ARCADIS Design & Consultancy for natural and built assets

Ms. Sheri Adkins, P.G.
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Subject:
Privileged and Confidential, Joint Defense Privilege
Response to Comments/ Notice of Deficiency
Interim Correction Action Plan, January 2016, Former Black Leaf Chemical Site, 1391 Dixie Highway, Louisville, Jefferson County, KY
AI #52202, CERCLIS ID #KYD980559520

ENVIRONMENTAL

Date:
October 28, 2016

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Our ref:
B0085908

Dear Ms. Adkins:

On behalf of ExxonMobil Environmental Services Company (EMES), Maxus Energy Corporation for Occidental Chemical Corporation (Occidental), Occidental, and Greif, Inc. (collectively the Investigating Parties [IPs]), this letter provides responses to comments received from the Kentucky Department of Environmental Protection (KDEP) (dated April 21, 2016) on the *Corrective Action Plan, Former Black Leaf Chemical Site, Louisville, Jefferson County, Kentucky* (CAP) dated January 2016. Comments are provided in bold typeface followed by the response in standard typeface.

As discussed during the May 27, 2016 meeting with KDEP, the IPs are working to ensure that deed instruments are implemented to restrict the future use of the property to industrial/commercial. As a result, the IPs are requesting approval from KDEP based on the path forward described in the enclosed Interim Corrective Action Plan, Revision No. 1 (Interim CAP). Additional details have been added to the Interim CAP based on KDEP's comments.

The following are a list of concerns raised in KDEP correspondence, each accompanied by clarification, additional information or are addressed by removal of the residential use scenario as a deed instrument will be implemented to restrict site use to industrial/commercial.

1. **Site Characterization**
    a. **Exposure Point Concentrations**
        i. **Kentucky's Bluegrass Regional Background guidance was not properly applied. Please refer to "Kentucky Guidance for Ambient Background Assessment"**

Response:

The Interim CAP has been revised to apply Kentucky's Bluegrass Regional Background guidance for assessing arsenic concentrations in soil at the Site. The guidance document identifies three criteria which must be met to demonstrate that the site data are background. The criteria (specific to arsenic) include that the mean site concentration must be below the 95% UCL of the mean concentration of background (13.12 milligrams per kilogram [mg/kg]), half of the data points should be less than the midpoint (60th percentile of 10.6 mg/kg), and no data point should be above the 95th percentile of 22.7 mg/kg. After soil removal is completed based on the strategy described in the Interim CAP, the mean site concentration for arsenic at the point of exposure (top 1 foot) will be 10.99 mg/kg, 50% of the data points will have arsenic concentrations less than 10.6 mg/kg, and no data point with arsenic concentrations above 22.7 mg/kg will remain in the top one foot. It should be noted that the proposed removal includes approximately 23,000 cubic yards (cy) and covers approximately 10 acres, while the proposed building demolition area covers approximately 6 acres. In total, soil removal and building demolition activities will encompass approximately 16 acres. This area represents more than 50% of the Site; therefore, more than half of the property will have clean backfill within the point of exposure.

        ii. **ProUCL statistical analysis was not calculated correctly to incorporate Kentucky's target risk levels (401 KAR 100:030), nor were all appropriate land use, risk scenarios, and/or populations accurately incorporated.**

Response:

As discussed, the IPs are working to ensure that deed instruments are implemented to restrict the future use of the Site to industrial/commercial use. The Interim CAP has been prepared on the basis that the Site will continue to be restricted for industrial/commercial use; therefore, residential site use scenarios were not evaluated.

The corrective action strategy outlined in the Interim CAP has been modified to include excavation of all soil with concentrations above the site-specific screening levels (SSSLs; defined in Section 2.2 of the Interim CAP) at the point of exposure (in the top 1 foot of soil).

For site soils below the point of exposure (deeper than 1 foot), ProUCL statistical analysis (i.e., calculation of the 95% UCL of the mean) was used to evaluate compounds with maximum concentrations above the SSSLs. The SSSLs correspond to a target cancer risk of 1×10^{-6} or a noncancer hazard quotient of 1 for an industrial use scenario.

2. Corrective Action Strategy ("management in place closure" KRS 224.1-400(18)(b))

a. Technical Approach and Scope of Work

i. Excavation of Impacted Soils

1. Proposed Corrective Action strategy is based on characterization Exposure Point calculations that are not deemed appropriate to satisfy 401 KAR 100:030

Response:

The Interim CAP has been prepared based on the intent that the Site will be restricted to industrial/commercial use. A deed instrument containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property will be recorded with the Jefferson County Clerk. A copy of the restrictive covenant will also be filed with the cabinet. As such, residential site use scenarios were not evaluated. The proposed corrective action for soil at the Site is consistent with 401 KAR 100:030 and with acceptable remedial approaches for management in place closure in accordance with KDEP rules and guidance. Most notably the approach:

(i) Removes from the Site all soils with pesticide and PAH concentrations at the point of exposure (top 1 foot of soil) above SSSLs (USEPA industrial/commercial soil RSLs dated May 2016) and, for arsenic, removes all soils at the point of exposure to achieve the background requirements specified in KDEP RAS 2008 and replaces the removed soils with clean fill; and,

(ii) In addition to the above and based on the proposed corrective action, the residual risks below the point of exposure (i.e., below the top 1 foot of soil) were calculated to ensure that the mean residual concentrations of pesticides and PAHs, calculated as the 95% UCL of the mean using USEPA procedures, are below concentrations that result in a total residual target cancer risk level of 1×10^{-6} or a noncancer hazard quotient of 1 for an industrial use scenario. Meeting these criteria below the point of exposure is achieved by:

1. Removal of all sample locations below the point of exposure containing pesticides at concentrations above the SSSLs and replacement of excavated soils with clean fill; and
2. Extensive removal of sample locations below the point of exposure (the top 1 foot of soil) containing PAHs at concentrations above SSSLs and replacement of excavated soils with clean fill.

The proposed excavation also includes extensive removal of sample locations below the point of exposure with arsenic concentrations above SSSLs and replacement of excavated soils with clean fill.

2. **Excavation of impacted soils relies on currently existing, dilapidated structures, and foundations to serve as de facto exposure covers (caps). Unless structural integrity of these areas can be confirmed and approved by KDEP as appropriate to reduce short-term and long-term exposure and eliminate migration pathways, these areas may not be utilized as engineering controls**

Response:

The revised corrective action strategy described in the Interim CAP includes demolition of all onsite buildings, slabs, and foundations. The IPs will remove the buildings once the deed instruments are secured and implemented. Many of these slabs and foundations are deeper than 1 foot; therefore, when restoring the area to match existing grade, a minimum of 1 foot of clean soil fill or stone will be added in these voids.

3. **Soils impacted to levels above "unrestrictive use" will not be approved for use as backfill in remedial actions.**

Response:

Samples collected from proposed backfill sources will be compared to May 2016 residential soil Regional Screening Levels (RSLs) and sample results will be submitted to KDEP for review and approval prior to use onsite.

ii. **Hydraulic Cleaning and Storm Water Management**
   1. **The methodology proposed does not clearly identify (in writing, on a site map, or both):**
      a. **The catch basins and down gradient sewer lines intended to be 'flushed';**
      b. **Where the 'flushed' sediments will ultimately settle, or end up – this information is particularly important in those areas near residential properties;**
      c. **What assurances/remedies are in place to address influx of pressure washer water/sediment load for underground conduits that could not be fully mapped and linked to MSD storm water controls;**
      d. **What measures will be taken to ensure the proposed activity does not effectively destroy old, crumbling infrastructure;**
      e. **What "appropriate" drainage that excess water generated during the activity will be directed to;**
      f. **How the cleaning will be coordinated with Louisville MSD in advance of work being implemented;**

g. Origin, capture method, treatment, and disposal of "dewatered sediment", or when such is expected to be generated or how.

Response:

Section 4.1.9.1 of the Interim CAP has been revised to incorporate additional information regarding hydraulic cleaning and storm water management. The removal action contractor selected to perform the work will be responsible for preparing a Hydraulic Cleaning Plan for review by IPs prior to the start of the work that will define the methods of pipe cleaning. This plan will be provided to KDEP for review and approval prior to the start of work.

iii. Institutional Controls

1. Assumed Commercial/Industrial Land Use does not fulfill requirement to assess all long-term future uses.

Response:

The Interim CAP has been prepared based on the intent that the Site will be restricted to industrial/commercial use. A deed instrument containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property will be drafted and submitted for KDEP approval prior to being recorded with the Jefferson County Clerk. A copy of the restrictive covenant will also be filed with the cabinet. As such, residential site use scenarios were not evaluated. The proposed corrective action for soil at the Site is consistent with 401 KAR 100:030 and with acceptable remedial approaches for a management in place closure in accordance with KDEP rules and guidance.

The target soil concentrations for industrial/commercial use will be met at the point of exposure (top 1 foot) by the proposed remedy. For site soils below the point of exposure (deeper than 1 foot), ProUCL statistical analysis (i.e., calculation of the 95% UCL of the mean) will be used to evaluate compounds with maximum concentrations above the SSSLs. An Environmental Covenant (EC) and Site Management Plan (SMP) will be developed consistent with KDEP guidance for a management in place closure with the use of institutional controls. In addition, Section 3.3 evaluates the exposure potential in site soils that would remain after the proposed corrective action.

2. It is not specified within the submitted document how the responsible party(s) will implement, control, maintain, and monitor the site in perpetuity or until unrestricted land use requirements are met

Response:

The EC and SMP prepared by the property owner or their designee will include these details and will be submitted as the final CAP. Additional detail has been added to the Interim CAP in Section 4.3. As required for management in place closures, the site will also comply with requirements for annual and five-year inspections and certifications while the institutional controls are required for restriction of site use to industrial/commercial.

3. **Plan does not include a draft deed instrument that legally binds institutional controls to the property and allowable land use (Environmental Covenant)**

Response:

The IPs are working to ensure that deed instruments will be implemented to restrict the future use of the Site to industrial/commercial use. The EC and SMP will be developed consistent with KRS 224.80 to restrict the Site to industrial/commercial land use and will be submitted as the final CAP.

4. **Plan further does not indicate agreement between property owner and submitting responsible parties regarding placement and execution of binding deed instrument.**

Response:

The IPs have discussed with KDEP the anticipated path forward regarding property ownership and implementation of a deed instrument.

5. **Plan does not detail the frequency and responsibility for required future inspections and/or certifications**

Response:

A SMP will be prepared by the property owner or their designee with these details. Additional detail has been added to Section 4.3 of the Interim CAP.

