the surface.

4. Cap the sample container tightly and place prelabeled sample container in a carrier.

5. Replace the well cap.

6. Log all samples in the site logbook and on field data sheets and label all samples.

7. Package samples and complete necessary paperwork.

8. Transport sample to decontamination zone for preparation for transport to analytical laboratory.

9. On completion, remove the tubing from the well and either replace the Teflon tubing and bladder with new dedicated tubing and bladder or rigorously decontaminate the existing materials.

10. Nonfiltered samples shall be collected directly from the outlet tubing into the sample bottle.

11. For filtered samples, connect the pump outlet tubing directly to the filter unit. The pump

pressure should remain decreased so that the pressure build up on the filter does not blow out the pump bladder or displace the filter. For the Geotech barrel filter, no actual connections are necessary so this is not a concern.

7.4.4 Suction Pumps

In view of the limitations of these type pumps, they are not recommended for sampling purposes.

7.4.5 Inertia Pumps

Inertia pumps may be used to collect samples. It is more common, however, to purge with these pumps and sample with a bailer (Section 7.4.1).

7.4.5.1 Operation

1. Following well evacuation, allow the well to recharge.

2. Assemble the appropriate bottles.

3. Since these pumps are manually operated, the flow rate may be regulated by the sampler. The sample may be discharged from the pump outlet directly into the appropriate sample container.

4. Cap the sample container tightly and place prelabeled sample container in a carrier.

5. Replace the well cap.

6. Log all samples in the site logbook and on field data sheets and label all samples.

7. Package samples and complete necessary paperwork.

8. Transport sample to decontamination zone for preparation for transport to the analytical laboratory.

9. Upon completion, remove pump and decontaminate or discard, as appropriate.

7.4.6. Sample Retrieval - Syringe

A limited number of commercial syringe type samplers are available, (IEA, TIMCO, etc.) some are homemade devices. These devices are claimed to provide good quality samples for volatile analysis, but are severly limited in sample volume and are specific to sampling for volatiles. Essentially, they operated with an evacuated chamber that is lowered down the well, and allowed to fill with the pressure of the water. The entire mechanism is then brought to the surface with the sample. The sample may then be transferred to a sample vial, or the entire unit may be sent as the sample container.

1. Evacuate the syringe if necessary, and lower the sampling device to just below the well screen.

2. Remove the constriction from the device and allow the sample to fill the syringe, apply slight suction as necessary.

3. Bring unit to the surface. If necessary, transfer the sample to vials, as outlined in steps 2 through 7 above.

7.5 Filtering

For samples requiring filtering, such as total metals analysis, the filter must be decontaminated prior to and between uses. Filters work by two methods. A barrel filter such as the "Geotech" filter works with a bicycle pump, used to build up positive pressure in the chamber containing the sample which is then forced through the filter paper (minimum size 0.45 µm) into a jar placed underneath. The barrel itself is filled manually from the bailer or directly via the hose of the sampling pump. The pressure must be maintained up to 30 lbs/in^2 by periodic pumping.

A vacuum type filter involves two chambers; the upper chamber contains the sample and a filter (minimum size 0.45 µm) divides the chambers. Using a hand pump or a Gilian type pump, air is withdrawn from the lower chamber, creating a vacuum and thus causing the sample to move through the filter into the lower chamber where it is drained into a sample jar. Repeated pumping may be required to drain all the sample into the lower chamber. If preservation of the sample is necessary, this should be done after filtering.

7.6 Post Operation

After all samples are collected and preserved, the sampling equipment should be decontaminated prior to sampling another well to prevent cross-contamination of equipment and monitor wells between locations.

1. Decontaminate all equipment.

2. Replace sampling equipment in storage containers.

3. Prepare and transport ground water samples to the laboratory. Check sample documentation and make sure samples are properly packed for shipment.

7.7 Special Considerations for VOA Sampling

The proper collection of a sample for volatile organics requires minimal disturbance of the sample to limit volatilization and therefore a loss of volatiles from the sample.

Sample retrieval systems suitable for the valid collection of volatile organic samples are: positive displacement bladder pumps, gear driven submersible pumps, syringe samplers and bailers (Barcelona, 1984; Nielsen, 1985). Field conditions and other constraints will limit the choice of appropriate systems. The focus of concern must be to provide a valid sample for analysis, one which has been subjected to the least amount of turbulence possible.

The following procedures should be followed:

1. Open the vial, set cap in a clean place, and collect the sample during the middle of the cycle. When collecting duplicates, collect both samples at the same time.

2. Fill the vial to just overflowing. Do not rinse the vial, nor excessively overflow it. There should be a convex meniscus on the top of the vial.

3. Check that the cap has not been contaminated (splashed) and carefully cap the vial. Place the cap directly over the top and screw down firmly. Do not overtighten and break the cap.

4. Invert the vial and tap gently. Observe vial for at least ten (10) seconds. If an air bubble appears, discard the sample and begin again. It is imperative that no entrapped air is in the sample vial.

5. Immediately place the vial in the protective foam sleeve and place into the cooler, oriented so that it is lying on its side, not straight up.

6. The holding time for VOAs is seven days. Samples should be shipped or delivered to the laboratory daily so as not to exceed the holding time. Ensure that the samples remain at 4EC, but do not allow them to freeze.

8.0 CALCULATIONS

If it is necessary to calculate the volume of the well, utilize the following equation:

$$\textit{Well volume} \quad ' \quad nr^2h\,(cf) \qquad [\textit{Equation } 1]$$

where:

n	=	pi
r	=	radius of monitoring well (feet)
h	=	height of the water column (feet) [This may be determined by subtracting the depth to water from the total depth of the well as measured from the same reference point.]
cf	=	conversion factor (gal/ft^3) = 7.48 gal/ft^3 [In this equation, 7.48 gal/ft^3 is the necessary conversion factor.]

Monitor well diameters are typically 2", 3", 4", or 6". Knowing the diameter of the monitor well, there are a number of standard conversion factors which can be used to simplify the equation above.

The volume, in gallons per linear foot, for various standard monitor well diameters can be calculated as follows:

$$v(gal/ft) \quad ' \quad nr^2\,(cf) \qquad [\textit{Equation } 2]$$

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where:

n	=	pi
r	=	radius of monitoring well (feet)
cf	=	conversion factor (7.48 gal/ft^3)

For a 2" diameter well, the volume per linear foot can be calculated as follows:

$$\textit{vol/linear ft} = nr^2 (cf) \quad [\textit{Equation } 2]$$
$$= 3.14\ (1/12\ ft)^2\ \ 7.48\ gal/ft^3$$
$$= 0.1632\ gal/ft$$

Remember that if you have a 2" diameter well, you must convert this to the radius in feet to be able to use the equation.

The conversion factors for the common size monitor wells are as follows:

Well diameter	2"	3"	4"	6"
Volume (gal/ft.)	0.1632	0.3672	0.6528	1.4688

If you utilize the conversation factors above, Equation 1 should be modified as follows:

$$\textit{Well volume} = (h)(cf) \quad [\textit{Equation } 3]$$

where:

h	=	height of water column (feet)
cf	=	the conversion factor calculated from Equation 2

The well volume is typically tripled to determine the volume to be purged.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following general QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation and they must be documented.

3. The collection of rinsate blanks is recommended to evaluate potential for cross contamination from the purging and/or sampling equipment.

4. Trip blanks are required if analytical parameters include VOAs.

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10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA or REAC health and safety guidelines. More specifically, depending upon the site specific contaminants, various protective programs must be implemented prior to sampling the first well. The site health and safety plan should be reviewed with specific emphasis placed on the protection program planned for the well sampling tasks. Standard safe operating practices should be followed such as minimizing contact with potential contaminants in both the vapor phase and liquid matrix through the use of respirators and disposable clothing.

When working around volatile organic contaminants:

1. Avoid breathing constituents venting from the well.

2. Pre-survey the well head-space with an FID/PID prior to sampling.

3. If monitoring results indicate organic constituents, sampling activities may be conducted in Level C protection. At a minimum, skin protection will be afforded by disposable protective clothing.

Physical hazards associated with well sampling:

1. Lifting injuries associated with pump and bailers retrieval; moving equipment.

2. Use of pocket knives for cutting discharge hose.

3. Heat/cold stress as a result of exposure to extreme temperatures and protective clothing.

4. Slip, trip, fall conditions as a result of pump discharge.

5. Restricted mobility due to the wearing of protective clothing.

6. Electrical shock associated with use of submersible pumps is possible. Use a GFCI or a copper grounding stake to avoid this problem.

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APPENDIX J

SAMPLING DATA SHEETS

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Sample Locations
American Creosote DeRidder – Site Inspection

Location ID	Sample Location	Sample Type	Notes
AC01	Background boring, up gradient of site area	Soil	
AC02	Background, up gradient of site near railroad track & Post Plant Rd	Sediment/Water	Surface water not sampled
AC03	Boring, approximate location of the former railway spur	Soil	
AC04	Oil/water separator within the concrete Structure	Sediment/Water	Sediment not sampled
AC05	Boring, on trail just past storage area for bulldozer	Soil	
AC06	Pit inside concrete structure	Sediment/Water	Sediment not sampled
AC07	Boring, on trail between Pond & Concrete Structure	Soil	
AC08	Wastewater Pond	Sediment/Water	
AC09	Common Drainage along railroad ROW, down gradient of wastewater pit area	Sediment/Water	Not Sampled
AC10	Boring, end of the trail to the west	Soil	
AC11	Boring, east of the railroad tracks. Closest to the command post, not on trail	Soil	
AC12	West side of railroad tracks, north of the culvert	Sediment/Water	Surface Water not sampled
AC13	Hand auger, just outside mouth of the culvert on east side of the railroad tracks	Soil	
AC14	Hand auger, 20 yards east of ACS13 near culvert east of railroad tracks	Soil	
AC15	SW property boundary of site	Sediment/Water	Surface Water not sampled
AC16	Background location, Palmetto Creek	Sediment/Water	Not Sampled
AC17	Drainage/overland flow pathway to Palmetto Creek	Sediment/Water	Not Sampled
AC18	Palmetto Creek	Sediment/Water	Not Sampled
AC19	Borings, on trail between Pond & Concrete Structure, and end of the trail to the west	Soil Field Duplicate	Duplicate of ACS07-58 & ACS10-10
AC20	Duplicate (location to be determined in field)	Sediment/Surface Water Field Duplicate	Not Sampled
AC21	Monitor Well #1	Groundwater	
AC22	Monitor Well #2	Groundwater	
AC23	Monitor Well #3	Groundwater	
AC24	Field Blank	Water	
AC25	Grab, taken from inside concrete structure	Soil	
AC26	Grab, taken from creosote piles	Soil	

SOIL SAMPLING DATA SHEETS

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CSS-Dynamac

Site Name: American Creosote - DeRidder

DATA SHEET

Date: 6/9/15		**Samplers:**	QRI / START
Sample Location	ACSO 1 (Soil Core) 0-15 ft bgs		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.835414° N	**Longitude**	93.274983° W
Photo #	1 & 2 # 0245 & 0246		
Photo Description	Photo 1 - sampling facing East Photo 2 - sampling complete facing East		

SOIL SAMPLE

Sample ID #	ACSO 1	**Sample Time**	1300hrs - 1330hrs
Location Description	0-5 ft - 90% Recovery 5-10 ft bgs - 90% Recovery 10-15 ft bgs - 90% Recovery		

Analyses

1) 0-2
2) 2-5
3) 5-8
4) 8-11
5) 11-13
6) 13-15 > discarded

VOC readings
1) 0-2' 0ppm
2) 2-5' 0.5ppm
3) 5-8' 0ppm
4) 8-11' 0ppm
5) 11-13' 0ppm
6) 13-15' 0ppm

Field Dup		**Lab QC**	Yes
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:	**Date Time**	**Received By:**	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

Date: 6/9/15		Samplers:	QRT / START
Sample Location	AC03		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831877 °N	Longitude	93.276937°W
Photo #	2100, 2101, 2102, 2103		
Photo Description	2100 & 2101 - Drilling 2102 & 2103 drilling complete		

SOIL SAMPLE

Sample ID #	AC03	Sample Time	1510 - 1535
Location Description	0-5 ft 5-10 ft 10-15 ft		

VOA readings
0-2': 1.1 ppm
4-5': .5 ppm
9-10': 1.5 ppm
10-10': 3.0 ppm
13-15': 0 ppm

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
Cyanides		Metals + Mercury (8 OZ) (1 / 2 / 1)	

Starting Tag No	6-			Sample Number(s)	
Relinquished By:		Date Time		Received By:	

CSS-Dynamac **Site Name:** American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	START
Sample Location	ASS05		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831562	**Longitude**	-93.276954
Photo #	2109		
Photo Description	Soil boring		

SOIL SAMPLE

Sample ID #	ACS 05	**Sample Time**	
Location Description	On trail Just past storage area for bulldozer		

0-5' 90% recovery
0-1 creosote
5-10' moist 8-10 possible water

Analyses

VOA readings: 0-2': 3.3 ppm 8-10' 1.4 ppm
2-5': 5.8 ppm
5-8': 4.4 ppm

Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac **Site Name:** American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	START
Sample Location	ACS07		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831156	**Longitude**	-93.277190
Photo #	2118		
Photo Description	Soil boring		

SOIL SAMPLE

Sample ID #	ACS07	**Sample Time**	
Location Description	on trail between pond & concrete structure		

A) 0-5' 90% recovery B) 5-10'
0-1 possible creosote
2-5 silty clay
5-8' hydrocarbon odor - creosote
8-10' hydrocarbon odor - creosote

VOC Readings:
0-2': 1.8 ppm
2-5': 1.3 ppm
5-8': 72.6 ppm
8-10': 175.5 ppm

Analyses

Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac **Site Name:** American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	JART
Sample Location	ACS10		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831251	**Longitude**	-93.277381
Photo #	2120		
Photo Description	Soil boring		

SOIL SAMPLE

Sample ID #	ACS 10	**Sample Time**	
Location Description	End of trail to the ~~East~~ WH West	VOC Readings: 0-2' - 12 ppm; 2-5' - .6 ppm; 5-8' - 14.8 ppm; 8-10' - 157.6 ppms	
A) 0-5' 0-1-1.5' - possible creosote last 4' - moist sand 2'9"-3'4" - sand yorker	**Analyses**	B) 5-10' 5-8' - possible creosote silty clay 8-10' - creosote	

Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

Date:	6/11/15	Samplers:	START
Sample Location	ACS 11		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.830934	Longitude	-93.277876
Photo #	2133		
Photo Description	Soil boring		

SOIL SAMPLE

Sample ID #	ACS 11	Sample Time	1432 - 1445
Location Description	East of rail road tracks closest boring to command post not on trail		
Analyses			
Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
Cyanides		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	
Relinquished By:		Date Time	Received By:

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	START
Sample Location	ACS13		
Address	Past Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.630901	**Longitude**	-93.277941
Photo #	NA		
Photo Description	NA		

SOIL SAMPLE

Sample ID #	ACS13	**Sample Time**	1503 - 1510
Location Description	Hand Auger. just outside mouth of the culvert on the East side of tracks		
Analyses			
Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	START
Sample Location	ACS 14		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.830251	**Longitude**	-93.278068
Photo #	2134		
Photo Description	Sampling		

SOIL SAMPLE

Sample ID #	ACS 14	**Sample Time**	1512-1521
Location Description	1st Auger @ 20 yards EAST of ACS 13 near culvert EAST of tracks		
Analyses			
Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac **Site Name:** American Creosote

DATA SHEET

Date:	6/11/15	**Samplers:**	START
Sample Location	Duplicate		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	NA	**Longitude**	NA
Photo #	NA		
Photo Description	NA		

SOIL SAMPLE

Sample ID #	ACS19	**Sample Time**	
Location Description	Duplicate sample of ACS07-5E & ACS10-10		
Analyses			
Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

Date:	6-11-15	**Samplers:**	START
Sample Location	ACS 25		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831493	**Longitude**	-93.277017
Photo #	2124		
Photo Description	~~Sediment~~ Soil sampling just inside concrete wall		

SOIL SAMPLE

Sample ID #	ACS 25	**Sample Time**	10:37 - 10:50
Location Description	Sample taken inside of the concrete structure 2.4" of sediment on top of concrete		

Analyses

Field Dup		**Lab QC**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
Cyanides		**Metals + Mercury (8 OZ) (1 / 2 / 1)**	
Starting Tag No	6-	**Sample Number(s)**	
Relinquished By:		**Date Time**	
Received By:			

CSS-Dynamac Site Name: American Creosote

DATA SHEET

Date:	6-11-15	Samplers:	START
Sample Location	ACS 26		
Address	Post Plant Rd.		
Property ID	SSID: CERCLIS:		
GPS Coordinates			
Latitude	30.831899	Longitude	-93.276548
Photo #	2132		
Photo Description	Sampling of creosote piles		

SOIL SAMPLE

Sample ID #	ACS26	Sample Time	1146 - 1148
Location Description	Creosote piles		
Analyses			
Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
Cyanides		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	
Relinquished By:		Date Time	
Received By:			

SURFACE WATER/SEDIMENT SAMPLING DATA SHEETS

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It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	Background, Common Drainage, upgradient of Site				
ADDRESS	Post Plant Rd.				
PROPERTY ID	(CERCLA) / (SSID)				
Date:	6-11-15	Samplers:	START		
GPS Coordinates	*Latitude*	30.835333	*Longitude*	-93.275212	

WATER SAMPLE

Sample ID #		Sample Time	
Location Description			
Photo #			
Photo Description			

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	ACSD 02	Sample Time	1617
Location Description	Background, upgradient of Site near railroad tracks & Post Plant Road		
Photo #	2137	Photo Direction	North
Photo Description	Sampling		

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	ACSW 04 Concrete Structure				
ADDRESS	Past Plant Pt				
PROPERTY ID	(CERCLA) CAN000604293 / (SSID) AC-KM				
Date:	6-11-15	Samplers:	START		
GPS Coordinates	*Latitude*	30.831530	*Longitude*	-93.276990	

WATER SAMPLE

Sample ID #	ACSW 04	Sample Time	0910-0923
Location Description	Oil/water separator located within the concrete structure		
Photo #	2119		
Photo Description	START Helewka sampling within the oil/water seperator facing southeast		

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	~~AE~~ JH	Sample Time	
Location Description			
Photo #		Photo Direction	
Photo Description			

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	ACSW06 - Pit		
ADDRESS	Post Plant Rd.		
PROPERTY ID	(CERCLA) / (SSID)		
Date: 6/11/15	Samplers: START		
GPS Coordinates	*Latitude* 30.831316	*Longitude* -93.277039	

WATER SAMPLE

Sample ID #	ACSW 06	Sample Time	1102-1110
Location Description	Pit inside of concrete structure		
Photo #	2125		
Photo Description	Sampling		

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #		Sample Time	
Location Description			
Photo #		Photo Direction	
Photo Description			

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	Pond				
ADDRESS	Post Plant Rd.				
PROPERTY ID	(CERCLA)	/ (SSID)			
Date:	6/11/15	Samplers:	START		
GPS Coordinates	*Latitude*	30.831326	*Longitude*	-93.277288	

WATER SAMPLE

Sample ID #	ACSW 08	Sample Time	0803 - 0830
Location Description	Pond		
Photo #	2115 & 2116		
Photo Description	Sampling		

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	ACSD 08	Sample Time	1017 - 1023
Location Description	Pond		
Photo #	2121, 2122, 2123	Photo Direction	West
Photo Description	Sampling		

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	Culvert on West side of tracks		
ADDRESS	Post Plant Rd.		
PROPERTY ID	(CERCLA) / (SSID)		
Date:	6/11/15	Samplers:	START
GPS Coordinates	*Latitude* 30.830321	*Longitude*	-93.278260

WATER SAMPLE

Sample ID #		Sample Time	
Location Description			
Photo #			
Photo Description			

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	ACSD 2	Sample Time	1605 - 1610
Location Description	Culvert on west side of tracks sampled to the north of the culvert		
Photo #	2136	Photo Direction	SE
Photo Description	Sample location		

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote

DATA SHEET

SAMPLE LOCATION	ACSD15				
ADDRESS	Past Plant Rd.				
PROPERTY ID	(CERCLA) / (SSID)				
Date:	6/11/15	Samplers:	SAET		
GPS Coordinates	*Latitude*	30.807576	*Longitude*	-93.280338	

WATER SAMPLE

Sample ID #		Sample Time	
Location Description			
Photo #			
Photo Description			

Miscellaneous

Secondary Containment? Yes / No	Describe:	Breached? Cracked? Hole? etc..	

Field Measurements (*Meter Model/ID No*: _____)

pH		Turbidity Meter ID	
Conductivity (us/cm)		Turbidity (NTU)	
TDS (ppm)		Temperature (°C)	
Dissolved Oxygen (% or mg/L)		ORP (mv)	

Analyses

Field Dup		Lab QC	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	ACSD 15	Sample Time	1549
Location Description	Southeast boundary of site		
Photo #	2135	Photo Direction	South
Photo Description	Sampling		

Analyses

Field Dup		Lab QC	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

GROUNDWATER SAMPLING DATA SHEETS

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GROUNDWATER WELL SAMPLING

Date: 6/10/15 Site Name: American Coke Samplers: QRT / START

Weather Conditions: Sunny 90°F Humidity 56%

Sample Location No.	ACGW-21
Sample Location Name	Monitor Well #01
GPS	30.830347 N -93.275253W

	Sample Type
	Split
	Duplicate
	QA/QC (~~triple volume~~)
	Composite / Grab (circle one)
	Other

Well Information	
Well ID No.	
Depth to H_2O Level	11' 8"
Depth of Well	16' 5"
Well Diameter	2"
Other Stick up	3'

PURGE

Time Interval: 1510 to 1545 hours

Conditions	1st	2nd	3rd	4th	5th
Time	1515	1520	1525	1535	1545
pH	5.14	4.84	4.84	4.86	4.90
Conductivity (mS/cm)	0.071	0.045	0.071	0.069	0.069
Temperature (°C)	19.84	20.13	19.82	19.75	19.52
Turbidity (NTU) TDS g/L	0.051	0.040	0.049	0.049	0.050
Dissolved Oxygen (D.O.) (mg/L)	1.16	9.36	1.23	0.93	0.87
Salinity (%)	0.04	0.03	0.04	0.03	0.03
Color	clear	clear	clear	clear	clear
Odor	none	none	none	none	none
Other					

SAMPLING

Time: 1546 hours

pH	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTU)	DO (mg/L)	Salinity (%)	Color	Odor	Other
4.89	0.069	19.59	0.050	0.64	0.03	clear	none	

Collection Method	low flow
Monitor Readings	

CSS-Dynamac

GROUNDWATER WELL SAMPLING

Date: 6/10/15 **Site Name:** American Creosote **Samplers:** QRT

Weather Conditions:

Sample Location No.	AGGW-22
Sample Location Name	Monitor Well #02
GPS	30.830874 N W-93.277789

Sample Type	
	Split
	Duplicate
	QA/QC (triple volume)
	Composite / Grab (circle one)
	Other

Well Information	
Well ID No.	
Depth to H_2O Level	10'6"
Depth of Well	19'
Well Diameter	2"
Other	

PURGE

Time Interval: 093542 to 1016 hours

Conditions	1st	2nd	3rd	4th	5th	6th
Time	0943	0948	0953	1002	1008	1015
pH	4.80	4.51	4.48	4.46	4.47	4.46
Conductivity (mS/cm)	.095	.001	0.000	0.076	0.074	0.072
Temperature (°C)	19.62	19.50	19.45	19.19	19.21	19.14
Turbidity (NTU) TDS g/L	0.001	0.001	0.000	0.055	0.054	0.053
Dissolved Oxygen (D.O.) (mg/L)	6.99	10.45	10.55	1.57	1.03	0.48
Salinity (%)	.05	0.00	0.00	0.04	0.04	0.04
Color	clear	clear	clear	clear	clear	clear
Odor	none	none	none	none	none	none
Other						

SAMPLING

Time: 1016 hours

pH	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTU)	DO (mg/L)	Salinity (%)	Color	Odor	Other
4.46	0.072	19.18	0.052	.41	0.03	clear	~~clear~~ none	na

Collection Method	low flow
Monitor Readings	

CSS-Dynamac

GROUNDWATER WELL SAMPLING

Date: 6/10/15 Site Name: American Creosote Samplers: START

Weather Conditions: Sunny 85°F 70% Humidity

Sample Location No.	ACGW-23
Sample Location Name	monitor well # 03
GPS	30.830678 N -93.278152W

Sample Type	
	Split
	Duplicate
	QA/QC (triple volume)
	Composite / Grab (circle one)
	Other

Well Information	
Well ID No.	
Depth to H_2O Level	12'4"
Depth of Well	18'5"
Well Diameter	2"
Other stick up	3'

PURGE

Time Interval: 1122 to 1207 hours

Conditions	1st	2nd	3rd	4th	5th	6th
Time	1127	1135	1140	1146	1156	1206
pH	4.24	4.51	4.48	4.56	4.53	4.31
Conductivity (mS/cm)	0.056	0.057	0.057	0.058	0.058	0.058
Temperature (°C)	20.34	21.23	21.03	21.02	20.59	20.23
Turbidity ~~(NTU)~~ TDS g/L	0.040	0.040	0.040	0.040	0.040	0.041
Dissolved Oxygen (D.O.) (mg/L)	0.92	1.96	1.64	1.47	0.48	0.27
Salinity (%)	0.03	0.03	0.03	0.03	0.03	0.03
Color	clear	clear	clear	clear	clear	clear
Odor	none	none	none	none	none	none
Other						

SAMPLING

Time: 1209 hours

pH	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTU)	DO (mg/L)	Salinity (%)	Color	Odor	Other
4.31	0.058	2020	0.040	.22	0.03	clear	none	

Collection Method	low flow
Monitor Readings	

APPENDIX K

INVESTIGATIVE DERIVED WASTE MANIFEST

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) DD 1502423772 SC PPW 7/4/2015 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NONEREQUIRED	1	(800) 483-3718	008743552 FLE

GENERATOR

5. Generator's Name and Mailing Address
American Creosote DeRidder
Post Plant Road
DeRidder, LA 70634
Generator's Phone: (214) 535-7923

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

6. Transporter 1 Company Name
Clean Harbors Environmental Services Inc

U.S. EPA ID Number
MAD039322250

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Chattanooga LLC
3300 Cummings Road
Chattanooga, TN 37419
Facility's Phone: (423) 821-6926

U.S. EPA ID Number
TND982141392

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON-REGULATED LIQUID, (GROUND WATER)	1	DM	60	P	
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
T CH1020262

15. **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. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month 8 | Day 12 | Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Alton Williams | Signature: Alton Williams | Month 8 | Day 12 | Year 15

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

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H070			

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

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

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

07 562

GENERATOR'S INITIAL COPY

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) DD 1602423772 SC PPW 7/4/2015 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NONEREQUIRED	1	(800) 483-3718	008743553 FLE

GENERATOR

5. Generator's Name and Mailing Address
American Creosote DeRidder
Post Plant Road
DeRidder, LA 70634
Generator's Phone: (214)535-7923

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

6. Transporter 1 Company Name
Clean Harbors Environmental Services Inc

U.S. EPA ID Number
MAD039322250

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors LaPorte, LLC
500 Independence Parkway South
La Porte, TX 77571
Facility's Phone: (281)884-5500

U.S. EPA ID Number
TXD982290140

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NON DOT REGULATED, (SOIL BORINGS)					OUT53011
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1028254

15. **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. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name | Signature | Month 8 | Day 12 | Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Allen W. Ramirez | Signature: Allen Williams | Month 8 | Day 12 | Year 15

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

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) | U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) | Month | Day | Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H141			

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

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

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

GENERATOR'S INITIAL COPY

APPENDIX L

DATA QUALITY REVIEWS

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
DATA QUALITY REVIEW REPORT

Date: January 6, 2016
Laboratory: KAP Technologies Inc., The Woodlands, Texas
Case#: 45361
SDG#: F9DA0
Laboratory ID #: S-1025
Data Quality Review Performed By: Mindy Song, Dynamac Corporation (Dynamac)
Dynamac Work Order #: S109-06K

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method. MS and MSD were not requested for this SDG and not applicable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met. The LCS was not analyzed and not applicable.

Some results were qualified as estimated (J) or (UJ) for all BNA samples and BNA-SIM sample ACSD02-06 because calibration was outside QC limits.

Data Quality Review
American Creosote Deridder
KAP Technologies Inc.
Case#: 45361, SDG#: F9DA0

Samples ACS05-02 and ACS07-58 had target analyte concentrations that exceeded the calibration range, but no further diluted re-analyses were performed. Therefore, the results of these analytes were qualified as estimated (J).

Some target compound results were false positive for following samples and the results were qualified as a false positive exists (F+):

ACS01-25: 1,4 -dioxane and 2,6-dinitrotoluene
ACS13-02 (dilution): 1,4-dioxane
ACS07-58: benzaldehyde
ACS14-25: benzaldehyde
ACS14-25: benzaldehyde, N-nitrosodiphenylamine, and 3,3'-dichlorobenzidine
ACS07-02: 2,6-dinitrotoluene
ACS07-02 (dilution): 2,6-dinitrotoluene
ACS10-02 (dilution): 2,6-dinitrotoluene
ACS11-02 (dilution): 2,6-dinitrotoluene
ACS19-58 (dilution): 2,6-dinitrotoluene
ACS19-10: 2,4-dinitrotoluene
ACS10-02: 3,3'-dichlorobenzidine

Although both the full scan and SIM analysis results were available for sample ACSD02-06, the SIM analysis results are designated for use only when the corresponding full scan analysis results were non-detects of below the quantitation limits. The results of high PAHs should be reported from the full scan of BNA analysis.

For sample ACS11-35, results for two separate analyses were submitted. To minimize data qualification and favor positive results, the results from the analysis performed on 7/6/15 were used with the exceptions of benzo(b)fluoranthene and benzo(k)fluoranthene which were taken from the analysis performed on 7/3/15.

1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 98 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks, surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. SVOCs were not detected in the laboratory blanks above the reporting limits.

1.2.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event.

1.2.5 Field Blanks

Field blanks were not collected for this sampling event.

1.2.6 Surrogates

Surrogate nitrobenzene-d5 recoveries were very low (<10%) in samples ACS-01-25 and ACS19-10. The non-detected results of acetophenone, N-nitroso-di-n-propylamine, hexachloroethane, nitrobenzene, 2,6-dinitrotoluene, 2,4-dinitrotoluene, and N-nitrosodiphenylamine were qualified as unusable (UR).

Surrogate 4,6-dinitro-2-methylphenol-d2 recoveries were very low (<10%) in samples ACS11-02 and ACS19-10. The non-detected results of 4,6-dinitro-2-methylphenol were qualified as unusable (UR).

Surrogates 2-nitrophenol-d4, 2,4-dichlorophenol-d3, dimethylphthalate-d6, and anthracene-d10 recoveries were very low (<10%) in sample ACS19-10. The detected result of 1,1'-biphenyl was qualified as estimated (J) and the non-detected results of isophorone, 2-nitrophenol, 2,4-dichlorophenol, hexachlorobutadiene, hexachlorocyclopentadiene, 4-chloro-3-methylphenol, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, 1,2,4,5-tetrachlorobenzene, pentachlorophenol, 2,3,4,6-tetrachlorophenol, caprolactam, dimethyl phthalate, diethylphthalate, di-n-butylphthalate, butylbenzylphthalate, bis(2-ethylhexyl) phthalate, di-n-octylphthalate, hexachlorobenzene, and atrazine were qualified as unusable (UR).

1.2.7 Internal Standards

Samples ACS01-25, ACS07-02 (dilution), ACS07-58, ACS10-02 (dilution), ACS10-58 (dilution), ACS13-24, and ACS19-10 had poor IS performance. The associated detected results were qualified as estimated (J) and the associated non-detected results were qualified as estimated (UJ).
The initial analysis of sample ACS13-24 had a very low recovery of IS2 (naphthalene-d5, %R<20%). To minimize data qualification, the results for analytes associated with IS2 from diluted analysis of sample ACS13-24 were recommended for use. No other failed QC criteria were noted with internal standards.

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
DATA QUALITY REVIEW REPORT

Date: January 6, 2016
Laboratory: KAP Technologies Inc., The Woodlands, Texas
Case#: 45361
SDG#: F9DC1
Laboratory ID #: S-1026
Data Quality Review Performed By: Mindy Song, Dynamac Corporation (Dynamac)
Dynamac Work Order #: S109-06K

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method. MS and MSD were not requested for this SDG and not applicable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met. The LCS was not analyzed and not applicable.

The 2-nitrophenol in BNA analysis did not meet the technical %D calibration criteria and the associated non-detected 2-nitrophenol results in samples ACSD12-06, ACSD15-06, and ACS01-10 were qualified

as estimated (UJ). Three analytes in BNA-SIM analysis did not meet the technical %D calibration criteria.

Some target compound results were false positive for following samples and the results were qualified as a false positive exists (F+):

ACSD08-06:	benzaldehyde
ACS07-10:	benzaldehyde
ACS10-10:	benzaldehyde
ACSD08-06 (dilution):	4-chloroaniline

Diluted analysis of results were recommended for use for dibenzofuran in sample ACSD08-06 and benzo(a)anthracene in sample ACSD15-06 because they were not reported in their respective original analysis.

Although both the full scan and SIM analysis results were available for samples ACSD08-06, ACSD12-06, and ACSD15-06, the SIM analysis results are designated for use only when the corresponding full scan analysis results were non-detects of below the quantitation limits. The results of high PAHs should be reported from the full scan of BNA analysis except the SIM analysis result of phenanthrene in sample ACSD15-06.

1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 99 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks, surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. SVOCs were not detected in the laboratory blanks above the reporting limits.

1.2.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event.

1.2.5 Field Blanks

Field blanks were not collected for this sampling event.

1.2.6 Surrogates

Surrogate 4,6-dinitro-2-methylphenol-d2 recoveries were very low (<10%) in samples ACSD12-06, ACSD15-06, ACS26-06, and ACS01-10. The non-detected results of 4,6-dinitro-2-methylphenol were qualified as unusable (UR).

1.2.7 Internal Standards

Sample ACSD15-06 had a low IS5 (chrysene-d12) response. The associated detected results were qualified as estimated (J) and the associated non-detected results were qualified as estimated (UJ).

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
DATA QUALITY REVIEW REPORT

Date: January 6, 2016
Laboratory: KAP Technologies Inc., The Woodlands, Texas
Case#: 45361
SDG#: F9DD1
Laboratory ID #: S-1022 and S-1027
Data Quality Review Performed By: Mindy Song, Dynamac Corporation (Dynamac)
Dynamac Work Order #: S109-06K

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method. MS and MSD were not requested for this SDG and not applicable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met. The LCS was not analyzed and not applicable.

The 2,4-dinitrophenol did not meet the technical %D calibration criteria for one closing CCV. The associated non-detected 2,4-dinitrophenol results in samples ACGW-21, ACGW-22, ACGW-23, and ACFB-24 were qualified as estimated (UJ).

1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 99 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks, surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. SVOCs were not detected in the laboratory blanks above the reporting limits.

1.2.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event.

1.2.5 Field Blanks

One field blank, ACFB-24, was collected and the low levels of diethylphthalate (2.8 ug/L) and benzo(a)pyrene (1.6 ug/L) were detected in the field blank. The detected diethylphthalate result in sample ACGW-23 was qualified as estimated high (J+). The detected benzo(a)pyrene results in samples ACSW-04 and ACSW-08 were qualified as estimated high (J+) and the detected benzo(a)pyrene results in samples ACGW-21, ACGW-22, and ACGW-23 were qualified as non-detect (U).

1.2.6 Surrogates

Surrogate 4,6-dinitro-2-methylphenol-d2 recoveries were very low (<10%) in samples ACGW-22, ACGW-23, and ACFB-24. The non-detected results of 4,6-dinitro-2-methylphenol were qualified as unusable (UR).

1.2.7 Internal Standards

All internal standards met the QC criteria.

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
DATA QUALITY REVIEW REPORT

Date: January 6, 2016
Laboratory: Chemtech Consulting Group, Mountainside, New Jersey
Case#: 45361
SDG#: MF9DA0
Laboratory ID #: G2641
Data Quality Review Performed By: Mindy Song, Dynamac Corporation (Dynamac)
Dynamac Work Order #: S109-06K

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method.

The RPD values were reviewed for all laboratory duplicate samples and/or MS/MSD samples. None of the data were qualified due to poor agreement between native and duplicate samples. Precision was acceptable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R)

to ensure that control limits are met. The LCS %R values were reviewed for all appropriate sample analyses. None of the data were qualified based on LCS recoveries. Also, matrix spike (MS) %R values were reviewed for all appropriate sample analyses. None of the data were qualified based on MS recoveries. Laboratory accuracy was acceptable.

1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 100 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

Data Quality Review
American Creosote Deridder
Chemtech Consulting Group
Case#: 45361, SDG#: MF9DA0

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. Metals were not detected in the laboratory blanks above the reporting limits.

1.2.3 Serial Dilution

The detected aluminum results in water samples ACGW-21, ACGW-22, and ACGW-23 were qualified as estimated (J) due to the aluminum serial dilution difference exceeding the technical QC limit in ICP-AES. No other failed QC criteria were noted with serial dilution.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sample delivery group.

1.2.5 Field Blanks

One field blank, ACFB-24, was collected and a trace amount zinc (0.41 ug/L) was detected. The detected zinc result in sample ACGW-21 was qualified as estimated high (J+).

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
DATA QUALITY REVIEW REPORT

Date: January 6, 2016
Laboratory: Chemtech Consulting Group, Mountainside, New Jersey
Case#: 45361
SDG#: MF9DB6
Laboratory ID #: G2654
Data Quality Review Performed By: Mindy Song, Dynamac Corporation (Dynamac)
Dynamac Work Order #: S109-06K

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method.

The RPD values were reviewed for all laboratory duplicate samples and/or MS/MSD samples. None of the data were qualified due to poor agreement between native and duplicate samples. Precision was acceptable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to

ensure that control limits are met. The LCS %R values were reviewed for all appropriate sample analyses. None of the data were qualified based on LCS recoveries. Water sample ACSW-04 was designated for the matrix spike analysis and the antimony, copper, and zinc matrix spike recoveries were outside the QC limits for the water matrix. In water samples ACSW-06, ACSW-04, and ACSW-08, non-detected antimony results were qualified as estimated (UJ) and detected copper and zinc results were qualified as estimated (J). No other failed QC criteria were noted with matrix spike. Laboratory accuracy was acceptable and the data is usable as qualified.

1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 100 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

Data Quality Review
American Creosote Deridder
Chemtech Consulting Group
Case#: 45361, SDG#: MF9DB6

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and field blanks.

These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. However, blank concentration affected some arsenic, cobalt, nickel, and thallium sample results in ICP-MS. The detected arsenic results in samples ACS19-10, ACSD02-06, ACS01-58, ACS07-10, ACSD12-06, ACSD15-06, and ACS11-58 were qualified as estimated high (J+). The detected nickel results in samples ACS19-58 and ACS11-58 were qualified as estimated high (J+). The detected cobalt results in samples ACSD02-06 and ACSD15-06 were qualified as estimated high (J+). The detected thallium result in sample ACS25-06 was qualified as estimated high (J+). No other failed QC criteria were noted with blanks.

1.2.3 Serial Dilution

The detected arsenic results in soil and sediment samples ACS19-58, ACS19-10, ACSD02-06, ACS01-58, ACSD08-06, ACS07-10, ACSD12-06, ACSD15-06, ACS10-10, ACS11-58, ACS25-06, ACS26-06, and ACS01-10 were qualified as estimated (J) due to the arsenic serial dilution difference exceeding the expanded QC limit in ICP-MS. No other failed QC criteria were noted with serial dilution.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sample delivery group.

1.2.5 Field Blanks

Field blanks were not collected for this sample delivery group.

APPENDIX F

EXPANDED SITE INSPECTION REPORT – AMERICAN CREOSOTE DERIDDER

EXPANDED SITE INSPECTION

AMERICAN CREOSOTE DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana

CERCLIS Identification Number: LAN000604293

Prepared in cooperation with the
U.S. Environmental Protection Agency, Region 6

November 28, 2016

EXPANDED SITE INSPECTION

AMERICAN CREOSOTE DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana
CERCLIS Identification Number: LAN000604293

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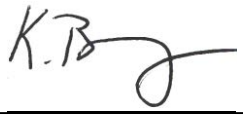

Karen Berecz
START-3, CSS-Dynamac
Project Manager

November 23, 2016
Date

Steve Cowan
START-3, CSS-Dynamac
Program Manager

November 23, 2016
Date

Brenda Nixon Cook
U.S. Environmental Protection Agency
Site Assessment Manager

November 23, 2016
Date

PROJECT CONTACTS

Brenda Cook
Site Assessment Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-TR)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202
(214) 665-7436

Steve Cowan
Program Manager - START-3
CSS-Dynamac
1323 Columbia Drive, Suite 307
Richardson, TX 75081
(214) 575-3344

Karen Berecz
Project Manager - START-3
CSS-Dynamac
1323 Columbia Drive, Suite 307
Richardson, TX 75081
(214) 575-3344

EXPANDED SITE INSPECTION

AMERICAN CREOSOTE DeRIDDER
Post Plant Road
DeRidder, Beauregard Parish, Louisiana
CERCLIS Number: LAN000604293

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APPENDICES

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Appendix D Chain of Custody Record
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Appendix H Quality Assurance Sampling Plan (QASP)
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ABBREVIATIONS AND ACRONYMS

µg/L	Micrograms Per Liter
µg/kg	Micrograms per kilogram
Acadian	Acadian Engineers & Environmental Consultants Inc.
AOC	Area of Concern
AOI	Area of Interest
bgs	Below Ground Surface
ATSF	Atchison, Topeka and Santa Fe Railway
BNSF	Burlington Northern Santa Fe Railroad
CAP	Corrective Action Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CMC	Central Manufacturing Company
COC	Contaminates of Concern
CRQL	Contract Required Quantitation Limit
DQO	Data Quality Objectives
EPA	United States Environmental Protection Agency
ESI	Expanded Site Inspection
FIRM	Flood Insurance Rate Map
GC/MA	Gas Chromatography/Mass Absorption
GC/MS	Gas Chromatography/Mass Spectrometry
GPS	Global Positioning System
HASP	Health and Safety Plan
HRS	Hazard Ranking System
IASD	Inactive and Abandoned Sites Division
IDW	Investigation-Derived Waste
IPC	International Paper Company
LCS	Laboratory Control Sample
LDEQ	Louisiana Department of Environmental Quality
LDNR	Louisiana Department of Natural Resources
LSU	Louisiana State University
MCL	Maximum Contaminant Level

mg/kg	Milligram per Kilogram
Mgal/d	Million Gallons per Day
MWV	Mead Westvaco Corporation
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NGVD	National Geodetic Vertical Datum
NPL	National Priorities List
NWI	National Wetlands Inventory
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PPE	Probable Point of Entry
QA/QC	Quality Assurance/Quality Control
QASP	Quality Assurance Sampling Plan
RA	Removal Action
RECAP	Risk Evaluation/Corrective Action Program
RI/FS	Remedial Investigation/Feasibility Study
ROW	Right-Of-Way
RPD	Relative Percent Difference
RSLs	Regional Screening Levels
RSD	Remediation Services Division
SAM	Site Assessment Manager
SARA	Superfund Amendments and Reauthorization Act
SCDM	Superfund Chemical Data Matrix
SFHA	Special Flood Hazard Area
SI	Site Inspection
SPRU	Soil Pile Remediation Unit
SQL	Sample Quantitation Limit
SSA	State Site Assessment
START-3	Superfund Technical Assessment and Response Team
SVOA	Semi-Volatile Organic Analysis
SVOC	Semi-Volatile Organic Compounds
TCL	Target Compound List
TDL	Target Distance Limit
TDD	Technical Direction Document

TPH	Total Petroleum Hydrocarbons
USDA	U.S. Department of Agriculture
VOC	Volatile Organic Compound
VRI	Voluntary Remediation Investigation
VRP	Voluntary Remediation Program

1 INTRODUCTION

CSS-Dynamac, a Superfund Technical Assessment and Response Team (START-3) contractor, was tasked by the United States Environmental Protection Agency (EPA) Region 6, under Technical Direction Document (TDD) 9/Dynamac-077-16-001 (Appendix A), to conduct an Expanded Site Investigation (ESI) for the American Creosote DeRidder site (CERCLIS No. LAN000604293) located at Post Plant Road, DeRidder, Beauregard Parish, Louisiana. See Figures 1 and 2 for the site location and area of interest (AOI) at American Creosote DeRidder. This ESI was conducted under authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). The purpose of this investigation was to collect information concerning conditions at the American Creosote DeRidder sufficient to:

- fill data gaps identified in the Site Inspection (SI) report, including further characterization of the on-site surface water pathway and wetlands, and determination of impacts to off-site surface water, sediment, and wetlands.
- assess the threat posed to human health and the environment by the site, and determine the potential for a release of hazardous constituents into the environment;
- determine the need for additional investigation under CERCLA or other authority, and, if appropriate, support site evaluation using the Hazard Ranking System (HRS) for proposal to the National Priorities List (NPL); and
- provide additional documentation necessary to support a decision by the EPA Region 6 Site Assessment Manager (SAM) regarding the need for further action under CERCLA and SARA.

The specific objectives and tasks for the American Creosote ESI, as identified by the EPA SAM, are to:

1. develop a work plan/cost estimate for completing an ESI;
2. develop a Quality Assurance Sampling Plan (QASP);
3. prepare a Health and Safety Plan (HASP);
4. prepare documents for procurement of samples using the Houston EPA Laboratory;

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5. collect and analyze samples from on-site and off-site migration pathways;
6. conduct a limited survey and sampling of the area surrounding the site in order to verify potential pathway targets and off-site conditions; and
7. prepare an ESI report for the site, including analytical tables comparing concentrations of contaminants with Louisiana Risk Evaluation/Corrective Action Program (RECAP) standards and EPA Regional Screening Levels (RSLs).

To accomplish the objectives, START-3 collected eight (8) surface water samples and eleven (11) sediment samples, including duplicate surface water and sediment samples, to assess the migration of contamination in the surface water pathway both on-site and off-site.

The ESI report is developed according to the EPA Guidance for Performing Site Inspection Under CERCLA (EPA540-R-92-021, Directive 9345.1-05), 40 CFR Part 300, Hazard Ranking System (HRS) Final Rule, the HRS Guidance Manual, and the Superfund Chemical Data Matrix (SCDM) (References 1 to 4).

Completion of the ESI included reviewing existing site information, determining regional characteristics, collecting receptor information within the range of site influence, executing a sampling plan, and producing this report. The report is organized as follows:

- Section 1, Introduction – Authority for performance of this work, goals for the project, and summary of the report contents;
- Section 2, Site Background – Site description, site operations and waste characteristics, and a summary of investigation locations;
- Section 3, Field Activities and Analytical Protocol – Summary of the field effort;
- Section 4, Quality Assurance/Quality Control (QA/QC) – Summary of the laboratory data;
- Section 5, Analytical Results Reporting and Background Samples – Discussion of results reporting criteria and background sample locations and analytical results;
- Section 6, Potential Sources – Discussion of site sources, and previous analytical results;

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- Section 7, Migration/Exposure Pathways and Receptors – Discussion of the migration/exposure pathways, sample locations, and analytical results;
- Section 8, Summary and Conclusions – summary of the investigation and recommendation for the site based on the information gathered during the investigation;
- Section 9, References – Numerical listing of the references cited throughout the text;
- Appendix A, Technical Direction Document (TDD) 9/Dynamac-077-16-001;
- Appendix B, Photographic Documentation – Photographs taken during the ESI sampling event and reconnaissance site visit;
- Appendix C, Copy of Logbook – Documentation of field activities during the ESI and reconnaissance site visit;
- Appendix D, Chain-of-Custody Forms – Forms documenting sample chain-of-custody for the ESI sampling event;
- Appendix E, Global Positioning System (GPS) Sample Location Coordinates – Latitude and longitude coordinates of ESI sample locations;
- Appendix F, Access Agreements – Forms granting access to properties;
- Appendix G, EPA Houston Analytical Data – Complete analytical results for all sediment samples and surface water samples collected during the ESI;
- Appendix H, Quality Assurance Sampling Plan (QASP) – Sampling process design for the ESI sampling event;
- Appendix I, Sampling Data Sheets – Forms documenting surface water and sediment samples collected during the ESI sampling event; and
- Appendix J, Data Quality Review – Assessment of laboratory analytical data acceptability and reliability.

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2 SITE BACKGROUND

This section describes the background of the site including location, description, ownership history, operations and source characteristics, previous investigations, and a summary of the expanded site investigation locations.

2.1 SITE LOCATION

Site Name:	American Creosote DeRidder
CERCLIS ID No.:	LAN000604293
Location:	Post Plant Road, approximately a half mile south of the intersection of Post Plant Road and the railroad crossing in DeRidder, Beauregard Parish, Louisiana 70634 (Figure 1)
Latitude:	30.831693º N
Longitude:	-93.276863º W Physical Address location coordinates per CMC Access Agreement (Appendix F)
Legal Description:	Section 3, Township 3 South, Range 9 West of the Louisiana Meridian (Ref. 5, p.7; Ref. 6, p. 2; Appendix F)
Congressional District:	Louisiana's 4th Congressional District
Site Owner:	Central Manufacturing Company, Inc. Post Office Box 877 Opelousas, Louisiana 0750-0877 (Ref. 6, pp. 1-5)
Site Contact:	Mr. James Lopez, Legal Council Central Manufacturing Company, Inc. Post Office Box 1329 Opelousas, Louisiana 70571 (Appendix F)

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2.2 SITE DESCRIPTION

The American Creosote DeRidder site is a 55-acre tract of land owned by Central Manufacturing Company (CMC) located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Beauregard Parish, Louisiana (Figure 1; Reference 6, pp. 1-5). The site is characterized by a gently rolling topography, mild winters and hot/humid summers, silty clayey sands and sandy silty clay soils (Ref. 5, p. 7). The average elevation of the site is 150 feet above mean sea level (Ref. 5, p. 7). The site area primarily consists of pine, however a variety of oak and cypress are present in the low bottom areas within which drainage tributaries meander (Ref. 5, p. 7). The site is bounded on the north by a rural roadway, to the east is heavy brush, to the south is undeveloped land, and to the west is the Burlington Northern Santa Fe (BNSF) railroad spur (Ref. 6, p. 5; Ref. 7, pp. 56 -57; Appendix F; Figure 2). The BNSF railroad spur is currently used by Ingevity, formerly the Mead Westvaco (MWV) Corporation. The sites broader surroundings include commercial, industrial and residential uses (Figure 2). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin (Ref. 5, p. 7).

2.3 SITE OWNERSHIP HISTORY

Central Manufacturing Company (CMC) has been the primary owner of the 55-acre tract of land from September 1992 to present (Ref. 8, p. 17). In September 1992 First National Bank in Deridder, Deridder, Louisiana sold CMC the parcel of land (Ref. 8, pp. 17 & 64-65). Prior to 1992, First National Bank of DeRidder, by means of "dation en paiement" conveyed the land on February 14, 1984 from Creighton and Frances Pugh to relieve them of mortgage and lien debt against the property (Ref. 8, pp. 62-63). The Creighton's had formerly purchased the parcel of land on April 24, 1972 from Charles Holbrook for commercial purposes (Ref. 8, pp.17 & 59).

Charles Holbrook was the original owner of the parcel of land that is currently in CMC ownership (Ref .8 p .17). Prior to April 1963 the current tract of land was fundamentally three separate parcels of property acquired by Mr. Holbrook and incorporated into one single tract of land (Ref. 8, p. 17; Figure 3). On April 4, 1963, International Paper Company (IPC) sold Charles Holbrook one (Parcel B) of the three tracts of land which he incorporated into the two other tracts of land

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(Parcel E1 and E2) that he had purchased years earlier from American Creosoting Corporation on December 21, 1959 (Ref. 8, p. 30-32, 52-55; Figure 3).

In 1956, Union Camp Corporation acquired American Creosoting Company (Ref .9, p. 64). Subsequent to the acquisition Union Camp renamed the operations to AmCre Corporation (Ref. 9, p. 64). In July 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation (Ref. 9, p.64).

The two tracts of land (Parcel E1 and E2) bought by Mr. Holbrook, that were later incorporated with the third tract of land (Parcel B) purchased from IPC, were initially purchased by American Creosoting Company in November 9, 1955 from Shreveport Creosoting Company, a Delaware Corporation (Ref. 8, pp. 24-29). From November 1928 to its sale in November 1955 both tracts of land (Parcel E1 and E2) were owned by Shreveport Creosoting Company, a Delaware Corporation which had previously purchased the properties from Shreveport Creosoting Company, an Indiana Corporation (Ref. 8, p.38).

Preceding both tracts of land being sold on November 15, 1928 by Shreveport Creosoting Companies, an Indiana Corporation, to Shreveport Creosoting Company, a Delaware Corporation, both tracts of land were acquired separately by Shreveport Creosoting Company in August 1918 (Ref. 8, pp. 19 & 33-38). One tract of land (Parcel E1) was sold by The Long Bell Lumber Company and the other tract of land (Parcel E2) was purchased from the Hudson River Lumber Company on the same date on August 5, 1918 by Shreveport Creosoting Company, an Indiana Corporation (Ref. 8, pp. 19 & 33-37).

Historical ownership prior to 1956 for the tract of land (Parcel B) previous owned by IPC and sold to Mr. Charles Holbrook is currently unknown. Historical ownership previous to 1918 for the two tracts of land (Parcel E1 and E2) separately owned by The Long Bell Lumber Company and Hudson River Lumber Company is also currently unknown.

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2.4 SITE OPERATIONS AND SOURCE CHARACTERISTICS

The American Creosote DeRidder site has been impacted by creosote related compounds from historical timber treatment operations at the site (Ref. 5, p. 9). The Shreveport Creosoting Company doing business as a Delaware Corporation operated a creosote timber treatment facility from the early 1920's to approximately 1945 on a parcel of land south of DeRidder, Beauregard Parish, Louisiana (Ref. 5, pp. 8 & 27-28). American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957 (Ref. 5, p. 8). From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992 who planned heavy industrial/commercial use (Ref. 10, p. 4; Ref. 12, p. 5).

The Shreveport Company's facilities and operations used creosote compounds, also known as liquid pitch oil, tar oil and coal tar solutions, in the wood preserving pressure treatment process (Ref. 12, p. 52; Ref. 20 p. 3). The specific operations at the site consisted of dipping timber into creosote vats and the collection of spent creosote in an open pit and also the discharging of untreated process wastewater into an open pit (Ref. 9, p. 93; Ref. 10 p. 2; Ref. 14, p .1). There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits (Ref. 5, p. 8; Ref. 14, p. 1).

The site is currently void of any of these operations and consists of heavy timber and extensive overgrowth, lower story overgrowth in and around the abandoned site (Ref. 5. p. 9). Abandoned wood treatment facilities of the previous operations currently remain at the site and consist of a concrete structure of a former retort house, concrete foundation of a former vat, an unlined wastewater pit and random areas of creosote solids and soil contamination (Ref. 7, pp. 61-69).

2.4.1 Sources

There are four identified potential sources on the property of American Creosote:

- Concrete Structure

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- Oil/water Separator
- Unlined Wastewater Pond
- Random Areas of Creosote Solids and Soil Contamination

Figure 5 provides the location of each source at the American Creosote site. A description of each source is provided below with information obtained during the December 2014 preliminary assessment (PA) and the June 2015 site inspection (SI) (Ref. 7, pp. 76-78; Ref. 11, pp. 181-182).

Concrete Structure: The concrete structure is located on the central western boundary of the property (Figure 5). The concrete structure is the former retort house from previous operations at the site (Ref. 5, pp. 14 & 28; Ref. 11, pp. 143-144). Due to the amount of pine forest and thick shrub overgrowth a complete survey of the concrete structure was not completed (Ref. 7, pp. 61-66; Ref. 11 p. 182). The approximate dimensions of the concrete structure from observations made during the SI are 30 feet x 70 feet (Ref. 11, pp. 181-182). There is approximately 24 inches of sediment on top of the concrete structure (Ref. 11, p. 181). Located within the concrete structure is a pit with a concrete bottom. The pit contains approximately five (5) feet of water and no sediment is present (Ref. 11, pp. 138-142 & 182).

Oil/Water Separator: The oil/water separator is located just northwest and adjacent to the concrete structure (Figure 5). The oil/water separator is a concrete structure and measures approximately five (5) feet across with a center wall at approximately two and a half (2.5) feet (Ref. 11, p. 181). The concrete structure of the oil/water separator is completely covered in creosote solids, contains stagnant water, and approximately 5-10 feet of vegetation to the bottom (Ref. 7, pp. 61- 66 & 76-77; Ref. 11, pp. 135 &181).

Unlined Wastewater Pond: The unlined wastewater pond is located just west of the concrete structure (Figure 5). The unlined wastewater pond measures approximately 100 feet x 50 feet, with hardened creosote flanking and adjacent to the pond (Ref. 7, p. 67-71 & 77). During the

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December 2014 PA the depth of the wastewater pond was taken from the southwest corner and measured approximately 8-10 inches deep (Ref. 7, p. 77; Ref. 11 pp. 132-133).

Random Areas of Creosote Solids and Soil Contamination: Random areas of creosote solids and soil contamination were observed at the site during the PA and SI (Ref. 7, pp. 58-60 & 76-77; Ref. 11, p.145 & 182). This observation confirmed what was reported in 2002 during the Acadian Engineers & Environmental Consultants Inc. (Acadian) environmental site investigation (Ref. 5, pp. 14 & 32).

2.5 PREVIOUS INVESTIGATIONS

Historical site investigations at American Creosote DeRidder found contamination along the concrete foundation of the former retort house basin, abandoned waste pit, surface water and soils in 1993 (Ref. 14, p. 3). Contamination resulted from facility operations and waste handling practices at the site. Contaminates of concern (COC) identified at site are polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPHs) (Ref. 12, p. 15; Ref. 5, p. 19-20).

In 1991 the American Creosote site was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD) (Ref. 40, p .1). LDEQ IASD contacted Westvaco, a company nearby that considered buying the property at the time, and had collected water and soil samples for analysis in February 1992 (Ref. 14, p. 2). Westvaco indicated to LDEQ IASD that the laboratory results showed low levels (< 5 ppm) of phenol contamination in the soils, and the water samples analyzed were below detection limits for phenol (Ref. 13, p. 2). The soil samples collected by Westvaco in February 1992 indicated low levels, 4.0 to 5.7 ppm, of phenols detected (Ref. 14, p. 3, Ref. 15, p.1). During 1992 LDEQ IASD visited the site several times to assess the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, 0.5 to 1.08 percent, for eight of the target compound list (TCL) listed creosote constituents were detected (Ref. 16, p 2). Analytical results from the October 1992 samples collected were found to high concentrations of PAHs per the West-Paine Laboratory results (Ref. 17, pp.17-18).

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In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination was discovered in the unlined pit lying between the old Santa Fe railway track and the creosoting structure foundation (Ref. 14, p.3). Low level Total Phenols concentrations were also discovered in soils and surface water sampled surrounding the old foundation (Ref. 14, p. 3). LDEQ IASD moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) at the site through a cooperative agreement with the responsible party identified at the time, CMC (Ref. 18, pp. 1-19). In October 1993 LDEQ IASD realized the site compromised two distinct ownerships, due to creosote contamination migrating off-site to the adjacent property to the west (Ref. 12, p. 5). LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway (ATSF), who owned the railway right-of way (ROW) corridor, and CMC who owned the property that held the former wood treating facility. In mid-1995 a cooperative agreement between LDEQ IASD, CMC and ATSF was entered into to perform interim measures as proposed in the Bio Pile Work Plan (Ref. 49, p. 2).

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Dr. Portier of Louisiana State University (LSU) who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at site (Ref. 12, p 5; Ref. 19, p .5). The work plan proposed transporting of contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated to clean-up levels of less than 100 milligrams per kilogram (mg/kg) TPH (Ref. 19, p. 3). The SPRU would be located within the CMC property boundaries on an existing concrete slab covered with plastic (Ref. 19, p .5). Leachate would be handled in the SPRU, and soil remediation would be monitored, evaluated and modified to optimize biodegradation of creosotes and related petroleum hydrocarbon soil contamination (Ref. 19, pp. 5-6). An approximate total of 1,250 cubic yards of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway ROW were proposed to be processed in the SPRU (Ref. 19, p. 5). In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote material from the site for TPH analyses at the ATSF contracted laboratory Radian Corporation (Ref. 19, p. 121). The four

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samples collected of tarry material were collected from the pit moving southwest toward the Santa Fe railway ROW (Ref. 19, p. 121). It was noted that the tarry material was only 1-2 inches thick and that the concentration decreased when moving from the pit to the southwest location of the ROW at the Santa Fe railway corridor (Ref. 19, p. 121). Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg (Ref. 19, pp. 5 & 123).

By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with LDEQ to begin its own soil remediation strategy (Ref. 12, p. 8). In mid-1996 Kei Consultants, hired by BNSF, submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder (Ref. 12). The estimated area of creosote impact to the BNSF railroad corridor extended 250 feet along the railway ROW and approximately 20-25 feet wide (Ref. 12, p. 5). Impact from the former creosote operations at the adjacent site, were visually apparent by the surficial patches of asphaltic that had formed (Ref. 12, p. 5). The noted contaminate of concern was TPH (Ref. 12, p. 8). The project objective was to excavate impacted soils from the BNSF property and transfer them to a suitable disposal site and perform site restoration at the excavated location (Ref. 12, p. 8). To date no remediation has taken place along the railroad ROW.

In August 2002 Acadian, on behalf of CMC, performed a Limited Site Investigation at the American Creosote site to delineate the horizontal and vertical extent of creosote contamination to determine potential remediation strategies (Ref. 20, p. 3). Acadian personnel collected soil samples from 25 locations placed across previously identified areas of impact, and 10 groundwater samples from temporary groundwater monitoring wells to assess the impact to shallow groundwater (Ref. 20, pp. 5-7).

In September 2002 Acadian submitted a Voluntary Remedial Investigation (VRI) application to LDEQ IASD for the American Creosote DeRidder site (Ref. 41, pp. 3-8). The site was entered into the LDEQ Voluntary Remediation Program (VRP) on September 26, 2002 (Ref. 42, p. 1).

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The August 2002 Limited Site Investigation Work Plan represented CMC's proposal to meet the site assessment requirements of the VRI application (Ref. 43, p. 1). Following LDEQs review of the August 2002 work plan and meeting with Acadian staff, Acadian submitted a revised work plan to LDEQ Remediation Services Division (RSD) dated September 11, 2002 (Ref. 43, p .1). The work plan was approved as amended with the stipulation that Acadian would add sections to the work plan identifying and briefly describing the individual areas of concern (AOC) at the site (Ref. 43, p 1). In October 2002 Acadian submitted an Amended Limited Site Investigation Work Plan on behalf of CMC to LDEQ IASD detailing the four (4) primary AOCs, to include (Ref. 44, p. 6):

- AOC 1 Old Drip Area
- AOC 2 Wash Pit
- AOC 3 Groundwater
- AOC 4 Surface Soils

Late 2003 Acadian submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media (Ref. 5, pp. 6 & 10). The proposed methodology to address the impacted soil media was over excavation of impacted areas and on-site treatment of the impacted soil (Ref. 5, p. 18). No implementation of groundwater remediation was required, yet continued monitoring was recommended (Ref. 5, p. 18). The limits of excavation proposed for the impacted soils were based on analytical results from soil samples collected from selected locations from within the identified following AOC, and are as follows (Ref. 5, pp. 11-15, 18 & 20-23):

- AOC #1 Old Railroad Spur – Five soil samples were collected in AOC #1 and one sample contained elevated levels of benzopyrene (sic) in excess of RECAP screening standards for industrial soil (Ref. 5, pp. 11-12, 20-21 & 29). The proposed limits of excavation consisted of a 100 feet x 8 feet area at a two foot depth, resulting in an in place volume of 59 cubic yards and an excavation/remediation volume of 77 cubic yards (Ref. 5, pp. 21 & 33).
- AOC #2 Concrete Structure – Twelve soil boring samples was collected within AOC #2 and three contained elevated levels of benzopyrene (sic) in excess of RECAP screening

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standards for oil (Ref. 5, pp. 12-13, 21 & 30). The proposed limits of excavation consisted of approximately one (1) acre at two (2) foot depth, resulting in a proposed excavation volume of 2,852 cubic yards and an estimated 3,710 cubic yards of soil to be remediated (Ref. 5, pp. 21 & 34).

- AOC #3 Abandoned Waste Pit – Two soil borings samples were collected within AOC #3 and both contained elevated levels of benzopyrene (sic) (Ref. 5, pp. 14, 21-22 & 31). The proposed excavation is two separate excavation areas located within AOC #3 (Ref. 5, p. 22). The first proposed depth of excavation was till hard pan impacted soils are encountered beneath the impacted media (Ref. 5, p. 22). The area of excavation is 3,300 square feet and the depth is estimated at three feet resulting in a proposed excavated volume of 367 cubic yards (Ref. 5 p. 22). The second proposed excavation is adjacent to the pit and consists of 7,710 cubic feet of excavatable area at a depth of two feet resulting in a volume of 527 cubic yards of proposed excavatable soil (Ref. 5, p. 22). The total proposed volume of excavation within AOC #3 is 894 cubic yards and 1,162 cubic yards of soil to be remediated (Ref. 5, pp. 22 & 35).
- AOC #4 Surface Soil – Eight soil borings were collected within AOC #4 and five revealed concentrations of benzopyrene (sic) in excess of RECAP screening standards for soil (Ref. 5 pp. 14-15, 22-23 & 32). The proposed excavation consists of 35,700 square feet (0.82 acres) at two feet depth resulting in a proposed excavation volume of 2,644 cubic yards or 3,438 cubic yards of soil to be remediated (Ref. 7, pp. 22-23 & 36).

The excavated soils were proposed to be remediated on-site through biodegradation of the creosote related organic compounds (Ref. 5, pp. 23). The proposed remediation of the soil from AOC #3 would be placed within the concrete retort structure adjacent to the abandoned earthen pit (Ref. 5, pp. 24 & 37). Soils excavated from AOC #1, AOC #2 and AOC #4 would be placed within an earthen remediation cell adjacent to the concrete structure (Ref. 5, pp. 24 & 38). Select microbes intended to remediate creosote related organic compounds would be used to inoculate and treat the impacted media (Ref. 5, p.25).

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In 2005 CMC had Acadian submit a RECAP to LDEQ IASD (Ref. 9). The RECAP was performed within the concept of the Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern identified at the site (Ref. 9, p. 64). CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval (Ref. 9, p. 88).

In April 2013 Acadian prepared and submitted a Corrective Action Plan (CAP) for the American Creosote site to LDEQ RSD (Ref. 45). The CAP was based upon the consideration that the creosote COCs upon the property are consistent with the topography, yet the limited pathways of exposure to the environment and others afford participation within the VRP (Ref. 45, p .5). It was the intention of the CAP and VRP to isolate and remediate the remaining source of potential impact at the CMC site (Ref. 45, p. 9). A solidification process was proposed to be implemented to immobilize the source waste through solidification of residual weathered creosote remaining within the 7,500 square foot AOC, the total area to be remediated (Ref. 45, pp. 7-8 & 17). Acadian proposed placing restrictive use (future) covenants upon the property within the Beauregard Parish Property Records office and to restrict access to the AOC and the adjacent abandoned creosote structure by erecting a six (6) foot galvanized chain link fence around the perimeter of the identified area (Ref. 45, p. 12). To date no remediation has taken place at the American Creosote DeRidder site.

START-3 conducted a SI at American Creosote DeRidder in June 2015 (Ref. 11, p. 22). Brenda Cook, EPA SAM accompanied START-3 on this inspection. Field operations during the SI included the collection of three (3) on-site surface water; three (3) on-site and one (1) off-site sediment; three (3) off-site groundwater; and ten (10) on-site subsurface soil samples to include background samples (Ref. 11, p. 22). The groundwater contained some of the same PAHs detected in the sources: 2-methylnaphthalene, dibenzofuran and naphthalene that meet observed release criteria (Ref. 11, pp. 54, 72, 97, 305-306). Soil samples from the culvert/ditch located south of the sources contained numerous PAHs detected in the sources that meet observed release criteria, to include: 2-methylnaphthalene, 3,3'-dichlorobenzidine, acenaphthene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno

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(1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Ref. 11, pp. 58-60, 66, 72, 93-94, 230-235). One sediment sample from the culvert/ditch located south of the sources contained benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene that meet observed release criteria (Ref. 11, pp. 57-58, 72, 96, 260-262). Additionally, one sediment sample located off-site and southwest of the property contained some of the same PAHs detected in the sources: benzo (a) anthracene, benzo (a) pyrene, and dibenz (a,h) anthracene (Ref. 11, pp. 60, 72-73, 262-263).

2.6 SUMMARY OF ESI INVESTIGATION LOCATIONS

START developed a QASP for the sampling effort conducted at the site as part of the EPA ESI (Appendix H). The QASP proposed the collection of ten (10) surface water and ten (10) collocated sediment samples, if available, to characterize the surface water migration of contamination from the site to the 15-mile downstream target distance limit (TDL), to include an off-site perennial stream, an off-site surface water impoundment/slough and a second off-site surface water impoundment all located on Ingevity property, formerly Mead WestVaco (MWV), the nearest perennial surface water.

The objectives of the ESI was to collect surface water and sediment samples from the on-site contiguous wetlands along the culvert/ditch, and determine background and down gradient levels of potential hazardous constituents via collection of off-site surface water and sediment samples from the contiguous wetlands on Ingevity property, to determine whether a release from the American Creosote DeRidder site has, or is occurring.

In summary, the following samples were collected during the May 2016 ESI sampling event:

- Eleven (11) sediment samples (AC-ESI-01, AC-ESI-02, AC-ESI-05, AC-ESI-06, AC-ESI-07, AC-ESI-08, AC-ESI-09, and AC-ESI-10) were collected, to include background samples (AC-ESI-03 and AC-ESI-04) and a duplicate sample (AC-ESI-11) (Figure 5)
- Eight (8) surface water samples (AC-ESI-05, AC-ESI-06, AC-ESI-07, AC-ESI-08, AC-ESI-09, and AC-ESI-10) were collected, to include background sample (AC-ESI-03) and a duplicate sample (AC-ESI-11) (Figure 5).

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Locations of the samples collected are shown in Figure 5. Appendix I presents the samples, sample numbers and location descriptions. START-3 performed photographic and written documentation of the sampling activities (Appendices B and C, respectively)

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3 FIELD ACTIVITIES AND ANALYTICAL PROTOCOL

The QASP developed for the ESI describes the sampling strategy, sampling methodology, and analytical program used to investigate potential hazardous substances, sources and potential receptors (Appendix H). With few exceptions, the field activities were conducted in accordance with the approved QASP. Deviations from the QASP are described, when applicable, in this section and in the sampling location discussions in Section 5 (Analytical Results Reporting and Background Samples) and Section 6 (Potential Sources).

The field sampling event was conducted from May 23, 2016 through May 26, 2016. A total of nineteen (19) samples, including three (3) background samples (two [2] sediment and one [1] surface water sample) were collected during the sampling event. Sample types and methods of collection are described below. A list of all samples collected for laboratory analysis during this sampling event is provided in Appendix I. Photographic documentation of the field activities is included as Appendix B.

Alphanumeric identification numbers applied to each sample location (e.g., AC-ESI-01 = American Creosote - Expanded Site Inspection - sample location 01) are used in the report as the sample location identifiers. Sample locations are provided in Figure 5.

This section describes sampling methodology, analytical protocol, global positions system, and investigation-derived waste.

3.1 SAMPLING METHODOLOGY

Grass leaves and other vegetative material, rocks, and other debris unsuitable for analysis were removed from samples before being placed into sample containers. Samples were stored on ice in coolers and continuously maintained under the custody of field personnel. Sampling methods used for each sample type are described below.

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3.1.1 Surface Water/Sediment Sampling

START collected sediment grab samples from ten (10) locations and surface water grab samples were collected from seven (7) collocated locations (Figure 5). At locations were both a sediment sample and a collocated surface water sample were collected, the surface water sample was collected first, followed by the collection of the sediment sample. Samples were collected from the following locations (Appendices C and I; Figure 5):

- Two (2) on-site sediment samples (AC-ESI-SD01 and AC-ESI-SD02) were collected along the on-site contiguous wetlands at the PPE and along the culvert/ditch area at the culvert itself;
- Eight (8) off-site sediment samples (AC-ESI-SD03 , AC-ESI-SD04 , AC-ESI-SD05 , AC-ESI-SD06, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09 and AC-ESI-SD10) and seven (7) surface water samples (AC-ESI-SD03, AC-ESI-SD05 , AC-ESI-SD06, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09 and AC-ESI-SD10) were collected from the surface water pathway route to include contiguous wetlands, a perennial stream, a surface water impoundment/slough and a second surface water impoundment, all located on Ingevity property.

Surface water samples were grab samples and collected directly into sample containers (Appendix B). Field parameters of pH, temperature, conductivity, turbidity, dissolved oxygen, oxidation/reduction potential and TDS were collected for each surface water sample (Appendix I). The surface water samples collected were sequentially labelled with an identifier representing the site name, type of sample and number, e.g., sample AC-ESI-SW01 = American Creosote - Expanded Site Inspection – Surface Water - sample location 01 (Table 3; Appendix D).

All collected sediment samples were grab samples. Sediment samples were collected at a depth of approximately 0-6 inches below ground surface (bgs) (Appendix H). Sediment samples were collected using dedicated stainless steel trowels or spoons and transferred directly into nine (9) ounce sample containers (Appendix B). The sediment samples collected were sequentially labelled with an identifier representing the site name, type of sample and

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number, e.g., sample AC-ESI-SD01 = American Creosote - Expanded Site Inspection - Sediment - sample location 01 (Table 1 & 2; Appendix D).

A total of eight (8) surface water and eleven (11) sediment samples were submitted for analysis, to include one (1) field duplicate of surface water and one (1) field duplicate of sediment. Samples were shipped to the U.S. EPA Laboratory in Houston for TCL semi-volatile organic analysis (SVOAs) (Appendix H).

3.2 ANALYTICAL PROTOCOL

Samples were processed and shipped to the U.S. EPA Laboratory in Houston on May 24, 2016 and May 25, 2016 for TCL SVOAs (Appendix H).

Analyses conducted on each of the samples collected during the ESI are presented in Tables 1, 2 and 3. Analytical methodology is also presented in Appendices G and J. The following analysis was conducted:

- TCL SVOAs by EPA CLP OLM04.2 – GC/MA (Low Level) – 8 surface water samples, including quality assurance/quality control (QA/QC) samples
- TCL SVOAs by EPA CLP OLM04.2 – GC/MS (Low Level) – 11 sediment samples, including QA/QC samples

3.3 GLOBAL POSITIONING SYSTEM

An iPhone 5s using the iPhone application, GPS & Map ToolBox for iOS (Version 2.2.1) was used to obtain GPS coordinates for each of the sampling locations. Coordinates of the sampling points are included in Appendix E.

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3.4 INVESTIGATION-DERIVED WASTE

Investigation-Derived Waste (IDW) generated during the ESI consisted of dedicated equipment (trowels and spoons) and paper waste. No decontamination liquids were generated. All waste was double bagged, sealed, removed from the property and disposed in a municipal landfill on May 25, 2015.

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4 QUALITY ASSURANCE/QUALITY CONTROL

QA/QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of sampling equipment, glassware, and reagents. Specific QC requirements for laboratory analyses are incorporated in the *USEPA Contract Laboratory Program Statement of Work for Organics Analyses, Multi-Media, Multi-Concentration*. These QC requirements, or equivalent requirements, were followed for analytical work on the American Creosote DeRidder ESI. This section describes the QA/QC measures taken for the ESI and provides an evaluation of the usability of data presented in this report.

All samples were collected following the guidance of the QASP for the field activities. Surface water and sediment samples were analyzed for TCL SVOAs (EPA CLP OLM04.2 – GC/MA [Low Level] and EPA CLP OLM04.2 – GC/MS [Low Level]). Analyses were performed by the EPA Region VI Laboratory located in Houston, TX. A Level II data package was received from the laboratory (Appendix G). All data from analyses performed at the EPA Region VI Laboratory in Houston were reviewed and validated by START-3 personnel. Data qualifiers were applied as necessary according to the following EPA guidance:

- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*.

When necessary, laboratory- and method-specific QC criteria were applied to the data. Copies of the data quality review are included in Appendix J.

4.1 SATISFACTION OF DATA QUALITY OBJECTIVES

The following EPA guidance document was used to establish data quality objectives (DQOs) for this ESI:

- *Data Quality Objectives Process for Superfund, Interim Final Guidance*, EPA 540-R-93-071.

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The EPA Site Assessment Manager determined that definitive data without error and bias determination would be used for the sampling and analyses conducted during the ESI field activities. The data quality achieved during fieldwork produced sufficient data that meet the DQOs stated in the American Creosote DeRidder QASP (Appendix H).

A detailed discussion of the ESI objectives that were accomplished is presented in the following sections.

4.2 QUALITY ASSURANCE/QUALITY CONTROL SAMPLES

QA samples (trip blanks and rinsate blanks) were not collected for this project. Volatile organic compound (VOC) analysis was not part of this investigation. All equipment used was dedicated equipment. QC samples included blind duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples. Blind duplicate samples were collected at a frequency of one in ten samples per matrix and MS/MSD samples were collected at a frequency of one in every twenty samples per matrix. These QC samples were analyzed for TCL SVOAs.

4.3 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data was reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project. The laboratory data quality review report is presented in Appendix J.

4.3.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample

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analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method.

The RPD values were reviewed for all laboratory duplicate samples and/or MS/MSD samples. The laboratory did flag detected benzo (a) pyrene result with a “J” estimated in sample AC-ESI-SW09 due to poor agreement between native and MS/MSD samples. Also, the laboratory did flag detected results of phenanthrene and fluoranthene with a “J’ as estimated in sample AC-ESI-SD09 due to poor agreement between native and MS/MSD samples. The RPD values were reviewed for MS/MSD samples and all RPD values were within quality control (QC) limits. Precision was acceptable.

4.3.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met. The LCS %R values were reviewed for all appropriate sample analyses. None of the data were qualified based on LCS recoveries. Laboratory accuracy was acceptable.

The laboratory did flag detected pentachlorophenol result with a ”J” as estimated in sample AC-ESI-SD10 because the associated continuing calibration verification was outside QC limit for this compound. The laboratory did flag any detected results of benzoic acid and carbazole with a “J” as estimated in samples AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09, AC-ESI-SD10, AC-ESI-SD11, AC-ESI-SD01, AC-ESI-SD02, AC-ESI-SD03, and AC-ESI-SD06 due to failed calibration QC criteria.

The laboratory did flag some benzoic acid results with a “J” as estimated because the concentration exceeded the calibration range and the results could not be reported from other dilution.

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The laboratory did flag benzoic acid result with a “NJ” as a tentative identification in sample AC-ESI-SD04 because a matching spectrum could not be obtained.

The laboratory did flag detected benzaldehyde results with “J” as estimated in samples AC-ESI-SD09, AC-ESI-SD10, and AC-ESI-SD03 due to degradation of this compound in multi-component solutions.

4.3.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 100 percent were determined to be usable. Data completeness is acceptable.

4.3.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

4.3.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

4.4 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data were also reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and trip blanks, surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered

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acceptable and the data is usable as qualified. The laboratory data quality review report is presented in Appendix J.

4.4.1 Holding Times

All samples were analyzed within holding time limits.

4.4.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. Butyl benzyl phthalate was detected in the laboratory blank above the reporting limit. Qualification was not required because no butyl benzyl phthalate was detected in any samples.

4.4.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses.

4.4.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event. All sampling equipment was dedicated equipment (Appendix C).

4.4.5 Trip Blanks

Trip blanks are not required and were not collected for SVOC analyses.

4.4.6 Field Blanks

Field blanks were not collected for this sampling event.

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4.4.7 Surrogates

The recoveries of surrogate terphenyl-d14 were outside QC limits in samples AC-ESI-SW10, AC-ESI-SW11, AC-ESI-SW03, AC-ESI-SW05, and AC-ESI-SW06. The laboratory did flag detected pyrene results with a “J” as estimated in samples AC-ESI-SW05 and AC-ESI-SW06. The recoveries of surrogate terphenyl-d14 were outside QC limits in the LCS and the MSD. Qualification was not necessary because the failures should not affect the data.

The recoveries of surrogate terphenyl-d14 were outside QC limits in sample AC-ESI-SD08, AC-ESI-SD01, and AC-ESI-SD05. Also, the recovery of surrogate 2,4,6-tribromophenol was outside QC limits in sample AC-ESI-SD01.

The laboratory reported pyrene results in samples AC-ESI-SD08 and AC-ESI-SD05 from dilutions where the recoveries of surrogates were within QC limits. However, the laboratory did flag detected results of pyrene, benzo (a) anthracene, and chrysene with a “J” as estimated in sample AC-ESI-SD01 due to the recovery of surrogate terphenyl-d14 being outside QC limits in the dilutions.

4.4.8 Internal Standards

No failed QC criteria were noted with internal standards.

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5 ANALYTICAL RESULTS REPORTING AND BACKGROUND SAMPLES

This section describes the reporting and methods applied to analytical results presented in Sections 6 (Sources) and 7 (Receptors) of this report, and discusses background locations and sample results. Appendix I lists all samples collected for laboratory analysis.

5.1 ANALTICAL RESULTS EVALUATION CRITERIA

Analytical results presented in the analytical summary tables show all analytes/compounds detected above laboratory detection limits in bold type. Analytical results indicating significant/elevated concentrations of contaminants in source samples (Section 6) and target samples (Section 7) with respect to background concentrations are shown underlined and in bold type. For the purposes of this investigation, significant/elevated concentrations are those concentrations that are:

- Equal to or greater than the sample's Contract Required Quantitation Limit (CRQL) or the Sample Quantitation Limit (SQL) when a non-CLP laboratory was used; and
- Equal to or greater than the background sample's CRQL or SQL when the background concentration was below detection limits; or
- At least three times greater than the background concentration when the background concentration equals or exceeds the detection limits.

In addition, detected concentrations were compared to Louisiana RECAP industrial standards and/or EPA RSLs industrial standards. RECAP and RSLs are incorporated into tables as applicable.

The analytical summary tables present all detected analytes/compounds, but only those detected analytes/compounds at potential sources and receptors meeting the significant/elevated concentration criteria are discussed in the report text. All detected concentrations are also discussed for the background samples. When samples were diluted for

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re-analysis at a laboratory, the dilution results were considered for evaluation and are provided in the tables.

5.2 BACKGROUND SAMPLES

Background samples were collected for each of the naturally occurring media from which American Creosote DeRidder samples were collected. These media are surface water and sediment. Results for the appropriate background samples are shown in a separate analytical results summary table or in the first column of the analytical results summary tables for comparison against source or target results.

5.2.1 Background Surface Water/Sediment Samples

5.2.1.1 Sample Locations

Two (2) background sediment samples (AC-ESI-SD03 and AC-ESI-SD04), and one (1) collocated background surface water sample (AC-ESI-SW03) were collected off-site, at location AC-ESI-03 and AC-ESI-04, up gradient of the PPE along separate, individual drainage tributaries on Ingevity property and away from American Creosote DeRidder facility impacts (Appendices B, C and I; Figure 5). All background samples were collected as grab samples. The background sediment samples were collected at a depth of approximately 0-6 inches bgs using dedicated trowels and placed directly into the sample containers. The background surface water samples were collected directly into the sample containers. The GPS coordinate for sample location AC-ESI-03 is 30.8306626631º north latitude and -93.2785531065º west longitude, and 30.8305938262º north latitude and -93.2786913138º west longitude for sample location AC-ESI-04 (Appendix E).

5.2.1.2 Sample Results

SVOA of background sediment sample AC-ESI-SD03 detected concentrations above the analytical reporting limits for anthracene, benzaldehyde, benzo (b) fluoranthene, benzo (k) fluoranthene, benzoic acid, chrysene, fluoranthene, naphthalene, phenanthrene and pyrene

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(Table 1). SVOA of background sample AC-ESI-04 detected benzoic acid in a concentration above the analytical reporting limit (Table 1). All analytical levels detected in background sediment samples AC-ESI-SD03 and AC-ESI-SD04 were below the Louisiana RECAP screening levels for industrial soil and EPA RSLs for industrial soil (Table 1). It should be noted that there are no Louisiana RECAP screening levels for benzaldehyde and benzoic acid and no EPA RSL for phenathrene (Table 1). No analytical concentrations were detected in surface water sample AC-ESI-SW03 above the analytical reporting limits (Table 3). Complete analytical results are included in Appendix G.

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6 POTENTIAL SOURCES

This section describes potential sources that remain at American Creosote DeRidder. No samples were collected from potential sources during the American Creosote DeRidder ESI May 2016 sampling event.

6.1 SOURCE – CONCRETE STRUCTURE

The concrete structure is located on the central western boundary of the property (Figure 5). The concrete structure is the former retort house from previous operations at the site (Ref. 5, pp. 9, 12 & 28). Due to the amount of pine forest and thick shrub overgrowth a complete survey of the concrete structure was not completed (Ref. 11, p. 182). The approximate dimensions of the concrete structure from observations made during the SI are 30 feet x 70 feet (Ref. 11, p. 182). There is approximately 24 inches of sediment on top of the concrete structure (Ref. 11, p. 181). Located within the concrete structure is a pit with a concrete bottom. The pit contains approximately five (5) feet of water and no sediment is present (Ref. 11, p. 182).

Surface water samples collected during the June 2015 SI detected arsenic concentrations at 3.7 times the EPA Maximum Contaminant Level (MCL) (Ref. 11, p. 97). The soil sample collected during the SI detected PAHs at percent concentrations to include: benzo (a) anthracene at 0.54%, benzo (a) pyrene at 0.33%, benzo (b) fluoranthene at 0.45%, benzo (k) fluoranthene at 0.51%, chrysene at 0.71%, fluoranthene at 1.6%, and pyrene at 1.3% (Ref. 11, p. 94).

6.2 SOURCE – OIL/WATER SEPARATOR

The oil/water separator is located just northwest and adjacent to the concrete structure (Figure 5). The oil/water separator is a concrete structure and measures approximately five (5) feet across with a center wall at approximately two and a half (2.5) feet (Ref. 11, pp. 135 & 181). The concrete structure of the oil/water separator is completely covered in creosote soils and contains stagnant water and approximately 5 - 10 feet of vegetation to the bottom (Ref. 7, pp. 61-66 & 76-77).

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Surface water samples collected during the June 2015 SI detected elevated levels of 2-methylnaphthalene, acenaphthene, arsenic, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, cadmium, chrysene, dibenzofuran, fluorene, lead, mercury, naphthalene, pyrene, thallium, vanadium, and zinc above the Louisiana RECAP screening levels for groundwater screening standards (Ref. 11, pp. 40 & 97). Concentrations for arsenic, benzo (a) pyrene, cadmium, lead, mercury and thallium are above the EPA MCLs (Ref. 11, pp. 40 & 97).

6.3 SOURCE – UNLINED WASTEWATER POND

The unlined wastewater pond is located just west of the concrete structure (Figure 5). The unlined wastewater pond measures approximately 100 feet x 50 feet, with hardened creosote flanking the pond and adjacent to pond (Ref. 7, p. 67-71 & 77). During the December 2014 preliminary assessment (PA) the depth of the wastewater pond was taken from the southwest corner and measured approximately 8 – 10 inches deep (Ref. 7, p. 77).

The surface water collected during the June 2015 SI indicated elevated levels of benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene and pyrene above the Louisiana RECAP screening levels for groundwater screening standards. The concentrations for arsenic and benzo (a) pyrene were above the EPA MCLs (Ref. 11, pp. 41-42 & 97). A sediment sample collected during the SI event detected concentrations of PAHs at percent concentrate to include: 2-methylnaphthalene at 0.94%, acenaphthene at 0.64, dibenzofuran at 0.71%, fluoranthene at 1.2%, fluorene at 0.95%, naphthalene at 2.5% and pyrene at 0.63% (Ref. 11, p. 96).

6.4 SOURCE – RANDOM AREAS OF CREOSOTE SOILDS AND SOIL CONTAMINATION

Random areas of creosote solids and soil contamination were observed at the site during the December 2014 PA (Ref. 7, pp. 58-60 & 76-77). This observation confirmed what was reported

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in 2002 during Acadian Engineers & Environmental Consultants environmental site investigation (Ref. 5, pp. 14 & 32).

During the June 2015 SI soil samples were collected from various random areas of creosote solids and soil contamination to include: an area along the former railroad spur, east of the oil/water separator, between the wastewater pond and oil/water separator, south of the wastewater pond, an area south of the sources along the overland flow pathway, and from a creosote pile (Ref. 11, pp. 43-48 & 90-95). Arsenic was detected above EPA MCLs along the former railroad spur, east of the oil/water separator, and in the area south of the sources along the overland flow pathway (Ref. 11, pp. 44-45, 47 & 90-95). The concentration of benzo (k) fluoranthene was also detected above the EPA MCLs from a creosote pile (Ref. 11, pp. 48 & 95). PAHs were detected at percent concentrations in the area between the wastewater pond and oil/water separator in the 8-10 foot interval, in an area of creosote located south of the wastewater pond in the 8-10 foot interval, and the area south of the sources along the overland flow pathway in the 5-8 foot interval (Ref. 11, pp. 91-93). Those PAHs with some of the highest percent concentrations in the area between the wastewater pond and oil/water separator include: 2-methylnaphthalene at 6.9%, acenaphthene at 5.0%, chrysene at 1.3%, dibenzofuran at 4.3%, fluoranthene at 6.5%, fluorene at 5.1%, naphthalene at 14.0%, phenanthrene at 9.4% and pyrene at 3.6% (Ref. 11, p. 91). In an area of creosote located south of the wastewater pond those with the highest percent concentrations include: 2-methylnaphthalene at 2.7%, acenaphthene at 2.1%, anthracene at 6.0%, benzo (a) anthracene at 0.64%, dibenzofuran at 1.9%, fluoranthene at 2.8%, fluorene at 2.5%, naphthalene at 11.0%, phenanthrene at 6.3% and pyrene at 1.5% (Ref. 11, p. 92). Some of the highest percent concentrations in the area south of the sources along the overland flow pathway include: 2-methylnaphthalene at 0.38%, benzo (a) anthracene at 0.14%, dibenzofuran at 0.33%, fluoranthene at 0.61% and naphthalene at 0.60% (Ref. 11, p. 93).

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7 MIGRATION/EXPOSURE PATHWAYS AND RECEPTORS

The following subsections describe migration pathways and potential receptors within the site's range of influence. This section discusses the groundwater migration pathway, the surface water migration pathway, the soil exposure pathway, and the air migration pathways.

7.1 GROUNDWATER MIGRATION PATHWAY

The Groundwater Migration Pathway assesses the potential for suspected contamination in the underlying aquifers. The primary emphasis of the groundwater migration pathway is the identification of drinking water wells and the aquifers that they draw from. The TDL for the groundwater migration pathway is a 4-mile radius that extends from the sources at the site. Figure 6 depicts the groundwater 4-mile TDL.

7.1.1 Geologic Setting

Regional surface geology in Beauregard Parish is categorized by four physiographic areas (Ref. 21, p. 215). These are the early Pleistocene high terraces which make up the majority of the land area and are on level to nearly level uplands on the broad interfluve divides, on gently sloping uplands on narrow divides, and on moderately sloping uplands in areas that have maturely dissected streams; the middle Pleistocene intermediate terraces that are on very gently sloping to moderately steep uplands, that rest on top or superpose the high terraces; the late Deweyville terraces are located in western Beauregard Parish flanking the Sabine River and in the eastern sector of the parish flanking Bundick Creek; and the Holocene alluvial valleys on the flood plains of the Sabine River and smaller streams of Beauregard Parish (Ref. 21, pp. 215-216). The total associated surface cover of terraces is less than 0.4% and is composed of the Intermediate Terraces along with Prairie Terraces, High Terraces and the Deweyville Terraces, and consisting of clay or mud, silt, sand, and gravel (Ref. 22). The alluvium surface covers about 0.1% of Beauregard Parish and is composed of clay or mud, sand, gravel and silt (Ref. 22).

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The site is located over the Quaternary Bentley Formation (Ref. 9, p. 62). The Bentley Formation is comprised of approximately 50 feet of clay and silt which overlies large beds of sand and gravel (Ref. 9, p.62). The Bentley Formation is underlain by the Williana Formation (Ref. 9, p. 62). The shallow geology of the site consists primarily of silty clay and clayey silt from zero (0) to seven (7) feet below ground surface (bgs) which overlies a silty clayey sand, silty sand or sand zone (Ref. 9, p. 62).

Beauregard Parish, Louisiana is located within the Gulf Coast Plain Physiographic Province (Ref. 23, p. 7). The area is underlain by thick multilayered sequences of unconsolidated sedimentary deposits that alternative among gravel, sand, silt and clay that a have a predominant dip to the south (Ref. 23, p. 7). Areal extensive zones of gravel and sand deposits, which form productive aquifers units, and the adjoining silt and clay deposits, which form confining units, are designated as the Chicot Aquifer system (Ref. 23, p. 7). The Chicot aquifer system underlies an area of approximately 9,000 square miles (mi^2) in southwestern Louisiana and is the principal source of fresh ground-water in the region (Ref. 23, pp. 7 & 8).

The soils within the Parish are classified as the Beauregard series and consist of very deep, moderately well drained, slowly permeable soils that formed in loamy alluvial sediments of the Pleistocene age (Ref. 21, p. 167; Ref. 25, p. 1). The soils are on a broad, nearly level and gently sloping Coastal Plains (Ref. 25, p. 1). They are saturated for short periods of time during winter and early spring, with a mean annual precipitation from 49 to 67 inches (Ref. 24, pp. 12-15; Ref. 25, p. 1). The total annual precipitation in Beauregard Parish is 58.8 inches (Ref. 21, p. 12). Water runs off the surface at a medium to slow rate, and permeability is slow to moderate (Ref. 21, pp. 18, 20, 44, 167, 215; Ref. 25, p. 1). The slope of the soil is predominantly 1 to 3 percent, but ranges from 0 to 5 percent (Ref. 21, p. 167-169; Ref. 24. p. 12-16; Ref. 25, p. 1).

7.1.2 Aquifer System

Beauregard Parish is endowed with a large quantity of good quality water, because of its accessibility and widespread distribution; groundwater is the predominant source of supply (Ref. 21, p. 13). The American Creosote DeRidder site lies above the Chicot Aquifer (Ref. 9, p. 62).

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The Chicot Aquifer system extends from eastern Texas east to the Atchafalaya River and is the principle aquifer system of southwest Louisiana (Re. 9, p. 62). The Chicot system underlies most of southwestern and parts of the Texas coastal lowlands, and is the principal source of fresh ground water in southwestern Louisiana (Ref. 27, p. 1). In Beauregard Parish the Chicot aquifer is composed of two sand units, the shallow upper sands and the lower undifferentiated sands, and contains freshwater (Ref. 26, p. 2). The shallow, upper sands aquifer is present within a superficial clayey confining unit (Ref. 26, p. 2). The unit generally ranges in thickness from 40 feet in the north to 120-160 feet in the southwestern areas of the parish (Ref. 26, p. 2). The shallow sand is composed of scattered sand streaks and lenses, and layers that provide water for domestic purposes (Ref. 26, p. 2).

The lower undifferentiated sand unit of the Chicot Aquifer is present throughout Beauregard Parish and is the primary component of the aquifer within the parish (Ref. 26, p. 2). The lower undifferentiated unit is composed of beds of clay, silt, sands and gravel (Ref. 26, p. 2). The altitude of the base of the undifferentiated aquifer unit ranges from 0 feet below National Geodetic Vertical Datum (NGVD) 29 near the town of Deridder to about 400-500 feet below GVD 29 along the southern parish line (Ref. 26, p. 2). The approximate base of the fresh groundwater within the Chicot Aquifer within Beauregard Parish is 1,000 feet to over 3,000 feet below the land surface (Ref. 26, p. 2). A properly designed well in Beauregard Parish can produce 1,500 gallons per minute (Ref. 21, p. 14).

In Beauregard Parish, wells screened in shallow sands are clustered in the DeRidder area (Ref. 23, p. 18). Well screens for all the shallow wells are less than 50 feet deep (Ref. 23, pp. 18 & 21). Well screen depths range from 14 to 46 feet, with a mean depth of 34 feet (Ref. 23, pp. 16, 18 & 21). Well logs in Beauregard Parish have a dispersed areal distribution (Ref. 23, p. 18). Less than ten logs, mostly from wells located in the western half of the parish, indicate that shallow sands are present (Ref. 23, pp. 18 & 21). The scarcity of shallow wells and well logs with shallow sands may indicate that shallow sands have a limited presence in the confining unit in Beauregard Parish (Ref. 23, p. 18).

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The primary source of recharge of the lower undifferentiated unit of the Chicot Aquifer is from infiltration of precipitation in southern Vernon Parish and the northern half of Beauregard Parish (Ref. 26, p. 2). Secondary sources of recharge for the aquifer are from vertical leakage of water through clays (Ref. 26, p. 2). Water movement within the undifferentiated unit of the Chicot Aquifer in Beauregard Parish is generally southward from the recharge area or westward toward the Sabine River (Ref. 26, p. 2).

In 2005, about 30.6 million gallons per day (Mgal/d) of water was withdrawn from the Chicot Aquifer, including about 30.4 Mgal/d from groundwater and 0.1 Mgal/d from surface water (Ref. 26, p.1). Water withdrawn from the Chicot Aquifer within Beauregard Parish from groundwater resources is for industrial use, primarily for wood products, which accounted for approximately 72% of the total water removed (Ref. 26, p.1). Other sources of aquifer water use included public supply, rural domestic, livestock, irrigation and aquaculture (Ref. 26, p.1). A limited groundwater investigation at the American Creosote DeRidder site occurred in 2005 using temporary monitoring wells, and seven contaminants of concern were identified: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene and indo(1,2,3-cd)pyrene (Ref. 9, p. 87).

7.1.3 Drinking Water Receptors

A water well survey, within a 4-mile radius of the American Creosote site was conducted by START-3 utilizing the Louisiana Department of Natural Resources (LDNR) website (Ref. 28). The 4-mile water radius was constructed using the coordinates of the site entrance off Post Plant Road as a center (Figure 6). START-3 has identified that groundwater within the 4-mile radius of the site is used for the following purposes: as a public water supply, as a domestic water source, as monitoring, as piezometers, for irrigation, for recovery, for heat pumps and for industrial supply (Ref. 26, p. 1; Ref. 28, pp. 6-17).

Domestic Drinking Water Receptors

According to the LDNR water well database, a total of 122 active domestic drinking water wells are located within the 4-mile radius (Ref. 28, pp. 6-17). There are two (2) domestic water wells

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within the one mile radius, 26 domestic water wells located within the two mile radius, 39 domestic water wells located within the three mile radius and 55 domestic water wells located within the 4-mile TDL of the facility (Ref. 28, pp. 6-17). Domestic or private water wells within the 4-mile radius include 106 wells drawing from the Chicot aquifer and 1 well drawing from the Evangeline aquifer (Ref. 28, pp. 6-17). Aquifers are not designated for 15 wells; however depths indicate that most of these wells are completed in the Chicot aquifer (Ref. 28, pp. 6-17). The domestic or private water wells range from 11 – 273 feet bgs, with water levels ranging between 0 – 80 feet bgs (Ref. 28, pp. 6-17). The average population per household in Beauregard Parish is 2.67 (Ref. 29, p .1).

Public Drinking Water Receptors

A total of seven (7) public drinking water wells are located within the 4-mile radius (Ref. 28, pp 6-17). There are no public water wells within the one mile radius (Ref. 28, pp. 6-11). There are four (4) public water wells within the two mile radius, three (3) are registered by the City of DeRidder and one (1) by Be Funeral Home (Ref. 28, pp. 11-14). There is one (1) public water well registered by the City of DeRidder within the three mile radius (Ref. 28, pp. 14-15). There are two (2) public water wells within the four mile radius, one (1) registered by J. L. Laurent, and one (1) registered by Green Acre Water (Ref. 28, pp. 15-17). All wells are reported to be completed in the Chicot aquifer, at depths of 157 – 203 feet bgs (Ref. 28, pp. 6-14). An aquifer is not designated for one (1) City of DeRidder municipal public supply well (Ref. 28, pp. 6-14). The population for the City of DeRidder, Louisiana is 10,890 (Ref. 30, p. 1) and per the Water Plant Supervisor at the City Of DeRidder, the public supply wells for the City of DeRidder serve a population of approximately 12,000 (Ref. 31. p. 1).

Resource Usage

The LDNR water well survey indicates the presence of thirteen (13) active registered irrigation wells, eight (8) active registered heat pump, and seven (7) active registered wells for industrial use (Ref. 28, pp. 6-17). Nineteen (19) registered resource use wells are screened in the Chicot Aquifer and one (1) in the Jasper Aquifer system within a 4-mile radius of the American Creosote Deridder site (Ref. 28, pp. 6-14). Eight (8) registered, active resource wells indicated as heat pumps have “no well made” listed as the aquifer (Ref. 28, pp. 6-14).

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Wellhead Protection Areas

The City of DeRidder and Beauregard Parish water system are located within a State approved wellhead protection area (Ref. 32, p.1).