6. **Plan indicated that the Cabinet directed the responsible party(s) in the implementation of institutional controls consistent with Industrial/ Commercial operations. The Cabinet does not prescribe the *level* (residential or industrial) to which a site must be remediated or managed. It is accurate to state that leaving in place any levels above residential/unrestricted use will require institutional controls, and appropriate long-term management to ensure protectiveness and to further state, that remediation of a property to unrestricted use will not require institutional controls.**

Response:

The Interim CAP has been prepared based on the intent that the Site will be restricted to industrial/commercial use. A deed instrument containing an enforceable restrictive covenant which is transferable and is binding on current and subsequent property will be recorded with the Jefferson County Clerk. A copy of the restrictive covenant will also be filed with the cabinet. As such, residential site use

scenarios were not evaluated. The proposed corrective action for soil at the Site is consistent with 401 KAR 100:030 and with acceptable remedial approaches for a management in place closure in accordance with KDEP rules and guidance. The IPs are working to ensure that an EC and SMP are implemented for the property that will restrict the future use of the Site to industrial/commercial use. The plan to secure the EC and SMP are integrated into the corrective action strategy proposed in the attached Interim CAP.

If you have any questions, please feel free to contact me.

Sincerely,

Arcadis U.S., Inc.

Corinda Chwalek

Project Manager

Copies:
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Chris DeJarlais, Boulder Environmental Consulting
Tom Dimond, for Greif, Inc.
Shawn Cecil, Arcadis

Enclosures:

Interim Corrective Action Plan – Revision 1, Former Black Leaf Chemical Site, Louisville, Jefferson County, Kentucky (October 2016)

ARCADIS Design & Consultancy for natural and built assets

Exxon Mobil Oil Corporation

Maxus Energy Corporation

Occidental Chemical Corporation

Greif, Inc.

INTERIM CORRECTIVE ACTION PLAN REVISION NO. 1

Former Black Leaf Chemical Site

Louisville, Kentucky

October 2016

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INTERIM CORRECTIVE ACTION PLAN

REVISION NO. 1

Former Black Leaf Chemical Site
Louisville, Jefferson County, Kentucky

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CONTENTS

TABLES

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

CAP	Corrective Action Plan
Arcadis	Arcadis U.S., Inc.
ExxonMobil	Exxon Mobil Oil Corporation
Occidental	Occidental Chemical Corporation
IPs	Investigating Parties
LIP	Louisville Industrial Park, LLC
SCR	Site Characterization Report
KDEP	Kentucky Department of Environmental Protection
COPC	Constituents of potential concern
USEPA	United States Environmental Protection Agency
RSL	Regional Screening Level
RAS	Risk Assessment Section
SSSL	Site-specific screening level
%	Percent
UCL	Upper Confidence Limit
EPC	Exposure point concentration
RAC	Removal Action Contractor
RCRA	Resource Conservation and Recovery Act
HASP	Health and Safety Plan
E&SC	Erosion and Sediment Control
CY	Cubic yard
DOT	Department of Transportation
CFR	Code of Federal Regulations
OSHA	Occupational Safety and Health Administration
PPE	Personal protective equipment
SDS	Safety Data Sheets
KAR	Kentucky Administrative Regulation
EC	Environmental covenant
SMP	Site Management Plan

1 INTRODUCTION

This Revised Interim Corrective Action Plan (CAP) has been prepared by Arcadis U.S., Inc. (Arcadis) on behalf of Exxon Mobil Oil Corporation (ExxonMobil), Maxus Energy Corporation for Occidental Chemical Corporation (Occidental), Occidental, and Greif, Inc. (collectively the Investigating Parties [IPs]) to describe the proposed corrective action to address impacted soil and sediment at the former Black Leaf Chemical Site located in Louisville, Jefferson County, Kentucky (Site). Figure 1-1 identifies the site location on the U.S. Geological Survey 7.5-minute quadrangle map for Louisville West, Kentucky-Indiana.

The proposed corrective action strategy outlined herein has been developed based on deed instruments that will be implemented to ensure the property will be restricted for industrial/commercial use. As discussed during the May 27, 2016 meeting with Kentucky Department for Environmental Protection (KDEP), the IPs are working to ensure that an Environmental Covenant (EC) to restrict site use to industrial/commercial and a Site Management Plan (SMP) are developed consistent with KDEP guidance for a management in place closure. The IPs are requesting Approval of this revised Interim CAP based on the path forward described herein.

The proposed corrective action strategy described herein has been developed based on deed instruments that will be implemented to ensure the property will be restricted to industrial/commercial use. Therefore, strategies to redevelop the property for residential use were not evaluated as part of this Interim CAP.

1.1 Site Description and Background

1.1.1 Site Location

The Site is located on a single 29-acre tax parcel (parcel number 039H 0026 0000) in Louisville, Jefferson County, Kentucky (Figure 1-2), currently owned by Louisville Industrial Park, LLC (LIP and the LIP Parcel). The current street address that most closely matches the location of the Site is 1391 Dixie Highway. The geographical location of the center of the Site is at 38.23214° North Latitude and 85.78341° West Longitude (North American Datum of 1983).

1.1.2 Site Ownership and Operational History

Historical operations at the Site have included pesticide formulation, operations by cooperage/distillery, and lumber interests. Historical Sanborn mapping also indicated a former coal yard on a portion of the Site, as well as an off-site coal yard and foundry to the east. LIP purchased the 29-acre parcel in 1999 and operated a lumber warehouse and distribution facility until approximately 2006. The Site has been vacant since 2006. A detailed summary of the current understanding of the site ownership history was provided in the *Site Characterization Plan, Former Black Leaf Chemical Site, Louisville, Jefferson County, Kentucky* (Arcadis, November 2013, revised via comment response letters in February 2014 and May 2014).

1.2 Current Site Use, Land Coverage, and Surrounding Area

The Site is zoned EZ-1 Enterprise Zone, which allows C-2 commercial and M-3 industrial uses (www.lojic.com). Currently there are no active Site operations, though erosion and sediment control (E&SC)

inspections are performed semi-annually in accordance with the *Erosion and Sediment Control Plan, Former Black Leaf Chemical Site* (Arcadis, 2014). Several buildings from former site operations remain on the central portion of the Site as shown in Figure 1-2. The Site can be accessed through the gate from Dixie Highway to the west, which is locked at all times.

An asphalt-paved driveway is located at the western entrance extending east to the central portion of the Site and transitions to gravel in some areas. The asphalt/gravel driveway then splits in several directions and extends to most of the remaining buildings on site. The condition of buildings onsite varies, but many are in poor condition and several of the building roofs have collapsed and are unsafe to enter.

The far eastern and far western portions of the property are presently undeveloped and mostly unpaved with grass, brush/trees or gravel surface cover. Over the years, small bushes and trees have grown up along the fence-line surrounding the property. There are a few large diameter trees along the west property line at Saint Louis Ave, near the former Office building (Figure 1-2).

Use of land surrounding the Site includes residential properties to the north, a large rail yard to the south, and mixed-use industrial/commercial properties to the west and east.

1.3 Interim CAP Organization

The introduction provided in this section is followed in Section 2 by a brief summary of the data generated during characterization activities which was previously submitted in the *Site Characterization Report, Former Black Leaf Chemical Site, Louisville, Jefferson County, Kentucky* ([SCR], Arcadis, February 2015, revised via comment response letters in May 2015 and August 2015), and approved by KDEP in a letter dated October 28, 2015. Section 3 presents the proposed corrective action strategy. Section 4 presents the specific details of the proposed corrective action at the Site. References cited in this document are included in Section 5.

2 SUMMARY OF SITE CHARACTERIZATION ACTIVITIES

2.1 Introduction

Soil, sediment, and groundwater samples have been collected by several parties to evaluate the presence and extent of constituents of potential concern (COPCs) at the Site. The United States Environmental Protection Agency (USEPA) and KDEP implemented preliminary field investigations in 2010 and 2011. Based on the data generated by USEPA and KDEP, site COPCs were identified as polycyclic aromatic hydrocarbons (PAHs), arsenic, lead, and organochlorine pesticides. Additional characterization activities were implemented by Arcadis on behalf of the IPs in August-September 2014 and June 2015. The following sections present a brief summary of the sampling activities and results from these investigations. A detailed summary of the site sampling and analytical results are provided in the SCR (Arcadis, 2015).

2.2 Soil Sampling and Results

During site characterization activities, 333 soil samples were collected from 115 soil borings advanced at the locations shown on Figures 2-1 and 2-2. Soil samples were generally collected from 0-1 foot, 1-2 feet, and then at 2-foot intervals to termination depth. With the exception of arsenic, the soil sample COPC concentrations were compared to the May 2016 USEPA Regional Screening Levels (RSLs) for industrial exposures (USEPA, 2016). Arsenic concentrations in soil were evaluated based on Kentucky's Bluegrass Regional Background guidance cited in the *Risk Assessment Section (RAS) Memorandum* dated April 7, 2008 (KDEP RAS, 2008) (Arsenic Background Guidance) which is based on the Kentucky Guidance for Ambient Background Assessment (NREPC, 2004). Collectively, the Industrial RSLs and Arsenic Background Guidance shall be referred to in this Interim CAP as the site-specific screening levels (SSSLs).

The Arsenic Background Guidance calculates cleanup levels for arsenic based on the Bluegrass Province database. The cleanup levels for arsenic presented in the Arsenic Background Guidance indicates that the mean site concentration must be below the 95% Upper Confidence Limit (UCL) of the mean concentration of background (13.12 milligrams per kilogram [mg/kg]); that half of the data points should be less than the midpoint (60th percentile, 10.6 mg/kg); and that no data point should be above the 95th percentile (22.7 mg/kg). The existing site data from the 0 to 1 foot interval has a mean arsenic concentration of 25.06 mg/kg, 32% of the data points were above 10.6 mg/kg, and 25% or 27 samples exceeded the arsenic concentration of 22.7 mg/kg.

Soil boring locations with COPC concentrations above the SSSLs at one or more sample intervals in the top two feet of soil are presented on Figure 2-1. Soil boring locations with COPC concentrations above the SSSLs in soils greater than two feet below ground surface are presented on Figure 2-2. For presentation purposes, soil boring locations with arsenic concentrations above 22.7 mg/kg are shown on Figures 2-1 and 2-2 based on exceedances at the respective depths.

It should be noted that background levels of PAHs can substantially exceed the PAH RSLs used in this evaluation (Massachusetts Department of Environmental Protection, 2002). Background is defined as PAHs in soils that result from the burning of fossil fuels (e.g., power plants, automobiles) and other combustion-related sources (forest fires), rather than from Site-related activities. KDEP is currently

evaluating background levels of PAHs in Kentucky soils. However, this document only uses the stated RSLs for PAHs and the comparison is therefore considered conservative.