7.1.4 Sample Locations and Results

No monitor wells or domestic wells were sampled during the American Creosote DeRidder ESI May 2016 sampling event.

7.2 SURFACE WATER MIGRATION PATHWAY

The surface water migration pathway TDL begins at the probable point of entry (PPE) of surface water runoff from the site to a surface water body and extends downstream for 15 miles. Figure 7 depicts the surface water 15-mile TDL.

The surface water migration pathway, overland/flood migration component assesses the potential for suspected contamination in perennial surface water bodies identified as part of the 15-mile downstream TDL. Identified perennial surface water bodies include streams, rivers, lakes, coastal tidal water and oceans. The pathway takes into account such factors as distance to the overland flow segment, the nearest surface water, flood frequencies, drainage area, surface soil type(s), the 2-year, 24-hour rainfall, the size of the source(s) being evaluated, the chemical constituents associated with the sources, and the associated surface water receptors identified within the 15-mile downstream TDL. Surface water migration pathway receptors include the location of the nearest drinking water intakes and associated population (Drinking Water Threat), fisheries and the consumption of aquatic human food chain organisms (Human Food Chain Threat), and sensitive environments (Environmental Threat) (Ref. 1-3). Figure 7 depicts the surface water 15-mile TDL.

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7.2.1 Overland Route

Surface water runoff on-site flows southwest along the western property boundary lateral to the railroad track and ROW, where it then encounters a culvert/ditch area classified by LDEQ and United States Fish and Wildlife Service National Wetlands Inventory (NWI) as contiguous wetlands, the PPE (Ref. 9, pp. 58-59; Ref. 13, p. 2; Ref. 16, p .2; Ref. 38, pp. 5-8; Ref. 46, pp. 1 & 3; Figure 7). Surface water then flows westerly within the contiguous wetlands under the railroad track off-site to Ingevity property, via a culvert, which is located approximately midway along the western property site boundary (Ref. 9, pp. 58-59; Ref. 15, p. 1; Ref. 38, pp. 5-8; Figure 7). Surface water then continues off-site on Ingevity property west within the contiguous wetlands on a short route to a perennial stream (Ref. 5, p. 9; Ref. 38, pp. 5-8; Ref. 46, pp. 1 & 3; Figure 1 & 7). The perennial stream then flows southwest to a surface water impoundment/slough then through culverts under Crosby Road to a second surface water impoundment all located along contiguous wetlands off-site on Ingevity property (Ref. 38, pp. 4-5 & 7-8; Ref. 46, pp. 1-3;Figure 7). Surface water subsequently discharges from the second surface water impoundment along a perennial tributary stream within contiguous wetlands, north of Ingevity facility operations, on a slightly northwesterly path till it encounters the Kansas City Southern Railroad ROW (Ref. 38, pp. 4 & 7-8; Figure 1 & 7). The tributary stream then flows south along the Kansas City Southern Railroad ROW within contiguous wetlands approximately 1,600 feet to Palmetto Creek (Ref. 38, pp. 4 & 7-8; Figure 1 & 7). From Palmetto Creek the water flows southeasterly within contiguous wetlands and merges into Bundick Creek (Ref. 38, pp. 3-4 & 7-8; Figure 1 & 7). The 15-mile TDL ends in Bundick Creek (Ref. 9, p. 61; Ref. 14, p. 2; Figure 7).

According to the U.S. Department of Agriculture (USDA), Web Soil Survey, four major soil classification types exist at the site (Ref. 24, p. 8). The four major soil classification types are Beauregard silt loam (BdB), Guyton silt loam (GtA), Malbis fine sandy loam (MbB) and the Malbis fine sandy loam (MbC) (Ref. 24, p. 10). The soil compromising the majority, and present throughout the site is the BdB. Slope characteristics of the BdB soil is 1 to 3 percent and is moderately well drained (Ref. 24, p. 10). The depth to restrictive features is more than 80 inches (Ref. 24, p. 12). Generally, the depth to water table characteristics of the soil type is about 18 to 36 inches (Ref. 24, p. 12). The available water capacity characteristic is very high, about 12.6

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inches (Ref. 24, p. 12). The typical Beauregard silt loam profile is 0 to 75 inches: silt loam; and 75 to 90 inches: silty clay loam (Ref. 24, p. 12).

The soil compromising a central oblong portion of the AOI is the MbB (Ref. 24, p. 8). Slope characteristics of the soil are 1 to 3 percent and are moderately well drained (Ref. 24, p. 14). The depth to restrictive features is more than 80 inches (Ref. 24, p. 14). Generally, the depth to the water table characteristic of the soil type is about 30 to 48 inches, and the available water capacity characteristic is very high, about 12.3 inches (Ref. 24, p. 14). The typical MbB profile is 0 to 30 inches: silt loam; and 30 to 74 inches: silty clay loam (Ref. 24, p. 14).

The soil compromising a small orbicular section along the south-western edge of the property, and adjacent to the railroad ROW of the AOI is comprised of the MbC and GtA (Ref. 24, p. 8). Slope characteristics of the MbC soil is 3 to 5 percent and are moderately well drained, and the GtA is occasionally flooded and is poorly drained (Ref. 24, pp. 13 & 16). The depth to restrictive features is more than 80 inches (Ref. 24, pp. 13 & 16). Generally, the depth to the water table characteristic of the soil type is 30 to 48 inches for the Malbis fine sandy loam and 0 to 18 inches for the Guyton silt loam (Ref. 24, pp. 13 & 16). The available water capacity characteristic is moderate in the Malbis fine sandy loam (about 8.3inches) and very high in the Guyton silt loam (about 12.3 inches) (Ref. 24, pp. 13 & 16). The typical Malbis fine sandy loam profile is 0 to 8 inches: fine sandy loam; 8 to 18 inches: loam; and 18 to 62 inches: clay loam, while a typical Guyton silt loam profile is 0 to 30 inches: silt loam; and 30 inches to 74 inches: silty clay loam (Ref. 24, pp.13 & 15).

A surface water impoundment with a tributary stream flow connected to Palmetto Creek, which lies approximately 1,250 feet south of the site, is a possible flooding source for the American Creosote DeRidder site. Palmetto Creek and the associated tributary stream are designated by the Flood Insurance Rate Map (FIRM) as flood zones A and AE, and considered a Special Flood Hazard Area (SFHA) (Ref. 34). The SFHA is an area that would be inundated by flooding having a one (1) percent chance of being equaled or exceeded base flood level in any given year (Ref. 34). Based on observations during the December 2014 site reconnaissance, there are no containment features that would prevent or contain a release in the event that the site

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becomes flooded (Ref. 7, pp. 56-57 & 73). The two-year, 24-hour rainfall for the area of the site is approximately 5.0 – 5.5 inches (Ref. 33, p. 22, Fig. 6.1).

7.2.1.1 Sample Locations and Results

No samples were collected from the overland route during the American Creosote DeRidder ESI May 2016 sampling event.

7.2.2 Drinking Water Receptors

Surface water is not utilized for public water supply in the City of DeRidder or Beauregard Parish (Ref. 26, p. 5). The water from the 15-mile TDL of the tributary stream, Palmetto Creek and Bundick Creek is not being used as a drinking water resource.

Surface water in the City of DeRidder and Beauregard Parish is limited and underdeveloped because the majority of the parish is in the headwaters of the Calcasieu River Basin and small basins draining to the Sabine River (Ref. 19, p.14). Headwaters and small basins produce small flows with little potential for development of large surface water resources (Ref. 19, p.14). The surface water that is withdrawn from miscellaneous streams in Beauregard Parish is used for general irrigation and livestock (Ref. 26, p.5).

7.2.2.1 Sample Locations and Results

No samples were collected from drinking water receptors during the American Creosote DeRidder ESI May 2016 sampling event.

7.2.3 Human Food Chain Receptors

Fishing is common along Palmetto Creek and Bundick Creek, and recreational fishing is likely to exist (Ref. 35, p. 1). The information of the pounds of human food chain organisms caught for consumption is not known, however, it is assumed that at least 24 pounds or more are consumed annually within the 15-mile TDL (Ref. 36, p. 4).

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7.2.3.1 Sample Locations and Results

No samples were collected from human food chain receptors during the American Creosote DeRidder ESI May 2016 sampling event.

7.2.4 Environmental Receptors

According to the Louisiana Ecological Services, there are one (1) species of bird (red-cockaded woodpecker – *Picoides borealis*) and one (1) species of plant (American chaff seed – *Schwalbea americana*) that are either federally or state-designated endangered or threatened species in Beauregard Parish (Ref. 37, p. 3). The location of the critical habitats for these designated endangered or threatened species has not been identified at this time. There are no species of fish that is either federally or state-designated endangered or threatened in Beauregard Parish (Ref. 37, p. 3).

During the ESI site reconnaissance conducted on April 12, 2016 and the ESI performed from May 24 – 25, 2016 at the American Creosote DeRidder site, contiguous wetland features were observed and documented by a LDEQ representative (Ref. 46; Ref. 47 and Ref. 48). The on-site portion of the contiguous wetlands was located in the riparian area along the culver/ditch area (Ref. 46, p. 1; Figure 5). In the area surrounding the on-site culvert/ditch, Water Oak (*Quercus nigra*) and Willow Oak (*Quercus phellos*) dominated the area of the bottomland hardwood forest (Ref. 46, p. 1; Ref. 47, pp. 1-4). Both trees are associated with lowland floodplains, are often found growing along streams, and in poorly drained soils (Ref. 46, p. 1). These trees exhibited buttressed bases where they were growing adjacent to the surface water pathway (Ref. 46, p. 1; Ref. 47, pp. 1 & 6). Such buttressed bases are characteristic of trees growing in wetland soils (Ref. 46, p. 1; Ref. 47, pp. 5 & 7).

In addition, to these wetland-adapted woody species, various types of sedges were also found growing in the riparian area off-site along the culvert/ditch area leading to the perennial stream (Ref. 46, p. 1; Ref. 47, pp. 8-9; Ref. 48, p. 4). These sedges included members of the Genus *Carex* (Ref. 46, p. 1). These sedges which are characteristic of wetlands were observed in

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areas adjacent to the off-site up gradient drainage tributary, the area surrounding the culvert discharge, and the area prior to entering the perennial stream, all located on Ingevity property (Ref. 46, p. 1; Figure 5).

Furthermore, the stream drains to the southwest to a surface water feature commonly known as a slough, which is bisected by Crosby Road (Ref. 46, p. 2; Figure 5). The edges of the slough are dominated by emergent aquatic vegetation; sedges, including members of the Genus *Carex*; and Button Willow (*Cephalanthus occidentalis*) (Ref. 46, p. 2; Ref. 48, p. 5). Off-site areas located in the slough included: the surrounding area down gradient of the PPE where the perennial stream flow enters into the surface water impoundment/slough east of Crosby Road, the area surrounding the point prior to where off-site surface water discharges into a culvert from the impoundment/slough east of Crosby Road, the area where the off-site surface water enters a second water impoundment, via culverts, on the west side of Crosby Road, and the surrounding area where the off-site surface water discharges from the second surface water impoundment west of Crosby Road (Ref. 46, p. 2; Figure 5).

According to the USDA *Soil Survey of Beauregard Parish Louisiana*, soils in the surface water pathway are Guyton silt loam, occasionally flooded (GtA) (Ref. 21, pp. 88-90; Ref. 46, p. 2). These soils are water retaining and hydric and are listed as suitable for wetland wildlife (Ref. 21, pp. 89-80; Ref. 46, p. 2). They are listed as having a management concern of “wetness” for most other uses due to their poor drainage (Ref. 21, p. 90; Ref. 46, p.2). These soils again support the determination that the surface water pathway is a riparian wetland that meets the definition of contiguous wetlands (Ref. 3; Ref. 46, p. 2).

The NWI substantiates there are contiguous wetlands present along the majority of the site 15-mile surface water TDL (Ref. 38, pp. 3-6; Figure 7). Palustrine scrub-shrub broad-leaved deciduous nontidal temporary flooded wetlands are present along the on-site and off-site culvert/ditch area per the NWI (Ref. 38, pp. 5-8; Figure 7). Also, the perennial stream that the culvert/ditch encounters off-site, on Ingevity property, is lined with palustrine forested broad-leaved deciduous non-tidal temporary flooded wetlands as recognized by the NWI (Ref. 38, pp. 5-8; Figure 7). The off-site surface water feature that the perennial stream flows into, and which

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is bisected by Crosby Road, is classified by NWI as a palustrine unconsolidated bottom nontidal permanently flooded dike/impound (Ref. 38, pp. 4-5 & 7-8). Stream flow exits the off-site surface water impoundment via a perennial stream within NWI classified palustrine scrub-shrub broad-leaved deciduous nontidal temporary flooded wetlands, and encounters forested and scrub-shrub wetlands present along the Kansas City Southern Railroad ROW, along Palmetto Creek and Bundick Creek within the TDL (Ref. 38, p. 3-4; Figure 7). NWI habitats classified along the Kansas City Southern Railroad ROW, Palmetto Creek and Bundick Creek are palustrine scrub-shrub and forested broad-leaved deciduous nontidal temporarily flooded wetlands (Ref. pp. 7-8; Figure 7). The approximate wetland frontage associated with the 15-mile TDL is 26 Miles (Ref. 38, p. 3; Figure 7).

7.2.4.1 Sample Locations and Results

START collected two (2) on-site sediment samples from the American Creosote site, and six (6) sediment samples and six (6) co-located surface water samples off-site on Ingevity property, to include a duplicate sample. Samples were collected at the PPE, along on-site and off-site contiguous wetlands, along an off-site perennial stream, from where surface water enters and discharges from an off-site surface water impoundment/slough, and from a second off-site surface water impoundment (Appendices B, C and I; Figure 5). Sediment and collocated surface water samples, if available, were collected from two background locations, AC-ESI-03 and AC-ESI-04, located up gradient along individual discharge tributaries of the off-site perennial stream, on Ingevity property, away from American Creosote facility impacts (Appendix B, C and I; Figure 5).

Two (2) on-site sediment samples AC-ESI-SD01 and AC-ESI-SD02 were collected at location AC-ESI-01 and AC-ESI-02, along the on-site contiguous wetlands at the PPE and in the culvert/ditch area at the culvert itself, located south of the former facility operations in an area likely to receive site impacts (Appendices B, C and I; Figure 5).

Analysis of sediment sample AC-ES1-SD01 from the on-site contiguous wetlands at the PPE found numerous semi-volatile organic compounds (SVOCs) with concentrations above

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analytical reporting limits and detected three times above background or background reporting limits to include: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Appendix G; Table 2). The concentrations of benzo (a) anthracene (851,000 micrograms per kilogram [µg/kg]), benzo (a) pyrene (406,000 µg/kg) , benzo (b) fluoranthene (847,000 µg/kg), benzo (k) fluoranthene (607,000 µg/kg), chrysene (1,200,000 µg/kg), dibenz (a,h) anthracene (93,000 µg/kg), fluoranthene (3,370,000 µg/kg), and indeno (1,2,3-cd) pyrene (188,000 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2).

Analysis of sediment sample AC-ESI-SD02 from the on-site contiguous wetlands in the area just prior to entering the culvert detected various SVOCs above analytical reporting limits and three times above background or background reporting limits to include: acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, indeno (1,2,3-cd) pyrene, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (a) anthracene (108,000 µg/kg) , benzo (a) pyrene (118,000 µg/kg), benzo (b) fluoranthene (188,000 µg/kg), benzo (k) fluoranthene (140,000 µg/kg), dibenz (a,h) anthracene (19,400 µg/kg), and indeno (1,2,3-cd) pyrene (57,100 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2).

Two (2) off-site sediment samples AC-ESI-SD05 and AC-ESI-SD06 were collected with co-located surface water samples AC-ESI-SW05 and AC-ESI-SW06 at locations AC-ESI-05 and AC-ESI-06. Samples at location AC-ESI-05 were collected along the off-site contiguous wetlands at the discharge area of the culvert and location AC-ESI-06 samples were collected along the off-site contiguous wetlands prior to entering the perennial stream, both on Ingevity property, in areas that may have received site impacts (Appendix B. C and I; Figure 5).

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Analysis of the off-site sample AC-ESI-05 from along the off-site contiguous wetlands at the discharge area of the culvert identified numerous SVOCs in sediment sample AC-ESI-SD05 above analytical reporting limits and detected three times above background or background reporting limits to include: 2-methylnaphthalene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, indeno (1,2,3-cd) pyrene, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (a) anthracene (13,200 µg/kg), benzo (a) pyrene (14,000 µg/kg), benzo (b) fluoranthene (31,300 µg/kg), dibenz (a,h) anthracene (4,050 µg/kg) and indeno (1,2,3-cd) pyrene (9,160 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). Analysis of the surface water sample AC-ESI-SW05 detected fluoranthene (0.8 micrograms per Liter [µg/L]) and pyrene (0.8 µg/L) above analytical reporting limit and above the background reporting limit (Table 3).

Analysis of the off-site sample AC-ESI-06, located along the contiguous wetlands prior to entering the perennial stream property detected many SVOCS in sediment sample AC-ESI-SD06 greater than analytical reporting limits and three times above background or background reporting limits to include: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (a) anthracene (27,800 µg/kg), benzo (a) pyrene (29,000 µg/kg), benzo (b) fluoranthene (60,700 µg/kg), benzo (k) fluoranthene (29,600 µg/kg), dibenz (a,h) anthracene (5,540 µg/kg) and indeno (1,2,3-cd) pyrene (10,300 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). Analysis of surface water sample AC-ESI-SW06 detected benzo (a) pyrene (0.6 µg/L) above the analytical reporting limit, above background reporting limit, and above the Louisiana RECAP screening level for groundwater standards and EPA MCL (Table 3). The concentrations of fluoranthene (1.3 µg/L) and pyrene (1.9 µg/L) in surface water sample AC-ESI-SW06 were detected above analytical reporting limit and above background reporting limit (Table 3).

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Four (4) sediment samples, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09 and AC-ESI-SD10, and co-located surface water samples, AC-ESI-SW07, AC-ESI-SW08, AC-ESI-SW09 and AC-ESI-SW10, were collected at location AC-ESI-07, AC-ESI-08, AC-ESI-09 and AC-ESI-10, respectively, on Ingevity property, and downgradient of the PPE. Location AC-ESI-07 was collected down gradient of the PPE where the perennial stream flow enters into a surface water impoundment/slough on Ingevity property. Location AC-ESI-08 was collected at the point prior to where off-site surface water discharges into a culvert from the impoundment/slough, and Location AC-ESI-09 was collected where the off-site surface water enters a second water impoundment on the southwest side of Crosby Road also on Ingevity property, via culverts. Location AC-ESI-10 was collected where the off-site surface water discharges from the second surface water impoundment on Ingevity property (Figure 5).

Analysis of AC-ESI-SD07, the off-site sample down gradient from the PPE where the perennial stream flow enters into a surface water impoundment/slough on Ingevity property found SVOCs in sediment sample AC-ESI-SD07 to include: acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, indeno (1,2,3-cd) pyrene, phenanthrene and pyrene greater than analytical reporting limits and three times above background or background reporting limits (Appendix G; Table 2). Concentrations of benzo (a) pyrene (3,080 µg/kg), benzo (b) fluoranthene (7,660 µg/kg) and dibenz (a,h) anthracene (1,140 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). No analytical SVOC concentrations were detected in surface water sample AC-ESI-SW07 above analytical reporting limits (Table 3).

Analysis of the off-site sample AC-ESI-08 from the point prior to where surface water discharges into a culvert from the impoundment/slough identified numerous SVOCs in sediment sample AC-ESI-SD08 greater than analytical reporting limits and three times above background or background reporting limits to include: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenz (a,h)

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anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Appendix G; Table 2). Concentrations of benzo (a) anthracene (29,100 µg/kg), benzo (a) pyrene (36,500 µg/kg), benzo (b) fluoranthene (63,400 µg/kg), benzo (k) fluoranthene (37,400 µg/kg), dibenz (a,h) anthracene (9,660 µg/kg) and indeno (1,2,3-cd) pyrene (17,700 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). No analytical SVOC concentrations were detected in surface water sample AC-ESI-SW08 above analytical reporting limits (Table 3).

Analysis of sample AC-ESI-09 from where off-site surface water enters a second water impoundment on the southwest side of Crosby Road also on Ingevity property, via culverts detected various SVOCs in sediment sample AC-ESI-SD09 greater than analytical reporting limits to include: anthracene, benzaldehyde, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, benzoic acid, chrysene, fluoranthene, naphthalene, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (a) pyrene (378 µg/kg) was detected above analytical reporting limit, above background reporting limit, and detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). Analysis of the surface water sample AC-ESI-SW09 detected benzo (a) pyrene (0.4 µg/L) above the analytical reporting limit, above background reporting limit, and above the Louisiana RECAP screening level for groundwater standards and EPA MCL (Table 3).

Analysis of sample AC-ESI-10 from where the off-site surface water discharges from the second surface water impoundment on Ingevity property found several SVOCs in sediment sample AC-ESI-SD10 above analytical reporting limits to include: anthracene, benzaldehyde, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, benzoic acid, chrysene, fluoranthene, indeno (1,2,3-cd) pyrene, pentachlorophenol, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (b) pyrene, benzo (g,h,i) perylene, indeno (1,2,3-cd) pyrene and pentachlorophenol are detected at three times above background or background reporting limit, and only benzo (b) pyrene (513 µg/kg) was detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). Analysis of surface water sample AC-ESI-SW10 identified benzo (b) pyrene (0.3 µg/L) above the analytical

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reporting limit, above background reporting limit, and above the Louisiana RECAP screening level for groundwater standards and EPA MCL (Table 3).

An off-site duplicate sample was collected from location AC-ESI-11. The duplicate sediment sample AC-ESI-SD11 was collected collocated with sediment sample AC-ESI-SD07, off-site down gradient from the PPE where stream flow enters into a surface water impoundment/slough on Ingevity property. The duplicate surface water sample AC-ESI-SW11 was collected collocated with surface water sample AC-ES-SW08, from the point prior to where surface water discharges into a culvert from the impoundment/slough (Appendix B. C and I; Figure 5).

Analysis of sediment sample AC-ESI-SD11, collocated with sediment sample AC-ES-SD07, the off-site sample down gradient from the PPE where stream flow enters into a surface water impoundment/slough on Ingevity property detected SVOCs greater than analytical reporting limits, and three times above background or background reporting limits to include: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Appendix G; Table 2). The concentration of benzo (a) pyrene (4,900 µg/kg), benzo (b) fluoranthene (13,500 µg/kg), dibenz (a,h) anthracene (2,180 µg/kg) and indeno (1,2,3-cd) pyrene (5,680 µg/kg) were detected above the Louisiana RECAP and EPA RSL screening level for industrial soil (Table 2). Analysis of surface water sample AC-ESI-SW11, collocated with surface water sample AC-ES-SW08, from the point prior to where surface water discharges into a culvert from the impoundment/slough detected no analytical SVOC concentrations above analytical reporting limits (Table 3).

Based on the analytical results of the sediment and collocated surface water samples collected from the 15-mile TDL, an observed release to the surface water migration pathway can be documented.

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7.3 SOIL EXPOSURE PATHWAY

The Soil Exposure Pathway assesses the threat to human health and the environment by direct exposure to hazardous substances and areas of suspected contamination. This pathway takes into account potential contact with in-place hazardous substances at a site, rather than the migration of substances from the site (Ref. 1). The following subsections will describe the various details associated with this pathway.

Likelihood of exposure is concerned with areas of suspected contamination and is not limited to soil, but any sources, areas of contamination or other material on the surface that can be considered as areas of suspected contamination.

7.3.1 Site Setting and Exposed Sources

The 55-acre American Creosote DeRidder site ceased operations as a creosote treatment facility by 1957 and has remained dormant to present-day. Areas of random contaminated soil at the surface were noted during the December 8, 2014 reconnaissance site visit. The amount and extent of contaminated soil on site is not known at this time due to the extensive pine forest and thick shrub overgrowth on site. Access to the site is not restricted, with vehicular access being difficult due to the amount of pine forest and thick shrub overgrowth covering the site, but this does not restrict pedestrian access (Figure 2; Ref. 7, pp. 56, 57, 73 & 75-80; Ref. 11, pp. 156-162).

7.3.2 Receptors

The site is currently inactive and there are no residences within 200 feet of suspected areas of contamination (Figure 1 and 2). No terrestrial resource usage (commercial agriculture, commercial silviculture, or commercial livestock grazing/production) has been documented within the site or within 200 feet of the site (Figure 1 and 2). The nearest resident is located approximately 0.3 miles east of the concrete structure area. Residential communities are located northeast, east and southeast of the site (Figure 2). Census data indicate that 29 people

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reside within the 0.25-mile radius, 392 people are located within the 0.25 to 0.50 mile radius, and 1,408 people are located within the 0.50 to 1.0-mile radius (Ref. 39, p. 5).

7.3.2.1 Sample Locations and Results

No samples were collected from soil exposure receptors during the American Creosote DeRidder ESI May 2016 sampling event.

7.4 AIR MIGRATION PATHWAY

The Air Migration Pathway assesses the threat to human health and the environment through the threat of airborne releases of hazardous substances. The air migration pathway TDL is a 4-mile radius that extends from sources at the site (Figure 8).

7.4.1 Human Receptors

The site is the previous location of a creosote treatment plant which closed in 1957 (Ref. 5, p. 8). The potentially contaminated soils at the site are covered with heavy overgrowth of pine forest and shrub (Ref. 7, p. 27). Due to the thickness and amount of vegetative overgrowth on site the extent and amount of soil contamination is unknown at this time (Ref. 7, p.27).

The nearest resident is located approximately 0.3 miles east of the concrete structure area. Residential communities are located to the northeast, east and southeast of the site (Figure 2). Missouri Census Data indicate that 29 people reside within the 0.25-mile radius, 392 people are located within the 0.25 to 0.50 mile radius, 1,408 people are located within the 0.50 to 1.0 mile radius, 4,698 people are located within the 1.0 to 2.0 mile radius, 4,542 people are located within the 2.0 to 3.0 mile radius and 3,623 people are located within the 3.0 to 4.0-mile radius (Ref. 39, p. 5).

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7.4.2 Environmental Receptors

According to U.S. Fish & Wildlife Service NWI, forested and scrub-shrub wetland acreage is located at the American Creosote DeRidder site along the culvert/ditch area. Also, forested and scrub-shrub wetland, and permanently flooded impoundment acreage are located off-site along the culvert/ditch, perennial stream, surface water feature with a tributary stream flow connected to Palmetto Creek, Palmetto Creek and Bundick Creek all within the 4-mile TDL for the air migration pathway (Figure 8; Ref. 38, p .4). NWI habitats classified along the on-site and off-site culvert/ditch, off-site perennial stream, off-site surface water feature and tributary stream, Palmetto Creek and Bundick Creek are palustrine scrub-shrub and forested broad-leaved deciduous nontidal temporarily flooded wetlands, and palustrine unconsolidated bottom nontidal permanently flooded dike/impound (Ref. 38, pp. 3-7). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin (Ref. 5, p.7). The site is currently void of operations and consists of heavy timber and thick shrub overgrowth (Ref. 7, pp. 56, 57, 73 & 75-80; Ref. 11, pp. 156-162). It is not currently known if a release of material attributable to the facility can be documented.

During the ESI site reconnaissance conducted on April 12, 2016 and the ESI performed from May 24 – 24, 2016 at the American Creosote DeRidder site, contiguous wetland features were observed and documented by a representative of LDEQ (Ref. 46; Ref. 47 and Ref. 48). The on-site portion of the contiguous wetlands was located in the riparian area along the culver/ditch area (Ref. 46, p. 1; Figure 5). In the area surrounding the on-site culvert/ditch, Water Oak (*Quercus nigra*) and Willow Oak (*Quercus phellos*) dominated the area of the bottomland hardwood forest (Ref. 46, p. 1; Ref. 47, pp. 1-4). Both trees are associated with lowland floodplains, are often found growing along streams, and in poorly drained soils (Ref. 46, p. 1). These trees exhibited buttressed bases where they were growing adjacent to the surface water pathway (Ref. 46, p. 1; Ref. 47, pp. 1 & 6). Such buttressed bases are characteristic of trees growing in wetland soils (Ref. 46, p. 1; Ref. 47, pp. 5 & 7).

In addition, to these wetland-adapted woody species, various types of sedges were also found growing in the riparian area off-site along the culvert/ditch area leading to the perennial stream (Ref. 46, p. 1; Ref. 47, pp. 8-9; Ref. 48, p. 4). These sedges included members of the Genus

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Carex (Ref. 46, p. 1). These sedges which are characteristic of wetlands were observed in areas adjacent to the off-site up gradient tributary stream, the area surrounding the culvert discharge, and the area prior to entering the perennial stream, all located on Ingevity property (Ref. 46, p. 1; Figure 5).

Furthermore, the stream drains to the southwest to a surface water feature commonly known as a slough, which is bisected by Crosby Road (Ref. 46, p. 2; Figure 5). The edges of the slough are dominated by emergent aquatic vegetation; sedges, including members of the Genus *Carex*; and Button Willow (*Cephalanthus occidentalis*) (Ref. 46, p. 2; Ref. 48, p. 5). Off-site areas located in the slough included: the surrounding area down gradient of the PPE where the perennial stream flow enters into the surface water impoundment/slough east of Crosby Road, the area surrounding the point prior to where off-site surface water discharges into a culvert from the impoundment/slough east of Crosby Road, the area where the off-site surface water enters a second water impoundment, via culverts, on the west side of Crosby Road, and the surrounding area where the off-site surface water discharges from the second surface water impoundment west of Crosby Road (Ref. 46, p. 2; Figure 5).

According to the USDA *Soil Survey of Beauregard Parish Louisiana*, soils in the surface water pathway are Guyton silt loam, occasionally flooded (GtA) (Ref. 21, pp. 88-90; Ref. 46, p. 2). These soils are water retaining and hydric and are listed as suitable for wetland wildlife (Ref. 21, pp. 89-80; Ref. 46, p. 2). They are listed as having a management concern of “wetness” for most other uses due to their poor drainage (Ref. 21, p. 90; Ref. 46, p.2). These soils again support the determination that the surface water pathway is a riparian wetland that meets the definition of contiguous wetlands (Ref. 3; Ref. 46, p. 2)

7.4.2.1 Sample Locations and Results

No samples were collected from air migration receptors during the American Creosote DeRidder ESI May 2016 sampling event.

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8 SUMMARY AND CONCLUSIONS

The American Creosote DeRidder site is a 55-acre property in DeRidder, Beauregard Parish, Louisiana that was used for the pressure treatment of wood from the early 1920's to approximately 1945. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957. From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992, who planned heavy industrial/commercial use. Since 1957 the property has remained inactive and currently void of any operations.

From May 24, 2016 through May 25, 2016, START collected a total of 19 samples, to include three (3) background samples (one [1] surface water and two [2] sediment). Sediment samples were collected from two (2) on-site, six (6) off-site locations and from two (2) off-site background locations at 0-6 inches bgs to identify and assess migration of contamination on-site and off-site. Surface water was collected from seven (7) off-site locations to assess the migration of contamination in the off-site surface water pathway.

Samples were processed and shipped to the U.S. EPA Laboratory in Houston on May 24, 2016 and May 25, 2016 for Target Compound List (TCL) semi-volatile organic compounds chemical analysis. The following analysis was conducted:

- TCL SVOAs by EPA CLP OLM04.2-GC/MS (Low Level): 8 – surface water samples, including QA/QC samples
- TCL SVOAs by EPA CLP OLM04.2-GC/MS (Low Level) 11 – sediment samples, including QA/QC samples

8.1 SOURCES

Sources that remain at American Creosote DeRidder include a concrete structure that was the former retort house from previous operations at the site, a concrete foundation of a former

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oil/water separator that is nearly completely covered in creosote solid and contains stagnant water, an unlined wastewater pit with hardened creosote bordering and nearby the pit, and random areas of creosote solids and soil contamination.

The sources contain numerous PAHs: 2-methylnaphthalene, acenaphthene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene, and pyrene which are creosote components (Ref. 11, pp. 70-72 & 90-92). In addition, the concrete structure contains the metal arsenic (Ref. 11, 70-72 & 90-92).

8.2 RECEPTORS

Surface water sample AC-ESI-SW05 from the off-site contiguous wetlands near the discharge area of the culvert contained fluoranthene and pyrene that meet observed release criteria. Additionally, surface water sample AC-ESI-SW06, along the contiguous wetlands area prior to the perennial stream on Ingevity property contained some of the same PAHs detected in the sources: benzo (a) pyrene, fluoranthene and pyrene. Surface water samples AC-ESI-SW09 and AC-ESI-SW10, from the second surface water impoundment west of Crosby Road on Ingevity property, detected benzo (a) pyrene that also is identified in the sources.

On-site sediment samples AC-ESI-SD01 and AC-ESI-SD02 located south of the former facility operations, along the on-site contiguous wetlands in the culvert/ditch area, the PPE, and at the culvert itself, contained benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene and indeno (1,2,3-cd) pyrene that meet observed release criteria. Off-site sediment sample AC-ESI-SD05, from along the drainage/overland flow pathway near the discharge area of the culvert on Ingevity property contained benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene that also meet observed release criteria. Additionally, sediment sample AC-ESI-SD06 from the contiguous wetlands prior to the perennial stream and sediment sample AC-ESI-SD08 from the point prior to where surface water discharges into a culvert from the impoundment/slough on the east side Crosby Road, both contained some of the

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same PAHs detected in the sources to include: benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, dibenz (a,h) anthracene and indeno (1,2,3-cd) pyrene. Off-site sediment sample AC-ESI-SD07 from the contiguous wetland area where the perennial stream flow enters into the surface water impoundment/slough on Ingevity property contained the PAHs benzo (a) pyrene, benzo (b) fluoranthene and dibenz (a,h) anthracene that are also detected in the sources. Lastly, off-site sediment samples AC-ESI-SD09 and AC-ESI-SD10, from the second surface water impoundment on Ingevity property, where off-site surface water enters and discharges from the water impoundment/slough on the west side of Crosby Road also on Ingevity property, detected benzo (a) pyrene that also is identified in the sources. Hence, the surface water pathway appears to be the pathway of concern for the American Creosote DeRidder site.

8.3 CONCLUSIONS

The site inspection conducted by START-3 in June 2015 revealed PAHs in the sources located at the American Creosote site, and an observed release of the same PAHs was detected in the groundwater, soil and surface water pathways. The ESI conducted in May 2016 revealed that the same PAHs detected in the sources have impacted the on-site and off-site contiguous wetlands, an off-site perennial stream, an off-site surface water impoundment/slough, and a second off-site surface water impoundment. The surface water pathway appears to be the pathway of concern for the American Creosote DeRidder site, due to the contaminated sediments and surface water located along the on-site and off-site culvert/ditch along contiguous wetlands south of former site operations, the off-site perennial stream, the off-site surface water impoundment/slough, and the second off-site surface water impoundment along contiguous wetlands.

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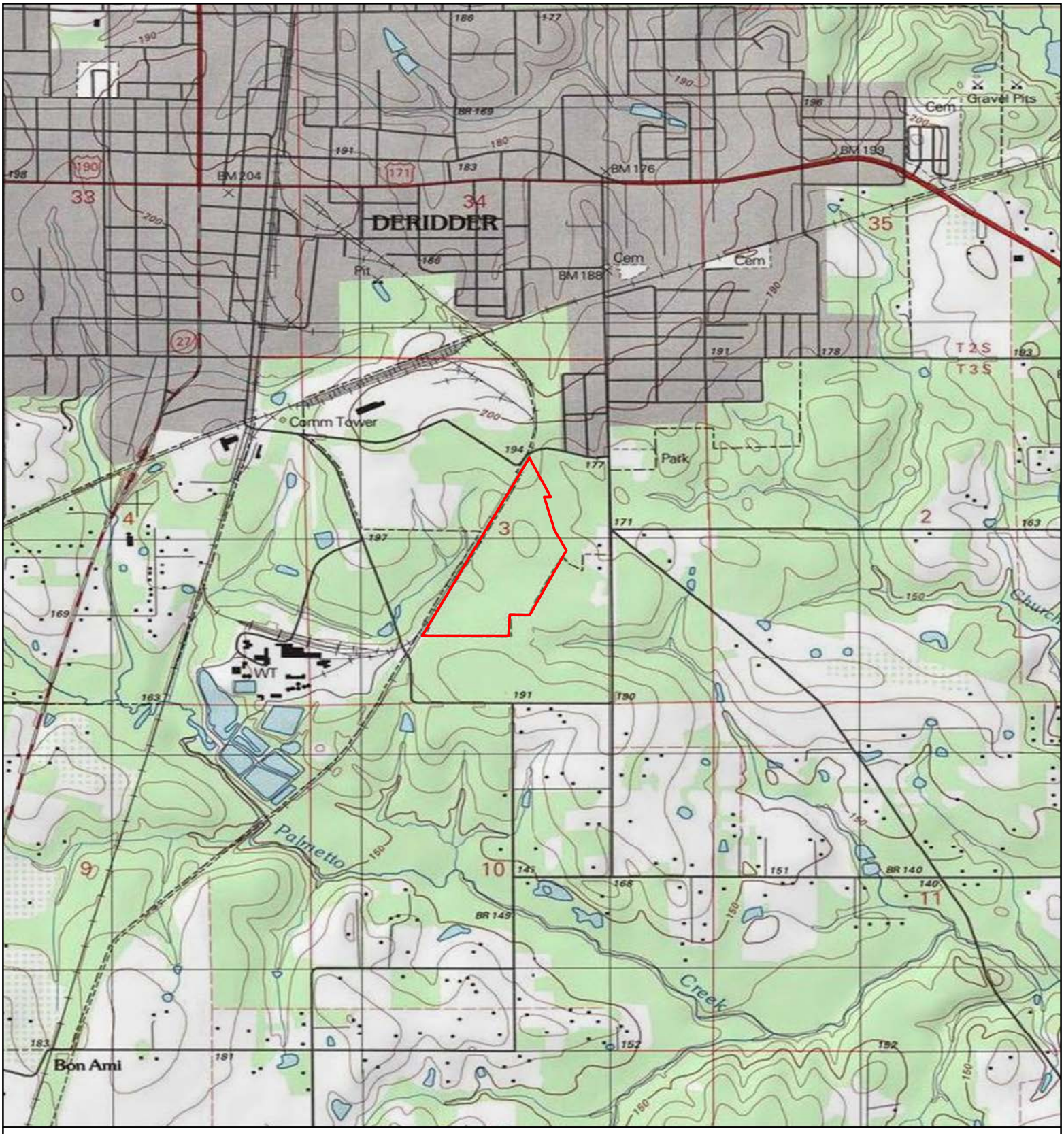
FIGURES



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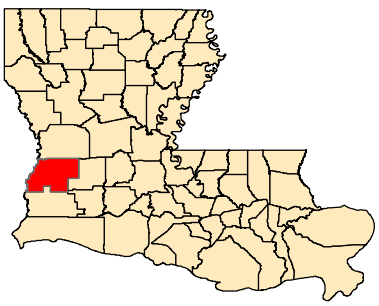


Legend

Site Boundary

N
W E
S

1:24,000

0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

Figure 1. Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

39 075

Map of Lousiana

Legend

Site Boundary

N
W E
S

1:24,000

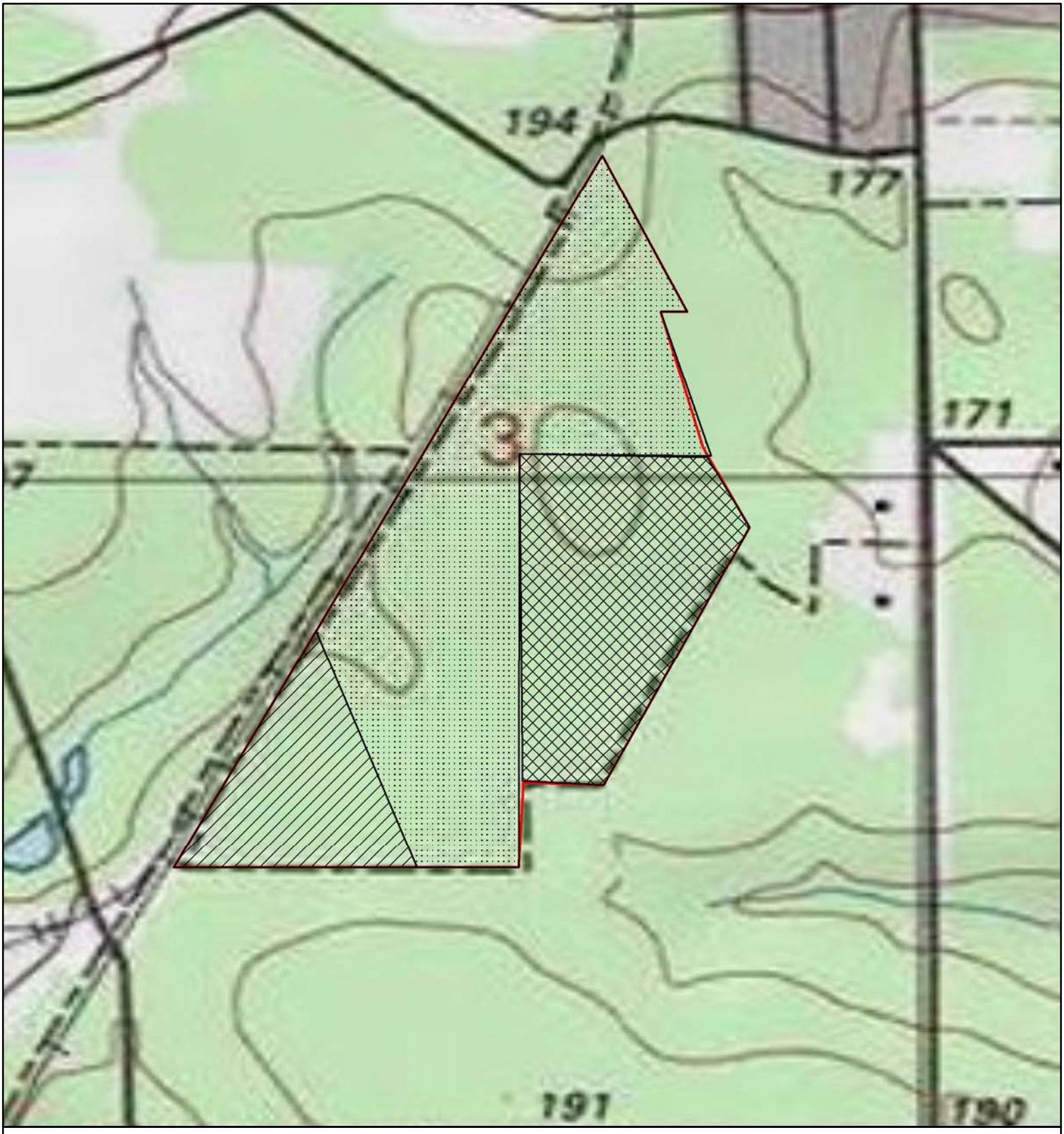
0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

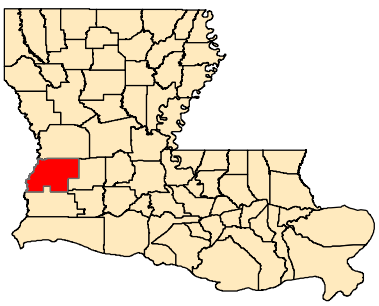
Figure 2. Aerial Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

39 076



Map of Lousiana



Legend

- Site Boundary
- Parcel B
- Parcel E1
- Parcel E2

N
W E
S

1:6,000

0 250 500 1,000 Feet

US EPA Region 6
START-3

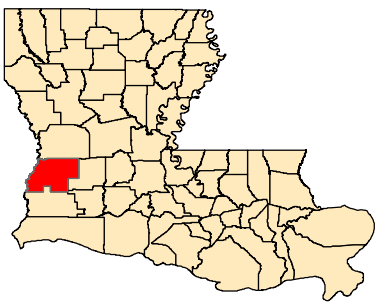
Figure 3. Site Land Parcel Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001

39 077

Source: Copyright:© 2013 National Geographic Society, i-cubed

Map of Lousiana



Legend

Site Boundary

N
W E
S

1:6,000

0 250 500 1,000 Feet

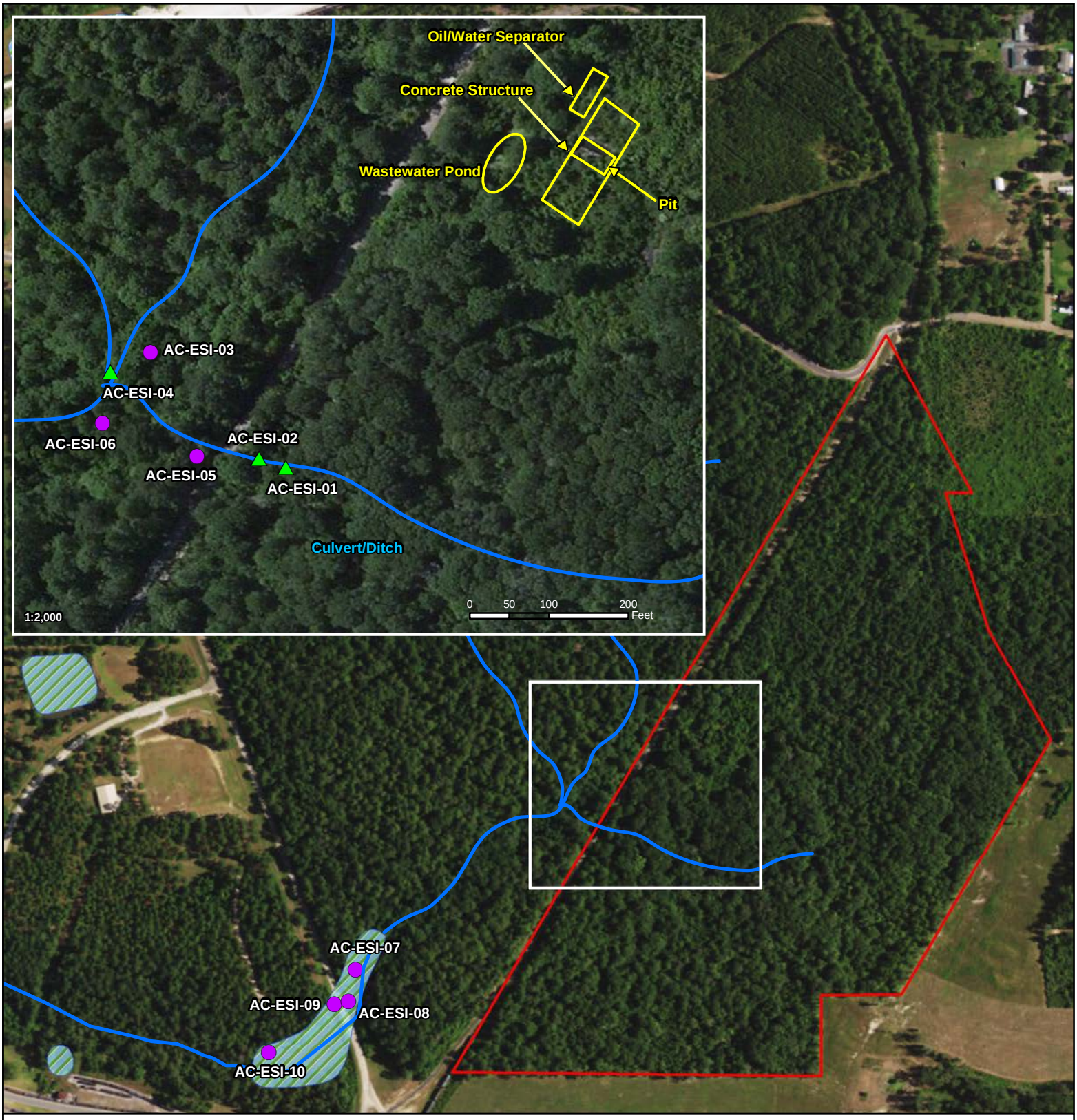
US EPA Region 6
START-3

Figure 4. Historical Aerial Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

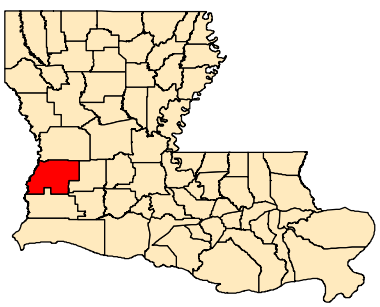
SSID No. A6KM
CERCLIS No. LAN000604293 TDD
No. 9/DYNAMAC-077-16-001

Source: USGS Aerial Photograph, 1954

39 078



Map of Lousiana



Legend

- Sediment
- Sediment/Surface Water
- Stream
- Culvert/Ditch
- Impoundments
- Site Boundary

N
W E
S

1:6,000

0 300 600 1,200
Feet

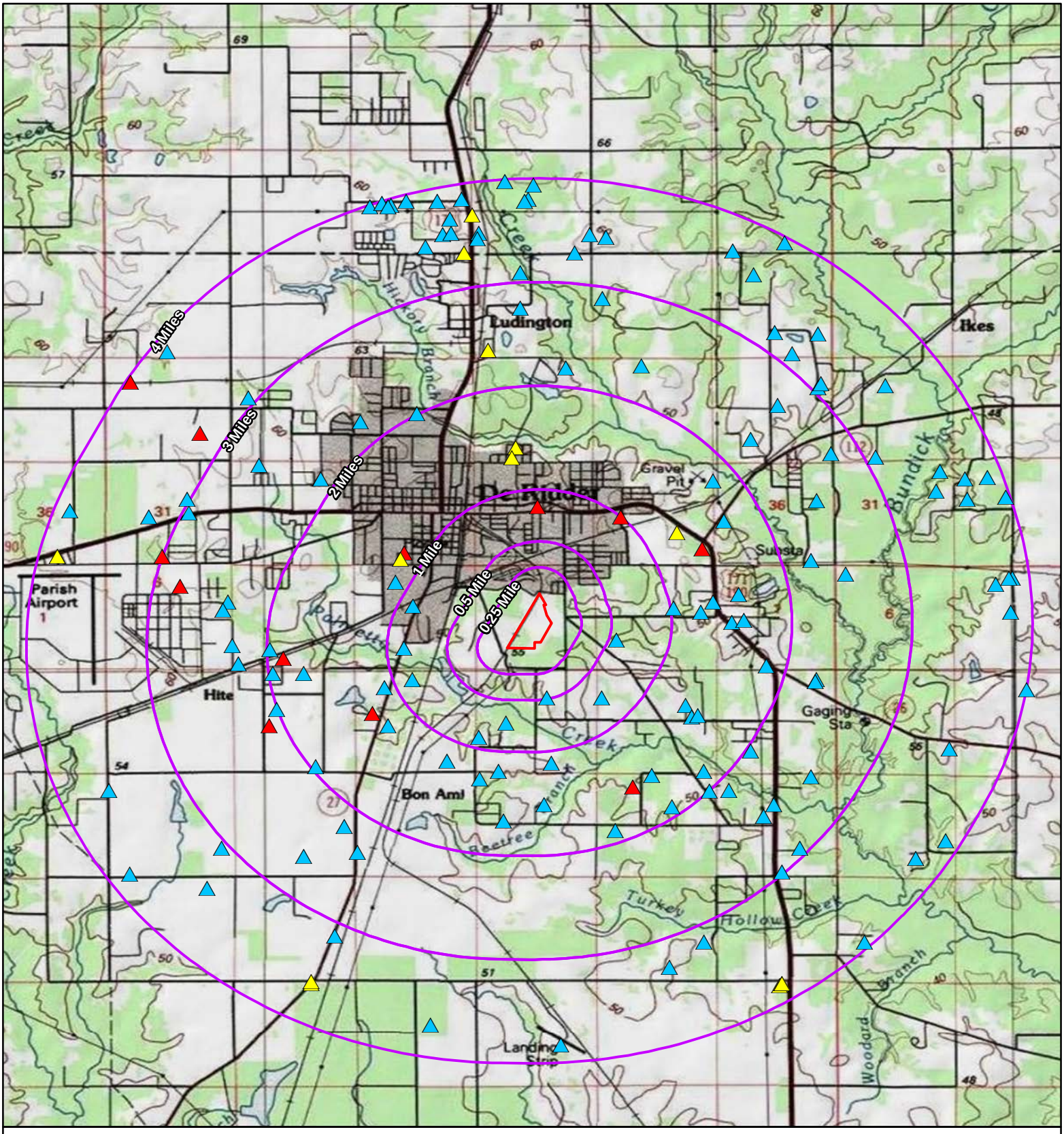
US EPA Region 6
START-3

Figure 5. Expanded Site Inspection (ESI)
Sample Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/Dynamac-077-16-001

39 079

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community and National Wetlands Inventory



Map of Lousiana

Legend

LA DNR Registered Wells

- Domestic
- Public Supply
- Resource
- Site Boundary
- 4-Mile Radius

0 0.5 1 2 Miles

1:80,000

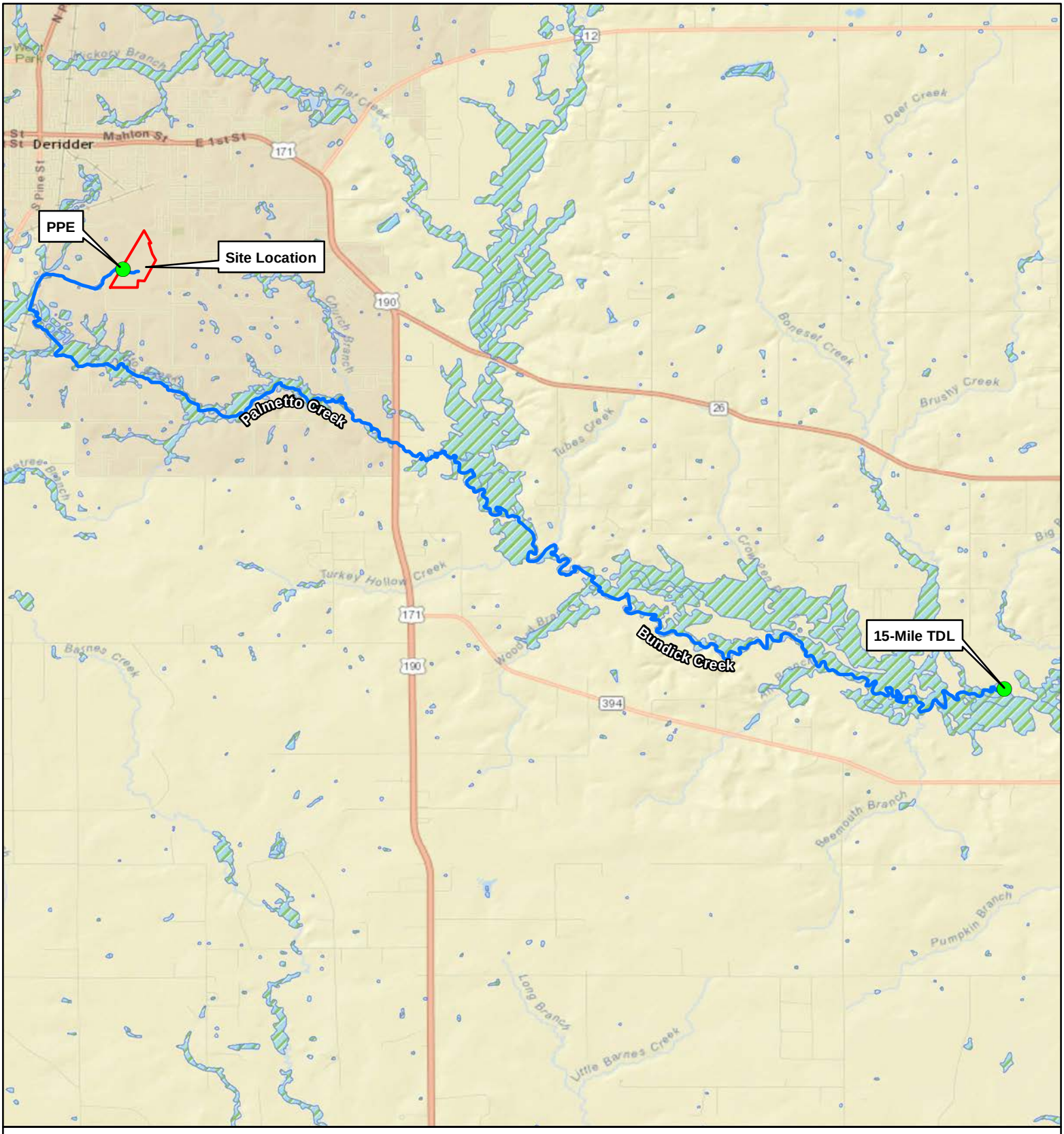
N W E S

US EPA Region 6
START-3

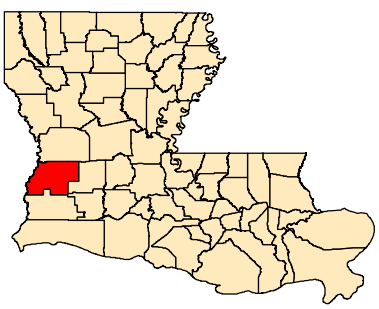
Figure 6. 4-Mile Radius Map
Groundwater Pathway
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

39 080



Map of Lousiana



Legend

- PPE
- Surface Water Flow
- Site Boundary
- Wetlands

N
W E
S

1:75,000

0 0.5 1 2 Miles

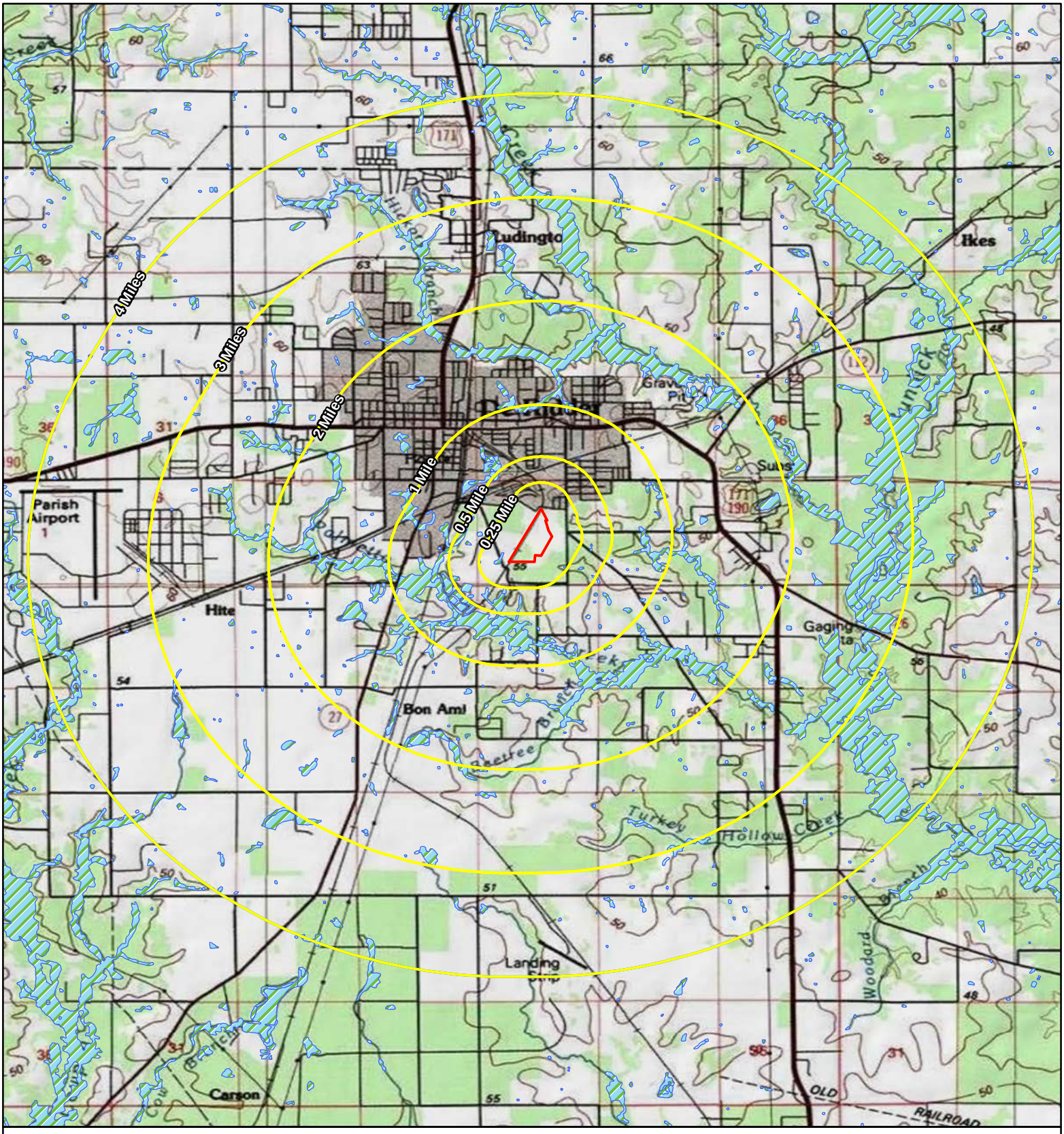
US EPA Region 6
START-3

Figure 7. 15-Mile Surface Water Pathway Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

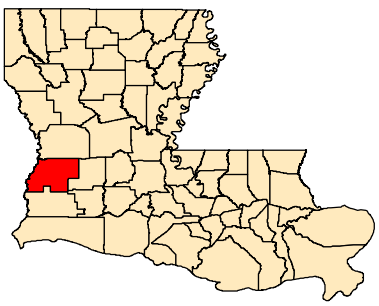
SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/Dynamac-077-16-001

39 081

Source: ESRI Street Map, National Hydrography Dataset, and National Wetlands Inventory



Map of Lousiana



Legend

- Site Boundary
- 4-Mile Radius
- Wetlands

N
W E
S

1:80,000

0 0.5 1 2 Miles

US EPA Region 6
START-3

Figure 8. 4-Mile Radius Map
Air Pathway
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/Dynamac-077-16-001

39 082

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TABLES

TABLE 1
Background Sediment Sample Results Summary

Sample Number:			AC-ESI-SD03				AC-ESI-SD04			
EPA Laboratory ID:			1605035-03				1605035-04			
Sample Location:			AC-ESI-03				AC-ESI-04			
Sample Location Description			Background - Up Gradient Off-site Drainage Tributary				Background - Up Gradient Off-site Drainage Tributary			
	LA RECAP (Industrial) µg/kg	EPA RSL (Industrial) µg/kg	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL	Result µg/kg	Flag	RL µg/kg	3x Bkgd or RL
ANALYTE: SVOCs										
1-Methylnaphthalene		73,000	U		63	63 (RL)	U		72.1	72.1 (RL)
2-Methylnaphthalene	170,000	300,000	U		63	63 (RL)	U		72.1	72.1 (RL)
Acenaphthene	6,100,000	4,500,000	U		63	63 (RL)	U		72.1	72.1 (RL)
Acenaphthylene	5,100,000		U		63	63 (RL)	U		72.1	72.1 (RL)
Anthracene	48,000,000	23,000,000	**89.4**		63	268.2 (3x)	U		72.1	72.1 (RL)
Benzaldehyde		820,000	**515**	J	252	1,545 (3x)	U		288	288 (RL)
Benzo (a) anthracene	2,900	2,900	U		252	252 (RL)	U		288	288 (RL)
Benzo (a) pyrene	330	290	U		252	252 (RL)	U		288	288 (RL)
Benzo (b) fluoranthene	2,900	2,900	**859**		252	2,577 (3x)	U		288	288 (RL)
Benzo (g,h,i) perylene			U		252	252 (RL)	U		288	288 (RL)
Benzo (k) fluoranthene	29,000	29,000	**496**		252	1,488 (3x)	U		288	288 (RL)
Benzoic Acid		330,000,000	**7,460**	J	630	22,380 (3x)	**1,250**	NJ	721	3,750 (RL)
Carbazole			U		252	252 (RL)	U		288	288 (RL)
Chrysene	290,000	290,000	**429**		252	1,287 (3x)	U		288	288 (RL)
Dibenz (a,h) anthracene	330	290	U		252	252 (RL)	U		288	288 (RL)
Dibenzofuran	150,000	100,000	U		252	252 (RL)	U		288	288 (RL)
Fluoranthene	2,900,000	3,000,000	**261**		63	783 (3x)	U		72.1	72.1 (RL)
Fluorene	5,400,000	3,000,000	U		63	63 (RL)	U		72.1	72.1 (RL)
Indeno (1,2,3-cd) pyrene	2,900	2,900	U		252	252 (RL)	U		288	288 (RL)
Naphthalene	43,000	17,000	**154**		63	462 (3x)	U		72.1	72.1 (RL)
Pentachlorophenol	9,700	4,000	U		126	126 (RL)	U		144	144 (RL)
Phenanthrene	43,000,000		**105**		63	315 (3x)	U		72.1	72.1 (RL)
Pyrene	5,600,000	2,300,000	**309**		63	927 (3x)	U		72.1	72.1 (RL)

Bold = Detected Above Reporting Limits
RL = Reporting Limit
U = Undetected
J = Identification of the analyte is acceptable; the reported value is an estimate
NJ = There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate

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TABLE 2
Sediment Sample Results Summary

Sample Number:			AC-ESI-SD01			AC-ESI-SD02			AC-ESI-SD05		
EPA Laboratory ID:			1605035-01			1605035-02			1605035-05		
Sample Location:			AC-ESI-01			AC-ESI-02			AC-ESI-05		
Sample Location Description			On-site Contiguous Wetlands Along the Culvert/Ditch, PPE			On-site Contiguous Wetlands At the Culvert			Off-site Contiguous Wetlands At Culvert Discharge Area		
	LA RECAP (Industrial) µg/kg	EPA RSL (Industrial) µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg
ANALYTE: SVOCs											
1-Methylnaphthalene		73,000	**5,740**		730	U		685	U		121
2-Methylnaphthalene	170,000	300,000	**5,640**		730	U		685	**150**		121
Acenaphthene	6,100,000	4,500,000	**24,400**		730	U		685	U		121
Acenaphthylene	5,100,000		**11,900**		730	**3,750**		685	**815**		121
Anthracene	48,000,000	23,000,000	**191,000**		7,300	**6,290**		685	**1,250**		121
Benzaldehyde		820,000	U		2,920	U		2,740	U		482
Benzo (a) anthracene	2,900	2,900	**851,000**	J	292,000	**108,000**		27,400	**13,200**		4,820
Benzo (a) pyrene	330	290	**406,000**		292,000	**118,000**		27,400	**14,000**		4,820
Benzo (b) fluoranthene	2,900	2,900	**847,000**		292,000	**188,000**		27,400	**31,300**		4,820
Benzo (g,h,i) perylene			**146,000**		29,200	**45,400**		27,400	**7,910**		4,820
Benzo (k) fluoranthene	29,000	29,000	**607,000**		292,000	**140,000**		27,400	**17,600**		4,820
Benzoic Acid		330,000,000	**19,800**	J	7,300	**13,600**	J	6,850	U		1,210
Carbazole			**225,000**	J	29,200	U		2,740	U		482
Chrysene	290,000	290,000	**1,200,000**	J	292,000	**137,000**		27,400	**18,400**		4,820
Dibenz (a,h) anthracene	330	290	**93,000**		29,200	**19,400**		2,740	**4,050**		3,620
Dibenzofuran	150,000	100,000	**22,800**		2,920	U		2,740	U		482
Fluoranthene		3,000,000	**3,370,000**		730,000	**110,000**		6,850	**17,800**		1,210
Fluorene	5,400,000	3,000,000	**27,300**		730	U		685	U		121
Indeno (1,2,3-cd) pyrene	2,900	2,900	**188,000**		29,200	**57,100**		27,400	**9,160**		4,820
Naphthalene	43,000	17,000	**6,150**		730	U		685	**446**		121
Pentachlorophenol	9,700	4,000	U		1,460	U		1,370	U		241
Phenanthrene	43,000,000		**1,120,000**		73,000	**1,550**		685	**834**		121
Pyrene	5,600,000	2,300,000	**1,960,000**	J	73,000	**135,000**		6,850	**21,200**		1,210

Bold = Detected Above Reporting Limits

Underlined = Concentration Detected 3x Above Background or Background RL

Highlighted = Concentration Exceeds EPA or State Risk Screening

RL = Reporting Limit

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J= Identification of the analyte is acceptable; the reported value is an estimate.

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TABLE 2
Sediment Sample Results Summary

Sample Number: **EPA Laboratory ID:** **Sample Location:** **Sample Location Description**			AC-ESI-SD06 1605035-06 AC-ESI-06 Off-site Contiguous Wetlands Prior to the Perennial Stream			AC-ESI-SD07 1605032-01 AC-ESI-07 Off-site Surface Impoundment/Slough - Entry Point (East of Crosby Road)			AC-ESI-SD08 1605032-02 AC-ESI-08 Off-site Surface Impoundment/Slough - Discharge Point (East of Crosby Road)		
	LA RECAP (Industrial) µg/kg	EPA RSL (Industrial) µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg
ANALYTE: SVOCs											
1-Methylnaphthalene		73,000	**485**		351	U		97.4	**243**		124
2-Methylnaphthalene	170,000	300,000	**2,540**		351	U		97.4	**659**		124
Acenaphthene	6,100,000	4,500,000	**471**		351	U		97.4	**476**		124
Acenaphthylene	5,100,000		**1,450**		351	**271**		97.4	**1,160**		124
Anthracene	48,000,000	23,000,000	**81,700**		3,510	**1,070**		97.4	**2,700**		124
Benzaldehyde		820,000	U		1,410	U		390	U		496
Benzo (a) anthracene	2,900	2,900	**27,800**		14,100	**1,630**		390	**29,100**		4,960
Benzo (a) pyrene	330	290	**29,000**		14,100	**3,080**		390	**36,500**		4,960
Benzo (b) fluoranthene	2,900	2,900	**60,700**		14,100	**7,660**		3,900	**63,400**		49,600
Benzo (g,h,i) perylene			**11,400**		11,200	**2,510**		779	**14,400**		4,960
Benzo (k) fluoranthene	29,000	29,000	**29,600**		14,100	**4,270**		3,900	**37,400**		37,200
Benzoic Acid		330,000,000	U		3,510	**4,770**	J	974	U		1,240
Carbazole			**28,400**	J	14,100	U		390	**669**	J	496
Chrysene	290,000	290,000	**36,500**		14,100	**3,360**		390	**29,700**		4,960
Dibenz (a,h) anthracene	330	290	**5,540**		1,410	**1,140**		390	**9,660**		4,960
Dibenzofuran	150,000	100,000	**3,700**		1,410	U		390	**602**		496
Fluoranthene		3,000,000	**34,800**		3,510	**1,580**		97.4	**29,100**		1,240
Fluorene	5,400,000	3,000,000	**7,910**		351	U		97.4	**367**		124
Indeno (1,2,3-cd) pyrene	2,900	2,900	**10,300**		1,410	**2,740**		390	**17,700**		4,960
Naphthalene	43,000	17,000	**3,110**		351	**154**		97.4	**1,630**		124
Pentachlorophenol	9,700	4,000	U		703	U		195	U		248
Phenanthrene	43,000,000		**16,400**		3,510	**339**		97.4	**2,150**		124
Pyrene	5,600,000	2,300,000	**40,000**		3,510	**2,340**		97.4	**41,900**		1,240

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TABLE 2
Sediment Sample Results Summary

Sample Number: **EPA Laboratory ID:** **Sample Location:** **Sample Location Description**			AC-ESI-SD09 1605032-03 AC-ESI-09 Second Off-site Surface Impoundment - Entry Point (West of Crosby Road)			AC-ESI-SD10 1605032-04 AC-ESI-10 Second Off-site Surface Impoundment - Discharge Point (West of Crosby Road)			AC-ESI-SD11 1605032-05 AC-ESI-11 Duplicate Sample at Location AC-ESI-SD07		
	LA RECAP (Industrial) µg/kg	EPA RSL (Industrial) µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg	Result µg/kg	Flag	RL µg/kg
ANALYTE: SVOCs											
1-Methylnaphthalene		73,000	U		84	U		86	**166**		111
2-Methylnaphthalene	170,000	300,000	U		84	U		86	**480**		111
Acenaphthene	6,100,000	4,500,000	U		84	U		86	**268**		111
Acenaphthylene	5,100,000		U		84	U		86	**480**		111
Anthracene	48,000,000	23,000,000	**92.4**		84	**227**		86	**2,300**		111
Benzaldehyde		820,000	**547**	J	336	**1,210**	J	344	U		443
Benzo (a) anthracene	2,900	2,900	U		336	U		344	**2,780**		443
Benzo (a) pyrene	330	290	**378**		336	**513**		482	**4,900**		2,210
Benzo (b) fluoranthene	2,900	2,900	**1,190**		336	**1,740**		688	**13,500**		2,210
Benzo (g,h,i) perylene			U		336	**468**		447	**4,160**		2,210
Benzo (k) fluoranthene	29,000	29,000	**416**		336	**1,030**		688	**7,430**		2,210
Benzoic Acid		330,000,000	**8,640**	J	840	**16,500**	J	860	**9,910**	J	1,110
Carbazole			U		336	U		344	U		443
Chrysene	290,000	290,000	**521**		336	**769**		344	**6,060**		2,210
Dibenz (a,h) anthracene	330	290	U		336	U		344	**2,180**		2,100
Dibenzofuran	150,000	100,000	U		336	U		344	U		443
Fluoranthene		3,000,000	**464**	J	84	**645**		86	**2,660**		111
Fluorene	5,400,000	3,000,000	U		84	U		86	**261**		111
Indeno (1,2,3-cd) pyrene	2,900	2,900	U		336	**547**		516	**5,680**		2,210
Naphthalene	43,000	17,000	**134**		84	U		86	**1,380**		111
Pentachlorophenol	9,700	4,000	U		168	**182**	J	172	U		221
Phenanthrene	43,000,000		**161**	J	84	**153**		86	**925**		111
Pyrene	5,600,000	2,300,000	**494**		84	**796**		86	**4,070**		111

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RL = Reporting Limit

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TABLE 3
Surface Water Sample Results Summary

Sample Number:			AC-ESI-SW03				AC-ESI-SW05			AC-ESI-SW06			AC-ESI-SW07			AC-ESI-SW08			AC-ESI-SW09			AC-ESI-SW10			AC-ESI-SW11		
EPA Laboratory ID:			1605035-07				1605035-08			1605035-09			1605032-06			1605032-07			1605032-08			1605032-09			1605032-10		
Sample Location:			AC-ESI-03				AC-ESI-05			AC-ESI-06			AC-ESI-07			AC-ESI-08			AC-ESI-09			AC-ESI-10			AC-ESI-11		
Sample Location Description			Background - Up Gradient Off-site Drainage Tributary				Off-site Contiguous Wetlands At Culvert Discharge Area			Off-site Contiguous Wetlands Prior to the Perennial Stream			Off-site Surface Impoundment/Slough - Entry Point (East of Crosby Road)			Off-site Surface Impoundment/Slough - Discharge Point (East of Crosby Road)			Second Off-site Surface Impoundment - Entry Point (West of Crosby Road)			Second Off-site Surface Impoundment - Discharge Point (West of Crosby Road)			Duplicate Sample at Location AC-ESI-SD08		
	LA RECAP (GW_SS) µg/L	EPA MCL µg/L	Result µg/L	Flag	RL µg/L	3x Bkgd or RL	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L	Result µg/L	Flag	RL µg/L
ANALYTE: SVOCs																											
Benzo (a) pyrene	0.2	0.2	U		0.2	0.2 (RL)	U		0.2	**0.6**		0.2	U		0.2	U		0.2	**0.4**	J	0.2	**0.3**		0.2	U		0.2
Fluoranthene	150		U		0.5	0.5 (RL)	**0.8**		0.5	**1.3**		0.5	U		0.5	U		0.5	U		0.5	U		0.5	U		0.5
Pyrene	18		U		0.5	0.5 (RL)	**0.8**	J	0.5	**1.9**	J	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U		0.5

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Underlined = Concentration Detected 3x Above Background or Background RL
Highlighted = Concentration Exceeds EPA or State Risk Screening
RL = Reporting Limit
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APPENDICES

APPENDIX A

Copy of TDD No.: 9/DYNAMAC-077-16-001

This document was prepared by CSS-Dynamac, expressly for EPA.
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U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-16-001
Amendment # :
Contract # : EP-W-06-077

TDD Title : American Creosote Deridder ESI
Purpose : TDD INITIATION

Verbal Date :
Start Date : 03/10/2016
Completion Date : 11/01/2016
Effective Date : 03/10/2016

Priority : HIGH
Overtime Authorized : No
Invoice Unit :

SSID : A6KM
Project/Site Name : American Creosote Deridder
Project Address : Section 3, T3 S, R 9W (Post Pole Road)
County : Beauregard
City : Deridder
State : LA
Zip Code : 70634

Work Area : Assessment / Inspections Activities
Work Area Code : 91
Activity : Expanded Site Inspection (ESI)
Activity Code : ES
Operable Unit :
Emergency Code :
FPN :
Performance Based : No

Authorized TDD Ceiling :

	Amount	LOE (Hours)
Previous Action(s) :	$0.00	0.00
This Action :	$60,000.00	0.00
New Total :	$60,000.00	0.00

Specific Elements :
See Schedule

Description of Work :
See Schedule

Region Specific :
CERCLIS: :

Misc 2 :

Accounting and Appropriation Information:

SFO:

Line	Budget / FY	Approp.	Budget Org	Program Element	Object Class	Site Project	Cost Org	DCN Line-ID	Funding Category	TDD Amount
1	10	T	6A00	302DD2C	2505	06WQWQ00	C001	106APLC015-001	CERCLA PIPELINE	$4,412.10
2	14	T	6A00	303DD2	2505	06WQWQ00	C001	146APLC018-001	CERCLA PIPELINE	$38,975.90
3	13	T	6A00	303DD2	2505	06WQWQ00	C001	146APLC024-001	CERCLA PIPELINE	$16,612.00

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-16-001
Amendment # :
Contract # : EP-W-06-077

Project Officer : Will LaBombard *(Signature)* *(Date)*	**Branch Mail Code:** **Phone Number :** 214-665-7199 **Fax Number :**
Contracting Officer Representative Brenda Cook *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-7436 **Fax Number :**
Contract Specialist: Michael J. Pheeny *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Contracting Officer : Michael J. Pheeny Electronically Signed by Michael J. Pheeny 03/10/2016 *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** 214-665-2798 **Fax Number :**
Other Agency Official *(Signature)* *(Date)*	**Branch Mail Code :** **Phone Number :** **Fax Number :**

U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Vendor : DYNAMAC CORPORATION

TDD # : 9/DYNAMAC-077-16-001
Amendment # :
Contract # : EP-W-06-077

Specific Elements: Analyze -Samples for PAH's,Conduct -ESI sampling focusing on SW Pathway,Coordinate -with SAM Brenda Cook ,Perform -ESI,Prepare Draft START Work PlanPrior to Sampling,Prepare ReportFinal report incorporating data
Description of Work: Investigation at the American Creosote Deridder site located in Deridder, Louisiana. Specific tasks in the work plan/cost estimate shall include:
1. Management/Cost Estimate;
2. QASP/HASP/Lab Procurement;
3. Site Access
3. Field Activities
4. SI Report
5. Quickscore HRS documentation package

In addition to developing a work plan/cost estimate, the contractor shall develop a Quality Assurance Sampling Plan (QASP) and Health and Safety Plan (HASP) and prepare sample request form for EPA Houston Laboaratory/CLP. The laboratory shall provide a defensible analytical data package(s) for any samples collected during the execution of the field activities under this TDD.

Field activities shall include the collection and analysis of the Surface Water pathway building on the results collected during the SI. It is estimated that no more than 20 samples (including QA/QC samples) will be collected during the field activities. Samples shall be transported/shipped to the procured laboratory for a full scan analysis. Routine turnaround time is requested for the sample analysis. Field activities shall include a limited survey of the area surrounding the site in order to verify potential pathway targets and off-site condition
An ESI report shall be developed for the site. Analytical data collected under this TDD shall be validated and defensible data validation reports developed. The SI report shall incorporate the validated analytical results from the samples collected under this TDD. The ESI report shall be developed according to the EPA guidance for performing site inspections (EPA540-R-92-021, Directive 9345.1-05). All activities shall be coordinated with the EPA COR, Brenda Cook (214-665-7436). The START contractor shall contact Brenda Cook after receipt of this TDD.

Interim Dates:

Draft workplan due April, 1, 2016
Conduct sampling by June 30, 2016

The initial TDD ceiling is $60,000.

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

EXPANDED SITE INSPECTION - SITE RECONNAISSANCE PHOTOGRAPHIC DOCUMENTATION

This document was prepared by CSS-Dynamac, expressly for EPA.
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Logbook Photo #	DSC01337
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	04/12/2016
Time	1025
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Buttress of a water oak tree located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01339
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	04/12/2016
Time	1026
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Leaves of a water oak tree located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01340
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	South
Date	04/12/2016
Time	1027
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Leaf from the water oak tree located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01342
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	04/12/2016
Time	1028
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Wetland vegetation located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01343
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	West
Date	04/12/2016
Time	1029
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Wetland area located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01344
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	04/12/2016
Time	1029
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Buttress of a water oak tree located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01346
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	East
Date	04/12/2016
Time	1031
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Wetland area located on-site along the surface water drainage/overland flow pathway in the culvert/ditch area.

Logbook Photo #	DSC01348
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	West
Date	04/12/2016
Time	1033
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Culvert/ditch area located on-site, on the east side of the railroad right-of-way, along the surface water drainage/overland flow pathway.

Logbook Photo #	DSC01351
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	04/12/2016
Time	1036
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Culvert coated in creosote located on-site, on the east side of the railroad right-of-way, along the surface water drainage/overland flow pathway.

Logbook Photo #	DSC01356
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	04/12/2016
Time	1044
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Culvert/ditch area located off-site, on the west side of the railroad right-of-way, along the surface water drainage/overland flow pathway.

Logbook Photo #	DSC01360
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	South
Date	04/12/2016
Time	1048
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Confluence of off-site culvert/ditch area and tributary stream.

Logbook Photo #	DSC01363
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	North
Date	04/12/2016
Time	1048
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Tributary stream, up gradient of confluence with off-site culvert/ditch area.

Logbook Photo #	DSC01366
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	West
Date	04/12/2016
Time	1052
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Wetland vegetation located off-site, on the west side of the railroad right-of-way, along the surface water drainage/overland flow pathway

Logbook Photo #	DSC01367
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	East
Date	04/12/2016
Time	1108
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Wetland vegetation located on-site, on the east side of the railroad right-of-way, along the surface water drainage/overland flow pathway.

Logbook Photo #	DSC01370
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	04/12/2016
Time	1319
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Off-site surface water impoundment located on south side of Crosby Road.

Logbook Photo #	DSC01372
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	East
Date	04/12/2016
Time	1322
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Culverts discharging into off-site surface water impoundment located on south side of Crosby road.

Logbook Photo #	DSC01374
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	04/12/2016
Time	1324
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Off-site surface water impoundment/slough located on north side of Crosby Road.

Logbook Photo #	DSC01375
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	West
Date	04/12/2016
Time	1326
Photographer	K. Berecz (START-EPA)
Witness	K. Horn (LDEQ)

Description:

Culverts draining off-site surface water impoundment/slough located on north side of Crosby road.

EXPANDED SITE INSPECTION
PHOTOGRAPHIC DOCUMENTATION

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Logbook Photo #	DSC00001
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
Parish	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	0922
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Sample location AC-ESI-10 located near the discharge area of the second surface water impoundment on Ingevity property.

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Logbook Photo #	DSC00002
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	0923
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-10, located near the discharge area of the second surface water impoundment on Ingevity property.

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Logbook Photo #	DSC00003
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	0928
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-10, located near the discharge area of the second surface water impoundment on Ingevity property.

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Logbook Photo #	DSC00004
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	0949
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-09, located where drainage enters the second surface water impoundment via culverts on Ingevity property.

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Logbook Photo #	DSC00005
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	0950
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Sample location AC-ESI-09, located where drainage enters the second surface water impoundment via culverts on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00006
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	1000
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-09, located where drainage enters the second surface water impoundment via culverts on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00007
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	North
Date	05/24/2016
Time	1025
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of surface water from sample location AC-ESI-08, located at the area of discharge of the first surface water impoundment/slough on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00008
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	North
Date	05/24/2016
Time	1030
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of sediment from sample location AC-ESI-08, located at the area of discharge of the first surface water impoundment/slough on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00009
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	North
Date	05/24/2016
Time	1032
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Sample location AC-ESI-08, located at the area of discharge of the first surface water impoundment/slough on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00010
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	1135
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Sample location AC-ESI-07, located in the area where stream flow enters the first surface water impoundment/slough on Ingevity property.

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Logbook Photo #	DSC00011
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	1032
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-07, where stream flow enters the first surface water impoundment/slough on Ingevity property.

This document was prepared by CSS-Dynamac, expressly for EPA. It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

Logbook Photo #	DSC00012
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	1140
Photographer	K. Berecz (START-EPA)
Witness	S. Wells (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-07, where stream flow enters the first surface water impoundment/slough on Ingevity property.

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Logbook Photo #	DSC00013
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/24/2016
Time	1327
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-06, located down gradient of the PPE along a perennial stream leading to the surface water impoundment/slough on Ingevity property.

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Logbook Photo #	DSC00014
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/24/2016
Time	1329
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-06, down gradient of the PPE along a perennial stream leading to the surface water impoundment/slough on Ingevity property.

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Logbook Photo #	DSC00015
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/24/2016
Time	1331
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-06, down gradient of the PPE along a perennial stream leading to the surface water impoundment/slough on Ingevity property.

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Logbook Photo #	DSC00016
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/24/2016
Time	1348
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-05, where drainage/overland flow discharges from the culvert on Ingevity property.

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Logbook Photo #	DSC00017
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	05/24/2016
Time	1349
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-05, where drainage/overland flow discharges from the culvert on Ingevity property.

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Logbook Photo #	DSC00018
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	South
Date	05/24/2016
Time	1352
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-05, where drainage/overland flow discharges from the culvert on Ingevity property.

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Logbook Photo #	DSC00019
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	05/24/2016
Time	1405
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of surface water at sample location AC-ESI-03, located on tributary stream up gradient of PPE and drainage/overland flow pathway on Ingevity Property.

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Logbook Photo #	DSC00020
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southwest
Date	05/24/2016
Time	1407
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-03, located on tributary stream up gradient of PPE and drainage/overland flow pathway on Ingevity Property.

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Logbook Photo #	DSC00021
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	South
Date	05/24/2016
Time	1413
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-03, located on tributary stream up gradient of PPE and drainage/overland flow pathway on Ingevity Property.

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Logbook Photo #	DSC00022
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/24/2016
Time	1413
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-04, located on dry tributary stream up gradient of PPE and drainage/overland flow pathway on Ingevity Property.

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Logbook Photo #	DSC00023
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/24/2016
Time	1414
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-04, located on dry tributary stream up gradient of PPE and drainage/overland flow pathway on Ingevity Property.

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Logbook Photo #	DSC00024
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	West
Date	05/25/2016
Time	0837
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-02, located on-site along the drainage/overland flow pathway at the culvert.

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Logbook Photo #	DSC00025
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northwest
Date	05/25/2016
Time	0839
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-02, the on-site drainage/overland flow pathway at the culvert.

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Logbook Photo #	DSC00026
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northeast
Date	05/25/2016
Time	0842
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Sample location AC-ESI-01, located on-site along the drainage/overland flow pathway in the culvert/ditch area.

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Logbook Photo #	DSC00027
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Northeast
Date	05/25/2016
Time	0843
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Collection of sediment at sample location AC-ESI-01, on-site along the drainage/overland flow pathway in the culvert/ditch area.

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Logbook Photo #	DSC00028
US EPA ID / Task Order Number	LAN000604293 09/DYNAMAC-077-16-001
Site	American Creosote DeRidder
Location Address	Post Plant Road
City, State	DeRidder, Louisiana
County	Beauregard
Direction/Orientation	Southeast
Date	05/25/2016
Time	0902
Photographer	K. Berecz (START-EPA)
Witness	M. VanShoubrek (START-EPA)

Description:

Alligator weed, indicative of wetlands, present in second surface water impoundment on Ingevity property

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APPENDIX C

COPY OF START-3 LOGBOOKS

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EXPANDED SITE INSPECTION – SITE RECONNAISSANCE

COPY OF START-3 LOGBOOK

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CERCLIS # LAN000604293
TDD # 9/DYNAMAC-077-16-001
LDEQ AI # 44487

"Rite in the Rain"®
ALL-WEATHER
JOURNAL
No. 390N

AMERICAN CREOSOTE - DERIDDER
POST PLANT ROAD
BEAUREGARD PARISH
DERIDDER, LA 70634

EXPANDED SITE INSPECTION (ESI)
SITE RECONNAISSANCE
APRIL 12, 2016

CONTENTS

PAGE	REFERENCE	DATE

SITE NAME: AMERICAN CREOSOTE-DERIDDER

TYPE OF ACTIVITY: EXPANDED SITE INSPECTION

SITE LOCATION: POST PLANT RD APPROX 1/2 MILE SOUTH OF THE INTERSECTION OF POST PLANT RD AND THE RAILROAD CROSSING. DERIDDER, BEAUREGARD PARISH LA 70634

(SITE ENTRANCE): LAT: 30.830934°N*
LONG: -93.277876°W*

*COORDINATES TAKEN APPROX. MID-SITE ALONG THE WESTERN PROPERTY BORDER

CERCLIS NO ID: LAN000604293
SSID NO: A6KM

EPA SAM: BRENDA COOK
LDEQ: KEITH HORN

START TDD #: 9/DYNAMAC-077-16-0001

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ALL-WEATHER WRITING PAPER

ALL-WEATHER
HORIZONTAL LINE BOOK

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Address 1323 COLUMBIA DR; STE. 307
RICHARDSON TX 75081

Phone 214-575-3344

Project AMERICAN CREOSOTE- DERIDDER
POST PLANT ROAD
BEAUREGARD PARISH
DERIDDER, LA 70634

This book is printed on "Rite in the Rain" All-Weather Writing Paper - A unique paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. For best results, use a pencil or an all-weather pen.

Specifications for this book:

Page Pattern		Cover Options	
Left Page	Right Page	Polydura Cover	Fabrikoid Cover
Lined	Lined	Item No. 390N	Item No. 370

04/12/2016 AMERICAN CREOSOTE KBERECZ
WEATHER: PARTLY CLOUDY WITH A HIGH NEAR 76°F. A 20% CHANCE OF RAIN. WIND NNE 9 MPH. HUMIDITY 70%. ——— KB
0730 EPA (BRENDA COOK), LDEQ (KEITH HORN) AND START (KAREN BERECZ) DEPART FOR SITE - AMERICAN CREOSOTE IN DERIDDER LA ON POST PLANT RD TO MEET QRI REPRESENTATIVE - SHAUN WELLS TO PERFORM AN OFF-SITE RECONNAISSANCE PRIOR TO CONDUCTING AN EXPANDED SITE INSPECTION (ESI)
0834 ARRIVE AT PARK ON MARTIN LUTHER KING ROAD IN DERIDDER, LA TO MEET SHAUN WELLS. MEET SHAUN WELLS AND TO SITE. ——— KB
0910 ARRIVE AT SOUTH END OF SITE. ENTER SITE OFF CROSBY ROAD AND HEAD NORTH ON RAILROAD ACCESS TO CULVERTS / DITCH ON SITE ——— KB
0918 PHOTO DSC01333; NE; LOOKING AT CULVERT LOCATED ON SOUTH END OF PROPERTY
0919 PHOTO DSC01334; E; LOOKING AT CULVERT LOCATED ON SOUTH END OF PROPERTY
0930 PHOTO DSC01335; NW; LOOKING AT CULVERT LOCATED ON SOUTH END OF PROPERTY; EAST SIDE OF RAILROAD TRACK. ——— KB
0937 PHOTO DSC01336; W; LOOKING AT CULVERT ——— KB

04/12/2016 AMERICAN CREOSOTE K BERECZ
LOCATED ON SOUTH END OF PROPERTY; WEST RAILROAD TRACK. ——— KB
1020 WALK NORTH ALONG RAILROAD TRACK TO CULVERT / DITCH LOCATED APPROXIMATELY 1/2 WAY ALONG WEST PROPERTY ——— KB
1025 PHOTO DSC01337; SE; BUTTRESS OF WATER OAK TREE IN CULVERT / DITCH AREA ON SITE PROPERTY ——— KB
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1028; PHOTO DSC01341; SW; WETLAND VEGETATION IN CULVERT / DITCH ON SITE PROPERTY ——— KB
1029 PHOTO DSC01342; SW; WETLAND VEGETATION IN CULVERT / DITCH ON SITE PROPERTY ——— KB
1029 PHOTO DSC01343; W; WETLAND AREA ALONG CULVERT / DITCH ON SITE PROPERTY ——— KB

04/12/2016 AMERICAN CREOSOTE KBERECZ

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04/12/2016 AMERICAN CREOSOTE KBERECZ

NATIONAL PROPERTY ——— KB

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1044 PHOTO DSC01355; W; WATER IN CULVERT/DITCH ON INTERNATIONAL PAPER PROPERTY; WEST SIDE OF RAILROAD TRACK.

1044 PHOTO DSC01356; SW; WATER IN CULVERT/DITCH ON INTERNATIONAL PAPER PROPERTY. WEST SIDE OF RAILROAD TRACK.

1047 PHOTO DSC01357; SE; WETLAND AREA IN CULVERT/DITCH AREA ON IP PROPERTY. ——— KB

1047 PHOTO DSC01358; W; WETLAND AREA IN CULVERT/DITCH AREA ON IP PROPERTY. ——— KB

1048 PHOTO DSC01359; SW; SLOUGH ON IP PROPERTY; CONFLUENCE OF CULVERT/DITCH AND TRIBUTARY ——— KB

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1048 PHOTO DSC01361, E; CULVERT/ DITCH ON IP PROPERTY. KB

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1048 PHOTO DSC01363, N; TRIBUTARY LOCATED ON IP PROPERTY KB

1051 PHOTO DSC01364, W, WETLAND VEGETATION IN CULVERT/DITCH ON IP PROPERTY

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1052 PHOTO DSC01366, W WETLAND VEGETATION IN CULVERT/DITCH ON IP PROPERTY

1108 PHOTO DSC01367, E; WETLAND VEGETATION ON SITE PROPERTY IN DITCH AREA AT CULVERT. KB

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1145 BREAK FOR LUNCH KB

1255 RETURN TO SITE. CHECK OUT SURFACE WATER IMPOUNDMENT ON IP PROPERTY FROM CROSBY ROAD KB

1319 PHOTO DSC01369; S; SURFACE WATER IMPOUNDMENT SOUTH OF CROSBY ROAD ON IP KB

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PROPERTY KB

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1327 PHOTO DSC01376; S; SURFACE WATER IMPOUNDMENT ON IP PROPERTY; KB

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CROSBY ROAD ——— KB

1328 PHOTO DSC01377, SE) SURFACE WATER IMPOUNDMENT SOUTH OF CROSBY ROAD ON IP PROPERTY. ——— KB

1345 DEPART SITE FOR DERIDDER PUBLIC LIBRARY WITH EPA LDEQ AND QRI ——— KB

1400 ARRIVE AT DERIDDER PUBLIC LIBRARY BEGAN RESEARCH ON SITE. ——— KB

1600 DEPART DERIDDER PUBLIC LIBRARY FOR CITY MUSEUM. ——— KB

1615 DERIDDER MUSEUM CLOSED. EXPLORE TOWN. ——— KB

1725 DEPART SITE. END OF SITE RECONNAISSANCE ——— KB

KB 04/12/2016

EXPANDED SITE INSPECTION
COPY OF START-3 LOGBOOK

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AMERICAN CREOSOTE - DERIDDER
POST PLANT ROAD
BEAUREGARD PARISH
DERIDDER, LA 70634

CERCLIS No.: LAN000604293
TDD #: 9/DYNAMAC-077-16-01
EXPANDED SITE INSPECTION (ESI)
MAY 24, 2016 - MAY 25, 2016

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POST PLANT ROAD
BEAUREGARD PARISH
DERIDDER, LA 70634
CERCLIS No.: LAN000604293
TDD #: 9/DYNAMAC-077-16-001
START DATE: MAY 24, 2016
END DATE: MAY 25, 2016

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PAGE	REFERENCE	DATE
	SITE NAME: AMERICAN CREOSOTE-DERIDDER	
	TYPE OF ACTIVITY: ESI (EXPANDED SITE INSPECTION)	
	SITE LOCATION: POST PLANT ROAD BEAUREGARD PARISH DERIDDER, LA 70634	
	SITE CONTACT: MR. JAMES LOPEZ (LEGAL COUNSEL) 337-948-8201	
	CERCLIS NO.: LAN000604293 SSID NO.: A6KM	
	EPA SAM: BRENDA NIXON COOK BRET KENDRICK	
	START TDD#: 9/DYNAMAC-077-16-001	
	TYPE OF DOCUMENTATION: LOGBOOK OF SAMPLING ACTIVITY.	

MAY 24 2016 AMERICAN CREOSOTE KBERECZ

WEATHER: PARTLY SUNNY. A 20% CHANCE OF SHOWERS AND THUNDERSTORMS IN THE AFTERNOON. HIGHS IN THE UPPER 80S. SOUTHEAST WINDS 5-10 MPH. ——— KB

0650 KAREN BERECZ & STEVE COWAN (START) DEPART FOR SITE - AMERICAN CREOSOTE IN DERIDDER, LA. ——— KB

0754 ARRIVE AT SITE, POST PLANT ROAD, DERIDDER, BEAUREGARD PARISH LA. MEET UP WITH SUBCONTRACTOR QRI PERSONNEL, MICAH VANSHOUBREK AND SEAN WELLS, ALONG WITH EPA SAM BRET KENDRICK.

0800 AS A GROUP, START, EPA AND QRI, DRIVE OVER TO INGEVITY PROPERTY TO MEET WITH COMPANY REPRESENTATIVE ARLENE BROOKS.

0805 MEET WITH ARLENE BROOKS, INGEVITY WHO WE WILL BE SPLITTING SAMPLES WITH AND WHO WILL MONITOR START WHILE SAMPLES ARE BEING COLLECTED ON INGEVITY PROPERTY. ARLENE GIVES START PERMISSION TO USE THE PAVILLION ~~AS~~ ON INVEGITY PROPERTY AS A COMMAND POST. ——— KB

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0910 CREW (QRI, START, EPA, INGEVITY) DEP. ——— KB

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ART TO BEGIN COLLECTING SAMPLES ON INGEVITY PROPERTY. ——— KB

0922 ARRIVE AT LOCATION ~~AS~~ AC-ESI-10.

QRI BEGINS TO COLLECT SURFACE WATER SAMPLES AT LOCATION WHERE THE SECOND SURFACE WATER IMPOUNDMENT DISCHARGES ON INGEVITY PROPERTY. GPS LOCATION ~~AS~~ LAT: 30.8279820323° LONG: -93.2817370894° (TAKEN WITH GPS & MAP TOOLBOX FOR iOS VERSION 2.2.1; COPYRIGHT 2010-2013 ALIDAMA SOFTWARE INC.). ——— KB

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1132 ARRIVE AT FIRST SURFACE WATER IMPOUNDMENT (SLOUGH) ON INGEVITY PROPERTY, SAMPLE LOCATION AC-ESI-07. QRI COLLECTS SURFACE WATER IN 5-GALLON BUCKET TO TAKE WATER QUALITY MEASUREMENTS: pH = 6.47; CONDUCTIVITY = 0.106; TDS = 0.069; DO = 6.57; TURBIDITY = 17.2; TEMPERATURE = 27.67; ORP = 85. QRI COLLECTS SURFACE WATER AND SEDIMENT SAMPLES AT LOCATION WHERE OFF-SITE OVERLAND/RUNOFF FLOW ENTERS INTO THE FIRST SURFACE WATER IMPOUNDMENT (SLOUGH) ON INGEVITY PROPERTY. GPS LOCATION: LAT: 30.828842041° LONG: -93.280837096°. QRI ALSO COLLECTS DUPLICATE SEDIMENT SAMPLE AT AC-ESI-07. ——— KB

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MENTS: pH = 7.25; CONDUCTIVITY: 0.179; TDS = 0.116; DO = 5.65; TURBIDITY = 12.8; TEMPERATURE = 26.62°C; ORP = 75; QRI COLLECTS SURFACE WATER AND COLLOCATED SEDIMENT SAMPLE AT LOCATION WHERE OFF-SITE DRAINAGE/OVERLAND FLOW PATHWAY DISCHARGES FROM THE CULVERT/DRAINAGE PIPE. LOCATION SAMPLE AC-ESI-05. GPS LOCATION: LAT: 30.830304008°; LONG: -93.2783933351 KB

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QUALITY MEASUREMENTS: pH = 7.05; CONDUCTIVITY: 0.170; TDS: 0.110 DO = 3.86; TURBIDITY = 15.0; TEMPERATURE = 25.36°C; ORP = 96. QRI COLLECTS SURFACE WATER AND COLLOCATED SEDIMENT SAMPLES AT LOCATION OFF-SITE UP GRADIENT OF DRAINAGE/OVERLAND FLOW PATHWAY ON TRIBUTARY ON INGEVITY PROPERTY. GPS LOCATION: LAT: 30.830662663 1°; LONG: -93.278553106 5°. ——— KB

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PHOTO DSC 00022; 1413; LOOKING NW, SAMPLE LOCATION AC-ESI-04. OFF-SITE LOCATION UP GRADIENT OF DRAINAGE/OVERLAND FLOW PATHWAY ON TRIBUTARY ON INGEVITY PROPERTY. NO SURFACE WATER PRESENT. —KB

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1427 DEPART LOCATION TO RETURN TO COMMAND POST. ——— KB

1442 RETURN TO COMMAND POST TO DROP OFF SAMPLES COLLECTED FOR START TO PROCESS. ——— KB

1500 BEGIN PROCESSING/PACKAGING OF SURFACE WATER AND SEDIMENT SAMPLES FOR SHIPMENT TO HOUSTON LABORATORY.

1538 COMPLETE PROCESSING OF SAMPLES FOR SHIPMENT TO LAB. BEGIN TO PACK UP EQUIPMENT AND SUPPLIES. ——— KB

1545 DEPART SITE FOR FEDEX LOCATION ——— KB

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1730 END OF DAY. ——— KB

KB 05/24/2016

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0700 DEPART FOR SITE WITH START STEVE COWAN. ——— KB
0757 ARRIVE AT SITE INGEVITY PARK LOCATED ON CROSBY ROAD (AT INTERSECTION OF CROSBY ROAD AND INGEVITY PLANT ENTRANCE) IN DERIDDER LA. ——— KB
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0837 ARRIVE AT SAMPLE LOCATION AC- ——— KB

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ESI-02, AN ON-SITE LOCATION AT THE CULVERT ALONG THE DRAINAGE/OVERLAND FLOW PATHWAY. NO SURFACE WATER PRESENT AT SAMPLE LOCATION AC-ESI-02 THUS NO WATER QUALITY MEASUREMENTS OR SURFACE WATERS SAMPLES ARE TAKEN. QRI COLLECTS SEDIMENT SAMPLE AT CULVERT ON-SITE WHERE DRAINAGE/OVERLAND FLOW PATHWAY EXISTS. GPS LOCATION: LAT: 30.830294174° LONG: -93.278178723°. ——— KB
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——— KB

MAY 25 2016 AMERICAN CREOSOTE KBERECZ
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MAY 25, 2016 AMERICAN CREOSOTE KBERECZ
QUALITY MEASUREMENTS: pH = 6.75; CONDUCTIVITY = 0.121; TDS = 0.080; TURBIDITY = 17.2; TEMPERATURE = 26.67°C; ORP = 116. GPS LOCATION: LAT: 30.82848770465°; LONG: -93.2810561825°. ——— KB
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0931 RETURN TO COMMAND POST TO HELP START COWAN PROCESS SAMPLES FOR SHIPMENT TO HOUSTON LABORATORY, AND PACK UP EQUIPMENT AND SUPPLIES — KB
1004 QRI DEPARTS SITE. ALL SAMPLING COMPLETED. ——— KB
——— KB

MAY 25, 2016 AMERICAN CREOSOTE KBERECZ
1025 START COWAN RELINQUISHS SPLIT SAMPLES (AC-ESI-03 TO AC-ESI-10) TO ARLENE BROOKS OF INGEVITY. SAMPLES RELINQUISHED TO ARLENE BROOKS CONSIST OF ONLY SPLIT SAMPLES COLLECTED ON INGEVITY PROPERTY. ——— KB
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1425 ARRIVE AT FED-EX LOCATION IN LAKE CHARLES LA. DROP OFF COOLER FOR SHIPMENT TO HOUSTON LABORATORY. END OF FIELD DAY. ——— KB

KB 05/25/2016

* NOTE: FIRST SURFACE WATER IMPOUNDMENT IS ALSO REFERRED TO AS A SLOUGH IN DOCUMENTATION.