2.3 Sediment Sampling and Results

Site characterization activities included the collection of 15 sediment samples in 2011 and 2014 from the accumulated sediments in specific concrete basins throughout the Site. In the absence of established screening criteria for sediment in manholes and catch basins, data for the sediment samples were compared to the same soil SSSLs described in Section 2.2 for screening purposes. Figure 2-3 presents catch basin/manhole locations where sediment sample COPC concentrations exceed SSSLs, and sections of sewer piping that were previously inspected/mapped.

2.4 Groundwater Sampling and Results

At the request of KDEP, the former production well onsite was purged and sampled in 2014. The analytical results from the groundwater sample were below USEPA Drinking Water Standard Maximum Contaminant Level (MCL) concentrations for site COPCs. The well was therefore properly abandoned in 2014 in accordance KDEP requirements.

In addition, in accordance with Kentucky Guidance for Groundwater Screening, analytical data from the soil profile were also evaluated to demonstrate that groundwater is not impacted. No further action is necessary relative to groundwater at the Site.

3 CORRECTIVE ACTION STRATEGY

The corrective action strategy presented in this section is consistent with 401 KAR 100:030 and with acceptable remedial approaches for a managed in place closure in accordance with KDEP rules and guidance. The proposed corrective action strategy outlined herein has been developed based on deed instruments that will be implemented to ensure the property will be restricted for industrial/commercial use. The IPs are working to ensure that an environmental covenant to restrict site to industrial commercial use and a SMP are developed consistent with KDEP guidance for a managed in place closure and will be submitted as the final CAP.

This Interim CAP includes:

- Removal of soils as described in this section and shown on Figure 3-1 with offsite disposal and replacement with clean fill;
- Hydraulic cleaning of specific portions of the on-site surface water drainage system (specific catch basins and downgradient sewer lines) to facilitate removal of impacted sediments, followed by implementation of Erosion and Sedimentation Control (E&SC) Measures at the site. Additional details regarding the flushing of the drainage system and subsequent storm water management are provided in Section 4.1.9;
- Use of institutional controls and a SMP to limit future use to those consistent with continued industrial and commercial operations and to require maintenance of E&SC measures to protect storm basins and piping and offsite areas; and
- Demolition of all on-site buildings and slabs once the deed instruments are secured and implemented.

The overall objective of the corrective action is to safely excavate identified soil locations and perform cleaning of site catch basin/sewer lines to remove impacted sediments to minimize the potential for future exposure to impacted soil/sediment by Site users while:

- Minimizing the disruption to the local community by completing construction activities in a timely manner;
- Protecting the structural integrity of permanent features (roadways, utilities, etc.); and
- Restoring the property to conditions that are as close as reasonably possible to pre-excavation conditions, or otherwise in a manner that is acceptable to the IPs and the property owner.

3.1 Soil Removal

The proposed corrective action for soil at the Site is consistent with 401 KAR 100:030 and with acceptable remedial approaches for a managed in place closure pursuant to KDEP rules and guidance. Most notably the approach:

- Removes from the Site soils with pesticide and PAH concentrations at the point of exposure (top 1 foot) above SSSLs (USEPA industrial/commercial RSLs) and, for arsenic, removes all soils at the point of exposure to achieve the background requirements specified in KDEP RAS 2008 and replaces the removed soils with clean fill; and

- Includes demolition of all onsite buildings and slabs once deed instruments are secured to ensure soil removal meets requirements specified above.

In addition to the above and based on the proposed corrective action, the residual risks below the point of exposure (i.e., below the top 1 foot of soil) were calculated to ensure that the mean residual concentrations of pesticides and PAHs, calculated as the 95% UCL of the mean using USEPA procedures, are below concentrations that result in a total residual target cancer risk level of 1×10^{-6} or a noncancer hazard quotient of 1 for an industrial use scenario. Meeting these criteria below the point of exposure is achieved by:

- Removal of all sample locations below the point of exposure containing pesticides at concentrations above the SSSLs and replacement of excavated soils with clean fill; and

- Extensive removal of sample locations below the point of exposure containing PAHs at concentrations above SSSLs and replacement of excavated soils with clean fill.

The proposed excavation also includes removal of sample locations below the point of exposure with arsenic concentrations above SSSLs and replacement of excavated soils with clean fill.

The proposed removal includes approximately 23,000 cubic yards (cy) over approximately 10 acres and building demolition over approximately 6 acres. It is anticipated that after demolition and removal of slabs/foundations at least 1 foot of clean fill will be placed below the footprint of each removed structure. In total, soil removal and building demolition activities will encompass approximately 16 acres. This area represents more than 50% of the Site; therefore, more than half of the property will have clean backfill within the point of exposure. Building demolition will take place prior to soil removal once the deed instruments are secured and implemented. All foundations will be removed to comply with local regulatory requirements. The proposed soil excavation locations and depths are presented on Figure 3-1. Theissen polygons were developed to depict the approximate horizontal limits of soil associated with each soil boring. The horizontal limits of each polygon are based on the midpoint between soil borings. Polygon areas are presented on Figure 3-1. All excavated soil will be disposed off-site. Removal areas will be replaced with clean soil and seed or stone to match existing grade. Additional details are included in Section 4. A summary of soil excavation areas and volumes is presented in Table 3-1.

3.2 Arsenic Evaluation

Following the soil removal presented on Figure 3-1, the remaining soil concentrations will meet each of the criteria described in the Arsenic Background Guidance (KDEP RAS 2008). Specifically, the mean site concentration for arsenic in the top one foot will be 10.99 mg/kg (which is below the 95% UCL of the mean background concentration of 13.12 mg/kg); 50% of the data points will have arsenic concentrations less than the midpoint of 10.6 mg/kg; and no data point with arsenic concentrations above the 95th percentile of 22.7 mg/kg will remain in the top one foot. Calculations are presented in Appendix B.

3.3 Evaluation of Residual Risk below the Point of Exposure (Below the Top 1 foot)

The proposed soil removal strategy will meet KDEP criteria by removing all sample locations above the SSSLs at the point of exposure (in the top one foot of soil). Below the point of exposure (top one foot.), the post excavation residual risk was evaluated in the following manner.

All soil data below 1 foot that will not be excavated as part of the proposed corrective action plan were evaluated for use in the UCL calculations described below. For duplicate samples, the concentration for each constituent used in the UCL calculation was selected as follows: (1) if both samples reported positive detections, the higher measured analytical concentration was used in the calculation; (2) if only one result was a positive detection, that concentration was used in the calculation; (3) if both samples reported non-detections, the lower sample quantitation limit (SQL) was used as the proxy concentration. For the case of two non-detections, the lower SQL was used because higher SQLs are frequently the result of dilution of the sample, and use of the higher SQL would introduce more uncertainty into the calculation. Additionally, it is not reasonable to use the higher SQL when the duplicate analysis for the sample indicated that the constituent was not present at the lower SQL. Soil data are included in Appendix A.

95% UCLs of the mean were calculated for COPCs detected at the Site consistent with the USEPA guidance (1989, 2002) as the 95% UCL of the mean assuming a one-tailed distribution. The UCL is a statistical number calculated to represent the mean concentration with a high level (e.g., 95% or higher) of confidence that the true arithmetic mean concentration for the Site will be less than the UCL. The high level of confidence is used to compensate for the uncertainty involved in representing site conditions with a finite number of samples. The UCLs were calculated using ProUCL 4.1 software (USEPA 2010). Calculations are presented in Appendix C. The UCLs recommended by the software were used in the evaluation.

The estimated post-excavation 95% UCLs were calculated by excluding the sample locations and depths shown on Table 3-1 from the data set (i.e., sample points that will be excavated). The post-excavation 95% UCLs are presented in Table 3-2 and are compared to the SSSLs. The SSSLs correspond to a target cancer risk of 1×10^{-6} or a noncancer hazard quotient of 1 for an industrial use scenario. As shown in Table 3-2, the calculated constituent 95% UCLs are below the SSSLs for each COPC. The constituents in Table 3-2 are considered potential carcinogens (USEPA, 2016). The total post-excavation risk for the COPCs was calculated to be 6×10^{-7}, which is below the KDEP target risk level of 1×10^{-6}. The ProUCL output is provided in Appendix C. Arsenic is not included in Table 3.2 because it is evaluated relative to background concentrations rather than based on risk.

4 CORRECTIVE ACTION IMPLEMENTATION

The Corrective Action presented in this section has been prepared to outline the technical approach and methods for conducting a corrective action at the Site.

4.1 Technical Approach and Scope of Work

The soil corrective action consists of excavation of soils from the locations and depths depicted in Figure 3-1. Impacted soil will be disposed of off-site in accordance with all applicable regulations. Excavated soil areas will be backfilled with imported fill and restored as described in Section 4.1.11.

Storm basins and piping will be hydraulically cleaned to remove any impacted sediments that have accumulated, as described in section 4.1.9. E&SC measures will be installed around the catch basins/manholes, and excavation areas as needed, to prevent introduction of additional sediments into the sewers or overland runoff during soil removal. Institutional controls requiring maintenance of the E&SC measures will be implemented as discussed in Section 4.1.5. The following sections describe activities in more detail.

4.1.1 Securing Access Agreements for Construction

The IPs will be required to first secure an access agreement from the property owner prior to conducting any work.

4.1.2 Waste Disposal Facilities

Based on review of available data, removed soil and sediments from the corrective action will be disposed of as non-hazardous waste at the following Resource Conservation and Recovery Act (RCRA) Subtitle D landfill:

Waste Management – Outer Loop Landfill
2673 Outer Loop
Louisville, KY 40219
Landfill Permit No.: KY – 056.00028

Should any hazardous materials be encountered during the corrective action those materials will be disposed at the following RCRA Subtitle C landfill:

Chemical Waste Management
P.O. Box 55
Highway 17 North, Mile Marker 163
Emelle, AL 35459
205-652-8156
RCRA No.: ALD000622464

Based on the depth to groundwater at the site, no groundwater is expected to be encountered during soil removal activities. Any wastewater generated from hydraulic cleaning of catch basins/manholes or piping, or from cleaning of equipment onsite, will be characterized and properly disposed at one of the above facilities; or permitted for discharge to the local municipal sewer system.

4.1.3 Analytical Laboratory

TestAmerica, Inc. located in Nashville, Tennessee has been selected to conduct any required sample analysis performed as part of this project.

4.1.4 Mobilization

This Interim CAP provides a description of the overall strategy for implementation of the corrective action at the Site. Detailed plans for implementing this strategy, including the protection of workers during construction activities, will be prepared by the Removal Action Contractor (RAC). Plans prepared by the RAC will be submitted to Arcadis and the IPs for review, comment, and approval prior to the start of work. These plans include a Site Operations Plan, Health and Safety Plan (HASP), Erosion and Sedimentation Control Plan, and any required permit applications.

4.1.5 Preparation of the Site for Removal Activities

The following sections describe the activities that will be performed at the Site to prepare for the intrusive phases of the corrective action.

4.1.5.1 Installation of Erosion and Sediment Control Measures

E&SC measures (e.g., silt fence, hay bales) will be installed at the Site to prevent the migration of soil-bound contaminants to surface water drainage features during and after removal activities. The type and location of E&SC measures to be installed will be specified in the E&SC Plan. E&SC measures will be inspected regularly to monitor their continued effectiveness. Additional E&SC measures will be installed, as necessary, as the corrective action progresses and at the end of removal activities to prevent the migration of eroded soil from the Site.

Appropriate measures will be taken to minimize the volume of water accumulating in excavation areas that potentially contain soils with elevated COPC concentrations. Water that does not come into direct contact with disturbed soil will be directly discharged into the appropriate drainage feature. If water management is required, liquids will be pumped to a series of frac tanks for settling and filtering prior to discharge to the local publicly owned treatment works or a RCRA Subtitle D landfill for disposal. Solids accumulated in E&SC controls and/or frac tanks will be disposed at a RCRA Subtitle D landfill.

4.1.5.2 Subsurface Utility Mark Out

All necessary precautions will be taken to protect the various subsurface and aboveground utilities that exist at the Site from damage. A review of all available Site plans will be conducted to identify the general location of subsurface utilities. Necessary permits and utility clearances will be obtained prior to any subsurface activities. The utility companies (and/or any private organization that is authorized by the utility

companies to delineate the presence of all subsurface services) will be contacted at least 72 hours before onsite intrusive activities are started. A utility mark out will be conducted at the Site to locate all subsurface utilities (e.g., gas, sewer, water, electrical, telephone). In addition, a private utility locating contractor (or equivalent) will scan the area for the presence of subsurface utilities prior to excavation. The private utility contractor will be asked to identify the size and type of all subsurface utility lines identified within the work area. The field copy of the site plans will then be updated with the information obtained from the mark out. During the mark out, the location of aboveground utilities will also be identified. Section 4.1.7 describes the minimum requirements that will be taken to protect the utilities.

4.1.6 Clearing and Grubbing

Clearing and grubbing of the construction areas will be performed prior to or concurrent with soil excavation activities as needed. Although minimal clearing and grubbing is anticipated, the aboveground portions of any trees will either be disposed of off-site or chipped and reused on-site for the construction of haul roads and/or dust control. Portions of the vegetation in contact with the soil (e.g., stumps, roots) will be excavated with the soil and disposed of off-site.

4.1.7 Excavation of Impacted Soil

To the extent practicable, soil will be excavated and loaded directly into trucks and transported to the identified landfill. Waste characterization samples collected during prior investigation activities and included in the *Site Characterization Report Addendum* (Arcadis, August 2015) indicate that soils targeted for removal are non-hazardous for disposal purposes. The estimated areal dimensions, depths, and in-place volumes for each excavated area are presented in Table 3-1. Approximately 23,000 cy of impacted soil across 10 acres will be removed. The actual horizontal limits of excavation may be modified in the field due to the presence of physical obstructions such as subsurface utilities.

Soil will generally be removed using standard construction equipment (e.g., backhoe, trackhoe) and manual shoveling. Large pieces of construction debris (e.g., chunks of concrete, brick foundations), greater than or equal to approximately 1 cy, will either be left in place or will be cleaned and left on site at a location agreeable to the IPs and the property owner. Dry decontamination methods (e.g., brushing) will be used to remove impacted soil from the surfaces of this debris. Wet decontamination methods, such as pressure washing, may be used to remove residual soils if dry decontamination methods are not adequate. Smaller debris such as bricks will be excavated and handled with the excavated soil.

Excavation sidewalls adjacent to paved areas will be sloped to prevent undermining. At the elevation of the bottom of the pavement, excavation will be performed at least 6 inches laterally from the toe of the structure before deeper excavation continues. Additional excavation will be performed by sloping or benching the excavation adjacent to these areas at a slope no greater than a 1V:2H. No excavation will be performed within 25 feet of active railroad tracks.

Excavation within utility corridors will be conducted by hand or in accordance with utility owner specifications, whichever is more stringent. No mechanical excavation (e.g., by excavators) will take place within 2.5 feet of a marked subsurface utility. All excavation to be performed within 2.5 feet of a marked subsurface utility (except as specified above) will be performed manually. Utilities will be protected in the

manner prescribed by the utility companies. The following describes the general actions that will be taken to protect the utilities:

1. Excavation of soil above and adjacent to a known utility will be performed manually in accordance with the methods, tolerances, and directions specified by the utility owner. At a minimum, all excavation above or within 2.5 feet of a marked utility will be performed manually. The use of an air spade or other similar equipment to remove soil around utilities will be discussed with utility owners on an individual basis.

2. Soil beneath any piped utilities or electric lines will be removed based on the ability to relocate the utility during excavation. Piped utilities include water lines and underground drain lines (if present). Piped utilities do not include phone lines and cable television lines. These lines are generally flexible and can be relocated within the excavation areas as work progresses.

3. If piped utilities are to be left in place during excavation, a soil shelf equal to the width of the pipe, plus a minimum of 6 inches on each side of the pipe will be left in place beneath the exposed piped utility for support. Soil beneath the piped utilities will then be sloped from the top edge of the shelf to the bottom of the excavation at a slope no greater than 1V:2H.

4.1.8 Surveying

All excavation areas will be surveyed prior to and after backfilling for horizontal and vertical control and base of excavations will be surveyed to verify excavation depths. All survey data will be referenced to the North American Horizontal Datum of 1983 and the North American Vertical Datum of 1988.

4.1.9 Hydraulic Cleaning and Stormwater Management

4.1.9.1 Hydraulic Cleaning

Hydraulic cleaning of specific portions of the on-site surface water drainage system, catch basins, and sewer lines will be performed to facilitate removal of impacted sediments. Hydraulic cleaning will be performed in any basin or manhole where sediment samples had one or more COPC detected at concentrations above SSSLs. Hydraulic cleaning will typically include the basin/manhole and downgradient sewer lines to the next downgradient manhole, if possible. If physical obstructions in pipes prevent the advancement of cleaning equipment, cleaning will be conducted as far as possible down the given pipeline. Figure 2-3 shows the basins/manholes and pipe segments to be cleaned to the extent possible based on accessibility of pipe segments. Cleaning will be performed to the first downgradient manhole offsite and upgradient to the manholes with sediment impacts identified. Access will be coordinated with the City of Louisville Metropolitan Sewer District for offsite manholes where access and cleaning is to be performed.

The RAC shall be responsible for preparing a Hydraulic Cleaning Plan for review by Arcadis and the IPs prior to the start of the work that will define the methods of pipe cleaning. This plan will be provided to KDEP for review and approval prior to the start of work. Cleaning shall generally be performed as follows:

- Prior to the commencement of hydraulic cleaning, bypass pumping of dry weather flow will be established around the section of drainage system being cleaned. Alternatively, if capacity of the

upstream sewer allows and flow is such that surcharge conditions will not cause issues, the upstream pipe will be plugged temporarily to facilitate cleaning of the line. Cleaning activities will not be conducted during rain events to minimize the amount of water requiring bypass. If bypass pumps are required, they (along with hoses) shall be watertight and free of leaks. Self-priming trash pumps or a submersible pump set in a sump established by sandbags are anticipated to be utilized. Pumps will either be self-powered (i.e., diesel or gasoline) or electric, with power supplied by a portable generator.

- Prior to commencement of hydraulic cleaning, the section of the drainage system to be cleaned will be isolated using appropriately sized sewer plugs and/or sand bags. These plugs will assure that flow from upstream is effectively eliminated from the section being cleaned and water used during flushing of the section is captured and removed from the drain and is not allowed to travel downstream. All water and debris generated during cleaning will be removed using a vacuum truck.

- Hydraulic cleaning of each storm drain section will be performed using a water jet / vacuum sewer cleaning truck. The truck shall be self-contained and utilize a low pressure / high volume water spray along with an integral vacuum. The unit operates by utilizing low pressure / high volume water produced by a pump located on the truck to propel a nozzle with rear thrust jets connected to a lightweight hose. The jets propel the hose up the pipe to be cleaned. When the hose is retracted, the jets flush solids within the pipe back to the manhole where the vacuum recovery system is employed to vacuum up the debris and rinse water and store it within the collector body of the truck for transport to the debris staging / water treatment area. No chemicals will be used for cleaning activities.

- Solids accumulated in the body of the truck will be transferred to a lined containment pad or into rolloff containers where the materials can be stabilized if required or mixed with drier solids for disposal at a RCRA Subtitle D landfill. Liquids will be pumped to a series of frac tanks for settling and filtering prior to discharge to the local publicly owned treatment works or a RCRA Subtitle D landfill for disposal.

- In addition to storm drain pipe sections, each manhole and catch basin associated with the storm drain pipe section being cleaned will also be pressure washed. This will be accomplished using the hand held pressure washing wand, which is integral to the jetter / vacuum truck.

Following the completion of hydraulic cleaning activities, a post-cleaning video inspection will be performed to the extent possible to confirm accumulated sediments have been removed from the proposed cleaning locations.

4.1.9.2 Post-Removal Stormwater Controls

Following hydraulic cleaning, E&SC measures will be installed around catch basins and manholes, and along preferential drainage pathways onsite that have the potential to receive runoff. E&SC measures may include, but are not limited to seeding to ensure proper vegetative cover of soil areas; and installation of silt fence, gravel berms/check dams, hay bales/waddles, etc. An E&SC measures inspection and maintenance

program will be developed as part of the post-remediation monitoring program to ensure proper care and maintenance of the measures. Institutional controls requiring maintenance of the E&SC measures will be implemented as discussed in Section 4.3.

4.1.10 Transport to Disposal Facility

All waste streams will be characterized before disposal, as required by applicable federal, state, and local laws, rules, and regulations, as well as any additional requirements imposed by the receiving landfill or disposal facility. Based on previous waste characterization, it is anticipated that soil, sediment, and demolition debris will be transported to a RCRA Subtitle D landfill for disposal. Wastewaters will either be transported to a RCRA Subtitle D landfill for disposal, or permitted for discharge to the local municipal sewer. The RAC will be responsible for coordinating and scheduling the transport vehicles and loading the materials.