American Creosote - ESI Sample Locations

GPS Coordinates:

Location	Latitude	Longitude
AC-ESI-10	30.8279820323°	-93.2817370894°
AC-ESI-09	30.8284770465°	-93.2810561825°
AC-ESI-08	30.8285068695°	-93.2809091456°
AC-ESI-07	30.8288422041°	-93.2808370796°
AC-ESI-06	30.8304177044°	-93.2787189702°
AC-ESI-05	30.8303040088°	-93.2783933357°
AC-ESI-04	30.8305938262°	-93.2786913138°
AC-ESI-03	30.8306626631°	-93.2785531065°
AC-ESI-02	30.8302941174°	-93.2781781723°
AC-ESI-01	30.8302632126°	-93.2780845688°

All GPS coordinates were taken using an iPhone 5S and the Apple application: GPS & MAP TOOLBOX. GPS & MAP TOOLBOX FOR iOS; Version: 2.2.1; Copyright © 2010-2013 Audama Software, Inc. All Rights Reserved. Information: Seller - Audama Software, Inc.; Category - Navigation; Updated - April 24, 2013; Version - 2.2.1; Size - 2.3 MB

American Creosote Visitors During ESI:

Bret Kendrick (EPA SAM)
972-979-9694
Kendrick.bret@epa.gov

Keith Horn (LDEQ)
225-223-1216
Keith.Horn@La.Gov)

Arlene Brooks (Ingevity)
337-462-4212 work / 337-540-0068 cell
arlene.brooks@ingevity.com

Micah VanSmoubrek (QRI)
225-347-7036
msch@qri.com

Sean Wells (QRI)
225-202-2700

Steve Cowan (Start-Dynamac)
214-205-6651
scowan@css-dynmac.com

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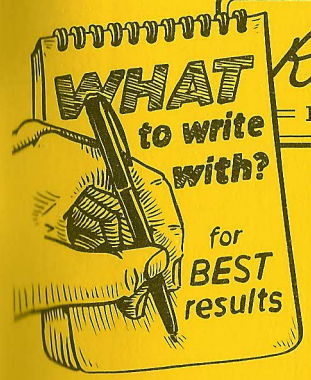


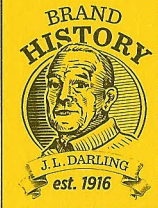
Yes, *Rite in the Rain* is a wood-based & recyclable paper, but unlike plain paper... **it won't turn to mush when exposed to:**

ALL-WEATHER TOUGH!

USE WET OR DRY
most pens stop writing when wet
- ALL PENCILS
- *RITE IN THE RAIN PENS*
- WAX MARKERS
- CRAYONS
- OIL PASTELS / PAINT

WHEN DRY ONLY
what you write won't wash off
- PERMANENT MARKERS
- STANDARD BALLPOINTS

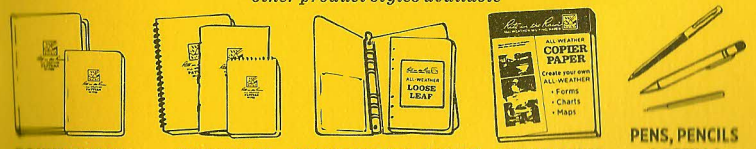
WON'T WORK
water-based inks bead off sheet
- GEL PENS
- MOST HIGHLIGHTERS
- FOUNTAIN PENS
- WATER COLORS
- ACRYLIC PAINT



The *Rite in the Rain* story began nearly a century ago in the forests of the Great Northwest. Entrepreneur, Jerry Darling, recognized the logging industry's need for a durable material that could be written on and survive in poor weather conditions. Jerry developed a special coating that created a unique moisture shield on the hand-dipped sheets of paper that he and his wife, Mary, processed at their home. From humble beginnings our first all-weather paper was born! Over the many years we've perfected and patented our environmentally responsible coating process. Still located in Tacoma, our continued mission is to provide innovative products for professionals and enthusiasts who brave the outdoors.

EQUIPPING MULTIPLE INDUSTRIES WORLD-WIDE

other product styles available



BOUND BOOKS | NOTEBOOKS | LOOSE LEAF & PLANNERS | COPIER PAPER | PENS, PENCILS & REFILLS

RiteintheRain.com

©JL DARLING LLC
2614 PACIFIC HWY EAST,
TACOMA, WA 98424 USA

MADE IN USA | RITE GREEN | Archival

APPENDIX D

CHAIN OF CUSTODY RECORD

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

USEPA
DateShipped: 5/24/2016
CarrierName: FedEx
AirbillNo: 776361594468

CHAIN OF CUSTODY RECORD
Site #: A6KM
Contact Name: Karen Berecz
Contact Phone: 2145635347

No: 6-052416-135956-0008
Cooler #: 1
Lab: EPA-Houston
Lab Phone: 281-983-2137

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	AC-ESI-SD07	PPE	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD08	Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD09	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	Y
	AC-ESI-SD10	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD11	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SW07	PPE	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW08	Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW09	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	6	32 oz Amber	Wet ice	Y
	AC-ESI-SW10	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW11	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N

Special Instructions: 35-day TAT on Data

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	[signature]	5/24/16	FedEx	5/24	1800				[signature]	5/25/16	9:50

TempBlank = 5°C

USEPA
DateShipped: 5/25/2016
CarrierName: FedEx
AirbillNo: 776368734110

CHAIN OF CUSTODY RECORD
Site #: A6KM
Contact Name: Karen Berecz
Contact Phone: 214.563.5347

No: 6-052516-100947-0011
Cooler #: 1 (5-25-2016)
Lab: EPA-Houston
Lab Phone: 281-983-2137

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	AC-ESI-SD01	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD02	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD03	Background	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD04	Background	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD05	Drainage,Overland Flow	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD06	Drainage,Overland Flow	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SW03	Background	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW05	Drainage,Overland Flow	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW06	Drainage,Overland Flow	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N

Special Instructions: 35-day TAT for Results

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Stan Cain	5/25/16	FedEx	5/25/16	1500				J Cross	5/26/16	9:25

Temp Blank = 8°C

APPENDIX E

GLOBAL POSITIONING SYSTEM (GPS)
SAMPLE LOCATION COORDINATES

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

LATITUDE (°N)	LONGITUDE (°W)	LOCATION ID	MATRIX	GPS TIMESTAMP	RCVR TYPE	APPLICATION USED
		AC-ESI-11	Duplicate of AC-ESI-08 & AC-ESI-07			
30.8279820323°	-93.2817370894°	AC-ESI-10	Surface Water/Sediment	Tue, May 24, 2016 9:25 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8284770465°	-93.2810561825°	AC-ESI-09	Surface Water/Sediment	Tue, May 24, 2016 9:51 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8288422041°	-93.2808370796°	AC-ESI-07	Surface Water/Sediment	Tue, May 24, 2016 11:38 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8285068695°	-93.2809091456°	AC-ESI-08	Surface Water/Sediment	Tue, May 24, 2016 11:46 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8304177044°	-93.2787189702°	AC-ESI-06	Surface Water/Sediment	Tue, May 24, 2016 1:31 PM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.830304008°	-93.2783933357°	AC-ESI-05	Surface Water/Sediment	Tue, May 24, 2016 1:51 PM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8305938262°	-93.2786913138°	AC-ESI-04	Sediment	Tue, May 24, 2016 2:16 PM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8306626631°	-93.2785531065°	AC-ESI-03	Surface Water/Sediment	Tue, May 24, 2016 2:18 PM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.8302941174°	-93.2781781723°	AC-ESI-02	Sediment	Wed, May 25, 2016 8:41 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1
30.830263212°	-93.278084568°	AC-ESI-01	Sediment	Wed, May 25, 2016 8:46 AM	iPhone 5s	GPS & Map Toolbox for iOS; Version2.2.1

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APPENDIX F

ACCESS AGREEMENTS

This document was prepared by CSS-Dynamac, expressly for EPA.
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

CONSENT FOR ACCESS TO PROPERTY

Name of Owner: MWV Specialty Chemicals
Attn: Plant Manager or Environment Coordinator

Address/Description of Property: *(See attached Parcel Map)*

Physical Address: 400 Crosby Road, DeRidder, Louisiana 70634

I consent to the officers, employees, contractors, and authorize representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to my property for the taking of such soil, water, air and/or other samples as may be determined by the EPA to be necessary.

I recognize that these actions by the EPA are undertaken in accordance with its response and enforcement authorities contained in the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

I certify that I have the authority to grant this permission as the owner or the authorized representative of the owner of the property described above. This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

5/5/16
Date

Signature

Daniel Kyle - Plant Manager
Print Name / Title

337-462-4248
Phone Number

Analytical Results

Place a check mark in the appropriate space. Please note that if no selection is made, the EPA will assume that you do not wish to be provided with the analytical results.

(X) Please provide me with a copy of the analytical results for my property.

( ) I do not wish to receive a copy of the analytical results for my property.

(X) We would like to collect split samples.

GUGLIELMO, LOPEZ, TUTTLE, HUNTER & JARRELL, L.L.P.

ATTORNEYS AT LAW
POST OFFICE DRAWER 1329
OPELOUSAS, LOUISIANA 70571-1329

JAMES T. GUGLIELMO
JAMES C. LOPEZ
GINA BRADLEY TUTTLE
H. DOUGLAS HUNTER
CHARLES M. JARRELL
ALEX L. ANDRUS, III
****
JENNIFER LYNN HART
MISTI LANDRY BRYANT

306 E. NORTH STREET

TELEPHONE:
(337) 948-8201

FACSIMILE:
(337) 942-4521

May 18, 2015

RECEIVED
15 MAY 26 PM 2:11
SUPERFUND DIV.
DIRECTOR'S OFC.

Attn: Brenda Nixon Cook
U. S. EPA, Region 6
1445 Ross Ave., Suite 1200
Mail Code: 6SF-TR
Dallas, Texas 75202-2733

RE: Request for Site Access at American Creosote Deridder
Located between Post Plant Road to the North and Crosby
Road to the South in Deridder, Beauregard Parish, La

Dear Brenda:

Attached is the Consent for Access to Property on behalf of Central Manufacturing Company, Inc. in Deridder, Louisiana. As noted, please provide us with a copy of your results. Also, please acknowledge your receipt of this correspondence. We made several attempts to send this by facsimile transmission but received an error code.

Very truly yours,

GUGLIELMO, LOPEZ, TUTTLE,
HUNTER & JARRELL, LLP

James C. Lopez

JCL:kft
Enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

CONSENT FOR ACCESS TO PROPERTY

Name of Owner: Central Manufacturing Company, Inc.
Attn: Mr. James Lopez, Legal Council

Address/Description of Property: *(See attached Parcel Map)*

Physical Address: Post Plant Road, DeRidder, Beauregard Parish, Louisiana (30.831693 North, -93.276863 West)

Legal Description: Section 3, Township 3 South, Range 9 West of the Louisiana Meridian

I consent to the officers, employees, contractors, and authorize representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to my property for the taking of such soil, water, air and/or other samples as may be determined by the EPA to be necessary.

I recognize that these actions by the EPA are undertaken in accordance with its response and enforcement authorities contained in the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

I certify that I have the authority to grant this permission as the owner or the authorized representative of the owner of the property described above. This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

CENTRAL MANUFACTURING COMPANY, INC.

May 14, 2015
Date

BY: G. Patricia B. James
Signature

G. Patricia B. James, President
Print Name / Title

James C. Lopez, Attorney (337) 948-8201
Phone Number

Analytical Results

Place a check mark in the appropriate space. Please note that if no selection is made, the EPA will assume that you do not wish to be provided with the analytical results.

(X) Please provide me with a copy of the analytical results for my property.

( ) I do not wish to receive a copy of the analytical results for my property.

05/05/2015 15:21 STAPLES 1250 PAGE 04

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TEXAS 75202-2733

CONSENT FOR ACCESS TO PROPERTY

Name of Owner: **Timber Rock Railroad (Watco Companies)**
Attn: Douglas Marshall, General Manager

Address/Description of Property: ***(See attached Beauregard Parish Assessor Map)***

Physical Address: **Timber Rock Railroad Right-of-Way(ROW) between Post Plant Road to the North and Crosby Road to the South, DeRidder, Beauregard Parish, Louisiana (ROW adjacent to GPS 30.831693 North, -93.276863 West)**

Legal Description: **Timber Rock Railroad ROW in Section 3, Township 3 South, Range 9 West of the Louisiana Meridian**

I consent to the officers, employees, contractors, and authorize representatives of the United States Environmental Protection Agency (EPA) entering and having continued access to my property for the taking of such soil, water, air and/or other samples as may be determined by the EPA to be necessary.

I recognize that these actions by the EPA are undertaken in accordance with its response and enforcement authorities contained in the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 *et seq.*

I certify that I have the authority to grant this permission as the owner or the authorized representative of the owner of the property described above. This written permission is given by me voluntarily with knowledge of my right to refuse and without threats or promises of any kind.

6-2-15
Date

Signature

Douglas Marshall / General Manager
Print Name / Title

409-385-6611
Phone Number

Analytical Results

Place a check mark in the appropriate space. Please note that if no selection is made, the EPA will assume that you do not wish to be provided with the analytical results.

(✓) Please provide me with a copy of the analytical results for my property.

( ) I do not wish to receive a copy of the analytical results for my property.

APPENDIX G

EPA HOUSTON LABORATORY ANALYTICAL DATA REPORT

This document was prepared by CSS-Dynamac, expressly for EPA.
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6 Laboratory
Environmental Services Branch
10625 Fallstone Road, Houston, TX 77099
Phone: (281)983-2100 Fax: (281)983-2248

Final Analytical Report

Site Name ----------	American Creosote Deridder
Sample Collection Date(s)--	05/24/16 - 05/25/16
Contact----------	Brenda Cook (6SF-RA)
Report Date----------	07/21/16
Project #----------	16SF083
Work Order(s)----------	1605032 1605035

Analyses included in this report:

ABN CLP Low Level

Report Narrative

Semi-volatile Liquids:

The surrogate Terphenyl-d14 fails high in several samples. There were no associated targets except for Pyrene. This analyte is qualified as estimated in samples 1605035-08 and 1605035-09 due to failure.

Benzo(a)pyrene is qualified as estimated in source sample 1605032-08 due to inconsistent concentrations found in the MS/MSD (0.2 ug/L and 0.1 ug/L, respectively).

Batch B6E2603: The surrogate Terphenyl-d14 fails low in the BS and high in the MSD. The failures should not affect the data.

Semi-volatile Solids:

Benzoic acid and Carbazole, where reported, are qualified as estimated due to chromatography problems with calibration. Additionally, some Benzoic acid results exceeded the calibration range and could not be reported from other dilutions. Benzoic acid is also qualified as a tentative identification in sample 1605035-04 because a matching spectrum could not be obtained.

Benzaldehyde, where reported, is qualified as estimated due to degradation of this analyte in multi-component solutions.

Report Narrative (cont'd)

The surrogate Terphenyl-d14 fails high in samples 1605032-02, 1605035-01, and 1605035-05; and the surrogate 2,4,6-Tribromophenol fails high in 1605035-01. All failures are due to suppression of the associated internal standard due to high concentrations of target analytes. The associated targets were reported from dilutions where the surrogate and internal standards are acceptable except for Pyrene, Benzo(a)anthracene, and Chrysene in sample 1605035-01. These analytes are qualified as estimated due to failure of Terphenyld-14 in the dilutions.

Phenanthrene and Fluoranthene are qualified as estimated in source sample 1605032-03 due to inconsistent concentrations found between sample results and MS/MSD.

Pentachlorophenol is qualified as estimated in sample 1605032-04 due to failure of this analyte in the associated continuing calibration verification.

Batch B6E3103: Butyl benzyl phthalate was found above the reporting limit in the blank but was not found in any sample.

Standard procedures for quality assurance and quality control were followed in the analysis and reporting of the sample results. The results apply only to the samples tested. This final report should only be reproduced in full.

The reporting limit (sometimes referred to as a quantitation limit) is defined as the lowest concentration at which an analyte can be reliably measured and reported without qualification. Reporting limits are adjusted for sample size, dilution, and matrix interference. Concentrations below the reporting limit are reported as non-detects or <RL.

Report Approvals:

Richard McMillin
Region 6 Laboratory Technical Manager

David W. McQuiddy
Region 6 Laboratory Branch Chief

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 6 Environmental Services Branch Laboratory

10625 Fallstone Road
Houston, Texas 77099

Sample Receipt and Disposal

Site Name: American Creosote Deridder Project Number: 16SF083

Data Management Coordinator: Christy Warren

/ /

Data Management Coordinator Signature Date

Date Transmitted: _____/_____/_____

Please have the U.S. EPA Project Manager/Officer call the Data Management Coordinator at 3-2137 for any comments or questions.

Please sign and date this form below and return it with any comments to:

Christy Warren
Data Management Coordinator
Region 6 Laboratory
6MD-HS

_____/____/_____
Received by and Date

Comments:

The laboratory routinely disposes of samples 90 days after all analyses have been completed. If you have a need to hold these samples in custody longer than 90 days, please sign below.

_____ _____
Signature Date

Please provide a reason for holding:

Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Sample Type	Date Collected	Date Received
AC-ESI-SD07	1605032-01	Solid	5/24/16 11:42	05/25/16 09:50
AC-ESI-SD08	1605032-02	Solid	5/24/16 10:30	05/25/16 09:50
AC-ESI-SD09	1605032-03	Solid	5/24/16 10:00	05/25/16 09:50
AC-ESI-SD10	1605032-04	Solid	5/24/16 9:28	05/25/16 09:50
AC-ESI-SD11	1605032-05	Solid	5/24/16 11:45	05/25/16 09:50
AC-ESI-SW07	1605032-06	Liquid	5/24/16 11:36	05/25/16 09:50
AC-ESI-SW08	1605032-07	Liquid	5/24/16 10:25	05/25/16 09:50
AC-ESI-SW09	1605032-08	Liquid	5/24/16 9:49	05/25/16 09:50
AC-ESI-SW10	1605032-09	Liquid	5/24/16 9:22	05/25/16 09:50
AC-ESI-SW11	1605032-10	Liquid	5/24/16 10:28	05/25/16 09:50
AC-ESI-SD01	1605035-01	Solid	5/25/16 8:43	05/26/16 09:25
AC-ESI-SD02	1605035-02	Solid	5/25/16 8:39	05/26/16 09:25
AC-ESI-SD03	1605035-03	Solid	5/24/16 14:07	05/26/16 09:25
AC-ESI-SD04	1605035-04	Solid	5/24/16 14:14	05/26/16 09:25
AC-ESI-SD05	1605035-05	Solid	5/25/16 13:52	05/26/16 09:25
AC-ESI-SD06	1605035-06	Solid	5/24/16 13:31	05/26/16 09:25
AC-ESI-SW03	1605035-07	Liquid	5/24/16 14:05	05/26/16 09:25
AC-ESI-SW05	1605035-08	Liquid	5/24/16 13:49	05/26/16 09:25
AC-ESI-SW06	1605035-09	Liquid	5/24/16 0:00	05/26/16 09:25

Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

QC SUMMARY REPORT

ABN CLP Low Level

B6E2603

Liquid

Samples: 8 **ReExts: 0**

LAB NUMBER	SOURCE
B6E2603-BLK1	
B6E2603-BS1	
B6E2603-MS1	1605032-08
B6E2603-MSD1	1605032-08

B6E3103

Solid

Samples: 11 **ReExts: 0**

LAB NUMBER	SOURCE
B6E3103-BLK1	
B6E3103-BS1	
B6E3103-BS2	
B6E3103-MS1	1605032-03
B6E3103-MSD1	1605032-03

Solids, Dry Weight

B6E3104

Solid

Samples: 11 **ReExts: 0**

LAB NUMBER	SOURCE
B6E3104-DUP1	1605035-06

Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-01 **Station ID: AC-ESI-SD07**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.327g
%Solids: 49.71

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	740		50.7	29-100	05/31/16	06/02/16
Phenol-d5	955		65.3	37-100	"	"
2-Chlorophenol-d4	849		58.1	33-100	"	"
1,2-Dichlorobenzene-d4	415		42.6	28-100	"	"
Nitrobenzene-d5	555		57.0	28-100	"	"
2-Fluorobiphenyl	684		70.2	37-110	"	"
2,4,6-Tribromophenol	1,840		126	41-137	"	"
Terphenyl-d14	849		87.2	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		97.4	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**271**		97.4	"	"	"
Acetophenone (98-86-2)	U		390	"	"	"
Anthracene (120-12-7)	**1,070**		97.4	"	"	"
Atrazine (1912-24-9)	U		390	"	"	"
Benzaldehyde (100-52-7)	U		390	"	"	"
Benzoic acid (65-85-0)	**4,770**	**J**	974	"	"	"
Benzo (a) anthracene (56-55-3)	**1,630**		390	"	"	"
Benzo (a) pyrene (50-32-8)	**3,080**		390	"	"	"
Benzo (b) fluoranthene (205-99-2)	**7,660**		3,900	10	"	06/23/16
Benzo (g,h,i) perylene (191-24-2)	**2,510**		779	2	"	06/24/16
Benzo (k) fluoranthene (207-08-9)	**4,270**		3,900	10	"	06/23/16
Benzyl alcohol (100-51-6)	U		390	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		390	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		390	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		390	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		390	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		390	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		390	"	"	"
Butyl benzyl phthalate (85-68-7)	U		390	"	"	"
Carbazole (86-74-8)	U		390	"	"	"
Caprolactam (105-60-2)	U		390	"	"	"
4-Chloroaniline (106-47-8)	U		390	"	"	"

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Region 6 Laboratory

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-01 **Station ID: AC-ESI-SD07**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.327g
%Solids: 49.71

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		390	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		390	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		390	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		390	"	"	"
Chrysene (218-01-9)	**3,360**		390	"	"	"
Dibenzofuran (132-64-9)	U		390	"	"	"
Dibenz (a,h) anthracene (53-70-3)	**1,140**		390	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		390	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		390	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		390	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		390	"	"	"
2,4-Dichlorophenol (120-83-2)	U		390	"	"	"
Diethyl phthalate (84-66-2)	U		390	"	"	"
2,4-Dimethylphenol (105-67-9)	U		390	"	"	"
Dimethyl phthalate (131-11-3)	U		390	"	"	"
2,4-Dinitrophenol (51-28-5)	U		1,950	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		390	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		390	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		1,950	"	"	"
Di-n-butyl phthalate (84-74-2)	U		390	"	"	"
Di-n-octyl phthalate (117-84-0)	U		390	"	"	"
Fluoranthene (206-44-0)	**1,580**		97.4	"	"	"
Fluorene (86-73-7)	U		97.4	"	"	"
Hexachlorobenzene (118-74-1)	U		195	"	"	"
Hexachlorobutadiene (87-68-3)	U		390	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		390	"	"	"
Hexachloroethane (67-72-1)	U		390	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**2,740**		390	"	"	"
Isophorone (78-59-1)	U		390	"	"	"
1-Methylnaphthalene (90-12-0)	U		97.4	"	"	"
2-Methylnaphthalene (91-57-6)	U		97.4	"	"	"
2-Methylphenol (95-48-7)	U		390	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		390	"	"	"
Naphthalene (91-20-3)	**154**		97.4	"	"	"
2-Nitroaniline (88-74-4)	U		779	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-01 **Station ID: AC-ESI-SD07**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.327g
%Solids: 49.71

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		779	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		779	"	"	"
Nitrobenzene (98-95-3)	U		390	"	"	"
2-Nitrophenol (88-75-5)	U		390	"	"	"
4-Nitrophenol (100-02-7)	U		1,170	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		390	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		390	"	"	"
Pentachlorophenol (87-86-5)	U		195	"	"	"
Phenanthrene (85-01-8)	**339**		97.4	"	"	"
Phenol (108-95-2)	U		390	"	"	"
Pyrene (129-00-0)	**2,340**		97.4	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		390	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		390	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		390	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-02 **Station ID: AC-ESI-SD08**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 5.149g
%Solids: 78.39

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	1,200		64.5	29-100	05/31/16	06/02/16
Phenol-d5	1,400		75.2	37-100	"	"
2-Chlorophenol-d4	1,330		71.6	33-100	"	"
1,2-Dichlorobenzene-d4	679		54.8	28-100	"	"
Nitrobenzene-d5	818		66.0	28-100	"	"
2-Fluorobiphenyl	919		74.2	37-110	"	"
2,4,6-Tribromophenol	2,250		121	41-137	"	"
Terphenyl-d14	1,820		147 **#**	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	**476**		124	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**1,160**		124	"	"	"
Acetophenone (98-86-2)	U		496	"	"	"
Anthracene (120-12-7)	**2,700**		124	"	"	"
Atrazine (1912-24-9)	U		496	"	"	"
Benzaldehyde (100-52-7)	U		496	"	"	"
Benzoic acid (65-85-0)	U		1,240	"	"	"
Benzo (a) anthracene (56-55-3)	**29,100**		4,960	10	"	06/23/16
Benzo (a) pyrene (50-32-8)	**36,500**		4,960	"	"	"
Benzo (b) fluoranthene (205-99-2)	**63,400**		49,600	100	"	06/23/16
Benzo (g,h,i) perylene (191-24-2)	**14,400**		4,960	10	"	06/23/16
Benzo (k) fluoranthene (207-08-9)	**37,400**		37,200	100	"	06/23/16
Benzyl alcohol (100-51-6)	U		496	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		496	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		496	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		496	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		496	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		496	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		496	"	"	"
Butyl benzyl phthalate (85-68-7)	U		496	"	"	"
Carbazole (86-74-8)	**669**	**J**	496	"	"	"
Caprolactam (105-60-2)	U		496	"	"	"
4-Chloroaniline (106-47-8)	U		496	"	"	"
2-Chloronaphthalene (91-58-7)	U		496	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-02 **Station ID: AC-ESI-SD08**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 5.149g
%Solids: 78.39

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chlorophenol (95-57-8)	U		496	1	05/31/16	06/02/16
4-Chlorophenyl phenyl ether (7005-72-3)	U		496	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		496	"	"	"
Chrysene (218-01-9)	**29,700**		4,960	10	"	06/23/16
Dibenzofuran (132-64-9)	**602**		496	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**9,660**		4,960	10	"	06/23/16
1,2-Dichlorobenzene (95-50-1)	U		496	1	"	06/02/16
1,3-Dichlorobenzene (541-73-1)	U		496	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		496	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		496	"	"	"
2,4-Dichlorophenol (120-83-2)	U		496	"	"	"
Diethyl phthalate (84-66-2)	U		496	"	"	"
2,4-Dimethylphenol (105-67-9)	U		496	"	"	"
Dimethyl phthalate (131-11-3)	U		496	"	"	"
2,4-Dinitrophenol (51-28-5)	U		2,480	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		496	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		496	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		2,480	"	"	"
Di-n-butyl phthalate (84-74-2)	U		496	"	"	"
Di-n-octyl phthalate (117-84-0)	U		496	"	"	"
Fluoranthene (206-44-0)	**29,100**		1,240	10	"	06/23/16
Fluorene (86-73-7)	**367**		124	1	"	06/02/16
Hexachlorobenzene (118-74-1)	U		248	"	"	"
Hexachlorobutadiene (87-68-3)	U		496	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		496	"	"	"
Hexachloroethane (67-72-1)	U		496	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**17,700**		4,960	10	"	06/23/16
Isophorone (78-59-1)	U		496	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	**243**		124	"	"	"
2-Methylnaphthalene (91-57-6)	**659**		124	"	"	"
2-Methylphenol (95-48-7)	U		496	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		496	"	"	"
Naphthalene (91-20-3)	**1,630**		124	"	"	"
2-Nitroaniline (88-74-4)	U		991	"	"	"
3-Nitroaniline (99-09-2)	U		991	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-02 **Station ID: AC-ESI-SD08**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 5.149g
%Solids: 78.39

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Nitroaniline (100-01-6)	U		991	1	05/31/16	06/02/16
Nitrobenzene (98-95-3)	U		496	"	"	"
2-Nitrophenol (88-75-5)	U		496	"	"	"
4-Nitrophenol (100-02-7)	U		1,490	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		496	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		496	"	"	"
Pentachlorophenol (87-86-5)	U		248	"	"	"
Phenanthrene (85-01-8)	**2,150**		124	"	"	"
Phenol (108-95-2)	U		496	"	"	"
Pyrene (129-00-0)	**41,900**		1,240	10	"	06/23/16
1,2,4-Trichlorobenzene (120-82-1)	U		496	1	"	06/02/16
2,4,5-Trichlorophenol (95-95-4)	U		496	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		496	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-03 **Station ID: AC-ESI-SD09**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.306g
%Solids: 57.78

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	702		55.7	29-100	05/31/16	06/02/16
Phenol-d5	862		68.4	37-100	"	"
2-Chlorophenol-d4	806		64.0	33-100	"	"
1,2-Dichlorobenzene-d4	359		42.8	28-100	"	"
Nitrobenzene-d5	475		56.6	28-100	"	"
2-Fluorobiphenyl	621		74.0	37-110	"	"
2,4,6-Tribromophenol	1,540		122	41-137	"	"
Terphenyl-d14	781		93.0	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		84.0	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	U		84.0	"	"	"
Acetophenone (98-86-2)	U		336	"	"	"
Anthracene (120-12-7)	**92.4**		84.0	"	"	"
Atrazine (1912-24-9)	U		336	"	"	"
Benzaldehyde (100-52-7)	**547**	**J**	336	"	"	"
Benzoic acid (65-85-0)	**8,640**	**J**	840	"	"	"
Benzo (a) anthracene (56-55-3)	U		336	"	"	"
Benzo (a) pyrene (50-32-8)	**378**		336	"	"	"
Benzo (b) fluoranthene (205-99-2)	**1,190**		336	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		336	"	"	"
Benzo (k) fluoranthene (207-08-9)	**416**		336	"	"	"
Benzyl alcohol (100-51-6)	U		336	"	"	"
1,1'-Biphenyl (92-52-4)	U		336	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		336	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		336	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		336	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		336	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		336	"	"	"
Butyl benzyl phthalate (85-68-7)	U		336	"	"	"
Carbazole (86-74-8)	U		336	"	"	"
Caprolactam (105-60-2)	U		336	"	"	"
4-Chloroaniline (106-47-8)	U		336	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-03 **Station ID: AC-ESI-SD09**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.306g
%Solids: 57.78

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		336	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		336	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		336	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		336	"	"	"
Chrysene (218-01-9)	**521**		336	"	"	"
Dibenzofuran (132-64-9)	U		336	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		336	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		336	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		336	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		336	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		336	"	"	"
2,4-Dichlorophenol (120-83-2)	U		336	"	"	"
Diethyl phthalate (84-66-2)	U		336	"	"	"
2,4-Dimethylphenol (105-67-9)	U		336	"	"	"
Dimethyl phthalate (131-11-3)	U		336	"	"	"
2,4-Dinitrophenol (51-28-5)	U		1,680	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		336	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		336	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		1,680	"	"	"
Di-n-butyl phthalate (84-74-2)	U		336	"	"	"
Di-n-octyl phthalate (117-84-0)	U		336	"	"	"
Fluoranthene (206-44-0)	**464**	**J**	84.0	"	"	"
Fluorene (86-73-7)	U		84.0	"	"	"
Hexachlorobenzene (118-74-1)	U		168	"	"	"
Hexachlorobutadiene (87-68-3)	U		336	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		336	"	"	"
Hexachloroethane (67-72-1)	U		336	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		336	"	"	"
Isophorone (78-59-1)	U		336	"	"	"
1-Methylnaphthalene (90-12-0)	U		84.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		84.0	"	"	"
2-Methylphenol (95-48-7)	U		336	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		336	"	"	"
Naphthalene (91-20-3)	**134**		84.0	"	"	"
2-Nitroaniline (88-74-4)	U		672	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-03 **Station ID: AC-ESI-SD09**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.306g
%Solids: 57.78

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		672	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		672	"	"	"
Nitrobenzene (98-95-3)	U		336	"	"	"
2-Nitrophenol (88-75-5)	U		336	"	"	"
4-Nitrophenol (100-02-7)	U		1,010	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		336	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		336	"	"	"
Pentachlorophenol (87-86-5)	U		168	"	"	"
Phenanthrene (85-01-8)	**161**	**J**	84.0	"	"	"
Phenol (108-95-2)	U		336	"	"	"
Pyrene (129-00-0)	**494**		84.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		336	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		336	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		336	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-04 **Station ID: AC-ESI-SD10**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.331g
%Solids: 56.27

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	1,060		82.1	29-100	05/31/16	06/02/16
Phenol-d5	1,200		93.1	37-100	"	"
2-Chlorophenol-d4	1,140		88.4	33-100	"	"
1,2-Dichlorobenzene-d4	607		70.6	28-100	"	"
Nitrobenzene-d5	726		84.4	28-100	"	"
2-Fluorobiphenyl	743		86.4	37-110	"	"
2,4,6-Tribromophenol	1,600		124	41-137	"	"
Terphenyl-d14	872		101	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		86.0	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	U		86.0	"	"	"
Acetophenone (98-86-2)	U		344	"	"	"
Anthracene (120-12-7)	**227**		86.0	"	"	"
Atrazine (1912-24-9)	U		344	"	"	"
Benzaldehyde (100-52-7)	**1,210**	**J**	344	"	"	"
Benzoic acid (65-85-0)	**16,500**	**J**	860	"	"	"
Benzo (a) anthracene (56-55-3)	U		344	"	"	"
Benzo (a) pyrene (50-32-8)	**513**		482	2	"	06/24/16
Benzo (b) fluoranthene (205-99-2)	**1,740**		688	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**468**		447	"	"	"
Benzo (k) fluoranthene (207-08-9)	**1,030**		688	"	"	"
Benzyl alcohol (100-51-6)	U		344	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		344	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		344	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		344	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		344	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		344	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		344	"	"	"
Butyl benzyl phthalate (85-68-7)	U		344	"	"	"
Carbazole (86-74-8)	U		344	"	"	"
Caprolactam (105-60-2)	U		344	"	"	"
4-Chloroaniline (106-47-8)	U		344	"	"	"

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Region 6 Laboratory

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-04 **Station ID: AC-ESI-SD10**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.331g
%Solids: 56.27

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		344	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		344	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		344	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		344	"	"	"
Chrysene (218-01-9)	**769**		344	"	"	"
Dibenzofuran (132-64-9)	U		344	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		344	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		344	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		344	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		344	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		344	"	"	"
2,4-Dichlorophenol (120-83-2)	U		344	"	"	"
Diethyl phthalate (84-66-2)	U		344	"	"	"
2,4-Dimethylphenol (105-67-9)	U		344	"	"	"
Dimethyl phthalate (131-11-3)	U		344	"	"	"
2,4-Dinitrophenol (51-28-5)	U		1,720	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		344	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		344	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		1,720	"	"	"
Di-n-butyl phthalate (84-74-2)	U		344	"	"	"
Di-n-octyl phthalate (117-84-0)	U		344	"	"	"
Fluoranthene (206-44-0)	**645**		86.0	"	"	"
Fluorene (86-73-7)	U		86.0	"	"	"
Hexachlorobenzene (118-74-1)	U		172	"	"	"
Hexachlorobutadiene (87-68-3)	U		344	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		344	"	"	"
Hexachloroethane (67-72-1)	U		344	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**547**		516	2	"	06/24/16
Isophorone (78-59-1)	U		344	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	U		86.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		86.0	"	"	"
2-Methylphenol (95-48-7)	U		344	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		344	"	"	"
Naphthalene (91-20-3)	U		86.0	"	"	"
2-Nitroaniline (88-74-4)	U		688	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-04 **Station ID: AC-ESI-SD10**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.331g
%Solids: 56.27

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		688	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		688	"	"	"
Nitrobenzene (98-95-3)	U		344	"	"	"
2-Nitrophenol (88-75-5)	U		344	"	"	"
4-Nitrophenol (100-02-7)	U		1,030	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		344	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		344	"	"	"
Pentachlorophenol (87-86-5)	**182**	**J**	172	"	"	"
Phenanthrene (85-01-8)	**153**		86.0	"	"	"
Phenol (108-95-2)	U		344	"	"	"
Pyrene (129-00-0)	**796**		86.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		344	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		344	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		344	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-05 **Station ID: AC-ESI-SD11**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.37g
%Solids: 43.57

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	1,320		79.7	29-100	05/31/16	06/02/16
Phenol-d5	1,490		90.0	37-100	"	"
2-Chlorophenol-d4	1,410		84.7	33-100	"	"
1,2-Dichlorobenzene-d4	739		66.8	28-100	"	"
Nitrobenzene-d5	910		82.2	28-100	"	"
2-Fluorobiphenyl	954		86.2	37-110	"	"
2,4,6-Tribromophenol	2,050		123	41-137	"	"
Terphenyl-d14	1,230		111	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	**268**		111	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**480**		111	"	"	"
Acetophenone (98-86-2)	U		443	"	"	"
Anthracene (120-12-7)	**2,300**		111	"	"	"
Atrazine (1912-24-9)	U		443	"	"	"
Benzaldehyde (100-52-7)	U		443	"	"	"
Benzoic acid (65-85-0)	**9,910**	**J**	1,110	"	"	"
Benzo (a) anthracene (56-55-3)	**2,780**		443	"	"	"
Benzo (a) pyrene (50-32-8)	**4,900**		2,210	5	"	06/23/16
Benzo (b) fluoranthene (205-99-2)	**13,500**		2,210	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**4,160**		2,210	"	"	"
Benzo (k) fluoranthene (207-08-9)	**7,430**		2,210	"	"	"
Benzyl alcohol (100-51-6)	U		443	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		443	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		443	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		443	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		443	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		443	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		443	"	"	"
Butyl benzyl phthalate (85-68-7)	U		443	"	"	"
Carbazole (86-74-8)	U		443	"	"	"
Caprolactam (105-60-2)	U		443	"	"	"
4-Chloroaniline (106-47-8)	U		443	"	"	"
2-Chloronaphthalene (91-58-7)	U		443	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-05 **Station ID: AC-ESI-SD11**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.37g
%Solids: 43.57

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chlorophenol (95-57-8)	U		443	1	05/31/16	06/02/16
4-Chlorophenyl phenyl ether (7005-72-3)	U		443	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		443	"	"	"
Chrysene (218-01-9)	**6,060**		2,210	5	"	06/23/16
Dibenzofuran (132-64-9)	U		443	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**2,180**		2,100	5	"	06/23/16
1,2-Dichlorobenzene (95-50-1)	U		443	1	"	06/02/16
1,3-Dichlorobenzene (541-73-1)	U		443	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		443	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		443	"	"	"
2,4-Dichlorophenol (120-83-2)	U		443	"	"	"
Diethyl phthalate (84-66-2)	U		443	"	"	"
2,4-Dimethylphenol (105-67-9)	U		443	"	"	"
Dimethyl phthalate (131-11-3)	U		443	"	"	"
2,4-Dinitrophenol (51-28-5)	U		2,210	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		443	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		443	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		2,210	"	"	"
Di-n-butyl phthalate (84-74-2)	U		443	"	"	"
Di-n-octyl phthalate (117-84-0)	U		443	"	"	"
Fluoranthene (206-44-0)	**2,660**		111	"	"	"
Fluorene (86-73-7)	**261**		111	"	"	"
Hexachlorobenzene (118-74-1)	U		221	"	"	"
Hexachlorobutadiene (87-68-3)	U		443	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		443	"	"	"
Hexachloroethane (67-72-1)	U		443	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**5,680**		2,210	5	"	06/23/16
Isophorone (78-59-1)	U		443	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	**166**		111	"	"	"
2-Methylnaphthalene (91-57-6)	**480**		111	"	"	"
2-Methylphenol (95-48-7)	U		443	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		443	"	"	"
Naphthalene (91-20-3)	**1,380**		111	"	"	"
2-Nitroaniline (88-74-4)	U		885	"	"	"
3-Nitroaniline (99-09-2)	U		885	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-05 **Station ID: AC-ESI-SD11**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.37g
%Solids: 43.57

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Nitroaniline (100-01-6)	U		885	1	05/31/16	06/02/16
Nitrobenzene (98-95-3)	U		443	"	"	"
2-Nitrophenol (88-75-5)	U		443	"	"	"
4-Nitrophenol (100-02-7)	U		1,330	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		443	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		443	"	"	"
Pentachlorophenol (87-86-5)	U		221	"	"	"
Phenanthrene (85-01-8)	**925**		111	"	"	"
Phenol (108-95-2)	U		443	"	"	"
Pyrene (129-00-0)	**4,070**		111	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		443	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		443	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		443	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-06 **Station ID: AC-ESI-SW07**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 981ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	6.53		85.5	42-109	05/27/16	05/27/16
Phenol-d5	6.63		86.7	46-110	"	"
2-Chlorophenol-d4	6.76		88.4	47-103	"	"
1,2-Dichlorobenzene-d4	3.38		66.4	33-100	"	"
Nitrobenzene-d5	4.39		86.2	42-126	"	"
2-Fluorobiphenyl	4.28		84.0	50-104	"	"
2,4,6-Tribromophenol	8.50		111	59-142	"	"
Terphenyl-d14	6.39		125	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.0	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.0	"	"	"
Benzaldehyde (100-52-7)	U		2.0	"	"	"
Benzoic acid (65-85-0)	U		5.1	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.0	"	"	"
Benzyl alcohol (100-51-6)	U		2.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.0	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.0	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		2.0	"	"	"
Caprolactam (105-60-2)	U		2.0	"	"	"
4-Chloroaniline (106-47-8)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-06 **Station ID: AC-ESI-SW07**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 981ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.0	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.0	"	"	"
Chrysene (218-01-9)	U		2.0	"	"	"
Dibenzofuran (132-64-9)	U		2.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		2.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.0	"	"	"
Dimethyl phthalate (131-11-3)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.2	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.2	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.0	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.0	"	"	"
Hexachloroethane (67-72-1)	U		2.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.0	"	"	"
Isophorone (78-59-1)	U		2.0	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.0	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.0	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-06 **Station ID: AC-ESI-SW07**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 981ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.1	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.1	"	"	"
Nitrobenzene (98-95-3)	U		2.0	"	"	"
2-Nitrophenol (88-75-5)	U		2.0	"	"	"
4-Nitrophenol (100-02-7)	U		6.1	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.0	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.0	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.0	"	"	"

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Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-07 **Station ID: AC-ESI-SW08**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1003ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	5.78		77.3	42-109	05/27/16	05/27/16
Phenol-d5	5.67		75.9	46-110	"	"
2-Chlorophenol-d4	6.04		80.8	47-103	"	"
1,2-Dichlorobenzene-d4	3.18		63.8	33-100	"	"
Nitrobenzene-d5	4.02		80.6	42-126	"	"
2-Fluorobiphenyl	3.94		79.0	50-104	"	"
2,4,6-Tribromophenol	8.52		114	59-142	"	"
Terphenyl-d14	6.25		125	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.0	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.0	"	"	"
Benzaldehyde (100-52-7)	U		2.0	"	"	"
Benzoic acid (65-85-0)	U		5.0	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.0	"	"	"
Benzyl alcohol (100-51-6)	U		2.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.0	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.0	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		2.0	"	"	"
Caprolactam (105-60-2)	U		2.0	"	"	"
4-Chloroaniline (106-47-8)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-07 **Station ID: AC-ESI-SW08**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1003ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.0	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.0	"	"	"
Chrysene (218-01-9)	U		2.0	"	"	"
Dibenzofuran (132-64-9)	U		2.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		2.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.0	"	"	"
Dimethyl phthalate (131-11-3)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.0	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.0	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.0	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.0	"	"	"
Hexachloroethane (67-72-1)	U		2.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.0	"	"	"
Isophorone (78-59-1)	U		2.0	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.0	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.0	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-07 **Station ID: AC-ESI-SW08**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1003ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.0	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.0	"	"	"
Nitrobenzene (98-95-3)	U		2.0	"	"	"
2-Nitrophenol (88-75-5)	U		2.0	"	"	"
4-Nitrophenol (100-02-7)	U		6.0	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.0	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.0	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-08 **Station ID: AC-ESI-SW09**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 990ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	6.10		80.5	42-109	05/27/16	05/27/16
Phenol-d5	6.18		81.6	46-110	"	"
2-Chlorophenol-d4	6.24		82.4	47-103	"	"
1,2-Dichlorobenzene-d4	3.19		63.2	33-100	"	"
Nitrobenzene-d5	4.01		79.4	42-126	"	"
2-Fluorobiphenyl	3.74		74.0	50-104	"	"
2,4,6-Tribromophenol	8.68		115	59-142	"	"
Terphenyl-d14	6.32		125	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.0	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.0	"	"	"
Benzaldehyde (100-52-7)	U		2.0	"	"	"
Benzoic acid (65-85-0)	U		5.1	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.0	"	"	"
Benzo (a) pyrene (50-32-8)	**0.4**	**J**	0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.0	"	"	"
Benzyl alcohol (100-51-6)	U		2.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.0	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.0	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		2.0	"	"	"
Caprolactam (105-60-2)	U		2.0	"	"	"
4-Chloroaniline (106-47-8)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-08 **Station ID: AC-ESI-SW09**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 990ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.0	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.0	"	"	"
Chrysene (218-01-9)	U		2.0	"	"	"
Dibenzofuran (132-64-9)	U		2.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		2.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.0	"	"	"
Dimethyl phthalate (131-11-3)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.1	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.1	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.0	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.0	"	"	"
Hexachloroethane (67-72-1)	U		2.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.0	"	"	"
Isophorone (78-59-1)	U		2.0	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.0	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.0	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-08 **Station ID: AC-ESI-SW09**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 990ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.0	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.0	"	"	"
Nitrobenzene (98-95-3)	U		2.0	"	"	"
2-Nitrophenol (88-75-5)	U		2.0	"	"	"
4-Nitrophenol (100-02-7)	U		6.1	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.0	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.0	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-09 **Station ID: AC-ESI-SW10**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 945ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	6.05		76.3	42-109	05/27/16	05/27/16
Phenol-d5	6.10		76.8	46-110	"	"
2-Chlorophenol-d4	6.23		78.5	47-103	"	"
1,2-Dichlorobenzene-d4	3.14		59.4	33-100	"	"
Nitrobenzene-d5	4.08		77.2	42-126	"	"
2-Fluorobiphenyl	3.90		73.8	50-104	"	"
2,4,6-Tribromophenol	9.60		121	59-142	"	"
Terphenyl-d14	6.95		131 **#**	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.1	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.1	"	"	"
Benzaldehyde (100-52-7)	U		2.1	"	"	"
Benzoic acid (65-85-0)	U		5.3	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.1	"	"	"
Benzo (a) pyrene (50-32-8)	**0.3**		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.1	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.1	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.1	"	"	"
Benzyl alcohol (100-51-6)	U		2.1	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.1	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.1	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.1	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.1	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.1	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.1	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.1	"	"	"
Carbazole (86-74-8)	U		2.1	"	"	"
Caprolactam (105-60-2)	U		2.1	"	"	"
4-Chloroaniline (106-47-8)	U		2.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-09 **Station ID: AC-ESI-SW10**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 945ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.1	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.1	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.1	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.1	"	"	"
Chrysene (218-01-9)	U		2.1	"	"	"
Dibenzofuran (132-64-9)	U		2.1	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.1	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.1	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.1	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.1	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.1	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.1	"	"	"
Diethyl phthalate (84-66-2)	U		2.1	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.1	"	"	"
Dimethyl phthalate (131-11-3)	U		2.1	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.6	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.1	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.1	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.6	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.1	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.1	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.1	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.1	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.1	"	"	"
Hexachloroethane (67-72-1)	U		2.1	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.1	"	"	"
Isophorone (78-59-1)	U		2.1	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.1	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.1	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.2	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-09 **Station ID: AC-ESI-SW10**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 945ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.2	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.2	"	"	"
Nitrobenzene (98-95-3)	U		2.1	"	"	"
2-Nitrophenol (88-75-5)	U		2.1	"	"	"
4-Nitrophenol (100-02-7)	U		6.3	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.1	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.1	"	"	"
Pentachlorophenol (87-86-5)	U		1.1	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.1	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.1	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.1	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-10 **Station ID: AC-ESI-SW11**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 968ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	6.42		82.8	42-109	05/27/16	05/27/16
Phenol-d5	6.39		82.5	46-110	"	"
2-Chlorophenol-d4	6.64		85.7	47-103	"	"
1,2-Dichlorobenzene-d4	3.27		63.4	33-100	"	"
Nitrobenzene-d5	4.46		86.4	42-126	"	"
2-Fluorobiphenyl	4.15		80.4	50-104	"	"
2,4,6-Tribromophenol	8.71		112	59-142	"	"
Terphenyl-d14	7.04		136 **#**	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.1	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.1	"	"	"
Benzaldehyde (100-52-7)	U		2.1	"	"	"
Benzoic acid (65-85-0)	U		5.2	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.1	"	"	"
Benzo (a) pyrene (50-32-8)	U		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.1	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.1	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.1	"	"	"
Benzyl alcohol (100-51-6)	U		2.1	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.1	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.1	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.1	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.1	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.1	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.1	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.1	"	"	"
Carbazole (86-74-8)	U		2.1	"	"	"
Caprolactam (105-60-2)	U		2.1	"	"	"
4-Chloroaniline (106-47-8)	U		2.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-10 **Station ID: AC-ESI-SW11**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 968ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.1	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.1	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.1	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.1	"	"	"
Chrysene (218-01-9)	U		2.1	"	"	"
Dibenzofuran (132-64-9)	U		2.1	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.1	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.1	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.1	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.1	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.1	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.1	"	"	"
Diethyl phthalate (84-66-2)	U		2.1	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.1	"	"	"
Dimethyl phthalate (131-11-3)	U		2.1	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.3	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.1	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.1	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.3	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.1	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.1	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.1	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.1	"	"	"
Hexachloroethane (67-72-1)	U		2.1	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.1	"	"	"
Isophorone (78-59-1)	U		2.1	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.1	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.1	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605032-10 **Station ID: AC-ESI-SW11**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 968ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.1	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.1	"	"	"
Nitrobenzene (98-95-3)	U		2.1	"	"	"
2-Nitrophenol (88-75-5)	U		2.1	"	"	"
4-Nitrophenol (100-02-7)	U		6.2	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.1	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.1	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.1	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.1	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.1	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.1	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-01 **Station ID: AC-ESI-SD01**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.045g
%Solids: 65.54

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	8,240		75.2	29-100	05/31/16	06/02/16
Phenol-d5	9,720		88.8	37-100	"	"
2-Chlorophenol-d4	9,330		85.2	33-100	"	"
1,2-Dichlorobenzene-d4	4,640		63.6	28-100	"	"
Nitrobenzene-d5	5,710		78.2	28-100	"	"
2-Fluorobiphenyl	6,420		88.0	37-110	"	"
2,4,6-Tribromophenol	16,800		153 #	41-137	"	"
Terphenyl-d14	14,600		200 #	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	**24,400**		730	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**11,900**		730	"	"	"
Acetophenone (98-86-2)	U		2,920	"	"	"
Anthracene (120-12-7)	**191,000**		7,300	10	"	06/23/16
Atrazine (1912-24-9)	U		2,920	1	"	06/02/16
Benzaldehyde (100-52-7)	U		2,920	"	"	"
Benzoic acid (65-85-0)	**19,800**	**J**	7,300	"	"	"
Benzo (a) anthracene (56-55-3)	**851,000**	**J**	292,000	100	"	06/23/16
Benzo (a) pyrene (50-32-8)	**406,000**		292,000	"	"	"
Benzo (b) fluoranthene (205-99-2)	**847,000**		292,000	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**146,000**		29,200	10	"	06/23/16
Benzo (k) fluoranthene (207-08-9)	**607,000**		292,000	100	"	06/23/16
Benzyl alcohol (100-51-6)	U		2,920	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		2,920	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2,920	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2,920	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2,920	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2,920	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2,920	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2,920	"	"	"
Carbazole (86-74-8)	**225,000**	**J**	29,200	10	"	06/23/16
Caprolactam (105-60-2)	U		2,920	1	"	06/02/16
4-Chloroaniline (106-47-8)	U		2,920	"	"	"
2-Chloronaphthalene (91-58-7)	U		2,920	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-01 **Station ID: AC-ESI-SD01**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.045g
%Solids: 65.54

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chlorophenol (95-57-8)	U		2,920	1	05/31/16	06/02/16
4-Chlorophenyl phenyl ether (7005-72-3)	U		2,920	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2,920	"	"	"
Chrysene (218-01-9)	**1.20E6**	**J**	292,000	100	"	06/23/16
Dibenzofuran (132-64-9)	**22,800**		2,920	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**93,000**		29,200	10	"	06/23/16
1,2-Dichlorobenzene (95-50-1)	U		2,920	1	"	06/02/16
1,3-Dichlorobenzene (541-73-1)	U		2,920	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2,920	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2,920	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2,920	"	"	"
Diethyl phthalate (84-66-2)	U		2,920	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2,920	"	"	"
Dimethyl phthalate (131-11-3)	U		2,920	"	"	"
2,4-Dinitrophenol (51-28-5)	U		14,600	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2,920	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2,920	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		14,600	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2,920	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2,920	"	"	"
Fluoranthene (206-44-0)	**3.37E6**		730,000	1000	"	06/23/16
Fluorene (86-73-7)	**27,300**		730	1	"	06/02/16
Hexachlorobenzene (118-74-1)	U		1,460	"	"	"
Hexachlorobutadiene (87-68-3)	U		2,920	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2,920	"	"	"
Hexachloroethane (67-72-1)	U		2,920	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**188,000**		29,200	10	"	06/23/16
Isophorone (78-59-1)	U		2,920	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	**5,740**		730	"	"	"
2-Methylnaphthalene (91-57-6)	**5,640**		730	"	"	"
2-Methylphenol (95-48-7)	U		2,920	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2,920	"	"	"
Naphthalene (91-20-3)	**6,150**		730	"	"	"
2-Nitroaniline (88-74-4)	U		5,840	"	"	"
3-Nitroaniline (99-09-2)	U		5,840	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-01 **Station ID: AC-ESI-SD01**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.045g
%Solids: 65.54

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Nitroaniline (100-01-6)	U		5,840	1	05/31/16	06/02/16
Nitrobenzene (98-95-3)	U		2,920	"	"	"
2-Nitrophenol (88-75-5)	U		2,920	"	"	"
4-Nitrophenol (100-02-7)	U		8,760	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2,920	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2,920	"	"	"
Pentachlorophenol (87-86-5)	U		1,460	"	"	"
Phenanthrene (85-01-8)	**1.12E6**		73,000	100	"	06/23/16
Phenol (108-95-2)	U		2,920	1	"	06/02/16
Pyrene (129-00-0)	**1.96E6**	**J**	73,000	100	"	06/23/16
1,2,4-Trichlorobenzene (120-82-1)	U		2,920	1	"	06/02/16
2,4,5-Trichlorophenol (95-95-4)	U		2,920	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2,920	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-02 **Station ID: AC-ESI-SD02**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.006g
%Solids: 72.55

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	8,280		80.5	29-100	05/31/16	06/02/16
Phenol-d5	9,100		88.5	37-100	"	"
2-Chlorophenol-d4	8,850		86.1	33-100	"	"
1,2-Dichlorobenzene-d4	4,800		70.0	28-100	"	"
Nitrobenzene-d5	5,480		80.0	28-100	"	"
2-Fluorobiphenyl	5,740		83.8	37-110	"	"
2,4,6-Tribromophenol	12,600		123	41-137	"	"
Terphenyl-d14	7,260		106	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		685	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**3,750**		685	"	"	"
Acetophenone (98-86-2)	U		2,740	"	"	"
Anthracene (120-12-7)	**6,290**		685	"	"	"
Atrazine (1912-24-9)	U		2,740	"	"	"
Benzaldehyde (100-52-7)	U		2,740	"	"	"
Benzoic acid (65-85-0)	**13,600**	**J**	6,850	"	"	"
Benzo (a) anthracene (56-55-3)	**108,000**		27,400	10	"	06/23/16
Benzo (a) pyrene (50-32-8)	**118,000**		27,400	"	"	"
Benzo (b) fluoranthene (205-99-2)	**188,000**		27,400	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**45,400**		27,400	"	"	"
Benzo (k) fluoranthene (207-08-9)	**140,000**		27,400	"	"	"
Benzyl alcohol (100-51-6)	U		2,740	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		2,740	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2,740	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2,740	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2,740	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2,740	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2,740	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2,740	"	"	"
Carbazole (86-74-8)	U		2,740	"	"	"
Caprolactam (105-60-2)	U		2,740	"	"	"
4-Chloroaniline (106-47-8)	U		2,740	"	"	"
2-Chloronaphthalene (91-58-7)	U		2,740	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-02 **Station ID: AC-ESI-SD02**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.006g
%Solids: 72.55

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chlorophenol (95-57-8)	U		2,740	1	05/31/16	06/02/16
4-Chlorophenyl phenyl ether (7005-72-3)	U		2,740	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2,740	"	"	"
Chrysene (218-01-9)	**137,000**		27,400	10	"	06/23/16
Dibenzofuran (132-64-9)	U		2,740	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**19,400**		2,740	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2,740	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2,740	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2,740	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2,740	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2,740	"	"	"
Diethyl phthalate (84-66-2)	U		2,740	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2,740	"	"	"
Dimethyl phthalate (131-11-3)	U		2,740	"	"	"
2,4-Dinitrophenol (51-28-5)	U		13,700	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2,740	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2,740	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		13,700	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2,740	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2,740	"	"	"
Fluoranthene (206-44-0)	**110,000**		6,850	10	"	06/23/16
Fluorene (86-73-7)	U		685	1	"	06/02/16
Hexachlorobenzene (118-74-1)	U		1,370	"	"	"
Hexachlorobutadiene (87-68-3)	U		2,740	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2,740	"	"	"
Hexachloroethane (67-72-1)	U		2,740	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**57,100**		27,400	10	"	06/23/16
Isophorone (78-59-1)	U		2,740	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	U		685	"	"	"
2-Methylnaphthalene (91-57-6)	U		685	"	"	"
2-Methylphenol (95-48-7)	U		2,740	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2,740	"	"	"
Naphthalene (91-20-3)	U		685	"	"	"
2-Nitroaniline (88-74-4)	U		5,480	"	"	"
3-Nitroaniline (99-09-2)	U		5,480	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-02 **Station ID: AC-ESI-SD02**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 1.006g
%Solids: 72.55

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Nitroaniline (100-01-6)	U		5,480	1	05/31/16	06/02/16
Nitrobenzene (98-95-3)	U		2,740	"	"	"
2-Nitrophenol (88-75-5)	U		2,740	"	"	"
4-Nitrophenol (100-02-7)	U		8,220	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2,740	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2,740	"	"	"
Pentachlorophenol (87-86-5)	U		1,370	"	"	"
Phenanthrene (85-01-8)	**1,550**		685	"	"	"
Phenol (108-95-2)	U		2,740	"	"	"
Pyrene (129-00-0)	**135,000**		6,850	10	"	06/23/16
1,2,4-Trichlorobenzene (120-82-1)	U		2,740	1	"	06/02/16
2,4,5-Trichlorophenol (95-95-4)	U		2,740	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2,740	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-03 **Station ID: AC-ESI-SD03**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.387g
%Solids: 76.44

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	749		79.3	29-100	05/31/16	06/02/16
Phenol-d5	860		91.1	37-100	"	"
2-Chlorophenol-d4	811		85.9	33-100	"	"
1,2-Dichlorobenzene-d4	436		69.2	28-100	"	"
Nitrobenzene-d5	516		82.0	28-100	"	"
2-Fluorobiphenyl	538		85.4	37-110	"	"
2,4,6-Tribromophenol	1,170		123	41-137	"	"
Terphenyl-d14	596		94.6	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		63.0	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	U		63.0	"	"	"
Acetophenone (98-86-2)	U		252	"	"	"
Anthracene (120-12-7)	**89.4**		63.0	"	"	"
Atrazine (1912-24-9)	U		252	"	"	"
Benzaldehyde (100-52-7)	**515**	**J**	252	"	"	"
Benzoic acid (65-85-0)	**7,460**	**J**	630	"	"	"
Benzo (a) anthracene (56-55-3)	U		252	"	"	"
Benzo (a) pyrene (50-32-8)	U		252	"	"	"
Benzo (b) fluoranthene (205-99-2)	**859**		252	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		252	"	"	"
Benzo (k) fluoranthene (207-08-9)	**496**		252	"	"	"
Benzyl alcohol (100-51-6)	U		252	"	"	"
1,1'-Biphenyl (92-52-4)	U		252	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		252	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		252	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		252	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		252	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		252	"	"	"
Butyl benzyl phthalate (85-68-7)	U		252	"	"	"
Carbazole (86-74-8)	U		252	"	"	"
Caprolactam (105-60-2)	U		252	"	"	"
4-Chloroaniline (106-47-8)	U		252	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-03 **Station ID: AC-ESI-SD03**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.387g
%Solids: 76.44

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		252	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		252	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		252	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		252	"	"	"
Chrysene (218-01-9)	**429**		252	"	"	"
Dibenzofuran (132-64-9)	U		252	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		252	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		252	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		252	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		252	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		252	"	"	"
2,4-Dichlorophenol (120-83-2)	U		252	"	"	"
Diethyl phthalate (84-66-2)	U		252	"	"	"
2,4-Dimethylphenol (105-67-9)	U		252	"	"	"
Dimethyl phthalate (131-11-3)	U		252	"	"	"
2,4-Dinitrophenol (51-28-5)	U		1,260	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		252	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		252	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		1,260	"	"	"
Di-n-butyl phthalate (84-74-2)	U		252	"	"	"
Di-n-octyl phthalate (117-84-0)	U		252	"	"	"
Fluoranthene (206-44-0)	**261**		63.0	"	"	"
Fluorene (86-73-7)	U		63.0	"	"	"
Hexachlorobenzene (118-74-1)	U		126	"	"	"
Hexachlorobutadiene (87-68-3)	U		252	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		252	"	"	"
Hexachloroethane (67-72-1)	U		252	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		252	"	"	"
Isophorone (78-59-1)	U		252	"	"	"
1-Methylnaphthalene (90-12-0)	U		63.0	"	"	"
2-Methylnaphthalene (91-57-6)	U		63.0	"	"	"
2-Methylphenol (95-48-7)	U		252	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		252	"	"	"
Naphthalene (91-20-3)	**154**		63.0	"	"	"
2-Nitroaniline (88-74-4)	U		504	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-03 **Station ID: AC-ESI-SD03**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.387g
%Solids: 76.44

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		504	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		504	"	"	"
Nitrobenzene (98-95-3)	U		252	"	"	"
2-Nitrophenol (88-75-5)	U		252	"	"	"
4-Nitrophenol (100-02-7)	U		756	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		252	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		252	"	"	"
Pentachlorophenol (87-86-5)	U		126	"	"	"
Phenanthrene (85-01-8)	**105**		63.0	"	"	"
Phenol (108-95-2)	U		252	"	"	"
Pyrene (129-00-0)	**309**		63.0	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		252	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		252	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		252	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-04 **Station ID: AC-ESI-SD04**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.315g
%Solids: 67.21

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	697		64.4	29-100	05/31/16	06/02/16
Phenol-d5	803		74.3	37-100	"	"
2-Chlorophenol-d4	762		70.4	33-100	"	"
1,2-Dichlorobenzene-d4	394		54.6	28-100	"	"
Nitrobenzene-d5	509		70.6	28-100	"	"
2-Fluorobiphenyl	544		75.4	37-110	"	"
2,4,6-Tribromophenol	1,280		118	41-137	"	"
Terphenyl-d14	687		95.2	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		72.1	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	U		72.1	"	"	"
Acetophenone (98-86-2)	U		288	"	"	"
Anthracene (120-12-7)	U		72.1	"	"	"
Atrazine (1912-24-9)	U		288	"	"	"
Benzaldehyde (100-52-7)	U		288	"	"	"
Benzoic acid (65-85-0)	**1,250**	**NJ**	721	"	"	"
Benzo (a) anthracene (56-55-3)	U		288	"	"	"
Benzo (a) pyrene (50-32-8)	U		288	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		288	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		288	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		288	"	"	"
Benzyl alcohol (100-51-6)	U		288	"	"	"
1,1'-Biphenyl (92-52-4)	U		288	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		288	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		288	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		288	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		288	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		288	"	"	"
Butyl benzyl phthalate (85-68-7)	U		288	"	"	"
Carbazole (86-74-8)	U		288	"	"	"
Caprolactam (105-60-2)	U		288	"	"	"
4-Chloroaniline (106-47-8)	U		288	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-04 **Station ID: AC-ESI-SD04**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.315g
%Solids: 67.21

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		288	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		288	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		288	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		288	"	"	"
Chrysene (218-01-9)	U		288	"	"	"
Dibenzofuran (132-64-9)	U		288	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		288	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		288	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		288	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		288	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		288	"	"	"
2,4-Dichlorophenol (120-83-2)	U		288	"	"	"
Diethyl phthalate (84-66-2)	U		288	"	"	"
2,4-Dimethylphenol (105-67-9)	U		288	"	"	"
Dimethyl phthalate (131-11-3)	U		288	"	"	"
2,4-Dinitrophenol (51-28-5)	U		1,440	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		288	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		288	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		1,440	"	"	"
Di-n-butyl phthalate (84-74-2)	U		288	"	"	"
Di-n-octyl phthalate (117-84-0)	U		288	"	"	"
Fluoranthene (206-44-0)	U		72.1	"	"	"
Fluorene (86-73-7)	U		72.1	"	"	"
Hexachlorobenzene (118-74-1)	U		144	"	"	"
Hexachlorobutadiene (87-68-3)	U		288	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		288	"	"	"
Hexachloroethane (67-72-1)	U		288	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		288	"	"	"
Isophorone (78-59-1)	U		288	"	"	"
1-Methylnaphthalene (90-12-0)	U		72.1	"	"	"
2-Methylnaphthalene (91-57-6)	U		72.1	"	"	"
2-Methylphenol (95-48-7)	U		288	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		288	"	"	"
Naphthalene (91-20-3)	U		72.1	"	"	"
2-Nitroaniline (88-74-4)	U		577	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-04 **Station ID: AC-ESI-SD04**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 10.315g
%Solids: 67.21

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		577	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		577	"	"	"
Nitrobenzene (98-95-3)	U		288	"	"	"
2-Nitrophenol (88-75-5)	U		288	"	"	"
4-Nitrophenol (100-02-7)	U		865	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		288	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		288	"	"	"
Pentachlorophenol (87-86-5)	U		144	"	"	"
Phenanthrene (85-01-8)	U		72.1	"	"	"
Phenol (108-95-2)	U		288	"	"	"
Pyrene (129-00-0)	U		72.1	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		288	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		288	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		288	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-05 **Station ID: AC-ESI-SD05**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 5.033g
%Solids: 82.40

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	1,080		59.7	29-100	05/31/16	06/02/16
Phenol-d5	1,220		67.2	37-100	"	"
2-Chlorophenol-d4	1,190		65.6	33-100	"	"
1,2-Dichlorobenzene-d4	634		52.6	28-100	"	"
Nitrobenzene-d5	769		63.8	28-100	"	"
2-Fluorobiphenyl	815		67.6	37-110	"	"
2,4,6-Tribromophenol	2,090		116	41-137	"	"
Terphenyl-d14	1,700		141 **#**	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		121	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**815**		121	"	"	"
Acetophenone (98-86-2)	U		482	"	"	"
Anthracene (120-12-7)	**1,250**		121	"	"	"
Atrazine (1912-24-9)	U		482	"	"	"
Benzaldehyde (100-52-7)	U		482	"	"	"
Benzoic acid (65-85-0)	U		1,210	"	"	"
Benzo (a) anthracene (56-55-3)	**13,200**		4,820	10	"	06/23/16
Benzo (a) pyrene (50-32-8)	**14,000**		4,820	"	"	"
Benzo (b) fluoranthene (205-99-2)	**31,300**		4,820	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**7,910**		4,820	"	"	"
Benzo (k) fluoranthene (207-08-9)	**17,600**		4,820	"	"	"
Benzyl alcohol (100-51-6)	U		482	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		482	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		482	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		482	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		482	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		482	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		482	"	"	"
Butyl benzyl phthalate (85-68-7)	U		482	"	"	"
Carbazole (86-74-8)	U		482	"	"	"
Caprolactam (105-60-2)	U		482	"	"	"
4-Chloroaniline (106-47-8)	U		482	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-05 **Station ID: AC-ESI-SD05**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 5.033g
%Solids: 82.40

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		482	1	05/31/16	06/02/16
2-Chlorophenol (95-57-8)	U		482	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		482	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		482	"	"	"
Chrysene (218-01-9)	**18,400**		4,820	10	"	06/23/16
Dibenzofuran (132-64-9)	U		482	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**4,050**		3,620	10	"	06/23/16
1,2-Dichlorobenzene (95-50-1)	U		482	1	"	06/02/16
1,3-Dichlorobenzene (541-73-1)	U		482	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		482	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		482	"	"	"
2,4-Dichlorophenol (120-83-2)	U		482	"	"	"
Diethyl phthalate (84-66-2)	U		482	"	"	"
2,4-Dimethylphenol (105-67-9)	U		482	"	"	"
Dimethyl phthalate (131-11-3)	U		482	"	"	"
2,4-Dinitrophenol (51-28-5)	U		2,410	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		482	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		482	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		2,410	"	"	"
Di-n-butyl phthalate (84-74-2)	U		482	"	"	"
Di-n-octyl phthalate (117-84-0)	U		482	"	"	"
Fluoranthene (206-44-0)	**17,800**		1,210	10	"	06/23/16
Fluorene (86-73-7)	U		121	1	"	06/02/16
Hexachlorobenzene (118-74-1)	U		241	"	"	"
Hexachlorobutadiene (87-68-3)	U		482	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		482	"	"	"
Hexachloroethane (67-72-1)	U		482	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**9,160**		4,820	10	"	06/23/16
Isophorone (78-59-1)	U		482	1	"	06/02/16
1-Methylnaphthalene (90-12-0)	U		121	"	"	"
2-Methylnaphthalene (91-57-6)	**150**		121	"	"	"
2-Methylphenol (95-48-7)	U		482	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		482	"	"	"
Naphthalene (91-20-3)	**446**		121	"	"	"
2-Nitroaniline (88-74-4)	U		965	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-05 **Station ID: AC-ESI-SD05**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/25/16
Sample Wt: 5.033g
%Solids: 82.40

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		965	1	05/31/16	06/02/16
4-Nitroaniline (100-01-6)	U		965	"	"	"
Nitrobenzene (98-95-3)	U		482	"	"	"
2-Nitrophenol (88-75-5)	U		482	"	"	"
4-Nitrophenol (100-02-7)	U		1,450	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		482	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		482	"	"	"
Pentachlorophenol (87-86-5)	U		241	"	"	"
Phenanthrene (85-01-8)	**834**		121	"	"	"
Phenol (108-95-2)	U		482	"	"	"
Pyrene (129-00-0)	**21,200**		1,210	10	"	06/23/16
1,2,4-Trichlorobenzene (120-82-1)	U		482	1	"	06/02/16
2,4,5-Trichlorophenol (95-95-4)	U		482	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		482	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-06 **Station ID: AC-ESI-SD06**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 2.03g
%Solids: 70.08

Sample Qualifiers:

Surrogates

Analyte	Result µg/kg (dry)	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	3,040		57.6	29-100	05/31/16	06/02/16
Phenol-d5	3,370		63.9	37-100	"	"
2-Chlorophenol-d4	3,280		62.1	33-100	"	"
1,2-Dichlorobenzene-d4	1,790		50.8	28-100	"	"
Nitrobenzene-d5	2,080		59.2	28-100	"	"
2-Fluorobiphenyl	2,230		63.4	37-110	"	"
2,4,6-Tribromophenol	6,030		114	41-137	"	"
Terphenyl-d14	3,850		110	46-138	"	"

Targets

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	**471**		351	1	05/31/16	06/02/16
Acenaphthylene (208-96-8)	**1,450**		351	"	"	"
Acetophenone (98-86-2)	U		1,410	"	"	"
Anthracene (120-12-7)	**81,700**		3,510	10	"	06/23/16
Atrazine (1912-24-9)	U		1,410	1	"	06/02/16
Benzaldehyde (100-52-7)	U		1,410	"	"	"
Benzoic acid (65-85-0)	U		3,510	"	"	"
Benzo (a) anthracene (56-55-3)	**27,800**		14,100	10	"	06/23/16
Benzo (a) pyrene (50-32-8)	**29,000**		14,100	"	"	"
Benzo (b) fluoranthene (205-99-2)	**60,700**		14,100	"	"	"
Benzo (g,h,i) perylene (191-24-2)	**11,400**		11,200	"	"	"
Benzo (k) fluoranthene (207-08-9)	**29,600**		14,100	"	"	"
Benzyl alcohol (100-51-6)	U		1,410	1	"	06/02/16
1,1'-Biphenyl (92-52-4)	U		1,410	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		1,410	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		1,410	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		1,410	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		1,410	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		1,410	"	"	"
Butyl benzyl phthalate (85-68-7)	U		1,410	"	"	"
Carbazole (86-74-8)	**28,400**	**J**	14,100	10	"	06/23/16
Caprolactam (105-60-2)	U		1,410	1	"	06/02/16
4-Chloroaniline (106-47-8)	U		1,410	"	"	"
2-Chloronaphthalene (91-58-7)	U		1,410	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-06 **Station ID: AC-ESI-SD06**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 2.03g
%Solids: 70.08

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chlorophenol (95-57-8)	U		1,410	1	05/31/16	06/02/16
4-Chlorophenyl phenyl ether (7005-72-3)	U		1,410	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		1,410	"	"	"
Chrysene (218-01-9)	**36,500**		14,100	10	"	06/23/16
Dibenzofuran (132-64-9)	**3,700**		1,410	1	"	06/02/16
Dibenz (a,h) anthracene (53-70-3)	**5,540**		1,410	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		1,410	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		1,410	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		1,410	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		1,410	"	"	"
2,4-Dichlorophenol (120-83-2)	U		1,410	"	"	"
Diethyl phthalate (84-66-2)	U		1,410	"	"	"
2,4-Dimethylphenol (105-67-9)	U		1,410	"	"	"
Dimethyl phthalate (131-11-3)	U		1,410	"	"	"
2,4-Dinitrophenol (51-28-5)	U		7,030	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		1,410	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		1,410	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		7,030	"	"	"
Di-n-butyl phthalate (84-74-2)	U		1,410	"	"	"
Di-n-octyl phthalate (117-84-0)	U		1,410	"	"	"
Fluoranthene (206-44-0)	**34,800**		3,510	10	"	06/23/16
Fluorene (86-73-7)	**7,910**		351	1	"	06/02/16
Hexachlorobenzene (118-74-1)	U		703	"	"	"
Hexachlorobutadiene (87-68-3)	U		1,410	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		1,410	"	"	"
Hexachloroethane (67-72-1)	U		1,410	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	**10,300**		1,410	"	"	"
Isophorone (78-59-1)	U		1,410	"	"	"
1-Methylnaphthalene (90-12-0)	**485**		351	"	"	"
2-Methylnaphthalene (91-57-6)	**2,540**		351	"	"	"
2-Methylphenol (95-48-7)	U		1,410	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		1,410	"	"	"
Naphthalene (91-20-3)	**3,110**		351	"	"	"
2-Nitroaniline (88-74-4)	U		2,810	"	"	"
3-Nitroaniline (99-09-2)	U		2,810	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-06 **Station ID: AC-ESI-SD06**

Batch: B6E3103
Sample Type: Solid

Date Collected: 05/24/16
Sample Wt: 2.03g
%Solids: 70.08

Sample Qualifiers:

Targets (Continued)

Analyte (CAS Number)	Result µg/kg (dry)	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
4-Nitroaniline (100-01-6)	U		2,810	1	05/31/16	06/02/16
Nitrobenzene (98-95-3)	U		1,410	"	"	"
2-Nitrophenol (88-75-5)	U		1,410	"	"	"
4-Nitrophenol (100-02-7)	U		4,220	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		1,410	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		1,410	"	"	"
Pentachlorophenol (87-86-5)	U		703	"	"	"
Phenanthrene (85-01-8)	**16,400**		3,510	10	"	06/23/16
Phenol (108-95-2)	U		1,410	1	"	06/02/16
Pyrene (129-00-0)	**40,000**		3,510	10	"	06/23/16
1,2,4-Trichlorobenzene (120-82-1)	U		1,410	1	"	06/02/16
2,4,5-Trichlorophenol (95-95-4)	U		1,410	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		1,410	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-07 **Station ID: AC-ESI-SW03**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1000ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	4.24		56.5	42-109	05/27/16	05/27/16
Phenol-d5	4.34		57.9	46-110	"	"
2-Chlorophenol-d4	4.50		60.0	47-103	"	"
1,2-Dichlorobenzene-d4	2.47		49.4	33-100	"	"
Nitrobenzene-d5	3.59		71.8	42-126	"	"
2-Fluorobiphenyl	3.38		67.6	50-104	"	"
2,4,6-Tribromophenol	5.09		67.9	59-142	"	"
Terphenyl-d14	6.55		131 **#**	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.0	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.0	"	"	"
Benzaldehyde (100-52-7)	U		2.0	"	"	"
Benzoic acid (65-85-0)	U		5.0	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.0	"	"	"
Benzo (a) pyrene (50-32-8)	U		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.0	"	"	"
Benzyl alcohol (100-51-6)	U		2.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.0	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.0	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		2.0	"	"	"
Caprolactam (105-60-2)	U		2.0	"	"	"
4-Chloroaniline (106-47-8)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-07 **Station ID: AC-ESI-SW03**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1000ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.0	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.0	"	"	"
Chrysene (218-01-9)	U		2.0	"	"	"
Dibenzofuran (132-64-9)	U		2.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		2.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.0	"	"	"
Dimethyl phthalate (131-11-3)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		10.0	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		10.0	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.0	"	"	"
Fluoranthene (206-44-0)	U		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.0	"	"	"
Hexachloroethane (67-72-1)	U		2.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.0	"	"	"
Isophorone (78-59-1)	U		2.0	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.0	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.0	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		4.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-07 **Station ID: AC-ESI-SW03**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1000ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		4.0	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		4.0	"	"	"
Nitrobenzene (98-95-3)	U		2.0	"	"	"
2-Nitrophenol (88-75-5)	U		2.0	"	"	"
4-Nitrophenol (100-02-7)	U		6.0	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.0	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.0	"	"	"
Pyrene (129-00-0)	U		0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.0	"	"	"

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Environmental Protection Agency

Region 6 Laboratory

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-08 **Station ID: AC-ESI-SW05**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1036ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	5.12		70.7	42-109	05/27/16	05/27/16
Phenol-d5	5.15		71.2	46-110	"	"
2-Chlorophenol-d4	5.33		73.6	47-103	"	"
1,2-Dichlorobenzene-d4	2.81		58.2	33-100	"	"
Nitrobenzene-d5	3.67		76.0	42-126	"	"
2-Fluorobiphenyl	3.70		76.6	50-104	"	"
2,4,6-Tribromophenol	7.16		98.9	59-142	"	"
Terphenyl-d14	6.50		135 **#**	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		1.9	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		1.9	"	"	"
Benzaldehyde (100-52-7)	U		1.9	"	"	"
Benzoic acid (65-85-0)	U		4.8	"	"	"
Benzo (a) anthracene (56-55-3)	U		1.9	"	"	"
Benzo (a) pyrene (50-32-8)	U		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		1.9	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		1.9	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		1.9	"	"	"
Benzyl alcohol (100-51-6)	U		1.9	"	"	"
1,1'-Biphenyl (92-52-4)	U		1.9	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		1.9	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		1.9	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		1.9	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		1.9	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		1.9	"	"	"
Butyl benzyl phthalate (85-68-7)	U		1.9	"	"	"
Carbazole (86-74-8)	U		1.9	"	"	"
Caprolactam (105-60-2)	U		1.9	"	"	"
4-Chloroaniline (106-47-8)	U		1.9	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-08 **Station ID: AC-ESI-SW05**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1036ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		1.9	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		1.9	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		1.9	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		1.9	"	"	"
Chrysene (218-01-9)	U		1.9	"	"	"
Dibenzofuran (132-64-9)	U		1.9	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		1.9	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		1.9	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		1.9	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		1.9	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		1.9	"	"	"
2,4-Dichlorophenol (120-83-2)	U		1.9	"	"	"
Diethyl phthalate (84-66-2)	U		1.9	"	"	"
2,4-Dimethylphenol (105-67-9)	U		1.9	"	"	"
Dimethyl phthalate (131-11-3)	U		1.9	"	"	"
2,4-Dinitrophenol (51-28-5)	U		9.7	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		1.9	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		1.9	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		9.7	"	"	"
Di-n-butyl phthalate (84-74-2)	U		1.9	"	"	"
Di-n-octyl phthalate (117-84-0)	U		1.9	"	"	"
Fluoranthene (206-44-0)	**0.8**		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		1.9	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		1.9	"	"	"
Hexachloroethane (67-72-1)	U		1.9	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		1.9	"	"	"
Isophorone (78-59-1)	U		1.9	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		1.9	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		1.9	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		3.9	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-08 **Station ID: AC-ESI-SW05**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1036ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		3.9	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		3.9	"	"	"
Nitrobenzene (98-95-3)	U		1.9	"	"	"
2-Nitrophenol (88-75-5)	U		1.9	"	"	"
4-Nitrophenol (100-02-7)	U		5.8	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		1.9	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		1.9	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		1.9	"	"	"
Pyrene (129-00-0)	**0.8**	**J**	0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		1.9	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		1.9	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		1.9	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-09 **Station ID: AC-ESI-SW06**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1018ml Sample Qualifiers: **A**

Surrogates

Analyte	Result µg/L	Analyte Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed
2-Fluorophenol	5.28		71.6	42-109	05/27/16	05/27/16
Phenol-d5	5.07		68.8	46-110	"	"
2-Chlorophenol-d4	5.57		75.6	47-103	"	"
1,2-Dichlorobenzene-d4	2.73		55.6	33-100	"	"
Nitrobenzene-d5	3.78		77.0	42-126	"	"
2-Fluorobiphenyl	3.54		72.0	50-104	"	"
2,4,6-Tribromophenol	8.16		111	59-142	"	"
Terphenyl-d14	6.67		136 **#**	61-125	"	"

Targets

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
Acenaphthene (83-32-9)	U		0.5	1	05/27/16	05/27/16
Acenaphthylene (208-96-8)	U		0.5	"	"	"
Acetophenone (98-86-2)	U		2.0	"	"	"
Anthracene (120-12-7)	U		0.5	"	"	"
Atrazine (1912-24-9)	U		2.0	"	"	"
Benzaldehyde (100-52-7)	U		2.0	"	"	"
Benzoic acid (65-85-0)	U		4.9	"	"	"
Benzo (a) anthracene (56-55-3)	U		2.0	"	"	"
Benzo (a) pyrene (50-32-8)	**0.6**		0.2	"	"	"
Benzo (b) fluoranthene (205-99-2)	U		2.0	"	"	"
Benzo (g,h,i) perylene (191-24-2)	U		2.0	"	"	"
Benzo (k) fluoranthene (207-08-9)	U		2.0	"	"	"
Benzyl alcohol (100-51-6)	U		2.0	"	"	"
1,1'-Biphenyl (92-52-4)	U		2.0	"	"	"
Bis(2-chloroethoxy)methane (111-91-1)	U		2.0	"	"	"
Bis(2-chloroethyl)ether (111-44-4)	U		2.0	"	"	"
Bis(2-chloro-1-methylethyl)ether (108-60-1)	U		2.0	"	"	"
Bis(2-ethylhexyl)phthalate (117-81-7)	U		2.0	"	"	"
4-Bromophenyl phenyl ether (101-55-3)	U		2.0	"	"	"
Butyl benzyl phthalate (85-68-7)	U		2.0	"	"	"
Carbazole (86-74-8)	U		2.0	"	"	"
Caprolactam (105-60-2)	U		2.0	"	"	"
4-Chloroaniline (106-47-8)	U		2.0	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-09 **Station ID: AC-ESI-SW06**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1018ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
2-Chloronaphthalene (91-58-7)	U		2.0	1	05/27/16	05/27/16
2-Chlorophenol (95-57-8)	U		2.0	"	"	"
4-Chlorophenyl phenyl ether (7005-72-3)	U		2.0	"	"	"
4-Chloro-3-methylphenol (59-50-7)	U		2.0	"	"	"
Chrysene (218-01-9)	U		2.0	"	"	"
Dibenzofuran (132-64-9)	U		2.0	"	"	"
Dibenz (a,h) anthracene (53-70-3)	U		2.0	"	"	"
1,2-Dichlorobenzene (95-50-1)	U		2.0	"	"	"
1,3-Dichlorobenzene (541-73-1)	U		2.0	"	"	"
1,4-Dichlorobenzene (106-46-7)	U		2.0	"	"	"
3,3´-Dichlorobenzidine (91-94-1)	U		2.0	"	"	"
2,4-Dichlorophenol (120-83-2)	U		2.0	"	"	"
Diethyl phthalate (84-66-2)	U		2.0	"	"	"
2,4-Dimethylphenol (105-67-9)	U		2.0	"	"	"
Dimethyl phthalate (131-11-3)	U		2.0	"	"	"
2,4-Dinitrophenol (51-28-5)	U		9.8	"	"	"
2,4-Dinitrotoluene (121-14-2)	U		2.0	"	"	"
2,6-Dinitrotoluene (606-20-2)	U		2.0	"	"	"
4,6-Dinitro-2-methylphenol (534-52-1)	U		9.8	"	"	"
Di-n-butyl phthalate (84-74-2)	U		2.0	"	"	"
Di-n-octyl phthalate (117-84-0)	U		2.0	"	"	"
Fluoranthene (206-44-0)	**1.3**		0.5	"	"	"
Fluorene (86-73-7)	U		0.5	"	"	"
Hexachlorobenzene (118-74-1)	U		1.0	"	"	"
Hexachlorobutadiene (87-68-3)	U		2.0	"	"	"
Hexachlorocyclopentadiene (77-47-4)	U		2.0	"	"	"
Hexachloroethane (67-72-1)	U		2.0	"	"	"
Indeno (1,2,3-cd) pyrene (193-39-5)	U		2.0	"	"	"
Isophorone (78-59-1)	U		2.0	"	"	"
1-Methylnaphthalene (90-12-0)	U		0.5	"	"	"
2-Methylnaphthalene (91-57-6)	U		0.5	"	"	"
2-Methylphenol (95-48-7)	U		2.0	"	"	"
3 &/or 4-Methylphenol (108-39-4/106-44-5)	U		2.0	"	"	"
Naphthalene (91-20-3)	U		0.5	"	"	"
2-Nitroaniline (88-74-4)	U		3.9	"	"	"

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level)

Lab ID: 1605035-09 **Station ID: AC-ESI-SW06**

Batch: B6E2603 Date Collected: 05/24/16
Sample Type: Liquid Sample Vol: 1018ml Sample Qualifiers: **A**

Targets (Continued)

Analyte (CAS Number)	Result µg/L	Analyte Qualifiers	Reporting Limit	Dilution	Prepared	Analyzed
3-Nitroaniline (99-09-2)	U		3.9	1	05/27/16	05/27/16
4-Nitroaniline (100-01-6)	U		3.9	"	"	"
Nitrobenzene (98-95-3)	U		2.0	"	"	"
2-Nitrophenol (88-75-5)	U		2.0	"	"	"
4-Nitrophenol (100-02-7)	U		5.9	"	"	"
N-Nitrosodiphenylamine/Diphenylamine (86-30-6/122-39-4)	U		2.0	"	"	"
N-Nitrosodi-n-propylamine (621-64-7)	U		2.0	"	"	"
Pentachlorophenol (87-86-5)	U		1.0	"	"	"
Phenanthrene (85-01-8)	U		0.5	"	"	"
Phenol (108-95-2)	U		2.0	"	"	"
Pyrene (129-00-0)	**1.9**	**J**	0.5	"	"	"
1,2,4-Trichlorobenzene (120-82-1)	U		2.0	"	"	"
2,4,5-Trichlorophenol (95-95-4)	U		2.0	"	"	"
2,4,6-Trichlorophenol (88-06-2)	U		2.0	"	"	"

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Percent Solids - Quality Control

Duplicate (B6E3104-DUP1)

Source: 1605035-06 Prepared: 5/31/2016 Analyzed: 6/1/2016

Targets

ANALYTE	Result %	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	RPD	RPD Limit
% Solids	69.14				70.08	1.36	20

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

Blank (B6E2603-BLK1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Surrogates

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	7.33		7.50	97.7	42-109
Phenol-d5	7.30		7.50	97.3	46-110
2-Chlorophenol-d4	7.40		7.50	98.7	47-103
1,2-Dichlorobenzene-d4	4.26		5.00	85.2	33-100
Nitrobenzene-d5	4.65		5.00	93.0	42-126
2-Fluorobiphenyl	4.84		5.00	96.8	50-104
2,4,6-Tribromophenol	8.04		7.50	107	59-142
Terphenyl-d14	5.55		5.00	111	61-125

Blank (B6E2603-BLK1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit
Acenaphthene	U		0.5
Acenaphthylene	U		0.5
Acetophenone	U		2.0
Anthracene	U		0.5
Atrazine	U		2.0
Benzaldehyde	U		2.0
Benzoic acid	U		5.0
Benzo (a) anthracene	U		2.0
Benzo (a) pyrene	U		0.2
Benzo (b) fluoranthene	U		2.0
Benzo (g,h,i) perylene	U		2.0
Benzo (k) fluoranthene	U		2.0
Benzyl alcohol	U		2.0
1,1'-Biphenyl	U		2.0
Bis(2-chloroethoxy)methane	U		2.0
Bis(2-chloroethyl)ether	U		2.0
Bis(2-chloro-1-methylethyl)ether	U		2.0
Bis(2-ethylhexyl)phthalate	U		2.0

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

Blank (B6E2603-BLK1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets (Continued)

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit
4-Bromophenyl phenyl ether	U		2.0
Butyl benzyl phthalate	U		2.0
Carbazole	U		2.0
Caprolactam	U		2.0
4-Chloroaniline	U		2.0
2-Chloronaphthalene	U		2.0
2-Chlorophenol	U		2.0
4-Chlorophenyl phenyl ether	U		2.0
4-Chloro-3-methylphenol	U		2.0
Chrysene	U		2.0
Dibenzofuran	U		2.0
Dibenz (a,h) anthracene	U		2.0
1,2-Dichlorobenzene	U		2.0
1,3-Dichlorobenzene	U		2.0
1,4-Dichlorobenzene	U		2.0
3,3´-Dichlorobenzidine	U		2.0
2,4-Dichlorophenol	U		2.0
Diethyl phthalate	U		2.0
2,4-Dimethylphenol	U		2.0
Dimethyl phthalate	U		2.0
2,4-Dinitrophenol	U		10.0
2,4-Dinitrotoluene	U		2.0
2,6-Dinitrotoluene	U		2.0
4,6-Dinitro-2-methylphenol	U		10.0
Di-n-butyl phthalate	U		2.0
Di-n-octyl phthalate	U		2.0
Fluoranthene	U		0.5
Fluorene	U		0.5
Hexachlorobenzene	U		1.0
Hexachlorobutadiene	U		2.0
Hexachlorocyclopentadiene	U		2.0
Hexachloroethane	U		2.0
Indeno (1,2,3-cd) pyrene	U		2.0

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

Blank (B6E2603-BLK1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets (Continued)

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit
Isophorone	U		2.0
1-Methylnaphthalene	U		0.5
2-Methylnaphthalene	U		0.5
2-Methylphenol	U		2.0
3 &/or 4-Methylphenol	U		2.0
Naphthalene	U		0.5
2-Nitroaniline	U		4.0
3-Nitroaniline	U		4.0
4-Nitroaniline	U		4.0
Nitrobenzene	U		2.0
2-Nitrophenol	U		2.0
4-Nitrophenol	U		6.0
N-Nitrosodiphenylamine/Diphenylamine	U		2.0
N-Nitrosodi-n-propylamine	U		2.0
Pentachlorophenol	U		1.0
Phenanthrene	U		0.5
Phenol	U		2.0
Pyrene	U		0.5
1,2,4-Trichlorobenzene	U		2.0
2,4,5-Trichlorophenol	U		2.0
2,4,6-Trichlorophenol	U		2.0

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

LCS (B6E2603-BS1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Surrogates

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	7.57		7.50	101	42-109
Phenol-d5	7.38		7.50	98.4	46-110
2-Chlorophenol-d4	7.72		7.50	103	47-103
1,2-Dichlorobenzene-d4	3.62		5.00	72.4	33-100
Nitrobenzene-d5	4.89		5.00	97.8	42-126
2-Fluorobiphenyl	4.42		5.00	88.4	50-104
2,4,6-Tribromophenol	8.46		7.50	113	59-142
Terphenyl-d14	2.82		5.00	56.4 #	61-125

LCS (B6E2603-BS1)

Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
Acenaphthene	4.8		0.5	5.00	96.0	63-112
2-Chlorophenol	7.2		2.0	7.50	95.3	64-116
4-Chloro-3-methylphenol	7.6		2.0	7.50	101	63-117
1,4-Dichlorobenzene	3.0		2.0	5.00	60.4	35-100
2,4-Dinitrotoluene	5.0		2.0	5.00	99.4	59-120
4-Nitrophenol	10.0		6.0	7.50	133	49-137
N-Nitrosodi-n-propylamine	4.8		2.0	5.00	95.8	65-118
Pentachlorophenol	7.4		1.0	7.50	98.3	46-133
Phenol	7.1		2.0	7.50	94.5	60-116
Pyrene	3.3		0.5	5.00	65.4	59-131
1,2,4-Trichlorobenzene	3.5		2.0	5.00	70.0	42-103

Environmental Protection Agency

Region 6 Laboratory

10625 Fallstone Road, Houston, TX 77099
Phone:(281)983-2100 Fax:(281)983-2248

Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

Matrix Spike (B6E2603-MS1)

Source: 1605032-08 Prepared: 5/27/2016 Analyzed: 5/27/2016

Surrogates

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	5.96		7.06	84.4	42-109
Phenol-d5	5.77		7.06	81.7	46-110
2-Chlorophenol-d4	6.04		7.06	85.5	47-103
1,2-Dichlorobenzene-d4	3.35		4.71	71.2	33-100
Nitrobenzene-d5	4.03		4.71	85.6	42-126
2-Fluorobiphenyl	3.37		4.71	71.6	50-104
2,4,6-Tribromophenol	7.74		7.06	110	59-142
Terphenyl-d14	5.82		4.71	124	61-125

Matrix Spike (B6E2603-MS1)

Source: 1605032-08 Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits
Acenaphthene	3.8		0.5	4.71	0.05	80.1	41-131
2-Chlorophenol	5.7		1.9	7.06		80.3	46-114
4-Chloro-3-methylphenol	6.7		1.9	7.06		94.3	44-137
1,4-Dichlorobenzene	2.9		1.9	4.71		61.8	34-100
2,4-Dinitrotoluene	4.7		1.9	4.71		100	57-123
4-Nitrophenol	10.1		5.6	7.06		143	39-152
N-Nitrosodi-n-propylamine	3.8		1.9	4.71		81.4	50-116
Pentachlorophenol	8.9		0.9	7.06	0.1	125	55-146
Phenol	5.6		1.9	7.06	0.04	79.0	41-114
Pyrene	5.4		0.5	4.71	0.5	105	54-133
1,2,4-Trichlorobenzene	3.2		1.9	4.71		68.6	38-106

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E2603 **Sample Type: Liquid**

Matrix Spike Dup (B6E2603-MSD1)

Source: 1605032-08 Prepared: 5/27/2016 Analyzed: 5/27/2016

Surrogates

ANALYTE	Result µg/L	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	6.99		7.91	88.4	42-109
Phenol-d5	6.72		7.91	84.9	46-110
2-Chlorophenol-d4	7.04		7.91	88.9	47-103
1,2-Dichlorobenzene-d4	3.68		5.27	69.8	33-100
Nitrobenzene-d5	4.63		5.27	87.8	42-126
2-Fluorobiphenyl	3.98		5.27	75.4	50-104
2,4,6-Tribromophenol	8.81		7.91	111	59-142
Terphenyl-d14	6.70		5.27	127 #	61-125

Matrix Spike Dup (B6E2603-MSD1)

Source: 1605032-08 Prepared: 5/27/2016 Analyzed: 5/27/2016

Targets

ANALYTE	Result µg/L	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Acenaphthene	4.2		0.5	5.27	0.05	79.2	41-131	1.11	33
2-Chlorophenol	6.6		2.1	7.91		83.7	46-114	4.23	27
4-Chloro-3-methylphenol	7.7		2.1	7.91		96.8	44-137	2.65	30
1,4-Dichlorobenzene	3.3		2.1	5.27		62.6	34-100	1.29	32
2,4-Dinitrotoluene	5.3		2.1	5.27		101	57-123	1.19	16
4-Nitrophenol	11.9		6.3	7.91		151	39-152	5.45	34
N-Nitrosodi-n-propylamine	4.5		2.1	5.27		84.8	50-116	4.09	29
Pentachlorophenol	10.0		1.1	7.91	0.1	125	55-146	0.57	21
Phenol	6.5		2.1	7.91	0.04	81.5	41-114	3.07	32
Pyrene	5.8		0.5	5.27	0.5	101	54-133	3.76	21
1,2,4-Trichlorobenzene	3.7		2.1	5.27		69.6	38-106	1.45	26

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

Blank (B6E3103-BLK1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Surrogates

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	553		749	73.9	29-100
Phenol-d5	621		749	82.9	37-100
2-Chlorophenol-d4	584		749	78.0	33-100
1,2-Dichlorobenzene-d4	329		499	66.0	28-100
Nitrobenzene-d5	379		499	76.0	28-100
2-Fluorobiphenyl	391		499	78.4	37-110
2,4,6-Tribromophenol	618		749	82.5	41-137
Terphenyl-d14	563		499	113	46-138

Blank (B6E3103-BLK1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit
Acenaphthene	U		49.9
Acenaphthylene	U		49.9
Acetophenone	U		200
Anthracene	U		49.9
Atrazine	U		200
Benzaldehyde	U		200
Benzoic acid	U		499
Benzo (a) anthracene	U		200
Benzo (a) pyrene	U		200
Benzo (b) fluoranthene	U		200
Benzo (g,h,i) perylene	U		200
Benzo (k) fluoranthene	U		200
Benzyl alcohol	U		200
1,1'-Biphenyl	U		200
Bis(2-chloroethoxy)methane	U		200
Bis(2-chloroethyl)ether	U		200
Bis(2-chloro-1-methylethyl)ether	U		200
Bis(2-ethylhexyl)phthalate	U		200

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

Blank (B6E3103-BLK1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets (Continued)

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit
4-Bromophenyl phenyl ether	U		200
Butyl benzyl phthalate	**347**		200
Carbazole	U		200
Caprolactam	U		200
4-Chloroaniline	U		200
2-Chloronaphthalene	U		200
2-Chlorophenol	U		200
4-Chlorophenyl phenyl ether	U		200
4-Chloro-3-methylphenol	U		200
Chrysene	U		200
Dibenzofuran	U		200
Dibenz (a,h) anthracene	U		200
1,2-Dichlorobenzene	U		200
1,3-Dichlorobenzene	U		200
1,4-Dichlorobenzene	U		200
3,3´-Dichlorobenzidine	U		200
2,4-Dichlorophenol	U		200
Diethyl phthalate	U		200
2,4-Dimethylphenol	U		200
Dimethyl phthalate	U		200
2,4-Dinitrophenol	U		998
2,4-Dinitrotoluene	U		200
2,6-Dinitrotoluene	U		200
4,6-Dinitro-2-methylphenol	U		998
Di-n-butyl phthalate	U		200
Di-n-octyl phthalate	U		200
Fluoranthene	U		49.9
Fluorene	U		49.9
Hexachlorobenzene	U		99.8
Hexachlorobutadiene	U		200
Hexachlorocyclopentadiene	U		200
Hexachloroethane	U		200
Indeno (1,2,3-cd) pyrene	U		200

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

Blank (B6E3103-BLK1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets (Continued)

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit
Isophorone	U		200
1-Methylnaphthalene	U		49.9
2-Methylnaphthalene	U		49.9
2-Methylphenol	U		200
3 &/or 4-Methylphenol	U		200
Naphthalene	U		49.9
2-Nitroaniline	U		399
3-Nitroaniline	U		399
4-Nitroaniline	U		399
Nitrobenzene	U		200
2-Nitrophenol	U		200
4-Nitrophenol	U		599
N-Nitrosodiphenylamine/Diphenylamine	U		200
N-Nitrosodi-n-propylamine	U		200
Pentachlorophenol	U		99.8
Phenanthrene	U		49.9
Phenol	U		200
Pyrene	U		49.9
1,2,4-Trichlorobenzene	U		200
2,4,5-Trichlorophenol	U		200
2,4,6-Trichlorophenol	U		200

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

LCS (B6E3103-BS1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Surrogates

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	510		745	68.4	29-100
Phenol-d5	592		745	79.5	37-100
2-Chlorophenol-d4	542		745	72.8	33-100
1,2-Dichlorobenzene-d4	297		497	59.8	28-100
Nitrobenzene-d5	352		497	70.8	28-100
2-Fluorobiphenyl	370		497	74.4	37-110
2,4,6-Tribromophenol	556		745	74.7	41-137
Terphenyl-d14	464		497	93.4	46-138

LCS (B6E3103-BS1)

Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	%REC	%REC Limits
Acenaphthene	382		49.7	497	76.8	52-103
2-Chlorophenol	489		199	745	65.6	44-101
4-Chloro-3-methylphenol	615		199	745	82.5	49-116
1,4-Dichlorobenzene	280		199	497	56.4	35-100
2,4-Dinitrotoluene	439		199	497	88.4	51-120
4-Nitrophenol	710		596	745	95.3	43-139
N-Nitrosodi-n-propylamine	356		199	497	71.6	44-105
Pentachlorophenol	700		99.4	745	94.0	28-121
Phenol	532		199	745	71.3	43-105
Pyrene	406		49.7	497	81.8	57-121
1,2,4-Trichlorobenzene	335		199	497	67.4	43-102

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

Matrix Spike (B6E3103-MS1)

Source: 1605032-03 Prepared: 5/31/2016 Analyzed: 6/2/2016

Surrogates

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	670		1,260	53.2	29-100
Phenol-d5	848		1,260	67.3	37-100
2-Chlorophenol-d4	784		1,260	62.3	33-100
1,2-Dichlorobenzene-d4	381		840	45.4	28-100
Nitrobenzene-d5	472		840	56.2	28-100
2-Fluorobiphenyl	625		840	74.4	37-110
2,4,6-Tribromophenol	1,500		1,260	119	41-137
Terphenyl-d14	1,030		840	123	46-138

Matrix Spike (B6E3103-MS1)

Source: 1605032-03 Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits
Acenaphthene	667		84.0	840	16.8	77.4	37-119
2-Chlorophenol	680		336	1,260		54.0	33-100
4-Chloro-3-methylphenol	1,100		336	1,260		87.5	45-122
1,4-Dichlorobenzene	307		336	840		36.6	26-100
2,4-Dinitrotoluene	773		336	840		92.0	44-125
4-Nitrophenol	1,330		1,010	1,260		106	47-141
N-Nitrosodi-n-propylamine	487		336	840		58.0	34-103
Pentachlorophenol	1,390		168	1,260	30.2	108	16-134
Phenol	773		336	1,260	33.6	58.7	37-102
Pyrene	1,350		84.0	840	494	102	42-138
1,2,4-Trichlorobenzene	440		336	840		52.4	33-100

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Semivolatiles by CLP OLM04.2 - GC/MS (Low Level) - Quality Control

Batch: B6E3103 **Sample Type: Solid**

Matrix Spike Dup (B6E3103-MSD1)

Source: 1605032-03 Prepared: 5/31/2016 Analyzed: 6/2/2016

Surrogates

ANALYTE	Result µg/kg dry	Analyte Qualifier	Spike Level	%REC	%REC Limits
2-Fluorophenol	684		1,260	54.3	29-100
Phenol-d5	819		1,260	64.9	37-100
2-Chlorophenol-d4	775		1,260	61.5	33-100
1,2-Dichlorobenzene-d4	370		840	44.0	28-100
Nitrobenzene-d5	492		840	58.6	28-100
2-Fluorobiphenyl	619		840	73.6	37-110
2,4,6-Tribromophenol	1,560		1,260	123	41-137
Terphenyl-d14	881		840	105	46-138

Matrix Spike Dup (B6E3103-MSD1)

Source: 1605032-03 Prepared: 5/31/2016 Analyzed: 6/2/2016

Targets

ANALYTE	Result µg/kg dry	Analyte Qualifiers	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Acenaphthene	691		84.0	840	16.8	80.2	37-119	3.56	30
2-Chlorophenol	676		336	1,260		53.6	33-100	0.74	37
4-Chloro-3-methylphenol	1,180		336	1,260		93.3	45-122	6.49	26
1,4-Dichlorobenzene	303		336	840		36.0	26-100	1.65	34
2,4-Dinitrotoluene	825		336	840		98.2	44-125	6.52	20
4-Nitrophenol	1,540		1,010	1,260		122	47-141	14.5	30
N-Nitrosodi-n-propylamine	486		336	840		57.8	34-103	0.35	32
Pentachlorophenol	1,570		168	1,260	30.2	122	16-134	12.2	35
Phenol	778		336	1,260	33.6	59.1	37-102	0.68	36
Pyrene	1,230		84.0	840	494	87.1	42-138	15.6	32
1,2,4-Trichlorobenzene	447		336	840		53.2	33-100	1.52	33

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SURROGATE SUMMARY REPORT

ABN CLP Low Level

Liquid

LAB NUMBER	2-FP	PH-d5	2-CP-d4	1,2-DCB-d4	NB-d5	2-FBP	2,4,6-TBP	TP-d14
1605032-06	85.5	86.7	88.4	66.4	86.2	84.0	111	125
1605032-07	77.3	75.9	80.8	63.8	80.6	79.0	114	125
1605032-08	80.5	81.6	82.4	63.2	79.4	74.0	115	125
1605032-09	76.3	76.8	78.5	59.4	77.2	73.8	121	131 #
1605032-10	82.8	82.5	85.7	63.4	86.4	80.4	112	136 #
1605035-07	56.5	57.9	60.0	49.4	71.8	67.6	67.9	131 #
1605035-08	70.7	71.2	73.6	58.2	76.0	76.6	98.9	135 #
1605035-09	71.6	68.8	75.6	55.6	77.0	72.0	111	136 #
B6E2603-BLK1	97.7	97.3	98.7	85.2	93.0	96.8	107	111
B6E2603-BS1	101	98.4	103	72.4	97.8	88.4	113	56.4 #
B6E2603-MS1	84.4	81.7	85.5	71.2	85.6	71.6	110	124
B6E2603-MSD1	88.4	84.9	88.9	69.8	87.8	75.4	111	127 #

QC LIMITS

2-FP	=	2-Fluorophenol	42 - 109
PH-d5	=	Phenol-d5	46 - 110
2-CP-d4	=	2-Chlorophenol-d4	47 - 103
1,2-DCB-d4	=	1,2-Dichlorobenzene-d4	33 - 100
NB-d5	=	Nitrobenzene-d5	42 - 126
2-FBP	=	2-Fluorobiphenyl	50 - 104
2,4,6-TBP	=	2,4,6-Tribromophenol	59 - 142
TP-d14	=	Terphenyl-d14	61 - 125

Solid

LAB NUMBER	2-FP	PH-d5	2-CP-d4	1,2-DCB-d4	NB-d5	2-FBP	2,4,6-TBP	TP-d14
1605032-01	50.7	65.3	58.1	42.6	57.0	70.2	126	87.2
1605032-02	64.5	75.2	71.6	54.8	66.0	74.2	121	147 #
1605032-03	55.7	68.4	64.0	42.8	56.6	74.0	122	93.0
1605032-04	82.1	93.1	88.4	70.6	84.4	86.4	124	101
1605032-05	79.7	90.0	84.7	66.8	82.2	86.2	123	111
1605035-01	75.2	88.8	85.2	63.6	78.2	88.0	153 #	200 #
1605035-02	80.5	88.5	86.1	70.0	80.0	83.8	123	106
1605035-03	79.3	91.1	85.9	69.2	82.0	85.4	123	94.6
1605035-04	64.4	74.3	70.4	54.6	70.6	75.4	118	95.2
1605035-05	59.7	67.2	65.6	52.6	63.8	67.6	116	141 #
1605035-06	57.6	63.9	62.1	50.8	59.2	63.4	114	110
B6E3103-BLK1	73.9	82.9	78.0	66.0	76.0	78.4	82.5	113
B6E3103-BS1	68.4	79.5	72.8	59.8	70.8	74.4	74.7	93.4

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SURROGATE SUMMARY REPORT

ABN CLP Low Level

Solid

LAB NUMBER	2-FP	PH-d5	2-CP-d4	1,2-DCB-d4	NB-d5	2-FBP	2,4,6-TBP	TP-d14
B6E3103-MS1	53.2	67.3	62.3	45.4	56.2	74.4	119	123
B6E3103-MSD1	54.3	64.9	61.5	44.0	58.6	73.6	123	105

			QC LIMITS
2-FP	=	2-Fluorophenol	29 - 100
PH-d5	=	Phenol-d5	37 - 100
2-CP-d4	=	2-Chlorophenol-d4	33 - 100
1,2-DCB-d4	=	1,2-Dichlorobenzene-d4	28 - 100
NB-d5	=	Nitrobenzene-d5	28 - 100
2-FBP	=	2-Fluorobiphenyl	37 - 110
2,4,6-TBP	=	2,4,6-Tribromophenol	41 - 137
TP-d14	=	Terphenyl-d14	46 - 138

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Notes and Definitions

NJ	There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.
J	The identification of the analyte is acceptable; the reported value is an estimate.
A	This sample was extracted at a single acid pH.
HTS	Sample was prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.
ABN	Acid Base Neutrals (Semivolatile Compounds)
AES	Atomic Emission Spectrometer
BS	Blank Spike
CVAA	Cold Vapor Atomic Absorption
DCB	Decachlorobiphenyl
ECD	Electron Capture Detector
GC	Gas Chromatograph
ICP	Inductively Coupled Plasma
ISTD	Internal Standard
LCS	Laboratory Control Sample
MS	Mass Spectrometer
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NA	Not Applicable
NPD	Nitrogen Phosphorous Detector
NR	Not Reported
PCB	Polychlorinatedbiphenyl
RL	Reporting Limit
RT	Retention Time

RPD	Relative Percent Difference
TCLP	Toxicity Characteristic Leaching Procedure
TCMX	Tetrachloro-meta-xylene
U	Undetected
VOA	Volatile Organic Analysis

Initial pressure in air analyses is the pressure at which the canister was received in psia (pounds *per* square inch absolute pressure).