Excavated soil and dewatered sediments will be loaded into dump trucks for transport to the disposal facility. Wastewater to be transported offsite will be pumped into tanker trucks for transport to the disposal facility. Traffic patterns will be established in the Traffic Control Plan to minimize or prevent trucks that are hauling soil offsite from traversing bare soil in impacted areas. Trucks that traverse areas containing impacted soils will be decontaminated prior to exiting the impacted areas. Decontamination procedures will be described in the RAC's Site Operations Plan.

All containers used for the offsite transport of solid materials will be covered with tarps prior to offsite transport. The RAC will be responsible for verifying that all transportation containers are tarped, manifested, and placarded in accordance with appropriate RCRA and Department of Transportation (DOT) requirements before leaving the Site.

The weight of the transportation containers prior to departure from the Site will be within its allowable loaded capacity for subsequent transport and in compliance with all DOT regulations. A daily log of information that includes the date and time, container identification number, and measured weight of each loaded transportation container to have departed the Site will be compiled.

4.1.11 Site Restoration

Upon completion of the excavation activities, the Site will be restored to conditions that are as close as reasonably possible to pre-excavation conditions, or otherwise in a manner that is acceptable to the IPs and the property owner. Repairs will be made to any fences, hard features, etc. in the event of accidental contact/damage during the corrective action activities.

In general, excavation in vegetated areas will be backfilled and compacted within approximately 6 inches of existing grade. The remaining 6 inches will be backfilled with topsoil to support vegetation or ground cover and seeded with grass or covered with gravel. Excavation areas may also be backfilled with concrete or brick demolition debris if these materials are deemed to be suitable. The fill materials proposed by the RAC (soil or concrete/brick demolition debris) for site restoration will be analyzed for pH, grain size, total organic carbon, Target Analyte List metals, Target Compound List volatile organic compounds and semi-volatile organic compounds, pesticides, and polychlorinated biphenyls. Sample analytical results for proposed backfill material will be compared to residential and industrial RSLs or, for

arsenic, applicable background concentrations, and submitted to KDEP for review and approval prior to use.

4.2 Reporting

4.2.1 Monthly Reports

Brief written progress reports that describe actions taken will be submitted to KDEP monthly. Each report will:

- Describe all significant developments of the preceding period, including actions performed and any problems encountered;
- Describe developments anticipated during the next reporting period, including anticipated problems (if necessary) and a schedule of work to be performed; and
- Discuss planned resolutions of past and/or anticipated future problems, if necessary.

4.2.2 Corrective Action Completion Report

An Interim Corrective Action Completion Report summarizing the actions taken at the Site will be submitted to KDEP for review and approval within 90 days of completion of the soil and sediment remediation activities described herein and following receipt of the final survey. The report will conform, at a minimum, with the requirements of 401 Kentucky Administrative Regulation (KAR) 100:030, Section 9 ("Corrective Action Completion Report") and will include the following:

- Documentation of the completion of all interim activities specified in this CAP;
- Documentation of any modifications from this interim CAP;
- A listing of the quantities and types of materials removed from the Site;
- Discussion of the removal and disposal options considered for removed materials;
- A listing of the ultimate destinations of all removed materials;
- A presentation of the analytical results of all sampling and analyses performed; and
- Appendices containing all relevant documentation generated during the corrective action (e.g., manifests, permits).

The final report will also include a certification statement as required by 401 KAR 100:030 Section 9(2)(d).

4.3 Institutional Controls

Institutional controls will be implemented for the Site to limit future use to those consistent with continued industrial and commercial operations and to require maintenance of E&SC measures to protect storm basins and piping and offsite areas. To implement appropriate institutional controls, an environmental covenant (EC) and Site Management Plan (SMP), that is consistent with KRS 224.80, will be drafted and submitted for KDEP approval. When the EC and SMP are finalized, the EC will be circulated for

execution, a public notice will be published, and the EC will be filed with the Jefferson County Clerk's Office. Once the EC and SMP have been approved and recorded, annual inspections and five-year certifications will be submitted documenting the condition of controls implemented to reduce risk to within allowable levels until those controls are no longer necessary to achieve the risk criteria.

In general, the soil removal areas shown on Figure 3-1 will be enrolled in a long-term inspection and maintenance program that will be carried out by the property owner or authorized representative to confirm the site remains zoned for non-residential use. As required for management in place closures, the site will also comply with requirements for annual and five-year inspections and certifications while the institutional controls are required to meet established risk criteria.

4.4 Schedule

The project schedule is contingent on the IPs obtaining an access agreement from the property owner and development and implementation of the EC and SMP. It is anticipated that the activities outlined herein can be completed within 1 year of receiving KDEP approval of the Interim CAP and receiving access from the property owner and development of the EC/SMP.

- Obtain KDEP approval of this Interim CAP
- Obtain Access Agreement from Property Owner and develop and implement the EC/SMP
- Prepare Bid Specifications/Select RAC/Prepare RAC Submittals
- Arcadis/IP Review and Approval of RAC Submittals
- Conduct Interim Corrective Action/Building Demolition
- Prepare/Submit Final Corrective Action Completion Report

5 REFERENCES

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TABLES

Table 3-1
Summary of Soil Excavation Areas and Volumes
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID	Depth Interval of Media to Excavate [1] (ft bgs)	Excavation Depth [1]	Approximate Surface Area of Impacted Media to be Removed (ft^2)	Estimated In-Place Excavation Volume	
				cubic yards	tons [2]
Soil Removal Locations					
BLC-SS-01	0-2	2	2,781	206	350
BLC-SS-02	0-1	1	7,292	270	459
BLC-SS-03	0-2	2	7,164	531	902
BLC-SS-04	0-2	2	7,188	532	905
BLC-SS-05	0-2	2	6,281	465	791
BLC-SS-07	0-2	2	4,490	333	565
BLC-SS-08	0-2	2	5,863	434	738
BLC-SS-11	0-2	2	6,918	512	871
BLC-SS-14	0-2	2	6,392	474	805
BLC-SS-16	0-2	2	8,667	642	1,091
BLC-SS-18/35	0-1	1	8,151	302	513
BLC-SS-19/32	0-1	1	3,362	125	212
BLC-SS-20/33	0-1	1	3,026	112	191
BLC-SS-21	0-1	1	12,535	464	789
BLC-SS-23	0-1	1	10,627	394	669
BLC-SS-24	0-1	1	9,698	359	611
BLC-SS-25	0-1	1	10,306	382	649
BLC-SS-26	0-1	1	11,639	431	733
BLC-SS-30/34	0-1	1	11,362	421	715
BLC-SS-41	0-1	1	11,396	422	718
BLC-SS-43	0-1	1	5,363	199	338
BLC-SS-47	0-1	1	5,261	195	331
BLC-SS-48	0-1	1	5,042	187	317
SS/SB-A1	0-1	1	4,547	168	286
SS-A5/A10	0-2	2	1,615	120	203
SS/SB-A6	0-1	1	3,977	147	250
SS-S9	0-1	1	1,780	66	112
SB-100	0-1	1	41,121	1,523	2,589
SB-107	0-1	1	3,594	133	226
SB-108	0-1	1	5,070	188	319
SB-110	0-1	1	8,618	319	543
SB-113	0-1	1	3,062	113	193
SB-119	0-2	2	16,891	1,251	2,127
SB-121	0-1	1	4,629	171	292
SB-122	0-2	2	7,727	572	973
SB-123	0-2	2	6,540	484	824
SB-124	0-2	2	3,897	289	491
SB-125	0-1	1	5,184	192	326
SB-126	0-2	2	1,641	122	207
SB-126R	0-2	2	4,838	358	609
SB-130	0-2	2	2,794	207	352
SB-131	0-2	2	9,390	696	1,182

Table 3-1
Summary of Soil Excavation Areas and Volumes
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID	Depth Interval of Media to Excavate [1] (ft bgs)	Excavation Depth [1]	Approximate Surface Area of Impacted Media to be Removed (ft^2)	Estimated In-Place Excavation Volume	
				cubic yards	tons [2]
SB-133	0-2	2	6,436	477	811
SB-135	0-2	2	5,321	394	670
SB-137	0-1	1	9,695	359	610
SB-141	0-1	1	14,817	549	933
SB-142	0-2	2	13,314	986	1,677
SB-146	0-1	1	10,314	382	649
SB-147	0-1	1	8,450	313	532
SB-148R	0-2	2	8,576	635	1,080
SB-149	0-2	2	13,652	1,011	1,719
SB-150	0-2	2	11,740	870	1,479
SB-151	0-2	2	6,185	458	779
SB-151R	0-2	2	3,832	284	483
SB-152R	0-1	1	3,727	138	235
SB-153	0-1	1	13,582	503	855
		Total	**437,358**	**22,872**	**38,882**

Notes:
ft^2 - square feet
ft bgs - feet below ground surface
[1] The depth interval of soil to excavate is to a maximum depth of 2 ft bgs.
[2] The calculation of cubic yards to tons is based on a conversion factor of 1.7 tons/cubic yard.

Table 3-2
Post-Excavation Risk for Soil Samples (1 to 16 feet)
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Constituent	USEPA Industrial Soil RSL	Units	Post-Excavation 95% UCL	Ratio of 95% UCL to RSL	Post-Excavation Risk
4,4'-DDD	9.6	mg/kg	0.02	2.46E-03	2.46E-09
4,4'-DDE	9.3	mg/kg	0.03	3.30E-03	3.30E-09
4,4'-DDT	8.5	mg/kg	0.222	2.61E-02	2.61E-08
alpha-BHC	0.36	mg/kg	0.0197	5.47E-02	5.47E-08
Benzo(a)anthracene	2.9	mg/kg	0.075	2.59E-02	2.59E-08
Benzo(a)pyrene	0.29	mg/kg	0.078	2.69E-01	2.69E-07
Benzo(b)fluoranthene	2.9	mg/kg	0.101	3.48E-02	3.48E-08
beta-BHC	1.3	mg/kg	0.00667	5.13E-03	5.13E-09
Dibenzo(a,h)anthracene	0.29	mg/kg	0.0261	9.00E-02	9.00E-08
Dieldrin	0.14	mg/kg	0.00852	6.09E-02	6.09E-08
gamma-BHC (Lindane)	2.5	mg/kg	0.00236	9.44E-04	9.44E-10
Indeno(1,2,3-cd)pyrene	2.9	mg/kg	0.106	3.66E-02	3.66E-08
			Total Post-Excavation Risk		6E-07

Notes:

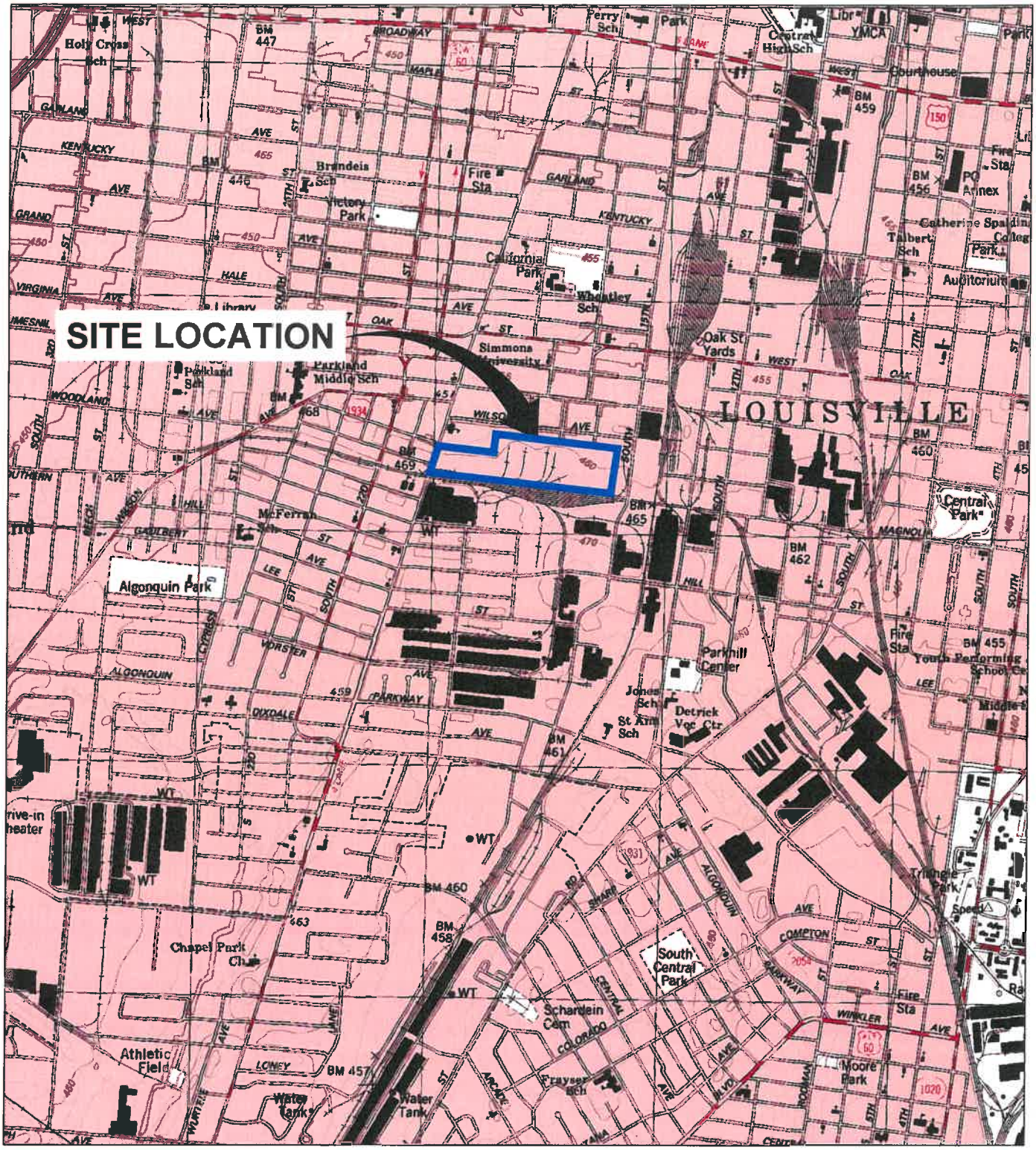
USEPA (May 2016) Industrial Soil RSLs are based on a target risk of 1×10^{-6} or a noncancer hazard of 1.

mg/kg = milligram per kilogram

UCL = upper confidence level

Total post-excavation risk is calculated as the sum of the ratio of the 95% UCL to the RSL for all constituents multiplied by 1×10^{-6}.

FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., LOUISVILLE WEST, KY-IN, 1998.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

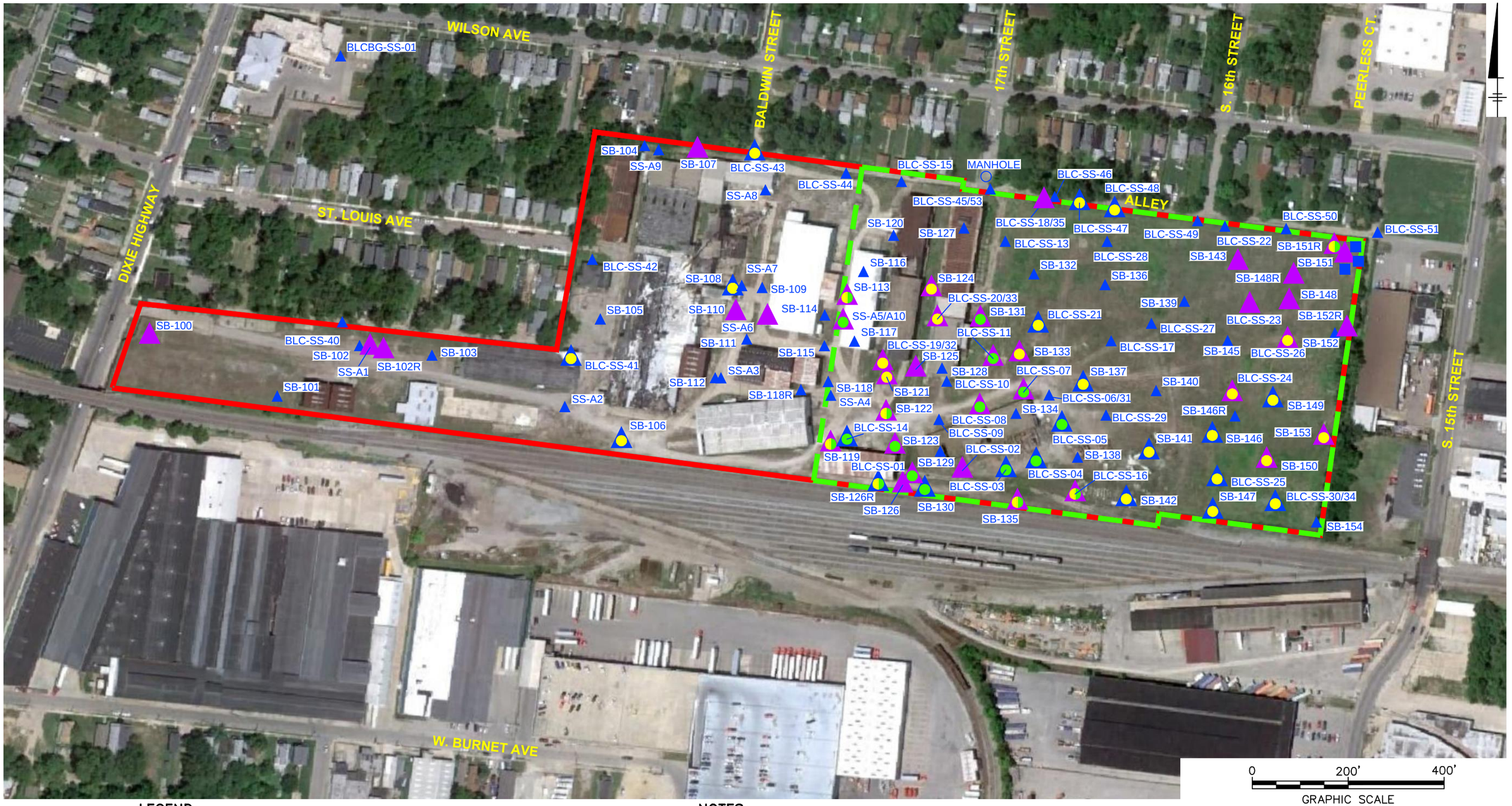
FORMER BLACK LEAF CHEMICAL SITE
LOUISVILLE, KENTUCKY
CORRECTIVE ACTION PLAN

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE
1-1

CITY: SYRACUSE, NY DIV/GROUP: EBC-IM/DV DB/LD: L.POSENAUER PM/TM: M.PELTON LYR:(Opt)ON=*;OFF=*REF*
G:\ENV\CAD\SYRACUSE\ACTIVE\60085908\150100008\CAP\85908N11.dwg LAYOUT: 1-1 SAVED: 11/20/2015 2:28 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 12/16/2015 9:17 AM BY: POSENAUER, LISA
XREFS:
IMAGES:
KY_Louisville_W.tif



LEGEND:

- FORMER SCHENLEY DISTILLERS SITE/CURRENT LOUISVILLE INDUSTRIAL PARK, LLC PROPERTY
- APPROXIMATE BOUNDARY OF THE FORMER BLACK LEAF CHEMICAL PROPERTY
- SOIL SAMPLE LOCATION WITH NO COPCs ABOVE RSLs
- SOIL SAMPLE LOCATION ANALYZED FOR ONLY LEAD
- EXCEEDS THE KENTUCKY BLUEGRASS REGIONAL BACKGROUND SOIL CONCENTRATION FOR ARSENIC (>22.7 MG/KG)
- EXCEEDS POLYCYCLIC AROMATIC HYDROCARBON (PAH) RSL
- EXCEEDS PESTICIDE RSL

NOTES:

1. AERIAL PHOTOGRAPH FROM GOOGLE EARTH (2010).
2. SITE FEATURES AND SAMPLE LOCATIONS SURVEYED BY CARDINAL SURVEYORS IN AUGUST – OCTOBER 2014.
3. RSL – USEPA INDUSTRIAL REGIONAL SCREENING LEVEL (MAY 2016).
4. MG/KG – MILLIGRAMS PER KILOGRAM
5. ARCADIS SOIL BORINGS COLLECTED IN SEPTEMBER 2014 BEGIN WITH BORING NUMBER SB–100. ARCADIS SOIL BORINGS ARE DISPLAYED ON DATA TABLES WITH PREFIX "BL–".