The pH reported for Volatile liquid samples was tested using a 0-14 pH indicator strip for the purpose of verifying chemical preservation.

The statistical software used for the reporting of toxicity data is ToxCalc 5.0.32, Environmental Toxicity Data Analysis System 1994-2007 Tidepool Scientific Software.

USEPA
DateShipped: 5/24/2016
CarrierName: FedEx
AirbillNo: 776361594468

CHAIN OF CUSTODY RECORD
Site #: A6KM
Contact Name: Karen Berecz
Contact Phone: 2145635347

No: 6-052416-135956-0008
Cooler #: 1
Lab: EPA-Houston
Lab Phone: 281-983-2137

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	AC-ESI-SD07	PPE	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD08	Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD09	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	Y
	AC-ESI-SD10	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD11	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SW07	PPE	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW08	Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW09	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	6	32 oz Amber	Wet ice	Y
	AC-ESI-SW10	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW11	2nd Surface Imp. Discharge Point	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N

Special Instructions: 35-day TAT on Data

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	[signature]	5/24/16	FedEx	5/24	1800				[signature]	5/25/16	9:50

TempBlank=5°C

USEPA
DateShipped: 5/25/2016
CarrierName: FedEx
AirbillNo: 776368734110

CHAIN OF CUSTODY RECORD
Site #: A6KM
Contact Name: Karen Berecz
Contact Phone: 214.563.5347

No: 6-052516-100947-0011
Cooler #: 1 (5-25-2016)
Lab: EPA-Houston
Lab Phone: 281-983-2137

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Preservative	Lab QC
	AC-ESI-SD01	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD02	Onsite Culvert/Ditch	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD03	Background	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD04	Background	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD05	Drainage,Overland Flow	Acid/Base/Neutrals	Sediment	5/25/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SD06	Drainage,Overland Flow	Acid/Base/Neutrals	Sediment	5/24/2016	1	8 oz. jar	Wet ice	N
	AC-ESI-SW03	Background	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW05	Drainage,Overland Flow	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N
	AC-ESI-SW06	Drainage,Overland Flow	Acid/Base/Neutrals	Surface Water	5/24/2016	2	32 oz Amber	Wet ice	N

Special Instructions: 35-day TAT for Results

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
	Stan Cain	5/25/16	FedEx	5/25/16	1500				J Cross	5/26/16	9:25

Temp Blank = 8°C

APPENDIX H

QUALITY ASSURANCE SAMPLING PLAN (QASP)

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QUALITY ASSURANCE SAMPLING PLAN
FOR
AMERICAN CREOSOTE DeRIDDER
DERIDDER, BEAUREGARD PARISH, LOUISIANA

Prepared For

U.S. Environmental Protection Agency Region 6
1445 Ross Ave.
Dallas, Texas 75202

Date Prepared
May 17, 2016

Prepared by

CSS-Dynamac
1323 Columbia Drive, Ste. 307
Richardson, Texas 75081

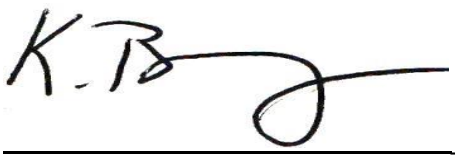
QUALITY ASSURANCE SAMPLING PLAN
FOR
AMERICAN CREOSOTE DeRIDDER
DeRIDDER, BEAUREGARD PARISH, LOUISIANA

Date Prepared
May 17, 2016

Reference Numbers

Contract No:	EP-W-06-077
TDD Number:	9/Dynamac-077-16-001
CERCLIS No:	LAN000604293
EPA SAM:	Brenda Nixon Cook
START PM:	Karen Berecz

Signatures:



Karen Berecz
CSS-Dynamac START Project Manager

Brenda Nixon Cook
U.S. EPA Site Assessment Manager

Steve Cowan
CSS-Dynamac START Program Manager

QUALITY ASSURANCE SAMPLING PLAN FOR AMERICAN CREOSOTE DeRIDDER DeRIDDER, BEAUREGARD PARISH, LOUISIANA TABLE OF CONTENTS

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Appendix C EPA ERT SOP # 2003 – Sample Storage, Preservation and Handling
Appendix D EPA ERT SOP # 2004 – Sample Packaging Shipment
Appendix E EPA ERT SOP # 2049 – Investigation-Derived Waste Management
Appendix F EPA ERT SOP # 2006 – Sampling Equipment Decontamination
Appendix G EPA ERT SOP # 2002 – Sample Documentation

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1.0 INTRODUCTION

CSS-Dynamac Superfund Technical Assessment and Response Team (START-3) is tasked by the U.S. Environmental Protection Agency (EPA), Region 6, under Technical Direction Document (TDD) No. 9/DYNAMAC-077-16-001, to conduct an Expanded Site Inspection (ESI) at American Creosote DeRidder (CERCLIS No. LAN000604293), located in DeRidder, Beauregard Parish, Louisiana (LA). See Figure 1 for the site location.

This Quality Assurance Sampling Plan (QASP) is prepared in partial fulfillment of the TDD. This QASP is designed to guide field operations during collection of surface water and sediment samples and describes the Quality Assurance (QA) measures that will be implemented during the course of the ESI field activities.

2.0 OBJECTIVES

The objectives of the ESI, per the EPA Site Assessment Manager (SAM) are to:

1) collect surface water and sediment samples from the on-site contiguous wetlands along the culvert/ditch for chemical analysis; and
2) determine background and down gradient levels of potential hazardous constituents via collection of off-site surface water and sediment samples for chemical analysis, from Ingevity (formerly Mead WestVaco [MWV]) property, to determine whether a release from the American Creosote DeRidder site has, or is occurring.

To accomplish the above-mentioned objectives, START-3 will collect two (2) surface water and sediment samples from the on-site culvert/ditch. START-3 will also collect surface water and sediment samples from eight (8) off-site locations, two (2) sample from tributaries on Ingevity (formerly MWV) property (background locations), two (2) samples from the drainage/overland flow pathway to the surface water impoundment/slough on Ingevity property, one (1) sample where off-site runoff (overland flow discharges into the probable point of entry [PPE]) into the surface water

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impoundment/slough on Ingevity property, one (1) sample at the point where the off-site surface water discharges from the impoundment/slough, one (1) sample where the off-site surface water discharge enters a second surface water impoundment also on Ingevity property, and one (1) sample from where the off-site surface water discharges from the second impoundment on Ingevity property.

3.0 BACKGROUND

3.1 Site Location

The American Creosote DeRidder site is a 55-acre tract of land owned by Central Manufacturing Company (CMC) located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Louisiana and Post Plant Road (Figure 1). The coordinates of the site are 30.831693 north latitude and -93.276863 west longitude as measured at the site entrance. The site is characterized by gently rolling topography, mild winters and hot/humid summers, silty clayey sands and sandy silty clay soils. The average elevation of the site is 150 feet above mean sea level. The site area primarily consists of pine; however a variety of oak and cypress are present in the low bottom areas where drainage tributaries meander. The site is bounded to the north by a rural roadway, to the east by heavy brush, to the south by undeveloped land, and to the west by the Burlington Northern Santa Fe (BNSF) Railroad spur, currently used by MWV. The site's broader surroundings include commercial, industrial and residential uses (Figure 2). Additionally, the site was once located in the now obsolete Bundick's Creek Game and Fish Reserve Watershed Basin.

3.2 Site Description/Ownership

CMC has been the primary owner of the 55-acre tract of land from September 1992 to present when it was sold by First National Bank in DeRidder, Louisiana. Prior to 1992, First National Bank of DeRidder, by means of "dation en paiement" conveyed the land in 1984 from Creighton and Frances Pugh to relieve them of mortgage and lien debt against the property. The Creighton's had formerly

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purchased the parcel of land in 1972 from Charles Holbrook for commercial purposes.

Charles Holbrook was the original owner of the parcel of land that is currently owned by CMC. Prior to 1963 the current tract of land was three separate parcels (designated Parcel B, E1 and E2) of property acquired by Mr. Holbrook and incorporated into one single tract of land (Figure 3). In April 1963, IP Company (IPC) sold Charles Holbrook, Parcel B, one of the three tracts of land which he incorporated into the two other tracts (Parcel E1 and E2), which were purchased from American Creosoting Corporation in 1959.

In 1956, Union Camp Corporation acquired American Creosoting Company. Subsequent to the acquisition, Union Camp renamed the operations to AmCre Corporation. In 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation.

The two tracts of land, Parcel E1 and E2, bought by Mr. Holbrook, that were later incorporated with the third tract of land purchased from (IPC), were purchased by American Creosoting Company in 1955 from Shreveport Creosoting Company, a Delaware Corporation. From 1928 to its sale in 1955 both tracts of land were owned by Shreveport Creosoting Company, a Delaware Corporation which had previously purchased the properties from Shreveport Creosoting Company, an Indiana Corporation.

Preceding both tracts of land being sold in 1928 by Shreveport Creosoting Company, an Indiana Corporation to Shreveport Creosoting Company, a Delaware Corporation, both tracts of land were acquired separately by Shreveport Creosoting Company in 1918. One tract of land was sold by The Long Bell Lumber Company and the other tract of land was purchased from the Hudson

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River Lumber Company on the same date in 1918 by Shreveport Creosoting Company, an Indiana Corporation.

Historical ownership prior to 1956 for Parcel B which was previously owned by IPC and sold to Mr. Charles Holbrook is currently unknown. Historical ownership prior to 1918 for Parcel E1 and E2, separately owned by The Long Bell Lumber Company and Hudson River Lumber Company is also currently unknown.

3.3 Site Operations

The American Creosote DeRidder site has been impacted by creosote-related compounds from historical lumber treatment operations at the site. The Shreveport Creosoting Company doing business as an Indiana Corporation and later a Delaware Corporation operated a creosote lumber treatment facility from the early 1920's to approximately 1945 on a parcel of land at the site. American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment activities reportedly until 1956 or 1957. From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992, who planned heavy industrial/commercial use.

The Shreveport Company's facilities and operations for the lumber treatment process were located approximately a half mile south of the intersection of Post Pole Road and the railroad corridor on the western portion of the property (Figure 4). Creosote oil and coal tar solutions were used in the wood preserving pressure treatment process. The specific operations at the site consisted of dipping lumber into creosote vats and the collection of spent creosote in an open pit and also the discharging of untreated process wastewater into an open pit. There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits.

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In 1991 the American Creosote site was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD). LDEQ IASD contacted Westvaco, a company nearby that was considering buying the property at the time, and had collected water and soil samples for analysis in February 1992. During 1992 LDEQ IASD visited the site several times to assess the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples.

In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) at the site through a cooperative agreement with the responsible party identified at the time, CMC. In October 1993 LDEQ IASD realized the site compromised two distinct ownerships, due to creosote contamination migrating off-site to the adjacent property to the west. LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway Company (ATSF), who owned the railway right-of way corridor, and CMC who now owned the former wood treating facility. In late 1993 a cooperative agreement between LDEQ IASD, CMC and ATSF was entered into for an RI/FS.

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Dr. Portier of Louisiana State University (LSU) who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at the site. The work plan proposed transporting the contaminated soil to a soil pile remediation unit (SPRU) where the soil would be biologically treated to clean-up levels of less than 100 mg/kg TPH. An approximate total of 1,250 cubic yards of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the ATSF railway right-of-way (ROW) were proposed for processing in the SPRU.

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In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote impacted material from the site for TPH analyses at the ATSF contracted laboratory, Radian Corporation. The four samples collected of creosote impacted material were collected from the pit moving southwest toward the ATSF railway ROW. Laboratory results indicated TPH concentrations ranging from 2,040 to 44,700 mg/kg.

By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ IASD was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with LDEQ to begin its own soil remediation strategy. In mid-1996 Kei Consultants hired by BNSF submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder. The estimated area of creosote impacted soil along the BNSF railroad corridor extended 250 feet along the railway ROW and 25 feet wide. The noted contaminate of concern was TPH.

In August 2002 Acadian Engineers on behalf of CMC performed a Limited Site Investigation at the American Creosote site to delineate the horizontal and vertical extent of creosote contamination to determine potential remediation strategies. Acadian personnel collected soil samples and groundwater samples from temporary groundwater monitoring wells to assess the impact to shallow groundwater.

Late 2003 Acadian Engineers & Environmental Consultants submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media. The proposed methodology to address the impacted soil media was over excavation of impacted areas and on-site treatment of the impacted soil. No implementation of groundwater remediation was required, yet continued groundwater monitoring was recommended.

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In 2005 CMC had Acadian Engineers & Environmental Consultants submit a Risk Evaluation Corrective Action Plan (RECAP) to LDEQ IASD. The RECAP was performed within the LDEQ Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern at the site. CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval. To date no remediation has taken place at the site or the nearby railroad property.

The site is currently void of any operations and consists of heavy timber and thick shrub overgrowth. Abandoned wood treatment facilities from the previous operations currently remain at the site and consist of a concrete foundation from a former vat, an unlined wastewater pit and random areas of creosote solids and soil contamination. One surface water runoff pathway exists at the facility, south along the western property boundary lateral to the railroad tracks right-of-way.

3.4 Waste Characterization

Historical site investigations at American Creosote DeRidder found contamination along the concrete foundation of the former retort house basin, abandoned waste pits, groundwater and soil. Contamination resulted from facility operations and waste handling practices at the site. Contaminants of concern (COCs) identified at the site are polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH).

MWV, a company nearby that was considering buying the property at the time and had collected water and soil samples in February 1992, indicated to Louisiana DEQ IASD that the laboratory results showed low levels (< 5 ppm) of phenol contamination in the soils, and the water samples analyzed were below detection

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limits for phenol. The soil samples collected by Westvaco indicated low levels, 4.0 to 5.7 ppm, of phenols detected.

During the site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, 0.5 to 1.08 percent, for eight of the TCL-listed Creosote constituents were detected. Analytical results from the October 1992 samples collected were found to have high concentrations of PAH per the West Paine Laboratory results. In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination were discovered in the unlined pit lying between the old ATSF railway track and the creosoting structure foundation. Low level Total Phenols concentrations were also discovered in soil and surface water samples collected around the old foundation.

In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote impacted material from the pit moving southwest toward the ATSF railroad ROW for TPH analyses at the ATSF contracted laboratory Radian Corporation. It was noted that the tarry material was only 1 – 2 inches thick and that the concentration decreased when moving from the pit to the southwest location of the ROW at the Santa Fe railway corridor. Laboratory results indicated TPH values that ranged from 2,040 to 44,700 mg/kg.

4.0 FIELD OPERATIONS

4.1 Concept of Operations

4.1.1 Schedule

Field work will tentatively occur the week of May 23, 2014 and is anticipated to require three (3) days to complete; including mobilization and demobilization.

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4.1.2 Health and Safety

START will develop a site-specific Health and Safety Plan (HASP) for the sampling at the former American Creosote DeRidder site. Field activities will be conducted in accordance with EPA Standard Operating Procedures (SOPs) provides as Appendices, the Generic QAPP, and the site specific Health and Safety Plan (HASP).

4.1.3 Site Access and Logistics

Site access to the site and surrounding properties will be obtained through the EPA SAM and START. ESI activities will be coordinated with the EPA SAM, LDEQ and property owners.

4.2 Sampling Design

START has designed this QASP to collect surface water and sediment samples to characterize the surface water migration of contamination from the site to the 15-mile downstream target distance limit located in a surface water impoundment/slough on Ingevity property, the nearest perennial surface water. Surface water and sediment samples will be collected to identify and characterize on-site and off-site contamination. Table 1 presents the anticipated number of samples, location descriptions, and proposed laboratory analyses. Dedicated sampling equipment will be used wherever possible in an effort to eliminate any potential cross contamination concerns. All sampling activities will be documented in a logbook and photographically using EPA ERT SOP #2002 as guidance.

4.2.1 On-site Surface Water and Sediment Sampling

Two (2) surface water and sediment samples, locations AC-ESI-01 and AC-ESI-02, if available, will be collected from the on-site drainage/overland flow

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pathway along the culvert/ditch area, including the culvert itself (Figure 5; Table 3). Water samples will be collected directly into the sample containers. Sediment samples will be collected at a depth of approximately 0-6 inches below ground surface (bgs). Sediment samples will be collected using trowels and spoons and the sediment placed directly into the sample containers. Target analytes and reporting limits are from the current CLP low concentration statement of work.

The samples will be sequentially labeled with the site identifier and a sequential sample number, e.g., AC-ESI-SW01 = American Creosote Expanded Site Inspection Surface Water sample 01, and AC-ESI-SD01 = American Creosote Expanded Site Inspection Sediment sample 01.

The surface water and sediment sampling will be conducted in accordance with SOPs; specifically, the EPA ERT SOP #2013 Surface Water Sampling (Appendix A), and SOP #2016 Sediment Sampling (Appendix B). Water quality parameters of pH, temperature, conductivity, dissolved oxygen and turbidity will be collected for each on-site surface water and groundwater sample and recorded into the site-specific logbook.

The samples will be shipped to the Houston EPA laboratory or a designated CLP laboratory for Target Compound List (TCL) semi-volatile organic compounds (SVOCs) chemical analyses.

4.2.2 Off-site Surface Water and Sediment Sampling

START will collect off-site surface water and sediment samples from the surface water overland flow migration route to the nearest perennial surface water, a surface water impoundment/slough located on Ingevity property. Specific off-site surface water and sediment sample locations may be

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determined in the field. Locations AC-ESI-03 and AC-ESI-04 will be collected up gradient along tributaries on MWV property and will provide representative background concentrations. Locations AC-ESI-05 and AC-ESI-06 will be collected along the drainage/overland flow pathway leading to the surface water impoundment/slough on Ingevity property, and Location AC-ESI-07 will be collected where off-site runoff/overland flow discharges into the probable point of entry (PPE), the surface water impoundment/slough on Ingevity property. Location AC-ESI-08 will be collected at the point where the off-site surface water discharges from the impoundment/slough, and Location AC-ESI-09 will be collected where the off-site surface water discharge enters a second surface water impoundment also on Ingevity property. Location AC-ESI-10 will be collected where the off-site surface water discharges from the second impoundment on Ingevity property (Table 3).

All samples will be grab samples. Sediment samples will be collected at a depth of approximately 0-12 inches below ground surface (bgs). Sediment samples will be collected using either a ponar dredge, a push probe technique using PVC piping, or trowels and spoons, and transferred directly into sample containers. Water samples will collected using the “beaker on a stick” method and placed directly into sample containers. TCL analytes and reporting limits are found in the current Contract Laboratory Program (CLP) low concentration statement of work. The samples collected will be sequentially labeled with the site, type of sample and number, e.g., AC-ESI-SW01 = American Creosote Expanded Site Inspection Surface Water sample 01 and AC-ESI-SD01 = American Creosote Expanded Site Inspection Sediment sample 01.

The surface water and sediment sampling will be conducted in accordance with standard operating procedures (SOP); specifically, the EPA

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Environmental Response Team (ERT) SOP #2013 Surface Water Sampling (Appendix A) and SOP #2016 Sediment Sampling (Appendix B). Water quality parameters of pH, temperature, conductivity, dissolved oxygen and turbidity will be collected for each off-site surface water sample and recorded into the site-specific logbook.

The surface water and sediment samples will be shipped to the Houston EPA laboratory or a designated CLP laboratory for TCL SVOC chemical analyses.

4.3 Analytical Parameters

Surface water and sediment samples will undergo chemical analysis by the Houston EPA laboratory, a CLP laboratory, or procured laboratory for TCL analyses using EPA or CLP SOW methods. The requested turn-around time for analytical results and corresponding Staged Electronic Data Deliverable (SEDD) will 30 – 35 calendar days. The analytical methods are specified in Table 2.

4.4 Sample Preservation

Sample preservation will be conducted utilizing procedures in the *Contract Laboratory Program Guidance for Field Samplers, August 2004* or EPA ERT SOP # 2003 Sample Storage, Preservation and Handling (Appendix C). All of the collected samples will be stored at less than 4º C.

4.5 Sample Packaging and Shipping

START will package and ship all samples collected utilizing procedures in the *Contract Laboratory Program Guidance for Field Samplers, August 2004* or EPA ERT SOP # 2004 Sample Packaging and Shipment (Appendix D). After the samples have been collected, the sampling data (station number, time collected,

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sampler, GPS coordinates, etc.,) and field measurements will be entered into the U.S. EPA's ERT SCRIBE software. SCRIBE will be used to generate sample labels and Chain-of-Custody (COC)/Traffic Reports (TR) forms for the collected samples to be shipped to the designated EPA laboratory, a CLP laboratory, or a procured laboratory for chemical analysis. The SCRIBE database will be uploaded into the EPA's SCRIBE Enterprise software which will serve as the sampling database for all the samples collected during the SI field activities.

All designated samples for chemical analysis will be packaged in appropriate sample containers. At a minimum, each sample container will contain a completed custody seal, bubble-wrapped, and placed in an individual plastic baggie. The packaged samples will then be placed into shipping coolers for shipment to the designated laboratory. Ice will be placed in the shipping cooler to preserve the collected samples to 4º C during transport to the laboratory. Completed custody seals will be placed on the outside of the shipping cooler in order to maintain the chain of custody of the collected samples.

4.6 Control of Contaminated Materials

Any investigation derived waste (IDW) generated through sampling operations will be contained in accordance with EPA ERT SOP #2049 IDW Management (Appendix E). It is anticipated that IDW will consist of PPE and used sampling equipment. Dedicated sampling equipment will be used in order to reduce the generation of decontamination solutions and the collection of rinsate samples. All IDW will be disposed of at the direction of the EPA SAM. The IDW will be disposed of at a permitted facility.

Should non-dedicated sampling equipment be utilized, it will be decontaminated prior to use and between each use using EPA ERT SOP #2006 Sampling Equipment Decontamination (Appendix F). Basic decontamination will consist of

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brushing gross particulate off sampling equipment with tap water and/or a scrub brush, followed by washing equipment with a soap solution of Liquinox® or Alconox® and tap water, and a final rinse using distilled or de-ionized water. After decontamination, the equipment will be allowed to gravity drain and air dry. The equipment will be wrapped in aluminum foil to minimize potential contamination if not immediately used.

5.0 QUALITY CONTROL

5.1 Laboratory Quality Control

Specific QC criteria have been developed to ensure that the Data Quality Objectives (DQOs) summarized in Table 4 are met. The analytical method for sample analysis has been selected on the basis of the required detection limits, known contaminants existing in the study area, and the range of analytes to be determined. Table 2 includes analytical parameters and reference guidance, sample containers, sample volume requirements, and sample preservatives.

5.2 Field Quality Control

The pH/conductivity/temperature dissolved oxygen and turbidity meters will be calibrated using manufacture's procedures by START prior to use each day.

5.3 Quality Assurance Samples

For Quality Assurance (QA) purposes, matrix spike/matrix spike duplicate (MS/MSD) samples will be collected on a frequency of 5%, per sample matrix. MS/MSD samples measure the performance of the method used, relative to the sample matrix, and the precision of analysis in terms of relative percent difference (RPD). It is anticipated that one (1) MS/MSD sample will be designated for the surface water samples, and one (1) MS/MSD sample for the sediment samples.

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MS/MSD samples will comprise additional volume of the sample medium from one environmental sample, but will not be designated as a unique sample.

Field duplicate samples, which are homogenized aliquots of a single sample used to assess the quality of sampling methods, sample handling, and laboratory procedures, will be collected on a frequency of 1 per 10 for the all matrices (10%). It is anticipated that at a minimum, two (2) duplicate samples (one [1] surface water and one [1] sediment) will be collected during the ESI field activities.

5.4 Chain of Custody

After sample collection and identification, all samples to be shipped to the EPA Houston Regional Laboratory, a CLP laboratory, or a procured laboratory and will be handled in strict accordance with chain-of-custody protocol, per EPA ERT SOP #2002, Sample Documentation (Appendix G). All sampling data will be entered into the U.S. EPA's ERT SCRIBE software, which will provide a database of all sample collection data and prepare the necessary chain-of-custody (COC) forms and sample labels. A chain-of-custody record will be maintained from the time the sample is taken to its final deposition. Every transfer of samples and custody will be noted and signed for, and a copy of this record kept by each individual/organization who has signed. When samples (or groups of samples) are not under direct control of the individual responsible for them, they must be stored in a locked container sealed with a custody seal.

The Chain of Custody record should include (at minimum) the following:

- Sample identification number
- Sample information
- Sample location
- Sample date
- Name(s) and signature(s) of sampler(s)
- Signature(s) of any individual(s) with control over samples

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6.0 RECONCILIATION WITH DATA QUALITY OBJECTIVES

The sample data will be assessed for accuracy, precision, completeness, representativeness, and comparability. Data assessment criteria are presented in the CSS-Dynamac START Generic QAPP, Section 4.0 “Assessment and Oversight” and Section 5.0, “Data Validation and Usability.” Generally, data that do not meet the established acceptance criteria are cause for re-sampling and re-analysis. However, in some cases, data that do not meet acceptance criteria are usable with specified limitations. Data that are indicated as usable with limitations will be included in the final report, but will be clearly indicated as having limited usability. Indicators of data limitations include data qualifiers, quantitative evaluations, and narrative statements regarding potential bias. The EPA ESAT contractor will conduct the data validation activities on the received CLP laboratory analytical data packages. START will review the validation report from ESAT and enter the data into SCRIBE Enterprise.

7.0 DELIVERABLES AND PROJECT ORGANIZATION

Upon completion of the inspection, a report will be prepared documenting all pertinent field and sampling activities, detailed site sketch/map, potential environmental receptors, and the results of sample laboratory analyses.

The EPA SAM, Brenda Cook, will provide overall direction for this project and will identify sampling needs, determine the sampling schedule, and coordinate community relations.

The START Task Leader (TL), Karen Berecz is the primary contact with the EPA. The START TL is responsible for project team organization, supervision of all project tasks, monitoring, and documenting the quality of all work produced by the project team, determining deviations from the QASP, and assisting with the overall sampling effort.

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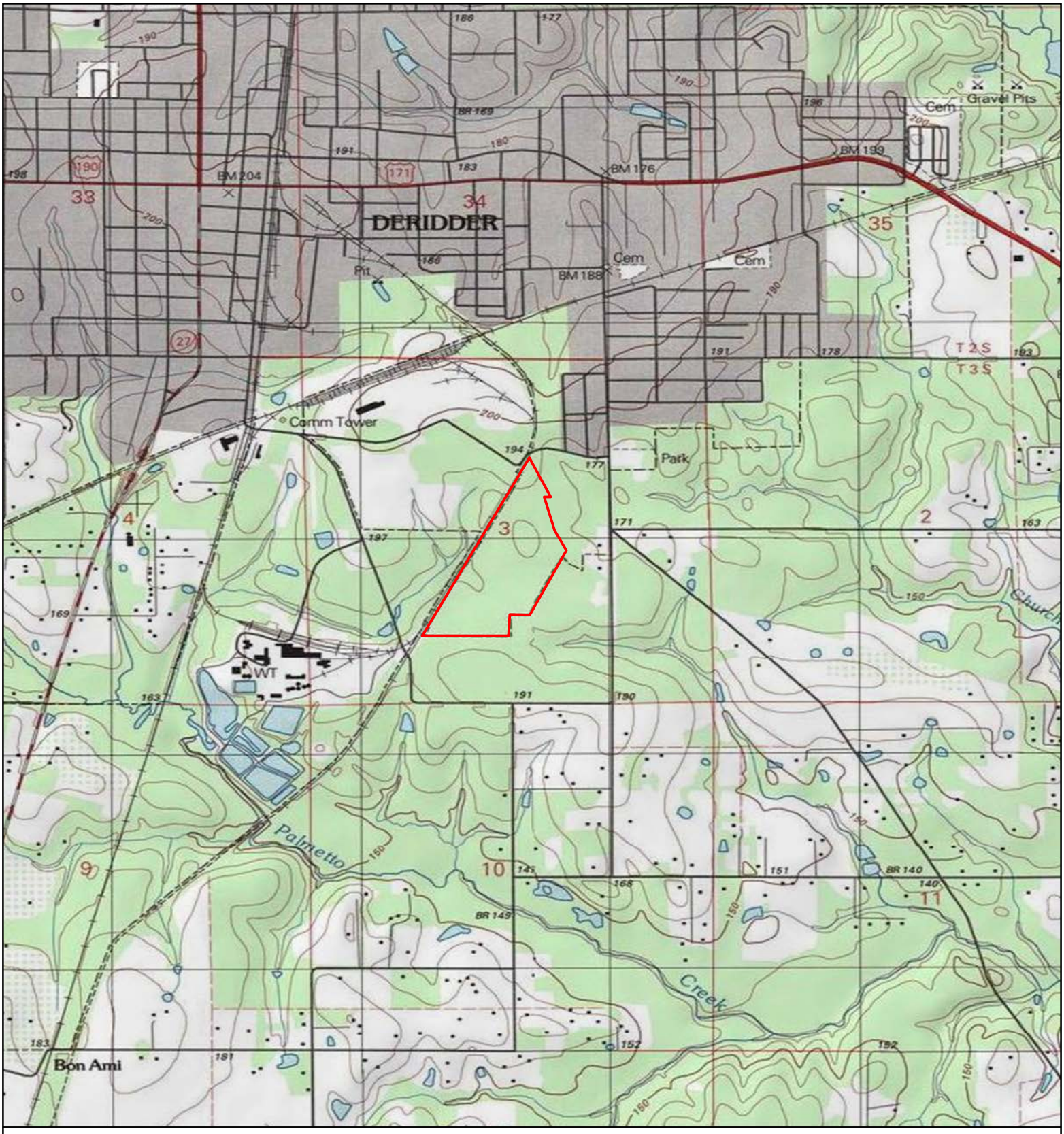
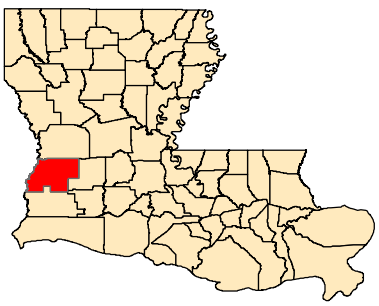
FIGURES



Map of Lousiana



Legend

Site Boundary

N
W E
S

1:24,000

0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

Figure 1. Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

39 278

Map of Lousiana

Legend

Site Boundary

N
W E
S

1:24,000

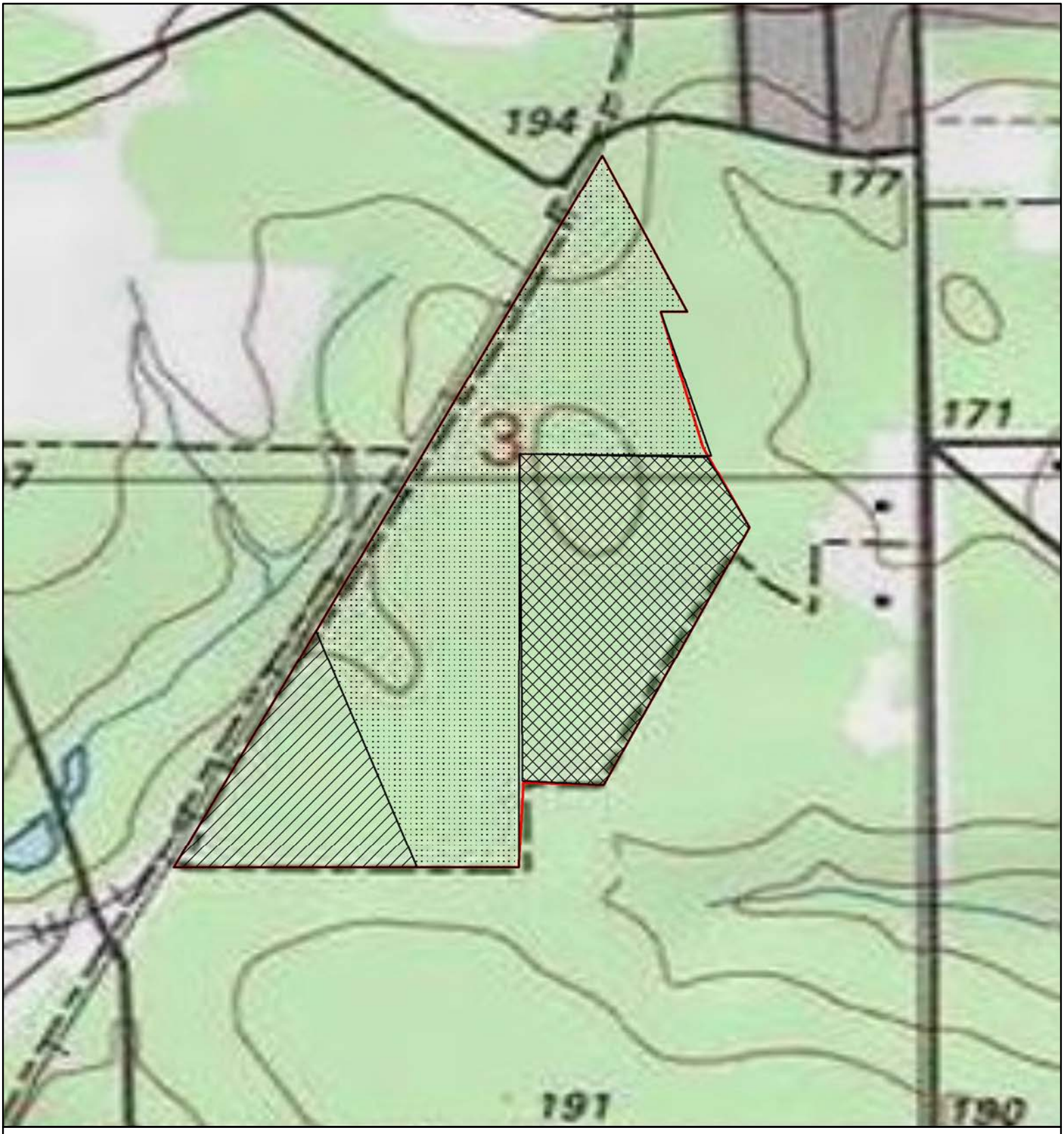
0 1,000 2,000 4,000 Feet

US EPA Region 6
START-3

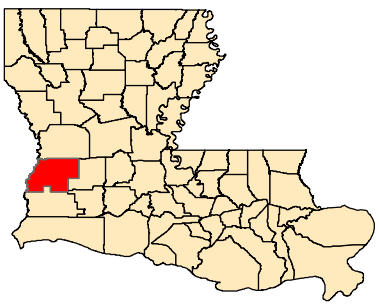
Figure 2. Aerial Site Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001
ESRI Street Map, National Hyrography Dataset, and National Wetlands Inventory

39 279



Map of Lousiana



Legend

- Site Boundary
- Parcel B
- Parcel E1
- Parcel E2

N
W E
S

1:6,000

0 250 500 1,000 Feet

US EPA Region 6
START-3

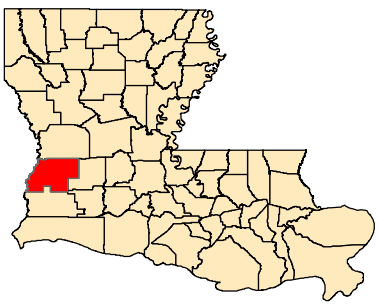
Figure 3. Site Land Parcel Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293 TDD
No. 9/DYNAMAC-077-16-001

39 280

Source: Copyright:© 2013 National Geographic Society, i-cubed

Map of Lousiana



Legend

Site Boundary

N
W E
S

1:6,000

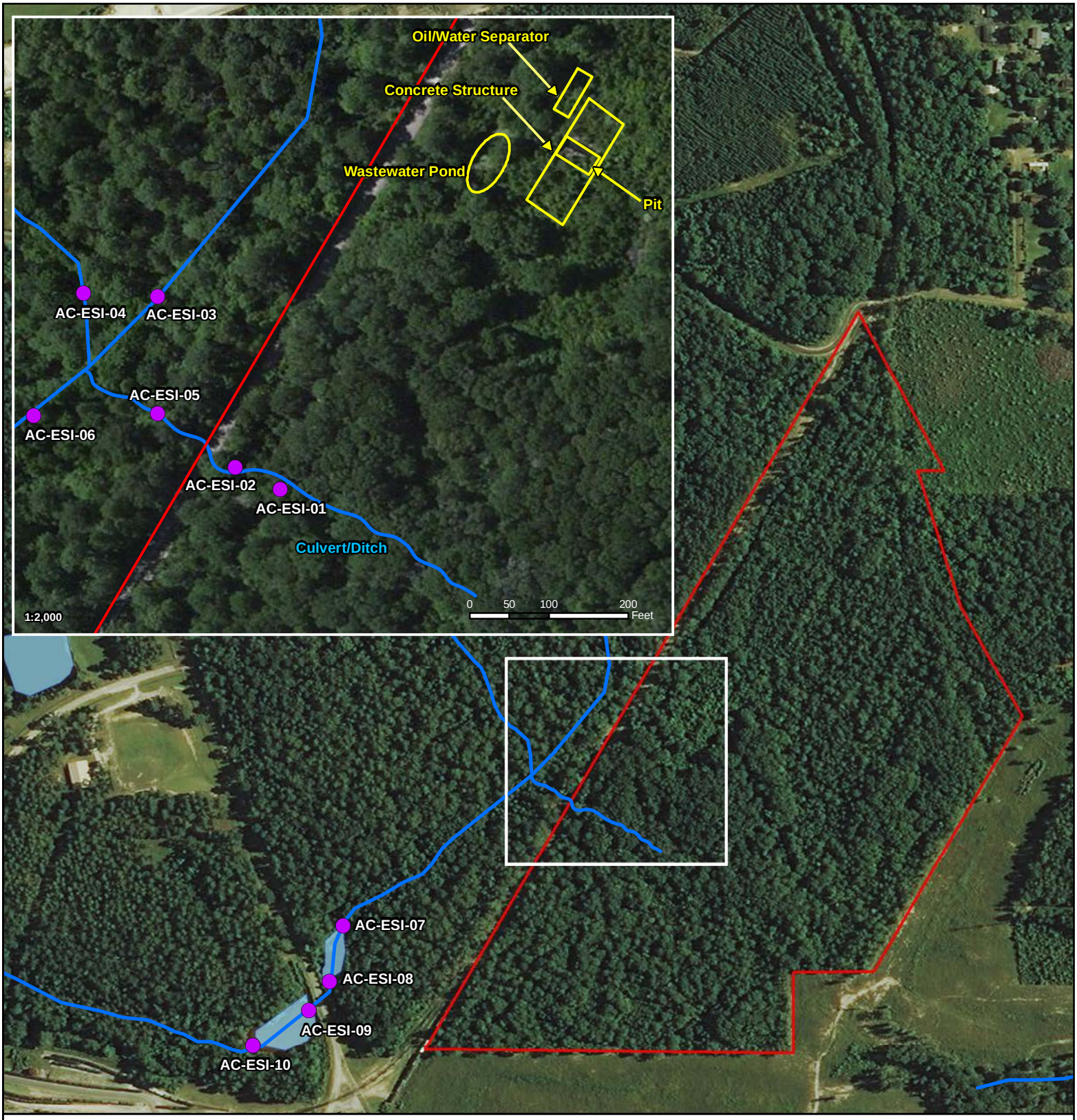
0 250 500 1,000 Feet

US EPA Region 6
START-3

Figure 4. Historical Aerial Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293 TDD
No. 9/DYNAMAC-077-16-001

Source: USGS Aerial Photograph, 1954



Map of Lousiana

Legend

- Proposed
- Site Boundary
- Culvert/Ditch
- Impoundments

N
W E
S

1:6,000

0 300 600 1,200 Feet

US EPA Region 6
START-3

Figure 5. Proposed Sample Location Map
American Creosote
DeRiddder, Beauregard Parish, Louisiana

SSID No. A6KM
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001

39 282

Source: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

TABLES

TABLE 1
SAMPLE COLLECTION SUMMARY

Sample Matrix	Sample Location	Analyses	Composites or Grab Samples	Trip Blank Samples	MS/MSD	Field Duplicates	Rinsates
Off-site Surface water	8 locations (Figure 1)	TCL SVOCs	Grab	1 per day to laboratory	1 per 20 samples	1 per 10 samples	NA
Off-site Sediment	8 locations (Figure 1)	TCL SVOCs	Grab	1 per day to laboratory	1 per 20 samples	1 per 10 samples	NA
On-site Surface Water	2 locations (Figure 1)	TCL SVOCs	Grab	1 per day to laboratory	1 per 20 samples	1 per 10 samples	NA
On-site Sediment	2 locations (Figure 1)	TCL SVOCs	Grab	1 per day to laboratory	1 per 20 samples	1 per 10 samples	NA

KEY:
MS/MSD – Matrix Spike/Matrix Spike Duplicate
NA – Not applicable
TCL – Target Compound List

TABLE 2
SAMPLING AND ANALYSIS SUMMARY

Matrix	Analytical Parameter	Analytical Method	Containers (Number, Size, and Type)	Preservation Requirements	No. of Samples	No. Field Duplicates	No. MS/MSD Pairs	No. of Equipment Rinsate Samples	No. of Trip Blanks	Total Number of Samples to Lab*
Surface Water	TCL SVOCs	EPA Regional Laboratory or current CLP SOW	2, one liter amber glass bottle	Cool to 4°C	10	1	1	0	0	11
Sediments	TCL SVOCs	EPA Regional Laboratory or current CLP SOW	1, 8 oz. jar	Cool to 4°C	10	1	1	0	0	11

Notes:
*Total number of samples to the laboratory does not include MS/MSD samples. However, please note that MS/MSD or spike/duplicate analysis may require additional sample volume.

KEY:
°C - Degrees Celsius
CLP – Contract Laboratory Program
MS/MSD – Matrix Spike/Matrix Spike Duplicate
SOW – Statement of Work
TCL – Target Compound List

TABLE 3
PROPOSED SAMPLE LOCATIONS
American Creosote DeRidder ESI

	Sample ID	Sample Location	Sample Type
1	AC-ESI-SD01/AC-ESI-SW01	On-Site Culvert/Ditch	Sediment/Water
2	AC-ESI-SD02/AC-ESI-SW02	On-Site Culvert/Ditch	Sediment/Water
3	AC-ESI-SD03/AC-ESI-SW03	Background, tributary on Ingevity property	Sediment/Water
4	AC-ESI-SD04/AC-ESI-SW04	Background, tributary on Ingevity property	Sediment/Water
5	AC-ESI-SD05/AC-ESI-SW05	Drainage/overland flow pathway to surface water impoundment/slough on Ingevity property	Sediment/Water
6	AC-ESI-SD06/AC-ESI-SW06	Drainage/overland flow pathway to surface water impoundment/slough on Ingevity property	Sediment/Water
7	AC-ESI-SD07/AC-ESI-SW07	Probable point of entry (PPE), surface water impoundment/slough on Ingevity property	Sediment/Water
8	AC-ESI-SD08/AC-ESI-SW08	Surface water impoundment/slough prior to discharging to second surface water impoundment on Ingevity property	Sediment/Water
9	AC-ESI-SD09/AC-ESI-SW09	Second surface water impoundment on Ingevity property	Sediment/Water
10	AC-ESI-SD10/AC-ESI-SW10	Second surface water impoundment on Ingeviry property	Sediment/Water
11	AC-ESI-SD11/AC-ESI-SW11	Duplicate (location to be determined in field)	Sediment/Surface Water Field Duplicate

Key:
AC-ESI-SW : American Creosote Expanded Site Inspection Surface Water Sample
AC-ESI-SD: American Creosote Expanded Site Inspection Sediment Sample

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder ESI	
STEP 1. STATE THE PROBLEM	
Determine if CERCLA hazardous substances are present in the surface water and sediments at the culvert/ditch on-site, and if they are migrating off-site to surface waters and sediments.	
STEP 2. IDENTIFY THE DECISION	
If CERCLA hazardous substances are present in surface water and sediments at the site, the site is eligible for HRS consideration. If CERCLA hazardous substances are present in the culvert/ditch or surface water impoundments, potential or actual releases to the HRS surface water pathway can be documented.	
IDENTIFY THE ALTERNATIVE ACTIONS THAT MAY BE TAKEN BASED ON THE DECISIONS.	If CERCLA hazardous substances are found in the surface water or sediments at the site, HRS evaluation of the site can be conducted. If CERCLA hazardous substances are found in the surface water or sediment of the surface water impoundments, an observed release is documented. If not, a potential release will be used for HRS evaluation.
STEP 3. IDENTIFY INPUTS TO THE DECISION	
IDENTIFY THE INFORMATIONAL INPUTS NEEDED TO RESOLVE A DECISION.	Surface water and sediment samples from the site and off-site. HRS Rule
IDENTIFY THE SOURCES FOR EACH INFORMATIONAL INPUT AND LIST THE INPUTS THAT ARE OBTAINED THROUGH ENVIRONMENTAL MEASUREMENTS.	HRS Rule is published. All sample results are environmental measurements
BASIS FOR THE CONTAMINANT SPECIFIC ACTION LEVELS.	HRS rule, background concentrations, sample CRQLs
IDENTIFY POTENTIAL SAMPLING TECHNIQUES AND APPROPRIATE ANALYTICAL METHODS.	On-Site and Off-Site Surface Waters and Sediments – Surface water samples will be collected either by the "beaker on a stick" method and placed directly into sample containers, or placed directly into sample containers. Sediment samples will be collected using either a ponar dredge, a push probe technique using PVC piping, or trowels and spoons, and transferred directly into sample containers. Samples will be analyzed for SVOCs using EPA methods utilized by the Houston EPA Lab or current CLP SOWs.
STEP 4. DEFINE THE BOUNDARIES OF THE STUDY	
DEFINE THE DOMAIN OR GEOGRAPHICAL AREA WITHIN WHICH ALL DECISIONS MUST APPLY.	The 55 acres that comprise the facility. The drainage pathways flow into a surface impoundment/slough on Ingevity property (the probable point of entry). The probable point of entry and extending 15 miles downstream, including a second impoundment straddled by Ingevity property, Palmetto Creek, Bundick Creek and the adjoining wetlands.
SPECIFY THE CHARACTERISTICS THAT DEFINE THE POPULATION OF INTEREST.	The primary population of interest is the users of surface water and ecological receptors within the 15 mile HRS target distance for the surface water pathway. The secondary population of interest is the users of drinking water receptors within the 4

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder ESI	
	mile target radius distance limit for the ground water pathway.
DEFINE THE SCALE OF THE DECISION MAKING.	Bounds of the samples collected.
DETERMINE THE TIMEFRAME TO WHICH THE DATA APPLY.	Results from this and subsequent potential investigations.
DETERMINE WHEN TO COLLECT THE DATA.	Sample collection will be conducted the week of May 23, 2016.
IDENTIFY PRACTICAL CONSTRAINTS ON DATA COLLECTION.	EPA/START must obtain access agreements from property owners before sampling.
STEP 5. DEVELOP A DECISION RULE	
SPECIFY THE PARAMETER THAT CHARACTERIZES THE POPULATION OF INTEREST.	SVOCs within the surface waters and/or sediments at the site and off-site.
SPECIFY THE ACTION LEVEL FOR THE DECISION.	Contaminants present in the samples of sediment or surface water at the site. Concentration greater than SQL if not detected in the background samples, greater than 3 times the background concentration if detected in background samples.
DEVELOP A DECISION RULE.	If CERCLA hazardous substances are present at concentrations greater than their SQLs in the surface water and/or sediment samples collected at the site, potential sources will be evaluated using the HRS model. If the concentration of a hazardous substance at the site is greater than its SQL in the off-site surface water and/or sediment samples and the substance is not detected in background samples, a release to that pathway will be evaluated, or if a hazardous substance at the site is detected in the background sample and its concentration in the off-site surface water or sediment samples is greater than its SQL and 3 times greater that the concentration in the background sample, a release to that pathway will be evaluated, else no release can be documented.
STEP 6. SPECIFY THE LIMITS ON DECISION ERRORS	
DETERMINE THE POSSIBLE RANGE OF THE PARAMETER OF INTEREST.	Concentrations may range from less than SQL/reporting limit to greater than 10,000 ppm.
DEFINE BOTH TYPES OF DECISION ERRORS AND IDENTIFY THE POTENTIAL CONSEQUENCES OF EACH.	1. Deciding that the concentrations are below HRS criteria when they are actually greater. 2. Deciding that the concentrations are above HRS criteria when they are actually lower.
ESTABLISH THE TRUE STATE OF NATURE FOR EACH DECISION RULE.	1. Concentrations are greater than HRS criteria 2. Concentration are less than HRS criteria

Table 4 DATA QUALITY OBJECTIVES American Creosote DeRidder ESI	
DEFINE THE TRUE STATE OF NATURE FOR THE MORE SEVERE DECISION ERROR AS THE BASELINE CONDITION OR THE NULL HYPOTHESIS (H_o), AND DEFINE THE TRUE STATE FOR THE LESS SEVERE DECISION ERROR AS THE ALTERNATIVE HYPOTHESIS (H_a).	The more sever decision error is to decide that the concentrations are below HRS criteria when they are actually above criteria, Ho – Null hypothesis. Alternate hypothesis – H1 – concentrations are above HRS criteria when they are actually below criteria.
ASSIGN THE TERMS "FALSE POSITIVE" AND "FALSE NEGATIVE" TO THE PROPER DECISION ERRORS.	Ho = false negative H1 = false positive
ASSIGN THE PROBABILITY VALUES TO POINTS ABOVE AND BELOW THE ACTION LEVEL THAT REFLECT THE ACCEPTABLE PROBABILITY FOR THE OCCURENCES OF DECISION ERRORS.	Probability values not assigned at this time.
STEP 7. OPTIMIZE THE DESIGN	
REVIEW THE DQOs.	
DEVELOP GENERAL SAMPLING AND ANALYSIS DESIGN. The QASP that these DQOs are attached to reflect the sample and analysis design to meet these objectives.	

APPENDICES

APPENDIX A

EPA ERT SOP No. 2013 – Surface Water Sampling

(Document not Generated by START)

SURFACE WATER SAMPLING

SOP#: 2013
DATE: 11/17/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

This standard operating procedure (SOP) is applicable to the collection of representative liquid samples, both aqueous and non-aqueous from streams, rivers, lakes, ponds, lagoons, and surface impoundments. It includes samples collected from depth, as well as samples collected from the surface.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure or other procedure limitations. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sampling situations vary widely, therefore, no universal sampling procedure can be recommended. However, sampling of both aqueous and non-aqueous liquids from the above mentioned sources is generally accomplished through the use of one of the following samplers or techniques:

- Kemmerer bottle
- Bacon bomb sampler
- Dip sampler
- Direct method

These sampling techniques will allow for the collection of representative samples from the majority of surface waters and impoundments encountered.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

Once samples have been collected, the following procedure should be followed:

1. Transfer the sample(s) into suitable, labeled sample containers.

2. Preserve the sample if appropriate, or use pre-preserved sample bottles. Do not overfill bottles if they are pre-preserved.

3. Cap the container, place in a ziploc plastic bag and cool to 4°C.

4. Record all pertinent data in the site logbook and on field data sheets.

5. Complete the Chain of Custody record.

6. Attach custody seals to cooler prior to shipment.

7. Decontaminate all sampling equipment prior to the collection of additional samples with that sampling device.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

There are two primary interferences or potential problems with surface water sampling. These include cross contamination of samples and improper sample collection.

1. Cross contamination problems can be eliminated or minimized through the use of dedicated sampling equipment. If this is not possible or practical, then decontamination of sampling equipment is necessary. Refer to the Sampling Equipment Decontamination SOP.

2. Improper sample collection can involve using contaminated equipment, disturbance of the stream or impoundment substrate, and sampling in an obviously disturbed area.

Following proper decontamination procedures and minimizing disturbance of the sample site will eliminate these problems.

5.0 EQUIPMENT/APPARATUS

Equipment needed for collection of surface water samples may include (depending on technique chosen):

- Kemmerer bottles
- Bacon bomb sampler
- Dip sampler
- Line and messengers
- Sample bottles/preservatives
- Ziploc bags
- Ice
- Coolers
- Chain of Custody records, custody seals
- Field data sheets
- Decontamination equipment
- Maps/plot plan
- Safety equipment
- Compass
- Tape measure
- Survey stakes, flags, or buoys and anchors
- Camera and film
- Logbook/waterproof pen
- Sample bottle labels

6.0 REAGENTS

Reagents will be utilized for preservation of samples and for decontamination of sampling equipment. The preservatives required are specified by the analysis to be performed.

7.0 PROCEDURES

7.1 Preparation

1. Determine the extent of the sampling effort, the sampling methods to be employed, and the types and amounts of equipment and supplies needed.

2. Obtain the necessary sampling and monitoring equipment.

3. Decontaminate or pre-clean equipment, and ensure that it is in working order.

4. Prepare scheduling and coordinate with staff, clients, and regulatory agency, if appropriate.

5. Perform a general site survey prior to site entry, in accordance with the site specific Health and Safety Plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. If required the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions. If collecting sediment samples, this procedure may disturb the bottom.

7.2 Representative Sampling Considerations

In order to collect a representative sample, the hydrology and morphometrics of a stream or impoundment should be determined prior to sampling. This will aid in determining the presence of phases or layers in lagoons, or impoundments, flow patterns in streams, and appropriate sample locations and depths.

Water quality data should be collected in impoundments, and to determine if stratification is present. Measurements of dissolved oxygen, pH, and temperature can indicate if strata exist which would effect analytical results. Measurements should be collected at one-meter intervals from the substrate to the surface using the appropriate instrument (i.e., a Hydrolab or equivalent).

Water quality measurements such as dissolved oxygen, pH, temperature, conductivity, and oxidation-reduction potential can assist in the interpretation of analytical data and the selection of sampling sites and depths when surface water samples are collected.

Generally, the deciding factors in the selection of a sampling device for sampling liquids in streams, rivers, lakes, ponds, lagoons, and surface impoundments are:

1. Will the sample be collected from shore or from a boat?

2. What is the desired depth at which you wish to collect the sample?

3. What is the overall depth and flow direction of river or stream?

4. What type of sample will be collected (i.e., water or lagoon liquids)?

7.2.1 Sampler Composition

The appropriate sampling device must be of a proper composition. Selection of samplers constructed of glass, stainless steel, PVC or PFTE (Teflon) should be based upon the analyses to be performed.

7.3 Sample Collection

7.3.1 Kemmerer Bottle

A Kemmerer bottle (Figure 1, Appendix A) may be used in most situations where site access is from a boat or structure such as a bridge or pier, and where samples at depth are required. Sampling procedures are as follows:

1. Use a properly decontaminated Kemmerer bottle. Set the sampling device so that the sampling end pieces (upper and lower stoppers) are pulled away from the sampling tube (body), allowing the substance to be sampled to pass through this tube.

2. Lower the pre-set sampling device to the predetermined depth. Avoid bottom disturbance.

3. When the Kemmerer bottle is at the required depth, send down the messenger, closing the sampling device.

4. Retrieve the sampler and discharge from the bottom drain the first 10-20 mL to clear any potential contamination of the valve. Transfer the sample to the appropriate sample container.

7.3.2 Bacon Bomb Sampler

A bacon bomb sampler (Figure 2, Appendix A) may be used in situations similar to those outlined for the Kemmerer bottle. Sampling procedures are as follows:

1. Lower the bacon bomb sampler carefully to the desired depth, allowing the line for the trigger to remain slack at all times. When the desired depth is reached, pull the trigger line until taut. This will allow the sampler to fill.

2. Release the trigger line and retrieve the sampler.

3. Transfer the sample to the appropriate sample container by pulling up on the trigger.

7.3.3 Dip Sampler

A dip sampler (Figure 3, Appendix A) is useful in situations where a sample is to be recovered from an outfall pipe or along a lagoon bank where direct access is limited. The long handle on such a device allows access from a discrete location. Sampling procedures are as follows:

1. Assemble the device in accordance with the manufacturer's instructions.

2. Extend the device to the sample location and collect the sample by dipping the sampler into the substance.

3. Retrieve the sampler and transfer the sample to the appropriate sample container.

7.3.4 Direct Method

For streams, rivers, lakes, and other surface waters, the direct method may be utilized to collect water samples from the surface directly into the sample bottle. This method is not to be used for sampling lagoons or other impoundments where contact with contaminants is a concern.

Using adequate protective clothing, access the sampling station by appropriate means. For shallow stream stations, collect the sample under the water surface while pointing the sample container upstream; the container must be upstream of the collector. Avoid disturbing the substrate. For lakes and other impoundments, collect the sample under the water surface avoiding surface debris and the boat wake.

When using the direct method, do not use pre-preserved sample bottles as the collection method may dilute the concentration of preservative necessary for proper sample preservation.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following general QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

More specifically, when sampling lagoons or surface impoundments containing known or suspected hazardous substances, adequate precautions must be taken to ensure the safety of sampling personnel. The sampling team member collecting the sample should not get too close to the edge of the impoundment, where bank failure may cause him/her to lose his/her balance. The person performing the sampling should be on a lifeline and be wearing adequate protective equipment. When conducting sampling from a boat in an impoundment or flowing waters, appropriate boating safety procedures should be followed.

12.0 REFERENCES

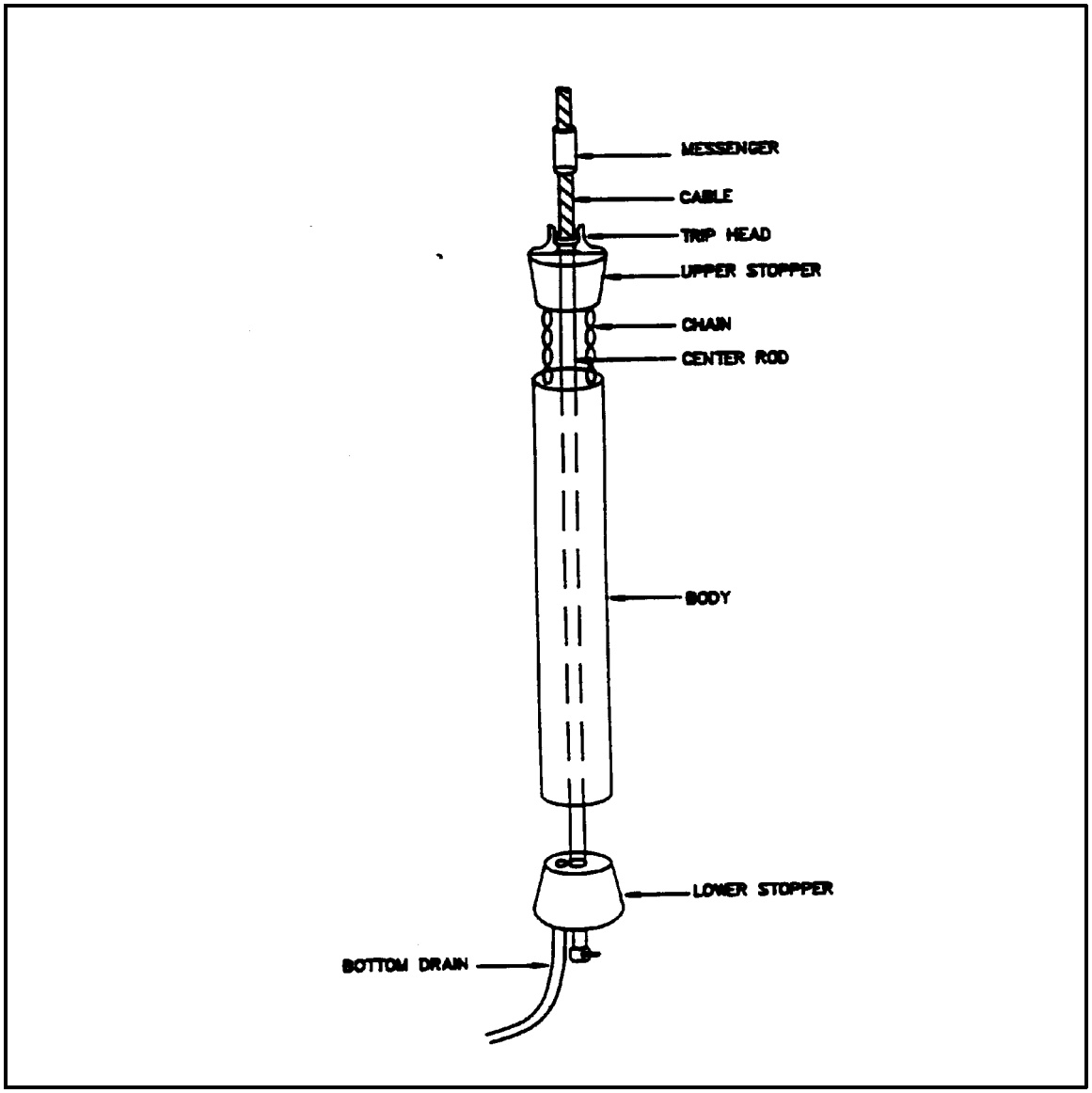
U.S. Geological Survey. 1977. National Handbook or Recommended Methods for Water Data Acquisition. Office of Water Data Coordination Reston, Virginia. (Chapter Updates available).

U.S. Environmental Protection Agency. 1984. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. EPA/600/4-84-076.

APPENDIX A

Figures

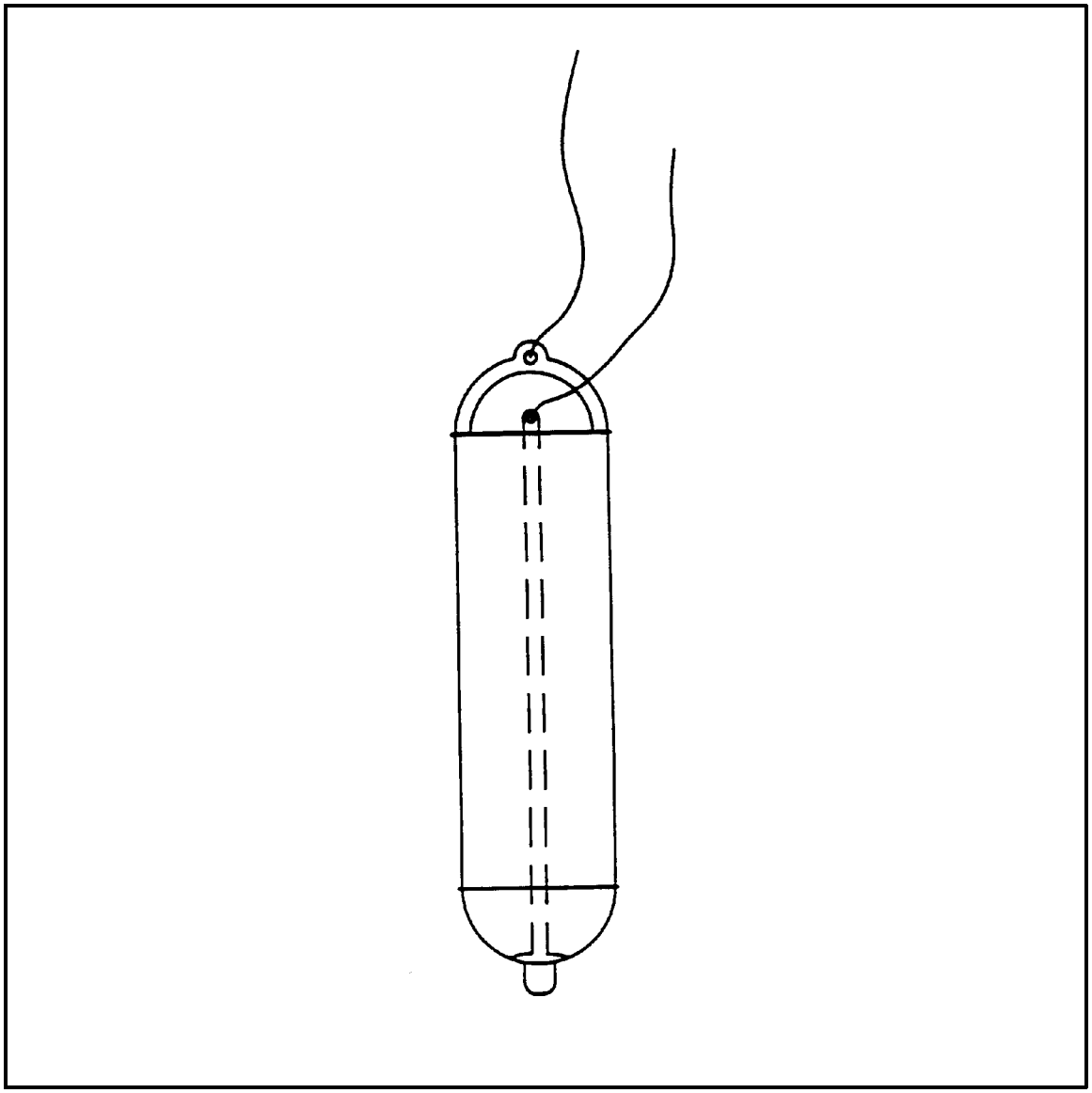
FIGURE 1. Kemmerer Bottle



APPENDIX A (Cont'd)

Figures

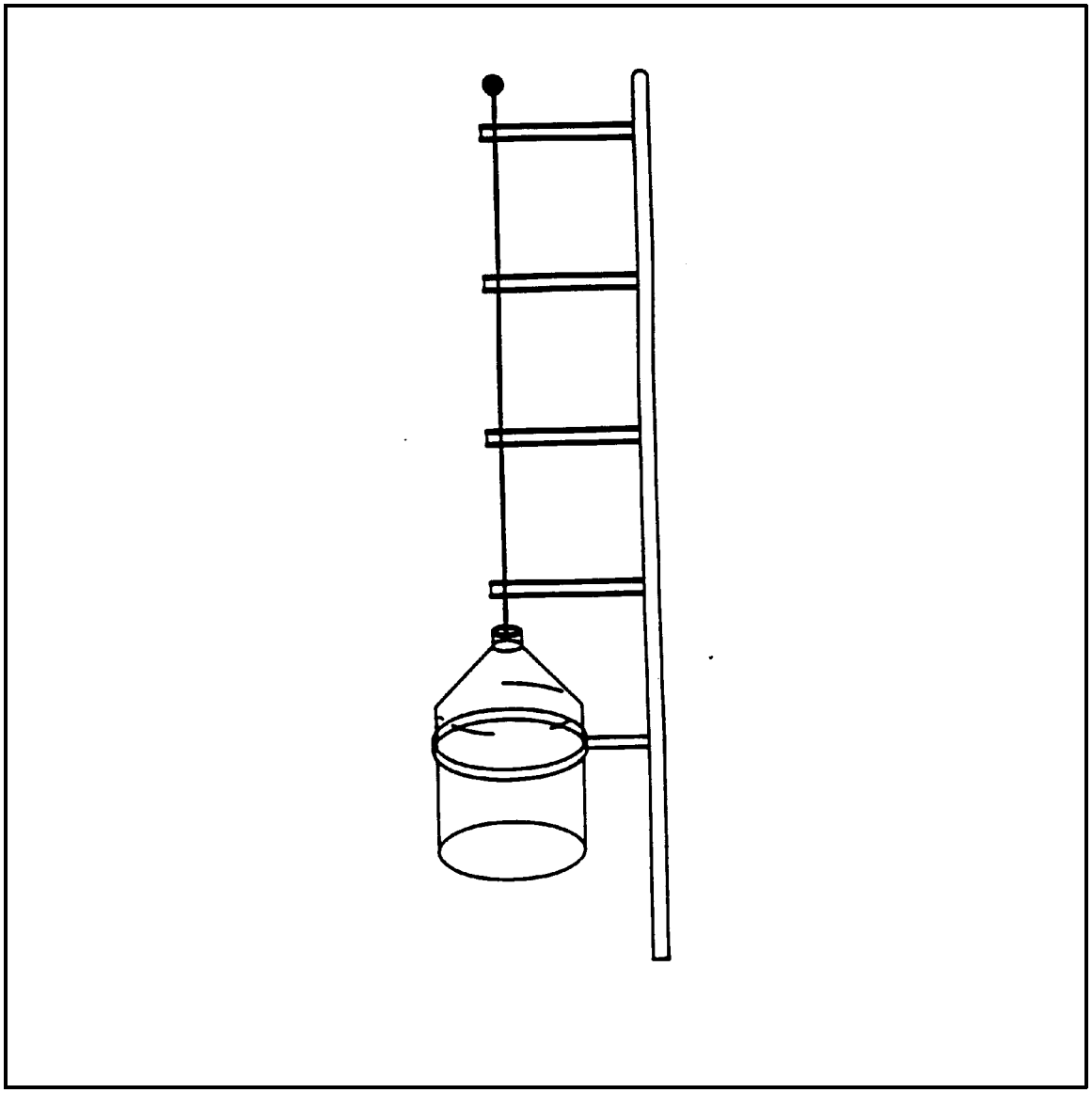
FIGURE 2. Bacon Bomb Sampler



APPENDIX A (Cont'd)

Figures

FIGURE 3. Dip Sampler



APPENDIX B

EPA ERT SOP No. 2016 – Sediment Sampling

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SEDIMENT SAMPLING

SOP#: 2016
DATE: 11/17/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

This standard operating procedure (SOP) is applicable to the collection of representative sediment samples. Analysis of sediment may be biological, chemical, or physical in nature and may be used to determine the following:

- toxicity;
- biological availability and effects of contaminants;
- benthic biota;
- extent and magnitude of contamination;
- contaminant migration pathways and source;
- fate of contaminants;
- grain size distribution.

The methodologies discussed in this SOP are applicable to the sampling of sediment in both flowing and standing water. They are generic in nature and may be modified in whole or part to meet the handling and analytical requirements of the contaminants of concern, as well as the constraints presented by site conditions and equipment limitations. However, if modifications occur, they should be documented in a site or personal logbook and discussed in reports summarizing field activities and analytical results.

For the purposes of this procedure, sediments are those mineral and organic materials situated beneath an aqueous layer. The aqueous layer may be either static, as in lakes, ponds, and impoundments; or flowing, as in rivers and streams.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Sediment samples may be collected using a variety of methods and equipment, depending on the depth of the aqueous layer, the portion of the sediment profile required (surface vs. subsurface), the type of sample required (disturbed vs. undisturbed), contaminants present, and sediment type.

Sediment is collected from beneath an aqueous layer either directly, using a hand held device such as a shovel, trowel, or auger; or indirectly, using a remotely activated device such as an Ekman or Ponar dredge. Following collection, sediment is transferred from the sampling device to a sample container of appropriate size and construction for the analyses requested. If composite sampling techniques are employed, multiple grabs are placed into a container constructed of inert material, homogenized, and transferred to sample containers appropriate for the analyses requested. The homogenization procedure should not be used if sample analysis includes volatile organics; in this case, sediment, or multiple grabs of sediment, should be transferred directly from the sample collection device or homogenization container to the sample container.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

1. Chemical preservation of solids is generally not recommended. Cooling to 4°C is usually the best approach, supplemented by the appropriate holding time for the analyses requested.

2. Wide mouth glass containers with Teflon lined caps are utilized for sediment samples. The sample volume is a function of the analytical requirements and will be specified in the Work Plan.

3. If analysis of sediment from a discrete depth or location is desired, sediment is transferred directly from the sampling device to a labeled sample container(s) of appropriate size and construction for the analyses

requested. Transfer is accomplished with a stainless steel or plastic lab spoon or equivalent.

4. If composite sampling techniques or multiple grabs are employed, equal portions of sediment from each location are deposited into a stainless steel, plastic, or other appropriate composition (e.g., Teflon) containers. The sediment is homogenized thoroughly to obtain a composite representative of the area sampled. The composite sediment sample is transferred to a labeled container(s) of appropriate size and construction for the analyses requested. Transfer of sediment is accomplished with a stainless steel or plastic lab spoon or equivalent. Samples for volatile organic analysis must be transferred directly from the sample collection device or pooled from multiple areas in the homogenization container prior to mixing. This is done to minimize loss of contaminant due to volatilization during homogenization.

5. All sampling devices should be decontaminated, then wrapped in aluminum foil. The sampling device should remain in this wrapping until it is needed. Each sampling device should be used for only one sample. Disposable sampling devices for sediment are generally impractical due to cost and the large number of sediment samples which may be required. Sampling devices should be cleaned in the field using the decontamination procedure described in the Sampling Equipment Decontamination SOP.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

Substrate particle size and organic matter content are a direct consequence of the flow characteristics of a waterbody. Contaminants are more likely to be concentrated in sediments typified by fine particle size and a high organic matter content. This type of sediment is most likely to be collected from depositional zones. In contrast, coarse sediments with low organic matter content do not typically concentrate pollutants and are generally found in erosional zones. The selection of a sampling location can, therefore, greatly influence the analytical results and should be justified and specified in the Work Plan.

5.0 EQUIPMENT/APPARATUS

Equipment needed for collection of sediment samples may include:

- Maps/plot plan
- Safety equipment
- Compass
- Tape measure
- Survey stakes, flags, or buoys and anchors
- Camera and film
- Stainless steel, plastic, or other appropriate composition bucket
- 4-oz., 8-oz., and one-quart wide mouth jars w/Teflon lined lids
- Ziploc plastic bags
- Logbook
- Sample jar labels
- Chain of Custody records, field data sheets
- Cooler(s)
- Ice
- Decontamination supplies/equipment
- Spade or shovel
- Spatula
- Scoop
- Trowel
- Bucket auger
- Tube auger
- Extension rods
- "T" handle
- Sediment coring device (tube, drive head, eggshell check value, nosecone, acetate tube, extension rods, "T" handle)
- Ponar dredge
- Ekman dredge
- Nylon rope or steel cable
- Messenger device

6.0 REAGENTS

Reagents are not used for preservation of sediment samples. Decontamination solutions are specified in the Sampling Equipment Decontamination SOP.

7.0 PROCEDURES

7.1 Preparation

1. Determine the objective(s) and extent of the sampling effort. The sampling methods to be employed, and the types and amounts of equipment and supplies required will be a function of site characteristics and objectives of the study.

2. Obtain the necessary sampling and monitoring equipment.

3. Prepare schedules, and coordinate with staff, client, and regulatory agencies, if appropriate.

4. Decontaminate or preclean equipment, and ensure that it is in working order.

5. Perform a general site survey prior to site entry in accordance with the site specific Health and Safety Plan.

6. Use stakes, flagging, or buoys to identify and mark all sampling locations. Specific site factors including flow regime, basin morphometry, sediment characteristics, depth of overlying aqueous layer, contaminant source, and extent and nature of contamination should be considered when selecting sample locations. If required, the proposed locations may be adjusted based on site access, property boundaries, and surface obstructions.

7.2 Sample Collection

Selection of a sampling device is most often contingent upon: (1) the depth of water at the sampling location, and (2) the physical characteristics of the sediment to be sampled. The following procedures may be utilized:

7.2.1 Sampling Surface Sediment with a Trowel or Scoop from Beneath a Shallow Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth and a shallow aqueous layer is considered to range from 0 to 12 inches in depth. Collection of surface sediment from beneath a shallow aqueous layer can be accomplished with tools such as spades, shovels, trowels, and scoops. Although this method can be used to collect both unconsolidated/consolidated sediment, it is limited somewhat by the depth and movement of the aqueous layer. Deep and rapidly flowing water render this method less accurate than others discussed below. However, representative samples can be collected with this procedure in shallow sluggish water provided care is demonstrated by the sample team member. A stainless steel or plastic sampling implement will suffice in most applications. Care should be exercised to avoid the use of devices plated with chrome or other materials; plating is particularly common with garden trowels.

The following procedure will be used to collect sediment with a scoop, shovel, or trowel:

1. Using a decontaminated sampling implement, remove the desired thickness and volume of sediment from the sampling area.

2. Transfer the sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

3. Surface water should be decanted from the sample or homogenization container prior to sealing or transfer; care should be taken to retain the fine sediment fraction during this procedure.

7.2.2 Sampling Surface Sediment with a Bucket Auger or Tube Auger from Beneath a Shallow Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches in depth. Collection of surface sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of bucket auger or tube auger, a series of extensions, and a "T" handle (Figure 1, Appendix A). The use of additional extensions in conjunction with a bucket auger can increase the depth of water from which sediment can be collected from 24 inches to 10 feet or more. However, sample handling and manipulation increases

in difficulty with increasing depth of water. The bucket auger or tube auger is driven into the sediment and used to extract a core. The various depths represented by the core are homogenized or a subsample of the core is taken from the appropriate depth.

The following procedure will be used to collect sediment samples with a bucket auger or tube auger:

1. An acetate core may be inserted into the bucket auger or tube auger prior to sampling if characteristics of the sediments or waterbody warrant. By using this technique, an intact core can be extracted.

2. Attach the auger head to the required length of extensions, then attach the "T" handle to the upper extension.

3. Clear the area to be sampled of any surface debris.

4. Insert the bucket auger or tube auger into the sediment at a 0º to 20º angle from vertical. This orientation minimizes spillage of the sample from the sampler upon extraction from the sediment and water.

5. Rotate the auger to cut a core of sediment.

6. Slowly withdraw the auger; if using a tube auger, make sure that the slot is facing upward.

7. Transfer the sample or a specified aliquot of sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

7.2.3 Sampling Deep Sediment with a Bucket Auger or Tube Auger from Beneath a Shallow Aqueous Layer

For the purpose of this method, deep sediment is considered to range from six to greater than 18 inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches. Collection of deep sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of a bucket auger, a tube auger, a series of extensions and a "T" handle. The use of additional extensions can increase the depth of water from which sediment can be collected from 24 inches to five feet or more. However, water clarity must be high enough to permit the sampler to directly observe the sampling operation. In addition, sample handling and manipulation increases in difficulty with increasing depth of water. The bucket auger is used to bore a hole to the upper range of the desired sampling depth and then withdrawn. The tube auger is then lowered down the borehole, and driven into the sediment to the lower range of the desired sampling depth. The tube is then withdrawn and the sample recovered from the tube. This method can be used to collect firmly consolidated sediments, but is somewhat limited by the depth of the aqueous layer, and the integrity of the initial borehole.

The following procedure will be used to collect deep sediment samples with a bucket auger and a tube auger:

1. Attach the bucket auger bit to the required lengths of extensions, then attach the "T" handle to the upper extension.

2. Clear the area to be sampled of any surface debris.

3. Begin augering, periodically removing any accumulated sediment (i.e., cuttings) from the auger bucket. Cuttings should be disposed of far enough from the sampling area to minimize cross contamination of various depths.

4. After reaching the upper range of the desired depth, slowly and carefully remove bucket auger from the boring.

5. Attach the tube auger bit to the required lengths of extensions, then attach the "T" handle to the upper extension.

6. Carefully lower tube auger down borehole using care to avoid making contact with the borehole sides and, thus, cross contaminating the sample. Gradually force tube auger into sediment to the lower range of the desired sampling depth. Hammering of the tube auger to facilitate coring should be avoided as the vibrations may cause the boring walls

to collapse.

7. Remove tube auger from the borehole, again taking care to avoid making contact with the borehole sides and, thus, cross contaminating the sample.

8. Discard the top of core (approximately 1 inch); as this represents material collected by the tube auger before penetration to the layer of concern.

9. Transfer sample into an appropriate sample or homogenization container. Ensure that non-dedicated containers have been adequately decontaminated.

7.2.4 Sampling Surface Sediment with an Ekman or Ponar Dredge from Beneath a Shallow or Deep Aqueous Layer

For the purpose of this method, surface sediment is considered to range from 0 to six inches in depth. Collection of surface sediment can be accomplished with a system consisting of a remotely activated device (dredge) and a deployment system. This technique consists of lowering a sampling device (dredge) to the surface of the sediment by use of a rope, cable, or extended handle. The mechanism is activated, and the device entraps sediment in spring loaded or lever operated jaws.

An Ekman dredge is a lightweight sediment sampling device with spring activated jaws. It is used to collect moderately consolidated, fine textured sediment. The following procedure will be used for collecting sediment with an Ekman dredge (Figure 2, Appendix A):

1. Attach a sturdy nylon rope or stainless steel cable through the hole on the top of the bracket, or secure the extension handle to the bracket with machine bolts.

2. Attach springs to both sides of the jaws. Fix the jaws so that they are in open position by placing trip cables over the release studs. Ensure that the hinged doors on the dredge top are free to open.

3. Lower the sampler to a point 4 to 6 inches above the sediment surface.

4. Drop the sampler to the sediment.

5. Trigger the jaw release mechanism by lowering a messenger down the line, or by depressing the button on the upper end of the extension handle.

6. Raise the sampler and slowly decant any free liquid through the top of the sampler. Care should be taken to retain the fine sediment fraction during this procedure.

7. Open the dredge jaws and transfer the sample into a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment grabs until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenize and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

A Ponar dredge is a heavyweight sediment sampling device with weighted jaws that are lever or spring activated. It is used to collect consolidated fine to coarse textured sediment. The following procedure will be used for collecting sediment with a Ponar dredge (Figure 3, Appendix A):

1. Attach a sturdy nylon rope or steel cable to the ring provided on top of the dredge.

2. Arrange the Ponar dredge with the jaws in the open position, setting the trip bar so the sampler remains open when lifted from the top. If the dredge is so equipped, place the spring loaded pin into the aligned holes in the trip bar.

3. Slowly lower the sampler to a point approximately two inches above the sediment.

4. Drop the sampler to the sediment. Slack on

the line will release the trip bar or spring loaded pin; pull up sharply on the line closing the dredge.

5. Raise the dredge to the surface and slowly decant any free liquid through the screens on top of the dredge. Care should be taken to retain the fine sediment fraction during this operation.

6. Open the dredge and transfer the sediment to a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenized and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

7.2.5 Sampling Subsurface Sediment with a Coring Device from Beneath a Shallow Aqueous Layer

For purposes of this method, subsurface sediment is considered to range from 6 to 24 inches in depth and a shallow aqueous layer is considered to range from 0 to 24 inches in depth. Collection of subsurface sediment from beneath a shallow aqueous layer can be accomplished with a system consisting of a tube sampler, acetate tube, eggshell check valve, nosecone, extensions, and "T" handle, or drivehead. The use of additional extensions can increase the depth of water from which sediment can be collected from 24 inches to 10 feet or more. This sampler may be used with either a drive hammer for firm sediment, or a "T" handle for soft sediment. However, sample handling and manipulation increases in difficulty with increasing depth of water.

The following procedure describes the use of a sample coring device (Figure 4, Appendix A) used to collect subsurface sediments.

1. Assemble the coring device by inserting the acetate core into the sampling tube.

2. Insert the "egg shell" check valve into the lower end of the sampling tube with the convex surface positioned inside the acetate core.

3. Screw the nosecone onto the lower end of the sampling tube, securing the acetate tube and eggshell check valve.

4. Screw the handle onto the upper end of the sampling tube and add extension rods as needed.

5. Place the sampler in a perpendicular position on the sediment to be sampled.

6. If the "T" handle is used, place downward pressure on the device until the desired depth is reached. After the desired depth is reached, rotate the sampler to shear off the core at the bottom. Slowly withdraw the sampler from the sediment and proceed to Step 15.

7. If the drive hammer is selected, insert the tapered handle (drive head) of the drive hammer through the drive head.

8. Drive the sampler into the sediment to the desired depth.

9. Record the length of the tube that penetrated the sample material, and the number of blows required to obtain this depth.

10. Remove the drive hammer and fit the keyhole-like opening on the flat side of the hammer onto the drive head. In this position, the hammer serves as a handle for the sampler.

11. Rotate the sampler to shear off the core at the bottom.

12. Lower the sampler handle (hammer) until it just clears the two ear-like protrusions on the drive head, and rotate about 90°.

13. Slowly withdraw the sampler from the sediment. If the drivehead was used, pull the hammer upwards and dislodge the sampler from the sediment.

14. Carefully remove the coring device from the water.

15. Unscrew the nosecone and remove the eggshell check valve.

16. Slide the acetate core out of the sampler tube. Decant surface water, using care to retain the fine sediment fraction. If head space is present in the upper end, a hacksaw may be used to shear the acetate tube off at the sediment surface. The acetate core may then be capped at both ends. Indicate on the acetate tube the appropriate orientation of the sediment core using a waterproof marker. The sample may be used in this fashion, or the contents transferred to a sample or homogenization container.

17. Open the acetate tube and transfer the sediment to a stainless steel, plastic or other appropriate composition (e.g., Teflon) container. Ensure that non-dedicated containers have been adequately decontaminated. If necessary, continue to collect additional sediment until sufficient material has been secured to fulfill analytical requirements. Thoroughly homogenize and then transfer sediment to sample containers appropriate for the analyses requested. Samples for volatile organic analysis must be collected directly from the bucket before homogenization to minimize volatilization of contaminants.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/ QUALITY CONTROL

There are no specific quality assurance (QA) activities which apply to the implementation of these procedures. However, the following QA procedures apply:

1. All data must be documented on field data sheets or within site logbooks.

2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan. Equipment checkout and calibration activities must occur prior to sampling/operation, and they must be documented.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA/OSHA and Corporate health and safety procedures.

More specifically, when sampling sediment from waterbodies, physical hazards must be identified and adequate precautions must be taken to ensure the safety of the sampling team. The team member collecting the sample should not get too close to the edge of the waterbody, where bank failure may cause loss of balance. To prevent this, the person performing the sampling should be on a lifeline, and be wearing adequate protective equipment. If sampling from a vessel is determined to be necessary, appropriate protective measures must be implemented.

12.0 REFERENCES

Mason, B.J., Preparation of Soil Sampling Protocol: Technique and Strategies. 1983 EPA-600/4-83-020.

Barth, D.S. and B.J. Mason, Soil Sampling Quality Assurance User's Guide. 1984 EPA-600/4-84-043.

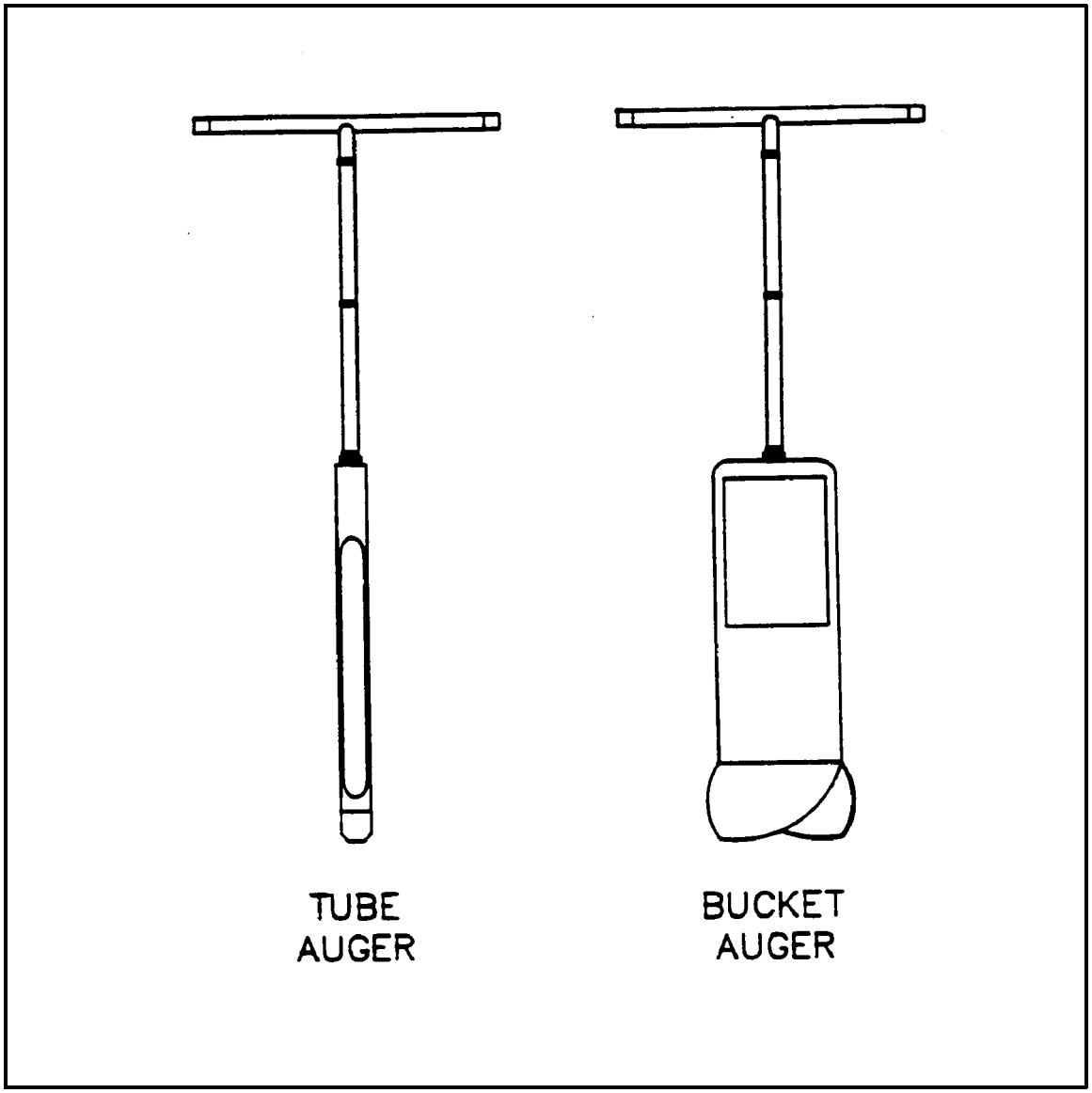
U.S. EPA. Characterization of Hazardous Waste Sites - A Methods Manual: Volume II. Available Sampling Methods, Second Edition. 1984 EPA-600/4-84-076.

de Vera, E.R., B.P. Simmons, R.D. Stephen, and D.L. Storm. Samplers and Sampling Procedures for Hazardous Waste Streams. 1980 EPA-600/2-80-018.