0 200' 400'

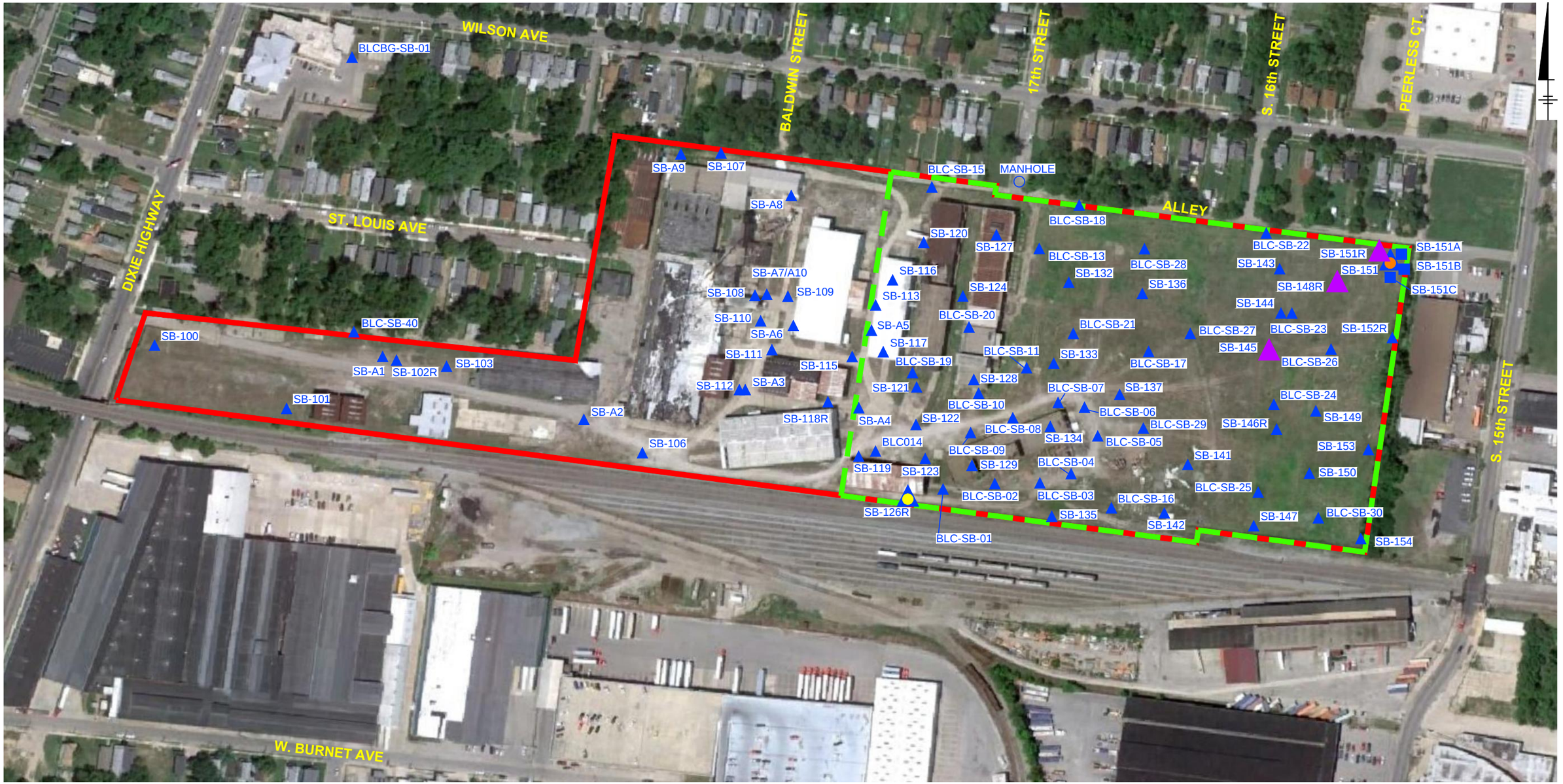
GRAPHIC SCALE

FORMER BLACK LEAF CHEMICAL SITE
LOUISVILLE, KENTUCKY
CORRECTIVE ACTION PLAN

LOCATIONS OF SOIL BORINGS WITH SAMPLES THAT EXCEED RSLs FOR INDUSTRIAL USE IN THE TOP 2 FEET

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2-1



LEGEND:

- FORMER SCHENLEY DISTILLERS SITE/CURRENT LOUISVILLE INDUSTRIAL PARK, LLC PROPERTY
- APPROXIMATE BOUNDARY OF THE FORMER BLACK LEAF CHEMICAL PROPERTY
- SOIL SAMPLE LOCATION WITH NO COPCs ABOVE RSLs
- SOIL SAMPLE LOCATION ANALYZED FOR ONLY LEAD
- EXCEEDS THE KENTUCKY BLUEGRASS REGIONAL BACKGROUND SOIL CONCENTRATION FOR ARSENIC (>22.7 MG/KG)
- EXCEEDS POLYCYCLIC AROMATIC HYDROCARBON (PAH) RSL
- EXCEEDS PESTICIDE RSL
- EXCEEDS LEAD RSL*
- * REFER TO THE TEXT FOR A DISCUSSION OF SAMPLE LOCATION BL–SB–151

NOTES:

1. AERIAL PHOTOGRAPH FROM GOOGLE EARTH (2010).
2. SITE FEATURES AND SAMPLE LOCATIONS SURVEYED BY CARDINAL SURVEYORS IN AUGUST – OCTOBER 2014.
3. RSL – USEPA INDUSTRIAL REGIONAL SCREENING LEVEL (MAY 2016).
4. MG/KG – MILLIGRAMS PER KILOGRAM
5. ARCADIS SOIL BORINGS COLLECTED IN SEPTEMBER 2014 BEGIN WITH BORING NUMBER SB–100. ARCADIS SOIL BORINGS ARE DISPLAYED ON DATA TABLES WITH PREFIX "BL–".
6. SUBSURFACE SAMPLES WERE ONLY ANALYZED FOR THE SPECIFIC CONSTITUENTS WHICH EXCEEDED RESIDENTIAL CRITERIA IN THE 0–2' INTERVAL.

0 200' 400'

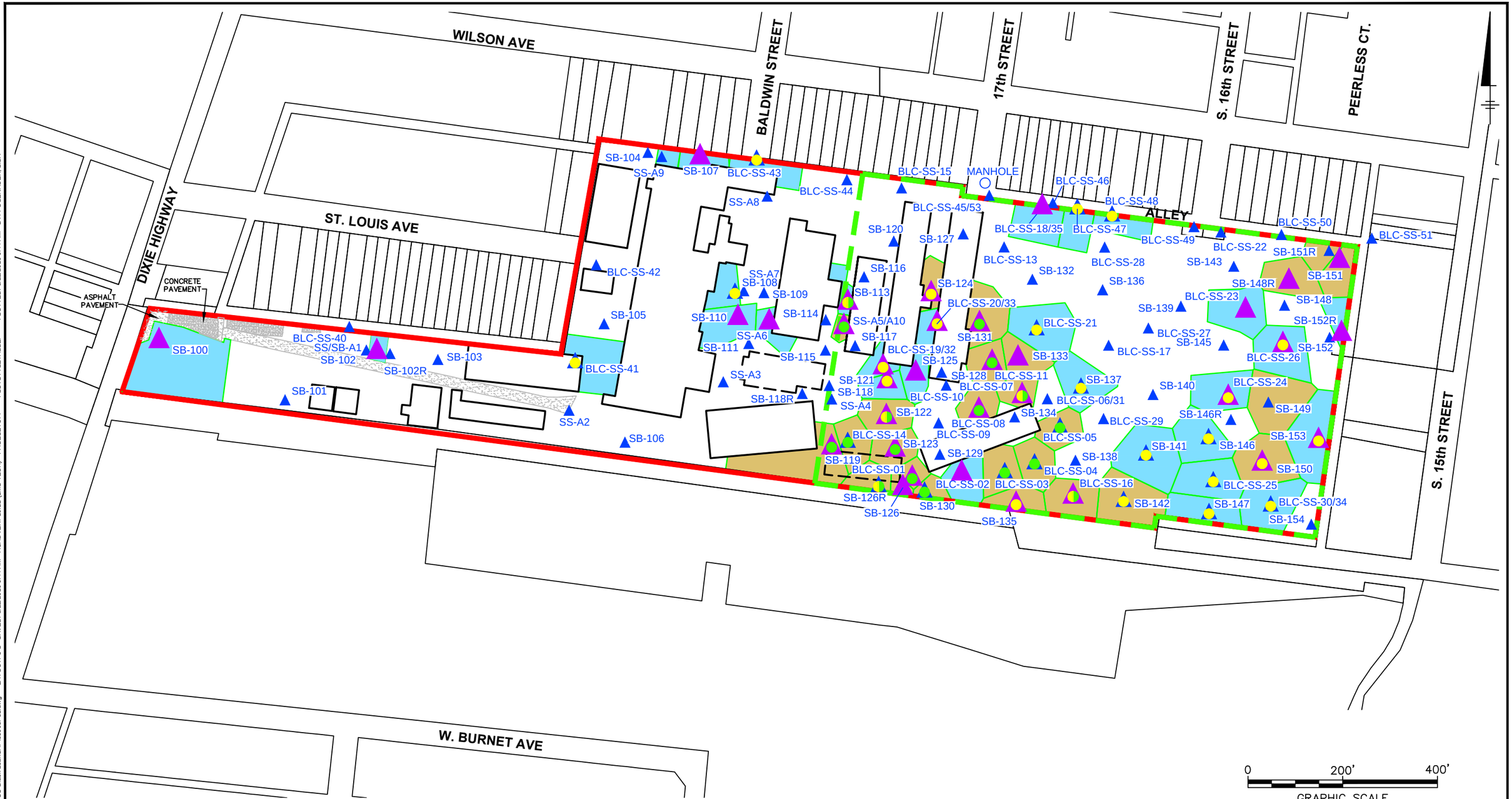
GRAPHIC SCALE

FORMER BLACK LEAF CHEMICAL SITE
LOUISVILLE, KENTUCKY
CORRECTIVE ACTION PLAN

LOCATIONS OF SOIL BORINGS WITH SAMPLES THAT EXCEED RSLs FOR INDUSTRIAL USE BELOW 2 FEET

ARCADIS Design & Consultancy for natural and built assets

FIGURE
2-2



LEGEND:

- FORMER SCHENLEY DISTILLERS SITE/CURRENT LOUISVILLE INDUSTRIAL PARK, LLC PROPERTY
- APPROXIMATE BOUNDARY OF THE FORMER BLACK LEAF CHEMICAL PROPERTY
- BUILDING WITHOUT A SLAB
- SOIL SAMPLE LOCATION
- EXCEEDS THE KENTUCKY BLUEGRASS REGIONAL BACKGROUND SOIL CONCENTRATION FOR ARSENIC (>22.7 MG/KG) IN SOIL 0–1'
- EXCEEDS POLYCYCLIC AROMATIC HYDROCARBON (PAH) KDEP ACTION LEVEL IN SOIL 0–1'
- EXCEEDS PESTICIDE RSL IN SOIL 0–1'
- 1 FOOT EXCAVATION DEPTH
- 2 FOOT EXCAVATION DEPTH

NOTES:

1. SITE FEATURES AND SAMPLE LOCATIONS SURVEYED BY CARDINAL SURVEYORS IN AUGUST – OCTOBER 2014.
2. RSL – USEPA REGIONAL SCREENING LEVEL (MAY 2016).
3. MG/KG – MILLIGRAMS PER KILOGRAM
4. ARCADIS SOIL BORINGS COLLECTED IN SEPTEMBER 2014 BEGIN WITH BORING NUMBER SB–100. ARCADIS SOIL BORINGS ARE DISPLAYED ON DATA TABLES WITH PREFIX "BL–".