APPENDIX A

Figures

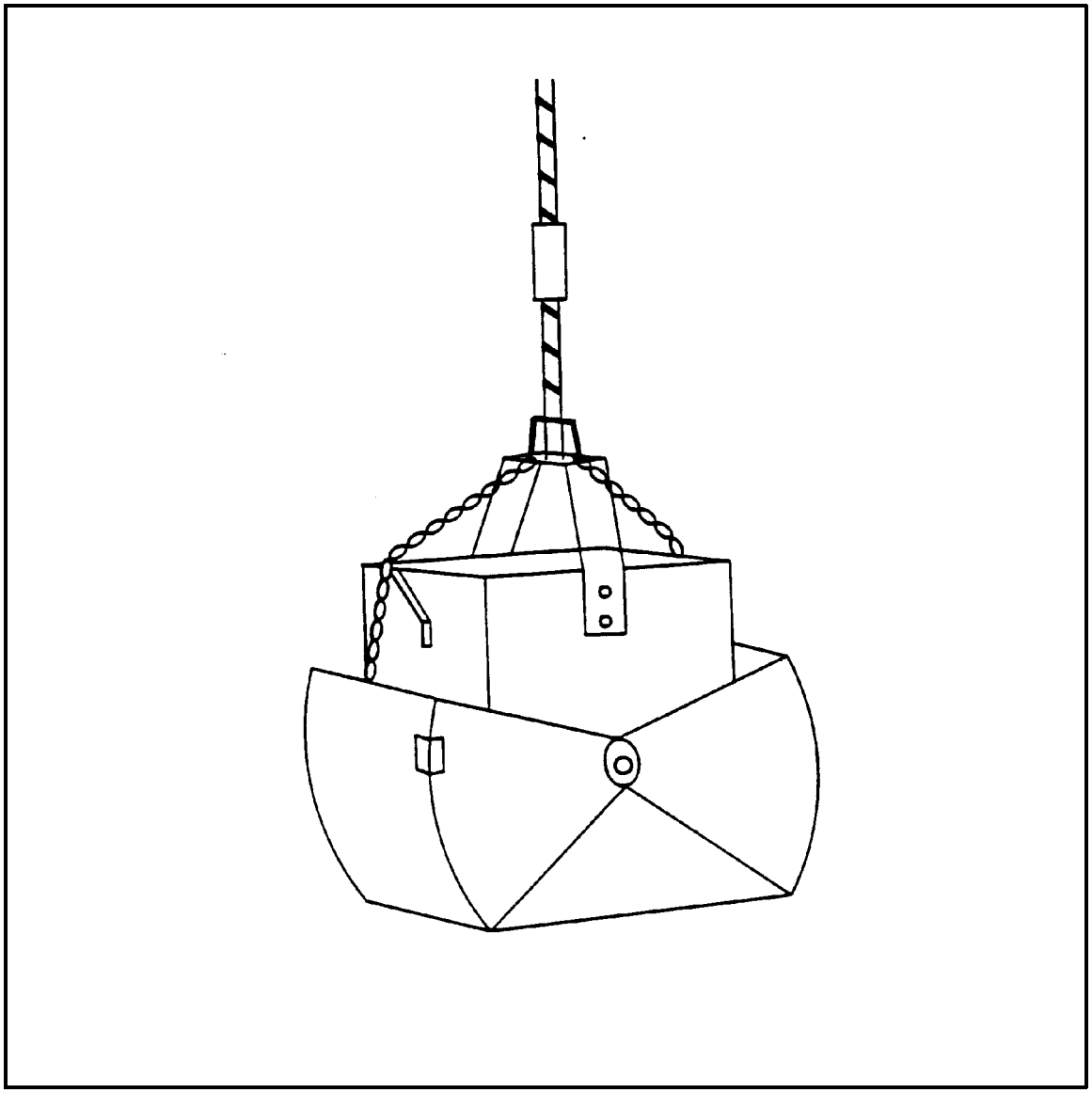
FIGURE 1. Sampling Auger



APPENDIX A (Cont'd)

Figures

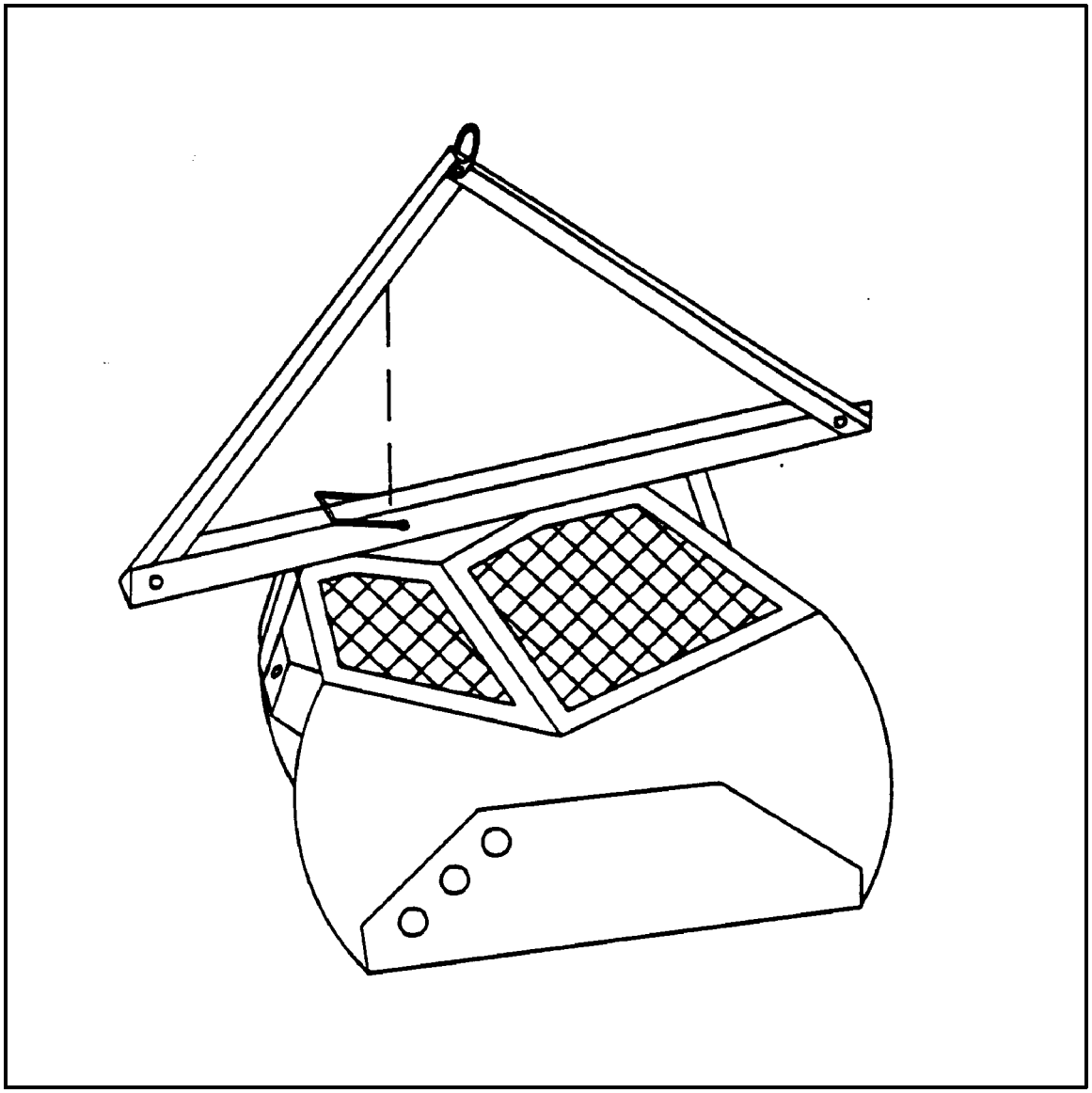
FIGURE 2. Ekman Dredge



APPENDIX A (Cont'd)

Figures

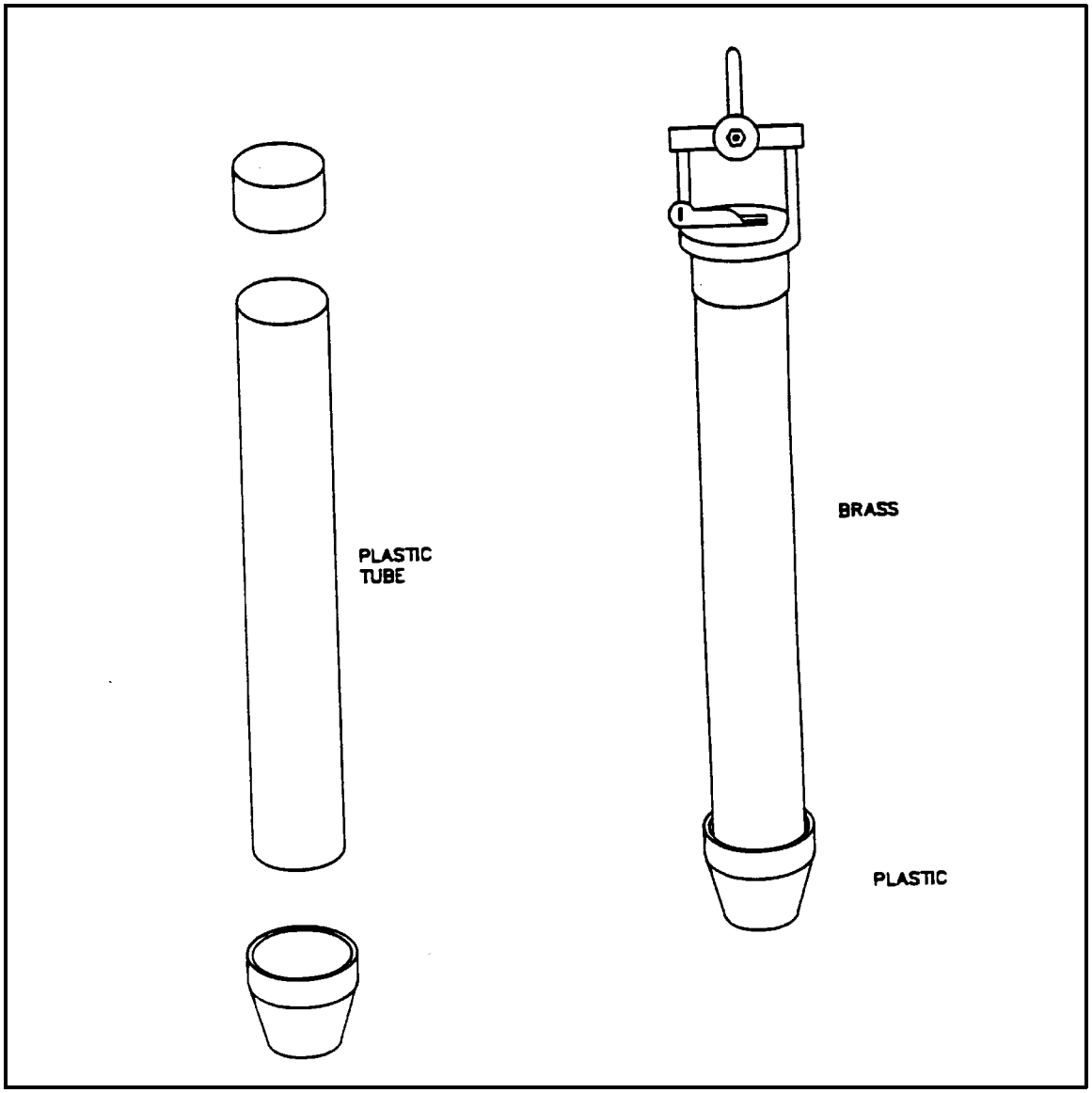
FIGURE 3. Ponar Dredge



APPENDIX A (Cont'd)

Figures

FIGURE 4. Sample Coring Device



APPENDIX C

EPA ERT SOP # 2003 – Sample Storage, Preservation and Handling

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U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SOP: 2003
PAGE: 1 of 7
REV: 0.0
DATE: 08/11/94

SAMPLE STORAGE, PRESERVATION AND HANDLING

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12.0 REFERENCES

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*These sections affected by Revision 0.0.

SUPERCEDES: SOP #2003; Revision 2.0; 01/09/92; U.S. EPA Contract 68-03-3482.

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide general guidelines for the storage and preservation of water and soil/sediment samples. Requirements for sample volume, matrix spike/matrix spike duplicate (MS/MSD) sample volume, container type, and preservation techniques are presented for both individual parameters and groups of parameters. Specific requirements for sample storage, preservation and handling must be established in the Quality Assurance (QA) Work Plan prior to sample collection.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U. S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

This SOP is applicable to all water or soil/sediment samples collected by ERT/REAC personnel. For handling, storage and preservation requirements for waste and air samples, refer to the specific SOPs for waste and air sampling techniques.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

3.1 Sample Storage and Preservation

Samples should be collected using equipment and procedures appropriate to the matrix, parameters and sampling objective. The volume of the sample collected must be sufficient to perform the analysis requested. Sample containers must not be pre-rinsed with the sample prior to sample collection.

Table 1 (Appendix A) contains a list of parameters which are typically of interest in ERT/REAC activations. Table 1 also indicates sample volumes to be collected by matrix and parameter. Samples must be stored in the proper types of containers and preserved in a manner appropriate to the analysis to be performed. This information is also provided in Table 1. To prevent leakage during shipping, sample containers should be no more than 90% full. If air space would affect sample integrity (i.e., samples for VOA analysis), fill the sample container completely and place the container in a second container to meet the 90% requirement.

All samples must be cooled to 4°C from the time of collection until analysis. When a preservative other than cooling is used, the preservative is generally added after the sample is collected, unless the sample container has been pre-preserved by the laboratory. If necessary, the pH must be adjusted to the appropriate level and checked with pH paper in a manner which will not contaminate the sample.

Depending on the arrangements for sample analysis and the amount of sample required for the analysis, it is possible that aliquots for several analyses may be taken from the same sample container. This should be verified with the laboratory performing the analyses prior to sample collection.

All sample containers must be labelled appropriately. The exterior of the sample containers must be wiped clean and dry prior to sample packaging. All samples must be packaged according to the requirements of U.S. Department of Transportation (U.S. DOT) or International Air Transportation Association (IATA).

3.2 Special Analytical Requests

If a parameter or group of parameters is not included in Table 1 (Appendix A), the laboratory performing the analysis should be contacted to determine the appropriate sample containers, volumes and preservatives. This information shall be documented in the QA Work Plan.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

The following are interferences or potential problems associated with sample storage, preservation and handling:

1. Samples should be protected from sunlight which may initiate photodegradation of sample components.

2. Delaying sample preservation may cause chemical reactions to occur, altering original sample composition.

3. Improper sample preservation may adversely affect sample results.

4. Inadequate sample volume may prohibit the appropriate analyses from being performed.

5.0 EQUIPMENT/APPARATUS

The equipment/apparatus required to collect samples must be determined on a site specific basis. Due to the wide variety of sampling equipment available, refer to the specific SOPs for sampling techniques which include lists of the equipment/apparatus required for sampling.

The following specific equipment/apparatus may be required for proper sample preservation:

- pipettes (various sizes)
- bulb
- pH paper
- safety equipment

6.0 REAGENTS

Reagents required for preservation of samples are specified in Table 1 (Appendix A). The preservatives required are specified by the analyses to be performed. Decontamination solutions are specified in ERT/REAC SOP #2006, Sampling Equipment Decontamination.

7.0 PROCEDURES

Once aqueous samples are collected, add the appropriate preservative to reach the desired pH. For non-aqueous samples, cool samples to 4°C immediately after collection. For handling, storage and preservation requirements for waste and air samples, refer to the specific SOPs.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

Refer to the specific SOPs for the type and frequency of QA/Quality Control (QC) samples to be analyzed, the acceptance criteria for the QA/QC samples, and any other QC activities which are associated with sampling techniques. All data associated with sampling must be documented on Field Data Sheets or within site logbooks.

10.0 DATA VALIDATION

Refer to the specific SOPs for data validation activities that are associated with sampling techniques.

11.0 HEALTH AND SAFETY

When working with potential hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

12.0 REFERENCES

This section is not applicable to this SOP.

APPENDIX A
Table
SOP #2003
August, 1994

TABLE 1. Sample Containers, Volumes to be Collected, and Preservatives by Parameter and Matrix[1]

Parameter	Matrix[2]	Container[3]	Volume to be Collected	Preservative
Acidity/Alkalinity	W	P or G	1 liter	Cool (4°C)
Acidity/Alkalinity	S	P or G	8 oz	Cool (4°C)
BNA[4]	W	G (amber)	2 x 1 liter	Cool (4°C)
BNA	S	G	8 oz	Cool (4°C)
BOD	W	G	1 liter	Cool (4°C)
COD	W	P or G	1 liter	Cool (4°C),H_2SO_4,pH<2
Cr^{+6}	W	P	200 ml	Cool (4°C)
Creosotes[4]	W	G	2 x 1 liter	Cool (4°C)
Creosotes	S	G	8 oz	Cool (4°C)
Cyanide[4]	W	P	1 liter	Cool (4°C),NaOH,pH>12
Cyanide	S	G	8 oz	Cool (4°C)
Dioxin/Furans	W	G	2 x 1 liter	Cool (4°C)
Dioxin/Furans	S	G	16 oz	Cool (4°C)
Herbicides[4]	W	G	2 x 1 liter	Cool (4°C)
Herbicides	S	G	8 oz	Cool (4°C)
Metals	W	P or G	1 liter	Cool (4°C),HNO_3, pH<2
Metals	S	G	8 oz	Cool (4°C)
Oil & Grease[4]	W	G	2 x 1 liter	Cool (4°C),H_2SO_4,pH<2
Oil & Grease	S	G	8 oz	Cool (4°C)
Petroleum Hydrocarbons[4]	W	G	2 x 1 liter	Cool (4°C),H_2SO_4pH<2
Petroleum Hydrocarbons	S	G	8 oz	Cool (4°C)
Pesticides/PCBs[4]	W	G (amber)	2 x 1 liter	Cool (4°C)
Pesticides/PCBs	S	G	8 oz	Cool (4°C)
Phenols	W	G	1 liter	Cool (4°C),H_2SO_4,pH<2
Phenols	S	G	8 oz	Cool (4°C)
Polynuclear Aromatic Hydrocarbons[4]	W	G	2 x 1 liter	Cool (4°C)
Polynuclear Aromatic Hydrocarbons	S	G	8 oz	Cool (4°C)
Reactivity (RCRA) (Cyanide)	W	P	1 liter	Cool (4°C),NaOH,pH>12
Reactivity (RCRA) (Sulfide)	W	P	1 liter	Cool (4°C),4.0 ml zinc acetate solution
Reactivity (RCRA) (Cyanide/Sulfide)	S	G (amber)	8 oz	Cool (4°C)
Corrosivity (RCRA)	W	P	500 ml	Cool (4°C)
Ignitibility (RCRA)	W	G (amber)	500 ml	Cool (4°C)
Ignitibility (RCRA)	S	G (amber)	8 oz	Cool (4°C)

TABLE 1. Sample Containers, Volumes to be Collected, and Preservatives by Parameter and Matrix[1] (Continued)

Parameter	Matrix[2]	Container[3]	Volume to be Collected	Preservative
TCLP-VOAs[6]	W	G	3 x 40 ml vial	Cool (4°C)
TCLP-BNAs	W	G (amber)	2 x 1 liter	Cool (4°C)
TCLP-Pesticides/Herbicides	W	G (amber)	2 x 1 liter	Cool (4°C)
TCLP-Inorganics	W	P	1 liter	Cool (4°C),HNO_3,pH<2
TCLP-Non-Volatile Extraction[5]	S	G	16 oz	Cool (4°C)
TCLP-Volatile Extraction[5]	S	G	16 oz	Cool (4°C)
TOC	W	P or G	500 ml	Cool (4°C), H_2SO_4,pH<2
TOC	S	G	8 oz	Cool (4°C)
TOX	W	G	300 ml	Cool (4°C)
TOX	S	G	8 oz	Cool (4°C)
VOAs[6]	W	G	3 x 40 ml vial	Cool (4°C)[7]
VOAs	S	G	40 ml vial	Cool (4°C)

(1) ERT/REAC requirements. Subcontract laboratory requirements may vary. Verify prior to sample collection.
(2) W - water, S - soil/sediment
(3) P - polyethylene, G - glass
(4) For 1 sample of every batch of 10 (or less) samples, collect 2 additional 1 liter volumes for MS/MSD analysis.
(5) For 1 sample of every batch of 10 (or less) samples, collect 2 additional 16 oz volumes for MS/MSD analysis.
(6) Avoid excessive turbulence when filling the sample container. The container must be sealed so that no air bubbles are entrapped. No headspace allowed.
(7) For drinking water samples, if residual chlorine is present, the sample should be preserved with 0.008% sodium thiosulfate. EPA Methods 330.4 and 330.5 may be used for measurement of residual chlorine. Field test kits are commercially available for this purpose.

APPENDIX D

EPA ERT SOP # 2004 Sample Packaging Shipment

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U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

SAMPLE PACKAGING AND SHIPMENT

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  - 3.3.1 Packaging
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*These sections affected by Revision 0.0.

1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to summarize requirements for the packaging, marking/labeling, and shipping of environmental and hazardous materials samples.

2.0 APPLICABILITY

This SOP is applicable to all Response, Engineering, and Analytical Contract (REAC) personnel when packaging, marking/labeling, and shipping environmental and hazardous material samples.

3.0 DESCRIPTION

3.1 General

Samples collected by REAC personnel are typically shipped to the REAC laboratory or a subcontract laboratory for analysis. Samples must be transported in a manner that will ensure their integrity, guard the samples from the detrimental effects of sample leakage or breakage and protect the health and safety of shipping/receiving personnel. Regulations for packaging, marking/labeling, and shipping of hazardous materials and wastes are promulgated by the U.S. Department of Transportation (U.S. DOT). Air carriers which transport hazardous materials, in particular Federal Express, require compliance with the current edition of the International Air Transport Association (IATA) *Dangerous Goods Regulations*, which applies to shipment and transportation of hazardous materials samples by air carrier. Following current IATA regulations will ensure compliance with U.S. DOT.

Employees should be aware that regulatory agencies with jurisdiction have the authority to levy substantial fines and penalties to violators. Failure on the part of any employee to comply with the requirements of these procedures may be cause for disciplinary action, including discharge.

3.2 Environmental Samples versus Hazardous Material Samples

Samples collected by REAC personnel are classified as either environmental or hazardous material samples. In general, environmental samples (soils, sediments, surface and ground waters) are those collected from off-site areas and are not expected to contain high concentrations of contaminants considered to be hazardous. Soils, sediments, surface and ground waters collected from on-site areas may be classified as hazardous material samples if they contain hazardous levels of contaminants. On-site materials collected from drums, bulk storage tanks, obviously contaminated ponds, impoundments, lagoons, pools, and leachates from hazardous waste sites are generally considered hazardous material samples. It should be noted that the sample collection location (on-site versus off-site) is not the dominant factor in determining whether the sample is an environmental or hazardous waste sample, but rather the concentration of the contaminants and the nature of the matrix. The following are examples of the types of information that the Task Leader may use to determine if a matrix should be considered either an environmental or hazardous material samples:

- proximity of the sampling location to the suspected source of contamination

- field screening results (HNu, OVA, XRF, etc.)
- environmental indicators such as living biota (vegetation, fish, etc.), staining, matrix characteristics (i.e., does the soil or water appear "normal"?)
- historic sampling and analytical results
- type of site and activities conducted on the site

Distinctions must be made between environmental and hazardous material samples:

- To determine the IATA requirements for the transportation of samples. If there is any doubt, a sample should be considered hazardous and shipped accordingly.
- To protect the health and safety of sample receiving personnel. Special precautions may be necessary when samples other than those of an environmental nature are received.

3.3 Environmental Samples

3.3.1 Packaging

Environmental samples must be packaged as follows:

1. The sample jars should be properly labeled in accordance with ERT/REAC SOP #2002, *Sample Documentation*, and the exteriors of the sample jars should be wiped clean and dried, if necessary. The sealed sample jars should be placed in a polyethylene bag (one sample per bag), and the bag should be sealed.

2. The sample jars may be placed in a U.S. DOT-approved fiberboard box or cooler (shipping container) which has been lined with a large polyethylene bag or plastic sheeting.

3. The shipping container must be packed with enough noncombustible, absorbent, cushioning material to minimize the possibility of sample jar breakage, and to absorb any material that may have leaked. If there are multiple sample jars, there must be sufficient cushioning material between them to prevent breakage if the shipping container is dropped or severely shocked.

4. If maintenance of the sample jars at 4°C is necessary, wet or blue ice must be placed into two sealable polyethylene bags which must be sealed and placed in the shipping container. Additional absorbent material may be added, if necessary.

   NOTE: If dry ice is used, it should be limited to 4 pounds or less per shipping container. Use of more than 4 pounds of dry ice will require the completion of the Federal Express Air bill for Dangerous Goods Shipments. In addition, the shipping

container must be vented to allow for escape of carbon dioxide gas. It is recommended to use a dry ice shipping container.

5. The Chain of Custody Record, completed in accordance with ERT/REAC SOP #4005, *Chain of Custody Procedures*, must be placed in a polyethylene bag which must be sealed and taped to the inside of the shipping container lid.

6. The shipping container must be closed and sealed with duct or strapping tape.

3.3.2 Marking/Labeling of Shipping Containers and Shipping Papers

1. Sample jars must have completed sample labels, and the shipping container must be marked "Environmental Samples" (Appendix A, Figure 1). When liquid samples are included in the shipping container, two sides of the shipping container must be marked "This End Up" or arrow labels (Appendix A, Figure 2) should be affixed. No IATA marking or labeling are required. However, the shipping container must be labeled with the names and addresses of both the sender and the receiver. At least two custody seals must be placed across the shipping container openings as per ERT/REAC SOP #4005, *Chain of Custody Procedures*.

2. No IATA shipping papers are required.

3.3.3 Transportation

1. There are no IATA restrictions on the mode of transportation.

2. In general, Federal Express is used for all overnight sample shipment. Due to holding time restrictions, this is highly recommended unless the samples personally can be transported to the appropriate laboratory for analysis.

3. When environmental samples are shipped by Federal Express, a Federal Express Airbill (Appendix A, Figure 3) must be completed. If Federal Express service is not available for a particular location, the REAC Shipping/Receiving Department must be contacted to determine the appropriate overnight carrier and make arrangements for shipment.

3.4 Hazardous Material Samples

3.4.1 Determination of Hazard Class

Prior to mobilization in the field and any sampling activities, the following steps must be taken to determine the Hazard Class(es) of the materials to be shipped.

1. The Task Leader or designee shall identify the material for which samples are being collected and analyzed. If it is a class of materials (i.e., BNAs, VOAs, etc.), the

specific compound/analyte considered to be the most hazardous should be identified.

2. The Task Leader or designee shall provide the REAC Shipping/Receiving Department with the proper shipping name (usually the chemical name or a synonym) of the material to be shipped. If the material is not included in the IATA List of Dangerous Goods, the Task Leader, or designee, shall assist the Shipping/Receiving personnel in determining the appropriate Hazard Class and Packing Group, if applicable. This is usually dependent on the physical properties of the hazardous material.

   The appropriate Hazard Class and Packing Group for hazardous material samples can be determined through professional judgement and logical elimination of inappropriate classes for the material being shipped. Definitions of the nine Hazard Classes specified by the IATA *Dangerous Goods Regulations*(1) are included in Appendix B.

3. The Shipping/Receiving personnel will consult the IATA *Dangerous Goods Regulations* (current edition) for packing, marking and labeling, and documentation instructions. REAC personnel will implement the "Limited Quantities" regulations unless they are not applicable.

4. Instructions provided by the Shipping/Receiving Department must be documented in the site specific Work Plan.

3.4.2 Packaging

Unless otherwise directed by the IATA *Dangerous Goods Regulations*, samples must be packaged as described in Section 3.3.1 of this SOP.

3.4.3 Marking/Labeling of Shipping Containers and Shipping Papers

Shipping containers must be marked, labeled and shipping documentation completed as described in the IATA *Dangerous Goods Regulations.* Shipping containers must be labeled with the names and addresses of both the sender and the receiver, and at least two custody seals must be placed across the shipping container openings.

3.4.4 Transportation

1. Generally, Federal Express is used for all overnight shipment of samples. Due to holding time constraints, this is highly recommended unless the samples can be personally transported to the appropriate laboratory for analysis.

2. When hazardous material samples are shipped by Federal Express, a Federal Express Airbill (Appendix A, Figure 3) in conjunction with a Shipper's Declaration for Dangerous Goods (Appendix A, Figure 4) must be completed. If Federal Express service is not available for a particular location, the REAC Shipping/Receiving Department must be contacted to determine the appropriate overnight carrier and to make arrangements for shipment.

3.5 Training Requirements

All personnel responsible for packing and shipping samples shall be trained as required by 40 CFR 171-177, as follows:

3.5.1 Initial Training Requirements

- Training for employees employed after November 15, 1992, shall be completed within 90 days of their employment.
- Employees who change job functions shall complete training within 90 days after the change if packing and shipping samples are to be part of the employee's new responsibilities.
- Employees employed after November 15, 1992, or have changed job functions may perform sample packing and shipping functions prior to the completion of training provided they are supervised by properly trained and knowledgeable employees.

3.5.2 Recurrent Training Requirements

- Employees shall receive training in packing and shipping samples as required by 40 CFR 171-177 at least once every three years.

4.0 RESPONSIBILITIES

4.1 Field Personnel

Field personnel are responsible for packaging and shipping samples in accordance with this SOP and the IATA *Dangerous Goods Regulations.* Field personnel must attend initial and recurrent training as described above.

4.2 Task Leaders

Task Leaders are responsible for assuring samples are packaged and shipped in accordance with this SOP and the IATA *Dangerous Goods Regulations,* for obtaining packaging and shipping information, when required, from the REAC Shipping/Receiving Department and assuring that all field personnel have the required training.

4.3 Shipping/Receiving Department

The REAC Shipping/Receiving Department is responsible for providing appropriate packaging and shipping information when requested by Task Leaders or field personnel. The REAC Shipping/Receiving Department in conjunction with Health and Safety are responsible for providing initial and recurrent training as described above.

4.4 Section Leaders and the QA Office

The Section Leaders and the QA Office are responsible for assuring this SOP is implemented.

5.0 APPENDICES

A - Figures
B - IATA Hazard Class Definitions

6.0 REFERENCES

(1) International Air Transport Association (IATA). 2000. *Dangerous Goods Regulations.* Montreal, Quebec, Canada.

APPENDIX A
Figures
SOP #2004
November 2000

FIGURE 1. Environmental Samples Label

FIGURE 2. Arrow Labels

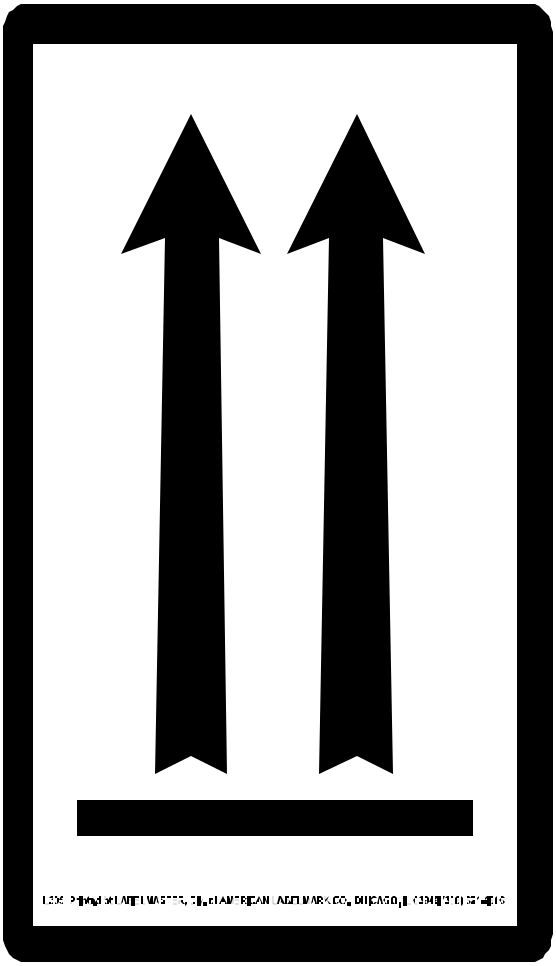


FIGURE 3. Federal Express Airbill

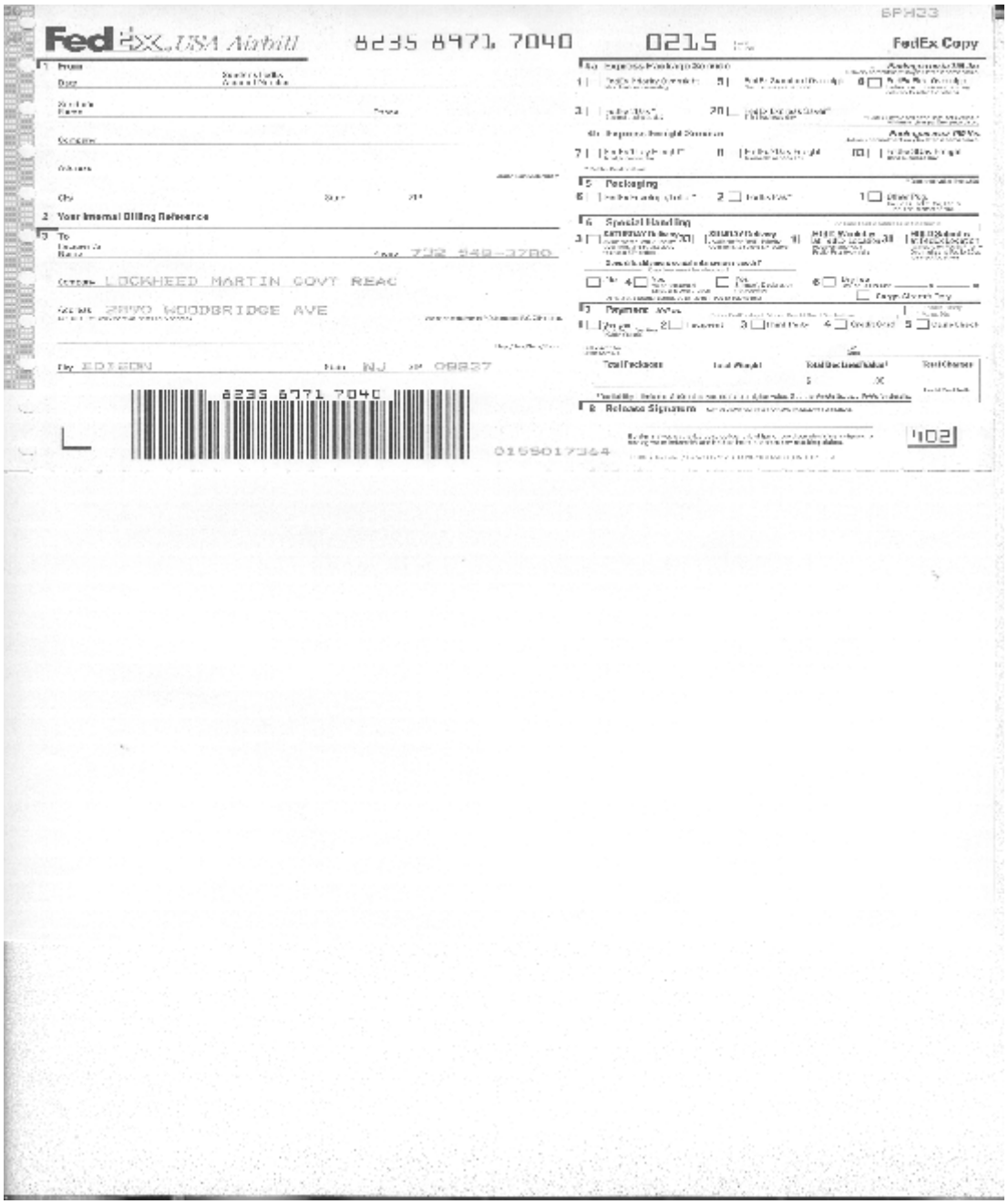
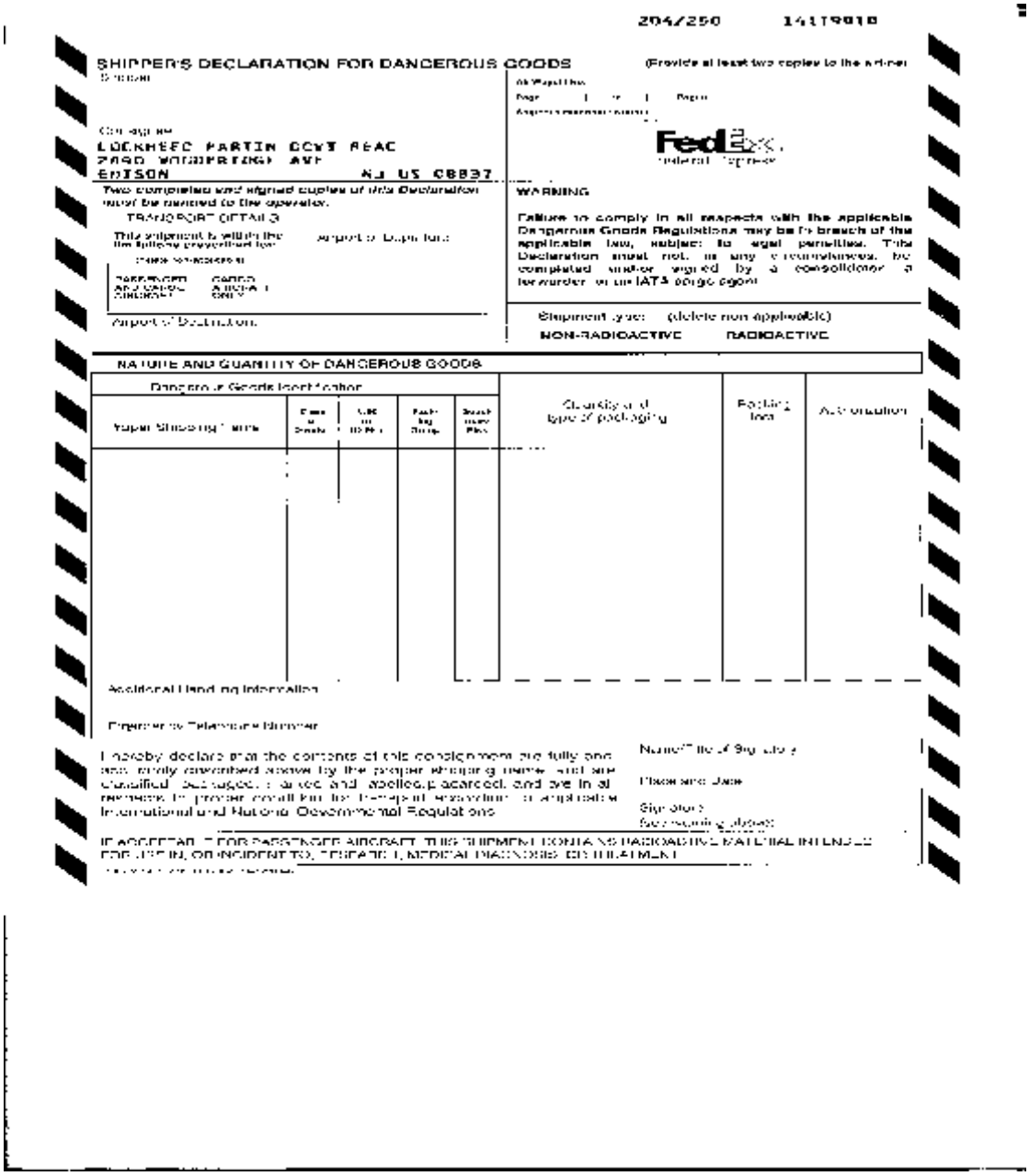


FIGURE 4. Shipper's Declaration for Dangerous Goods



204/250 14119010

SHIPPER'S DECLARATION FOR DANGEROUS GOODS (Provide at least two copies to the airline)

Shipper

Consignee
LOCKHEED MARTIN GOVT REAC
2400 WOODBRIDGE AVE
EDISON NJ US 08837

Two completed and signed copies of this Declaration must be handed to the operator.

TRANSPORT DETAILS

This shipment is within the limitations prescribed for: Airport of Departure:

PASSENGER AND CARGO AIRCRAFT / CARGO AIRCRAFT ONLY

Airport of Destination:

WARNING

Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

Shipment type: (delete non-applicable)
NON-RADIOACTIVE RADIOACTIVE

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification					Quantity and type of packaging	Packing Inst.	Authorization
Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk			

Additional Handling Information

Emergency Telephone Number

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 labelled/placarded, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations.

Name/Title of Signatory

Place and Date

Signature
(See warning above)

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT

APPENDIX B
IATA Hazard Class Definitions
SOP #2004
November 2000

IATA Hazard Class Definitions

Class 1 - Explosives

This class includes:

(a) Explosive substances, except those whose predominant hazard should be in another class.

(b) Explosive articles, except devices containing explosive substances in such a limited quantity or of such a character that their inadvertent or accidental ignition or initiation, during transport, will not cause any manifestation of projection, fire, smoke, heat, or loud noise external to the device.

(c) Articles and substances not mentioned above which are manufactured with a view to producing a practical explosion or pyrotechnic effect.

Class 2 - Gases

This class comprises compressed gases, liquefied gases, gases in solution, refrigerated liquefied gases, mixtures of gases, mixtures of one or more gases with one or more vapors of substances of other classes, articles charged with a gas, tellurium hexafluoride, and aerosols.

Class 3 - Flammable Liquids

This class comprises liquids or mixtures of liquids or liquids containing solids in solution or in suspension which give off a flammable vapor at temperatures of not more than 60.5°C (141°F) closed-cup test or not more than 65.6°C (150°F) open-cup test.

Class 4 - Flammable Solids

Class 4 is divided into three divisions as follows:

Division 4.1 - Flammable Solids

Flammable solids are readily combustible solids and those which may cause fire through friction. Readily combustible solids are powdered, granular, or pasty substances which are dangerous if they can be easily ignited by brief contact with an ignition source, such as a burning match, and if the flame spreads rapidly. The danger may not only come from the fire but also from the toxic combustion products. Metal powders are especially dangerous because of the difficulty of extinguishing a fire since normal extinguishing agents such as carbon dioxide or water can increase the hazard.

Division 4.2 - Substances Liable to Spontaneous Combustion

Substances which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being then liable to catch fire.

Division 4.3 - Substances Which, on Contact With Water, Emit Flammable Gases (Dangerous When Wet)

Substances which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

Class 5 - Oxidizing Substances and Organic Peroxides

Oxidizing substances are substances which, in themselves are not necessarily combustible, but may generally cause or contribute to the combustion of other material by yielding oxygen.

Organic peroxides are organic substances which contain the bivalent structure -O-O- and may be considered derivatives of hydrogen peroxide in which one or both of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are thermally unstable substances which may undergo exothermic, self-accelerating decomposition. In addition, they may have one or more of the following properties:

- Be liable to explosive decomposition
- Burn rapidly
- Be sensitive to impact or friction
- React dangerously with other substances
- Cause damage to the eyes

Class 6 - Poisonous (Toxic) and Infectious Substances

Poisonous (toxic) substances are substances which are liable to cause death or injury or harm to human health if swallowed, inhaled, or contacted by the skin.

Infectious substances are substances containing viable micro-organisms including a bacterium, virus, rickettsia, parasite, fungus, or a recombinant, hybrid, or mutant, that are known or reasonably believed to cause disease in humans or animals.

Genetically modified organisms or micro-organisms

Biological products

Diagnostic specimens

Class 7 - Radioactive Material

For the purpose of these regulations, a radioactive material is any article or substance with a specific activity greater than 70 kBq/kg (0.002 uCi/g).

Class 8 - Corrosives

Substances which, in the event of leakage, can cause severe damage by chemical action when in contact with living tissue or can materially damage other freight or the means of transport.

Class 9 - Miscellaneous Dangerous Goods

Substances and articles which during air transport present a danger not covered by other classes. Included in this class are: other regulated substances, magnetized material, and miscellaneous articles and substances.

Other regulated substances are liquids or solids which have anaesthetic, noxious, or other similar properties which could cause extreme annoyance or discomfort to passengers and/or flight crew members.

Magnetized material is any material, which, when packed for air transport, has a magnetic field strength of 0.159 A/m (0.002 gauss) or more at a distance of 2.1 m (7 ft) from any point on the surface of the assembled package.

Examples of miscellaneous articles and substances are as follows:

- Asbestos
- Dry ice
- Environmentally hazardous substances
- Polymeric beads
- Zinc dithionite

APPENDIX E

EPA ERT SOP #2049 IDW Management

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U. S. EPA ENVIRONMENTAL RESPONSE TEAM

STANDARD OPERATING PROCEDURES

INVESTIGATION-DERIVED WASTE MANAGEMENT

CONTENTS

1.0 SCOPE AND APPLICATION

2.0 METHOD SUMMARY

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

5.0 EQUIPMENT/APPARATUS

- 5.1 Waste Disposal
- 5.2 Decontamination Equipment

6.0 REAGENTS

7.0 PROCEDURES

- 7.1 Regulatory Background and Options for Management of IDW
- 7.2 Identification of IDW
- 7.3 Management of IDW
  - 7.3.1 Waste Minimization
  - 7.3.2 Types, Hazards, and Quantities of IDW
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8.0 CALCULATIONS

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11.0 HEALTH AND SAFETY

12.0 REFERENCES

SUPERCEDES: SOP #2170; Revision 0.0; 03/22/94; U.S. EPA Contract 68-03-3482.

1.0 SCOPE AND APPLICATION

The objective of this standard operating procedure (SOP) is to provide general reference information on management of investigation-derived wastes (IDW) generated during REAC site investigations. IDW includes soil cuttings, drilling muds, purged groundwater, decontamination fluids (water and other fluids), disposable sampling equipment, and disposable personal protective equipment (PPE).

This SOP is applicable only if the U.S. Environmental Protection Agency (U.S. EPA) On-Scene Coordinator, Remedial Project Manager, or other Regional Manager does not have procedures in place for IDW management.

These are standard (i.e., typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitations or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. EPA endorsement or recommendation for use.

2.0 METHOD SUMMARY

Prior to site activities, the Task Leader should determine if the On-Scene Coordinator, Remedial Project Manager, or other Regional Manager has procedures in place for IDW management. This should be done by contacting the Work Assignment Manager.

If it is determined that procedures are not in place, then the Task Leader should evaluate IDW handling and management options based on:

- The site contaminants and their concentrations, and total projected volume of IDW.
- Media potentially affected (e.g., groundwater, soil) by management options.
- Location of the nearest population(s) and likelihood and/or degree of site access.
- Potential exposure to workers.
- Potential environmental impacts.

Every effort must be made to ensure the selection of investigation method(s) that minimize the generation of IDW, contact with contaminants, and cost of disposal. Efforts made to characterize IDW shall be consistent with the scope and purpose of the site investigation.

The QA Work Plan describing the anticipated approach and procedures for IDW management shall be clear, detailed, and concise. Any deviation or modification due to unexpected and unforeseen field conditions will be noted in the site logbook.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING AND STORAGE

This section is not applicable to this SOP.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

IDW can be contaminated with various hazardous substances. To handle IDW in compliance with regulations, reasonable efforts should be made to characterize the wastes.

5.0 EQUIPMENT/APPARATUS

Equipment, materials, and supplies needed for containerizing IDW are generally selected based on waste characteristics or constituents. Other considerations include the case of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, 5-gallon buckets, plastic bags, etc. can help segregate contaminated materials. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

5.1 Waste Disposal

- Trash bags
- Trash containers
- 55-gallon drums or 5-gallon pails
- Metal/plastic buckets/containers for storage and disposal of decontamination solutions

5.2 Decontamination Equipment

- Drop cloths of plastic or other suitable materials
- Large galvanized tubs
- Wash solutions
- Rinse solutions
- Long-handled, soft-bristled brushes
- Paper or cloth towels
- Metal or plastic cans or drums
- Soap or wash solution

6.0 REAGENTS

There are no reagents used in this procedure aside from decontamination solutions. In general, the following solvents are typically utilized for decontamination purposes:

- 10% nitric acid
- Acetone (pesticide grade)
- Hexane (pesticide grade)
- Methanol

7.0 PROCEDURES

7.1 Regulatory Background and Options for Management of IDW

This SOP is based on the following guidance document:

OERR Directive 9345.3-02, "Management of Investigation-Derived Wastes During Site Inspections," May 1991.

The guidance document presents a general regulatory background and options for management of IDW generated during Superfund site activities. IDW includes soil cuttings, drilling muds, purged groundwater, decontamination fluids (water and other fluids), disposable sampling equipment and disposable PPE. The National Contingency Plan (NCP) requires that management of IDW generated during site investigations complies with all applicable or relevant and appropriate requirements (ARARs) to the extent practicable. In addition, other legal and practical considerations may affect the handling of IDW.

IDW from site inspections may contain hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Some CERCLA hazardous substances are hazardous wastes under Subtitle C of the Resource Conservation and Recovery Act (RCRA), while other substances are regulated by other federal laws such as the Safe Drinking Water Act (SDWA), Clean Air Act (CAA), Toxic Substances Control Act (TSCA), and the Clean Water Act (CWA). The U.S. EPA estimates that RCRA hazardous IDW have been generated at fewer than 15% of CERCLA sites. However, RCRA regulations, and in particular the RCRA Land Disposal Restrictions, are very important as potential ARARs since they regulate treatment, storage, and disposal of many of the most toxic and hazardous materials.

The U.S. EPA's strategy for managing RCRA hazardous IDW is based on:

- The NCP directive that site investigations comply with ARARs to the extent practicable.
- The area of contamination (AOC) unit concept.

The most important general elements of managing IDW are as follows:

- Leaving a site in no worse condition than existed prior to the investigation.
- Removing those wastes that pose an immediate threat to human health or the environment.
- Leaving on site those wastes that do not require off-site disposal or long-term above-ground containerization.
- Complying with federal and state ARARs to the extent practicable.
- Planning and coordination for IDW management.
- Minimizing the quantity of wastes generated.

The specific elements of the approach are as follows:

- Characterizing IDW through the use of existing information (manifests, Material Safety Data Sheets, previous test results, knowledge of the waste generation process, and other relevant records) and best professional judgement.
- Delineating an AOC unit for leaving RCRA hazardous soil cuttings within the unit.
- Containerizing and disposing of RCRA hazardous groundwater, decontamination fluids, PPE, and disposable sampling equipment (if generated in excess of 100 kg/month) at RCRA Subtitle C facilities.
- Leaving on site RCRA nonhazardous soil cuttings, groundwater, and decontamination fluids preferably without containerization and testing.

The U.S. EPA does not recommend the removal of wastes from all sites and, in particular, from those sites where IDW does not pose any immediate threat to human health or the environment.

Based on this information and the guidelines included in the following sections, the REAC Task Leader should include a plan for handling IDW in the QA Work Plan. Any deviations from or modifications to the plan due to unexpected or unforeseen field conditions must be noted in the site logbook.

7.2 Identification of IDW

To handle IDW properly, the Task Leader must know whether it contains CERCLA hazardous substances and whether these substances are RCRA hazardous wastes or contaminants regulated under other statutes. To handle IDW in compliance with regulations, reasonable efforts should be made to characterize them. However, these efforts should be consistent with the scope and purpose of the site investigation.

In particular, extensive testing is not warranted in most cases; instead, the nature of the wastes should be assessed by applying professional judgement, using readily available information about the site (such as manifests, storage reports, preliminary assessments, and results of earlier studies), as well as direct observation of the wastes for discoloration, odor, or other indicators of contamination. Similarly, RCRA procedures for determining whether a waste exhibits RCRA hazardous characteristics do not require testing if the decision can be made by applying knowledge of the

characteristic in light of the materials or process used. In most instances, a determination may be made based on available information and professional judgement. This does not mean that IDW can be assumed to be nonhazardous unless clearly proven otherwise. Given the limited information available, the Task Leader, in conjunction with the Work Assignment Manager, must determine whether it more likely than not that the wastes are hazardous.

Even if the IDW do not contain RCRA hazardous waste, the Task Leader should determine whether they contain other CERCLA hazardous substances. CERCLA hazardous substances include, in addition to RCRA hazardous wastes, substances, elements, compounds, solutions, or mixtures designated as hazardous or toxic under CERCLA itself or under the authority of other laws such as TSCA, CWA, CAA, and SDWA. Therefore, even if RCRA is not applicable, one of these statutes may be.

IDW may include, but is not limited to, the following items:

Solid Waste

- Soil
- Sediment
- Sludge/slag
- Drum solids
- Drill cuttings
- Used glassware
- Dedicated/expendable equipment (bailers, fitters, hose, buckets, XRF cups, etc.)
- Biological tissue
- Clean trash
- PPE
- Decontamination equipment (buckets, brushes, clothing, tools, etc.)
- Field analytics waste (immunoassay, chlor-n-oil, chlor-in-soil, HACH kits, sample extracts, etc.)

Aqueous Waste

- Drilling fluids
- Purge water
- Development water
- Decontamination fluids

7.3 Management of IDW

7.3.1 Waste Minimization

The Task Leader should select site investigation methods that minimize the generation of IDW, particularly RCRA hazardous wastes. The site investigation team should limit contact

with contaminants and use drilling and decontamination methods (such as steam cleaning) that minimize PPE, disposable equipment, decontamination fluids, and soil cuttings. In particular, the inspection team should minimize the amounts of solvents used for decontamination or eliminate solvents altogether. Minimizing the amount of wastes generated reduces the number of IDW handling problems and costs of disposal.

7.3.2 Types, Hazards, and Quantities of IDW

To handle IDW properly, the Task Leader must determine the types (such as soil cuttings, groundwater, decontamination fluids, PPE, or disposable equipment), characteristics (whether RCRA hazardous or containing other CERCLA hazardous substances), and quantities of anticipated wastes. As discussed previously, testing will generally not be required to characterize waste.

Upon determining the types of anticipated IDW, the Task Leader should determine IDW characteristics, in particular whether it is expected to be RCRA hazardous or to contain high concentrations of PCBs. For RCRA hazardous IDW, the Task Leader should determine whether it poses an increased hazard to human health and the environment relative to conditions that existed prior to the site investigation. Field analytical screening results, if available, may be helpful indicators of IDW characteristics. However, the Task Leader must remember that these are not RCRA tests and that the test results usually do not identify RCRA hazardous wastes. The Task Leader must also determine the exact properties of RCRA nonhazardous IDW to select an appropriate disposal facility when the off-site disposal is required.

Upon determining the type and characteristics of IDW to be generated, the Task Leader must assess the anticipated quantities of waste. This should be done based on past experience with site investigations of similar scope.

7.3.3 On-Site IDW Handling Options

In planning the scope of work, the Task Leader must decide if IDW can be left on site or if it must be disposed off site.

Handling of RCRA hazardous IDW and IDW with high PCB concentrations (greater than 50 ppm) may involve either moving the IDW within an AOC unit, or containerization, storage, testing, treatment, and off-site disposal. Handling of RCRA nonhazardous IDW usually involves various methods of on-site disposal. It is preferable to leave both RCRA hazardous and nonhazardous IDW on site whenever it complies with regulations and does not pose any immediate threat to human health and the environment.

If IDW are RCRA nonhazardous soil or water, they should be left on site unless other circumstances, such as state ARARs or a high probability of serious community concerns, require off-site disposal. RCRA hazardous soil also may be left on site within an AOC unit.

The Task Leader must determine procedures for handling IDW on site in conjunction with the Work Assignment Manager.

The on-site handling options available to the Task Leader when IDW are RCRA nonhazardous are listed below.

For soil cuttings:

1. Spread around the well.
2. Put back into the boring.
3. Put into a pit within the AOC.
4. Dispose of at the site's operating treatment/disposal unit (TDU).

For groundwater:

1. Pour onto ground next to well to allow infiltration.
2. Dispose of at the site's TDU.

For decontamination fluids:

1. Pour onto ground (from containers) to allow infiltration.
2. Dispose of at the site's TDU.

For decontaminated PPE and disposable equipment:

1. Double bag and deposit in the site or U.S. EPA dumpster, or in any municipal landfill.
2. Dispose of at the site's TDU.

If IDW are considered RCRA nonhazardous due to lack of information on the waste hazard, the Task Leader should have an alternate plan for handling IDW if field conditions indicate that these wastes are hazardous. In such a case, there should be an adequate number of containers available for collecting groundwater, decontamination water, soil cuttings, etc.

If IDW consists of RCRA hazardous soils that pose no immediate threat to human health and the environment, the Task Leader should plan on leaving it on site within a delineated AOC unit. However, the Task Leader must consider the proximity of residents and workers in the surrounding area and use best professional judgement to make these decisions. Planning for leaving RCRA hazardous waste on site involves:

- Delineating the AOC unit.
- Determining pit locations close to the borings within the AOC unit for waste burial.
- Covering hazardous IDW in the pits with surficial soil.
- Not containerizing and testing wastes designated to be left on site.

Another alternative for handling RCRA hazardous soil is disposal in a TDU located on the same property as the AOC under investigation. If the TDU is outside the AOC, it must comply with the off-site policy. If any decontamination fluids are generated which are RCRA hazardous wastes, they should be disposed of off site in compliance with the off-site policy or in compliance with the conditionally exempt small quantity generator exemption. Small quantities (i.e., no more than 100 kg/month) of decontamination fluids may be containerized prior to delivery to a hazardous waste facility.

7.3.4 Off-Site Disposal of IDW Options

IDW should be disposed of off site in the following situations:

- When they are RCRA hazardous water.
- When they are RCRA hazardous soil that may pose a substantial risk if left at the site.
- When they are RCRA hazardous PPE and disposable equipment.
- If leaving them on site would create increased risks at the site.

RCRA nonhazardous wastes could be disposed of off-site at appropriate RCRA nonhazardous facilities that are in compliance with CERCLA section 121(d)(3) and off-site policy when it is necessary to comply with legally enforceable requirements such as state ARARs that preclude on-site disposal. IDW designated for off-site disposal must be properly containerized, tested, and stored before pick up and disposal. Decontaminated PPE and disposable equipment should be double-bagged if sent to an off-site dumpster or municipal landfill.

Planning for off-site disposal should include the following guidelines:

- Informing the Work Assignment Manager that containerized IDW may be temporarily stored on site while awaiting pick up for off-site disposal.
- Initiating the procurement process for IDW testing, pick up and disposal.
- Coordinating IDW testing and pick-up activities.
- Preparing adequate numbers and types of containers. Drums should be used for collecting small amounts of IDW. Larger amounts of soil and water can be contained in Baker tanks, poly tanks, and bins. PPE and disposable equipment should be double-bagged for disposal at a municipal landfill or collected in drums for disposal at a hazardous waste facility.
- Designating a storage area (either within the site's existing storage facility, existing fenced area, or within a temporary fence constructed for the site investigation). No humans, children in particular, may have access to the storage area.

All IDW shipped off site, whether RCRA hazardous or not, must go to facilities that comply with the RCRA disposal policy, and the Task Leader, in conjunction with the REAC Purchasing Department, must verify that the facilities operate in accordance with this policy.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITY ASSURANCE/QUALITY CONTROL

There are no specific quality assurance activities which apply to the implementation of these procedures. However all IDW disposal information must be documented within site logbooks. Additionally, all shipping and transport of hazardous and nonhazardous samples will comply with Department of Transportation (DOT) and International Air Transport Association (IATA) regulations. For additional information regarding sample handling procedures refer to ERT/REAC SOP #2003, Sample Storage, Preservation, and Handling.

10.0 DATA VALIDATION

This section is not applicable to this SOP.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow U.S. EPA, OSHA and corporate health and safety procedures.

12.0 REFERENCES

U.S. EPA, Guide to Management of Investigation Derived Wastes, OERR Directive 9345.3.03FS, January 1992.

U.S. EPA, Management of Investigations - Derived Wastes During Site Inspections, OERR Directive 9345.3-02, May 1991.

Code of Federal Regulations (CFR), Title 40, Part 261, Section 23, Section 11 (a) (3), and Section 24 (a) (b).

CFR Proposed Criteria: 51 FR 21685, June 30,1986 and 51 FR 21450, May 20, 1992.

APPENDIX F

EPA ERT SOP #2006 Sampling Equipment Decontamination

(Document not Generated by START)

SAMPLING EQUIPMENT DECONTAMINATION

SOP#: 2006
DATE: 08/11/94
REV. #: 0.0

1.0 SCOPE AND APPLICATION

The purpose of this Standard Operating Procedure (SOP) is to provide a description of the methods used for preventing, minimizing, or limiting cross-contamination of samples due to inappropriate or inadequate equipment decontamination and to provide general guidelines for developing decontamination procedures for sampling equipment to be used during hazardous waste operations as per 29 Code of Federal Regulations (CFR) 1910.120. This SOP does not address personnel decontamination.

These are standard (i.e. typically applicable) operating procedures which may be varied or changed as required, dependent upon site conditions, equipment limitation, or limitations imposed by the procedure. In all instances, the ultimate procedures employed should be documented and associated with the final report.

Mention of trade names or commercial products does not constitute U.S. Environmental Protection Agency (U.S. EPA) endorsement or recommendation for use.

2.0 METHOD SUMMARY

Removing or neutralizing contaminants from equipment minimizes the likelihood of sample cross contamination, reduces or eliminates transfer of contaminants to clean areas, and prevents the mixing of incompatible substances.

Gross contamination can be removed by physical decontamination procedures. These abrasive and non-abrasive methods include the use of brushes, air and wet blasting, and high and low pressure water cleaning.

The first step, a soap and water wash, removes all visible particulate matter and residual oils and grease. This may be preceded by a steam or high pressure water wash to facilitate residuals removal. The second step involves a tap water rinse and a distilled/deionized water rinse to remove the detergent. An acid rinse provides a low pH media for trace metals removal and is included in the decontamination process if metal samples are to be collected. It is followed by another distilled/deionized water rinse. If sample analysis does not include metals, the acid rinse step can be omitted. Next, a high purity solvent rinse is performed for trace organics removal if organics are a concern at the site. Typical solvents used for removal of organic contaminants include acetone, hexane, or water. Acetone is typically chosen because it is an excellent solvent, miscible in water, and not a target analyte on the Priority Pollutant List. If acetone is known to be a contaminant of concern at a given site or if Target Compound List analysis (which includes acetone) is to be performed, another solvent may be substituted. The solvent must be allowed to evaporate completely and then a final distilled/deionized water rinse is performed. This rinse removes any residual traces of the solvent.

The decontamination procedure described above may be summarized as follows:

1. Physical removal
2. Non-phosphate detergent wash
3. Tap water rinse
4. Distilled/deionized water rinse
5. 10% nitric acid rinse
6. Distilled/deionized water rinse
7. Solvent rinse (pesticide grade)
8. Air dry
9. Distilled/deionized water rinse

If a particular contaminant fraction is not present at the site, the nine (9) step decontamination procedure specified above may be modified for site specificity. For example, the nitric acid rinse may be eliminated if metals are not of concern at a site. Similarly, the solvent rinse may be eliminated if organics are not of

concern at a site. Modifications to the standard procedure should be documented in the site specific work plan or subsequent report.

3.0 SAMPLE PRESERVATION, CONTAINERS, HANDLING, AND STORAGE

The amount of sample to be collected and the proper sample container type (i.e., glass, plastic), chemical preservation, and storage requirements are dependent on the matrix being sampled and the parameter(s) of interest.

More specifically, sample collection and analysis of decontamination waste may be required before beginning proper disposal of decontamination liquids and solids generated at a site. This should be determined prior to initiation of site activities.

4.0 INTERFERENCES AND POTENTIAL PROBLEMS

- The use of distilled/deionized water commonly available from commercial vendors may be acceptable for decontamination of sampling equipment provided that it has been verified by laboratory analysis to be analyte free (specifically for the contaminants of concern).

- The use of an untreated potable water supply is not an acceptable substitute for tap water. Tap water may be used from any municipal or industrial water treatment system.

- If acids or solvents are utilized in decontamination they raise health and safety, and waste disposal concerns.

- Damage can be incurred by acid and solvent washing of complex and sophisticated sampling equipment.

5.0 EQUIPMENT/APPARATUS

Decontamination equipment, materials, and supplies are generally selected based on availability. Other considerations include the ease of decontaminating or disposing of the equipment. Most equipment and supplies can be easily procured. For example, soft-bristle scrub brushes or long-handled bottle brushes can be used to remove contaminants. Large galvanized wash tubs, stock tanks, or buckets can hold wash and rinse solutions. Children's wading pools can also be used. Large plastic garbage cans or other similar containers lined with plastic bags can help segregate contaminated equipment. Contaminated liquid can be stored temporarily in metal or plastic cans or drums.

The following standard materials and equipment are recommended for decontamination activities:

5.1 Decontamination Solutions

- Non-phosphate detergent
- Selected solvents (acetone, hexane, nitric acid, etc.)
- Tap water
- Distilled or deionized water

5.2 Decontamination Tools/Supplies

- Long and short handled brushes
- Bottle brushes
- Drop cloth/plastic sheeting
- Paper towels
- Plastic or galvanized tubs or buckets
- Pressurized sprayers (H_2O)
- Solvent sprayers
- Aluminum foil

5.3 Health and Safety Equipment

Appropriate personal protective equipment (i.e., safety glasses or splash shield, appropriate gloves, aprons or coveralls, respirator, emergency eye wash)

5.4 Waste Disposal

- Trash bags
- Trash containers
- 55-gallon drums
- Metal/plastic buckets/containers for storage and disposal of decontamination solutions

6.0 REAGENTS

There are no reagents used in this procedure aside from the actual decontamination solutions. Table 1 (Appendix A) lists solvent rinses which may be required for elimination of particular chemicals. In

general, the following solvents are typically utilized for decontamination purposes:

- 10% nitric acid is typically used for inorganic compounds such as metals. An acid rinse may not be required if inorganics are not a contaminant of concern.
- Acetone (pesticide grade)[(1)]
- Hexane (pesticide grade)[(1)]
- Methanol[(1)]

[(1)] - Only if sample is to be analyzed for organics.

7.0 PROCEDURES

As part of the health and safety plan, a decontamination plan should be developed and reviewed. The decontamination line should be set up before any personnel or equipment enter the areas of potential exposure. The equipment decontamination plan should include:

- The number, location, and layout of decontamination stations.
- Decontamination equipment needed.
- Appropriate decontamination methods.
- Methods for disposal of contaminated clothing, equipment, and solutions.
- Procedures can be established to minimize the potential for contamination. This may include: (1) work practices that minimize contact with potential contaminants; (2) using remote sampling techniques; (3) covering monitoring and sampling equipment with plastic, aluminum foil, or other protective material; (4) watering down dusty areas; (5) avoiding laying down equipment in areas of obvious contamination; and (6) use of disposable sampling equipment.

7.1 Decontamination Methods

All samples and equipment leaving the contaminated area of a site must be decontaminated to remove any contamination that may have adhered to equipment. Various decontamination methods will remove contaminants by: (1) flushing or other physical action, or (2) chemical complexing to inactivate contaminants by neutralization, chemical reaction, disinfection, or sterilization.

Physical decontamination techniques can be grouped into two categories: abrasive methods and non-abrasive methods, as follows:

7.1.1 Abrasive Cleaning Methods

Abrasive cleaning methods work by rubbing and wearing away the top layer of the surface containing the contaminant. The mechanical abrasive cleaning methods are most commonly used at hazardous waste sites. The following abrasive methods are available:

Mechanical

Mechanical methods of decontamination include using metal or nylon brushes. The amount and type of contaminants removed will vary with the hardness of bristles, length of time brushed, degree of brush contact, degree of contamination, nature of the surface being cleaned, and degree of contaminant adherence to the surface.

Air Blasting

Air blasting equipment uses compressed air to force abrasive material through a nozzle at high velocities. The distance between nozzle and surface cleaned, air pressure, time of application, and angle at which the abrasive strikes the surface will dictate cleaning efficiency. Disadvantages of this method are the inability to control the amount of material removed and the large amount of waste generated.

Wet Blasting

Wet blast cleaning involves use of a suspended fine abrasive. The abrasive/water mixture is delivered by compressed air to the contaminated area. By using a very fine abrasive, the amount of materials removed can be carefully controlled.

7.1.2 Non-Abrasive Cleaning Methods

Non-abrasive cleaning methods work by forcing the contaminant off a surface with pressure. In general, the equipment surface is not removed using non-abrasive methods.

Low-Pressure Water

This method consists of a container which is filled with water. The user pumps air out of the container to create a vacuum. A slender nozzle and hose allow the user to spray in hard-to-reach places.

High-Pressure Water

This method consists of a high-pressure pump, an operator controlled directional nozzle, and a high-pressure hose. Operating pressure usually ranges from 340 to 680 atmospheres (atm) and flow rates usually range from 20 to 140 liters per minute.

Ultra-High-Pressure Water

This system produces a water jet that is pressured from 1,000 to 4,000 atmospheres. This ultra-high-pressure spray can remove tightly-adhered surface films. The water velocity ranges from 500 meters/second (m/s) (1,000 atm) to 900 m/s (4,000 atm). Additives can be used to enhance the cleaning action.

Rinsing

Contaminants are removed by rinsing through dilution, physical attraction, and solubilization.

Damp Cloth Removal

In some instances, due to sensitive, non-waterproof equipment or due to the unlikelihood of equipment being contaminated, it is not necessary to conduct an extensive decontamination procedure. For example, air sampling pumps hooked on a fence, placed on a drum, or wrapped in plastic bags are not likely to become heavily contaminated. A damp cloth should be used to wipe off contaminants which may have adhered to equipment through airborne contaminants or from surfaces upon which the equipment was set.

Disinfection/Sterilization

Disinfectants are a practical means of inactivating infectious agents. Unfortunately, standard sterilization methods are impractical for large equipment. This method of decontamination is typically performed off-site.

7.2 Field Sampling Equipment Decontamination Procedures

The decontamination line is setup so that the first station is used to clean the most contaminated item. It progresses to the last station where the least contaminated item is cleaned. The spread of contaminants is further reduced by separating each decontamination station by a minimum of three (3) feet. Ideally, the contamination should decrease as the equipment progresses from one station to another farther along in the line.

A site is typically divided up into the following boundaries: Hot Zone or Exclusion Zone (EZ), the Contamination Reduction Zone (CRZ), and the Support or Safe Zone (SZ). The decontamination line should be setup in the Contamination Reduction Corridor (CRC) which is in the CRZ. Figure 1 (Appendix B) shows a typical contaminant reduction zone layout. The CRC controls access into and out of the exclusion zone and confines decontamination activities to a limited area. The CRC boundaries should be conspicuously marked. The far end is the hotline, the boundary between the exclusion zone and the contamination reduction zone. The size of the decontamination corridor depends on the number of stations in the decontamination process, overall dimensions of the work zones, and amount of space available at the site. Whenever possible, it should be a straight line.

Anyone in the CRC should be wearing the level of protection designated for the decontamination crew. Another corridor may be required for the entry and exit of heavy equipment. Sampling and monitoring equipment and sampling supplies are all maintained outside of the CRC. Personnel don their equipment away from the CRC and enter the exclusion zone through a separate access control point at the hotline. One person (or more) dedicated to decontaminating equipment is recommended.

7.2.1 Decontamination Setup

Starting with the most contaminated station, the decontamination setup should be as follows:

Station 1: Segregate Equipment Drop

Place plastic sheeting on the ground (Figure 2, Appendix B). Size will depend on amount of

equipment to be decontaminated. Provide containers lined with plastic if equipment is to be segregated. Segregation may be required if sensitive equipment or mildly contaminated equipment is used at the same time as equipment which is likely to be heavily contaminated.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

As indicated in 7.1.2, a high-pressure wash may be required for compounds which are difficult to remove by washing with brushes. The elevated temperature of the water from the high-pressure washers is excellent at removing greasy/oily compounds. High pressure washers require water and electricity.

A decontamination pad may be required for the high-pressure wash area. An example of a wash pad may consist of an approximately 1 1/2 foot-deep basin lined with plastic sheeting and sloped to a sump at one corner. A layer of sand can be placed over the plastic and the basin is filled with gravel or shell. The sump is also lined with visqueen and a barrel is placed in the hole to prevent collapse. A sump pump is used to remove the water from the sump for transfer into a drum.

Typically heavy machinery is decontaminated at the end of the day unless site sampling requires that the machinery be decontaminated frequently. A separate decontamination pad may be required for heavy equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Prior to setting up Station 3, place plastic sheeting on the ground to cover areas under Station 3 through Station 10.
Fill a wash basin, a large bucket, or child's swimming pool with non-phosphate detergent and tap water. Several bottle and bristle brushes to physically remove contamination should be dedicated to this station . Approximately 10 - 50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 4: Water Basin

Fill a wash basin, a large bucket, or child's swimming pool with tap water. Several bottle and bristle brushes should be dedicated to this station. Approximately 10-50 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 5: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to contain the water during the rinsing process. Approximately 10-20 gallons of water may be required initially depending upon the amount of equipment to decontaminate and the amount of gross contamination.

Station 6: Nitric Acid Sprayers

Fill a spray bottle with 10% nitric acid. An acid rinse may not be required if inorganics are not a contaminant of concern. The amount of acid will depend on the amount of equipment to be decontaminated. Provide a 5-gallon bucket or basin to collect acid during the rinsing process.

Station 7: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 8: Organic Solvent Sprayers

Fill a spray bottle with an organic solvent. After each solvent rinse, the equipment should be rinsed with distilled/deionized water and air dried. Amount of solvent will depend on the amount of equipment to decontaminate. Provide a 5-gallon bucket or basin to collect the solvent during the rinsing process.

Solvent rinses may not be required unless organics are a contaminant of concern, and may be eliminated from the station sequence.

Station 9: Low-Pressure Sprayers

Fill a low-pressure sprayer with distilled/deionized water. Provide a 5-gallon bucket or basin to collect water during the rinsate process.

Station 10: Clean Equipment Drop

Lay a clean piece of plastic sheeting over the bottom

plastic layer. This will allow easy removal of the plastic in the event that it becomes dirty. Provide aluminum foil, plastic, or other protective material to wrap clean equipment.

7.2.2 Decontamination Procedures

Station 1: Segregate Equipment Drop

Deposit equipment used on-site (i.e., tools, sampling devices and containers, monitoring instruments radios, clipboards, etc.) on the plastic drop cloth/sheet or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross contamination. Loose leaf sampling data sheets or maps can be placed in plastic zip lock bags if contamination is evident.

Station 2: Physical Removal With A High-Pressure Washer (Optional)

Use high pressure wash on grossly contaminated equipment. Do not use high- pressure wash on sensitive or non-waterproof equipment.

Station 3: Physical Removal With Brushes And A Wash Basin

Scrub equipment with soap and water using bottle and bristle brushes. Only sensitive equipment (i.e., radios, air monitoring and sampling equipment) which is waterproof should be washed. Equipment which is not waterproof should have plastic bags removed and wiped down with a damp cloth. Acids and organic rinses may also ruin sensitive equipment. Consult the manufacturers for recommended decontamination solutions.

Station 4: Equipment Rinse

Wash soap off of equipment with water by immersing the equipment in the water while brushing. Repeat as many times as necessary.

Station 5: Low-Pressure Rinse

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 6: Nitric Acid Sprayers (required only if metals are a contaminant of concern)

Using a spray bottle rinse sampling equipment with nitric acid. Begin spraying (inside and outside) at one end of the equipment allowing the acid to drip to the other end into a 5-gallon bucket. A rinsate blank may be required at this station. Refer to Section 9.

Station 7: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure sprayer.

Station 8: Organic Solvent Sprayers

Rinse sampling equipment with a solvent. Begin spraying (inside and outside) at one end of the equipment allowing the solvent to drip to the other end into a 5-gallon bucket. Allow the solvent to evaporate from the equipment before going to the next station. A QC rinsate sample may be required at this station.

Station 9: Low-Pressure Sprayers

Rinse sampling equipment with distilled/deionized water with a low-pressure washer.

Station 10 : Clean Equipment Drop

Lay clean equipment on plastic sheeting. Once air dried, wrap sampling equipment with aluminum foil, plastic, or other protective material.

7.2.3 Post Decontamination Procedures

1. Collect high-pressure pad and heavy equipment decontamination area liquid and waste and store in appropriate drum or container. A sump pump can aid in the collection process. Refer to the Department of Transportation (DOT) requirements for appropriate containers based on the contaminant of concern.

2. Collect high-pressure pad and heavy equipment decontamination area solid waste and store in appropriate drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

3. Empty soap and water liquid wastes from basins and buckets and store in appropriate

drum or container. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

4. Empty acid rinse waste and place in appropriate container or neutralize with a base and place in appropriate drum. pH paper or an equivalent pH test is required for neutralization. Consult DOT requirements for appropriate drum for acid rinse waste.

5. Empty solvent rinse sprayer and solvent waste into an appropriate container. Consult DOT requirements for appropriate drum for solvent rinse waste.

6. Using low-pressure sprayers, rinse basins, and brushes. Place liquid generated from this process into the wash water rinse container.

7. Empty low-pressure sprayer water onto the ground.

8. Place all solid waste materials generated from the decontamination area (i.e., gloves and plastic sheeting, etc.) in an approved DOT drum. Refer to the DOT requirements for appropriate containers based on the contaminant of concern.

9. Write appropriate labels for waste and make arrangements for disposal. Consult DOT regulations for the appropriate label for each drum generated from the decontamination process.

8.0 CALCULATIONS

This section is not applicable to this SOP.

9.0 QUALITYASSURANCE/ QUALITY CONTROL

A rinsate blank is one specific type of quality control sample associated with the field decontamination process. This sample will provide information on the effectiveness of the decontamination process employed in the field.

Rinsate blanks are samples obtained by running analyte free water over decontaminated sampling equipment to test for residual contamination. The blank water is collected in sample containers for handling, shipment, and analysis. These samples are treated identical to samples collected that day. A rinsate blank is used to assess cross contamination brought about by improper decontamination procedures. Where dedicated sampling equipment is not utilized, collect one rinsate blank per day per type of sampling device samples to meet QA2 and QA3 objectives.

If sampling equipment requires the use of plastic tubing it should be disposed of as contaminated and replaced with clean tubing before additional sampling occurs.

10.0 DATA VALIDATION

Results of quality control samples will be evaluated for contamination. This information will be utilized to qualify the environmental sample results in accordance with the project's data quality objectives.

11.0 HEALTH AND SAFETY

When working with potentially hazardous materials, follow OSHA, U.S. EPA, corporate, and other applicable health and safety procedures.

Decontamination can pose hazards under certain circumstances. Hazardous substances may be incompatible with decontamination materials. For example, the decontamination solution may react with contaminants to produce heat, explosion, or toxic products. Also, vapors from decontamination solutions may pose a direct health hazard to workers by inhalation, contact, fire, or explosion.

The decontamination solutions must be determined to be acceptable before use. Decontamination materials may degrade protective clothing or equipment; some solvents can permeate protective clothing. If decontamination materials do pose a health hazard, measures should be taken to protect personnel or substitutions should be made to eliminate the hazard. The choice of respiratory protection based on contaminants of concern from the site may not be appropriate for solvents used in the decontamination process.

Safety considerations should be addressed when using abrasive and non-abrasive decontamination

equipment. Maximum air pressure produced by abrasive equipment could cause physical injury. Displaced material requires control mechanisms.

Material generated from decontamination activities requires proper handling, storage, and disposal. Personal Protective Equipment may be required for these activities.

Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard (i.e., acetone, alcohol, and trisodiumphosphate).

In some jurisdictions, phosphate containing detergents (i.e., TSP) are banned.

12.0 REFERENCES

Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, February, 1988.

A Compendium of Superfund Field Operations Methods, EPA 540/p-87/001.

Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, USEPA Region IV, April 1, 1986.

Guidelines for the Selection of Chemical Protective Clothing, Volume 1, Third Edition, American Conference of Governmental Industrial Hygienists, Inc., February, 1987.

Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, NIOSH/OSHA/USCG/EPA, October, 1985.

APPENDIX A

Table

Table 1. Soluble Contaminants and Recommended Solvent Rinse

TABLE 1 Soluble Contaminants and Recommended Solvent Rinse		
SOLVENT[1]	EXAMPLES OF SOLVENTS	SOLUBLE CONTAMINANTS
Water	Deionized water Tap water	Low-chain hydrocarbons Inorganic compounds Salts Some organic acids and other polar compounds
Dilute Acids	Nitric acid Acetic acid Boric acid	Basic (caustic) compounds (e.g., amines and hydrazines)
Dilute Bases	Sodium bicarbonate (e.g., soap detergent)	Acidic compounds Phenol Thiols Some nitro and sulfonic compounds
Organic Solvents [2]	Alcohols Ethers Ketones Aromatics Straight chain alkalines (e.g., hexane) Common petroleum products (e.g., fuel, oil, kerosene)	Nonpolar compounds (e.g., some organic compounds)
Organic Solvent[2]	Hexane	PCBs

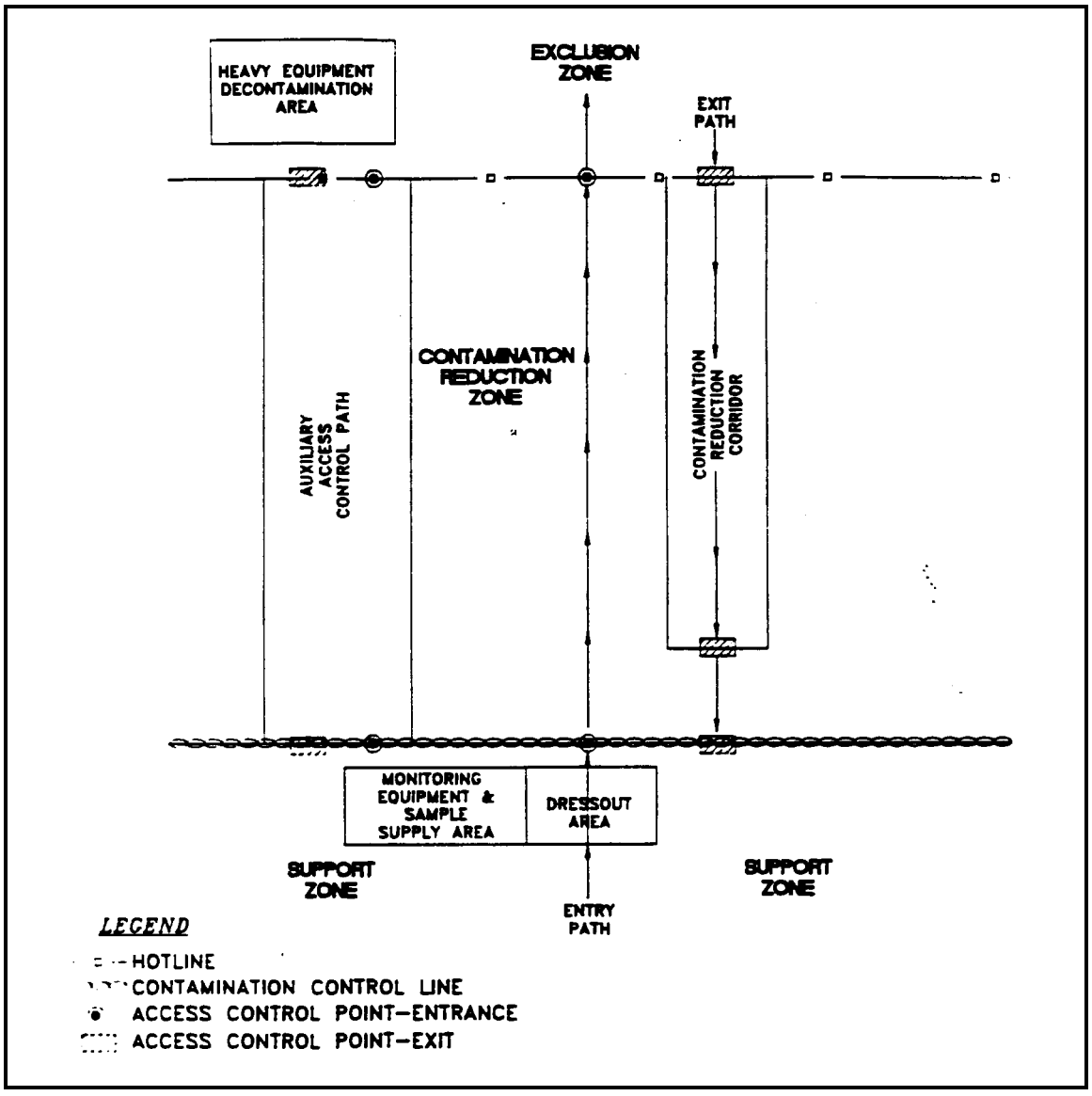
[1] - Material safety data sheets are required for all decontamination solvents or solutions as required by the Hazard Communication Standard

[2] - WARNING: Some organic solvents can permeate and/or degrade the protective clothing

APPENDIX B

Figures

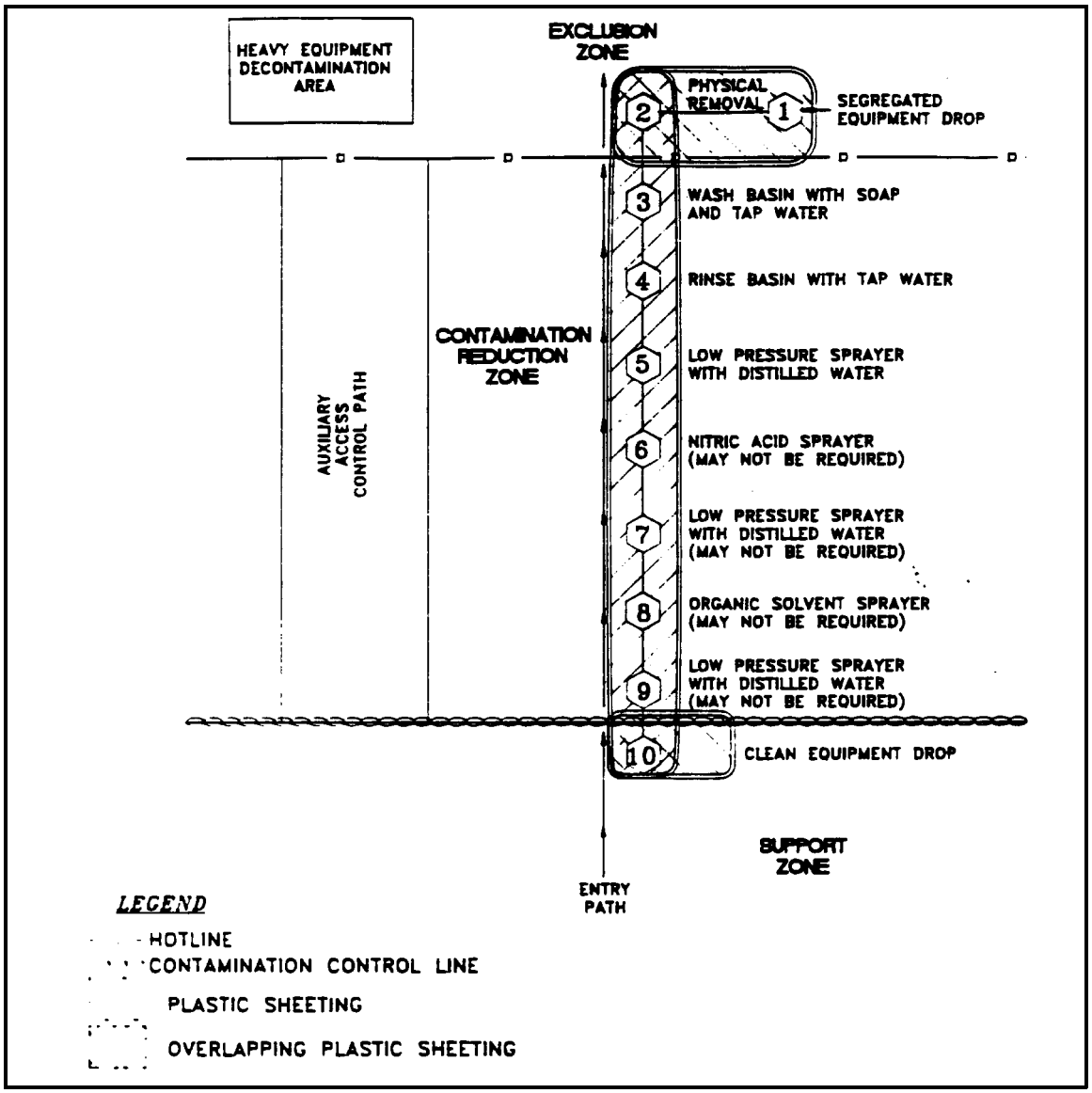
Figure 1. Contamination Reduction Zone Layout



APPENDIX B (Cont'd.)

Figures

Figure 2. Decontamination Layout



APPENDIX G

EPA ERT SOP #2002 Sample Documentation

(Document not Generated by START)

SAMPLE DOCUMENTATION

CONTENTS

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- 3.1 General
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  - 3.4.1 Field Data Sheets and Sample Labels
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- 4.3 Quality Assurance Office

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* These sections affected by Revision 0.0.

SUPERCEDES: SOP #2002; Revision 2.0; 05/17/93; U.S. EPA Contract 68-03-3482.

1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to define the procedures for preparing and maintaining documentation which provides the details of field sampling activities. The sample documentation discussed in this procedure includes: site and personal logbooks, Field Data Sheets and labels, and Chain of Custody records and Custody seals.

2.0 APPLICABILITY

This SOP is applicable to all REAC field activities which involve the generation of environmental measurements.

3.0 DESCRIPTION

3.1 General

Accurate sample documentation is essential for proper site evaluation. A clear traceable paper trail must follow each sample from its point of origin to the Final Report (or other appropriate report). It is important that specific procedures be adopted so that the desired degree of accuracy is achieved.

All sample documents must be completed legibly and in ink. Any corrections or revisions must be made by lining through the incorrect entry and initialing the error.

3.2 Site Logbook

The site logbook is used to record data and observations so that an accurate account of field operations can be reconstructed in the writer's absence. There is the potential, especially on Superfund sites, for site logs to be used as legal evidence sometime in the future. The site logbook is essentially a descriptive notebook detailing site activities and observations. All entries should be dated and signed by the individual(s) making the entries. Site logbooks should contain at a minimum, the following information:

- Site name and location on inside cover
- Date and location of field work
- Times (military times preferred, or reference a.m. or p.m.)
- Names and addresses of field contacts
- Site sketches and photographic references
- Weather conditions (Optional if provided on Field Data Sheets. See Section 3.1.)
- Sample descriptions, locations, times taken, identification numbers (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Chain of Custody information, shipping paper identification number, recipient address, and phone number, etc.

- Field observations and discussion (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Field measurements (i.e., pH, temperature, surface water flow rates, etc.) (Optional if provided on Field Data Sheets. See Section 3.4.1.)
- Instructions issued by the Work Assignment Manager
- Field activities by all REAC personnel on site

Entries may be made in site logbooks by any ERT or REAC personnel on site and should detail the activities of all personnel involved in the field operations. Each entry should be signed by the person making the entry and should relate to previous entries or have sufficient background detail. The sequence of site activities should be clear to a reader who was not at the site.

When a site logbook is completed, no longer needed for site documentation, or after a project is finished, the site logbook must be transmitted to the appropriate Work Assignment folder of the Central File. If the site logbook is transmitted to the ERT, documentation of the transmittal must be prepared and maintained in the Central File.

3.3 Personal Logbooks

When involved in field operations, all REAC personnel will maintain a personal logbook. The personal logbook will be a chronological compilation of the individual's daily field activities. Personal logbooks are to be maintained, even if a REAC member is entering information in a site log. The personal logbook may reference the site logbook, but must also identify what, if any, work was performed when not on site. In the absence of a dedicated site logbook, the personal logbook must detail all site related activities that would typically be entered in a site logbook.

If personal logbooks are used for site-related information in lieu of a dedicated site logbook, the REAC Task Leader must obtain copies of the site notes from each individual field member and transmit the notes under a standard cover memo (Figure 1, Appendix A) to the Central File. This must be done within 10 working days of completion of field activities.

Personal logbooks may be maintained for the individual's daily office activities at the discretion of the individual. When a REAC member is in the office, the personal logbook should contain, at a minimum, meetings attended and meeting notes, telephone conversations, and detail of any work performed that relates to a particular site. Any task related entries should include the Work Assignment number. Entries should include, but are not limited to, the following:

- Field and project-related activities performed
- Directives from Work Assignment Manager
- Verbal instructions from U.S. EPA personnel
- Personal injuries or potential exposures
- Phone conversations relevant to Work Assignments

When a personal logbook is completed or the person to whom it is assigned leaves REAC, the personal logbook shall be returned to the Quality Assurance (QA) Office. People who must access information in a personal logbook may obtain photocopies from the person to whom the logbook is assigned.

3.4 Field Data Sheets and Sample Labels

Field Data Sheets and corresponding sample labels are used to identify samples and document field sampling conditions and activities. There are several different Field Data Sheets and sample labels used within the REAC project.

Field Data Sheets will be maintained by the Task Leader or designee. Task Leaders are responsible for conveying original Field Data Sheets to the corresponding Central File folder upon completion of the Trip or Final Report. Field Data Sheets may be transmitted to the Central File as an attachment to these reports or as a stand alone document.

3.4.1 Field Data Sheets and Sample Labels

Prenumbered Field Data Sheets and corresponding, prenumbered sample labels (Figures 2 and 3, Appendix A) are used for all types of samples except soil gas and air samples (see Sections 3.4.2 and 3.4.3).

Upon sample collection at a particular sampling location, Field Data Sheet(s) shall be completed with the following information:

1. Site name, sampling location, date and time of sampling, name(s) of sampler(s), Chain of Custody record number, REAC Task Leader's name, U.S. EPA Work Assignment Manager's name, and the Work Assignment number.

2. Site description and, as applicable, soil type, surface water, stream, and bottom information.

3. Sample type, sampling device, sample information (e.g., color, odor, temperature, pH, etc.) and weather parameters.

4. Analyses to be performed and sample preparation information.

Also upon sample collection, the corresponding prenumbered sample labels must be completed and securely affixed to the sample container(s).

Because samples are often collected from the same location in more than one container (for more than one analysis), the sample label consists of several parts (Figure 3, Appendix A). The largest part of the sample label consists of the project name and U.S. EPA contract number, the unique sample identification number consisting of the prefix "A" followed by a five-digit number (A01001), and spaces for inserting the following information: site name,

work order number, date and time of collection, the analysis requested, and the preservative. Other parts of the sample label include additional sample labels numbered with the same sample identification number and consecutive letter prefixes (B01001 to L01001).

When a sample is collected in only one container, the largest part of the sample label is completed and affixed to the sample container. When the sample is collected in multiple containers, the largest part of the sample label is completed and affixed to one of the sample containers, and the additional labels, beginning with letter prefix "B," are affixed to the additional containers in a consecutive order. If more than 12 containers are included in a sample set, then the sampler may use blank labels and insert the sample identification number beginning with letter prefix "M" (M01001).

If duplicates or blanks are collected at a sampling location, the sample sets must be treated as being unique from the original sample and labeled with different sample identification numbers. When collecting samples for parameters which require extra volume for matrix spike/matrix spike duplicate (MS/MSD) analysis, the original sample container(s) and the MS/MSD containers are labeled with the same sample identification number and consecutive letter prefixes. For example, a water sample for BNA analysis that also requires MS/MSD analysis would be collected in four sample containers which would be labeled A01003 through D01003. Required volumes for MS/MSD analysis for typical parameters are specified in ERT/REAC SOP #4005, Chain of Custody.

3.4.2 Soil Gas Sampling Data Sheets and Sample Labels

Soil Gas Sampling Data Sheets and prenumbered sample labels (Figure 4 and 5, Appendix A) are used for all soil gas sampling activities.

The heading of the data sheets shall be completed with the following information: site name, samplers, date, REAC Task Leader, U.S. EPA Work Assignment Manager, the project number, and the weather parameters.

After the soil gas well is screened with field instrument(s), the location identification, pertinent remarks, time, depth, and the instrument reading(s) are recorded in the first available column on the Soil Gas Sampling Data Sheet. A total of five (5) columns are available to record data from five sampling points on each Data Sheet.

If a soil gas sample was collected at that particular location, "Y" is circled to indicate this. The soil gas sample label is completed with the site name, sample location, date, time, remarks, and instrument readings; then the label is affixed to the sample container. A corresponding sample label (with sample identification number only) is inserted on the sample number line in the appropriate column on the soil gas sampling data sheet. If a soil gas sample was not collected at that particular location, "N" is circled to indicate this.

If necessary, the additional sample label (with the sample identification number only) can be inserted in the logbook used for documenting sampling activities, or it can be used for

additional sample containers if the sample is collected in multiple containers. Blank sample labels are also provided so that sample numbers can be written in, when needed. Trip standards, field blanks, and samples containing spikes must be assigned unique sample identification numbers. Soil Gas Sampling Data Sheets and sample labels will be prepared and maintained for these types of samples in the same manner as other sample matrices.

3.4.3 Air Sampling Work Sheets and Sample Labels

Air Sampling Work Sheets and prenumbered sample labels (Figures 6 and 7, Appendix A, respectively) are used for all air sampling activities.

The heading of the Air Sampling Worksheet is completed with the following information: site name, samplers, date, Work Assignment number, the name of the U.S. EPA Work Assignment Manager, and the REAC Task Leader.

When air sampling is initiated, the following information is recorded in the first available column on the Air Sampling Worksheet: sample number, location, pump number media, analysis/method and time/counter start. At the end of the sampling period the following information is recorded: time/counter stop, total time, pumpfault (indicate by using "Y" or "N"), flow rate start, flow rate stop, flow rate average, and volume, are recorded. A total of five columns are available to record data from five sampling locations on each air sampling worksheet.

The total sampling time is calculated by subtracting the start time/counter value from the stop time/counter value. The flow rate average is calculated from the start and stop flow rates. The volume sampled is calculated by multiplying the total sampling time by the average flow rate. All calculated values, along with the analysis requested, are recorded in the appropriate location on the air sampling worksheets.

If real-time air monitoring instruments are used at a particular sample location, the instrument readings are recorded on an Air Monitoring Work Sheet (Figure 8, Appendix A). If air samples are collected outdoors, then the appropriate weather parameters are also recorded on the Air Monitoring Work Sheet.

The prenumbered air sample label (Figure 7, Appendix A) consists of several parts. The largest part includes the project name, the contract number, the sample identification number, and space for the following information: the site name, volume of air, date, time, requested analysis, and remarks. Other parts include two additional sample labels with only the sample identification number.

When a sample is collected, the largest part of the sample label is completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. If samples are collected from a single sampling location in more than one sample media, separate sample numbers are used for each different sample medium used. The blank space at the end of the sample identification number is used to indicate the media. The small

sample labels are affixed to the additional sample containers. If available, the small sample labels may be inserted in the sample number space in the appropriate column on the Air Sampling Work Sheet. Blank sample labels are provided for use as necessary.

Alternatively, at the Task Leader's discretion, separate sample numbers may be used for each media in which samples are collected at a single sampling location. In this case, the largest part of the sample label will be completed and affixed to the sample container in the manner described by the appropriate ERT/REAC air sampling SOP. The small sample labels (with sample identification number only) will be affixed to the Air Sampling Worksheet and the logbook.

Quality Control (QC) samples must be assigned unique sample identification numbers. Air Sampling Work Sheets and prenumbered sample labels will be prepared and maintained in the same manner as for other sample matrices.

3.4.4 Specialized Field Data Sheets

Task Leaders, with the approval of the Group Leader, the Work Assignment Manager, and the QA Officer, may develop specialized Field Data Sheets if none of the three types described above meet the specific needs of the project. At a minimum, the Field Data Sheet must include space for recording the name(s) of the sampler(s), the sample number(s), the location of the sample, the date and time that the sample was taken, and any pertinent field conditions. The following information will be included in the header of the data sheet: (Matrix) Data Sheet, Roy F. Weston, Inc., REAC, Edison, NJ, U.S. EPA Contract: 68-C4-0022.

3.5 Chain of Custody

A Chain of Custody record (Figure 9, Appendix A) must be maintained from the time a sample is collected to its final deposition. The Chain of Custody record shall contain, at a minimum, the following information: project name, project number, the REAC contact, and the contact telephone number. For each sample collected, the Chain of Custody record shall include the sample number, sampling location, sample matrix, date collected, number of bottles, container/preservative, the analysis requested, and special instructions, if any are applicable.

Chain of Custody records must be completed legibly, with all required information, so that miscommunication with, or misunderstanding by, the receiving laboratory is prevented.

If samples collected during a sampling event are being forwarded to more than one laboratory, then a separate Chain of Custody record, indicating which samples are being sent to that particular laboratory, must be completed.

The Chain of Custody provides a means by which the entire path and life of a sample can be traced. Every transfer of custody must be noted and signed for on the Chain of Custody record. If a sample or group of samples is not under direct control or observation of the individual responsible for the

samples, then they must be stored in a locked container that has been sealed with a Custody Seal (Section 3.6). A copy of the Chain of Custody record should be kept by each individual who has signed it. The final copy should be included with the Analytical Report.

3.6 Custody Seals

Custody Seals (Figure 10, Appendix A) demonstrate that a sample container has not been opened or tampered with during transport or storage. Two seals should be affixed in such a manner that the shipping container cannot be opened without breaking the seal. The person in direct possession of the samples shall sign and date the seal. The name of the individual signing the seal and a description of the packaging shall be noted in the site logbook.

4.0 RESPONSIBILITIES

4.1 Task Leaders and Field Staff

Task Leaders and field staff are responsible for preparing and maintaining sample documentation in accordance with this SOP.

4.2 Group Leaders and Section Leaders

Group Leaders and Section Leaders are responsible for ensuring implementation of the procedures outlined in this SOP.

4.3 QA Office

The QA Office is responsible for ensuring compliance with this SOP by auditing reports prepared by REAC personnel.

APPENDIX A
Figures
SOP #2002
September 1994

FIGURE 1. Cover Memo - Transmittal of Site Notes

DATE:

TO: Central File # _____

FROM: _____, Task Leader

SUBJECT: LOGBOOK NOTES
SITE NAME, DATE(s)

Attached please find copies of field-related personal logbook records for activities performed at the above- referenced site. Individuals involved included:

NAME	LOGBOOK NUMBER
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

w/Attachments

FIGURE 2. Field Data Sheet

FIELD DATA SHEET 26880

Roy F. Weston, Inc.
REAC, Edison, N.J.
EPA Contract 68-C4-0022

Chain of Custody No. _____
Samplers: _____ REAC Task Leader: _____
Date: _____ Site Name: _____ EPA WAM _____
Time: _____ Sample Location: _____ Work Assignment No.: _____

SITE DESCRIPTION			SOIL TYPE		SURFACE WATER	STREAM	BOTTOM	
landfill	old field	upland palustrine	rock	clay	color _____	width _____	rock	silt
industrial	wooded	lowland riverine	gravel	muck	odor _____	depth _____	rubble	clay
commercial	farmland	lacustrine	sand	loam	flow _____	velocity _____ cm/s	gravel	organic
residential	gully		silt	peat	direction _____	pools _____ %	shell	other _____
hedgegrows	floodplain		color _____			riffles _____ %	sand	

SAMPLE TYPE		DEVICE		SAMPLE INFORMATION		WEATHER PARAMETERS
surface water	effluent	kemmerer	ponar	color _____	pH _____	ambient temp _____
groundwater	sludge	trowel	other _____	odor _____	ORP _____	barometric pressure _____
potable water	leachate	bucket		temp _____	salinity _____	relative humidity _____
sediment	waste	auger		DO _____	sample depth _____	weather conditions _____
soil	other _____	ekman		cond _____	tide stage _____	_____

ANALYSES TO BE PERFORMED

ORGANICS
- A. halogenated & aromatic volatiles
- B. volatiles
- C. trihalomethanes
- D. pesticides/PCB
- E. PCB
- F. base neutral/acid extractables
- G. pesticides, drinking water
- H. herbicides, drinking water
- I. other _____

INORGANICS
- A. metals, priority pollutant
- B. metals, TAL
- C. metals scan (ICP)
- D. metals, other _____

RCRA
- A. TCLP
- B. Ignitability
- C. corrosivity _____ pH _____
- D. reactivity
- E. other _____

ORGANICS
- A. total cyanide
- B. total phenol
- C. petroleum hydrocarbons
- D. pH
- E. alkalinity
- F. hardness
- G. total dissolved solids
- H. total suspended solids
- I. sulfate
- J. TOC
- K. grain size
- L. other _____
- M. other _____

SAMPLE PREPARATION

CONTAINER	PRESERVATIVES
glass jar	HNO_3
plastic jar	NaOH
acetate core	Zn Acetate
plastic bag	HCl
plastic bucket	Na_2SO_4
other _____	other _____

STORAGE
wet ice
dry ice
ambient

COMMENTS:

FIGURE 3. Sample Labels

ROY F. WESTON, INC. REAC, EDISON, NJ EPA Contract 68-C4-0022	SAMPLE NO. A 26880
SITE NAME:	DATE:
WORK ORDER NO:	TIME:
ANALYSIS REQUESTED:	
PRESERVATIVE: ☐ NONE ☐ SULFURIC ACID ☐ OTHER (Specify:) ☐ COOL (4°C) ☐ SODIUM HYDROXIDE ☐ NITRIC ACID ☐ SODIUM THIOSULFATE	

B 26880
C 26880
D 26880
E 26880
F 26880
G 26880
H 26880
I 26880
J 26880
K 26880
L 26880

FIGURE 4. Soil Gas Sampling Data Sheet

SOIL GAS SAMPLING SHEET

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site Name: _____ REAC Task Leader: _____

Samplers: _____ EPA Work Assignment Manager: _____

Date: _____ Work Assignment No.: _____

Weather Parameters: ambient temp. _____ relative humidity _____
barometric pressure _____ weather conditions _____

Sample No.:					
Location ID.:					
Remarks:					
Time:					
Sample Depth:					
Sample Taken:	Y/N	Y/N	Y/N	Y/N	Y/N
Instrument Readings:					
HNU					
OVA					
LEL					
% O_2					
Soil Temp.					
Other					

General Comments:

FIGURE 5. Soil Gas Sample Labels

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02951
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02952
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02951
SG 02951
SG 02952
SG 02952
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02953
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02954
EPA CONTRACT 68-C4-0022
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02953
SG 02953
SG 02954
SG 02954
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02955
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02956
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02955
SG 02955
SG 02956
SG 02956
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02957
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02958
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02957
SG 02957
SG 02958
SG 02958
SG0

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02959
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

Roy F. Weston, Inc.
REAC, EDISON, NJ SAMPLE NO. SG 02960
EPA CONTRACT 68-C4- 22
SITE NAME: DATE: TIME:
SAMPLE LOCATION: REMARKS:
HNu _____ % O_2 _____
OVA _____ SOIL TEMP. _____
LEL _____ OTHER _____

SG 02959
SG 02959
SG 02960
SG 02960
SG0

FIGURE 6. Air Sampling Work Sheet

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Page ___ of ___

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Samplers: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Sample #					
Location					
Pump #					
Media					
Analysis/Method					
Time/Counter (Start)					
Time/Counter (Stop)					
Total Time					
Pump Fault	Y / N	Y / N	Y / N	Y / N	Y / N
Flow Rate (Start)					
Flow Rate (Stop)					
Flow Rate (Average)					
Volume					

MET Station On-site? Y / N

General Comments:

FIGURE 7. Air Sample Labels

Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07091_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07092_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07091_ 07091_ 07092_ 07092_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07093_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07094_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07093_ 07093_ 07094_ 07094_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07095_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07096_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07095_ 07095_ 07096_ 07096_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07097_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07098_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07097_ 07097_ 07098_ 07098_ 0 _
Roy F. Weston, Inc. REAC, EDISON, NJ SAMPLE NO. 07099_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	**Roy F. Weston, Inc.** REAC, EDISON, NJ SAMPLE NO. 07100_ EPA CONTRACT 68-C4- 22 SITE NAME: DATE: VOL. OF AIR: TIME: ANALYSIS REQUEST: REMARKS:	07099_ 07099_ 07100_ 07100_ 0 _

FIGURE 8. Air Monitoring Work Sheet

ENVIRONMENTAL RESPONSE TEAM
AIR SAMPLING WORK SHEET

Page ____ of ____

Roy F. Weston, Inc.
REAC Project, Edison, NJ
EPA Contract No. 68-C4-0022

Site: _____ WA#: _____

Prepared By: _____ EPA/ERT WAM: _____

Date: _____ REAC Task Leader:: _____

Instrument	EPA #	Location/Description	Reading	Time

General Comments:

FIGURE 9. Chain of Custody Record/Lab Work Request

CHAIN OF CUSTODY RECORD / LAB WORK REQUEST No. 10387

Roy F. Weston, Inc.
REAC, Edison, N.J.
EPA Contract 68-C4-0022

Project Name: _____
Project Number: _____
RFW Contact: _____ Phone: _____

Sheet ____ of ____

SAMPLE IDENTIFICATION							ANALYSES REQUESTED			
REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/ Preservative				

Matrix:
SD – Sediment PW – Potable Water S – Soil
DS – Drum Solids GW – Ground Water W – Water
DL – Drum Liquids SW – Surface Water O – Oil
X – Other SL – Sludge A – Air

Special Instructions:

FOR SUBCONTRACT USE ONLY
FROM CHAIN OF
CUSTODY #

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time

FIGURE 10. Custody Seals

WESTON MANAGERS DESIGNERS/CONSULTANTS

CUSTODY SEAL

Date

Signature

WESTON MANAGERS DESIGNERS/CONSULTANTS

CUSTODY SEAL

Date

Signature

APPENDIX I

SAMPLING DATA SHEETS

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	**AC-ESI-01**
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA
CERCLIS NO	LAN000604293
Photo #	DSC 00026
Photo Description	SAMPLE LOCATION AT THE ON-SITE DRAINAGE/OVERLAND FLOW PATHWAY. LOOKING NE
Date: 05/25/2016	**Samplers:** SEAN WELLS, MICAH VANSHOUBREK

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW01	**Sample Time**	NA
Location Description	NA - NO SURFACE WATER PRESENT AT SAMPLE LOCATION AC-ESI-01.		

GPS Coordinates

Latitude	30.830263212°	**Longitude**	-93.27808456
Photo #	NA		
Photo Description	NA		

Field Measurements

pH/Cond/Temp Meter ID	NA	**Turbidity Meter ID**	NA
pH	NA	**Turbidity (NTU)**	NA
Conductivity (us/cm)	NA	**Temperature (°C)**	NA
TDS (ppm)	NA	**ORP (mv)**	NA

Analyses

Field Dup		**Lab QC (MS/MSD)**	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)		**Dioxins/Furans (Amber) (2 / 4 / 6)**	
Pesticide/PCB (Amber) 2 / 4 / 6)		**Metals + Mercury (Poly) (1 / 2 / 2)**	
Coliforms (125 poly) (1 / 2)		**Cyanides**	
Starting Tag No	6-	**Sample Number(s)**	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD01	**Sample Time**	0843
Location Description	ON-SITE DRAINAGE/OVERLAND FLOW PATHWAY.		

GPS Coordinates

Latitude	30.830263212°	**Longitude**	-93.27808456
Photo #	DSC 00027		
Photo Description	COLLECTING SEDIMENT SAMPLE AT LOCATION AC-ESI-01. LOOKING NE.		

Analyses

Field Dup		**Lab QC (MS/MSD)**	
VOA (Core n One) (3 / 6 / 9)		**SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)**	X
% Moisture (4 oz) (1 / 2 / 1)		**Dioxins/Furans (16 OZ) (1 / 2 / 2)**	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	**Sample Number(s)**	

Relinquished By:		**Date Time**		**Received By:**	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-02		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC00024		
Photo Description	ON-SITE DRAINAGE/OVERLAND FLOW PATHWAY AT CULVERT, SAMPLE LOCATION AC-ESI-02. LOOKING WEST		
Date: 05/25/2016		Samplers:	SEAN WELLS MICAH VANSHOUBREK

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW02	Sample Time	NA
Location Description	NA - NO SURFACE WATER PRESENT AT SAMPLE LOCATION AC ESI-02.		

GPS Coordinates

Latitude	30.830294 1174°	Longitude	-93.2781781723°
Photo #	NA		
Photo Description	NA		

Field Measurements

pH/Cond/Temp Meter ID	NA	Turbidity Meter ID	NA
pH	NA	Turbidity (NTU)	NA
Conductivity (us/cm)	NA	Temperature (°C)	NA
TDS (ppm)	NA	ORP (mv)	NA

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)	*	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD02	Sample Time	0839
Location Description	ON-SITE LOCATION AT CULVERT OF DRAINAGE/OVERLAND FLOW PATHWAY.		

GPS Coordinates

Latitude	30.830294 1174°	Longitude	-93.2781781723°
Photo #	DSC00025		
Photo Description	COLLECTION OF SEDIMENT SAMPLE AT LOCATION AC-ESI-02. LOOKING NW.		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-03 /BACKGROUND		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC00021		
Photo Description	OFF-SITE LOCATION UPGRADIENT ON TRIBUTARY ON MWV/INGEVITY PROPERTY. LOOKING SOUTH. SAMPLE LOCATION AC-ESI-03		
Date: 05/24/2016		Samplers:	SEAN WELLS MICAH VANSHOUBLEK

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW03	Sample Time	1405
Location Description	UP-GRADIENT TRIBUTARY ON MWV/INGEVITY PROPERTY. ~~LOOKING~~ (S)		

GPS Coordinates

Latitude	30.830662663l°	Longitude	-93.27855310650
Photo #	DSC00019		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-03. LOOKING SW.		

Field Measurements

TURBIDITY/DO pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/ S3	~~Turbidity~~ Meter ID	SONDE: 21365/DISPLAY: 19270
pH	7.05	Turbidity (NTU)	15.0
Conductivity (us/cm)	0.170	Temperature (°C)	25.36
TDS ~~(ppm)~~ g/L	0.110	ORP (mv)	96
DO mg/L	3.56		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) (2) / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD03	Sample Time	
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE AT LOCATION AC-ESI-03		

GPS Coordinates

Latitude	30.830662663l°	Longitude	-93.27855310650
Photo #	DSC00020		
Photo Description	COLLECTING OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-03 LOOKING SW.		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1) / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-04 / BACKGROUND		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC00022		
Photo Description	OFFSITE LOCATION UPGRADIENT ON TRIBUTARY ON MWV/INGEVITY PROPERTY. LOOKING NW. SAMPLE LOCATION AC-ESI-04		
Date: 05/24/2016		Samplers:	SEAN WELLS MICAH VANSOUBREK

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW04	Sample Time	NA
Location Description	NA - NO SURFACE WATER PRESENT AT SAMPLE LOCATION AC-ESI-04.		

GPS Coordinates

Latitude	30.830593826 2°	Longitude	-93.27869131 38°
Photo #	NA		
Photo Description	NA		

Field Measurements

pH/Cond/Temp Meter ID	NA	Turbidity Meter ID	NA
pH	NA	Turbidity (NTU)	NA
Conductivity (us/cm)	NA	Temperature (°C)	NA
TDS (ppm)	NA	ORP (mv)	NA

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)	*	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD04	Sample Time	1414
Location Description	OFF SITE LOCATION UP GRADIENT ON TRIBUTARY ON MWV/INGEVITY PROPERTY. SAMPLE LOCATION AC-ESI-04.		

GPS Coordinates

Latitude	30.830593826 2°	Longitude	-93.27869131 38°
Photo #	DSC00023		
Photo Description	COLLECTION OF SEDIMENT SAMPLE AT LOCATION AC-ESI-04. LOOKING NW		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-05		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC00016		
Photo Description	OFF-SITE DRAINAGE/OVERLAND FLOW PATHWAY ON MWV/INGEVITY PROPERTY. LOOKING SE. SAMPLE LOCATION AC-ESI-05		
Date: 05/24/2016		Samplers:	SEAN WELLS MICAH VANSHOUBREK.

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW05	Sample Time	1349
Location Description	OFF-SITE DRAINAGE/OVERLAND FLOW PATHWAY ON MWV/INGEVITY PROPERTY.		
GPS Coordinates			
Latitude	30.830304008°	Longitude	-93.2783933357°
Photo #	DSC00017		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-05. LOOKING SW		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 21365/DISPLAY: 19270
pH	7.25	Turbidity (NTU)	12.8
Conductivity (~~µ~~s/cm)	0.179	Temperature (°C)	26.62
TDS (~~ppm~~) g/L	0.116	ORP (mv)	75
DO mg/L	5.65		

TURBIDITY / DO

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2) / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD05	Sample Time	1352
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE AT LOCATION AC-ESI-05		
GPS Coordinates			
Latitude	30.830304008°	Longitude	-93.2783933357°
Photo #	DSC00018		
Photo Description	COLLECTION OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-05. LOOKING SOUTH.		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1) / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	
Relinquished By:		Date Time	
Received By:			

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-06		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC00013		
Photo Description	OFF-SITE DRAINAGE/OVERLAND FLOW PATHWAY LEADING TO SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY LOOKING SW		
Date: 05/24/2016		Samplers:	SEAN WELLS MICAH VANSHOUBRCK

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW06	Sample Time	1329
Location Description	OFF-SITE DRAINAGE/OVERLAND FLOW PATHWAY LEADING TO SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY. SAMPLE LOCATION AC-ESI-06		

GPS Coordinates

Latitude	30.830417704 4°	Longitude	-93.27871897 02°
Photo #	DSC00014		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-06, LOOKING NW.		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 2365/DISPLAY: 19210
pH	6.65	Turbidity (NTU)	129
Conductivity (~~µ~~s/cm)	0.176	Temperature (°C)	26.92
TDS (~~ppm~~) g/L	0.114	ORP (mv)	-36
DO mg/L	2.56		

TURBIDITY/DO

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2) / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD06	Sample Time	1331
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE AT LOCATION AC-ESI-06		

GPS Coordinates

Latitude	30.830417704 4°	Longitude	-93.27871897 02°
Photo #	DSC00015		
Photo Description	COLLECTION OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-06. LOOKING NW.		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1) / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	
Relinquished By:		Date Time	
Received By:			

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-07		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC 00010		
Photo Description	OFF-SITE LOCATION WHERE RUNOFF/OVERLAND FLOW DISCHARGES INTO THE SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY. (SLOUGH) LOOKING SE		
Date: 05/24/2016		Samplers:	MICAH VANSHOMBRCK SEAN WELLS

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW07	Sample Time	1136
Location Description	OFF-SITE LOCATION WHERE RUN OFF/OVERLAND FLOW ENTERS INTO THE SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY. (SLOUGH)		

GPS Coordinates

Latitude	30.828842204 1°	Longitude	-93.280837096°
Photo #	DSC 00011		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-07. LOOKING ~~SW~~ SE.		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA-U-52/53	~~Turbidity~~ Meter ID	SONDE: 21365/DISPLAY: 19270
pH	6.47	Turbidity (NTU)	17.2
Conductivity (~~µs~~/cm)	0.106	Temperature (°C)	27.67
TDS (~~ppm~~) g/L	0.069	ORP (mv)	85
DO mg/L	6.57		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2) / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD07	Sample Time	1142
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE AT LOCATION AC-ESI-07.		

GPS Coordinates

Latitude	30.828842204 1°	Longitude	-93.280837096°
Photo #	DSC 00012		
Photo Description	COLLECTION OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-07. LOOKING SE.		

Analyses

Field Dup	X	Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-08		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC 00009		
Photo Description	POINT WHERE OFF-SITE SURFACE WATER DISCHARGES FROM THE IMPOUNDMENT ON MWV/INGEVITY PROPERTY. LOOKING NORTH (SLOUGH)		
Date: 05/24/2016		Samplers:	MICAH VANSHOUBREK SEAN WELLS

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW08	Sample Time	1025
Location Description	POINT WHERE OFF-SITE SURFACE WATER DISCHARGES FROM THE FIRST WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY (SLOUGH)		
GPS Coordinates			
Latitude	30.828506869 5°	Longitude	-93.280909 1456°
Photo #	DSC 00007		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-08. LOOKING NORTH.		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 21365/DISPLAY: 19270
pH	5.93	Turbidity (NTU)	9.1
Conductivity (~~µs~~/cm)	0.124	Temperature (°C)	26.32
TDS ~~(ppm)~~ g/L	0.080	ORP (mv)	155
DO mg/L	2.12		

TURBIDITY/DO

Analyses

Field Dup	X	Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / (4) / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD08	Sample Time	1030
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE AT LOCATION AC-ESI-08.		
GPS Coordinates			
Latitude	30.828506869 5°	Longitude	-93.280909 1456°
Photo #	DSC 00008		
Photo Description	COLLECTION OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-08. LOOKING NORTH.		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-09
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA
CERCLIS NO	LAN000604293
Photo #	DSC0005
Photo Description	SAMPLE LOCATION AT THE SECOND SURFACE WATER IMPOUNDMENT WHERE DISCHARGE ENTERS FROM THE FIRST IMPOUNDMENT ON MWV/INGEVITY PROPERTY (SLOUGH) LOOKING SE
Date: 05/24/2016	Samplers: @~~MICHAH~~ MICAH VANSHOLBREK, SEAN WELLS

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW09	Sample Time	0949
Location Description	AREA WHERE DISCHARGE FROM THE FIRST WATER IMPOUNDMENT (SLOUGH) ENTERS A SECOND WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY		

GPS Coordinates

Latitude	30.828487704 65°	Longitude	-93.28105618 25°
Photo #	DSC0004		
Photo Description	COLLECTION OF SURFACE WATER AT LOCATION AC-ESI-09. LOOKING SE		

Field Measurements

TURBIDITY/DO/

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 2136S/DISPLAY: 19270
pH	6.75	Turbidity (NTU)	17.2
Conductivity (~~us~~/cm)	8.121	Temperature (°C)	26.67
TDS (~~ppm~~) g/L	8.080	ORP (mv)	116
DO mg/L			

Analyses

Field Dup		Lab QC (MS/MSD)	X
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2) / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No 6-		Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD09	Sample Time	1000
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE		

GPS Coordinates

Latitude	30.828487704 65°	Longitude	-93.28105618 25°
Photo #	DSC0006		
Photo Description	COLLECTION OF SEDIMENT SAMPLE AT LOCATION AC-ESI-09. LOOKING SE		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No 6-		Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-10		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC 0001		
Photo Description	SAMPLE LOCATION AT THE SECOND SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY. LOOKING SOUTH-EAST.		
Date: 05/24/2016		Samplers:	MICAH VANSHOUBREK SEAN WELLS

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW10	Sample Time	0922
Location Description	DISCHARGE AREA AT SECOND SURFACE WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY.		

GPS Coordinates

Latitude	30.82798203 23°	Longitude	-93.28173708 94°
Photo #	DSC 0002		
Photo Description	COLLECTING OF SURFACE WATER FROM LOCATION AC-ESI-10. LOOKING SE		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 21365 / DISPLAY 19270
pH	6.58	Turbidity (NTU)	0.0
Conductivity (~~us~~/cm)	0.109	Temperature (°C)	27.12
TDS ~~(ppm)~~ g/L	0.071	ORP (mv)	-88

TURBIDITY/DO/ DO mg/L

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2) / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD10	Sample Time	0928
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SURFACE WATER SAMPLE		

GPS Coordinates

Latitude	30.82798203 23°	Longitude	-93.28173708 94°
Photo #	DSC 0003		
Photo Description	COLLECTING OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-10. LOOKING SE		

Analyses

Field Dup		Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1) / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

CSS-Dynamac

Site Name: American Creosote DeRidder – ESI

DATA SHEET

SAMPLE LOCATION	AC-ESI-11 (DUPLICATE OF SAMPLE AC-ESI-08)		
ADDRESS	Post Plant Road, Beauregard Parish, DeRidder, LA		
CERCLIS NO	LAN000604293		
Photo #	DSC 00009 / DSC 00010		
Photo Description	POINT WHERE OFF-SITE SURFACE WATER DISCHARGES FROM THE FIRST IMPOUNDMENT. OFF SITE LOCATION WHERE RUNOFF/OVERLAND FLOW ENTERS THE FIRST IMPOUNDMENT. LOOKING NORTH/LOOKING SE.		
Date: 05/24/2016		Samplers:	MICAH VANSHOUBREK SEAN WELLS

SURFACE WATER SAMPLE

Sample ID #	AC-ESI-SW11 (DUPLICATE OF AC-ESI-08)	Sample Time	1028
Location Description	POINT WHERE OFF-SITE SURFACE WATER DISCHARGES FROM THE FIRST WATER IMPOUNDMENT ON MWV/INGEVITY PROPERTY		

GPS Coordinates

Latitude	30.828506869 5°	Longitude	-93.280909145 6°
Photo #	DSC 00007		
Photo Description	COLLECTION OF SURFACE WATER FROM LOCATION AC-ESI-11/08 (18) LOOKING NORTH		

Field Measurements

pH/Cond/Temp Meter ~~ID~~	HORIBA U-52/53	~~Turbidity~~ Meter ID	SONDE: 21365/DISPLAY: 19270
pH	5.93	Turbidity (NTU)	9.1
Conductivity (~~µs~~/cm)	0.124	Temperature (°C)	26.32
TDS (~~ppm~~) g/L	0.080	ORP (mv)	155
DO mg/L	2.12		

TURBIDITY/DO

Analyses

Field Dup	X	Lab QC (MS/MSD)	
VOA (40 ml) (3 / 6 / 9)			
SVOA (Amber) (2 / 4 / 6)	X	Dioxins/Furans (Amber) (2 / 4 / 6)	
Pesticide/PCB (Amber) 2 / 4 / 6)		Metals + Mercury (Poly) (1 / 2 / 2)	
Coliforms (125 poly) (1 / 2)		Cyanides	
Starting Tag No	6-	Sample Number(s)	

SEDIMENT SAMPLE

Sample ID #	AC-ESI-SD11 (DUPLICATE OF AC-ESI-07)	Sample Time	1145
Location Description	COLLOCATED SEDIMENT SAMPLE WITH SEDIMENT SAMPLE AC-ESI-07.		

GPS Coordinates

Latitude	30.828842204 1°	Longitude	-93.280837079 6°
Photo #	DSC 00012		
Photo Description	COLLECTION OF SEDIMENT SAMPLE FROM LOCATION AC-ESI-11/07.		

Analyses

Field Dup	X	Lab QC (MS/MSD)	
VOA (Core n One) (3 / 6 / 9)		SVOA/PEST/PCB (8 OZ) (1 / 2 / 1)	X
% Moisture (4 oz) (1 / 2 / 1)		Dioxins/Furans (16 OZ) (1 / 2 / 2)	
		Metals + Mercury (8 OZ) (1 / 2 / 1)	
Starting Tag No	6-	Sample Number(s)	

Relinquished By:		Date Time		Received By:	

APPENDIX J

LABORATORY DATA QUALITY REVIEW

This document was prepared by CSS-Dynamac, expressly for EPA.
It shall not be released or disclosed in whole or in part without the express, written permission of EPA.

AMERICAN CREOSOTE DERIDDER
DeRidder, Beauregard Parish, LA
LABORATORY DATA QUALITY REVIEW REPORT

Date: August 1, 2016
Laboratory: US EPA Region 6 Laboratory
Project#: 16SF083
Work Order(s): 1605032, 1605035
Data Quality Review Performed By: Mindy Song, CSS-Dynamac (Dynamac)
Dynamac Work Order #: S109-07L

1.1 PROJECT-SPECIFIC DATA QUALITY OBJECTIVES

The laboratory data were reviewed to ensure that DQOs for the project were met. The following describes the laboratories' ability to meet project DQOs for precision, accuracy, and completeness and the field team's ability to meet project DQOs for representativeness and comparability. The laboratory and the field team were able to meet DQOs for the project.

1.1.1 Precision

Precision measures the reproducibility of the sampling and analytical methodology. Laboratory and field precision is defined as the relative percent difference (RPD) between duplicate sample analyses. The laboratory duplicate samples and/or MS/MSD samples measure the precision of the analytical method.

The RPD values were reviewed for all laboratory duplicate samples and/or MS/MSD samples. The laboratory did flag detected benzo(a)pyrene result with a "J" estimated in sample AC-ESI-SW09 due to poor agreement between native and MS/MSD samples. Also, the laboratory did flag detected results of phenanthrene and fluoranthene with a "J' as estimated in sample AC-ESI-SD09 due to poor agreement between native and MS/MSD samples. The RPD values were reviewed for MS/MSD samples and all RPD values were within quality control (QC) limits.
Precision was acceptable.

1.1.2 Accuracy

Accuracy measures the reproducibility of the sampling and analytical methodology. Laboratory accuracy is measured by reviewing the laboratory control sample (LCS) percent recoveries (%R) to ensure that control limits are met. The LCS %R values were reviewed for all appropriate sample analyses. None of the data were qualified based on LCS recoveries. Laboratory accuracy was acceptable.

The laboratory did flag detected pentachlorophenol result with a ”J” as estimated in sample AC-ESI-SD10 because the associated continuing calibration verification was outside QC limit for this compound. The laboratory did flag any detected results of benzoic acid and carbazole with a “J” as estimated in samples AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09, AC-ESI-SD10, AC-ESI-SD11, AC-ESI-SD01, AC-ESI-SD02, AC-ESI-SD03, and AC-ESI-SD06 due to failed calibration QC criteria.

The laboratory did flag some benzoic acid results with a “J” as estimated because the concentration exceeded the calibration range and the results could not be reported from other dilution.

The laboratory did flag benzoic acid result with a “NJ” as a tentative identification in sample AC-ESI-SD04 because a matching spectrum could not be obtained.

The laboratory did flag detected benzaldehyde results with “J” as estimated in samples AC-ESI-SD09, AC-ESI-SD10, and AC-ESI-SD03 due to degradation of this compound in multi-component solutions.

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1.1.3 Completeness

Data completeness is defined as the percentage of usable data (usable data divided by total possible data). All laboratory data were reviewed for usability and 100 percent were determined to be usable. Data completeness is acceptable.

1.1.4 Representativeness

Data representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or environmental condition. The number and selection of samples were determined in the field to account accurately for site variations and sample matrices. The DQOs for representativeness were met.

1.1.5 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared to another. Data produced for this site followed applicable field sampling techniques and specific analytical methodology. The DQOs for comparability were met.

1.2 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PARAMETERS

The laboratory data also were reviewed for holding times, laboratory blanks, serial dilution samples, rinsate and trip blanks, surrogates, and internal standards. These QA/QC parameters are summarized below. In general, the laboratory QA/QC parameters were considered acceptable and the data is usable as qualified.

1.2.1 Holding Times

All samples were analyzed within holding time limits.

1.2.2 Laboratory Blanks

All laboratory blanks met the frequency criteria. Butyl benzyl phthalate was detected in the laboratory blank above the reporting limit. Qualification was not required because no butyl benzyl phthalate was detected in any samples.

1.2.3 Serial Dilution

Serial dilution is not applicable to SVOC analyses.

1.2.4 Rinsate Blank

Rinsate blanks were not collected for this sampling event.

1.2.5 Trip Blanks

Trip blanks are not required and were not collected for SVOC analyses.

1.2.6 Surrogates

The recoveries of surrogate terphenyl-d14 were outside QC limits in samples AC-ESI-SW10, AC-ESI-SW11, AC-ESI-SW03, AC-ESI-SW05, and AC-ESI-SW06. The laboratory did flag detected pyrene results with a “J” as estimated in samples AC-ESI-SW05 and AC-ESI-SW06.
The recoveries of surrogate terphenyl-d14 were outside QC limits in the LCS and the MSD. Qualification was not necessary because the failures should not affect the data.

The recoveries of surrogate terphenyl-d14 were outside QC limits in sample AC-ESI-SD08, AC-ESI-SD01, and AC-ESI-SD05. Also, the recovery of surrogate 2,4,6 -tribromophenol was outside QC limits in sample AC-ESI-SD01.

Data Quality Review
American Creosote Deridder
US EPA Region 6 Laboratory
Project#: 16SF083, Work Order(s): 1605032, 1605035

The laboratory reported pyrene results in samples AC-ESI-SD08 and AC-ESI-SD05 from dilutions where the recoveries of surrogates were within QC limits. However, the laboratory did flag detected results of pyrene, benzo(a)anthracene, and chrysene with a “J” as estimated in sample AC-ESI-SD01 due to the recovery of surrogate terphenyl-d14 being outside QC limits in the dilutions.

1.2.7 Internal Standards

No failed QC criteria were noted with internal standards.

APPENDIX G

AMERICAN CREOSOTE DERIDDER HRS PACKAGE

HRS DOCUMENTATION RECORD COVER SHEET

Name of Site: American Creosote DeRidder

EPA ID Number: LAN000604293

Contact Persons

Site Investigation:	Brenda Nixon Cook, EPA Region 6	(214) 665-7436
	(Name)	(Telephone)
Documentation Record:	Brenda Nixon Cook, EPA Region 6	(214) 665-7436
	(Name)	(Telephone)

Pathways, Components, or Threats Not Scored

1) **Ground Water Pathway:** The ground water migration pathway has not been scored. Temporary wells located on Central Manufacturing Company (CMC) property and ground water monitoring wells located on Burlington Northern Santa Fe (BNSF) Railroad property have shown elevated levels of total petroleum hydrocarbons (TPHs) and polycyclic aromatic hydrocarbons (PAHs) (Ref. 4, pp. 95-96; Ref. 6, pp. 42-45, 87, 120-121, 125; Ref. 7, pp. 53-54, 97, 302-306, 335 & 338-341). Based on information available at this time, further evaluation of the ground water migration pathway would not significantly affect the listing decision (Ref. 1, Sec. 2.2.3).

2) **Surface Water Pathway: Ground Water to Surface Water Migration Component:** The overland/flood migration component of the Surface Water Migration Pathway has been scored for the Human Food Chain Threat and Environmental Threat. The Ground Water to Surface Water Migration component has not been scored. Based on information available at this time, evaluation of this component would not significantly affect the listing decision (Ref. 1, Sec. 2.2.3).

3) **Air Migration Pathway:** Based on information available at this time, evaluation of the Air Migration Pathway would not significantly affect the listing decision (Ref. 1, Sec. 2.2.3).

4) **Soil Exposure and Subsurface Intrusion Pathway:** Based on information available at this time, further evaluation of the Soil Exposure and Subsurface Intrusion Pathway would not significantly affect the listing decision (Ref. 1, Sec. 2.2.3; Ref. 1a, Sec. 2.2.3).

These pathways and components are of concern to the U.S. Environmental Protection Agency (EPA) and may be considered during a future evaluation.

HRS DOCUMENTATION RECORD

Name of Site:	American Creosote DeRidder	Date Prepared: July 2017
EPA ID Number:	LAN000604293	
EPA Region:	6	
Street Address of Site*:	Washington St/Post Plant Rd, DeRidder, Beauregard Parish (Ref. 12, p. 1). Section 3, Township 3 South, Range 9 West of the Louisiana Meridian (Ref. 4, p. 7; Ref. 5, p. 2; Fig. 1 of this HRS documentation record)	
City, Parish, State, Zip Code:	DeRidder, Beauregard Parish, Louisiana 70634	
General Location in the State:	American Creosote DeRidder is located in northern Beauregard Parish, south of the corporate limits of the city of DeRidder, Louisiana (Figure 1)	
Topographic Map:	DeRidder Quadrangle Louisiana – Beauregard Parish (Ref. 3, p. 1)	
Latitude: Longitude:	30° 49' 54.0948" North 93° 16' 36.7068" West Physical Address location coordinates per CMC Access Agreement, and location of former facility operations (Ref. 7, p. 207; Ref. 40, p. 1)	

Air Pathway	Not Scored
Ground Water Pathway	Not Scored
Soil Exposure and Subsurface Intrusion Pathway	Not Scored
Surface Water Pathway	100.00
HRS SITE SCORE	**50.00**

*The street address, coordinates, and contaminant locations presented in this HRS documentation record identify the general area the site is located. They represent one or more locations EPA considers to be part of the site based on the screening information EPA used to evaluate the site for NPL listing. EPA lists national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. A site is defined as where a hazardous substance has been "deposited, stored, disposed, or placed, or has otherwise come to be located." Generally, HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under CERCLA. Accordingly, EPA contemplates that the preliminary description of facility boundaries at the time of scoring will be refined as more information is developed as to where the contamination has come to be located.

FIGURES

Figure 1 Facility Location Map
Figure 2 Aerial Facility Sketch
Figure 3 Sources with Site Inspection and Expanded Site Inspection Sampling Locations Map
Figure 4 PPE Location and Overland Flow Pathways
Figure 5 Level II Contamination Segments
Figure 6 Surface Water Migration Pathway

NOTES TO THE READER

The following rules were used when citing references in the HRS (Hazard Ranking System) package.

1. Hazardous substances are listed by how they appear in the Superfund Chemical Data Matrix (SCDM).

2. Significant figures: Calculations are reported to two significant figures to the right of the decimal place when the HRS does not specify rounding.

3. Abbreviations/Conventions used to identify references and citations:

Figure	Fig.
Number	No.
Reference	Ref.
Section	Sec.
Single Pages	p.
Multiple Pages	pp.
"."	Next Reference
()	Selected acronyms

ABBREVIATIONS

ACADIAN	Acadian Engineers & Environmental Consultants Inc.
ACRES	Assessment, Cleanup and Redevelopment Exchange System
ADJ CRQL	Adjusted Contract Required Quantitation Limit
AIRS/AFS	US Air Facility System
AOC	Area of Concern
ATSF	Atchison, Topeka and Santa Fe Railway
BGS	Below Ground Surface
BNSF	Burlington Northern Santa Fe
CERLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFS	Cubic feet per second
CLP	Contract Laboratory Program
CMC	Central Manufacturing Company
COC	Contaminants of Concern
CORRACTS	Correction Action Report
ERNS	Emergency Response Notification System
ERT	Environmental Response Team
ESI	Expanded Site Inspection
FIRM	Flood Insurance Rate Map
ft^2	Square Feet
ft^3	Cubic Feet
HRS	Hazard Ranking System
IASD	Inactive and Abandoned Sites Division
LDEQ	Louisiana Department of Environmental Quality
LDWF	Louisiana Department of Wildlife and Fisheries
mg/kg	Milligram per Kilogram
MSDS	Material Safety Data Sheet
NFRAP	No Further Remedial Action Planned
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NWI	National Wetlands Inventory
QASP	Quality Assurance Sampling Plan
PAH	Polycyclic Aromatic Hydrocarbons
PPE	Probable Point of Entry
PPM	Parts per Million
RA	Removal Action
RCRA	Resource Conservation and Recovery Act
RECAP	Risk Evaluation/Corrective Action
RI/FS	Remedial Investigation/Feasibility Study
RL	Reporting Limit
ROW	Right-of Way
SCDM	Superfund Chemical Data Matrix
SFHA	Special Flood Hazard Area
SI	Site Inspection
SOP	Standard Operating Procedure

SSID	Site Spill Identifier Number
START	Superfund Technical Assessment and Response Team
SVOA	Semi-Volatile Organic Analysis
TAL	Target Analyte List
TCL	Target Compound List
TDL	Target Distance Limit
TPH	Total Petroleum Hydrocarbon
TSD	Treatment, Storage, Disposal
USGS	United States Geological Survey
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compounds
yd^3	Cubic Yards

FIGURE REFERENCE SHEET

Figure 1: Facility Location Map
Base Map Source*, USGS The National Map: National Boundaries Dataset, 3D Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau – TIGER/Line

* Map annotated by EPA START-3 on September 22, 2016 to depict site location and property boundary (Ref. 3, p. 1; Ref. 4, pp. 7 & 27; Ref. 5, pp. 2-3 & 5; Ref. 6, pp. 61 & 91-92; Ref. 7, pp. 12 & 80-82; Ref. 10, pp. 2-9; Ref. 12, p. 5; Ref. 13, pp. 10, 36-38; Ref. 15, p. 1; Ref. 17, p. 1; Ref. 19, p. 14; Ref. 20, pp. 17-18; Ref. 22, p. 5; Ref. 26, pp. 4 & 15).

Figure 2: Aerial Facility Sketch
Base Map Source*, Esri**- with World Imagery Metadata From: DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; National Hydrography Dataset

* Map annotated by EPA START-3 on September 23, 2016, to depict source locations (Ref. 4, pp. 22 & 28-37; Ref. 6, pp. 93-114; Ref. 10, pp. 10 & 13; Ref .16, p. 1; Ref. 21, pp. 117 & 119-120; Ref. 26, pp. 7-8 & 16-17).

** Source map image is Esri, and is used by EPA with Esri's permission

Figure 3: Sources with Site Inspection and Expanded Site Inspection Sampling Locations Map
Base Map Source*, Esri**- with World Imagery Metadata From: DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; National Hydrography Dataset; and National Wetlands Inventory

* Map annotated by EPA START-3 on September 23, 2016, to depict source locations and sample locations (Ref. 4, pp. 22 & 35; Ref. 7, pp. 36-38, 40-44, 57, 63-67, 84, 121-150, 174-177, 180-194, 205, 537-560; Ref. 26, pp. 7-8 & 16-17; Ref. 39, pp. 79, 115-141, 154-162, 168 & 380-390).

** Source map image is Esri, and is used by EPA with Esri's permission

Figure 4: PPE Location and Overland Flow Pathways
Base Map Source* , Esri**- with World Imagery Metadata From: DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; National Hydrography Dataset

* Map annotated by EPA START-3 on September 23, 2016, to depict the PPE, site drainage, overland flow, and sources (Ref. 4, pp. 13, 15-16, 22 & 28-37; Ref. 6, pp. 58-59, 71, 73, 76 & 93-114; Ref. 7, pp. 57-60, 84, 147, 149, 182, 205, 230-235, 337-338, 340-341, 537, 545-546; Ref. 9, p. 3; Ref. 10, pp. 10 & 13; Ref. 12, p. 2; Ref. 14, pp. 1-2; Ref. 15, p. 2; Ref. 16, p. 1; Ref. 17, p. 2; Ref. 21, pp. 5, 117 & 119; Ref. 26, pp. 7-8, 16-17 & 19-24; Ref. 28, pp. 6-7; Ref. 35, pp. 1-2; Ref. 36, pp.5, 7 & 9; Ref. 37, pp. 1-5; Ref. 39, pp. 53-54, 79, 138-141, 159-160, 162, 168, 380-381 & 210-215).

** Source map image is Esri, and is used by EPA with Esri's permission

Figure 5: Level II Contamination Segments
Base Map Source*, Esri**- with World Imagery Metadata From: DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; National Hydrography Dataset; and National Wetlands Inventory

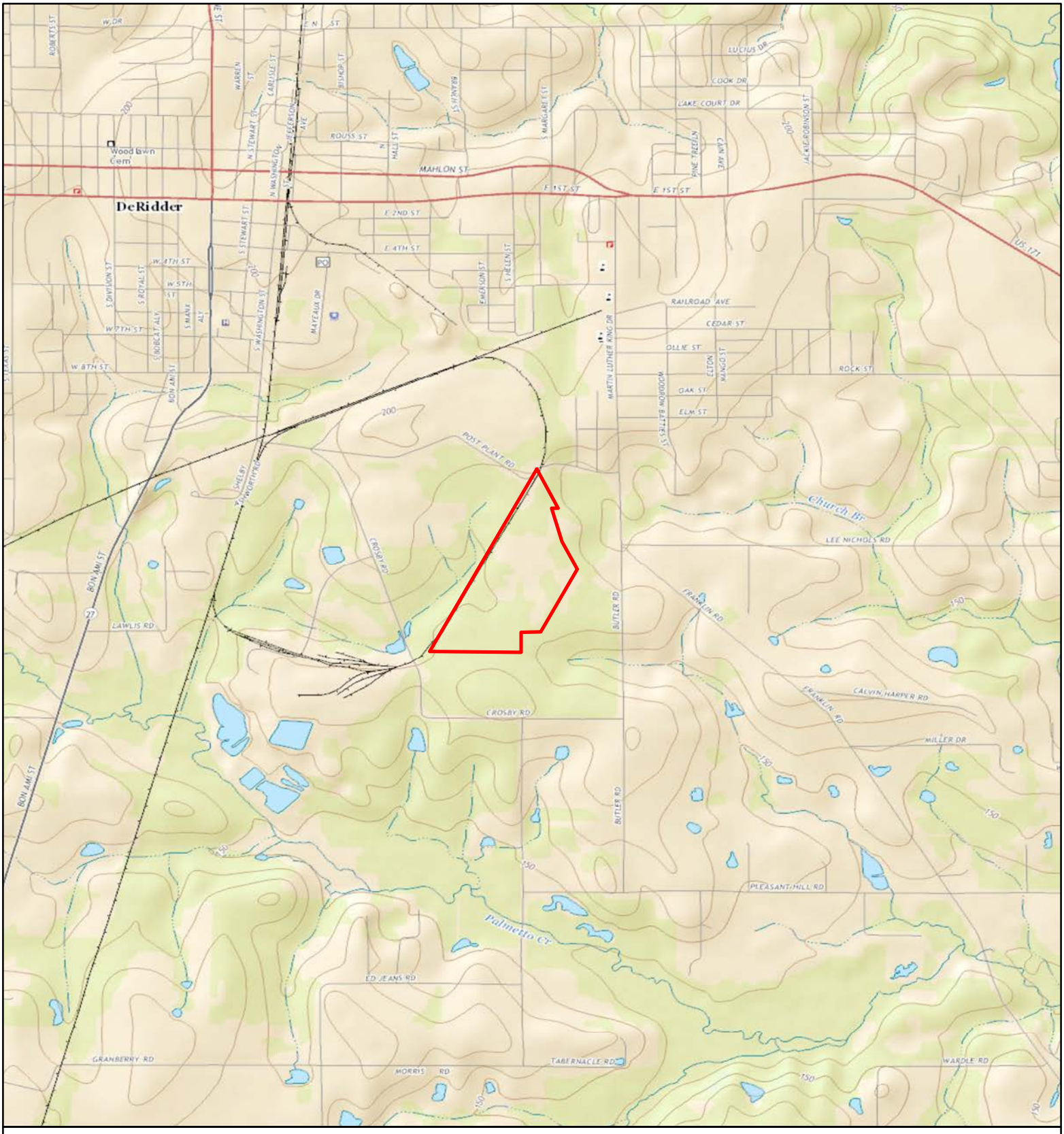
* Map annotated by EPA START-3 on September 23, 2016, to depict background and release sample locations, the PPE, and surface water pathway contamination, and wetland contamination (Ref .4, pp. 13, 15-16 & 28-37; Ref. 6, pp. 58-59, 71, 73, 76 & 93-114; Ref. 7, pp. 36-38, 40-41, 57-60, 63-67, 84, 121-150. 174-177, 180-194, 205, 230-235, 237-239, 260-263, 337-338, 340-341, 355-359 & 537-560; Ref. 9, p. 3; Ref. 10, pp. 10 & 13; Ref. 12, p. 2; Ref. 14, pp. 1-2; Ref. 15, p. 2; Ref. 16, p. 1; Ref. 17, p. 2; Ref. 21, pp. 5, 117 & 119; Ref. 26, pp. 16-17 & 19-24; Ref. 28, pp. 3-9; Ref. Ref. 31, p. 1; Ref. 32, p. 1; Ref. 33, pp. 2-3; Ref. 34, pp. 21-23; Ref. 35, pp. 1-2; Ref. 36, pp. 1-9, Ref. 37, pp. 1-5; Ref. 39, pp. 79, 96-113, 115-142, 147-150; 168, 180-236 & 380-390.

** Source map image is Esri, and is used by EPA with Esri's permission

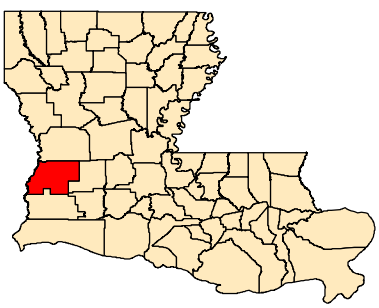
Figure 6: Surface Water Migration Pathway
Base Map Source*, Esri**- with World Imagery Metadata From: DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community; National Hydrography Dataset; and National Wetlands Inventory

* Map annotated by EPA START-3 on September 23, 2016, for surface water flow, common drainage, facility boundary, wetland delineation maps, and national wetland inventory (Ref. 3, p .1; Ref. 4, pp. 7, 13, 15-16, 27, 32, 34 & 36; Ref. 5, pp. 2-3 & 5; Ref. 6, pp. 58-59, 61, 71, 73 & 91-114; Ref. 7, pp. 12, 80-82, 86, 149; Ref. 9, p. 3; Ref. 10, pp. 2-10 & 13; Ref. 12, pp. 2 & 5; Ref. 13, pp. 10, 36-38; Ref. 14, pp. 1-2; Ref. 15, pp. 1-2; Ref. 16, p. 1; Ref. 17, pp. 1-2; Ref. 19, p. 14; Ref. 20, pp. 17-18; Ref. 21, pp. 5 & 119-120; Ref. 22, p. 5; Ref. 26, pp. 4, 15 & 19-24; Ref. 28, pp. 3-18; Ref. 31, p. 1; Ref. 32, p. 1; Ref. 33, pp. 2-3; Ref. 34, pp. 21-23; Ref. 35, pp. 1-3; Ref. 36, pp. 1-9; Ref. 37, pp. 1-5).

** Source map image used by EPA with Esri's permission



Map of Lousiana



Legend

Facility Boundary

N
W E
S

1:24,000

0 1,000 2,000 4,000 Feet

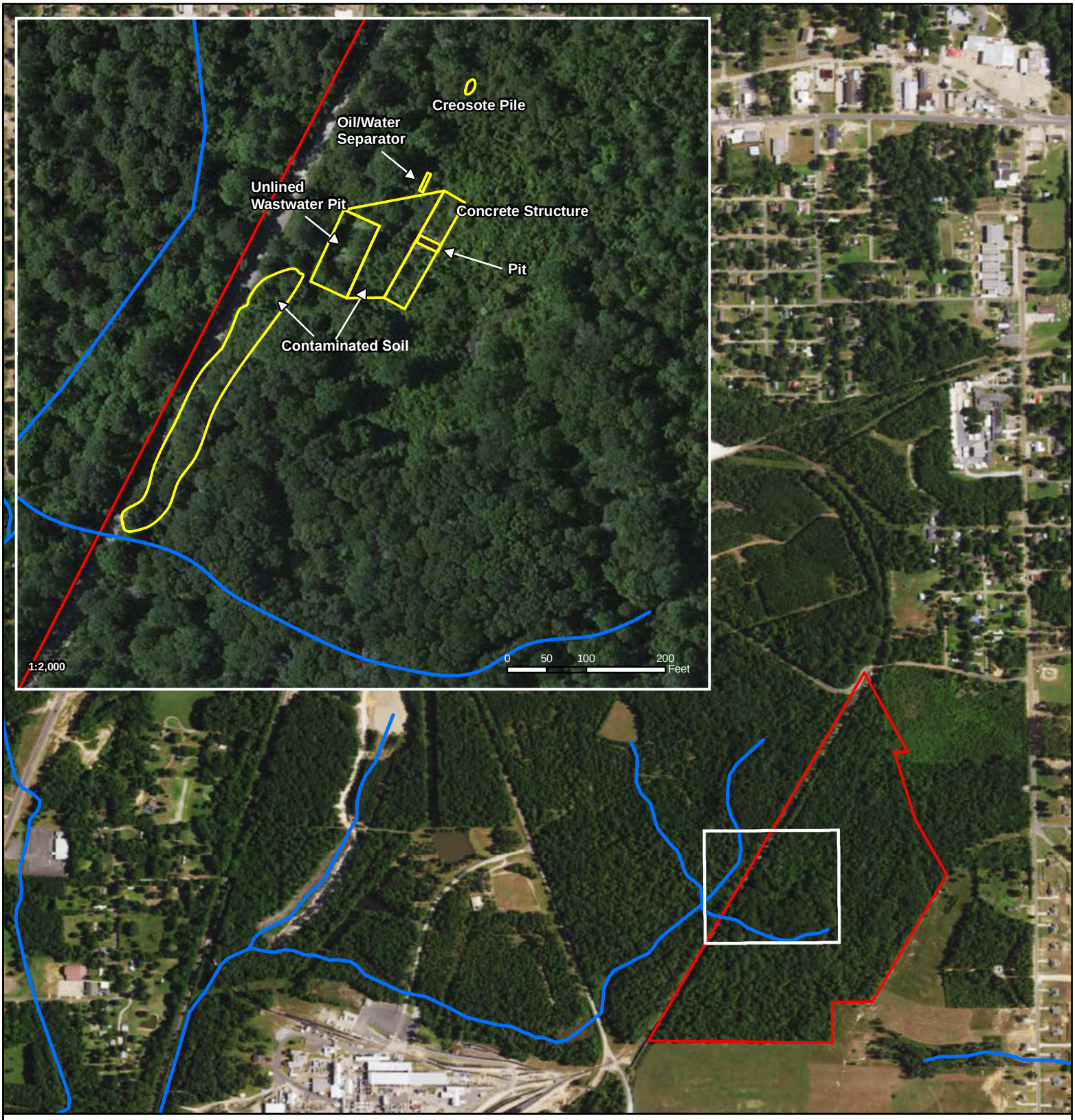
US EPA Region 6
START-3

Figure 1. Facility Location Map
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

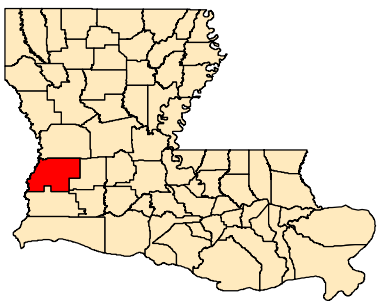
CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-001

October 1, 2016

Figure Reference Sheet included as part of the HRS Documentation Record.



Map of Lousiana



Legend

Sources

N
W E
S

1:12,000

0 600 1,200 2,400 Feet

US EPA Region 6
START-3

Figure 2. Aerial Facility Sketch
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-01

October 8, 2016

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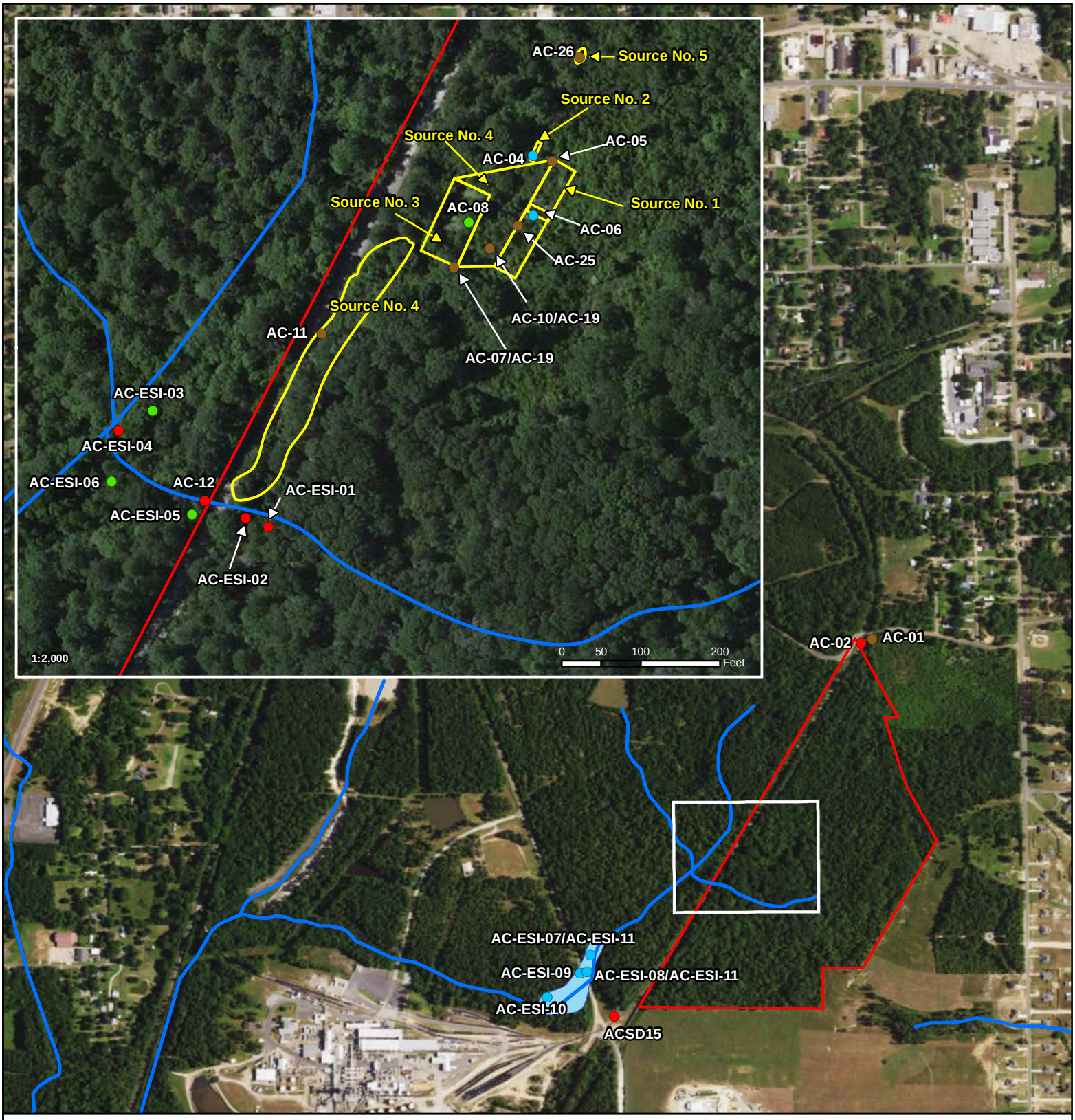
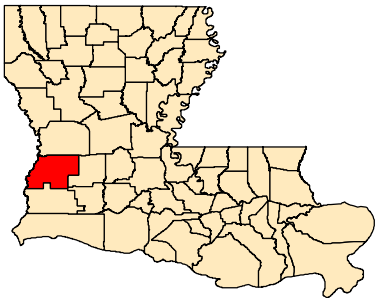
Figure Reference Sheet included as part of the HRS Documentation Record.



Map of Lousiana



Legend

- Soil
- Sediment
- Sediment/Surface Water
- Surface Water
- Sources

N
W E
S

1:12,000

0 600 1,200 2,400 Feet

US EPA Region 6
START-3

Figure 3. Sources with Site Inspection and Expanded Site Inspection Sampling Locations Map
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-01

October 8, 2016

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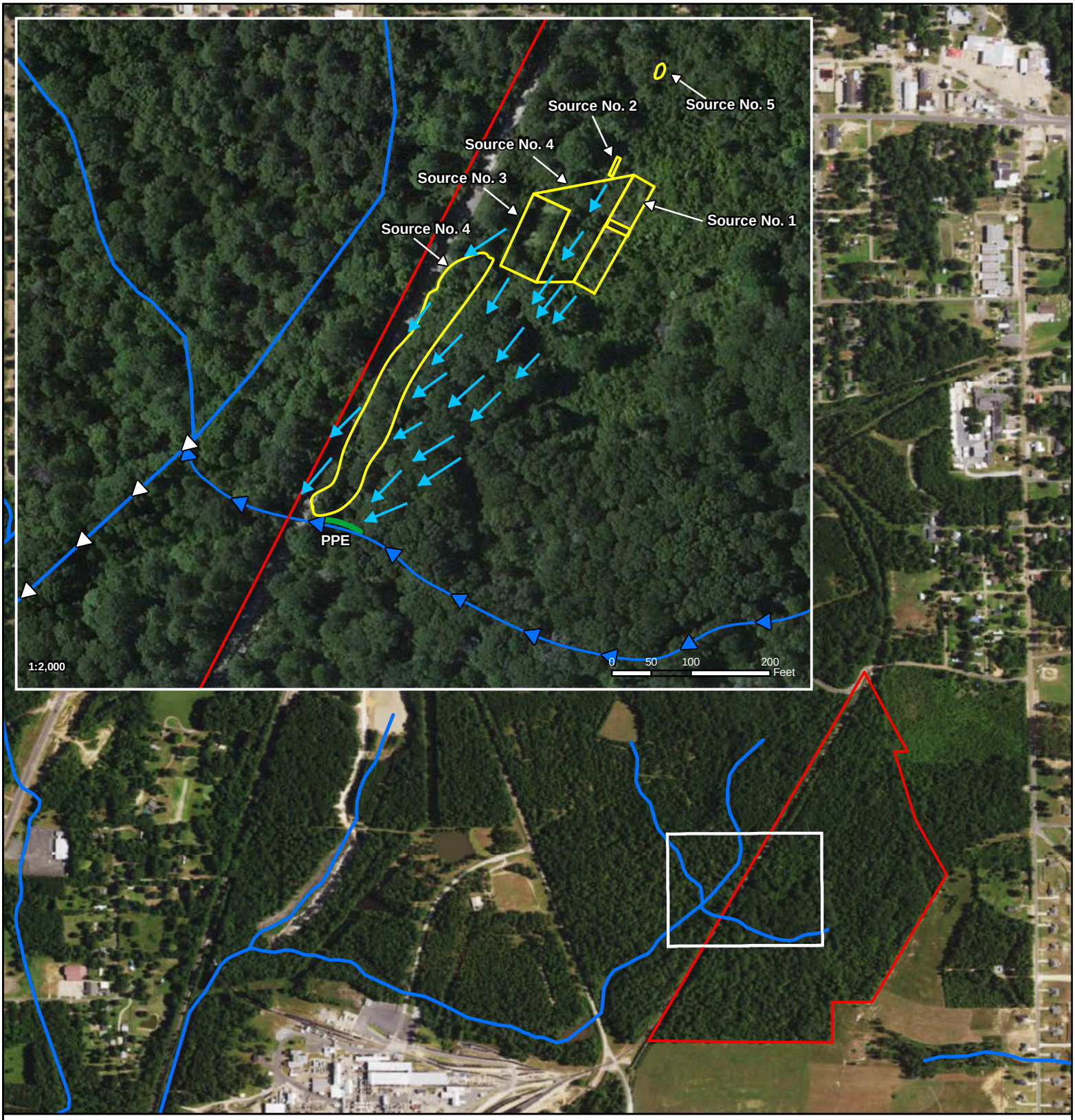
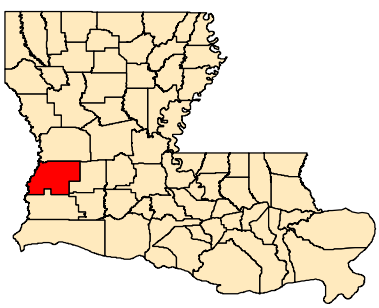


Map of Lousiana



Legend

PPE

Unnamed Stream

Unnamed Drainage Ditch/Stream

Overland Flow Direction

Sources

N
W E
S

1:12,000

0 600 1,200 2,400
Feet

US EPA Region 6
START-3

Figure 4. PPE Location and Overland Flow Pathways
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-01

October 8, 2016

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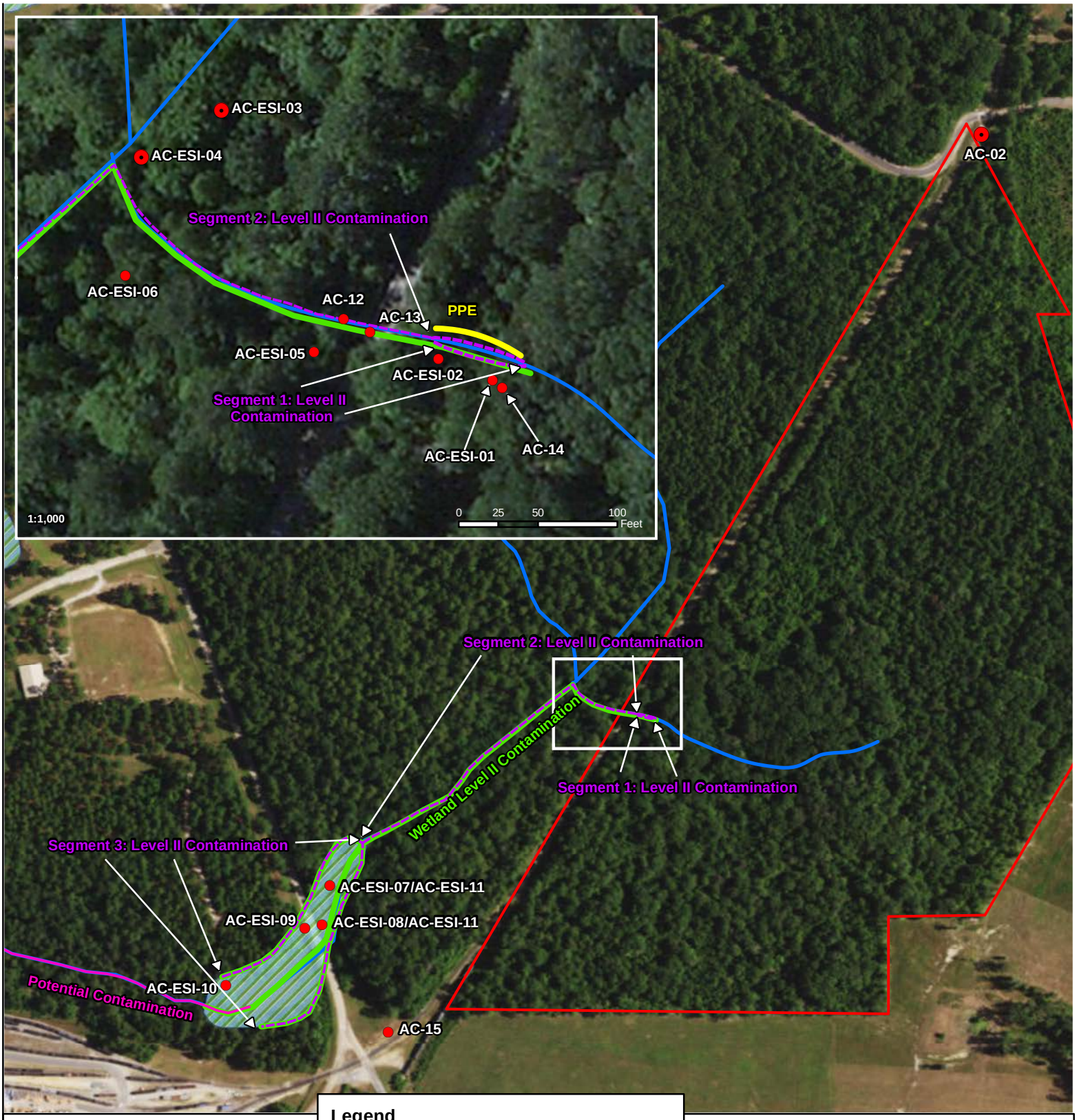
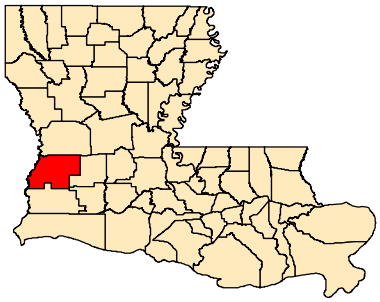


Map of Lousiana



Legend

- PPE
- Background Sample
- Release Sample
- Level II Contamination Segments
- Potential Contamination
- Wetland Level II Contamination
- American Creosote DeRidder

1:5,000

0 250 500 1,000 Feet

N W E S

US EPA Region 6
START-3

Figure 5. Level II Contamination Segments
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

CERCLIS No. LAN000604293
TDD No. 9/DYNAMAC-077-16-01

October 11, 2016

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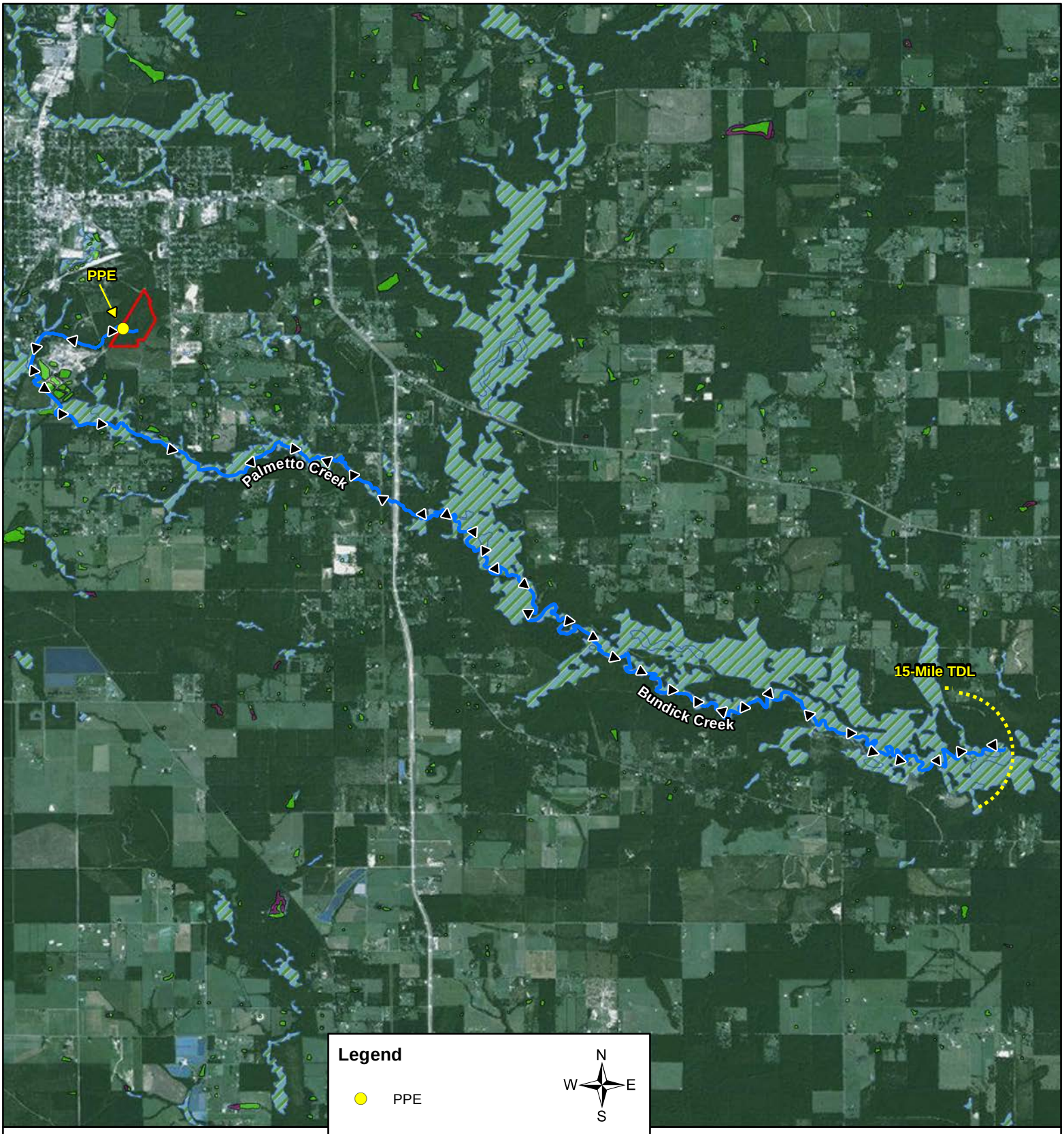


Legend

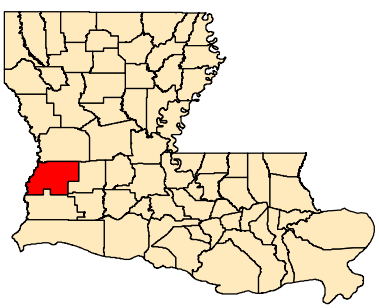
N
W E
S

- PPE
- Surface Water Flow
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Facility Boundary

0 0.5 1 2 Miles

1:75,000

Map of Louisiana



US EPA Region 6
START-3

Figure 6. Surface Water Migration Pathway
American Creosote DeRidder
DeRidder, Beauregard Parish, Louisiana

CERCLIS No. LAN000604293
TDD No. 9/Dynamac-077-16-001

October 8, 2016

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Figure Reference Sheet included as part of the HRS Documentation Record.

WORKSHEET FOR COMPUTING HRS SITE SCORE

	s	s2
1. Ground Water Migration Pathway Score (Sgw)	NS	NS
2a. Surface Water Overland/Flood Migration Component (from Section 4.3 of the HRS Documentation Record)	100.00	10,000
2b. Ground Water to Surface Water Migration Component	NS	NS
2c. Surface Water Migration Pathway Score (Ssw) Enter the larger of the line 2a and 2b as the pathway score	100.00	10,000
3. Soil Exposure and Subsurface Intrusion Pathway Score (Ssessi)	NS	NS
4. Air Migration Pathway Score (Sa)	NS	NS
5. Total of $Sgw^2 + Ssw^2 + Ssessi^2 + Sa^2$		10,000
6. HRS Site Score: Divide the value on line 5 by 4 and take the square root.		50.00

NS = Not Scored

TABLE 4-1 -Surface Water Overland/Flood Migration Component Scoresheet

Factor Categories and Factors		Maximum Value	Value Assigned
DRINKING WATER THREAT			
	Likelihood of Release		
1.	Observed Release	550	550
2.	Potential to Release by Overland Flow:		
	2a. Containment	10	
	2b. Runoff		
	2c. Distance to Surface Water	25	
	2d. Potential to Release by Overland Flow (Lines 2a X [2b+2c])	500	NS
3	Potential to Release by Flood		
	3a. Containment (Flood)	10	
	3b. Flood Frequency	50	
	3c. Potential to Release by Flood (Line 3a X 3b)	500	NS
4.	Potential to Release (Lines 2d + 3c, subject to a maximum of 500)	500	NS
5.	Likelihood to Release (Higher of Lines 1 and 4) NS	550	550
	Waste Characteristics		
6.	Toxicity/Persistence	*	
7.	Hazardous Waste Quantity	*	
8.	Waste Characteristics	100	NS
	Targets		
9.	Nearest Intake	50	NS
10.	Population:		
	10a. Level I Concentrations	**	NS
	10b. Level II Concentrations	**	NS
	10c. Potential Contamination	**	NS
	10d. Population (Lines 10a+10b+10c)	**	NS
11.	Resources	5	NS
12.	Targets (Lines 9+10d+11)	**	NS

	Factor Categories and Factors	Maximum Value	Value Assigned
DRINKING WATER THREAT (Concluded)			
	Drinking Water Threat Score		
13.	Drinking Water Threat Score ([Lines 5 x 8 x 12]/82,500, subject to a maximum of 100)	550	NS
HUMAN FOOD CHAIN THREAT			
	Likelihood of Release		
14.	Likelihood of Release (Same value as Line 5)	550	550
	Waste Characteristics		
15.	Toxicity/Persistence/Bioaccumulation	*	5×10^8
16.	Hazardous Waste Quantity	*	100
17.	Waste Characteristics	1,000	320
	Targets		
18.	Food Chain Individual	50	20
19.	Population:		
	19a. Level I Concentrations	**	0
	19b. Level II Concentrations	**	0
	19c. Potential Contamination	**	0.00006
	19d. Population (Lines 19a+19b+19c)	**	0.00006
20.	Targets (Value from Lines 18+19d)	**	20.00006
	Human Food Chain Threat Score		
21.	Human Food Chain Threat Score ([Lines 14 x 17 x 20]/82,500, subject to a maximum of 100)	100	42.66
ENVIORNMENTAL THREAT			
	Likelihood of Release		
22.	Likelihood of Release (Same value as Line 5)	550	550
	Waste Characteristics		
23.	Ecosystem Toxicity/Persistence/ Bioaccumulation	*	5×10^8
24.	Hazardous Waste Quantity	*	100
25.	Waste Characteristics	1,000	320
	Targets		
26.	Sensitive Environments:		
	26a. Level I Concentrations	**	0
	26b. Level II Concentrations	**	25
	26c. Potential Contamination	**	5.7

Factor Categories and Factors	Maximum Value	Value Assigned
26d. Sensitive Environments (Lines 26a+26b+26c)	**	30.7
27. Targets (Value from Line 26d)	**	30.7
ENVIRONMENTAL THREAT		
28. Environmental Threat Score ([Lines 22 x 25 x 27]/82,500subject to a maximum of 60)	60	60.00
SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORE FOR A WATERSHED		
29. WATERSHED SCORE (Lines 13 + 21 + 28, subject to a maximum of 100)	100	100.00
30. Component Score (S0,) (Highest score from Line 29 for all watersheds evaluated, subject to a maximum of 100)	100	100.00

Maximum value applies to waste characteristic category
Maximum value applicable
Do not round to the nearest integer

REFERENCE SHEET

Ref.
No. Description of the Reference

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SITE DESCRIPTION:

The American Creosote DeRidder site as scored consists of 5 sources and a release of hazardous substances to the surface water pathway as a result of historical operations using creosote compounds, also known as liquid pitch oil, tar oil and coal tar solutions, in the wood preserving pressure treatment process (Ref. 4, pp. 8-9; Ref. 8, pp. 5, 52; Ref. 11, p. 3; Figures 2 and 3). The source locations are on two adjacent parcels with different owners; Central Manufacturing Company (CMC), and Burlington Northern Santa Fe (BNSF) owning the adjacent transportation corridor (Ref. 4, pp. 8-9; Ref. 8, p. 5).

American Creosote DeRidder is a 55-acre tract of land owned by CMC located in northern Beauregard Parish, south of the corporate limits of the City of DeRidder, Beauregard Parish, Louisiana (Ref. 4, pp. 7-8; Ref. 6, pp. 1-5; Figure 1). The area is characterized by a gently rolling topography, mild winters and hot/humid summers, and silty clayey sands and sandy silty clay soils (Ref. 4, p. 7). The area primarily consists of pine; however, a variety of oak and cypress are present in the low bottom areas through which drainage tributaries meander (Ref. 4, p. 7). The property is bounded in the north by a rural roadway, to the east by heavy brush, to the south by undeveloped land, and to the west by the Timber Rock Railroad spur, formerly the BNSF spur (Ref. 4, p. 7; Ref. 5, p. 5; Ref. 7, p. 208). The broader surroundings include commercial, industrial and residential uses (Figure 2). Additionally, the CMC property and former facility was once located in the now obsolete Bundick's Creek and Game Fish Reserve Watershed Basin (Ref. 4, p. 7).

The BNSF property is located near DeRidder, Louisiana, and comprises a section of the operating Right-of Way (ROW) that is approximately 2,000 feet south of the intersection of Post Plant Road and the rail corridor (Ref. 8, p. 5; Figure 1). This section of track continues in a southwestern direction toward the intersection of the rail corridor and Washington Street near the Westvaco Plant (Ref. 8, p. 5). The railroad corridor at this point is approximately 100 feet wide (Ref. 8, p. 5). The centerline of the track is the midpoint of the corridor (Ref. 8, p. 5)

The Shreveport Creosoting Company, a Delaware Corporation, operated a creosote timber facility from the early 1920's to approximately 1945 on a parcel of land south of DeRidder, Beauregard Parish, Louisiana (Ref. 4, pp. 8 & 27-28). American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957 (Ref. 4, p. 8). In 1956, Union Camp Corporation acquired American Creosoting Company (Ref. 4, p. 8). Subsequent to the acquisition Union Camp Corporation renamed the operations to AmCre Corporation (Ref. 4, p. 8). In July 1964, Kerr McGee Oil acquired the stock of AmCre Corporation from Union Camp Corporation, at which time Kerr McGee changed the name of the company to Moss American and later to Kerr McGee Chemical Corporation (Ref. 4, pp. 8-9). From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992 who planned heavy industrial/commercial use on the (Ref. 4, p. 9; Ref. 8, p. 5; Ref. 9, p. 4; Ref. 10, p. 17).

The Shreveport Company's facilities and operations used creosote compounds, also known as liquid pitch oil, tar oil and coal tar solutions, in the wood preserving pressure treatment process (Ref. 8, p. 52; Ref. 11, p. 3). The specific operations at the site consisted of dipping timber into creosote vats and the collection of spent creosote in an open pit, and also the discharge of untreated process wastewater into an open pit (Ref. 6, p. 93; Ref. 9, p. 2; Ref. 12, p .1). There is no historical data to indicate that site

operations included waste handling, disposal practices, or facility permits (Ref. 4, p. 8; Ref. 12, p. 1).

The property is currently void of any of these operations and consists of heavy timber cover and extensive overgrowth, including lower story overgrowth in and around the abandoned facility (Ref. 4. p. 9). Abandoned wood treatment facilities of the previous operations currently remain at the property (Ref. 4, p. 9). The American Creosote DeRidder property has been impacted by creosote related compounds from previous timber treatment operations at the property (Ref. 4, p. 9; Ref. 11, p. 3). Additionally, visual evidence reveals surface impact to the adjoining BNSF property and contiguous wetland stream bed area (Ref. 4, p. 9). The pathway of hardened creosote and underlying contaminated soils paralleling the east side of a one-track railroad spur owned by BNSF is approximately 400 feet long and 10-20 feet wide, and lies mostly within the BNSF 50-foot ROW from the track centerline (Ref. 14, pp. 1-2). The hardened creosote pathway appears to end at the point where an intermittent unnamed stream passes beneath the railroad spur from east to west (Ref. 14, pp. 1-2). The impact is visually apparent and has formed sections of asphaltic surficial patches (Ref. 8, p. 5).

The American Creosote DeRidder site, as scored, includes five sources: a concrete structure of a former retort house, a concrete foundation of a former vat, an unlined wastewater pit, aggregated areas of contaminated soil, and a pile of creosote solids (Ref. 7, pp. 38 & 40-43 Ref. 13, pp. 13 & 61-69). Contamination in the sources has been documented to include numerous hazardous substances, including total petroleum hydrocarbons (TPHs), numerous polycyclic aromatic hydrocarbons (PAHs), and metals (Ref. 7, pp. 38-48, 90-97, 222-226, 235-236 & 258-260). Metal and PAH surface water contamination is documented based on analyses of wetland sediment, surface water, and soil samples from the contiguous wetlands, the unnamed drainage ditch/stream area, railroad ROW, and tributary streams (Ref. 7, pp. 57-60, 64- 67, 90-97, 220-222, 226-237 & 336-341; Ref. 39, pp. 53-58, 64-65, 84-88 & 180-236). Approximately 3,761 feet or 0.71 miles of contiguous wetland frontage is located within the zone of Level II contamination, and an estimated 29 miles of contiguous wetland frontage is located along the 15-mile target distance limit (TDL) outside of the zone of actual contamination (Figures 5 & 6). The surface water overland migration pathway is the pathway of concern being evaluated for this site. An observed release by chemical analysis has been documented to impact an unnamed drainage ditch/stream, an unnamed perennial stream, freshwater pond, and associated contiguous wetlands. Contaminates of Concern (COCs) for the surface water pathway include: acenaphthene, acenaphthylene, anthracene, arsenic, benzo (a) anthracene, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (b) fluoranthene, benzo (k) fluoranthene, 1,1'-biphenyl, bis (2-ethylhexyl) phthalate, cadmium, carbazole, chromium, chrysene, cobalt, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, lead, manganese, mercury, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, nickel, phenanthrene, pyrene, silver, thallium, and zinc.

FACILITY HISTORY

In 1991 the American Creosote DeRidder facility was entered into the Louisiana Department of Environmental Quality (LDEQ) Inactive and Abandoned Sites Division (IASD) (Ref. 14, p .1). LDEQ IASD contacted Westvaco, a company nearby that considered buying the property at the time, and had collected water and soil samples for analysis in February 1992 (Ref. 12, p. 2). Westvaco indicated to LDEQ IASD that the laboratory results showed low levels (< 5 parts per million [ppm]) of phenol contamination in the soils, with the water samples analyzed below detection limits for phenol (Ref. 12, p. 3; Ref. 15, p. 2; Ref. 16, p.1). During 1992 LDEQ IASD visited the property several times to assess

the location for contamination. During the site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, 0.5 to 1.08 percent, for eight of the target compound list (TCL) listed creosote constituents were detected (Ref. 17, p 2). Analytical results from the October 1992 samples collected detected high concentrations of PAHs per the West-Paine Laboratory results (Ref. 18, pp.17-18).

In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination were discovered in the unlined pit lying between the old Santa Fe (BNSF) railway track and the creosoting structure foundation (Ref. 12, p.3). Low level Total Phenols concentrations were also discovered in soil and surface water sampled surrounding the old foundation (Ref. 12, p. 3). LDEQ IASD moved to proceed with a Remedial Investigation/Feasibility Study (RI/FS) and Removal Action (RA) through a cooperative agreement with the responsible party identified at the time, CMC (Ref. 19, pp. 1-17). In October 1993 LDEQ IASD realized the contamination resided on two distinct properties, due to creosote contamination migrating from the former wood treatment facility to the adjacent property to the west (Ref. 8, p. 5). LDEQ IASD sent letters to the identified parties, Atchison, Topeka and Santa Fe Railway (ATSF), who owned the railway right-of way (ROW) corridor, and CMC who owned the property that held the former wood treating facility. In mid-1995 a cooperative agreement between LDEQ IASD, CMC and ATSF was entered into to perform interim measures as proposed in the Bio Pile Work Plan (Ref. 21, p. 2).

CMC, in cooperation with ATSF, from February 1994 to 1996 contracted with Louisiana State University, who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at the site (Ref. 8, p. 5; Ref. 21, p. 5). The work plan proposed transporting contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated (Ref. 21, p. 3). An approximate total of 1,250 cubic yards (yd^3) of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway ROW were proposed to be processed in the SPRU (Ref. 21, p. 5). In April 1994 in cooperation with ATSF, CMC personnel collected four samples of creosote material from the site for TPH analyses performed at the ATSF contracted laboratory, Radian Corporation (Ref. 21, p. 121). The four samples of tarry material were collected from the pit moving southwest toward the Santa Fe railway ROW (Ref. 21, p. 121). It was noted that the tarry material was only 1-2 inches thick and that the concentration of PAHs decreased when moving from the pit to the southwest location of the ROW at the Santa Fe railway corridor (Ref. 21, pp. 121 & 123). Laboratory results indicated TPH values that ranged from 2,040 to 44,700 milligram per kilogram (mg/kg) (Ref. 21, pp. 5 & 123).

By April 1996 the executed Cooperative Agreement between ATSF, CMC and LDEQ was dissolved, and ATSF (now BNSF) entered into its own cooperative agreement with LDEQ to begin its own soil remediation strategy (Ref. 8, p. 8). In mid-1996 Kei Consultants, hired by BNSF, submitted a Soil Remediation Work Plan to LDEQ IASD to address the railway corridor impacted by run-off creosote material associated with the adjacent former wood treatment facility, American Creosote DeRidder (Ref. 8). The estimated area of creosote impact to the BNSF railroad corridor extended 250 feet along the railway ROW and was approximately 20-25 feet wide (Ref. 8, p. 5). Impact from the former creosote operations to the adjacent property, was visually apparent by the surficial patches of asphalt that had formed (Ref. 8, p. 5). The noted contaminant of concern was TPH (Ref. 8, p. 8). The project objective was to excavate impacted soils from the BNSF property and transfer them to a suitable disposal site and perform site restoration at the excavated location (Ref. 8, p. 8). To date no remediation has taken place

along the railroad ROW.

In August 2002 Acadian Engineers & Environmental Consultant Inc. (Acadian), on behalf of CMC, performed a Limited Site Investigation at the American Creosote DeRidder site to delineate the horizontal and vertical extent of creosote contamination in order to determine potential remediation strategies (Ref. 11, p. 3). Acadian personnel collected soil samples from 25 locations placed across previously identified areas of impact, and 10 ground water samples from temporary ground water monitoring wells to assess the impact to shallow ground water (Ref. 11, pp. 5-7).

In September 2002 Acadian submitted a Voluntary Remedial Investigation (VRI) application to LDEQ IASD for the American Creosote DeRidder site (Ref. 22, pp. 3-8). The site was entered into the LDEQ Voluntary Remediation Program (VRP) on September 26, 2002 (Ref. 23, p. 1). The August 2002 Limited Site Investigation Work Plan represented CMC's proposal to meet the site assessment requirements of the VRI application (Ref. 24, p. 1). Following LDEQ's review of the August 2002 work plan and its meeting with Acadian staff, Acadian submitted a revised work plan to LDEQ Remediation Services Division (RSD) dated September 11, 2002 (Ref. 24, p .1). The work plan was approved as amended with the stipulation that Acadian would add sections to the work plan identifying and briefly describing the individual areas of concern (AOC) at the site (Ref. 24, p 1). In October 2002 Acadian submitted an Amended Limited Site Investigation Work Plan on behalf of CMC to LDEQ IASD detailing the four (4) primary AOCs to include: AOC 1 – Old Drip Area, AOC 2 – Wash Pit, AOC – 3 Ground Water, and AOC 4 – Surface Soils (Ref. 25, p. 6).

In late 2003 Acadian submitted a Voluntary Remedial Action Plan on behalf of CMC to LDEQ IASD to address the limited removal of impacted media (Ref. 4, pp. 6 & 10). The proposed methodology to address the impacted soil media was over-excavation of impacted areas and treatment of the impacted soil (Ref. 4, p. 18). No implementation of ground water remediation was required, yet continued monitoring was recommended (Ref. 4, p. 18). The limits of excavation proposed for the impacted soils were based on analytical results from soil samples collected from selected locations from within the identified following AOCs, and are described as follows (Ref. 4, pp. 11-15, 18 & 20-23):

- AOC #1 Old Railroad Spur – Five (5) soil samples were collected in AOC #1 and one (1) sample contained elevated levels of benzopyrene (*sic*) in excess of Risk Evaluation/Corrective Action (RECAP) screening standards for industrial soil (Ref. 4, pp. 11-12, 20-21 & 29). The proposed limits of excavation consisted of a 100 feet by 8 feet area to a two-foot depth, resulting in an in place volume of 59 $yd^3$and an excavation/remediation volume of 77 yd^3 (Ref. 4, pp. 21 & 33).

- AOC #2 Concrete Structure – Twelve (12) soil boring samples were collected within AOC #2 and three (3) contained elevated levels of benzopyrene (*sic*) in excess of RECAP screening standards for oil (Ref. 4, pp. 12-13, 21 & 30). The proposed limits of excavation consisted of approximately one (1) acre to a two (2) foot depth, resulting in a proposed excavation volume of 2,852 yd^3 and an estimated 3,710 yd^3 of soil to be remediated (Ref. 4, pp. 21 & 34).

- AOC #3 Abandoned Waste Pit – Two (2) soil boring samples were collected within AOC #3 and both contained elevated levels of benzopyrene (*sic*) (Ref. 4, pp. 14, 21-22 & 31). The proposed excavation consists of two separate excavation areas located within AOC #3 (Ref. 4, p. 22). The first proposed depth of excavation was until hard pan impacted soils are encountered beneath the

impacted media (Ref. 4, p. 22). The area of excavation is 3,300 square feet (ft^2) and the depth is estimated at three feet resulting in a proposed excavated volume of 367 yd^3 (Ref. 4 p. 22). The second proposed excavation is adjacent to the pit and consists of 7,710 cubic feet (ft^3) of excavatable area to a depth of two feet resulting in a volume of 527 yd^3 of proposed excavatable soil (Ref. 4, p. 22). The total proposed volume of excavation within AOC #3 is 894 yd^3 and 1,162 yd^3 of soil to be remediated (Ref. 4, pp. 22 & 35).

- AOC #4 Surface Soil – Samples from eight (8) soil borings were collected within AOC #4 and five revealed concentrations of benzopyrene (*sic*) in excess of RECAP screening standards for soil (Ref. 4 pp. 14-15, 22-23 & 32). The proposed excavation area consists of 35,700 ft^2 (0.82 acres) at two feet depth resulting in a proposed excavation volume of 2,644 yd^3 and 3,438 yd^3 of soil to be remediated (Ref. 13, pp. 22-23 & 36).

The excavated soils were proposed to be remediated through biodegradation of the creosote related organic compounds (Ref. 4, pp. 23). Select microbes intended to remediate creosote related organic compounds would be used to inoculate and treat the impacted media (Ref. 4, p.25).

In 2005 CMC had Acadian submit a RECAP to LDEQ IASD (Ref. 6). The RECAP was performed within the concept of the Voluntary Remediation Program (VRP) to delineate the vertical and horizontal limits of the constituents of concern identified at the site (Ref. 6, p. 64). CMC proposed to perform the remediation and implement required institutional controls in accordance with LDEQ approval (Ref. 6, p. 88).

In April 2013 Acadian prepared and submitted a Corrective Action Plan (CAP) for the American Creosote site to LDEQ RSD (Ref. 26). The CAP was based upon the consideration that the creosote COCs upon the property are consistent with the topography, yet the limited pathways of exposure to the environment and others afford participation within the VRP (Ref. 26, p .5). It was the intention of the CAP and VRP to isolate and remediate the remaining source of potential impact at the CMC site (Ref. 26, p. 9). A solidification process was proposed to immobilize the source waste through solidification of residual weathered creosote remaining within the 7,500 square foot AOC, the total area to be remediated (Ref. 26, pp. 7-8 & 17). Acadian proposed placing restrictive use (future) covenants upon the property within the Beauregard Parish Property Records office and restricting access to the AOC and the adjacent abandoned creosote structure by erecting a six (6) foot galvanized chain link fence around the perimeter of the identified area (Ref. 26, p. 12). As of the date of this report no remediation has taken place at the American Creosote DeRidder site (Ref. 6, p. 11).

EPA conducted a Site Inspection (SI) at American Creosote DeRidder in June 2015 (Ref. 7, p. 22). Field operations during the SI included the collection of soil samples down to 15 feet below ground surface (bgs) to identify the source material and contamination at the site, of ground water samples to assess the migration of contamination in the ground water pathway, and of surface water samples and sediment samples to assess the migration of contamination in the surface water pathway (Ref 7, p. 69). Analytical data from the soil, ground water, and sediment samples indicated the presence of PAHs that exceeded background sample concentrations and met observed release criteria (Ref. 7, pp. 72-73). As in the proposed rule, observed releases may be established on either direct observation or chemical analysis of samples (Ref. 1, Sec. 4.1.2.1.1). In the case of direct observation, material containing hazardous substances must be seen entering the medium directly or must have been deposited in the medium (Ref.

1, Sec.4.1.2.1.1). An observed release is confirmed when a sample measurement equals or exceeds the sample quantitation limit and is at least three times above the background level, and available information attributes some portion of the release of the hazardous substance to the site (Ref. 1, Sec. 4.1.2.1.1).

During the May 2016 EPA Expanded Site Inspection (ESI) sediment and surface water samples were collected to identify and assess migration of contamination to the surface water pathway (Ref. 39, pp. 63 & 154-162). Analytical data from the surface water and sediment samples indicated the presence of PAHs that met the observed release criteria (Ref. 1, Sec. 4.1.2.1.1, Table 2-3, &; Ref. 39, pp. 64-65).

2.2 SOURCE CHARACTERIZATION

The sources evaluated at the American Creosote DeRidder site, for HRS purposes, are:

- Source 1: Concrete Structure (Other)
- Source 2: Oil/Water Separator (Container)
- Source 3: Unlined Wastewater Pit (Surface Impoundment, Not Buried/Backfilled)
- Source 4: Aggregated Areas of Soil Contamination (Contaminated Soil)
- Source 5: Creosote Solid (Pile)

2.2.1 SOURCE IDENTIFICATION – SOURCE 1

The following information corresponds to the first source identified for this documentation record.

Number of source: 1

Name of source: Concrete Structure

Source Type: Other

Description and Location of Source: The concrete structure is located on the central western boundary of the property (Figure 2). The concrete structure is an abandoned surface structure that is a remnant of the former retort house basin that included the treatment cells and a sunken water retention basin, now dismantled tanks and vats, and creosote storage bins used in previous operations at the facility (Ref. 4, pp. 9, 12, 28 & 37; Ref. 6, pp. 64, 70 & 94; Ref. 7, pp. 139-144; Ref. 17, p. 2; Ref. 26, p. 5). Historically a retort house was built primarily to cover and protect the treating cylinders or retorts (Ref. 42, p. 1). In best construction it was made of steel, brick, or re-enforced concrete, although a wooden structure may have been used if minimum cost was desired (Ref. 42, p.1). At American Creosote DeRidder the retort house had a concrete foundation with 2.5 foot walls, and it is presumed that either a metal or wooden structure covered and protected the treating area below, since all that remains of the structure is the concrete foundation (Ref. 4, pp. 28 & 37; Ref. 7, pp. 38 & 139-144) To guard against loss of preservative due to leaks, or accident, the floor was sometimes made of solid concrete with appropriate drains to a sewer or underground tank, and depressed so that the level of the rails in the retorts would be the same as that of the outside tracks (Ref. 42, p. 1). At the former retort house at American Creosote this was observed and labeled the pit, or commonly referred to as the sunken water retention basin (Ref. 4, p. 38; Ref. 7, pp. 38 & 139-142). Additionally, the building was constructed so that free ventilation can be obtained to carry off the vapors which frequently arise during operations and to keep the temperature in the retort house from becoming oppressive to the workmen (Ref. 42, p. 1). Thus, it can again be presumed that the former retort house at American Creosote DeRidder had a wooden or metal structure that covered and protected the treating area.

The foundation of the old treatment unit retort vessel sits in heavy overgrowth approximately 150 feet east of a north/south Santa Fe railway spur and approximately 500 feet north of a railway culvert that receives storm water drainage from the area immediately around the old foundation (Ref. 7, pp. 139-144; Ref. 21, pp. 5 & 120). The concrete structure that remains from the former retort house basin was considered part of the creosote processing facilities area, and an area of impact from previous facility operations (Ref. 6, pp. 65, 70 & 93-94; Ref. 7, pp. 143-144 & 170-172; Ref. 26, p. 5). A complete survey of the concrete structure was not completed during the EPA SI due to the amount of pine forest and thick shrub overgrowth (Ref. 7, p. 182). The approximate dimensions of the concrete structure from observations made during the EPA SI are 30 feet x 70 feet (Ref. 7, p. 182). There is approximately 24 inches of sediment deposited over time, along with abundant vegetative growth, within the remains of the contaminated concrete foundation of the former retort house structure (Ref. 7, pp. 139-144 & 181). Located within the concrete structure is a sunken pit with a concrete bottom, or commonly referred to as the water retention basin (Ref. 4, p. 37; Ref. 7, p. 182). The contaminated pit/water retention basin contains approximately five (5) feet of water that has accumulated over time, with no obvious sediment present at the bottom of the pit (Ref. 7, pp. 138-142 & 182).

Based on a December 2003 Voluntary Remedial Action Plan prepared for the American Creosote DeRidder site by Acadian, the concrete structure, as indicated by historical figures was 155 feet in length, 30 feet in width and had a 2.5 foot high wall (Ref. 4, p. 37). As previously noted, a water retention basin was present within the concrete structure, and measured 10 feet in width, over 30 feet in length, and 7.5 feet deep (Ref. 4, pp. 24 & 37).

LDEQ stated in their Phase II State Site assessment that low level total phenol concentrations were discovered in soils and surface water sampled surrounding the old foundation (Ref. 12, p. 3). Additionally, in the Voluntary Remedial Action Plan the concrete structure, as indicated by historical mapping, was the location of the retort house (Ref. 4, p. 12; Ref. 6, pp. 70 & 93-94). The retort house was labelled an AOC by Acadian personnel and included as part of AOC #2, the wash pit area (Ref. 4, pp. 11-12, 28 & 30; Ref. 6, p. 65 & 94-114). AOC #2 had soil sampling performed to determine the horizontal and vertical extent of impact to the shallow soils (Ref. 4, pp. 11-12 & 30; Ref. 11, p. 3). Acadian personnel reported stained soils and residual weathered creosote within AOC #2 namely between the retort structure and the western boundary (Ref. 4, p. 13; Ref. 6, pp. 94-114, 147 & 163). Twelve (12) soil borings were performed within AOC #2, samples from three (3) of which revealed concentrations of benzopyrene (*sic*) in excess of RECAP screening standards for industrial soil standards; these are located to the west and south of the concrete structure (retort house) (Ref. 4, pp. 21, 30 & 42-76; Ref. 6, pp. 16-20, 26, 34, 37-41, 86, 94-114, 116 & 118-119).

Acadian's proposed methodology for addressing the impacted soils around the concrete structure (retort house) was over-excavation of impacted areas and treatment of the impacted media (Ref. 4, p. 18). The proposed excavation within AOC #2 near the concrete structure (retort house) consisted of approximately one (1) acre at two (2) feet in depth resulting in a proposed excavation volume of 2,852 yd^3, or 3,710 yd^3 of soil to be remediated (Ref. 4, pp. 21 & 34). The excavated soils were proposed to be remediated through bio-degradation of the creosote related organic compounds (Ref. 4, p. 23). Soils from AOC #2 were to be placed within an earthen remediation cell adjacent to the concrete structure (Ref. 4, pp. 23 & 38). Select microbes intended to remediate creosote related organic compounds were to be used to inoculate and treat the impacted media (Ref. 4, p. 23).

A soil boring was advanced into the accumulated soil that is associated with the contaminated concrete structure using direct push technology at one (1) location within the confines of the structure walls during the June 2015 EPA SI (Ref. 7, pp. 23, 38 & 84). The boring was advanced to a maximum depth of 15 feet bgs using the procedure in the EPA Environmental Response Team (ERT) Standard Operating Procedure (SOP) 2012, modified for the actual unit used by the driller (Ref. 7, pp. 23, 181, 436-449). Grab soil samples were collected from each boring, from intervals of visual contamination or where photoionization detector (PID) readings for VOCs above background were detected (Ref. 7, p. 23-24, 394, 436-449). One (1) soil sample was collected from within the confines of the concrete structure at location AC25 from the 0-2 feet bgs interval (Ref. 7, pp. 38, 84, 537, 548 & 553; Figure 3).

A background soil sample, ACS01, was collected approximately 32 feet south of Post Plant Road and approximately 80 feet west of the railroad tracks (Ref. 7, pp. 36 & 84). The background sample location ACS01 is up gradient relative to ground water flow (Ref. 7, pp. 36 & 80). The background soil sample was collected using similar collection methods, and from a location where no designated operations were known to have taken place (Ref. 7, pp. 36-37; Ref. 6, pp. 93-94). Background soil samples were

collected from four (4) intervals at either two (2) foot or three (3) foot intervals, as follows (Ref. 7, pp. 36-37):

- ACS01-02 (0-2 feet bgs)
- ACS01-25 (2-5 feet bgs)
- ACS01-58 (5-8 feet bgs)
- ACS01-10 (8-10 feet bgs)

Soil samples were analyzed for TCL semi-volatile organic compounds (SVOCS) by EPA Contract Laboratory Program (CLP) Statement of Work (SOW) SOM02.2, and soil samples were also analyzed for Target Analyte List (TAL) inorganic total metals/mercury by EPA CLP SOW ISM02.2. Organic analyses were performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis were performed by Chemtech Consulting Group located in Mountainside, New Jersey. All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 265-266 & 356-357).

The soil sample results from within the concrete structure source area were compared to the concentrations in the corresponding foot interval from the background soil sample (Table 1). PAHs such as 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene were detected above background levels (Ref. 7, pp. 39, 94 & 265-266; Tables 1 & 2). While the increases in concentration are not required to associate the substance with the source, the levels detected in the soil samples are above background.

Metal concentrations were also detected in the 0-2 feet bgs soil sample to include arsenic, cadmium, cobalt, copper, lead, manganese, mercury, nickel and zinc at greater than background levels (Ref. 7, pp. 39, 94 & 356-357; Table 1 & 2). Again, while these increases in concentration are not required to associate the substances with the source, it does demonstrate the levels in the soil sample are significantly above background.

Additionally, a sample was collected by the Superfund Technical Assessment and Response Team (START) contractor, during the June 2015 EPA SI, from accumulated waste water that was associated with the contaminated wastes of the pit/sunken water retention basin in the foundation of the contaminated concrete structure (Ref. 7, p. 38). Waste water sample ACSW-06 was collected directly into sample containers and shipped to KAP Technologies Inc. located in The Woodlands, Texas, for organic analysis, and Chemtech Consulting Group located in Mountainside, New Jersey, for inorganic analysis. The waste water sample was analyzed for SVOCs by EPA CLP SOW SOM02.2 and for inorganic metals/mercury by EPA CLP SOW ISM02.2. All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 300-301 & 357-359).

Waste water sample ACSW-06 contained metals that included: arsenic, manganese, and zinc at concentrations equal to or greater than their corresponding adjusted contract required quantitative limits (ADJ CRQLs) (Ref. 7, pp. 39, 97 & 357; Table 3).

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

The substances listed in Tables 2 and 3 are associated with Source No. 1 based on analytical results from a soil sample collected from within the concrete structure walls, and a waste water sample collected from the pit/sunken water retention basin in the foundation of the concrete structure during the June 2015 American Creosote DeRidder SI (Ref. 7, pp. 94, 97, 265-266, 300-301 & 356-357). Sampling was conducted following the procedures set forth in the Quality Assurance Sampling Plan (QASP) (Ref. 7, pp. 416-423).

PAHs such as 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene were detected in the soil sample collected from within the concrete structure walls (Ref. 7, pp. 94 & 265-266; Tables 1 & 2).

Also, numerous metals such as arsenic, cadmium, cobalt, copper, lead, manganese, mercury, nickel and zinc were detected in the soil sample collected from within the concrete structure walls, and the waste water sample collected from the pit/sunken water retention basin in the foundation of the concrete structure (Ref. 7, pp. 94, 97, 300-301 & 356-359; Tables 1 & 2).

Table 1 – Background Soil Samples

Sample Number:	ACS01-02				ACS01-25				ACS01-58				ACS01-10			
EPA Sample Number:	F9DA0/MF9DA0				F9DA1/MF9DA1				F9DB9/MF9DB9				F9DE0/MF9DE0			
Sample Location:	AC01				AC01				AC01				AC01			
Sample Description	Background				Background				Background				Background			
Sample Depth	0 - 2 feet interval				2 - 5 feet interval				5 - 8 feet interval				8 - 10 feet interval			
	Result (µg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (µg/kg)
ANALYTE: SVOCs																
1,1'-Biphenyl	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
2-Methylnaphthalene	200	UJ	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	UJ	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
2-Methylphenol	390	UJ	390	390 (ADJ CRQL)	390	UJ	200	200 (ADJ CRQL)	350	UJ	350	350 (ADJ CRQL)	430	U	430	430 (ADJ CRQL)
3,3'-Dichlorobenzidine	390	U	390	390 (ADJ CRQL)	390	UJ	390	390 (ADJ CRQL)	350	U	350	350 (ADJ CRQL)	430	U	430	430 (ADJ CRQL)
3-Nitroaniline	390	U	390	390 (ADJ CRQL)	390	UJ	390	390 (ADJ CRQL)	350	U	350	350 (ADJ CRQL)	430	U	430	430 (ADJ CRQL)
Acenaphthene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Acenaphthylene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Anthracene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	**440**		180	1,320 (3x Result)	220	U	220	220 (ADJ CRQL)
Benzaldehyde	390	U	390	390 (ADJ CRQL)	390	UJ	390	390 (ADJ CRQL)	350	U	350	350 (ADJ CRQL)	430	U	430	430 (ADJ CRQL)
Benzo (a) anthracene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Benzo (a) pyrene	200	UJ	200	200 (ADJ CRQL)	**310 (3,100)***	J	200	930 (9,300)* (3x Result)	**110 (1,100)***	LJ	180	330 (3,300)* (3x Result)	220	U	220	220 (ADJ CRQL)
Benzo (b) fluoranthene	200	UJ	200	200 (ADJ CRQL)	**190 (1,900)***	LJ	200	570 (5,700)* (3x Result)	**170 (1,700)***	LJ	180	510 (5,100)* (3x Result)	**140 (1,400)***	LJ	220	420 (4,200)* (3x Result)
Benzo (g,h,i) perylene	200	UJ	200	200 (ADJ CRQL)	**280 (2,800)***	J	200	840 (8,400)* (3x Result)	180	UJ	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Benzo (k) fluoranthene	200	U	200	200 (ADJ CRQL)	**320 (3,200)***	J	320	960 (9,600)* (3x Result)	**180**		180	540 (3x Result)	220	U	220	220 (ADJ CRQL)
Bis (2-ethylhexyl) phthalate	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	**120 (1,200)***	LJ	220	360 (3,600)* (3x Result)
Carbazole	390	U	390	390 (ADJ CRQL)	390	UJ	390	390 (ADJ CRQL)	350	U	350	350 (ADJ CRQL)	430	U	430	430 (ADJ CRQL)
Chrysene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	**120 (1,200)***	LJ	180	360 (3,600)* (3x Result)	220	U	220	220 (ADJ CRQL)
Dibenzo (a,h) anthracene	200	UJ	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	UJ	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Dibenzofuran	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Fluoranthene	390	U	390	390 (ADJ CRQL)	390	UJ	390	390 (ADJ CRQL)	**230 (2,300)***	LJ	350	690 (6,900)* (3x Result)	430	U	430	430 (ADJ CRQL)
Fluorene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Indeno (1,2,3-cd) pyrene	200	U	200	200 (ADJ CRQL)	**320 (3,200)***	J	200	960 (9,600)* (3x Result)	180	U	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Naphthalene	200	UJ	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	180	UJ	180	180 (ADJ CRQL)	220	U	220	220 (ADJ CRQL)
Phenanthrene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	**140 (1,400)***	LJ	180	420 (4,200)* (3x Result)	220	U	220	220 (ADJ CRQL)
Pyrene	200	U	200	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	**160 (1,897.6)***	LJ	180	480 (5,692.8)* (3x Result)	220	U	220	220 (ADJ CRQL)
ANALYTE: TOTAL METALS																
	Result (mg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (mg/kg)	ADJ CRQL (mg/kg)	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (mg/kg)	Result mg/kg	Flag	ADJ CRQL	Bkgd - ADJ CRQL or 3x Result (mg/kg)
Antimony	0.89	U	0.89	0.89 (ADJ CRQL)	0.8	U	0.8	0.8 (ADJ CRQL)	0.98		0.98	2.94 (3x Result)	0.027	U	0.82	0.82 (ADJ CRQL)
Arsenic	**2.4**		0.44	7.2 (3x Result)	**2**		0.4	6 (3x Result)	**1.1 (1.1)****	J+	0.49	3.3 (3.3)** (3x Result)	**6.4**		0.41	19.2 (3x Result)
Cadmium	0.44	U	0.44	0.44 (ADJ CRQL)	0.4	U	0.4	0.4 (ADJ CRQL)	0.49	U	0.49	0.49 (ADJ CRQL)	0.41	U	0.41	0.41 (ADJ CRQL)
Chromium	**10.3**		0.89	30.9 (3x Result)	**10.3**		0.8	30.9 (3x Result)	**2.7**		0.98	8.1 (3x Result)	**4.2**		0.82	12.6 (3x Result)
Cobalt	**0.82**		0.44	2.46 (3x Result)	**1.1**		0.4	3.3 (3x Result)	**0.84**		0.49	2.52 (3x Result)	**1.2**		0.41	3.6 (3x Result)
Copper	**3.7**		0.89	11.1 (3x Result)	**3.7**		0.8	11.1 (3x Result)	**1.4**		0.98	4.2 (3x Result)	**1.5**		0.82	4.5 (3x Result)
Lead	**12.8**		0.44	38.4 (3x Result)	**5.9**		0.4	17.7 (3x Result)	**4.7**		0.49	14.1 (3x Result)	**5.3**		0.41	15.9 (3x Result)
Manganese	**18.9**		1.3	56.7 (3x Result)	**6.3**		1.3	18.9 (3x Result)	**3.9**		1.5	11.7 (3x Result)	**2.3**		1.2	6.9 (3x Result)
Mercury	0.02 (0.04)*	LJ	0.11	0.06 (0.12)* (3x Result)	0.12	U	0.12	0.12 (ADJ CRQL)	0.12	U	0.12	0.12 (ADJ CRQL)	0.11	U	0.11	0.11 (ADJ CRQL)
Nickel	**1.4**		0.44	4.2 (3x Result)	**1.8**		0.4	5.4 (3x Result)	**0.96**		0.49	2.88 (3x Result)	**1.2**		0.41	3.6 (3x Result)
Silver	0.44	U	0.44	0.44 (ADJ CRQL)	0.4	U	0.4	0.4 (ADJ CRQL)	0.49	U	0.49	0.49 (ADJ CRQL)	0.41	U	0.41	0.41 (ADJ CRQL)
Thallium	0.44	U	0.44	0.44 (ADJ CRQL)	0.4	U	0.4	0.4 (ADJ CRQL)	0.49	U	0.49	0.49 (ADJ CRQL)	0.41	U	0.41	0.41 (ADJ CRQL)
Zinc	**7.7**		0.89	23.1 (3x Result)	**3.7**		0.8	11.1 (3x Result)	**1.3**		0.98	3.9 (3x Result)	**1.8**		0.82	5.4 (3x Result)

KEY

Bkgd - Background
ADJ CRQL - Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/Kg - Concentration in milligram per kilogram
Bold - detected above adjusted contract required quantitation limit (CRQL)
U - Not detected at reported quantitation limit
J - Estimated value
L -Reported concentration is below the contract required quantitation limit (CRQL)
+ - High biased. Actual concentration may be lower than the concentration reported
UJ - Estimated quantitation limit

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has increased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.

** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 18). After adjusting the value for the qualified data, the adjusted value remains as the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.

Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, p. 246 & 344	Ref. 7, p. 247 & 345	Ref. 7, pp. 249 & 362	Ref. 7, p. 249 & 363
Laboratory Results	Ref. 7, pp. 218-219, 338 & 340-341	Ref. 7, pp. 219-220, 335, 339 & 341	Ref. 7, pp. 239-240, 355 & 358	Ref. 7, pp. 268-269, 357 & 358-359
Data	Ref. 7, pp. 213-214, 217-219, 330-331, 334, 338 & 340-341; Ref. 27, pp. 8 & 18; Ref. 45, pp. 1-5 & 199-201	Ref. 7, pp. 213-214, 217, 219-220, 330-331, 334-335, 339 & 341; Ref. 27, pp. 8 & 14-15; Ref. 45, pp. 6-10 & 202-204	Ref. 7, pp. 213-214, 217, 239-340, 350-351, 354-355 & 358; Ref. 27, pp. 8, 14-15 & 18; Ref. 45, pp. 92-96 & 235-237	Ref. 7, pp. 253-254, 257, 268-269, 350-351, 354, 357 & 358-359; Ref .27, pp. 8 & 14; Ref. 45, pp. 179-183 & 268-270

Table 2 – Source 1 – Concrete Structure

Sample Number:	ACS25-06			
EPA Sample Number:	F9DC7/MF9DC7			
Sample Location:	AC25			
Sample Description	Soil Inside Concrete Structure			
Sample Depth	0 - 2 foot interval			
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-02) ADJ CRQL or 3x Result (µg/kg)
ANALYTE: SVOCs				
1,1'-Biphenyl	**6,500**		2,000	200 (ADJ CRQL)
2-Methylnaphthalene	**40,000 (4,000)***	J	2,000	200 (ADJ CRQL)
Acenaphthene	**12,000**		200	200 (ADJ CRQL)
Acenaphthylene	**7,700**		2,000	200 (ADJ CRQL)
Anthracene	**20,000,000**		3,900,000	200 (ADJ CRQL)
Benzo (a) anthracene	**5,400,000**		3,900,000	200 (ADJ CRQL)
Benzo (a) pyrene	3,300,000 (3,300,000)*	LJ	3,900,000	200 (ADJ CRQL)
Benzo (b) fluoranthene	**4,500,000**		3,900,000	200 (ADJ CRQL)
Benzo (g,h,i) perylene	43,000 (4,300)*	J	2,000	200 (ADJ CRQL)
Benzo (k) fluoranthene	**5,100,000**		3,900,000	200 (ADJ CRQL)
Carbazole	**6,700,000 (6,700,000)***	LJ	3,900,000	390 (ADJ CRQL)
Chrysene	**7,100,000**		3,900,000	200 (ADJ CRQL)
Dibenzo (a,h) anthracene	**23,000**		2,000	200 (ADJ CRQL)
Dibenzofuran	**45,000 (4,500)***	J	2,000	200 (ADJ CRQL)
Fluoranthene	**16,000,000**		7,700,000	390 (ADJ CRQL)
Fluorene	**110,000 (11,000)***	J	2,000	200 (ADJ CRQL)
Indeno (1,2,3-cd) pyrene	**53,000 (5,300)***	J	2,000	200 (ADJ CRQL)
Naphthalene	**30,000**		2,000	200 (ADJ CRQL)
Phenanthrene	**8,000,000**		3,900,000	200 (ADJ CRQL)
Pyrene	**13,000,000**		3,900,000	200 (ADJ CRQL)
ANALYTE: TOTAL METALS				
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-02) ADJ CRQL or 3x Result (mg/kg)
Arsenic	**18.2 (10.46)***	J	0.46	7.2 (3x Result)
Cadmium	**1.6**		0.46	0.44 (ADJ CRQL)
Cobalt	**2.8**		0.46	2.46 (3x Result)
Copper	**68.2**		0.93	11.1 (3x Result)
Lead	**204**		0.46	38.4 (3x Result)
Manganese	**784**		1.4	56.7 (3x Result)
Mercury	**28.3**		3	0.06 (0.12)** (3x Result)
Nickel	**8.8**		0.46	4.2 (3x Result)
Thallium	0.68 (0.37)*	J+	0.46	0.44 (ADJ CRQL)
Zinc	**180**		0.93	23.1 (3x Result)

KEY

Bkgd - Background
ADJ CRQL - Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/kg - Concentration in milligram per kilogram
Bold - Concentration detected is elevated above background adjusted contract required quantitation limit (CRQL).
J - Estimated Value
L - Reported concentration is below the contract required quantitation limit (CRQL)
+ - High biased. Actual Concentration is lower than the concentration reported
* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination"* (Ref. 27, pp. 8, 13-15 & 18). After adjusting the value for the qualified data, the adjusted value remained as the original value reported or decreased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination over background.
** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 18). After adjusting the value for the qualified data, the adjusted value remains as the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.
Note; Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 249 & 363
Laboratory Results	Ref. 7, pp. 265-266, 356-359
Data	Ref. 7, pp. 253-254, 257, 265-266, 350-351, 354 & 356-359; Ref. 27, pp. 8, 13-15 & 18; Ref. 45, pp. 159-168 & 256-258

Table 3 – Source 1 – Pit within the Concrete Structure

Sample Number:	ACSW-06		
EPA Sample Number:	F9DC9/MF9DC9		
Sampling Location:	AC06		
Sample Description	Water From the Pit Inside the Concrete Structure		
	Result (µg/L)	Flag	ADJ CRQL (µg/L)
ANALYTE: Metals			
Arsenic	**3.7**		1
Manganese	**58.2**		15
Zinc	**8.3 (6.43)***	J	2
KEY			
ADJ CRQL -Adjusted contract required quantitation limit µg/L - Concentration in micrograms per liter **Bold** - Concentration is detected above contract required quantitation limit (CRQL) J - Estimated Value * - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 18). After adjusting the value for the qualified data, the adjusted value has decreased significantly from the original value reported. Although the results are qualified as estimated, the presence of the analytes is not in question. Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.			
REFERENCES			
Chain of Custody	Ref. 7, pp. 313 & 363		
Laboratory Reports	Ref. 7, pp. 300-301 & 357 -359		
Data	Ref. 7, pp. 295-296, 299-301, 350-351, 354, 357-359; Ref. 27, pp. 8 & 18; Ref .45, pp. 184-188 & 262-264		

2.2.3 HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment

Gas release to air: The air migration pathway was not scored; therefore, gas release to air containment was not evaluated.

Particulate release to air: The air migration pathway was not scored; therefore, particulate containment was not evaluated.

Release to ground water: The ground water pathway was not scored; therefore, ground water containment was not evaluated.

Release via overland migration: There is no evidence that the concrete structure of the former retort house had any containment features when in operation (Ref. 6, pp. 93-94). There is no historical data to indicate that site operations included waste handling, disposal practices, or facility permits (Ref. 4, p. 8; Ref. 12, p. 1; Ref. 26, p. 4). There is evidence of hazardous substance migration from Source No.1, to include the source itself the concrete structure, and the associated contaminated soil and waste water that has accumulated over time within the confines of the concrete structure and is in direct contact with the remaining concrete walls and pit/sunken water retention basin in the foundation of the structure (Ref. 6, pp. 70, 93-94 & 143). The containment factor value for Source No. 1 is 10 due to no observed maintained engineered cover or functioning and maintained run-on control system and runoff management system (Ref. 1, Table 4-2).

Because containment for this source is greater than zero, the following substances associated with the source can migrate via the Surface Water Migration Pathway (Ref. 1, Sec. 4.1.2.1.2.1.1):

- 1,1'-Biphenyl
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Arsenic
- Benzo (a) anthracene
- Benzo (a) pyrene
- Benzo (b) fluoranthene
- Benzo (k) fluoranthene
- Cadmium
- Carbazole
- Chrysene
- Cobalt
- Copper
- Dibenzo (a,h) anthracene
- Dibenzofuran
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Zinc

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1. Hazardous Constituent Quantity – Tier A

The total Hazardous Constituent Quantity for Source 1 could not be adequately determined according to the HRS requirements; that is, the total mass of all CERCLA hazardous substances in the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.1). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, etc.) are not available to adequately calculate the total or partial mass of all CERCLA hazardous substances in the source and the associated releases from the source. Therefore, there is insufficient information to calculate a total or partial Hazardous Constituent Quantity estimate for Source 1 with reasonable confidence. Scoring proceeds to the evaluation of Tier B, Hazardous wastestream quantity (Ref. 1, Section 2.4.2.1.1).

Hazardous Constituent Quantity Value (S): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.2. Hazardous Wastestream Quantity – Tier B

The total Hazardous Wastestream Quantity for Source 1 could not be adequately determined according to the HRS requirements; that is, the total mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and releases from the source are not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.2). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are not available to adequately calculate the total or partial mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and the associated releases from the source. Therefore, there is insufficient information to adequately calculate or extrapolate a total or partial Hazardous Wastestream Quantity estimate for Source 1 with reasonable confidence. Scoring proceeds to the evaluation of Tier C, Volume (Ref. 1, Section 2.4.2.1.2).

Hazardous Wastestream Quantity Value (W): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.3. Volume – Tier C

The concrete structure is an abandoned surface structure that is a remnant of the former retort house basin from previous operations at the facility (Ref. 4, pp. 9, 12 & 28; Ref. 6, pp. 64, 70 & 94; Ref. 7, pp. 143-144; Ref. 26, p. 17). The concrete structure that remains from the former retort house basin was considered part of the creosote processing facilities area (Ref. 6, pp. 65, 70 & 93; Ref. 7, pp. 143-144 & 170-172). A complete survey of the concrete structure was not completed during the EPA SI due to the amount of pine forest and thick shrub overgrowth (Ref. 7, p. 182). The approximate dimensions of the concrete structure from observations made during the EPA SI are 30 feet x 70 feet (Ref. 7, p. 182). There are approximately 24 inches of sediment on the top of the concrete (Ref. 7, p. 181). Located

within the concrete structure is a pit with a concrete bottom (Ref. 7, p. 182). The pit contains approximately five (5) feet of water, and no sediment is present (Ref. 7, pp. 138-142 & 182).

Based on a December 2003 Voluntary Remedial Action Plan prepared for the American Creosote DeRidder site by Acadian, the concrete structure, as indicated by historical figures, was 155 feet in length, 30 feet in width and 2.5 feet deep (Ref. 4, p. 37). A water retention basin was present within the concrete structure, and measured 10 feet in width, over 30 feet in length, and 7.5 feet deep (Ref. 4, pp. 24 & 37).

Using a conservative estimate for the source area of the concrete structure of the former retort house basin of 30 feet in width x 70 feet in length x 2 feet deep, it occupied approximately 4,200 ft^3 (Ref. 7, p. 181-182). The evaluation equation applied for the conversion of cubic feet (ft^3) to cubic yards (yds^3) is 1 yd^3 = 27 ft^3. The estimated capacity of the concrete structure is 155.56 yd^3.

4,200 cubic feet (ft^3) x (1 cubic yard (yd^3) ÷ 27 cubic feet (ft^3)) = 155.56 yd^3

The hazardous waste quantity evaluation equation for source type other is V/2.5 (Ref. 1, Table 2-5). The source volume will be assigned a volume hazardous waste quantity value of 62.22.

155.56 yd^3 ÷ 2.5 = 62.22

Volume of source No. 1 (yd^3): 155.56
Reference(s): Ref. 1, Table 2-5
Volume Assigned Value: 62.22

2.4.2.1.4. Area – Tier D

Tier D, Area, is not applicable for source type other (Ref. 1, Sec. 2.4.2.1.3 and 2.4.2.1.4).

Area of Source No. 1 in square feet (ft^2): Not Applicable
Area Assigned Value: 0
References: Ref. 1, Sec. 2.4.2.1.4

2.4.2.1.5. Source Hazardous Waste Quantity Value

Source No. 1, Concrete Structure

Measures	Surface Water, Ground Water and Air Pathways
Tier A	NC
Tier B	NC
Tier C	62.22
Tier D	0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	62.22

NC: Not Calculated

The highest value assigned to either Tier A, Tier B, Tier C, or Tier D is assigned as the Source No. 1 Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5). The highest value assigned is Tier C.

Source No. 1 Hazardous Waste Quantity Value: 62.22

2.2.1 SOURCE IDENTIFICATION – SOURCE 2

The following information corresponds to the second source identified for this documentation record.

Number of source: 2

Name of source: Oil/Water Separator

Source Type: Tanks/Containers other than Drums

Description and Location of Source: The oil/water separator is located just northwest of and in close proximity to the concrete structure (Figure 2; Ref. 6, pp. 93-94). Generally the oil/water separator received discharged sludges from work tank/storage tanks (Ref. 43, p. 3). Wastewater contaminated by oil/preservative solutions and sludges were discharged to a tank where oil/water separation took place (Ref. 43, pp. 3-4). The oil/water separation process treated effluent generated after completion of the wood treating process (Ref. 43, p. 4). At the American Creosote DeRidder facility the oil water separator is present in close proximity to the concrete structure, the former retort house, in order to receive discharge from the creosote processing (Figure 2). Although no water is intentionally added to the wood treating process, a substantial amount of water is release from the wood itself during hot oil/preservative solution steeping (Ref. 43, p. 4). Some of this wastewater is emitted to the air as stream during the steeping process, and some is entrained in the preservative solution or settles to the bottom of the wood treating tank (Ref. 43, p. 4). The oil/water separator receives contaminated wastewater effluent directly from the treating tank (Ref. 43, p. 4). Additionally, common practice may have been to add the bottom sludges from the storage tanks/work tanks to the oil/water separator (Ref, 43, p. 4).

The oil/water separator is a concrete structure and measures approximately 25 feet in length, five (5) feet across with a center wall at approximately two and a half (2.5) feet (Ref. 7, p. 181; Ref. 13, pp. 13, 19, 61-66 & 76-77). The concrete structure of the oil/water separator is completely covered in creosote-contaminated solids and contains stagnant water and approximately 5 -10 feet of vegetation from the surface to the bottom of the oil/water separator (Ref. 7, pp. 135, 173 & 181; Ref. 13, pp. 13, 61-66 & 76-77). The oil/water separator is an abandoned concrete surface foundation structure that is a remnant of the former retort house basin from previous operations at the facility (Ref. 4, pp. 9, 12 & 28; Ref. 6, pp. 64, 70 & 94; Ref. 7, p. 135 & 173). The concrete structure that remains from the former retort house basin was considered part of the creosote processing facilities area, and an area of impact from previous facility operations (Ref. 6, pp. 65, 70 & 93-94; Ref. 7, pp. 135 & 173).

A waste water sample was collected from within the contaminated oil/water separator during the June 2015 EPA SI (Ref. 7, pp. 40 & 135). Waste water sample ACSW-04 was collected using a peristaltic pump with dedicated tubing, and low flowed directly into sample containers (Ref. 7, p. 135). The waste water sample was shipped to KAP Technologies Inc. located in The Woodlands, Texas, for organic analyses, and Chemtech Consulting Group located in Mountainside, New Jersey, for inorganic analyses (Ref. 7, p. 27). The waste water sample was analyzed for SVOCS by EPA CLP SOW SOM02.2, and for inorganic metals/mercury by EPA CLP SOW ISM02.2 (Ref. 7, pp. 25-27). All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 301-302 & 357-359).

Waste water sample ACSW-04 contained elevated levels of PAHs including 1,1'-biphenyl, 2,4-dimethylphenol, 2-methylnaphthalene, 4-methylphenol, acenaphthene, anthracene, benzo (a) anthracence, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene in concentrations equal to or greater than their corresponding ADJ CRQLs (Ref. 7, pp. 40, 97 & 301-302; Table 4).

Metal concentrations for arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium, and zinc were detected at concentrations equal to or greater than their corresponding ADJ CRQLs (Ref. 7, pp. 41, 97 & 357-359; Table 4).

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

Analysis of waste water from the oil/water separator detected numerous PAHS such as: 1,1'-biphenyl, 2,4-dimethylphenol, 2-methylnaphthalene, 4-methylphenol, acenaphthene, anthracene, benzo (a) anthracence, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Ref. 11, pp. 11, 40 & 301-302; Table 4). Metals such as arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium, and zinc were also detected (Ref. 7, pp. 11, 40 & 357-359; Table 4).

Table 4 – Source 2 - Oil/Water Separator

Sample Number:	ACSW-04		
EPA Sample Number:	F9DD0/MF9DD0		
Sampling Location:	AC04		
Sample Description	Water from the Oil/Water Separator		
	Result (µg/L)	Flag	ADJ CRQL (µg/L)
ANALYTE: SVOCs			
1,1'-Biphenyl	**12**		5
2,4-Dimethylphenol	4.5 (4.5)*	LJ	5
2-Methylnaphthalene	**110**		25
4-Methylphenol	7.3	LJ	10
Acenaphthene	**75**		5
Anthracene	**42**		5
Benzo (a) anthracene	**13**		5
Benzo (a) pyrene	**6**		5
Benzo (b) fluoranthene	**7.5**		5
Benzo (g,h,i) perylene	2.3 (2.3)*	LJ	5
Benzo (k) fluoranthene	**7.9**		5
Carbazole	**34**		10
Chrysene	**14**		5
Dibenzofuran	**61**		5
Fluoranthene	**91**		10
Fluorene	**69**		5
Indeno (1,2,3-cd) pyrene	2.2 (2.2)*	LJ	5
Naphthalene	**220**		25
Phenanthrene	**150**		25
Pyrene	**54**		5
ANALYTE: Total Metals			
	Result (µg/L)	Flag	ADJ CRQL (µg/L)
Arsenic	**17.4**		1
Cadmium	**10.8**		1
Chromium	**12.1**		2
Cobalt	**6.1**		1
Copper	**328 (262.4)***	J	2
Lead	**258**		1
Manganese	**1,020**		15
Mercury	**7.4**		0.2
Nickel	**23.1**		1
Thallium	**8.6**		1
Zinc	**1,490 (1,150)***	J	2

KEY

ADJ CRQL - Adjusted contract required quantitation limit
µg/L - Concentration in micrograms per liter
Bold - Concentration is detected above contract required quantitation limit (CRQL)
J - Estimated Value
L - Reported concentration is below the contract required quantitation limit (CRQL).
* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 18). After adjusting the value for the qualified data, the adjusted value has remained as the original value reported or decreased significantly from the original value reported. Although the results are qualified as estimated, the presence of the analytes is not in question.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES	
Chain of Custody	Ref. 7, pp. 313 & 363
Laboratory Reports	Ref. 7, pp. 301-302 & 357-359
Data	Ref. 7, pp. 295-296, 299, 301-302, 350-351, 354 & 357-359; Ref. 27, pp. 8, 13-15 & 18; Ref. 45, pp. 189-193 & 265-267

2.2.3 HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment

Gas release to air: The air migration pathway was not scored; therefore, gas release to air containment was not evaluated.

Particulate release to air: The air migration pathway was not scored; therefore, particulate containment was not evaluated.

Release to ground water: The ground water pathway was not scored; therefore, ground water containment was not evaluated.

Release via overland migration: There is no evidence that the oil/water separator of the former retort house had any contaminant features when in operation (Ref. 6, pp. 93-94). There is no historical data to indicate that facility operations included waste handling, disposal practices, or facility permits (Ref. 4, p. 8; Ref. 12, p. 1; Ref. 26, p. 4). There is evidence of hazardous substance migration from Source No.2, to include the source itself, the oil/water separator that was observed to be completely covered in creosote solids, and stagnant water in direct contact with the contaminated source (Ref. 7, pp. 40-41, 94, 97 & 135; Ref. 13, pp. 13, 19, 61-66 & 76-77). The containment factor value for Source No. 2 is 10 due to no diking or no similar structure surrounding the container area (Ref. 1, Table 4-2).

Because containment for this source is greater than zero, the following substances associated with the source can migrate via the Surface Water Migration Pathway (Ref. 1, Sec. 4.1.2.1.2.1.1):

- 1,1'-Biphenyl
- 2,4-Dimethylphenol
- 2-Methylnaphthalene
- 4-Methylphenol
- Acenaphthene
- Anthracene
- Arsenic
- Benzo (a) anthracene
- Benzo (a) pyrene
- Benzo (b) fluoranthene
- Benzo (g,h,i) perylene
- Benzo (k) fluoranthene
- Cadmium
- Carbazole
- Chromium
- Chrysene
- Cobalt
- Copper
- Dibenzofuran
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Thallium
- Zinc

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1. Hazardous Constituent Quantity – Tier A

The total Hazardous Constituent Quantity for Source 2 could not be adequately determined according to the HRS requirements; that is, the total mass of all CERCLA hazardous substances in the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.1). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, etc.) are not available to adequately calculate the total or partial mass of all CERCLA hazardous substances in the source and the associated releases from the source. Therefore, there is insufficient information to calculate a total or partial Hazardous Constituent Quantity estimate for Source 2 with reasonable confidence. Scoring proceeds to the evaluation of Tier B, Hazardous wastestream quantity (Ref. 1, Sec. 2.4.2.1.1).

Hazardous Constituent Quantity Value (S): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.2. Hazardous Wastestream Quantity – Tier B

The total Hazardous Wastestream Quantity for Source 2 could not be adequately determined according to the HRS requirements; that is, the total mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec 2.4.2.1.2). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are not available to adequately calculate the total or partial mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and the associated releases from the source. Therefore, there is insufficient information to adequately calculate or extrapolate a total or partial Hazardous Wastestream Quantity estimate for Source 2 with reasonable confidence. Scoring proceeds to the evaluation of Tier C, Volume (Ref. 1, Section 2.4.2.1.2).

Hazardous Wastestream Quantity Value (W): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.3. Volume – Tier C

The oil/water separator is located just northwest and in close proximity to the concrete structure of the former retort house in order to receive discharge from the creosote processing that occurred within the former retort house (Figure 2; Ref. 6, pp. 93-94; Ref. 43, pp. 3-4). The oil/water separator is an abandoned concrete surface foundation structure that is a remnant of the former retort house basin from previous operations at the facility (Ref. 4, pp. 9, 12 & 28; Ref. 6, pp. 64, 70 & 94; Ref. 7, p. 135 & 173). The concrete structure that remains from the former retort house basin was considered part of the creosote processing facilities area (Ref. 6, pp. 65, 70 & 93; Ref. 7, pp. 135 & 173). The oil/water separator is a concrete structure and measures approximately 25 feet in length, five (5) feet across with a center wall at approximately two and a half (2.5) feet; it contains 5-10 feet of vegetation to the bottom

(Ref. 7, pp. 40 & 181; Ref. 13, pp. 61-66 & 76-77). The concrete structure of the oil/water separator is completely covered in creosote soils and contains stagnant water; during sampling the concrete bottom was encountered at the approximate depth of 5 feet (Ref. 7, pp. 135, 173 & 181; Ref. 13, pp. 61-66 & 76-77).

Using a conservative estimate for the oil/water separator of the former retort house basin of 25 feet in length x 5 feet across x 5 feet deep, it occupied approximately 625 ft^3 (Ref. 7, pp. 40 & 181; Ref. 13, pp. 76-77). The evaluation equation applied for the conversion of cubic feet (ft^3) to cubic yards (yds^3) is 1 yd^3 = 27 ft^3. The estimated capacity of the oil water separator is 23.15 yd^3.

625 cubic feet (ft^3) x 1 cubic yard (yd^3) ÷ 27 cubic feet (ft^3) = 23.15 yd^3

The hazardous waste quantity evaluation equation other sources is V/2.5 (Ref. 1, Table 2-5). The volume source will be assigned a volume hazardous waste quantity value of 23.15.

23.15 yd^3 ÷ 2.5 = 9.26

Volume of source (yd^3): 23.15
Reference(s): Ref. 1, Table 2-5
Volume Assigned Value: 9.26

2.4.2.1.4. Area – Tier D

Tier D, Area, is not applicable for source type containers (Ref. 1, Sec. 2.4.2.1.3 and 2.4.2.1.4).

Area of Source No. 2 in square feet (ft^2): Not Applicable
Area Assigned Value: 0
References: Ref. 1, Sec. 2.4.2.1.4

2.4.2.1.5. Source Hazardous Waste Quantity Value

Source No. 2, Oil/Water Separator

Measures	Surface Water, Ground Water and Air Pathways
Tier A	NC
Tier B	NC
Tier C	9.26
Tier D	0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	9.26

NC: Not Calculated

The highest value assigned to either Tier A, Tier B, Tier C, or Tier D is assigned as the Source No. 2 Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5). The highest value assigned is Tier C.

Source No. 2 Hazardous Waste Quantity Value: 9.26

2.2.1 SOURCE IDENTIFICATION – SOURCE 3

The following information corresponds to the third source identified for this documentation record.

Number of source: 3

Name of source: Unlined Wastewater Pit

Source Type: Surface Impoundment Not Buried/Backfilled

Description and Location of Source: The unlined abandoned wastewater pit, or pond as commonly referred to, is located just west of the concrete (retort house) structure, and was the waste pit for the creosote operations at the facility (Figure 2; Ref. 4, pp. 14, 21, 28; Ref. 6, pp. 64 & 72, 93-94; Ref. 14, p. 1; Ref. 26, p. 5). The open unlined rectangular pit lies between the retort foundation and the Santa Fe track to the west, and served as a creosote wastewater holding pit for the creosote operations (Ref. 21, pp. 5 & 120). Typically, in the creosote processing the oil/preservative solutions recovered by the mechanical oil/water separator undergo a secondary wastewater treatment step by thermal dehydration/evaporation (Ref. 43, p. 4). The pond at American Creosote DeRidder undoubtedly served as the secondary wastewater treatment step by thermal dehydration/evaporation (Ref. 43, p. 4). The pit contains spent creosote wastewater that was sent to the pond for secondary treatment, and which now has contaminated the underlying soil (Ref. 9, p. 3). The unlined wastewater pit measures approximately 100 feet x 50 feet, with hardened creosote flanking the pit and adjacent to the pit (Ref. 4, pp. 28 & 31; Ref. 6, pp. 93-94; Ref. 13, p. 67-71 & 77; Ref. 14, p. 1). During the EPA December 2014 preliminary assessment (PA) the depth of the wastewater pit was taken from the southwest corner and measured approximately 8-10 inches deep (Ref. 13, p. 77).

LDEQ in cooperation with CMC and ATSF, from February 1994 to 1996, contracted with Louisiana State University who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at the site (Ref. 8, p. 5; Ref. 21, p. 5). The work plan proposed transporting contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated (Ref. 21, p. 3). An approximate total of 1,250 yd^3 of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway ROW were proposed to be processed in the SPRU (Ref. 21, p. 5). By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ had been dissolved (Ref. 8, p. 8).

Historical site investigations by LDEQ documented contamination at the unlined wastewater pit. During a site visit in October 1992, LDEQ IASD collected sediment samples from the pond and elevated levels, from 0.5 to 1.08 percent, for eight of the TCL listed creosote constituents were detected (Ref. 17, p 2). Analytical results from the October 1992 sample collection were found to contain high concentrations of PAHs per the West-Paine Laboratory results (Ref. 18, pp.17-18). Also, high creosote concentrations were discovered in the open unlined pit lying between the old Santa Fe railway tracks and the creosoting structure foundation by LDEQ (Ref. 12, p. 3). In 1993 LDEQ IASD completed a Phase I and Phase II State Site Assessment (SSA) and determined that high concentrations of creosote contamination were present in the unlined pit lying between the old Santa Fe railway track and the creosoting structure foundation (Ref. 12, p.3).

The abandoned waste pit was an earthen creosote waste pit considered an area of impact, and the site feature of most concern by LDEQ and Acadian personnel, based on previous field observations (Ref. 4, p. 14; Ref. 6, pp. 65, 72 & 93-94). In the December 2003 Voluntary Remedial Action Plan Acadian designated the area surrounding the former waste pit and the pit itself, immediately to the west of the concrete (retort house) structure, as AOC #3 for investigative purposes (Ref. 4, p. 14). Site visual inspections revealed considerable stained surface soils and residual weathered creosote throughout AOC #3 in addition to the pit area (Ref. 4, p. 14; Ref. 6, pp. 65 & 148-149). AOC #3 had soil sampling performed to determine the horizontal and vertical extent of impact to the shallow soils (Ref. 4, pp. 14 & 31; Ref. 11, p. 3). Site visual inspections revealed considerable stained surface soils and residual weathered creosote throughout AOC #3 in addition to the pit area (Ref. 4, p. 14). Soil borings from AOC #3 revealed elevated concentrations of benzopyrene (*sic*) (Ref. 4, p. 21; Ref. 6, pp. 20-26, 86, 94-114, 116 & 119).

In the 2003 proposed Voluntary Remedial Action Plan, Acadian proposed methodology for addressing the impacted soils around the waste pit and the pit itself was over-excavation of impacted areas and treatment of the impacted media (Ref. 4, p. 18). The proposed limits of excavation within AOC #3 entailed the entire area and were based upon analytical results and the visual surface impact (Ref. 4, p. 21; Ref. 6, pp. 21-26, 86 & 94-114). The proposed, yet never started, excavation of AOC #3 was to consist of two (2) separate excavation areas (AOC #3a and AOC #3b) (Ref. 4, pp. 22 & 35). AOC #3a was the abandoned waste pit which proposed the depth of excavation until hard pan impacted soils were encountered beneath the impacted sludge media (Ref. 4, p. 22). The proposed area of excavation for AOC #3a was 3,300 $ft^2$and the depth was estimated at three (3) feet to result in a proposed excavation volume of 367 yd^3 (Ref. 4, p. 22). ACO #3b was to consist of the adjacent area to the pit that revealed elevated levels of benzopyrene (*sic*) and visible surface impact present (Ref. 4, p. 22). AOC #3b was proposed to consist of 7,110 ft^2 of excavatable area at a depth of two (2) feet resulting in a volume of 527 $yd^3$of proposed excavatable soil (Ref. 4, p. 22). The proposed total volume of excavation within AOC #3 was 894 yd^3 or 1,162 yd^3 to be remediated (Ref. 4, p. 22). To date no remediation has taken place at American Creosote DeRidder (Ref. 6, p. 11).

The proposed remediation of the waste sludge from the abandoned earthen pit was to place the excavated material within the concrete retort house structure adjacent to the pit (Ref. 4, pp. 22 & 37). Select microbes intended to remediate creosote related organic compounds were to be used to inoculate and treat the impacted media (Ref. 4, p. 23). To date no remediation has taken place at American Creosote DeRidder (Ref. 6, p. 11).

In April 2014 Acadian submitted a CAP that identified the area most necessary to be subjected to corrective action, a 7,500 square foot AOC, bound to the east by the westernmost portion of the abandoned concrete retort house basins and to the west by the western bankline of the abandoned waste pit (Ref. 26, pp. 6-7 & 16-17). The waste pit AOC dimensions included the pond area of 1,650 ft^2 and the wetted pond area of 5,400 ft^2 (Ref. 26, p. 7). The solidification/stabilization of creosote impacted soil was to take place in the waste pit and involved in-situ mixing with Portland cement (Ref. 26, pp. 8-9). Volumes to be removed from the wastewater pit area include 11,849 gallons of water from the wastewater pit prior to the solidification process, and 48.9 yd^3 of pond volume (Ref. 26, pp. 8-9).

During the June 2015 EPA SI a sediment sample, ACSD-08, was collected from the eastern edge of the abandoned wastewater pit using a 3-feet direct push acetate sleeve (sample retrieval tube with a rubber-

lined gasket top) and transferred directly to sample containers (Ref. 7, pp. 24, 41, 81, 133, 395 & 425-435). The sediment sample was shipped to the designated CLP Laboratory for TCL SVOCs and TAL total metal/mercury chemical analysis (Ref. 7, p. 24). Sediment samples were submitted to KAP Technologies Inc. located in The Woodlands, Texas, for TCL Semi-Volatile Organic Analysis (SVOAs) by EPA CLP SOM02.2 organic analysis, and to Chemtech Consulting Group located in Mountainside, New Jersey, for TAL Total Metals and Mercury by EPA ISM02.2 inorganic analysis (Ref. 7, pp. 69-70).

The sediment sample results from location ACSD-08 detected concentrations of PAHs such as 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene were detected at concentrations equal to or greater than their corresponding ADJ CRQLs (Ref. 7, pp. 42, 96 & 258-259; Table 5).

Metal concentrations were also detected in the ACSD-08 sediment sample including arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium and zinc equal to or greater than their corresponding ADJ CRQLs (Ref. 7, pp. 42, 96, 355 & 358; Table 5).

Additionally, a waste water sample, ACSW-08, was collected during the June 2015 EPA SI, from the abandoned wastewater pit (Ref. 7, pp. 41, 181 & 554). Waste water sample ACSW-08 was collected using a peristaltic pump with dedicated tubing, and low flowed directly into sample containers (Ref. 7, pp. 130-131). The sample was shipped to KAP Technologies Inc. located in The Woodlands, Texas, for organic analysis, and Chemtech Consulting Group located in Mountainside, New Jersey, for inorganic analysis (Ref. 7, p. 27). The sample was analyzed for SVOCS by EPA CLP SOW SOM02.2, and for inorganic TAL metals/mercury by EPA CLP SOW ISM02.2 (Ref. 7, pp. 25-27). All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 308-309 & 357-359)

Waste water sample ACSW-08 contained PAHS including: 2-methylnaphthalene, acenaphthene, anthracene, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene at concentrations equal to or greater than their corresponding ADJ CRQLs (Ref. 7, pp. 41-42, 97 & 308-309; Table 6). Metals concentrations were also detected in the waste water sample collected from the wastewater pit at concentrations equal to or greater than their corresponding ADJ CRQLs including: arsenic, chromium, cobalt, copper, lead, manganese, nickel, and zinc (Ref. 7, pp. 41-42, 97 & 357-359).

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

Analyses of the sediment sample and waste water sample collected from location AC-08, located along the eastern edge of the unlined wastewater pit detected numerous PAHs including: 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzaldehyde, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Ref. 7, pp. 41-42, 96-97, 259-259 & 308-309).

Additionally, numerous metals were detected in the sediment sample and waste water sample collected from location AC-08 such as arsenic, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, thallium, and zinc (Ref. 7, pp. 41-42, 96-97, 355 & 357-359).

Table 5 – Source 3 – Unlined Wastewater Pit

Sample Number:	ACSD08-06		
EPA Sample Number:	F9DC1/MF9DC1		
Sampling Location:	AC08		
Sample Description	Sediment from Wastewater Pit		
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)
ANALYTE: SVOCs			
1,1'-Biphenyl	**67,000 (67,000)***	J	1,700
2-Methylnaphthalene	**9,400,000**		3,500,000
Acenaphthene	**6,400,000**		3,500,000
Acenaphthylene	**4,700**		1,700
Anthracene	**18,000,000**		3,500,000
Benzo (a) anthracene	2,800,000 (2,800,000)*	LJ	3,500,000
Benzo (a) pyrene	**34,000 (3,400)***	J	1,700
Benzo (b) fluoranthene	**38,000 (3,800)***	J	1,700
Benzo (g,h,i) perylene	**7,200**		1,700
Benzo (k) fluoranthene	**38,000 (3,800)***	J	1,700
Carbazole	**9,700,000**		6,700,000
Chrysene	2,900,000 (2,900,000)*	LJ	3,500,000
Dibenzo (a,h) anthracene	**3,300**		1,700
Dibenzofuran	**7,100,000**		3,500,000
Fluoranthene	**12,000,000**		6,700,000
Fluorene	**9,500,000**		3,500,000
Indeno (1,2,3-cd) pyrene	**10,000**		1,700
Naphthalene	**25,000,000**		3,500,000
Phenanthrene	**26,000,000**		3,500,000
Pyrene	**6,300,000**		3,500,000
ANALYTE: TOTAL METALS			
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)
Arsenic	**4.7 (2.8)***	J	0.59
Cadmium	**0.75**		0.59
Chromium	**3.7**		1.2
Cobalt	**1.3**		0.59
Copper	**34.1**		1.2
Lead	**55.4**		0.59
Manganese	**19.5**		1.8
Mercury	**3.4**		0.78
Nickel	**3.6**		0.59
Thallium	**1.3**		0.59
Zinc	**93.9**		1.2

KEY

Bkgd - Background
ADJ CRQL - Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/Kg - Concentration in milligram per kilogram
Bold - Concentration is detected above contract required quantitation limit (CRQL)
J - Estimated Value
L -Reported concentration is below the contract required quantitation limit (CRQL)
* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15 & 18). After adjusting the value for the qualified data, the adjusted value has remained the original value reported or decreased significantly from the original value reported. Although the results are qualified as estimated, the presence of the analytes is not in question.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 273 & 362
Laboratory Reports	Ref. 7, pp. 258-259, 355 & 358
Data	Ref. 7, pp. 253-254, 257-259, 350-351, 354, 355 & 358; Ref. 27, pp. 8, 14 & 18; Ref. 45, pp. 97-107 & 238-240

Table 6 – Source 3 – Unlined Wastewater Pit

Sample Number:	ACSW-08		
EPA Sample Number:	F9DE1/MF9DE1		
Sampling Location:	AC08		
Sample Description	Waste Water From the Wastewater Pit		
	Result (µg/L)	Flag	ADJ CRQL (µg/L)
ANALYTE: SVOCs			
2-Methylnaphthalene	3.8 (3.8)*	LJ	5
Acenaphthene	**6.6**		5
Anthracene	**6.7**		5
Benzaldehyde	5.3 (5.3)*	LJ	10
Benzo (a) anthracene	**15**		5
Benzo (a) pyrene	**8.1**		5
Benzo (b) fluoranthene	**14**		5
Benzo (g,h,i) perylene	3.2 (3.2)*	LJ	5
Benzo (k) fluoranthene	**15**		5
Carbazole	5.4 (5.4)*	LJ	10
Chrysene	**16**		5
Dibenzofuran	3.6 (3.6)*	LJ	5
Fluoranthene	**33**		10
Fluorene	4.6 (4.6)*	LJ	5
Indeno (1,2,3-cd) pyrene	3.4 (3.4)*	LJ	5
Naphthalene	5 (5)*	LJ	5
Phenanthrene	**5.4**		5
Pyrene	**36**		5
ANALYTE: METALS			
	Result (µg/L)	Flag	ADJ CRQL (µg/L)
Arsenic	**5.9**		1
Chromium	**3**		2
Cobalt	**2.7**		1
Copper	**10.3 (8.2)***	J	2
Lead	**11.3**		1
Manganese	**488**		15
Nickel	**4.8**		1
Zinc	**47.4 (36.7)***	J	2

KEY

ADJ CRQL – Adjusted contract required quantitation limit
µg/L - Concentration in micrograms per liter
Bold - Concentration is detected above contract required quantitation limit (CRQL)
J - Estimated Value
L - Reported concentration is below the contract required quantitation limit (CRQL)
* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 18). After adjusting the value for the qualified data, the adjusted value has remained the original value reported or decreased significantly from the original value reported. Although the results are qualified as estimated, the presence of the analytes is not in question.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 313 & 345
Laboratory Reports	Ref. 7, pp. 308-309 & 357-359
Data	Ref. 7, pp. 295-296, 299, 308-309, 350-351, 354, 357-359. Ref. 27, pp. 8, 13-15 & 18; Ref. 45, pp. 194-198 & 271-273

2.2.3 HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment

Gas release to air: The air migration pathway was not scored; therefore, gas release to air containment was not evaluated.

Particulate release to air: The air migration pathway was not scored; therefore, particulate containment was not evaluated.

Release to ground water: The ground water pathway was not scored; therefore, ground water containment was not evaluated.

Release via overland migration: There is no evidence that the unlined wastewater pit had any contaminant features when in operation (Ref. 6, pp. 93-94). There is no historical data to indicate that facility operations included waste handling, disposal practices or facility permits (Ref. 4, p. 8; Ref. 12, p. 1; Ref. 26, p. 4). There is evidence of hazardous substance migration from Source No. 3, by direct observation of hardened creosote flanking the pond and adjacent to the pond indicative of wastewater overflow (Ref. 1, Table 4-2; Ref. 6, pp. 72 & 94-114; Ref. 13, pp. 19, 67-71 & 77). The containment factor value for Source No. 3 is 10 due to free liquids present with either no diking, unsound diking, or diking that is not regularly inspected and maintained, and no evidence of a liner, as the pond has been referred to as an earthen creosote waste pit, and an open unlined creosote wastewater pit (Ref. 1, Table 4-2; Ref. 6, p. 94; Ref. 14, p. 1).

Because containment for this source is greater than zero, the following substances associated with the source can migrate via the Surface Water Migration Pathway (Ref. 1, Sec. 4.1.2.1.2.1.1):

- 1,1'-Biphenyl
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Arsenic
- Benzaldehyde
- Benzo (a) anthracene
- Benzo (a) pyrene
- Benzo (b) fluoranthene
- Benzo (g,h,i) perylene
- Benzo (k) fluoranthene
- Cadmium
- Carbazole
- Chromium
- Chrysene
- Cobalt
- Copper
- Dibenzo (a,h) anthracene
- Dibenzofuran
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Thallium
- Zinc

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1. Hazardous Constituent Quantity – Tier A

The total Hazardous Constituent Quantity for Source 3 could not be adequately determined according to the HRS requirements; that is, the total mass of all CERCLA hazardous substances in the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.1). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, etc.) are not available to adequately calculate the total or partial mass of all CERCLA hazardous substances in the source and the associated releases from the source. Therefore, there is insufficient information to calculate a total or partial Hazardous Constituent Quantity estimate for Source 3 with reasonable confidence. Scoring proceeds to the evaluation of Tier B, Hazardous wastestream quantity (Ref. 1, Sec. 2.4.2.1.1).

Hazardous Constituent Quantity Value (S): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.2. Hazardous Wastestream Quantity – Tier B

The total Hazardous Wastestream Quantity for Source 3 could not be adequately determined according to the HRS requirements; that is, the total mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.2). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are not available to adequately calculate the total or partial mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and the associated releases from the source. Therefore, there is insufficient information to adequately calculate or extrapolate a total or partial Hazardous Wastestream Quantity estimate for Source 3 with reasonable confidence. Scoring proceeds to the evaluation of Tier C, Volume (Ref. 1, Sec. 2.4.2.1.2).

Hazardous Wastestream Quantity Value (W): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.3. Volume – Tier C

The unlined abandoned wastewater pit is located just west of the concrete (retort house) structure (Figure 2; Ref. 6, p. 72). The unlined wastewater pit measures approximately 100 feet x 50 feet, with hardened creosote flanking the pit and adjacent to pit (Ref. 13, p. 67-71 & 77). During the EPA December 2014 preliminary assessment (PA) the depth of the wastewater pit was taken from the southwest corner and measured approximately 8 – 10 inches deep (Ref. 13, p. 77). The abandoned waste pit was an earthen creosote waste pit considered an area of impact, and the site feature of most concern by LDEQ and Acadian personnel based on previous field observations (Ref. 6, pp. 65, 72 & 93-94).

Using the estimate for the unlined wastewater pit of 100 feet in length x 50 feet across x 8 inches deep, it occupied approximately 3,333.33 ft^3 (Ref. 7, pp. 41 & 181-182; Ref. 13, pp. 13, 19 & 67-69 & 77). The evaluation equation applied for the conversion of cubic feet (ft^3) to cubic yards (yds^3) is 1 yd^3 = 27 ft^3. The estimated capacity of the oil water separator is 123.46 yd^3.

3,333.33 cubic feet (ft^3) x 1 cubic yard (yd^3) ÷ 27 cubic feet (ft^3) = 123.46 yd^3

The hazardous waste quantity evaluation equation for a surface impoundment not buried/backfilled is V/2.5 (Ref. 1, Table 2-5). The volume source will be assigned a volume hazardous waste quantity value of 123.46.

123.46 yd^3 ÷ 2.5 = 49.38

Volume of source (yd^3): 123.46
Reference(s): Ref. 1, Table 2-5
Volume Assigned Value: 49.38

2.4.2.1.4. Area – Tier D

Tier D, Area, was not calculated for Source 3 since the volume was estimated. Therefore, according to HRS, the area is not calculated (Ref. 1, Sec. 2.4.2.1.3 and 2.4.2.1.4).

Area of Source No. 3 in square feet (ft^2): Not Applicable
Area Assigned Value: 0
References: Ref. 1, Sec. 2.4.2.1.4

2.4.2.1.5. Source Hazardous Waste Quantity Value

Source No. 3, Unlined Wastewater Pit

Measures	Surface Water, Ground Water and Air Pathways
Tier A	NC
Tier B	NC
Tier C	49.38
Tier D	0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	49.38

NC: Not Calculated

The highest value assigned to either Tier A, Tier B, Tier C, or Tier D is assigned as the Source No. 3 Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5). The highest value assigned is Tier C.

Source No. 3 Hazardous Waste Quantity Value: 49.38

2.2.1 SOURCE IDENTIFICATION – SOURCE 4

The following information corresponds to the source identified for this documentation record.

Number of source: 4

Name of source: Aggregated Areas of Soil Contamination

Source Type: Contaminated Soil

Description and Location of Source: Areas of soil contamination at the site are being aggregated as Source No. 4. Source aggregation is done based on having more than two areas that could be considered individual sources as one discrete source when evaluating one or more pathways (Ref. 1, Sec. 4.2). Source aggregation for Source No. 4 is applied because all sources can be classified as the same source type, the sources affect the similar target populations, the sources have similar containment, the sources contain substances with similar waste characteristics factor values, and the sources are in the same watershed and floodplain (Ref. 1, Sec. 4.2).

Areas of soil contamination were observed at the site during the PA (Ref. 13, pp. 19, 58-60 & 76-77). This observation confirmed what was reported in 2003 during Acadian Engineers & Environmental Consultants environmental site investigation, and was considered AOC #4 (Ref. 4, pp. 11, 14-15, 22-23 & 32). Physical characteristics of the weathered creosote material are an approximate 1-4 inch thick layer on top of the surface soils, with textural characteristics of a dry hard mass (Ref. 6, pp. 154-155, 159 & 162; Ref. 26, p. 6).

LDEQ in cooperation with CMC and ATSF, from February 1994 to 1996, contracted with Louisiana State University who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at the site (Ref. 8, p. 5; Ref. 21, p. 5). The work plan proposed transporting contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated (Ref. 21, p. 3). An approximate total of 1,250 yd^3 of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway ROW were proposed to be processed in the SPRU (Ref. 21, p. 5). By April 1996 the executed cooperative agreement between ATSF, CMC and LDEQ was dissolved (Ref. 8, p. 8).

In the Voluntary Remedial Action Plan Acadian designated contaminated surface soils as AOC #4, primarily downgradient of the old drip area, the wash pit area, and was approximately ½ acre in size (Ref. 4, pp. 11 & 14). AOC #4, contaminated surface soils, has a downgradient slope of 1.2 percent to the south (Ref. 4, pp. 11, 14 & 32). The area consists of hardwood trees and heavy underbrush (Ref. 4, p. 14). Historical plans and the Acadian site inspections indicate the area is void of any structures from the previous creosotes operations (Ref. 4, p. 14). Previous visual site inspections by LDEQ and Acadian personnel revealed considerable amounts of weathered creosote product on the ground surface primarily along the western property boundary (Ref. 4, p .14).

In September 2002, Acadian collected eight (8) soil borings through AOC #4 to a maximum depth of 0-4 feet bgs, acquired by advancing a Shelby tube sampler in two (2) foot increments (Ref. 4, pp. 14-16 &

32). The soil boring placement was based upon the downgradient topographic nature of the study area, the visual evidence of surface impact, the location of the western property boundary, and the bottom drainage basin located at the southern end of the study area (Ref. 4, pp. 14-15 & 32). Constituents which exceeded the LDEQ RECAP industrial soil screening standards and their corresponding TPH value are benzoanthracene (*sic*), benzopyrene (*sic*), benzofluoranthracene (*sic*), dibenzoanthracene (*sic*), idenopyrene (*sic*), and naphthalene (Ref. 4, pp. 19-20 & 42-76; Ref. 6, pp. 26-37, 86, 94-114, 116 & 118-119).

Acadian's proposed methodology for addressing the impacted soils was over-excavation of impacted areas and treatment of the impacted media (Ref. 4, p. 18). The proposed excavation within AOC #4 consists of 35,700 ft^2 (0.82) acres to two (2) foot depth resulting in a proposed excavation volume of 2,644 yd^3 or 3,438 yd^3 of soil to be remediated (Ref. 4, pp. 17, 22-23 & 36). The excavated soils were proposed to be remediated through bio-degradation of the creosote related organic compounds (Ref. 4, p. 23). Soils from AOC #4 were to be placed within an earthen remediation cell adjacent to the concrete structure (Ref. 4, pp. 23 & 38). Select microbes intended to remediate creosote related organic compounds were to be used to inoculate and treat the impacted media (Ref. 4, p. 23).

In April 2014 Acadian submitted a CAP that identified the area most necessary to be subjected to corrective action, a 7,500 ft^2 AOC, bound to the east by the westernmost portion of the abandoned concrete retort house basins and to the west by the western bankline of the abandoned waste pit (Ref. 26, pp. 6-7 & 16-17). The graded surface dimensions were 5,400 ft^2 (Ref. 26, p. 7). The solidification/stabilization of creosote impacted soil was to take place in the waste pit and involved in-situ mixing with Portland cement (Ref. 26, pp. 8-9). Volumes to be removed from the surface area and solidified in the wastewater pit were 100 yd^3 (Ref. 26, pp. 8-9). The AOC encompasses the total area that would be remediated, which included the waste pit (Ref. 26, p. 8). The area of the waste pit is 1,650 ft^2 and is located at the southwest end of the AOC (Ref. 26, p. 8). The AOC outside of the waste pit has an approximate area of 7,500 ft^2 and this gives an approximate total volume of 2,700 ft^3 (based on a six-inch removal depth) that would be placed into the waste pit for solidification (Ref. 26, p. 8).

Additionally, LDEQ in its Notice of Potential Liability to Kerr-McGee Chemical Corporation stated that a pathway of hardened creosote and underlying contaminated soils beginning along the west side of the pit and gently sloping southward downgradient from the pit paralleling the east side of a one track railroad spur owned by BNSF is approximately 400 feet long and 10-20 feet wide, and lies mostly within the BNSF 50-foot ROW from the track centerline (Ref. 14, pp. 1-2). The creosote pathway appears to end at the point where an intermittent unnamed stream passes beneath the railroad spur from east to west (Ref. 14, pp. 1-2).

During the June 2015 EPA SI soil samples were collected from four (4) random areas of soil contamination, these four source sample areas represent the aggregation for Source No. 4 (Ref. 1, Sec. 4.2; Ref. 7, pp. 43 & 84). Soil borings were advanced using direct push technology with borings advanced to a maximum depth of 15 feet bgs using the procedure in the EPA Environmental Response Team (ERT) Standard Operating Procedure (SOP) 2012, modified for the actual unit used by the driller (Ref. 7, pp. 23, 43-44, 84, 180-182 & 436-449). Grab soil samples were collected from each boring, from intervals of visual contamination or where photoionization detector (PID) readings for VOCs above background were detected (Ref. 7, p. 23-24, 189, 193-194, 394 & 436-449). The following samples were collected (Ref. 7, p. 43-47, 84, 129, 134, 136, 146, 180-183 & 541-544; Figure 3):

- Sample Location AC-05, Sample ACS05-02 & Sample ACS05-25: collected east of the oil/water separator at 0 to 2 feet bgs and 2 to 5 feet bgs;
- Sample Location AC-07, Sample ACS07-02, Sample ACS07-58 and Sample AC07-10: collected between the wastewater pit and oil/water separator at 0 to 2 feet bgs, 5 to 8 feet bgs and 8 to 10 feet bgs;
- Sample Location AC-10, Sample ACS10-02, Sample ACS10-58 and Sample AC10-10: collected from an area of creosote at 0 to 2 feet bgs, 5 to 8 feet bgs and 8 to 10 feet bgs;
- Sample Location AC-11, Sample ACS11-02 and Sample ACS11-10: collected south of facility operations at 0 to 2 feet bgs and 8 to 10 feet bgs; and
- Sample Location AC-19, Sample ACS19-58 and Sample ACS19-10: duplicate samples of ACS07-58 and ACS10-10.

Soil samples were analyzed for TCL SVOCS by EPA CLP SOW SOM02.2 and for TAL total metals/mercury by EPA CLP SOW ISM02.2. Organic analyses were performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis were performed by Chemtech Consulting Group located in Mountainside, New Jersey. All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 220-230, 236-237, 259-260, 263-265, 335-341 & 355-359).

The soil sample results from the aggregate source areas of soil contamination were compared to the concentrations in the corresponding foot interval from the background soil sample (Table 1 & 7). PAHs such as 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, bis (2-ethylhexyl) phthalate, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene were detected above corresponding soil background levels (AC-01) (Table 1 & 7). COCs were detected above observed release criteria in the soil samples from zero (0) to ten (10) feet bgs (Ref. 7, pp. 44-48, 90-95, 222-229, 235-237, 259-260 & 263-268; Table 7). While the increase in concentration is not required to associate the substance with the source, it does demonstrate the level in the soil samples is significantly above background.

Metal concentrations were also detected in the soil samples including chromium, copper, lead, manganese, mercury, nickel silver, and zinc greater than background level (Ref. 7, pp. 44-48, 90-95, 335-336, 339-341 & 355-359; Table 7). Again, while this increase in concentration is not required to associate the substances with the source, it does demonstrate the level in the soil samples are significantly above background.

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

PAHs such as 1,1'-biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, bis(2-ethylhexyl)phthalate, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene were detected in the areas of soil contamination sampling (Table 7). These constituents were also detected in other sources at American Creosote DeRidder including the concrete structure, the oil/water separator and the unlined

wastewater pit (Sources 1, 2 and 3, respectively) (Tables 3, 4, 5 & 6).

In addition, metal concentrations detected in the areas of soil contamination included chromium, copper, lead, manganese, mercury, nickel silver, and zinc (Table 7).

Table 7 – Source 4 – Areas of Creosote Solids and Soil Contamination

Sample Number:	ACS05-02				ACS05-25				ACS07-02				ACS07-58				ACS19-58 (Duplicate of ACS07-58)			
EPA Sample Number:	F9DA4/MF9DA4				F9DA5/MF9DA5				F9DA6/MF9DA6				F9DA7/MF9DA7				F9DB6/MF9DB6			
Sample Location:	AC05				AC05				AC07				AC07				AC19			
Sample Description	Concrete Structure				Concrete Structure				Between Pond & Concrete Structure				Between Pond & Concrete Structure				Creosote Area			
Sample Depth	0 - 2 foot interval				2 - 5 foot interval				0 - 2 foot interval				5 - 8 foot interval				5 - 8 foot interval			
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (AC01-02) – ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-25) – ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (AC01-02) - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-58) - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-58) - ADJ CRQL or 3x Result (µg/kg)
ANALYTE: SVOCs																				
1,1'-Biphenyl	230	U	230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	190	U	190	200 (ADJ CRQL)	**64,000 (6,400)***	J^	180	180 (ADJ CRQL)	**74,000 (7,400)***	J	2,000	180 (ADJ CRQL)
2-Methylnaphthalene	320 (32)*	J	320	200 (ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	160 (160)*	LJ	190	200 (ADJ CRQL)	**240,000 (24,000)***	J^	180	180 (ADJ CRQL)	**61,000,000**		39,000,000	180 (ADJ CRQL)
Acenaphthene	**470**		230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	190	U	190	200 (ADJ CRQL)	**200,000 (20,000)***	J^	180	180 (ADJ CRQL)	**60,000,000**		39,000,000	180 (ADJ CRQL)
Acenaphthylene	**2,900**		230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	**1,300**		190	200 (ADJ CRQL)	**8,400 (840)***	J^	180	180 (ADJ CRQL)	**10,000**		2,000	180 (ADJ CRQL)
Anthracene	**1,900**		230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	**2,800**		190	200 (ADJ CRQL)	**140,000 (14,000)***	J^	180	1,320 (3x Result)	**39,000,000 (39,000,000)***	LJ	39,000,000	1,320 (3x Result)
Benzo (a) anthracene	**8,100 (810)***	J	230	200 (ADJ CRQL)	150 (150)*	LJ	200	200 (ADJ CRQL)	**24,000 (2,400)***	J	3,800	200 (ADJ CRQL)	**22,000 (2,200)***	J	180	180 (ADJ CRQL)	**81,000 (8,100)***	J	2,000	180 (ADJ CRQL)
Benzo (a) pyrene	**22,000 (2,200)***	J	230	200 (ADJ CRQL)	330 (33)*	J	200	930 (9,300)** (3x Result)	**16,000 (1,600)***	J	3,800	200 (ADJ CRQL)	6,400 (640)*	J	180	330 (3,330)** (3x Result)	**34,000 (3,400)***	J	2,000	330 (3,300)** (3x Result)
Benzo (b) fluoranthene	**35,000 (3,500)***	J	230	200 (ADJ CRQL)	470 (47)*	J	200	570 (5,700)** (3x Result)	**22,000 (2,200)***	J	3,800	200 (ADJ CRQL)	15,000 (1,500)*	J	180	510 (5,100)** (3x Result)	**58,000 (5,800)***	J	2,000	510 (5,100)** (3x Result)
Benzo (k) fluoranthene	**12,000 (1,200)***	J	230	200 (ADJ CRQL)	400		200	960 (9,600)** (3x Result)	**20,000 (2,000)***	J	3,800	200 (ADJ CRQL)	3,600 (360)*	J	180	540 (3x Result)	**27,000**		2,000	540 (3x Result)
Carbazole	**690**		440	390 (ADJ CRQL)	390	U	390	390 (ADJ CRQL)	280 (280)*	LJ	370	390 (ADJ CRQL)	**240,000 (24,000)***	J^	350	350 (ADJ CRQL)	**120,000 (12,000)***	J	3,800	350 (ADJ CRQL)
Chrysene	**1,5000 (1,500)***	J	230	200 (ADJ CRQL)	**280**		200	200 (ADJ CRQL)	**20,000 (2,000)***	J	3,800	200 (ADJ CRQL)	14,000 (1,400)*	J	180	360 (3,600)** (3x Result)	**69,000 (6,900)***	J	2,000	360 (3,600)** (3x Result)
Dibenzofuran	**410**		230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	160 (160)*	LJ	190	200 (ADJ CRQL)	**160,000 (16,000)***	J^	180	180 (ADJ CRQL)	**54,000,000**		39,000,000	180 (ADJ CRQL)
Fluoranthene	**16,000 (1,600)***	J	440	390 (ADJ CRQL)	390	U	390	390 (ADJ CRQL)	**35,000**		7,500	390 (ADJ CRQL)	**670,000 (67,000)**	J	350	690 (6,900)** (3x Result)	**93,000,000 (9,300,000)***	J	76,000,000	690 (6,900)** (3x Result)
Fluorene	230	U	230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	190	U	190	200 (ADJ CRQL)	**220,000 (22,000)***	J^	180	180 (ADJ CRQL)	**62,000,000**		39,000,000	180 (ADJ CRQL)
Indeno (1,2,3-cd) pyrene	**16,000 (1,600)***	J	230	200 (ADJ CRQL)	320		200	960 (9,600)* (3x Result)	**7,800 (780)***	J	3,800	200 (ADJ CRQL)	**3,700 (370)***	J	180	180 (ADJ CRQL)	**13,000**		2,000	180 (ADJ CRQL)
Naphthalene	1,200 (120)*	J	230	200 ADJ CRQL)	200	UJ	200	200 (ADJ CRQL)	**530**		190	200 ADJ CRQL)	**450,000 (45,000)**	J^	180	180 (ADJ CRQL)	**290,000,000**		39,000,000	180 (ADJ CRQL)
Phenanthrene	**2,000**		230	200 (ADJ CRQL)	200	U	200	200 (ADJ CRQL)	**410**		190	200 (ADJ CRQL)	**900,000 (90,000)***	J^	180	420 (4,200)** (3x Result)	**170,000,000**		39,000,000	420 (4,200)** (3x Result)
Pyrene	230	U	230	200 (ADJ CRQL)	150 (150)*	LJ	200	200 (ADJ CRQL)	**58,000 (4,890.4)***	J	3,800	200 (ADJ CRQL)	38,000 (3,204)*	J	180	480 (5,692.8)** (3x Result)	**41,000,000**		39,000,000	480 (5,692.8)** (3x Result)
ANALYTE: TOTAL METALS																				
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (AC01-02) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-25) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (AC01-02) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-58) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-58) - ADJ CRQL or 3x Result (mg/kg)
Chromium	9.5		0.83	30.9 (3x Result)	16.6		0.84	30.9 (3x Result)	11		0.79	30.9 (3x Result)	**11.4**		0.89	8.1 (3x Result)	**11.2**		0.87	8.1 (3x Result)
Copper	**24.5**		0.83	11.1 (3x ADJ CRQL)	3.3		0.84	11.1 (3x Result)	4.8		0.79	11.1 (3x ADJ CRQL)	2.80		0.89	4.2 (3x Result)	2.8		0.87	4.2 (3x Result)
Manganese	**254**		1.2	56.7 (3x ADJ CRQL)	11.6		1.3	18.9 (3x Result)	42.9		1.2	56.7 (3x ADJ CRQL)	**13**		1.3	11.7 (3x Result)	**12.8**		1.3	11.7 (3x Result)
Mercury	**3.9**		0.51	0.11 (ADJ CRQL)	0.11	U	0.11	0.12 (ADJ CRQL)	0.022	UJ	0.11	0.11 (ADJ CRQL)	0.11	U	0.11	0.12 (ADJ CRQL)	0.11	U	0.11	0.12 (ADJ CRQL)
Nickel	**5.7**		0.42	4.2 (3x Result)	2.1		0.42	5.4 (3x Result)	2.8		0.39	4.2 (3x Result)	0.92		0.44	2.88 (3x Result)	0.71 (0.53)*	J+	0.43	2.88 (3x Result)
Silver	**0.7**		0.42	0.44 (ADJ CRQL)	0.42	U	0.42	0.4 (ADJ CRQL)	0.39	U	0.39	0.44 (ADJ CRQL)	0.44	U	0.44	0.49 (ADJ CRQL)	0.43	U	0.43	0.49 (ADJ CRQL)
Zinc	**49.1**		0.83	23.1 (3x Result)	3.3		0.84	11.1 (3x Result)	14.5		0.79	23.1 (3x Result)	2.5		0.89	3.9 (3x Result)	1.6		0.87	3.9 (3x Result)

KEY

Bkgd - Background
ADJ CRQL – Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/kg - Concentration in milligram per kilogram
Bold - Concentration detected above background adjusted contract required quantitation limit (CRQL)
U - Not detected at reported quantitation limit
J - Estimated value
L - Reported concentration is below the contract required quantitation limit (CRQL)
UJ - Estimated quantitation limit
^ - High biased. Actual concentration may be lower than the concentration reported
UJ - Estimated quantitation limit
+ - High biased. Actual concentration may be lower than the concentration reported

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 13-15 & 18). After adjusting the value for the qualified data, the adjusted value has remained the same as the original value reported or decreased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative decrease in contamination over background.

** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has increased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.

Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 247 & 345	Ref. 7, pp. 247 & 345	Ref. 7, pp. 247 & 345	Ref. 7, pp. 247 & 345	Ref. 7, pp. 274 & 362
Laboratory Results	Ref. 7, pp. 222-223, 335, 339 & 341	Ref. 7, pp. 223-224, 335-336, 339 & 341	Ref. 7, pp. 224-225, 336, 339 & 341	Ref. 7, pp. 225-226, 336, 339 & 341	Ref. 7, pp. 235-236, 355 & 358
Data	Ref. 7, pp. 213-214, 217, 222-223, 330-331, 334-335, 339 & 341; Ref. 27, pp. 8 & 13-15; Ref. 45, pp. 11-15 & 205-207	Ref. 7, pp. 213-214, 217, 223-224, 330-331, 334-336, 339 & 341; Ref. 27, pp. 8 & 14-15; Ref. 45, pp. 16-20 & 208-210	Ref. 7, pp. 214-214, 217, 224-225, 330-331, 334, 336, 339 & 341; Ref. 27, pp. 8 & 13-15; Ref. 45, pp. 21-30 & 211-213	Ref. 7, pp. 213-214, 217, 225-226, 330-331, 334, 336, 339 & 314; Ref. 27, pp. 8 & 13-15; Ref. 45, pp. 31-34 & 214-216	Ref. 7, pp. 213-214, 217, 235-236, 350-351, 354-355 & 358; Ref. 27, pp. 8, 14-15 & 18; Ref. 45, pp. 65-74 & 226-228

Table 7 (continued) – Source 4 – Areas of Creosote Solids and Soil Contamination

Sample Number:	ACS07-10				ACS10-02				ACS10-58				ACS10-10			
EPA Sample Number:	F9DC2/MF9DC2				F9DA8/MF9DA8				F9DA9/MF9DA9				F9DC5/MF9DC5			
Sample Location:	AC07				AC10				AC10				AC10			
Sample Description	Between Pond & Concrete Structure				Creosote Area				Creosote Area				Creosote Area			
Sample Depth	8 - 10 foot Interval				0 - 2 foot interval				5 - 8 foot interval				8 - 10 foot interval			
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-10) – ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (AC01-02) - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-58) - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-10) - ADJ CRQL or 3x Result (µg/kg)
ANALYTE: SVOCs																
1,1'-Biphenyl	**86,000 (8,600)***	J	1,900	220 (ADJ CRQL)	210	U	210	200 (ADJ CRQL)	**520**		200	180 (ADJ CRQL)	**44,000 (4,400)***	J	2,100	220 (ADJ CRQL)
2-Methylnaphthalene	**69,000,000**		19,000,000	220 (ADJ CRQL)	**320**		210	200 (ADJ CRQL)	**4,000 (400)***	J	2,000	180 (ADJ CRQL)	**27,000,000**		11,000,000	220 (ADJ CRQL)
Acenaphthene	**50,000,000**		19,000,000	220 (ADJ CRQL)	**600**		210	200 (ADJ CRQL)	**4,800 (480)***	J	2,000	180 (ADJ CRQL)	**21,000,000**		11,000,000	220 (ADJ CRQL)
Acenaphthylene	**13,000**		1,900	220 (ADJ CRQL)	**860**		210	200 (ADJ CRQL)	**290**		200	180 (ADJ CRQL)	**7,200**		2,100	220 (ADJ CRQL)
Anthracene	**30,000,000**		19,000,000	220 (ADJ CRQL)	**4,200 (420)***	J	4,100	200 (ADJ CRQL)	5,000 (500)*	J	2,000	1,320 (3x Result)	**60,000,000 (6,000,000)***	J	11,000,000	220 (ADJ CRQL)
Benzo (a) anthracene	**140,000 (14,000)***	J	1,900	220 (ADJ CRQL)	**19,000 (1,900)***	J	4,100	200 (ADJ CRQL)	**1,800**		200	180 (ADJ CRQL)	6,400,000 (6,400,000)*	LJ	11,000,000	220 (ADJ CRQL)
Benzo (a) pyrene	**60,000 (6,000)***	J	1,900	220 (ADJ CRQL)	**13,000 (1,300)***	J	4,100	200 (ADJ CRQL)	1,700		200	330 (3,300)** (3x Result)	**19,000**		2,100	220 (ADJ CRQL)
Benzo (b) fluoranthene	**74,000 (7,400)***	J	1,900	420 (4,200)** (3x Result)	**23,000 (2,300)***	J	4,100	200 (ADJ CRQL)	2,500		200	510 (5,100)** (3x Result)	**21,000**		2,100	420 (4,200)** (3x Result)
Benzo (g,h,i) perylene	**16,000**		1,900	220 (ADJ CRQL)	**7,100 (710)***	J	4,100	200 (ADJ CRQL)	**920**		200	180 (ADJ CRQL)	**5,500**		2,100	220 (ADJ CRQL)
Benzo (k) fluoranthene	**58,000 (5,800)***	J	1,900	220 (ADJ CRQL)	**20,000 (2,000)***	J	4,100	200 (ADJ CRQL)	**1,200**		200	540 (3x Result)	**19,000**		2,100	220 (ADJ CRQL)
Carbazole	**22,000,000 (22,000,000)***	LJ	38,000,000	430 (ADJ CRQL)	**860**		400	390 (ADJ CRQL)	**2,500**		390	350 (ADJ CRQL)	**69,000 (6,900)***	J	4,100	430 (ADJ CRQL)
Chrysene	**13,000,000 (13,000,000)***	LJ	19,000,000	220 (ADJ CRQL)	**22,000 (2,200)***	J	4,100	200 (ADJ CRQL)	1,800		200	360 (3,600)** (3x Result)	**44,000 (4,400)***	J	2,100	220 (ADJ CRQL)
Dibenzo (a,h) anthracene	**6,800**		1,900	220 (ADJ CRQL)	**2,600**		210	200 (ADJ CRQL)	**420**		200	180(ADJ CRQL)	**2,200**		2,100	220 (ADJ CRQL)
Dibenzofuran	**43,000,000**		19,000,000	220 (ADJ CRQL)	**490**		210	200 (ADJ CRQL)	**5,300 (530)***	J	2,000	180 (ADJ CRQL)	**19,000,000**		11,000,000	220 (ADJ CRQL)
Fluoranthene	**65,000,000**		38,000,000	430 (ADJ CRQL)	**50,000 (5,000)***	J	8,000	390 (ADJ CRQL)	11,000 (1,100)*	J	3,900	690 (6,900)** (3x Result)	**28,000,000**		20,000,000	430 (ADJ CRQL)
Fluorene	**51,000,000**		19,000,000	220 (ADJ CRQL)	**420**		210	200 (ADJ CRQL)	**5,400 (540)***	J	2,000	180 (ADJ CRQL)	**25,000,000**		11,000,000	220 (ADJ CRQL)
Indeno (1,2,3-cd) pyrene	**20,000**		1,900	220 (ADJ CRQL)	**8,600 (860)***	J	4,100	200 (ADJ CRQL)	**1,100**		200	180 (ADJ CRQL)	**6,700**		2,100	220 (ADJ CRQL)
Naphthalene	**140,000,000**		19,000,000	220 (ADJ CRQL)	**1,200**		210	200 (ADJ CRQL)	**7,100 (710)***	J	2,000	180 (ADJ CRQL)	**110,000,000**		11,000,000	220 (ADJ CRQL)
Phenanthrene	**94,000,000**		19,000,000	220 (ADJ CRQL)	**4,800 (480)***	J	4,100	200 (ADJ CRQL)	19,000 (1,900)*	J	2,000	420 (4,200)** (3x Result)	**63,000,000**		11,000,000	220 (ADJ CRQL)
Pyrene	**36,000,000**		19,000,000	220 (ADJ CRQL)	**42,000 (3,541.3)***	J	4,100	200 (ADJ CRQL)	6,300 (531.2)*	J	2,000	480 (5,692.8)** (3x Result)	**15,000,000**		11,000,000	220 (ADJ CRQL)
ANALYTE: TOTAL METALS																
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-10) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (AC01-02) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-58) – ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-10) - ADJ CRQL or 3x Result (mg/kg)
Chromium	3		0.8	12.6 (3x Result)	18.8		0.84	30.9 (3x Result)	**11.5**		0.81	8.1 (3x Result)	4		0.86	12.6 (3x Result)
Lead	3.4		0.4	15.9 (3x Result)	**39.1**		0.42	38.4 (3x Result)	5.1		0.4	14.1 (3x Result)	3.6		0.43	15.9 (3x Result)
Manganese	3.3		1.2	6.9 (3x Result)	**96.4**		1.2	56.7 (3x Result)	10.9		1.2	11.7 (3x Result)	6.1		1.2	6.9 (3x Result)
Mercury	0.11	U	0.11	0.11 (ADJ CRQL)	**1.9**		0.11	0.06 (0.12)** (3x Result)	0.12	U	0.12	0.12 (ADJ CRQL)	0.095	U	0.095	0.11 (ADJ CRQL)
Zinc	0.8	U	0.8	5.4 (3x Result)	**28.8**		0.84	23.1 (3x Result)	3.1		0.81	3.9 (3x Result)	0.86	U	0.86	5.4 (3x Result)

KEY

Bkgd - Background
ADJ CRQL – Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/kg - Concentration in milligram per kilogram
Bold - Concentration detected above background adjusted contract required quantitation limit (CRQL)
U - Not detected at reported quantitation limit
J - Estimated value
L -Reported concentration is below the contract required quantitation limit (CRQL)

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 13-15 & 18). After adjusting the value for the qualified data, the adjusted value has remained the same as the original value reported or decreased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative decrease in contamination over background.
** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has increased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 274 & 362	Ref. 7, pp. 247 & 345	Ref. 7, pp. 247 & 345	Ref. 7, pp. 274 & 362
Laboratory Results	Ref. 7, pp. 259-260, 355-356 & 358	Ref. 7, pp. 226-227, 336, 339 & 341	Ref. 7, pp. 227-228, 336, 339 & 341	Ref. 7, pp. 263-264, 356 & 358-359
Data	Ref. 7, pp. 253-254, 257, 259-260, 350-351, 354, 355-356; Ref. 27, pp. 8 & 14; Ref. 45, pp. 108-117 & 241-243	Ref. 7, pp. 213-214, 217, 226-227, 330-331, 334, 336, 339 & 341; Ref. 27, pp. 8 & 14-15; Ref, 45, pp. 35-44 & 217-219	Ref. 7, pp. 213-214, 217, 227-228, 330-331, 334, 336, 339 & 341; Ref. 27, pp. 8 & 13-15; Ref. 45, pp. 45-54 & 220-222	Ref. 7, pp. 253-254, 257, 263-264, 350-351, 354, 356 & 358-359; Ref. 27, pp. 8 & 14; Ref. 45, pp. 139-148 & 250-252

Table 7 (continued) – Source 4 – Areas of Creosote Solids and Soil Contamination

Sample Number:	ACS19-10 (Duplicate of ACS10-10)				ACS11-02				ACS11-58			
EPA Sample Number:	F9DB7/MF9DB7				F9DB0/MF9DB0				F9DC6/MF9DC6			
Sample Location:	AC19				AC11				AC11			
Sample Description	Creosote Area				Creosote Area				Creosote Area			
Sample Depth	8 - 10 feet interval				0 - 2 feet interval				5 - 8 feet interval			
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-10) - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (AC01-02) – ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd (ACS01-58) – ADJ CRQL or 3x Result (µg/kg)
ANALYTE: SVOCs												
1,1'-Biphenyl	**120,000 (12,000)***	J	190	220 (ADJ CRQL)	190	U	190	200 (ADJ CRQL)	**25,000**		2,400	180(ADJ CRQL)
2-Methylnaphthalene	**6,000,000**		3,800,000	220 (ADJ CRQL)	140 (140)*	LJ	190	200 (ADJ CRQL)	**3,800,000**		1,200,000	180 (ADJ CRQL)
Acenaphthene	**5,800,000**		3,800,000	220 (ADJ CRQL)	**890**		190	200 (ADJ CRQL)	**3,000,000**		1,200,000	180 (ADJ CRQL)
Acenaphthylene	190	UJ	190	220 (ADJ CRQL)	**2,100**		190	200 (ADJ CRQL)	**4,900**		2,400	180 (ADJ CRQL)
Anthracene	**3,800,000**		3,800,000	220 (ADJ CRQL)	**12,000**		9,600	200 (ADJ CRQL)	**1,900,000**		1,200,000	1,320 (3x Result)
Benzo (a) anthracene	**130,000 (13,000)***	J	190	220 (ADJ CRQL)	**38,000**		9,600	200 (ADJ CRQL)	**1,400,000**		1,200,000	180 (ADJ CRQL)
Benzo (a) pyrene	**84,000 (8,400)***	J	190	220 (ADJ CRQL)	**36,000**		9,600	200 (ADJ CRQL)	**14,000**		2,400	330 (3,300)** (3x Result)
Benzo (b) fluoranthene	**73,000 (7,300)***	J	190	420 (4,200)** (3x Result)	**50,000**		9,600	200 (ADJ CRQL)	**17,000**		2,400	510 (5,100)** (3x Result)
Benzo (g,h,i) perylene	**13,000 (1,300)***	J	190	220 (ADJ CRQL)	**14,000**		900	200 (ADJ CRQL)	**4,700**		2,400	180 (ADJ CRQL)
Benzo (k) fluoranthene	**51,000 (5,100)***	J	190	220 (ADJ CRQL)	**49,000**		9,600	200 (ADJ CRQL)	**16,000**		2,400	540 (3x Result)
Bis(2-ethylhexyl)phthalate	190	UR	190	360 (3,600)** (3x Result)	**660**		190	200 (ADJ CRQL)	**2,400**	U	2,400	180 (ADJ CRQL)
Carbazole	**95,000 (9,500)***	J	360	430 (ADJ CRQL)	**1,700**		370	390 (ADJ CRQL)	**23,000**		4,600	350(ADJ CRQL)
Chrysene	**28,000 (2,800)***	J	190	220 (ADJ CRQL)	**34,000**		9,600	200 (ADJ CRQL)	**37,000**		2,400	360 (3,600)** (3x Result)
Dibenzo (a,h) anthracene	**9200 (920)***	J	190	220 (ADJ CRQL)	**11,000**		9,600	200 (ADJ CRQL)	**2,000 (2,000)***	LJ	2,400	180 (ADJ CRQL)
Dibenzofuran	**4,900,000**		3,800,000	220 (ADJ CRQL)	**790**		190	200 (ADJ CRQL)	**3,300,000**		1,200,000	180 (ADJ CRQL)
Fluoranthene	**11,000,000 (1,100,000)***	J	360	430 (ADJ CRQL)	**85,000 (8,500)***	J	19,000	390 (ADJ CRQL)	**6,100,000**		2,300,000	690 (6,900)** (3x Result)
Fluorene	**6,200,000**		3,800,000	220 (ADJ CRQL)	**950**		190	200 (ADJ CRQL)	**4,100,000**		1,200,000	180 (ADJ CRQL)
Indeno (1,2,3-cd) pyrene	**16,000 (1,600)***	J	190	220 (ADJ CRQL)	**18,000**		9,600	200 (ADJ CRQL)	**5,800**		2,400	180 (ADJ CRQL)
Naphthalene	**29,000,000**		3,800,000	220 (ADJ CRQL)	200		190	200 (ADJ CRQL)	**6,000,000**		1,200,000	180 (ADJ CRQL)
Phenanthrene	**17,000,000**		3,800,000	220 (ADJ CRQL)	**35,000**		9,600	200 (ADJ CRQL)	**12,000,000**		1,200,000	420 (4,200)** (3x Result)
Pyrene	**4,600,000**		3,800,000	220 (ADJ CRQL)	**140,000**		9,600	200 (ADJ CRQL)	**3,300,000**		1,200,000	480 (5,692.8)** (3x Result)
ANALYTE: TOTAL METALS												
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-10) - ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (AC01-02) – ADJ CRQL or 3x Result (mg/kg)	Result (mg/kg)	Flag	ADJ CRQL (mg/kg)	Bkgd (ACS01-58) – ADJ CRQL or 3x Result (mg/kg)
Chromium	4.5		0.83	12.6 (3x Result)	13.3		0.79	30.9 (3x Result)	**9.2**		0.82	8.1 (3x Result)
Copper	0.79 (0.79)*	LJ	0.83	4.5 (3x Result)	3.6		0.79	11.1 (3x Result)	1.4		0.82	4.2 (3x Result)
Lead	3.3		0.42	15.9 (3x Result)	5.7		0.39	38.4 (3x Result)	4.2		0.41	14.1 (3x Result)
Manganese	4.4		1.2	6.9 (3x Result)	15.1		1.2	56.7 (3x Result)	5.6		1.2	11.7 (3x Result)
Mercury	0.1	U	0.1	0.11 (ADJ CRQL)	0.041 (0.041)*	LJ	0.1	0.06 (0.12)** (3x Result)	0.11	U	0.11	0.12 (ADJ CRQL)
Nickel	0.42	U	0.42	3.6 (3x Result)	2.4		0.39	4.2 (3x Result)	0.57 (0.42)*	J+	0.41	2.88 (3x Result)
Zinc	1.3		0.83	5.4 (3x Result)	11.6		0.79	23.1 (3x Result)	0.82	U	0.82	3.9 (3x Result)

KEY

BKGD - Background
ADJ CRQL – Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/kg - Concentration in milligram per kilogram
Bold - Concentration detected above background adjusted contract required quantitation limit (CRQL)
U - Not detected at reported quantitation limit
J - Estimated value
L -Reported concentration is below the contract required quantitation limit (CRQL)
R - Result is not useable
'+ - High biased. Actual concentration may be lower than the concentration reported

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 13-15 & 18). After adjusting the value for the qualified data, the adjusted value has remained the same as the original value reported or decreased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative decrease in contamination over background.

** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has increased significantly from the original value reported. Although not required by the HRS or fact sheet, qualified data are adjusted to demonstrate the relative increase in contamination.

Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7, pp. 249 & 362	Ref. 7, pp. 247 & 345	Ref. 7, pp. 274 & 362
Laboratory Reports	Ref. 7, pp. 236-237, 355 & 358	Ref. 7, pp. 228-229, 336-337 & 339-341	Ref. 7, pp. 264-265, 356 & 358-359
Data	Ref. 7, pp. 213-214, 217, 350-351, 354-355 & 358; Ref. 27, pp. 8, 14-14 & 18; Ref. 45, pp. 75- 84 & 229-231	Ref. 7, pp. 213-214, 217, 228-229, 330-331, 334, 336-337 & 339-341; Ref. 27, pp. 8,13, 15 & 18; Ref. 45, pp. 55-64 & 223-225	Ref. 7, pp. 253-254, 257, 350-351, 354, 356 & 358-359; Ref. 27, pp. 8, 15 & 18; Ref. 45, pp. 149-158 & 253-255

2.2.3 HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment

Gas release to air: The air migration pathway was not scored; therefore, gas release to air containment was not evaluated.

Particulate release to air: The air migration pathway was not scored; therefore, particulate containment was not evaluated.

Release to ground water: The ground water pathway was not scored; therefore, ground water containment was not evaluated.

Release via overland migration: Source area No. 4 receives surface runoff and drainage from former facility operations to include the drip area, washout area, creosote processing basin area, and the waste pit (Ref. 6, pp. 65 & 93). There is no historical data to indicate that facility operations included waste handling, disposal practices or facility permits (Ref. 4, p. 8; Ref. 12, p. 1; Ref. 26, p. 4). The containment factor value for Source No. 4 is 10 due to evidence of hazardous substance migration from the source area, and no observed maintained engineered cover or functioning and maintained run-on control system and runoff management system (Ref. 1, Table 4-2).

Because containment for this source is greater than zero, the following substances associated with the source can migrate via the Surface Water Migration Pathway (Ref. 1, Sec. 4.1.2.1.2.1.1):

- 1,1'-Biphenyl
- 2-Methylnaphthalene
- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo (a) anthracene
- Benzo (a) pyrene
- Benzo (b) fluoranthene
- Benzo (g,h,i) perylene
- Benzo (k) fluoranthene
- Bis(2-ethylhexyl)phthalate
- Carbazole
- Chromium
- Chrysene
- Copper
- Dibenzo (a,h) anthracene
- Dibenzofuran
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Silver
- Zinc

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1. Hazardous Constituent Quantity – Tier A

The total Hazardous Constituent Quantity for Source 4 could not be adequately determined according to the HRS requirements; that is, the total mass of all CERCLA hazardous substances in the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.1). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, etc.) are not available to adequately calculate the total or partial mass of all CERCLA hazardous substances in the source and the associated releases from the source. Therefore, there is insufficient information to calculate a total or partial Hazardous Constituent Quantity estimate for Source 4 with reasonable confidence. Scoring proceeds to the evaluation of Tier B, Hazardous wastestream quantity (Ref. 1, Sec. 2.4.2.1.1).

Hazardous Constituent Quantity Value (S): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.2. Hazardous Wastestream Quantity – Tier B

The total Hazardous Wastestream Quantity for Source 4 could not be adequately determined according to the HRS requirements; that is, the total mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.2). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are not available to adequately calculate the total or partial mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and the associated releases from the source. Therefore, there is insufficient information to adequately calculate or extrapolate a total or partial Hazardous Wastestream Quantity estimate for Source 4 with reasonable confidence. Scoring proceeds to the evaluation of Tier C, Volume (Ref. 1, Sec. 2.4.2.1.2).

Hazardous Wastestream Quantity Value (W): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.3. Volume – Tier C

LDEQ in cooperation with CMC and ATSF, from February 1994 to 1996, contracted with Louisiana State University who prepared several versions of a bioremediation work plan to remediate the creosote contaminated soils at the site (Ref. 8, p. 5; Ref. 21, p. 5). The work plan proposed transporting contaminated soils to a soil pile remediation unit (SPRU) where the soils would be biologically treated (Ref. 21, p. 3). An approximate total of 1,250 yd^3 of contaminated soil from the creosote wastewater holding pit and run-off contaminated soil adjacent to the Santa Fe railway ROW were proposed to be processed in the SPRU (Ref. 21, p. 5).

In September 2002, Acadian collected eight (8) soil borings through AOC #4 based upon the downgradient topographic nature of the study area, the visual evidence of surface impact, the location of the western property boundary, and the bottom drainage basin located at the southern end of the study area (Ref. 4, pp. 14-16 & 32). TPH constituents in the collected soil samples exceeded the LDEQ RECAP industrial soil screening standards and their corresponding TPH values (Ref. 4, pp. 19-20 & 42-76; Ref. 6, pp. 26-37, 86, 94-114, 116 & 118-119). Acadian's proposed methodology for addressing the impacted soils was over-excavation of impacted areas and treatment of the impacted media (Ref. 4, p. 18). The proposed excavation within AOC #4 consists of 35,700 ft^2 (0.82) acres to a two (2) foot depth resulting in a proposed excavation volume of 2,644 yd^3 or 3,438 yd^3 of soil to be remediated (Ref. 4, pp. 17, 22-23 & 36).

In the 2003 Voluntary Remedial Action Plan, Acadian designated contaminated surface soils as AOC #4, primarily downgradient of the old drip area and the wash pit area, and was approximately ½ acre in size (Ref. 4, pp. 11 & 14). Historical plans and the Acadian site inspections indicate the area is void of any structures from the previous creosote operations (Ref. 4, p. 14). Previous visual site inspections by LDEQ and Acadian personnel revealed considerable amounts of weathered creosote product on the ground surface primarily along the western property boundary (Ref. 4, p .14).

In April 2014 Acadian submitted a CAP that identified the area most necessary to undergo corrective action, a 7,500 ft^2 AOC, bound to the east by the westernmost portion of the abandoned concrete retort house basins and to the west by the western bankline of the abandoned waste pit (Ref. 26, pp. 6-7 & 16-17). The AOC outside of the waste pit has an approximate area of 7,500 ft^2, and based on a six (6) inch removal depth that would be placed into the waste of solidification, an approximate total of 3,750 ft^3 (Ref. 26, p. 8) .

Additionally, LDEQ in its Notice of Potential Liability to Kerr-McGee Chemical Corporation stated that the pathway of hardened creosote and underlying contaminated soils beginning along the west side of the pit and gently sloping southward downgradient from the pit paralleling the east side of a one track railroad spur owned by BNSF is approximately 400 feet long and 10-20 feet wide, and lies mostly within BNSF 50 foot ROW from the track centerline (Ref. 14, pp. 1-2). In a 1996 Soil Remediation work plan it was noted that visual evidence revealed surface impact to the adjoining property and stream bed (Ref. 4, p. 9). The creosote impact extends approximately 250 feet along the eastern ROW and is approximately 20-25 feet wide (Ref. 8, p. 5). During the 2016 ESI no visual observation of creosote surface impact was evident to the adjoining property, but an observed release by chemical analysis was documented revealing the same PAHs detected in the sources having impacted the contiguous site wetlands and adjoining streams (Ref. 39, pp. 53-58, 65 & 84-88).

Source No. 4 hazardous waste quantity evaluated two source areas of contaminated soil that have been aggregated based on having the same source type and having similar characteristic (Ref. 1, Sec. 4.2). The first area of contaminated soil being evaluated consists of the area between the concrete structure (Source No. 1) and the unlined wastewater pit (Source No. 3), and will adequately cover sample locations AC-05, AC-07, and AC-10 (Contaminated Soil Area 1) (Figure 3; Ref. 4, pp. 14, 22 & 35; Ref. 26, pp. 7-8, 16-17 & 19-20). The second area of contaminated soil being evaluated consists of a patch of contaminated soil located along the BNSF ROW adjacent to the western property boundary of CMC and north of a stream bed, and will include sample location AC-11 (Contaminated Soil Area 2) (Figure 3; Ref. 4, pp. 9, 32; Ref. 14, pp. 1-2).

Contaminated Soil Area 1

Using the estimate for the areas of soil contamination for the locations surrounding the facility of operations from the 2014 CAP, of 7,500 ft^2, and based on a six (6) inch removal depth, the volume of contaminated soils would be 3,750 ft^3 (Ref. 4, pp. 14, 22, 35; Ref. 26, pp. 8, 16-17 & 19-20). The evaluation equation applied for the conversion of cubic feet (ft^3) to cubic yards (yds^3) is 1 yd^3 = 27 ft^3. The estimated capacity of the contaminate soils surrounding the facility operations is 138.89 yd^3.

3,750 cubic feet (ft^3) x 1 cubic yard (yd^3) ÷ 27 cubic feet (ft^3) = 138.89 yd^3

Contaminated Soil Area 2

Additionally, using the estimate for the area of soil contamination to the adjoining property paralleling the east side of a one track railroad spur owned by BNSF and a stream bed 400 feet long, 10 feet wide and based on a six (6) inch removal depth the area of contaminated soils would be 2,000 ft^3 (Ref. 4, p. 9; Ref. 14, pp. 1-2). The evaluation equation applied for the conversion of cubic feet (ft^3) to cubic yards (yds^3) is 1 yd^3 = 27 ft^3. The estimated capacity of the contaminated soil along the track railroad spur owned by BNSF and stream bed is 74.07 yd^3.

2,000 cubic feet (ft^3) x 1 cubic yard (yd^3) ÷ 27 cubic feet (ft^3) = 74.07 yd^3

Source No. 4 Volume (Contaminated Soil Area 1 & 2)

The total estimated volume of the contaminated soil surrounding the facility operations, along the track railroad spur owned by BNSF and the stream bed is 212.96 yd^3.

138.89 yd^3 + 74.07 yd^3 = 212.96 yd^3

The hazardous waste quantity evaluation equation for contaminated soil is V/2,500 (Ref. 1, Table 2-5). The volume source will be assigned a volume hazardous waste quantity value of 0.09.

212.96 yd^3 ÷ 2,500 = 0.09

Volume of source (yd^3): 212.96
Reference(s): Ref. 1, Table 2-5
Volume Assigned Value: 0.09

2.4.2.1.4. Area – Tier D

Tier D, An area was not calculated for Source 4 since the volume was estimated. Therefore, according to HRS, the area is not calculated (Ref. 1, Sec. 2.4.2.1.3 and 2.4.2.1.4).

Area of Source No. 4 in square feet (ft^2): Not Applicable
Area Assigned Value: 0
References: Ref. 1, Sec. 2.4.2.1.4

2.4.2.1.5. Source Hazardous Waste Quantity Value

Source No. 4, Areas of Creosote Solids and Soil Contamination

Measures	Surface Water, Ground Water and Air Pathways
Tier A	NC
Tier B	NC
Tier C	0.09
Tier D	0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	0.09

NC: Not Calculated

The highest value assigned to either Tier A, Tier B, Tier C, or Tier D is assigned as the Source No. 4 Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5). The highest value assigned is Tier C.

Source No. 4 Hazardous Waste Quantity Value: 0.09

2.2.1 SOURCE IDENTIFICATION – SOURCE 5

The following information corresponds to the fifth source identified for this documentation record.

Number of source: 5

Name of source: Creosote Solids

Source Type: Pile

Description and Location of Source: A pile of weathered creosote waste located north of former facility operations in the locality of the old railroad spur on CMC property (Ref. 4, pp. 28-29; Ref. 7, pp. 44, 48, 84, 145, 182-183 & 549; Figure 3). Areas of creosote solids and soil contamination were observed at the site during the PA (Ref. 13, pp. 19, 58-60 & 76-77). This observation confirmed what was reported in 2003 during Acadian Engineers & Environmental Consultants environmental site investigation, and was considered AOC #1, the old drip area (Ref. 4, pp. 11-12, 20-21 & 29). Physical characteristics of the weathered creosote material are an approximate 1-4 inch thick layer on top of the surface soils, with textural characteristics of a dry hard mass (Ref. 6, pp. 154-155, 159 & 162; Ref. 26, p. 6).

In the Voluntary Remedial Action Plan Acadian designated the old drip area as AOC #1, which consisted of the former railroad spur (Ref. 4, pp. 11 & 28; Ref. 6, pp. 65 & 93). Previous visual site inspections of this area by LDEQ and Acadian personnel revealed surface conditions indicative of previous creosote spillage (Ref. 4, p. 11; Ref .6, pp. 140-141). In September 2002 subsurface sampling in the old drip area along the old railroad spur was performed (Ref. 4, p 11). Acadian personnel performed five (5) soil borings and acquired six (6) soil samples from the five (5) discrete locations, acquiring soil from either ground surface to two (2) feet bgs or from two (2) feet to four (4) feet bgs (Ref. 4, pp. 11 & 29; Ref. 6, pp. 69-70). The soil sampling was performed in an effort to determine the horizontal and vertical extent of impact to the shallow soils (Ref. 4, p. 12). Three (3) soil borings were performed in the approximate center of the abandoned railroad spur, and one (1) soil boring was performed approximately 30 feet from the abandoned railroad spur centerline in an effort to assess the potential for horizontal migration of previous spillage (Ref. 4, pp. 12 & 29). Hazardous substance associated with the old drip area, AOC #1, included acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenzo (a,h) anthracene, fluoranthene, indeno (1,2,3-cd) pyrene, phenanthrene and pyrene (Ref. 4, pp. 11-12 & 48).

Of the five (5) soil samples collected within AOC#1, along the old railroad spur, one (1) sample revealed concentrations of benzopyrene (sic) in excess of RECAP screening standards for industrial soil (Ref. 4, pp. 20 & 29). Due to limiting amount of analytical data by which to establish isocontours, the proposed limits of excavation were primarily established based upon property features and characteristics (Ref. 4, p. 20). The previously identified visual area of impact was the drip area of the old railroad spur consequently resulting in residual surface spillage of creosote (Ref. 4, p. 20). Due to this, the limits of excavation for AOC#1 were limited to the immediate area of the abandoned railroad spur (Ref. 4, pp. 20-21 & 33). The proposed excavation consisted of a 100 foot x 8 foot area at a two (2) foot depth resulting in an in-place volume of 59 cubic yards and an excavation/remediation volume of 77 cubic yards (Ref. 4, pp. 21 & 33).

During the June 2015 EPA SI a waste sample was collected from one (1) pile of weathered creosote solids located in the old drip area, which consisted of the former railroad spur (Figure 3; Ref. 4, pp. 28-29; Ref. 7, pp. 44 & 84). The waste sample was collected using a trowel and transferred directly to the sample containers using the procedure in the EPA Environmental Response Team (ERT) Standard Operating Procedure (SOP) 2012, modified for the waste sample collected (Ref. 7, pp. 23-24, 44, 84, 182 & 436-449). The following waste sample was collected (Ref. 7, p. 44, 84, 145 & 549; Figure 3):

- Sample Location AC-26, Sample ACS26-06; collected from a creosote pile at 0 to 2 feet bgs

The waste sample was analyzed for TCL SVOCS by EPA CLP SOW SOM02.2 and for TAL total metals/mercury by EPA CLP SOW ISM02.2. Organic analyses was performed by KAP Technologies Inc. located in The Woodlands, Texas, and inorganic analysis was performed by Chemtech Consulting Group located in Mountainside, New Jersey. All data from analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 27, 69-70, 220-230, 225-237, 259-260, 263-265, 335-341 & 355-359).

The waste sample of weathered creosote solids from the source area of the former railroad spur detected PAHs such as 2-methylnaphthalene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, naphthalene, phenanthrene and pyrene were detected above release criteria (Ref. 7, pp. 48, 95 & 266-268; Table 8). While the increase in concentration is not required to associate the substance with the source, it does demonstrate the level in the waste sample is significantly above ADJ CRQLs.

Metal concentrations were also detected in the soil samples including chromium, copper, lead, manganese, mercury, nickel, and zinc greater than release criteria (Ref. 7, pp. 48, 95 & 357-358; Table 8). Again, while this increase in concentration is not required to associate the substances with the source, it does demonstrate the level in the soil samples are significantly above ADJ CRQLs.

2.2.2 HAZARDOUS SUBSTANCES ASSOCIATED WITH THE SOURCE

PAHs such as 2-methylnaphthalene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, naphthalene, phenanthrene and pyrene were detected in an area of creosote solids sampling located in the approximate area of the old drip area, which consisted of the former railroad spur (Table 8). These constituents were also detected in other sources at American Creosote DeRidder including the concrete structure, the oil/water separator and the unlined wastewater pit (Sources 1, 2 and 3, respectively) (Tables 3, 4, 5 & 6).

In addition, metal concentrations detected in the area of creosote solids included chromium, copper, lead, manganese, mercury, nickel, and zinc (Table 8).

Table 8 – Source 5 – Creosote Pile

Sample Number:	ACS26-06		
EPA Sample Number:	F9DC8/MF9DC8		
Sample Location:	AC26		
Sample Description	Creosote Pile		
Sample Depth	0 - 2 feet interval		
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)
ANALYTE: SVOCs			
2-Methylnaphthalene	**300**		210
Acenaphthylene	**1,500**		210
Anthracene	**2,900**		210
Benzo (a) anthracene	**16,000**		10,000
Benzo (a) pyrene	**16,000**		10,000
Benzo (b) fluoranthene	**26,000**		10,000
Benzo (k) fluoranthene	**24,000**		10,000
Carbazole	**1,100**		410
Chrysene	**25,000**		10,000
Dibenzo (a,h) anthracene	**3,200**		210
Dibenzofuran	**540**		210
Fluoranthene	**31,000**		20,000
Naphthalene	**960**		210
Phenanthrene	**2,500**		210
Pyrene	**32,000**		10,000
ANALYTE: TOTAL METALS			
	Result (mg/kg)	Flag	ADJ CRQL (mg/kg_
Chromium	**4.4**		0.8
Copper	**48.8**		0.8
Lead	**67**		0.4
Manganese	**254**		1.2
Mercury	**0.26**		0.1
Nickel	**5.3**		0.4
Zinc	**57.8**		0.8
KEY			
ADJ CRQL – Adjusted contract required quantitation limit µg/kg - Concentration in microgram per kilogram mg/kg - Concentration in milligram per kilogram **Bold** - Concentration detected above adjusted contract required quantitation limit (CRQL)			
REFERNCES			
Chain of Custody	Ref. 274 & 363		
Laboratory Reports	Ref. 7, pp. 266-268 & 357-359		
Data	Ref. 7, pp. 253-254, 257, 350-351, 354 & 357-359; Ref. 45, pp. 169-178 & 259-261		

2.2.3 HAZARDOUS SUBSTANCES AVAILABLE TO A PATHWAY

Containment

Gas release to air: The air migration pathway was not scored; therefore, gas release to air containment was not evaluated.

Particulate release to air: The air migration pathway was not scored; therefore, particulate containment was not evaluated.

Release to ground water: The ground water pathway was not scored; therefore, ground water containment was not evaluated.

Release via overland migration: Source area No. 5 is a pile of creosote solid observed during the PA and sampled during the SI (Ref. 7, pp. 44, 84, 145 & 549; Ref. 13, pp. 19, 58-60 & 76-77). There is no historical data to indicate that facility operations included waste handling, disposal practices or facility permits (Ref. 4, p. 8; Ref. 12, p. 1; Ref. 26, p. 4). The containment factor value for Source No. 5 is 10 due to no observed maintained engineered cover or functioning and maintained run-on control system and runoff management system, or any observed associated containment features (Ref. 1, Table 4-2).

Because containment for this source is greater than zero, the following substances associated with the source can migrate via the Surface Water Migration Pathway (Ref. 1, Sec. 4.1.2.1.2.1.1):

- 2-Methylnaphthalene
- Acenaphthylene
- Anthracene
- Benzo (a) anthracene
- Benzo (a) pyrene
- Benzo (b) fluoranthene
- Benzo (k) fluoranthene
- Carbazole
- Chromium
- Chrysene
- Copper
- Dibenzo (a,h) anthracene
- Dibenzofuran
- Fluoranthene
- Lead
- Manganese
- Mercury
- Naphthalene
- Nickel
- Phenanthrene
- Pyrene
- Zinc

2.4.2 HAZARDOUS WASTE QUANTITY

2.4.2.1.1. Hazardous Constituent Quantity – Tier A

The total Hazardous Constituent Quantity for Source 5 could not be adequately determined according to the HRS requirements; that is, the total mass of all CERCLA hazardous substances in the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.1). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, etc.) are not available to adequately calculate the total or partial mass of all CERCLA hazardous substances in the source and the associated releases from the source. Therefore, there is insufficient information to calculate a total or partial Hazardous Constituent Quantity estimate for Source 5 with reasonable confidence. Scoring proceeds to the evaluation of Tier B, Hazardous wastestream quantity (Ref. 1, Sec. 2.4.2.1.1).

Hazardous Constituent Quantity Value (S): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.2. Hazardous Wastestream Quantity – Tier B

The total Hazardous Wastestream Quantity for Source 5 could not be adequately determined according to the HRS requirements; that is, the total mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and releases from the source is not known and cannot be estimated with reasonable confidence (Ref. 1, Sec. 2.4.2.1.2). Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are not available to adequately calculate the total or partial mass of all hazardous waste streams and CERCLA pollutants and contaminants for the source and the associated releases from the source. Therefore, there is insufficient information to adequately calculate or extrapolate a total or partial Hazardous Wastestream Quantity estimate for Source 5 with reasonable confidence. Scoring proceeds to the evaluation of Tier C, Volume (Ref. 1, Sec. 2.4.2.1.2).

Hazardous Wastestream Quantity Value (W): Not Calculated
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.3. Volume – Tier C

Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are available to adequately calculate the volume associated with the creosote pile and any associated releases from the source. There is insufficient data (lack of creosote pile dimensions) to calculate a Hazardous Waste Quantity score based on Volume – Tier C; therefore, the Source Hazardous Waste Quantity score will be defaulted to Area – Tier D (Ref. 1, Sec. 2.4.2.1.3). As a result, the evaluation of hazardous waste quantity proceeds to the evaluation of Tier D, area (Ref. 1, Sec. 2.4.2.1.3).

Hazardous Waste Volume Quantity Value (V): 0
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.4. Area – Tier D

Insufficient historical and current data (manifests, potentially responsible party [PRP] records, State records, permits, waste concentration data, annual reports, etc.) are available to adequately calculate the volume associated with the creosote pile and the associated releases from the source. There is insufficient data (lack of creosote pile dimensions) to reasonably or accurately estimate a Hazardous Waste Quantity score based on Area – Tier D. However, visual site inspections by LDEQ and Acadian personnel revealed surface conditions indicative of creosote spillage (Ref. 4, p. 11; Ref .6, pp. 140-141). During the June 2015 EPA SI, a waste sample was collected from a pile of weathered creosote solids located in the old drip area, which consisted of the former railroad spur (Figure 3; Ref. 4, pp. 28-29; Ref. 7, pp. 44 & 84). At Sample location AC-26, sample ACS26-06, collected from a creosote pile at 0 to 2 feet bgs, documented the presence of PAHs such as 2-methylnaphthalene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, naphthalene, phenanthrene and pyrene (Ref. 7, pp. 48, 95 & 266-268; Table 8); therefore, the Source Hazardous Waste Quantity area is estimated to be greater than zero, but exact value is unknown (Ref. 1, Sec. 2.4.2.1.4).

Hazardous Waste Area Quantity Value (A): >0
Are the data complete for hazardous constituent quantity for this area? No

2.4.2.1.5. Source Hazardous Waste Quantity Value

Source No. 5, Creosote Solids

Measures	Surface Water, Ground Water and Air Pathways
Tier A	NC
Tier B	NC
Tier C	0
Tier D	>0
Assigned Source Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5)	>0

NC: Not Calculated

The highest value assigned to either Tier A, Tier B, Tier C, or Tier D is assigned as the Source No. 5 Hazardous Waste Quantity Value (Ref. 1, Sec. 2.4.2.1.5). The highest value assigned is Tier D.

Source No. 5 Hazardous Waste Quantity Value: >0

SITE SUMMARY OF SOURCE DESCRIPTIONS

			Containment			
	Source Hazardous Waste Quantity Value				Air	
Source No.	Surface Water Migration Pathway	Soil Exposure and Subsurface Intrusion Pathway	Ground Water	Surface Water	Gas	Air Particulate
1	62.22	NS	NS	10	NS	NS
2	9.26	NS	NS	10	NS	NS
3	49.38	NS	NS	10	NS	NS
4	0.09	NS	NS	10	NS	NS
5	>0	NS	NS	10	NS	NS
Total	**120.95**					

NS: Not Scored

Other Possible Sources

Other possible sources at American Creosote DeRidder include the former structures in the wash pit area (Ref. 4, p .11; Ref. 6, p. 65; Ref. 25, p. 6). The wash pit was identified as an area of concern in the Voluntary Remedial Action Plan submitted by Acadian in December 2003 (Ref. 4, pp. 11-14 & 28; Ref. 6, pp. 65 & 93-94). The wash pit area was acknowledged and characterized as AOC #2 (Ref. 4, p. 11; Ref, 6, pp. 65 & 93-94).

The wash pit area, AOC #2, entailed an approximate seven (7) acre study area (Ref. 4, p. 12; Ref. 6, p. 70). The study area consists of the concrete structure, addressed as Source No. 1, which historical mapping indicates was the location of the Retort House (Ref. 4, p. 12; Ref. 6, p. 70). Additionally, AOC #2 consists of several other features as shown on historical plans and boring location map (Ref. 4, pp. 12, 28-30; Ref. 6, p. 70). Historical mapping indicates that these structures consisted of three (3) 30 foot storage tank, one (1) unknown structure, one (1) water tower, one (1) shop building, three (3) abandoned water wells, and one (1) deep water well (Ref. 4, pp. 12 & 28; Ref. 6, p. 70). Site visual inspections by LDEQ and Acadian personnel revealed stained surface soils and residual weathered creosote within AOC #2, namely between the retort structure and the western boundary of AOC #2 (Ref. 4, pp. 12-13). In September 2002 subsurface sampling in the wash pit area was performed (Ref. 4, p 13). Twelve (12) soil borings were performed throughout AOC #2 (Ref. 4, pp. 13 & 30; Ref. 6, p. 71). The soil boring placement was based upon previous visual site inspection findings and the nature of the topographical features within AOC #2; namely the considerable down gradient slope from the identified structure to the south (Ref. 4, p. 13; Ref. 6, pp. 144 & 150). Acadian personnel collected 13 soil samples from 12 discrete locations, acquiring soil from either ground surface to two (2) feet bgs or from two (2) feet to four (4) feet bgs or from six (6) feet to seven (7) feet bgs (Ref. 4, p. 13; Ref. 6, p. 71). Hazardous substances associated with the wash pit area, AOC #2, included acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenzo (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd)

pyrene, phenanthrene and pyrene (Ref. 4, pp. 11, 12-13, 21, 53 & 72).

Additionally, the laboratory analytical values of the soil samples acquired during the 2002 sampling event exceeded LDEQ RECAP for industrial screening standards and the corresponding TPH values for benzoanthracene (*sic*), benzopyrene (*sic*), benzoflouranthracene (*sic*), dibenzoanthracene (*sic*), idenopyrene (*sic*) and naphthalene (Ref. 4, pp. 19-20; Ref. 6, pp. 86 & 95-114). The proposed methodology for addressing the impacted media was over excavation of the impacted areas and treatment of the impacted media (Ref. 4, p. 18).

SURFACE WATER MIGRATION PATHWAY

4.1 OVERLAND/FLOOD MIGRATION COMPONENT

4.1.1.1 Definition of Hazardous Substance Migration Path for Overland/Flood Component

General Considerations

One probable point of entry (PPE) has been identified:

- The PPE is in a segment of contiguous Palustrine Freshwater Forested/Shrub wetland that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 6, p. 94; Ref. 7, p. 84; Ref. 10, p. 10; Ref. 16, p. 1; Ref. 28, pp. 6-9; Ref. 35, pp. 1-2; Ref. 39, pp. 79, 96-103; Figure 4). The PPE segment is located approximately mid-point on the western side of the CMC property and based on property features, characteristics, and the nature of the topography, the contiguous wetland and adjoining drainage ditch/stream are down gradient to the south from identified sources (Ref. 3, p. 1; Ref. 4, pp. 13, 20-21: Ref. 6, pp. 58 & 94; Ref. 12, p. 2; Ref. 39, pp. 96-103; Figure 1 & 4). The unnamed drainage ditch/stream adjoining the contiguous designated wetlands passes beneath the railroad spur, via a culvert, from east to west (Ref. 14, pp. 1-2; Ref. 28, pp. 6-8; Ref. 35, pp. 1-2; Ref. 39, pp. 96-103 & 105-106).

The migration route of all sources is southwest toward the railroad tracks, based on the topography of the property, and eventually all flow toward, and into the contiguous wetlands and adjoining unnamed drainage ditch/stream with discernible flow (Ref. 10, p. 10; Ref. 17, p. 2; Ref. 21, pp. 5 & 119-120; Ref. 28, pp. 3-9; Ref. 35, p. 1; Ref. 36, pp. 5, 7 & 9; Figure 5). From the PPE within the contiguous wetlands with discernible flow from an adjoining unnamed drainage ditch/stream, flow passes through a culvert beneath the railroad spur to the west, where the continuous stream flows into an unnamed perennial stream with adjoining contiguous wetlands. Flow continues southwest into a freshwater pond which contains emergent aquatic vegetation along the shoreline. The freshwater pond is bisected by Crosby Road but is continuously connected by culverts (Ref. 14, pp. 1-2; Ref. 21, pp. 119-120; Ref. 28, pp. 6-9; Ref. 35, pp. 1-3; Ref. 37, pp. 1-2 & 5; Ref. 39, pp. 102-103 & 105-113). Surface water subsequently discharges from the freshwater pond which contains contiguous wetland into an adjoining unnamed perennial stream on a slightly northwesterly path until the unnamed perennial stream encounters the Kansas City Southern Railroad ROW (Ref. 28, p. 5). The unnamed perennial stream with contiguous wetlands then flows south along the Kansas City Southern Railroad ROW to Palmetto Creek (Ref. 28, pp. 4-5). From Palmetto Creek which contains contiguous wetlands, surface water flows southeasterly till it merges into Bundick Creek (Ref. 28, pp. 3-4). The remainder of the 15-mile Target Distance Limit (TDL) for the surface water migration pathway is located in Bundick Creek which also contains contiguous wetlands (Figure 6).

Surface Water Pathway Description for Each Source		
Source No	**Pathway Description**	**PPE**
1	A Concrete Structure located on the central western boundary of the property, north of the drainage ditch/stream adjoining the designated wetland area (Ref. 4, pp. 9, 28 & 30; Ref. 6, pp. 70 & 93-94; Ref. 16, p. 1;	PPE: A segment of contiguous Palustrine Freshwater Forested/Shrub Wetlands that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 28, pp. 6-9; Ref. 35, pp.1-2; Ref.

Surface Water Pathway Description for Each Source		
Source No	**Pathway Description**	**PPE**
	Ref. 21, pp. 5 & 120; Ref. 28, pp. 6-7; Figure 2). Distance to PPE is approximately 500 feet (Ref. 4, p. 30; Ref. 6, p. 94; Ref. 16, p. 1; Ref. 21, p. 120; Figure 2, 3 & 4)	36, pp. 1-7).
2	The oil/water separator is located just northwest and adjacent to the concrete structure, north of the drainage ditch/stream adjoining the designated wetland area(Ref. 4, pp. 9, 28 & 30; Ref. 6, pp. 93-94; Ref. 28, pp. 6-7; Figure 2).Distance to the PPE is approximately 560 feet (Ref. 4, p. 30: Ref. 6, p. 94; Figure 2, 3 & 4)	PPE: A segment of contiguous Palustrine Freshwater Forested/Shrub Wetlands that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 28, pp. 6-9; Ref. 35, pp. 1-2; Ref. 36, pp. 1-7).
3	The open unlined abandoned rectangular wastewater pit lies between the retort foundation and the Santa Fe track to the west, north of the drainage ditch/stream adjoining the designated wetland area (Ref. 4, pp. 14, 28 & 31; Ref. 6, pp. 72 & 93-94; Ref. 16, p. 1; Ref. 21, pp. 5 & 120; Ref. 28, pp. 6-7; Figure 2). Distance to the PPE is approximately 415 feet (Ref. 6, p. 94; Ref. 16, p. 1; Ref. 21, p. 120; Figure 2, 3 & 4)	PPE: A segment of contiguous Palustrine Freshwater Forested/Shrub Wetlands that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 28, pp. 6-9; Ref. 35, pp. 1-2; Ref. 36, pp. 1-7).
4	Areas of soil contamination, primarily downgradient of the old drip area, the wash pit area, north of the drainage ditch/stream adjoining the designated wetland area (Ref. 4, pp. 11, 14 & 32; Ref. 6, pp. 72 & 94; Ref. 28, pp. 6-7; Figure 2). Distance to the PPE from sample location ACS-14 is approximately 0 feet (Ref. 4, p. 32, Ref. 6, p. 94; Figure 2, 3 & 4)	PPE: A segment of contiguous Palustrine Freshwater Forested/Shrub Wetlands that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 28, pp. 6-9; Ref. 35, pp. 1-2; Ref. 36, pp. 1-7).
5	A pile of weathered creosote waste located north of former facility operations and the drainage ditch/stream adjoining the designated wetland area (Ref. 7, pp. 43-44, 48, 84, 145, 182-183, 205 & 549; Figure 2). Distance to the PPE from sample location AC-26 is approximately 690 feet (Ref. 7, pp. 84, 145, 182, 205; Figure 2, 3 & 4).	PPE: A segment of contiguous Palustrine Freshwater Forested/Shrub Wetlands that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 28, pp. 6-9; Ref. 35, pp. 1-2; Ref. 36, pp. 1-7).

Definition of In-Water Segments

The in-water segment of the 15-mile TDL begins at the most upstream point of the PPE, from which the 15-mile TDL starts, and ends along Bundick Creek. The PPE is located in contiguous palustrine freshwater forested/shrub wetlands with discernible flow from an adjoining unnamed ditch/stream (Figure 5; Ref. 28, p. 7; Ref. 35, pp. 1 & 3). The beginning of the in-water segment is in the contiguous palustrine freshwater forested/shrub wetland and the adjoining unnamed drainage ditch/stream with discernible flow that flows continuous for approximately 200 feet, passing beneath a railroad spur to the west, flowing into an unnamed perennial stream which contains contiguous wetlands (Ref. 28, p. 6-7; Ref. 35, p. 1-3). The unnamed perennial stream which contains contiguous wetlands flows approximately 790 feet southwest into a freshwater pond which contains emergent aquatic vegetation along its shoreline. The freshwater pond is bisected by Crosby Road but is continuously connected by culverts (Ref. 28, p. 6-7; Ref. 35, pp. 1-3). Surface water flows approximately 725 feet across the freshwater pond, with emergent aquatic vegetation along the shoreline, subsequently discharging into an unnamed perennial stream which also contains contiguous wetlands (Ref. 28, p. 6; Ref. 35, pp. 1-3). The unnamed perennial stream adjoining which contains contiguous palustrine freshwater forested/shrub wetlands flows approximately 0.41 miles on a slightly northwesterly path till the stream encounters the

Kansas City Southern Railroad ROW (Ref. 28, p. 5). The unnamed perennial stream which contains contiguous wetlands then flows south along the Kansas City Southern Railroad ROW approximately 1,900 feet to Palmetto Creek. Palmetto Creek flows southeasterly and is bordered by contiguous palustrine freshwater forested/shrub wetlands until it merges into Bundick Creek in approximately 4.50 miles (Ref. 28, pp. 4-5). The remainder of the 15-mile TDL for the surface water migration pathway is located in Bundick Creek which also contains contiguous palustrine freshwater forested/shrub wetlands (Figure 6; Ref. 28, pp. 4-7; Ref. 35, pp 1-3).

Segment 1

The contiguous palustrine freshwater forested/shrub wetlands and adjoining unnamed drainage ditch/stream with discernible flow, which includes the PPE, flows continuously for approximately 200 feet passing beneath the railroad spur, via a culvert, to the west flowing into a perennial unnamed stream with adjoining contiguous wetlands (Figure 5; Ref. 28, pp. 6-7; Ref. 35, pp. 1-3). No published average stream flow data is available for this segment. Based on visual observation, it appears that this portion has an average stream flow of less than 10 cubic feet per second (cfs) and is a minimal stream and receives a dilution weight of 1 (Ref. 1, Table 4-13; Figures 5 & 6; Ref. 14, p. 2; Ref. 21, p. 120).

Segment 2

The unnamed perennial stream with adjoining wetlands that the unnamed drainage ditch/stream encounters flows for approximately 790 feet southwest into a freshwater pond, with emergent aquatic vegetation along the shoreline (Figure 5; Ref. 28, pp. 6-7; Ref. 35, pp. 1-3). No published average stream flow data is available for this segment. Based on visual observation, it appears that this portion has an average flow of less than 10 cfs and is a minimal stream and receives a dilution weight of 1 (Ref. 1, Table 4-13; Figures 5 & 6; Ref. 28, pp. 6-7).

Segment 3

The freshwater pond with emergent aquatic vegetation is bisected by Crosby Road but continuously connected by culverts. It is approximately 2.11 acres in size, with surface water flowing approximately 725 feet across the water body (Figures 5 & 6; Ref. 28, p. 6; Ref. 35, pp. 1-3). The freshwater pond receives surface water from the northeast from the perennial unnamed stream, and discharges surface water to the west into an unnamed perennial stream (Figures 5 & 6; Ref. 28, pp. 5-6). No published average flow data is available for this segment. Based on visual observation and the average flow rates assigned to Segment 2 and Segment 4, both unnamed perennial streams flowing and discharging from the freshwater pond, also with no published flow rate data, it appears this portion will also have an average flow of less than 10 cfs and receives a dilution weight of 1 (Ref. 1, Table 4-13; Figures 5 & 6; Ref. 28, pp. 5-6).

Segment 4

The unnamed perennial stream with contiguous wetlands, receiving discharge from the freshwater pond, flows approximately 0.40 miles on a slightly northwesterly path until the stream encounters the Kansas City Southern Railroad ROW (Figure 5 & 6; Ref. 28, pp. 4-5). The unnamed perennial stream with contiguous wetlands then flows south along the Kansas City Southern Railroad ROW approximately

1,900 feet to Palmetto Creek (Figure 5 & 6; Ref. 28, pp. 4-5). No published average stream flow data is available for this segment. Based on visual observation, it appears that this portion has an average flow of less than 10 cfs and is a minimal stream and receives a dilution weight of 1 (Ref. 1, Table 4-13; Figure 6; Ref. 28, pp. 4-5).

Segment 5

Palmetto Creek, bordered by contiguous wetlands, flows southeasterly approximately 4.51 miles until it merges into Bundick Creek (Figure 6; Ref. 28, p. 3). No published average stream flow data is available for Palmetto Creek. The flow rate at the target location was extrapolated using the flow data from Bundick Creek. This segment will be set to equal the flow at the upstream gauging station and will be considered to be a moderate to large stream and will be assigned a dilution value of 0.01 (Ref. 1, Table 4-13; Figure 6).

Segment 6

The remainder of the 15-mile TDL surface water migration pathway ends along Bundick Creek which is also bordered by contiguous wetlands (Figure 6; Ref. 28, p. 3). A United States Geological Survey (USGS) gauging station 08080204, located in Beauregard Parish near DeRidder, Louisiana, has an average annual flow rate for Bundick Creek as measured for water years 1957 through 2015 of 150.88 cfs (Ref. 29, pp. 1-4). USGS gauging station, 08080204 is located on Bundick Creek approximately 1.68 miles upstream from the confluence of Palmetto Creek and Bundick Creek at latitude 30°49'07" North and longitude 93°13'48" West (Ref. 29, p. 1). A moderate to large stream with an average stream flow rate greater than 100 cfs to 1,000 cfs receives a dilution value of 0.01 (Ref. 1, Table 4-13; Figure 6).

4.1.2.1 Likelihood of Release

4.1.2.1.1 Observed Release

Chemical Analyses

Site Inspection (SI) – June 2015

Background sediment sample, ACSD-02, was collected on CMC property up gradient from previous facility operations, at location AC-02, along the northern boundary of the property near to where Post Plant Road and the railroad tracks intersect, and along the drainage pathway identified along the BNSF ROW (Ref. 7, p. 150 & 182, 551; Ref. 15, p. 2; Ref. 17, p. 2; Ref. 35, p. 2; Ref. 36, pp. 8-9; Figure 3). Sediment sample location AC-02 was considered a background sample for sediments, as it was collected up gradient relative to known former designated facility operations (Ref. 4, p. 28; Ref. 6, p. 93; Figure 3).

Sediment sample (ACSD-12 and ACSD-15) were collected during the June 2015 EPA SI to assess the migration and observed release by chemical analysis of contamination in the surface water drainage pathway and designated wetlands as previously identified along the BNSF ROW from the former operations at the American Creosote DeRidder facility and associated PPE (Figures 3 & 4). The following samples were collected:

- ACSD-12 - collected just north of the culvert/ditch along the railroad ROW, along the contiguous wetlands (Ref. 7, p. 57; Figure 3).
- ACSD-15 – collected down gradient of former facility operations, southwest of the property boundary (Ref. 7, p. 60; Figure 3);

Samples collected from locations AC-02, AC-12, and AC-15 were sent to KAP Technologies Inc. located in The Woodlands, Texas, for organic analyses, and samples were sent to Chemtech Consulting Group located in Mountainside, New Jersey, for inorganic analyses. Sediment samples were analyzed for CLP SVOCs by EPA CLP SOW SOM02.2 and for TAL total metals/mercury by EPA CLP SOW ISM02.2. All data analyses performed at KAP Technologies Inc. and Chemtech Consulting Group were reviewed and validated by the Houston EPA Laboratory (Ref. 7, pp. 25-26, 69-70, 237-239, 260-263, 355-356 & 358).

Analytic results for sediment samples collected from locations AC-12 and AC-15 during the June 2015 EPA SI were compared to results for their representative background sample location (AC-02), also collected during that specific sampling event. See Table 9 for the background sediment sample and observed release sample concentrations.

The release sediment samples (AC-12 and AC-15) contained concentrations of PAHs and metals that met observed release criteria. These were: 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, chrysene, dibenzo (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, and pyrene. All were above ADJ CRQLs or three times the concentration in background sediment ADJ CRQLs (Ref. 1, Table 2-3; Figure 5; Table 9).

Expanded Site Inspection (ESI) – May 2016

Background sediment samples (AC-ESI-SD03 and AC-ESI-SD04) and one (1) collocated background surface water sample (AC-ESI-SW03) were collected up gradient of the PPE along separate, individual perennial streams on Ingevity property, and away from American Creosote DeRidder former facility operations (Ref. 39, pp. 37, 133-137, 157-158 & 382-383; Figures 3 & 5). Sediment sample AC-ESI-SD03 analyses included certain semi-volatile constituents above reporting limits, while analytical results of sediment sample AC-ESI-SD04 included one semi-volatile constituent above reporting limit (Ref. 39, pp. 37-38, 84, 88 & 216-221; Table 10).

Additionally, sediment samples (AC-ESI-SD01, AC-ESI-SD02, AC-ESI-SD05, AC-ESI-SD06, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09, AC-ESI-SD10 and AC-ESI-SD11) and surface water samples (AC-ESI-SD05, AC-ESI-SD06, AC-ESI-SD09 and AC-ESI-SD10) collected during the May 2016 EPA ESI were compared to their respective background sediment samples (AC-ESI-SD03 and AC-ESI-SD04) and surface water sample (AC-ESI-SW03), also collected during that specific sampling event (Ref. 39, pp. 53-58, 85-88, 115-132, 138-141, 154-161, 380-381, 384-390)(Tables 10, 11 & 12).

Samples collected from locations AC-ESI-01, AC-ESI-02, AC-ESI-03, AC-ESI-04, AC-ESI-05, AC-ESI-06, AC-ESI-07, AC-ESI-08, AC-ESI-09, AC-ESI-10 and AC-ESI-11 were sent to the U.S. EPA Laboratory in Houston, TX for analysis, data review and data validation for TCL SVOAs by EPA

method EPA CLP OLM04.2 – GC/MA (Low Level) and TCL SVOAs by EPA CLP OLM04.2 – GC/MS (Low Level) (Ref. 39, pp. 28, 63 & 180-236).

Observed release sample concentrations were compared to the greater of the two background reporting limits or to three times above background limit concentrations. No semi-volatiles or inorganics were detected in the designated background surface water sample AC-ESI-SW03 (Ref. 39, pp. 88 & 228-230). See Table 10 for background sediment samples and Table 12 for background surface water sample, and their respective observed release sample concentrations (Tables 11 & 12).

Nine (9) sediment samples (AC-ESI-SD01, AC-ESI-SD02, AC-ESI-SD05, AC-ESI-SD06, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09, AC-ESI-SD10, and AC-ESI-SD11) were collected during the May 2016 EPA ESI to assess the migration and observed release by chemical analysis of contamination in the surface water pathway from the former operations at the American Creosote DeRidder facility and associated PPE (Figures 3 & 4). The following samples were collected:

- AC-ESI-SD01 - collected along the unnamed drainage ditch/stream in contiguous wetlands, the PPE (Ref. 39, pp. 53-54, 79 85, 140-141, 160, 380 ; Figure 3);
- AC-ESI-SD02 - collected at the culvert along the unnamed drainage ditch/stream in the contiguous wetlands, along the PPE (Ref. 39, pp. 53-54, 79, 85, 138-139, 160, 381; Figure 3);
- AC-ESI-SD05 - collected at the discharge area of the culvert along the unnamed drainage ditch/stream in contiguous wetland (Ref. 39, pp. 54-55, 79, 85, 130-132, 157, 384; Figure 3);
- AC-ESI-SD06 - collected along the unnamed drainage ditch/stream in contiguous wetlands prior to entering the unnamed perennial stream (Ref. 39, pp. 54-55, 79, 86, 127-129, 156-157, 385; Figure 3);
- AC-ESI-SD07 - collected down gradient of the PPE where the unnamed perennial stream flow enters into a freshwater pond bisected by Crosby Road (Ref. 39, pp. 56, 79, 86, 124-126, 156, 386; Figure 3);
- AC-ESI-SD08 - collected from the bisected freshwater pond, at the point prior to where surface water passes through culverts from the east side of Crosby road to west side of Crosby Road (Ref. 39, pp. 56-57, 79, 86, 121-123, 155, 387; Figure 3);
- AC-ESI-SD09 – collected where surface water enters, via culverts, the bisected freshwater pond on the west side of Crosby Road (Ref. 39, pp. 56-57, 79, 87, 118-120, 155, 388; Figure 3);
- AC-ESI-SD10 – collected where the surface water discharges from the freshwater pond bisected by Crosby Road (Ref. 39, pp. 56-58, 79, 87, 115-117, 154, 389; Figure 3); and
- AC-ESI-SD11 – a duplicate sample collocated with sediment sample AC-ESI-SD07, and collected down gradient of the PPE where the unnamed perennial stream flow enters into a freshwater pond bisected by Crosby Road (Ref. 39, pp. 56, 58, 79, 87, 156, 390; Figure 3).

The sediments contained numerous PAHs that met observed release criteria including: 1-methylnaphthalene, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene all above reporting limits or three times the concentration in background sediment samples (Ref. 1, Table 2-3; Tables 10 & 11).

Three (3) surface water samples (AC-ESI-SW05, AC-ESI-SW06, and AC-ESI-SW10) collocated with their respective sediment samples were also collected during the May 2016 EPA ESI, to identify and assess the migration and observed release of contamination in the surface water pathway from the former American Creosote DeRidder facility (Figure 3 & 4). The following samples were collected:

- AC-ESI-SD05 - collected at the discharge area of the culvert along the unnamed drainage ditch/stream in contiguous wetlands (Ref. 39, pp. 54-55, 79, 85, 130-132, 157, 384; Figure 3);
- AC-ESI-SD06 - collected along the unnamed drainage ditch/stream in contiguous wetlands prior to entering the unnamed perennial stream (Ref. 39, pp. 54-55, 79, 86, 127-129, 156-157, 385; Figure 3); and
- AC-ESI-SD10 – collected where the surface water discharges from the freshwater pond bisected by Crosby Road (Ref. 39, pp. 56-58, 79, 87, 115-117, 154, 389; Figure 3)

The surface water samples collected along the surface water migration pathway contained concentrations of PAHs that met observed release criteria include: benzo (a) pyrene, and fluoranthene (Ref. 1, Table 2-3; Table 12).

Chemical analyses of the sediment and surface water samples collected at and along the PPE, along the unnamed drainage ditch/stream adjoining the contiguous wetlands, and along the surface water migration pathway provide analytical evidence of an observed release of hazardous substances in the media significantly above background and attribution of at least part of the increase to the site.

Table 9 – Site Inspection Background and Release Sediment Samples

Sample Number:	ACSD02-06				ACSD12-06			ACSD15-06		
EPA Sample Number:	F9DB8/MF9DB8				F9DC3/MF9DC3			F9DC4/MF9DC4		
Sampling Location:	AC02				AC12			AC15		
Sample Description	Sediment Background				Sediment from Culvert/Ditch in Wetland			Sediment from SW Property Boundary		
	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Bkgd - ADJ CRQL or 3x Result (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)	Result (µg/kg)	Flag	ADJ CRQL (µg/kg)
ANALYTE: SVOCs										
2-Methylnaphthalene	23		3.4	69 (3x Result)	**370**		210	60		3.7
Acenaphthene	22		3.4	66 (3x Result)	**510**		210	24		3.7
Acenaphthylene	3.4	UJ	3.4	3.4 (ADJ CRQL)	**1,100**		210	29 (2.9)**	J	3.7
Anthracene	27 (270)*	J	3.4	81 (810)* (3x Result)	**2,600**		210	**1,500**		190
Benzo (a) anthracene	16		3.4	48 (3x Result)	**4,600**		2,100	**2,700**		1,900
Benzo (a) pyrene	39		3.4	117 (3x Result)	**2,200**		2,100	**970**		190
Benzo (b) fluoranthene	210 (2,100)*	J	170	630 (6,300)* (3x Result)	3,900		2,100	2,000		190
Benzo (g,h,i) perylene	39		3.4	117 (3x Result)	**3,500**		210	**480**		190
Benzo (k) fluoranthene	190		170	570 (3x Result)	**3,200**		2,100	**1,500**		190
Bis(2-ethylhexyl)phthalate	170	U	170	170 (ADJ CRQL)	200 (200)**	LJ	210	190	U	190
Carbazole	340	U	340	340 (ADJ CRQL)	**710**		410	370	U	370
Chrysene	28		3.4	84 (3x Result)	**7,900**		2,100	**4,400**		1,900
Dibenzo (a,h) anthracene	3.4	U	3.4	3.4 (ADJ CRQL)	**2,000**		210	**250**		190
Fluoranthene	170 (1,700)*	J	34	510 (5,100)* (3x result)	**7,400**		4,100	**4,200**		3,700
Fluorene	170	U	170	170 (ADJ CRQL)	**520**		210	32		3.7
Indeno (1,2,3-cd) pyrene	27		3.4	81 (3x Result)	**4,100**		210	580		190
Naphthalene	310 (3,100)*	J	34	930 (9,300)* (3x Result)	1,200		210	560		190
Pyrene	44 (521.8)*	J	3.4	132 (1,565.5)* (3x Result)	**9,100**		2,100	**5,300**		1,900

KEY

Bkgd - Background
ADJ CRQL – Adjusted contract required quantitation limit
µg/kg - Concentration in microgram per kilogram
mg/Kg - Concentration in milligram per kilogram
U - Not detected at reported quantitation limit
J - Estimated value
L -Reported concentration is below the contract required quantitation limit (CRQL)
UJ - Estimated quantitation limit

Bold - Concentration detected significantly above background level (at or above adjusted contract required quantitation limit (CRQL) or 3 times or more background concentration if analyte is present in background sample).

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has increased significantly from the original value reported.

** - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14). After adjusting the value for the qualified data, the adjusted value remained as the original value reported or decreased significantly from the original value reported.

Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 7. pp. 248 & 362	Ref. 7, pp. 273 & 362	Ref. 7, pp. 273 & 362
Laboratory Reports	Ref. 7, pp. 237-239, 355 & 357	Ref. 7, pp. 260-262, 356 & 358	Ref. 7, pp. 262-263, 356 & 358-359
Data	Ref. 7, pp. 213-214, 217, 237-239, 350-351, 354-355 & 357; Ref. 27, pp. 8 & 14-15; Ref. 45, pp. 85-91 & 232-234	Ref. 7, pp. 253-254, 257, 260-262, 350-351, 354, 356 & 358; Ref. 27, pp. 8 & 14; Ref. 45, pp. 118-127 & 244-246	Ref. 7, pp. 253-254, 257, 262-263, 350-351, 354, 356 & 358-359; Ref. 27, pp. 8 & 14; Ref. 45, pp. 128-138 & 247-249

Table 10 – Expanded Site Inspection Background Sediment Samples

Sample Number:	AC-ESI-SD03				AC-ESI-SD04			
EPA Laboratory ID:	1605035-03				1605035-04			
Sample Location:	AC-ESI-03				AC-ESI-04			
Sample Location Description	Background - Up Gradient Drainage Tributary				Background - Up Gradient Drainage Tributary			
	Result (µg/kg)	Flag	RL (µg/kg)	Bkgd – RL or 3x Result (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Bkgd – RL or 3x Result (µg/kg)
ANALYTE: SVOCs								
1-Methylnaphthalene	U		63	63 (RL)	U		72.1	72.1 (RL)
2-Methylnaphthalene	U		63	63 (RL)	U		72.1	72.1 (RL)
Acenaphthene	U		63	63 (RL)	U		72.1	72.1 (RL)
Acenaphthylene	U		63	63 (RL)	U		72.1	72.1 (RL)
Anthracene	**89.4**		63	268.2 (3x)	U		72.1	72.1 (RL)
Benzo (a) anthracene	U		252	252 (RL)	U		288	288 (RL)
Benzo (a) pyrene	U		252	252 (RL)	U		288	288 (RL)
Benzo (b) fluoranthene	**859**		252	2,577 (3x)	U		288	288 (RL)
Benzo (g,h,i) perylene	U		252	252 (RL)	U		288	288 (RL)
Benzo (k) fluoranthene	**496**		252	1,488 (3x)	U		288	288 (RL)
Carbazole	U		252	252 (RL)	U		288	288 (RL)
Chrysene	**429**		252	1,287 (3x)	U		288	288 (RL)
Dibenz (a,h) anthracene	U		252	252 (RL)	U		288	288 (RL)
Dibenzofuran	U		252	252 (RL)	U		288	288 (RL)
Fluoranthene	**261**		63	783 (3x)	U		72.1	72.1 (RL)
Fluorene	U		63	63 (RL)	U		72.1	72.1 (RL)
Indeno (1,2,3-cd) pyrene	U		252	252 (RL)	U		288	288 (RL)
Naphthalene	**154**		63	462 (3x)	U		72.1	72.1 (RL)
Phenanthrene	**105**		63	315 (3x)	U		72.1	72.1 (RL)
Pyrene	**309**		63	927 (3x)	U		72.1	72.1 (RL)
KEY								
Bkgd - Background RL = Reporting Limit µg/kg - Concentration in microgram per kilogram					**Bold** - detected above Reporting Limit U - Undetected			
REFERENCES								
Chain of Custody	Ref. 39, p. 255				Ref. 39, p. 255			
Laboratory Reports	Ref. 39, pp. 216-218				Ref. 39, pp. 219-221			
Data	Ref. 39, pp. 175-176, 216-218 & 252-253				Ref. 39, pp. 175-176, 219-221 & 252-253			

Table 11 – Expanded Site Inspection Release Sediment Samples

Sample Number:	AC-ESI-SD01			AC-ESI-SD02			AC-ESI-SD05			AC-ESI-SD06			AC-ESI-SD07		
EPA Laboratory ID:	1605035-01			1605035-02			1605035-05			1605035-06			1605032-01		
Sample Location:	AC-ESI-01			AC-ESI-02			AC-ESI-05			AC-ESI-06			AC-ESI-07		
Sample Location Description	Culvert/ditch in the contiguous wetlands at the PPE			Culvert/ditch in the contiguous wetlands, along the PPE			Drainage overland flow - Discharge area of the culvert in contiguous wetlands			Drainage overland flow - Contiguous wetlands prior to entering the perennial stream			Perennial stream prior to entry into the fresh water pond		
	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)
ANALYTE: SVOCs															
1-Methylnaphthalene	**5,740**		730	U		685	U		121	**485**		351	U		97.4
2-Methylnaphthalene	**5,640**		730	U		685	**150**		121	**2,540**		351	U		97.4
Acenaphthene	**24,400**		730	U		685	U		121	**471**		351	U		97.4
Acenaphthylene	**11,900**		730	**3,750**		685	**815**		121	**1,450**		351	**271**		97.4
Anthracene	**191,000**		7,300	**6,290**		685	**1,250**		121	**81,700**		3,510	**1,070**		97.4
Benzo (a) anthracene	851,000 (85,100)*	J	292,000	**108,000**		27,400	**13,200**		4,820	**27,800**		14,100	**1,630**		390
Benzo (a) pyrene	**406,000**		292,000	**118,000**		27,400	**14,000**		4,820	**29,000**		14,100	**3,080**		390
Benzo (b) fluoranthene	**847,000**		292,000	**188,000**		27,400	**31,300**		4,820	**60,700**		14,100	**7,660**		3,900
Benzo (g,h,i) perylene	**146,000**		29,200	**45,400**		27,400	**7,910**		4,820	**11,400**		11,200	**2,510**		779
Benzo (k) fluoranthene	**607,000**		292,000	**140,000**		27,400	**17,600**		4,820	**29,600**		14,100	**4,270**		3,900
Carbazole	225,000 (22,500)*	J	29,200	U		2,740	U		482	28,400 (2,840)*	J	14,100	U		390
Chrysene	**1,200,000 (120,000)***	J	292,000	**137,000**		27,400	**18,400**		4,820	**36,500**		14,100	**3,360**		390
Dibenzo (a,h) anthracene	**93,000**		29,200	**19,400**		2,740	**4,050**		3,620	**5,540**		1,410	**1,140**		390
Dibenzofuran	**22,800**		2,920	U		2,740	U		482	**3,700**		1,410	U		390
Fluoranthene	**3,370,000**		730,000	**110,000**		6,850	**17,800**		1,210	**34,800**		3,510	**1,580**		97.4
Fluorene	**27,300**		730	U		685	U		121	**7,910**		351	U		97.4
Indeno (1,2,3-cd) pyrene	**188,000**		29,200	**57,100**		27,400	**9,160**		4,820	**10,300**		1,410	**2,740**		390
Naphthalene	**6,150**		730	U		685	446		121	**3,110**		351	154		97.4
Phenanthrene	**1,120,000**		73,000	**1,550**		685	**834**		121	**16,400**		3,510	**339**		97.4
Pyrene	**1,960,000 (165,261)***	J	73,000	**135,000**		6,850	**21,200**		1,210	**40,000**		3,510	**2,340**		97.4

KEY

Bold - Detected significantly above background level (at or above Reporting Limit or 3 times or more background concentration if analyte is present in background sample).

Bkgd - Background
RL - Reporting limit
µg/kg - Concentration in microgram per kilogram

U - Undetected
J - The identification of the analyte is acceptable; the reported value is an estimate.

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has decreased significantly from the original value reported.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 39, p. 255	Ref. 39, p. 255	Ref. 39, p. 255	Ref. 39, p. 255	Ref. 39, p. 254
Laboratory Reports	Ref. 39, pp. 210-212	Ref. 39, pp. 213-215	Ref. 39, pp. 222-224	Ref. 39, pp. 225-227	Ref. 39, pp. 180-182
Data	Ref. 39, pp. 175-176, 210-212 & 252-253; Ref. 27, pp. 8 & 14-15	Ref. 39, pp. 175-176, 213-215 & 252-253	Ref. 39, pp. 175-176, 222-224 & 252-253	Ref. 39, pp. 175-176, 225-227 & 252-253; Ref. 27, pp. 8 & 14	Ref. 39, pp. 175-176, 180-182 & 252-253

Table 11 (continued) – Expanded Site Inspection Release Sediment Samples

Sample Number:	AC-ESI-SD08			AC-ESI-SD09			AC-ESI-SD10			AC-ESI-SD11		
EPA Laboratory ID:	1605032-02			1605032-03			1605032-04			1605032-05		
Sample Location:	AC-ESI-08			AC-ESI-09			AC-ESI-10			AC-ESI-11		
Sample Location Description	Freshwater Pond - Discharge Point (East of Crosby Road)			Freshwater Pond - Entry Point (West of Crosby Road)			Freshwater Pond - Discharge Point (West of Crosby Road)			Duplicate Sample at Location AC-ESI-SD07		
	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)	Result (µg/kg)	Flag	RL (µg/kg)
ANALYTE: SVOCs												
1-Methylnaphthalene	**243**		124	U		84	U		86	**166**		111
2-Methylnaphthalene	**659**		124	U		84	U		86	**480**		111
Acenaphthene	**476**		124	U		84	U		86	**268**		111
Acenaphthylene	**1,160**		124	U		84	U		86	**480**		111
Anthracene	**2,700**		124	92.4		84	227		86	**2,300**		111
Benzo (a) anthracene	**29,100**		4,960	U		336	U		344	**2,780**		443
Benzo (a) pyrene	**36,500**		4,960	**378**		336	**513**		482	**4,900**		2,210
Benzo (b) fluoranthene	**63,400**		49,600	1,190		336	1,740		688	**13,500**		2,210
Benzo (g,h,i) perylene	**14,400**		4,960	U		336	**468**		447	**4,160**		2,210
Benzo (k) fluoranthene	**37,400**		37,200	416		336	1,030		688	**7,430**		2,210
Carbazole	669 (66.9)*	J	496	U		336	U		344	U		443
Chrysene	**29,700**		4,960	521		336	769		344	**6,060**		2,210
Dibenzo (a,h) anthracene	**9,660**		4,960	U		336	U		344	**2,180**		2,100
Dibenzofuran	**602**		496	U		336	U		344	U		443
Fluoranthene	**29,100**		1,240	464 (46.4)*	J	84	645		86	**2,660**		111
Fluorene	**367**		124	U		84	U		86	**261**		111
Indeno (1,2,3-cd) pyrene	**17,700**		4,960	U		336	**547**		516	**5,680**		2,210
Naphthalene	**1,630**		124	134		84	U		86	**1,380**		111
Phenanthrene	**2,150**		124	161 (16.1)*	J	84	153		86	**925**		111
Pyrene	**41,900**		1,240	494		84	796		86	**4,070**		111

KEY

Bold - Detected significantly above background level (at or above Reporting Limit or 3 times or more background concentration if analyte is present in background sample).

Bkgd - Background
RL - Reporting limit
µg/kg - Concentration in microgram per kilogram

U - Undetected
J - The identification of the analyte is acceptable; the reported value is an estimate.

* - The detected concentration was adjusted by using guidance document "*Using Qualified Data to Document an Observed Release and Observed Contamination*" (Ref. 27, pp. 8 & 14-15). After adjusting the value for the qualified data, the adjusted value has decreased significantly from the original value reported.
Note: Unless otherwise flagged, bias on adjusted "J" data results is unknown and treated as such.

REFERENCES

Chain of Custody	Ref. 39, p. 254	Ref. 39, p. 254	Ref. 39, p. 254	Ref. 39, p. 254
Laboratory Reports	Ref. 39, pp. 183-185	Ref. 39, pp. 186-188	Ref. 39, pp. 189-191	Ref. 39, pp. 192-194
Data	Ref. 39, pp. 175-176,183-185 & 252-253; Ref. 27, pp. 8 & 14	Ref. 39, pp. 175-176, 186-188 & 252-253; Ref. 27, pp. 8 & 15	Ref. 39, pp. 175-176, 189-191 & 252-253	Ref. 39, pp. 175-176, 192-194 & 252-253

Table 12 – Expanded Site Inspection Background and Release Surface Water Samples

Sample Number:	AC-ESI-SW03				AC-ESI-SW05			AC-ESI-SW06			AC-ESI-SW10		
EPA Laboratory ID:	1605035-07				1605035-08			1605035-09			1605032-09		
Sample Location:	AC-ESI-03				AC-ESI-05			AC-ESI-06			AC-ESI-10		
Sample Location Description	Background - Up Gradient of PPE along Perennial Stream				Discharge area of the culvert along the unnamed drainage ditch/stream in contiguous wetlands			Unnamed drainage ditch/stream in contiguous wetlands prior to entering the unnamed perennial stream			Freshwater Pond - Discharge Point (West of Crosby Road)		
	Result (µg/L)	Flag	RL (µg/L)	Bkgd – RL or 3x Result (µg/L)	Result (µg/L)	Flag	RL (µg/L)	Result (µg/L)	Flag	RL (µg/L)	Result (µg/L)	Flag	RL (µg/L)
ANALYTE: SVOCs													
Benzo (a) pyrene	U		0.2	0.2 (RL)	U		0.2	**0.6**		0.2	**0.3**		0.2
Fluoranthene	U		0.5	0.5 (RL)	**0.8**		0.5	**1.3**		0.5	U		0.5
KEY													
Bkgd - Background RL = Reporting Limit µg/L - Concentration in microgram per liter								**Bold** - Detected above Reporting Limit U - Undetected					
REFERENCES													
Chain of Custody	Ref. 39, p. 255				Ref. 39, p. 255			Ref. 39, p. 255			Ref. 39, p. 254		
Laboratory Reports	Ref. 39, pp. 228-230				Ref. 39, pp. 231-233			Ref. 39, pp. 234-236			Ref. 39, pp. 204-206		
Data	Ref, 39, pp. 175-176, 228-230 & 252-253				Ref. 39, pp. 175-176, 231-233 & 252-253			Ref. 39, pp. 175-176, 234-236 & 252-253			Ref. 39, pp. 175-176, 204-206 & 252-253		

Attribution

The Shreveport Creosoting Company operated a creosote timber facility from the early 1920's to approximately 1945 on a parcel of land south of DeRidder, Beauregard Parish, Louisiana (Ref. 4, pp. 8 & 27-28). American Creosoting Company, Shreveport Creosoting Company's parent company, relocated the creosote operations from this tract of land, although other wood treatment procedures are reported to have continued until 1956 or 1957 (Ref. 4, p. 8). From 1957 to 1992 the property remained dormant until its purchase by CMC in September 1992 who planned heavy industrial/commercial use (Ref. 4, p. 9; Ref. 8, p. 5; Ref. 9, p. 4; Ref. 10, p. 17).

The Shreveport Creosoting Company's facilities and operations used creosote compounds, also known as liquid pitch oil, tar oil and coal tar solutions, in the wood preserving pressure treatment process (Ref. 8, p. 52; Ref. 11, p. 3). The specific operations at the facility consisted of dipping timber into creosote vats, the collection of spent creosote in an open pit, and the discharge of untreated process wastewater into an open pit (Ref. 6, p. 93; Ref. 9, p. 2; Ref. 12, p .1). There is no historical data to indicate that site operations included waste handling, disposal practices, releases or facility permits (Ref. 4, p. 8; Ref. 12, p. 1).

The site is currently void of any of these operations and consists of heavy timber and extensive overgrowth and lower story overgrowth in and around the abandoned site (Ref. 4. p. 9). Abandoned wood treatment facilities from the previous operations currently remain at the site (Ref. 4, p. 9). The American Creosote DeRidder site has been impacted by creosote related compounds from previous timber treatment operations at the site (Ref. 4, p. 9; Ref. 11, p. 3). Site investigations indicate that creosote from the previous facility operations appears to have impacted the CMC property at various locations identified to include the old drip area, wash pit, ground water, and surface soils (Ref. 4, pp. 9 & 11; Ref. 6, pp. 93-114). Additionally, visual evidence reveals surface impact to the adjoining property and stream bed (Ref. 4, p. 9). The creosote impact extends along the eastern BNSF ROW and railroad spur (Ref. 6, pp. 9 & 59; Ref. 8, p. 5). The impact is visually apparent and has formed sections of surficial asphaltic patches (Ref. 8, p. 5). Also, physical characteristics of the weathered creosote material are an approximately 1 inch to 4 inches thick layer on top of the surface soils, with textural characteristics of a dry hard mass (Ref. 26, pp. 6 & 18). The creosote at the site has hardened and dried and has acquired characteristics more similar to a tar or asphalt versus non-weathered creosote (Ref. 26, pp. 6 & 18).

COCs at the site that are being scored are constituents associated with the previous wood preservation facility that used creosote related compounds during wood processing operations (Ref. 4, p. 9; Ref. 6, pp. 8 & 59; Ref. 8, p. 5; Ref. 9, p. 2; Ref. 11, p. 3; Ref. 17, p. 2; Ref. 25, p. 5). The COCs at the site are CERCLA hazardous substances. Previous site investigations documented PAHs as known or suspected constituents to have been released (Ref. 6, pp. 8 & 59; Ref. 22, p. 6). Potential chemical hazards in the soil at the site are TPH in the form of diesel, and PAHs to include: 1,1 biphenyl, 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, bis (2-ethylhexyl) phthalate, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Ref. 6, pp 13-41, 116, 118-119 & 121). Also, potential chemical hazardous found in the ground water at the site are TPH in the form of diesel, and PAHs to include: 1,1 biphenyl, 2,4-dimthylphenol, 2-methylnaphthalene, acenaphthene, acenaphthylene, aniline, anthracene, benzo (a) anthracene, benzo (a)

pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenzo (a,h) anthracene, dibenzofuran, diethyl phthalate, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, naphthalene, phenanthrene and pyrene (Ref. 6, pp. 42-45 & 120-121).

During the operational period American Creosote DeRidder used creosote compounds, also known as liquid pitch oil, tar oil, and coal tar solutions, in the wood preserving pressure treatment process (Ref. 8, p. 52; Ref. 11, p. 3). The major chemicals in coal tar creosote, coal tar, and coal tar pitch are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols (Ref. 41, p. 23). Major components of wood creosote consist mainly of phenol, cresol, guaiacol, and xylenol, with phenols having been previously detected on site (Ref. 12, p. 3; Ref. 15, p. 2; Ref. 16, p.1; Ref. 41, p. 241). Common PAH components of coal tar pitch are acenaphthene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (b) fluoranthene, benzo (k) fluoranthene, 1,1 biphenyl, carbazole, chrysene, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, phenanthrene and pyrene, which have been detected in site sources and releases to the surface water pathway (Ref. 41, pp. 245-248; Tables 2, 4-7, 8, 9, 11, & 12). Wastes from the former creosote operations were handled in the drip area (Source No. 4 and Source No. 5), waste pit (Source No. 3), washout area (Source No. 4) and creosote processing basin area (Source No. 1 and Source No. 2) (Ref. 4, pp. 11-15 7 28; Ref. 6, pp. 65 & 93). All wastes managed at the facility consisted of creosote compounds, and there is no historical data to indicate that facility operations included waste handling, disposal practices, or facility permits (Ref. 4, pp. 8-9; Ref. 8, p. 5; Ref. 12, p. 1; Ref. 26, p. 4). The American Creosote DeRidder site is considered to pose “a long term” threat to human health, safety and/or sensitive environmental receptors (Ref. 6, p. 79).

Eleven (11) sediment samples (ACSD-12, ACSD-15, AC-ESI-SD01, AC-ESI-SD02, AC-ESI-SD05, AC-ESI-SD06, AC-ESI-SD07, AC-ESI-SD08, AC-ESI-SD09, AC-ESI-SD10, and AC-ESI-SD11) were collected down gradient of former facility operations, along the contiguous palustrine freshwater forested/shrub wetland with discernible flow from an adjoining unnamed drainage ditch/stream, along the contiguous palustrine freshwater forested/shrub wetland and adjoining unnamed perennial stream, and from a freshwater pond with emergent aquatic vegetation along the shoreline that is bisected by Crosby Road but continuously connected by culverts, to determine the migration of contamination in the surface water pathway from the concrete structure (Source 1), oil/water separator (Source 2), unlined wastewater pit (Source 3), areas of soil contamination (Source 4), and creosote solids (Source 5) from the former American Creosote DeRidder operations (Figure 5; Ref. 7, pp. 57, 60 & 84; Ref. 28, pp.4-7; Ref. 35, pp. 1-3; Ref. 36, pp. 1-9; Ref. 37, pp. 1-5; Ref. 39, pp. 53-58, 85-88, 115-132, 138-141, 154-161, 380-381, 384-390).

Three (3) surface water samples (AC-ESI-SW05, AC-ESI-SW06, and AC-ESI-SW10) were collected from the wetland at the unnamed drainage ditch/ stream contiguous and from the freshwater pond bisected by Crosby Road to assess the migration of contamination in the surface water pathway from the former American Creosote DeRidder operations (Figure 5; Ref. 39, pp. 54-58, 79, 85-87, 115-117, 127-132, 154, 156-157, 384-385 & 389). In the release surface water samples located down gradient of former American Creosote DeRidder operations benzo (a) pyrene and fluoranthene were detected and met observed release criteria (Table 12).

Facilities located within a one (1) mile radius of the American Creosote DeRidder site were identified. It was determined that these facilities, although potentially, are unlikely to be contributing to the release of

hazardous substance at the site based on background samples collected, and directional location and gradient from the site (Ref. 7, pp. 36-38, 84, 89 & 96; Ref. ; Ref. 30, pp. 7, 11, 13, 16, 22 & 25; Ref .39, pp. 37-38, 79, 84 & 88). The following types of facilities within a one (1) mile radius of American Creosote DeRidder are:

- Two (2) RCRA CORRACTS facilities (Ref. 30, pp 2 & 7-8) ;
- One (1) Emergency Response Notification System (ERNS) facility (Ref. 30, pp 2 & 11-12);
- Two (2) U.S. Toxic Release Inventory facilities (Ref. 30, pp 2 & 13-15);
- Seven (7) US RCRA Generator facilities (Ref. 30, pp 2 & 16-20);
- Four (4) National Pollutant Discharge Elimination System (NPDES) facilities (Ref. 30, pp 2 & 22-24); and
- Four (4) US Air Facility System (AIRS/AFS) facilities (Ref. 30, pp 2 & 25-28)

There are no identified National Priorities List (NPL) sites, CERCLIS List sites, CERCLIS No Further Remedial Action Planned (NFRAP) sites, Resource Conservation and Recovery Act (RCRA) non-Correction Action Report (CORRACTS) Treatment, Storage, Disposal (TSD) facilities, Federal Institutional Control/Engineering Control Registry sites, U.S. Assessment, Cleanup and Redevelopment Exchange System (ACRES) (Brownfields), Louisiana (LA) Underground Storage Tanks or LA Leaking Underground Storage Tanks located within a one (1) mile radius of American Creosote DeRidder (Ref. 30, pp. 2, 4-6, 9-10, 21& 29-30).

Background sediment sample location AC-02 collected north of the property near where Post Plant Road and the railroad tracks intersect contained concentrations above the analytical ADJ CRQLs for 2-methylnaphthalene, acenaphthene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (g,h,i) perylene, benzo (k) fluoranthene, chrysene, cobalt, copper, fluoranthene, indeno (1,2,3-cd) pyrene, naphthalene, and phenanthrene (Table 9). Additionally, background sediment sample location AC-ESI-03, collected along an unnamed perennial stream up gradient of the surface water pathway from the former American Creosote DeRidder site, contained PAH concentrations of anthracene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, fluoranthene, naphthalene, phenanthrene and pyrene above analytical report limits (Ref. 39, pp. 37, 84 & 216-218). Background sediment sample location AC-ESI-04 also collected along a separate unnamed perennial stream up gradient of the surface water pathway did not contain any contaminants of concern associated with the site (Ref. 39, pp. 38, 84 & 219-221).

Comparison to background sediment and surface water sample results indicates that the significant increase in the concentrations of specific PAHs are attributable at least in part to a release from the site. The hazardous substances in the observed release samples are the same constituents found in site sources. Observed release hazardous substances to the surface water pathway include acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (b) fluoranthene, benzo (k) fluoranthene, carbazole, chrysene, , dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, methylnaphthalene, 1-, methylnaphthalene, 2-, naphthalene, phenanthrene, and pyrene (Tables 9, 10, 11 & 12).

Observed Release Factor Value: 550

4.1.3.2 HUMAN FOOD CHAIN THREAT - WASTE CHARACTERISTICS

4.1.3.2.1 Toxicity/Persistence/Bioaccumulation

The human food chain waste characteristics section provides the toxicity, persistence and bioaccumulation factor values for hazardous substances that are available to migrate or have migrated from sources at the site to surface water in the watershed via the overland/flood hazardous substances migration path for the watershed (Ref. 1, Sec. 4.1.3.2.1), the hazardous waste quantity value for the watershed (Ref, 1, Sec. 4.1.3.2.2), and the calculation of the human food chain threat-waste characteristics factor category value (Ref. 1, Sec. 4.1.3.2.3). The highest combined toxicity, persistence and bioaccumulation factor is used to determine the waste characteristics factor value for the human food chain threat from the surface water migration pathway (Ref. 1, Sec. 4.1.3.2.1.4).

Hazardous substances that meet the criteria for an observed release to surface water and all hazardous substances associated with the sources that have a surface water containment factor value greater than 0 for the watershed are presented in Table 13 below. Each hazardous substance eligible to be evaluated is assigned a toxicity/persistence/bioaccumulation factor value. The hazardous substances with the highest toxicity/persistence/bioaccumulation are benzo (a) pyrene, cadmium, dibenzo (a,h) anthracene, and mercury.

Table 13 – Human Food Chain Threat – Toxicity/Persistence/Bioaccumulation Summary

Hazardous Substance	Source No.	Toxicity Factor Value	Persistence Factor Value*	Toxicity/ Persistence Factor Value (Table 4-12)	Bioaccumulation Factor Value **	Toxicity/Persistence / Bioaccumulation Factor Value (Table 4-16)	Reference
Acenaphthene	1, 2, 3, 4, OR	10	0.4	4	500	2,000	Ref. 1, Tables 4-12, 4-16; Ref. 1a, Section 2.4.1.1; Ref. 2, pp. 1-65; Ref. 2a, pp. 1, 2
Acenaphthylene	1, 3, 4, 5, OR	1	0.4	0.4	500	200	
Anthracene	1, 2, 3, 4, 5, OR	10	0.4	4	50,000	200,000	
Arsenic	1, 2, 3	10,000	1	10,000	5	50,000	
Benzo (a) anthracene	1, 2, 3, 4, 5, OR	1,000	1	1,000	50,000	50,000,000	
Benzo (a) pyrene	1, 2, 3, 4, 5, OR	10,000	1	10,000	50,000	500,000,000	
Benzo (g,h,i) perylene	2, 3, 4, OR	0	1	0	50,000	0	
Benzo (b) fluoranthene	1, 2, 3, 4, 5, OR						
Benzo (k) fluoranthene	1, 2, 3, 4, 5, OR	1,000	1	1,000	50,000	50,000,000	
Biphenyl, 1,1'-	1, 2, 3, 4						
Bis (2-ethylhexyl) phthalate	4	100	1	100	50,000	5,000,000	
Cadmium	1, 2, 3	10,000	1	10,000	50,000	500,000,000	
Carbazole	1, 2, 3, 4, 5, OR	10	0.07	0.7	500	350	
Chromium	2, 3, 4, 5	10,000	1	10,000	5	50,000	
Chrysene	1, 2, 3, 4, 5, OR	100	1	100	5	500	
Cobalt	1, 2, 3	10,000	1	10,000	50	500,000	
Copper	1, 2, 3, 4, 5	100	1	100	50,000	5,000,000	
Dibenzo (a,h) anthracene	1, 3, 4, 5 OR	10,000	1	10,000	50,000	500,000,000	
Dibenzofuran	1, 2, 3, 4, 5, OR	1,000	0.4	400	500	200,000	
Fluoranthene[1]	1, 2, 3, 4, 5, OR	100	1	100	5,000	500,000	
Fluorene	1, 2, 3, 4, OR	100	1	100	500	50,000	
Indeno (1,2,3-cd) pyrene	1, 2, 3, 4, OR	1,000	1	1,000	50,000	50,000,000	
Lead	1, 2, 3, 4, 5	10,000	1	10,000	5,000	50,000,000	
Manganese	1, 2, 3, 4, 5	10,000	1	10,000	500	5,000,000	
Mercury	1, 2, 3, 4, 5	10,000	1	10,000	50,000	500,000,000	
Methylnaphthalene, 1-	OR						
Methylnaphthalene, 2-	1, 2, 3, 4, 5, OR	1,000	0.07	70	50,000	3,500,000	
Naphthalene	1, 2, 3, 4, 5, OR	1,000	0.07	70	50,000	3,500,000	
Nickel	1, 2, 3, 4, 5	10,000	1	10,000	5	50,000	
Phenanthrene	1, 2, 3, 4, 5, OR	1	0.4	0.4	5,000	2,000	
Pyrene	1, 2, 3, 4, 5, OR	100	1	100	50,000	5,000,000	
Silver	4	100	1	100	50	5,000	
Thallium	2, 3	10,000	1	10,000	500	5,000,000	
Zinc	1, 2, 3, 4, 5	10	1	10	500	5,000	

* Persistence values assigned are based on Palmetto Creek which has perennially flowing water, and thus classified as a River.
** Bioaccumulation values are food chain values assigned based on the surface water category of fresh water (Ref. 28, pp. 3-9).
[1]Fluoranthene is listed as benzo (j,k) fluoranthene in the SCDM (Ref. 2, p. 16).
OR – Observed Release documented substance.

The hazardous substances with the highest Toxicity/Persistence/Bioaccumulation Factor Values are benzo (a) pyrene, cadmium, dibenzo (a,h) anthracene, and mercury (Ref. 1, Table 4-16; Ref. 2, pp. 12, 22, 36 & 48).

Toxicity/Persistence/Bioaccumulation Factor Value: 500,000,000

4.1.3.2.2 Hazardous Waste Quantity

Source Number	Source Hazardous Waste Quantity Value (Section 2.4.2.1.5)	Is Source Hazardous Constituent Quantity Data Complete? (yes/no)
1	62.22	No
2	9.26	No
3	49.38	No
4	0.09	No
5	>0	No
TOTAL	**120.95**	

The sum of the source hazardous waste quantity values is assigned as the Hazardous Waste Quantity Factor Value (Ref.1, Sec. 2.4.2.2 and Table 2-6). The sum of the source hazardous waste quantity values for Surface Water Pathway, rounded to the nearest integer, is 121. For a hazardous waste quantity range of greater than 100 to 10,000 a value of 100 is assigned from Ref. 1, Table 2-6 for the migration pathway. Also, according to Section 2.4.2.2 of the HRS, a surface water pathway hazardous waste quantity factor value of 100 can be assigned because the hazardous constituent quantity data is not adequately determined for one or more sources, and targets for the surface water pathway are subject to actual contamination at Level II concentrations (Ref. 1, Sec. 2.4.2.2, Table 2-6; Section 4.1.4.3.1.2 of this HRS documentation record).

Sum of Values: 121
Hazardous Waste Quantity Assigned (Ref 1, Section 2.4.2.2, Table 2-6): 100

4.1.3.2.3 Waste Characteristics Factor Category Value

The waste characteristics factor category value is assigned based on the Waste Characteristics Product. The Waste Characteristics Product is the product of the Toxicity/Persistence Factor Value and the Hazardous Waste Quantity Factor Value subject to a maximum of 1 X 10^8. This product is multiplied by the Bioaccumulation Potential Factor Value subject to a maximum value of 1 x 10^{12}. The hazardous substances with the highest Toxicity/Persistence/Bioaccumulation Factor Value for the watershed, benzo (a) pyrene, cadmium, dibenzo (a,h) anthracene, and mercury, will be used (Ref. 1, Sec. 4.1.3.2.1.4).

Toxicity/Persistence Factor Value: 10,000
Hazardous Waste Quantity Factor Value: 100

(Toxicity/Persistence x Hazardous Waste Quantity):
10,000 x 100 = 1 x 10^6
(Subject to a maximum product of 1.0 x 10^8)

Bioaccumulation Potential Factor Value: 50,000
(Toxicity/Persistence x Hazardous Waste Quantity) x
Bioaccumulation Potential Factor Value:

(1 x 10^6) x (50,000) = 5.0 x 10^{10}
(Subject to a maximum product of 1.0 x 10^{12})

A Waste Characteristics Product value of 5.0 x 10^{10} receives a waste characteristic factor category value of 320 (Ref. 1, Table 2-7)

Hazardous Waste Quantity Assigned Value: 100
Waste Characteristics Factor Category Value: 320

4.1.3.3 HUMAN FOOD CHAIN THREAT – TARGETS

Recreational fishing exists along Palmetto Creek with largemouth bass, bream, bluegill, crappie, perch, striped bass, bullhead, catfish, rainbow trout, and redear sunfish species being caught (Ref. 31, p. 1; Ref. 32, p. 1; Ref. 44, pp. 1-5). Additionally, Bundick Creek is fished recreationally with lamprey, paddlefish, gars, bowfin, herring, carps, minnows, suckers, pike, catfish, perch, New Word silverside, topminnows, livebearer, crappie, bream, sunfish, bass, drum and croakers, and pygmy sunfish caught or known to occur (Ref. 33, pp. 2-3; Ref. 34, pp. 21-23; Ref. 44, pp. 1-5).

4.1.3.3.1 Food Chain Individual

A food chain individual factor of 20 is assigned based on an observed release (from chemical analysis) of acenaphthene, acenaphthylene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (g,h,i) perylene, benzo (k) fluoranthene, carbazole, dibenzo (a,h) anthracene, dibenzofuran, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene with a Bioaccumulation Factor Value of 500 or greater to sediments and surface water in the watershed, and also based on a fishery being present within the 15-mile TDL of the in water segment (Ref. 1, Sec. 4.1.3.3.1; Ref. 2, pp. 2, 4, 6, 10, 12, 14, 16, 18, 20, 24, 34, 36, 38, 40, 42, 50, 52, 56 & 58; Figure 6; Tables 9, 11 & 12).

Food Chain Individual Factor Value (Ref. 1, Sec. 4.1.3.3.1): 20

4.1.3.3.2 Population

The Population Factor for the watershed is based on three factors: Level I concentrations, Level II concentrations, and potential human food chain contamination.

4.1.3.3.2.1 Level I Concentrations

There are no Level I concentrations established because a portion of the fishery is not within the boundaries of the observed release, the fishery is not closed within the boundaries of the observed release, and no tissue samples were collected from an essentially sessile, benthic, human food chain organism from the watershed within the 15-mile target distance limit of the in water segment (Ref. 1, Sec. 4.1.3.3.2.1).

4.1.3.3.2.2 Level II Concentrations

No Level II concentrations have been established for fisheries or portions of fisheries, within the watershed (Ref. 1, Sec. 4.1.3.3.2.2). Recreational fishing does not occur within the unnamed drainage ditch/stream, unnamed perennial stream, or the freshwater pond (bisected by Crosby Road but continuously connected by culverts) where an observed release by chemical analysis is evident in the sediment and surface water media of a hazardous substance significantly above background and attributed to the site (Ref. 39, pp. 65 & 84-88; Table 10 & 11).

4.1.3.3.2.3 Potential Human Food Chain Contamination

Fishing was not observed or known to occur along the unnamed drainage ditch/stream, unnamed perennial stream, the freshwater pond (bisected by Crosby Road but continuously connected by culverts), and the unnamed perennial stream receiving discharge from the freshwater pond flowing toward the Kansas City Southern Railroad ROW, along the Kansas City Southern Railroad ROW, and eventually into Palmetto Creek.

Recreational fishing is conducted within Palmetto Creek and Bundick Creek (Ref. 31, p. 1; Ref. 32, p. 1; Ref. 33, pp. 2-3; Ref. 34, pp. 21-23; Ref. 44, pp. 1-5). The Louisiana Department of Wildlife and Fisheries (LDWF) does not keep records on pounds of fish caught and consumed annually per body of water; therefore it will be assumed that at least more than zero (>0) and less than 100 (<100) pounds per year are consumed annually from Palmetto Creek, and Bundick Creek (Ref. 1, Table 4-18; Ref. 34, pp. 21-23).

No gauging stations are located along Palmetto Creek. Additionally, no published average stream flow data is available for Palmetto Creek. The flow rate at the target location was extrapolated using the flow data for Bundick Creek. According to gauging station 08080204 located on Bundick Creek, upstream from the confluence of Palmetto Creek and Bundick Creek, the average annual flow rate as measured for water years 1957 through 2015 is 150.88 cfs (Ref. 29, pp. 1-4). This segment will be set to equal the flow at the upstream gauging station and will be considered to be a moderate to large stream, and will be assigned a dilution value of 0.01 (Ref. 1, Table 4-13; Figure 6).

The United States Geological Survey (USGS) gauging station 08080204, located in Beauregard Parish near DeRidder, Louisiana, approximately 1.68 miles upstream from the confluence of Palmetto Creek and Bundick Creek, at latitude 30°49'07" North and longitude 93°13'48" West, has an average annual flow rate for Bundick Creek as measured for water years 1957 through 2015 of 150.88 cfs (Ref. 29, pp. 1-4). The flow rate for Bundick Creek falls into the moderate to large stream category, with an average stream flow rate greater than 100 cfs and less than 1,000 cfs, thus being assigned a dilution value of 0.01 (Ref. 1, Table 4-13).

Table 14 – Fishery Identification Study

Identity of Fishery	Annual Production (pounds)	Type of Surface Water Body	Average Annual Flow	Population Value (P_i)	Dilution Weight (D_i)	P_i x D_i	Reference
Palmetto Creek	>0-100	Moderate to Large Stream	150.88 cfs	0.03	0.01	0.0003	Ref.1, Tables 4-13, 4-18; Ref. 29, pp. 1-4
Bundick Creek	>0-100	Moderate to Large Stream	150.88 cfs	0.03	0.01	0.0003	Ref.1, Tables 4-13, 4-18; Ref. 29, p. 1-4

Sum (P_i x D_i): 0.0006
(Sum of P_i x D_i) x 1/10: 0.00006

Potential Human Food Chain Contamination Factor Value: 6.0×10^{-5}

4.1.3.3.2.4 Calculation of Population Factor Value

The population factor value is equal to:

Level I Concentrations (0) + Level II Concentrations (0) + Potential Human Food Chain Contamination (0.00006) = 0.00006.

A value of 6.0×10^{-5} is assigned as the Population Factor Value.

Population Factor Value: 6.0×10^{-5}

4.1.3.3.3. Calculation of Human Food Chain Threat – Targets Factor Category Value

The Human Food Chain Threat – Targets Threat Category value is calculated by summing the food chain individual and population factor values for the watershed:

Food Chain Individual Factor Value (20) + Population Factor Value (0.00006) = 20.00006

Target Factor Category Value: 20.00006

4.1.3.4. Calculation of Human Food Chain Threat Score for a Watershed

The Human Food Chain Threat Score is calculated by multiplying the human food chain threat factor category values for the likelihood of release, waste characteristics, and targets for the watershed (Ref. 1, Sec. 4.1.3.4).

Likelihood of Release (550) x Waste Characteristics (320) x Targets (20.00006) = 3,520,011 (rounded to the nearest integer).

This product is then divided by 82,500:

$$3{,}520{,}011 \div 82{,}500 = 42.66$$

The resulting value, subject to a maximum of 100, is assigned as the Human Food Chain Threat Score.

Human Food Chain Threat Score: 42.66

4.1.4.2 ENVIRONMENAL THREAT – WASTE CHARACTERISTICS

4.1.4.2.1 Ecosystem Toxicity/Persistence/Bioaccumulation

The environmental threat waste characteristics section provides the ecosystem toxicity, persistence and bioaccumulation factor values for hazardous substances that are available to migrate from sources at the site to surface water in the watershed via the overland/flood hazardous substances migration path for the watershed (Ref. 1, Sec. 4.1.4.2.1), the hazardous waste quantity value for the watershed (Ref. 1, Sec. 4.1.4.2.2), and the calculation of the environmental threat – waste characteristics factor category value. The highest combined ecosystem toxicity, persistence and ecobioaccumulation factor is used to determine the waste characteristics factor value for the environmental threat of the surface water migration pathway (Ref. 1, Sec. 4.1.4.2.3).

Table 15 – Ecosystem Toxicity/Persistence/EcoBioaccumulation Factor Summary

Hazardous Substance	Source No.	Eco Toxicity Factor Value	Persistence Factor Value*	Eco Toxicity/ Persistence Factor Value (Table 4-12)	Bioaccumulation Factor Value **	Toxicity/Persistence /Bioaccumulation Factor Value (Table 4-16)	Reference
Acenaphthene	1, 2, 3, 4, OR	10,000	0.4	400	500	200,000	Ref. 1, Tables 4-12, 4-16; Ref. 2, pp. 1-65
Acenaphthylene	1, 3, 4, 5, OR	0	0.4	0	500	0	
Anthracene	1, 2, 3, 4, 5, OR	10,000	0.4	4,000	50,000	200,000,000	
Arsenic	1, 2, 3	10	1	10	50,000	500,000	
Benzo (a) anthracene	1, 2, 3, 4, 5, OR	10,000	1	10,000	50,000	500,000,000	
Benzo (a) pyrene	1, 2, 3, 4, 5, OR	10,000	1	10,000	50,000	500,000,000	
Benzo (g,h,i) perylene	2, 3, 4, OR	0	1	0	50,000	0	
Benzo (b) fluoranthene	1, 2, 3, 4, 5, OR						
Benzo (k) fluoranthene	1, 2, 3, 4, 5, OR	0	1	0	50,000	0	
Biphenyl, 1,1'-	1, 2, 3, 4,						
Bis (2-ethylhexyl) phthalate	4	1,000	1	1,000	50,000	50,000,000	
Cadmium	1, 2, 3	10,000	1	10,000	50,000	500,000,000	
Carbazole	1, 2, 3, 4, 5, OR	1,000	0.07	70	500	35,000	
Chromium	2, 3, 4, 5	10,000	1	10,000	500	5,000,000	
Chrysene	1, 2, 3, 4, OR	1,000	1	1,000	5,000	5,000,000	
Cobalt	1, 2, 3	0	1	0	500	0	
Copper	1, 2, 3, 4, 5	1,000	1	1,000	50,000	50,000,000	
Dibenzo (a,h) anthracene	1, 3, 4, 5, OR	0	1	0	50,000	0	
Dibenzofuran	1, 2, 3, 4, 5, OR	1,000	0.4	400	500	200,000	
Fluoranthene[1]	1, 2, 3, 4, 5, OR	10,000	1	10,000	5,000	50,000,000	
Fluorene	1, 2, 3, 4, OR	1,000	1	1,000	5,000	5,000,000	
Indeno (1,2,3-cd) pyrene	1, 2, 3, 4, OR	0	1	0	50,000	0	
Lead	1, 2, 3, 4, 5	1,000	1	1,000	50,000	50,000,000	
Manganese	1, 2, 3, 4, 5	100	1	100	50,000	5,000,000	
Mercury	1, 2, 3, 4, 5	10,000	1	10,000	50,000	500,000,000	
Methylnaphthalene, 1-	OR						
Methylnaphthalene, 2-	1, 2, 3, 4, 5, OR	100	0.07	7	50,000	350,000	
Naphthalene	1, 2, 3, 4, 5, OR	1,000	0.07	70	50,000	3,500,000	
Nickel	1, 2, 3, 4, 5	100	1	100	50,000	5,000,000	
Phenanthrene	1, 2, 3, 4, 5, OR	10,000	0.4	4,000	50,000	200,000,000	
Pyrene	1, 2, 3, 4, 5, OR	10,000	1	10,000	50,000	500,000,000	
Silver	4	10,000	1	10,000	50	500,000	
Thallium	2, 3	100	1	100	500	50,000	
Zinc	1, 2, 3, 4, 5	10	1	10	50,000	500,000	

* Persistence values assigned are based on Palmetto Creek, which is perennially flowing water, and thus classified as a River.
** Bioaccumulation values are food chain values assigned based on the surface water category of fresh water (Ref. 28, pp. 3-8).
[1]Fluoranthene is listed as benzo (j,k) fluoranthene in the SCDM (Ref. 2, p. 16).
OR – Observed Release documented substance.

The contaminants with the highest Ecosystem Toxicity/Persistence/Bioaccumulation Factor Values are benzo (a) anthracene, benzo (a) pyrene, cadmium, mercury, and pyrene (Ref. 1, Table 4-21; Ref. 2, pp. 10, 12, 22. 48 & 58).

Ecosystem Toxicity/Persistence/Bioaccumulation Factor Value: 500,000,000

4.1.4.2.2 Hazardous Waste Quantity

Source Number	Source Hazardous Waste Quantity Value (Section 2.4.2.1.5)	Is Source Hazardous Constituent Quantity Data Complete? (yes/no)
1	62.22	No
2	9.26	No
3	49.38	No
4	0.09	No
5	>0	No
TOTAL	**120.95**	

The sum of the source hazardous waste quantity values is assigned as the Hazardous Waste Quantity Factor Value (Ref. 1, Sec. 2.4.2.2 and Table 2-6). The sum of the source hazardous waste quantity values for Surface Water Pathway, rounded to the nearest integer, is 121. For a hazardous waste Quantity range of greater than 100 to 10,000 a value of 100 is assigned from Ref. 1, Table 2-6 for the migration pathway (Ref. 1, Sec. 2.4.2.2, Table 2-6). Also, according to Section 2.4.2.2 of the HRS, a surface water pathway hazardous waste quantity factor value of 100 can be assigned because the hazardous constituent quantity data is not adequately determined for one or more sources, and targets for the surface water pathway are subject to actual contamination at Level II concentrations (Ref. 1, Sec. 2.4.2.2, Table 2-6; Section 4.1.4.3.1.2 of this HRS documentation record).

Sum of Values: 121
Hazardous Waste Quantity Factor Value (Ref. 1, Sec. 2.4.2.2, Table 2-6): 100

4.1.4.2.3 Waste Characteristics Factor Category Value

A Waste Characteristics Factor Category Value is assigned based on the Waste Characteristic Product. The hazardous substances with the highest ecosystem toxicity/persistence/bioaccumulation factor value for the watershed are benzo (a) anthracene, benzo (a) pyrene, cadmium, mercury, and pyrene (Ref. 1, Sec. 4.1.4.2.3). These values are used to determine the Waste Characteristic Product. The Waste Characteristic Product is the product of the Ecosystem Toxicity/Persistence/Bioaccumulation Factor Value and the Hazardous Waste Quantity Factor Value subject to a maximum product of 1×10^8. This product is multiplied by the Ecosystem Bioaccumulation Potential Factor Value subject to a maximum product of 1×10^{12}.

Using HRS Table 4-20 and Table 15 in Section 4.1.4.2.1 of this HRS documentation record, the Ecosystem Toxicity/Persistence for benzo (a) anthracene, benzo (a) pyrene, cadmium, mercury, and pyrene is 10,000.

A Hazardous Waste Quantity Factor Value of 100 is assigned (Ref. 1, Sec. 2.4.2.2, Table 2-6; Section 4.1.4.2.2 of this HRS documentation record).

Ecosystem Toxicity/Persistence Factor Value = 10,000
Hazardous Waste Quantity Factor Value = 100
$10{,}000 \times 100 = 1.0 \times 10^6$
(Subject to a maximum product of 1.0×10^8)

The Ecosystem Bioaccumulation Factor Value for benzo (a) anthracene, benzo (a) pyrene, cadmium, mercury, and pyrene is 50,000 (Ref. 2, pp. 10, 12, 22, 48 & 58).

Ecosystem Bioaccumulation Factor Value = 50,000

(Ecosystem Toxicity/Persistence x Hazardous Waste Quantity) x Bioaccumulation Factor Value:

$(1 \times 10^6) \times 50{,}000 = 5 \times 10^{10}$
(Subject to a maximum product of 1×10^{12})

A Waste Characteristics Product Value of 5×10^{10} receives a Waste Characteristic Factor Value of 320 (Ref. 1, Table 2-7).

(Ecosystem Toxicity/Persistence Factor Value x Hazardous Waste Quantity Factor Value) x Bioaccumulation Factor Value: 5×10^{10}
Waste Characteristics Factor Value: 320

4.1.4.3 ENVIRONMENTAL THREAT – TARGETS

4.1.4.3.1 Sensitive Environments

4.1.4.3.1.1 Level I Concentrations

Level I concentrations cannot be established in the contiguous wetlands and adjoining unnamed drainage ditch/stream, the unnamed perennial stream, or the freshwater pond.

Level I Concentrations Factor Value: 0

4.1.4.3.1.2 Level II Concentrations

Wetlands were identified by LDEQ personnel and the National Wetland Inventory (NWI) contiguously along the 15-TDL for the surface water migration pathway. Wetlands as identified by NWI are as follows: PSS1A designation: palustrine scrub-shrub broad-leave deciduous nontidal temporary flooded; PFO1A designation: palustrine forested broad-leave deciduous nontidal temporarily flooded; and PUBHh designation: palustrine unconsolidated bottom nontidal permanently flooded diked/impounded, with documented emergent aquatic vegetation that clearly meets the HRS wetland definition (Ref. 28, pp. 5-9; Ref. 35, pp. 1-3; Ref. 36, pp. 1-9; Ref. 37, pp. 1-5).

The PPE is a segment of contiguous Palustrine Freshwater Forested/Shrub wetland that contains discernible flow from an adjoining unnamed drainage ditch/stream (Ref. 6, p. 94; Ref. 7, p. 84; Ref. 10, p. 10; Ref. 16, p. 1; Ref. 28, pp. 5-9; Ref. 35, pp. 1-2; Ref. 39, pp. 79, 96-103; Figure 4). The PPE is located approximately mid-point on the western side of the CMC property and based on property features, characteristics, and the nature of the topography, the contiguous wetlands and adjoining drainage ditch/stream are down gradient to the south from identified sources (Ref. 3, p. 1; Ref. 4, pp. 13, 20-21: Ref. 6, pp. 58 & 94; Ref. 12, p. 2; Ref. 39, pp. 96-103; Figure 1 & 4). The continuous unnamed drainage ditch/stream adjoins the contiguous designated wetlands and passes beneath the railroad spur, via a culvert, from east to west (Ref. 14, pp. 1-2; Ref. 28, pp. 5-9; Ref. 35, pp. 1-2; Ref. 39, pp. 96-103 & 105-106).

Level II concentrations have been established in the contiguous wetlands and the adjoining unnamed drainage ditch/stream, the unnamed perennial stream, and the freshwater pond by chemical analysis of wetland samples that met observed release criteria (Tables 10, 11 & 12). The total frontage of wetlands subject to Level II contamination is approximately 3,761 feet (Figure 5; Ref. 28, pp. 6-7 & 8-11; Ref. 35, pp. 1-2; Ref. 36, pp. 1-9; Ref. 37, pp. 1-5). The total wetland frontages measured are divided into three segments (Ref. 28, pp. 10-14). The wetland frontage of Segment 1, from the PPE in the wetland near Sample ACS-14 to surface water sample AC-ESI-02 also in the wetland is determined by the perimeter of that portion of the wetland subject to Level II concentrations, the perimeter of which is approximately 117 feet (Figure 5; Ref. 28, pp. 7 & 10; Ref. 35, p. 1; Ref. 36, pp. 1-9). The wetland frontage of Segment 2 is determined by the distance, approximately 1,834 feet, measured along the contiguous wetlands and the adjoining unnamed drainage ditch/stream, continuing along the unnamed perennial stream to the freshwater pond with emergent aquatic vegetation. The total frontage for Segment 2 is the sum of the wetland along the right descending bank (921 feet) and the left descending bank (913 feet) of the contiguous wetlands and the adjoining unnamed drainage ditch/stream, and continuing along the unnamed perennial stream to the freshwater pond with emergent aquatic vegetation (Figure 5; Ref. 28, pp. 6-7 & 10-11; Ref. 35, p. 1; Ref. 37, pp. 1-4). The wetland frontage of Segment 3 is determined by the frontage of the contiguous wetland along the shoreline of the freshwater pond with emergent aquatic vegetation and bisected by Crosby Road but continuously connected by culverts (AC-ESI-07, AC-ESI-08, AC-ESI-09, AC-ESI-10 and AC-ESI-11). Approximately 1,810 feet of wetland frontage surrounds the freshwater pond from the point of entry from the unnamed perennial stream to sample location AC-ESI-10 (Figure 5; Ref. 28, pp. 6 & 13-14; Ref. 35, pp. 1-2; Ref. 37, p. 5). The perimeter of the contiguous wetlands and the adjoining unnamed drainage ditch/stream along the PPE (Segment 1), the frontage along the contiguous wetlands and adjoining unnamed drainage ditch/stream, continuing along the unnamed perennial stream to the freshwater pond with emergent aquatic vegetation (Segment 2), and the perimeter of the freshwater pond from the point of entry from the unnamed

perennial stream to sample location AC-ESI-10 (Segment 3) were all measured on a scaled map that included the NWI map overlay, and are included with the NWI maps reference (Ref. 28, pp. 10-14).

The total frontage of wetlands subject to Level II contamination measures 3,761 feet or approximately 0.71 miles (Figures 5 and 6). A value of 25 is assigned from Table 4-24 of the HRS for a length of wetlands from 0.1 to 1 mile (Ref. 1, Sec. 4.1.4.3.1.2).

Threatened and endangered species have been reported within the general area; however, it is not known if their habitats overlap the zone of Level II contamination. Therefore, these other sensitive environments will not be evaluated (Ref. 38, p. 3).

To obtain the Level II concentration factor, the sum of the sensitive wetlands value and sensitive environments value are added to obtain the Level II Concentration Factor Value (Ref. 1, Sec. 4.1.4.3.1.3).

Sensitive Wetlands Value (25) + Sensitive Environments Value (0) = 25

Level II Concentration Factor Value (Ref. 1, Sec. 4.1.4.3.1.2 and Table 4-24): 25

4.1.4.3.1.3 Potential Contamination

Palustrine scrub-shrub broad-leaved deciduous wetlands and palustrine forested broad-leaved deciduous wetlands, as identified on NWI that are nontidal temporarily flooded, are located along the frontage of the unnamed perennial stream receiving discharge from the freshwater pond that flows until encountering the Kansas City Southern Railroad ROW, then flows south along the Kansas City Southern Railroad ROW until encountering Palmetto Creek (Ref. 28, pp. 4-5 & 9).

In addition, palustrine scrub-shrub broad-leaved deciduous wetlands and palustrine forested broad-leaved deciduous wetlands, as identified on NWI that are nontidal temporary flooded, are located along the frontage of Palmetto Creek (Ref. 28, pp. 3-4 & 9). Also, palustrine forested broad-leaved deciduous nontidal temporary flooded wetlands, and areas of palustrine forested broad-leaved deciduous nontidal seasonally flooded wetlands are located along the frontage of Bundick Creek (Ref. 28, p. 3 & 9).

The wetlands subject to potential contamination are located along the unnamed perennial stream, Palmetto Creek and Bundick Creek meet the criteria as defined in 40 CFR 230.3, to be classified in the palustrine system and subcategories of frosted and scrub-shrub wetlands (Ref. 28, pp. 3-5 & 9). The wetlands along the unnamed perennial stream, Palmetto Creek and Bundick Creek were measured on a scaled map that included the NWI map overlay, and are included with the NWI maps reference (Ref. 28, pp. 15-18). Due to wetlands being contiguous along the entire 15-mile TDL, the length of each in-water segment was measured and multiplied by two to give the total wetland frontage along each individual segment subject to potential contamination. The length of the unnamed perennial stream was measured in two separate lengths for a total length of approximately 0.76 miles, for a total contiguous wetland frontage of approximately 1.52 miles (Ref. 28, pp. 15-16). The length of Palmetto Creek to the confluence with Bundick Creek is approximately 4.51 miles, for a total wetland frontage of approximately 9.02 miles (Ref. 28, p. 17). The length of Bundick Creek from the confluence with Palmetto Creek to the end of the 15-mile TDL is approximately 9.41 miles, for a total wetland frontage of approximately 18.82 miles (Ref. 28, p. 18).

Type of Surface Water Body	Wetland Frontage (miles)	Reference	Wetland Value (Ref. 1, Table 4-24)
Unnamed Perennial Stream	1.52	Ref. 28, pp. 15-16; Figure 6	50
Palmetto Creek	9.02	Ref. 28, p. 17; Figure 6	250
Bundick Creek	18.82	Ref. 28, p. 18; Figure 6	450

To obtain the Potential Contamination Factor Value, the sum of the sensitive environments is added to the wetland value, which is then multiplied by the assigned surface water dilution weight for each in-water segment. This value is then divided by 10 to obtain the Potential Contamination Factor Value (Ref. 1, Sec. 4.1.4.3.1.3).

Type of Surface Water Body	Sum of Sensitive Environment Values (Sj)	Wetland Frontage Value (Wj)	Adjusted Dilution Weight (Dj)	(Wj + Sj)Dj
Unnamed Perennial Stream	0	50	1	50
Palmetto Creek	0	250	0.01	2.5
Bundick Creek	0	450	0.01	4.5

Potential Contamination Factor Value
57.0 ÷ 10 = 5.7

Sum of Sensitive Environment Values + Wetland Frontage Values: 0
Potential Contamination Factor Value: 5.7

4.1.4.3.1.4 Environmental Threat – Targets Factor Category Value

The environmental threat target factor category value for the watershed is the sum of the values for the Level I Concentrations Factor Value , Level II Concentrations Factor Value, and Potential Contamination Factors Value (Ref. 1, Sec. 4.1.4.3.1.4).

Level I (0) + Level II (25) + Potential Contamination (5.7) = 30.7

Target Factor Category Value: 30.7

4.1.4.4 Calculation of Environmental Threat Score

The Environmental Threat Score is calculated by multiplying the environmental threat factor category values for the likelihood of release, waste characteristics, and targets for the watershed (Ref. 1, Sec. 4.1.4.4 and 4.1.4.3.1.4).

Likelihood of Release (550) x Waste Characteristics (320) x Targets (30.7) = 5,403,200 (rounded to the nearest integer).

This product is then divided by 82,500:

5,403,200 ÷ 82,500 = 65.49

The resulting value, subject to a maximum of 60, is assigned as the Environmental Threat Score.

Environmental Threat Score: 60.0

4.1.5 Calculation of Overland/Flood Migration Component Score for a Watershed

The overland/flood migration component score for the watershed is calculated by summing the scores for the Drinking Water Threat Score, Human Food Chain Threat Score, and Environmental Threat Score assigned as the Surface Water Overland/Flood Migration Component Score for a Watershed (Ref. 1, Sec. 4.1.5).

Drinking Water (0) + Human Food Chain (42.66) + Environmental (60) = 102.66

The resulting value, subject to a maximum of 100, is assigned as the Watershed Score.

Watershed Score: 100

4.1.6 Calculation of Overland/Flood Migration Component Score

The highest Surface Water Overland/Flood Migration Component Score for the Watershed evaluated (in this case, only one watershed was evaluated) is selected and assigned as the Surface Water Overland/Flood Migration Component Score for the site, subject to a maximum of 100 (Ref. 1, Sec. 4.1.6).

Component Score: 100

4.2 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT

This component was not scored because an observed release was documented for the overland flow/flood component.

Ground Water to Surface Water Factor Value: NS

4.3 CALCULATION OF SURFACE WATER MIGRATION PATHWAY SCORE

The overland/flood migration component was scored and this value is assigned to the surface water migration pathway score.

Surface Water Migration Pathway Score: 100