0 200' 400'

GRAPHIC SCALE

FORMER BLACK LEAF CHEMICAL SITE
LOUISVILLE, KENTUCKY
CORRECTIVE ACTION PLAN

PROPOSED SOIL EXCAVATION AREAS

ARCADIS Design & Consultancy for natural and built assets

FIGURE
3-1

APPENDIX A

Soil Analytical Data

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC001	BLC001	BLC002	BLC002	BLC003	BLC003	BLC004	BLC004	BLC005	BLC005	BLC006	BLC006	BLC007	BLC007
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10
Sample Name:	May2016	May2016	Concentration	Units	BLC-SS-01	BLC-SB-01	BLC-SS-02	BLC-SB-02	BLC-SS-03	BLC-SB-03	BLC-SS-04	BLC-SB-04	BLC-SS-05	BLC-SB-05	BLC-SS-06	BLC-SB-06	BLC-SS-07	BLC-SB-07
Detected Semivolatile Organics																		
1,1'-Biphenyl	47	200	- -	mg/kg	4.5 U	0.19 U	0.52 U	0.18 U	0.2 U	0.19 U	0.07 J	0.19 U	0.047 J	0.18 U	0.18 U [0.19 U]	0.18 U	1.1 J	0.18 U
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	8.9	0.19 U	0.52 U	0.18 U	0.042 J	0.19 U	0.022 J	0.19 U	0.18 U	0.18 U	0.18 U [0.19 U]	0.18 U	1.3 U	0.18 U
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	4.5 U	0.19 U	0.52 U	0.18 U	0.039 J	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U [0.19 U]	0.18 U	1.3 U	0.18 U
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	4.5 U	0.19 U	0.52 U	0.18 U	0.024 J	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U [0.19 U]	0.18 U	1.3 U	0.18 U
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	4.5 U	0.19 U	0.52 U	0.18 U	0.2 U	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U [0.19 U]	0.18 U	1.3 U	0.18 U
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.17	0.0036 U	0.088	0.0035 U	0.26	0.0037 U	0.62	0.0026 J	0.66	0.0032 J	0.064 J [0.047 J]	0.0035 U	6.1	0.00035 J
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.093	0.0036 U	0.14	0.0035 U	0.011	0.0037 U	0.011	0.0037 U	0.0049	0.0035 U	0.0025 J [0.0023 J]	0.0035 U	3	0.0035 U
Acenaphthylene	- -	- -	- -	mg/kg	0.014 J	0.0036 U	0.045	0.0035 U	0.0049	0.0037 U	0.0061	0.0037 U	0.01	0.0035 U	0.0072 [0.0033 J]	0.0035 U	0.3	0.0035 U
Anthracene	18,000	230,000	- -	mg/kg	0.33 J	0.0036 U	0.63	0.0006 J	0.046 J	0.0037 U	0.055 J	0.0037 U	0.024	0.0035 U	0.013 [0.0081]	0.0035 U	3.8	0.0035 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**1.1 J**	0.0036 U	**2.2**	0.0012 J	**0.23**	0.00087 J	**0.17 J**	0.00063 J	0.13 J	0.00044 J	0.079 J [0.082 J]	0.0035 U	**7.8**	0.0035 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.99 J**	0.0036 U	**2**	0.0038 U	**0.21**	0.0041 U	**0.13 J**	0.004 U	**0.12 J**	0.004 U	**0.085 J [0.079 J]**	0.0035 U	**6.4**	0.0035 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**1.1 J**	0.0036 U	**2.2**	0.00098 J	**0.26**	0.0011 J	0.15 J	0.00089 J	0.16 J	0.0009 J	0.13 J [0.14 J]	0.0035 U	**9.5**	0.00045 J
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.77 J	0.0036 U	1.9 J	0.0035 U	0.22 J	0.0037 U	0.097 J	0.0037 U	0.085 J	0.0035 U	0.1 J [0.047 J]	0.0035 UJ	3.7 J	0.0035 UJ
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	1.1 J	0.0036 U	**1.8**	0.00091 J	0.2 J	0.0012 J	0.14 J	0.00092 J	0.12 J	0.00098 J	0.096 J [0.085 J]	0.0035 U	**9.2**	0.0035 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	4.5 U	0.19 U	0.19 J	0.18 U	0.03 J	0.19 U	0.18 U	0.19 U	0.02 J	0.18 U	0.18 U [0.19 U]	0.18 U	0.42 J	0.18 U
Chrysene	16	290	- -	mg/kg	1.2 J	0.0036 U	2.2	0.001 J	0.27	0.00097 J	0.2	0.00063 J	0.17 J	0.00054 J	0.11 J [0.12 J]	0.0035 U	13	0.0035 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**0.4 J**	0.0036 U	**0.48 J**	0.0035 U	**0.075 J**	0.0037 U	**0.032 J**	0.0037 U	**0.027 J**	0.0035 U	**0.02 J [0.017]**	0.0035 U	**2.2**	0.0035 U
Dibenzofuran	73	1,000	- -	mg/kg	4.5 U	0.19 U	0.12 J	0.18 U	0.07 J	0.19 U	0.18	0.19 U	0.15 J	0.18 U	0.18 U [0.19 U]	0.18 U	2.8	0.18 U
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	2.9 J	0.0036 U	4.3	0.0032 J	0.44	0.0014 J	0.3	0.00079 J	0.19	0.00058 J	0.13 J [0.16 J]	0.0035 U	9.9	0.0035 U
Fluorene	2,400	30,000	- -	mg/kg	0.098	0.0036 U	0.17	0.0035 U	0.01	0.0037 U	0.01	0.0037 U	0.0048	0.0035 U	0.0027 J [0.002 J]	0.0035 U	2.9	0.0035 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	**0.65 J**	0.0036 U	**1.7**	0.0035 U	**0.19 J**	0.0037 U	0.092 J	0.0037 U	0.077 J	0.0035 U	0.075 J [0.052 J]	0.0035 U	**4.3**	0.0035 U
Naphthalene	3.8	17	- -	mg/kg	0.13	0.0036 U	0.055	0.0035 U	0.14 J	0.0037 U	0.31	0.0037 U	0.38	0.0035 U	0.026 [0.015]	0.0035 U	**6.9**	0.0035 U
Pentachlorophenol	1	4	- -	mg/kg	0.044 UJ	0.0074 UJ	0.071 UJ	0.0072 UJ	0.0081 UJ	0.0076 UJ	0.0071 UJ	0.0076 UJ	0.0072 UJ	0.0071 UJ	0.0069 UJ [0.37 U]	0.0071 UJ	0.19 UJ	0.0071 UJ
Phenanthrene	- -	- -	- -	mg/kg	1.8 J	0.0036 U	2.4	0.002 J	0.34	0.00086 J	0.5	0.0012 J	0.38	0.0015 J	0.086 J [0.093 J]	0.0035 U	12	0.00049 J
Phenol	19,000	250,000	- -	mg/kg	4.5 U	0.19 U	0.52 U	0.18 U	0.2 U	0.19 U	0.18 U	0.19 U	0.18 U	0.18 U	0.18 U [0.19 U]	0.18 U	1.3 U	0.18 U
Pyrene	1,800	23,000	- -	mg/kg	2.4 J	0.0036 U	4.1	0.0035 U	0.46	0.0037 U	0.33	0.0037 U	0.23	0.0035 U	0.13 J [0.19]	0.0035 U	10	0.0035 U
Detected Inorganics																		
Arsenic	0.68	3	22.7	mg/kg	7.4	8	11	8.2	5.6	12	9.5	7.8	8.7	9.3	6.3 [15]	8.2	**24**	8.1
Lead	400	800	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																		
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	**120**	0.058	0.19	0.0035 U	**8.6**	0.0037 U	**34**	0.012	**2.7 J**	0.0042 U	**4.9 [0.29]**	0.0035 U	**15 J**	0.0036 U
4,4'-DDE	2	9.3	- -	mg/kg	**22 J**	0.0068	1.6	0.0092	**3.3**	0.0013 J	**4.4**	0.0015 J	**26**	0.028	0.88 [0.86]	0.0035 U	**13 J**	0.0049
4,4'-DDT	1.9	8.5	- -	mg/kg	**370**	0.49	0.76	0.013	**11**	0.0054 U	**41**	0.03	**26**	0.03	**5.6 [0.33]**	0.0035 U	**130**	0.032
Aldrin	0.039	0.18	- -	mg/kg	22 U	0.0019 U	0.018 U	0.0018 U	0.012 J	0.0019 U	0.18 U	0.0019 U	0.18 U	0.0018 U	0.036 U [0.0095 U]	0.0018 U	0.032 J	0.0018 U
alpha-BHC	0.086	0.36	- -	mg/kg	**1,400**	**0.36**	0.047	0.0076	**0.8**	0.0019 U	**6**	0.0019 U	0.18 U	0.015	0.036 U [0.0013 J]	0.0085	**1.3**	0.0018 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	22 U	0.0019 U	0.0023 NJ	0.0018 U	0.051	0.0019 U	0.041 J	0.0019 U	0.25	0.0018 U	0.0036 J [0.0039 J]	0.0018 U	0.19 J	0.0018 U
beta-BHC	0.3	1.3	- -	mg/kg	**23**	0.073	0.022 NJ	0.0036	**1.2**	0.0019 U	**2.1**	0.0019 U	**0.57**	0.0055	0.036 U [0.0095 U]	0.014	**8 J**	0.0059
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	6.5 J	0.0094	0.018 U	0.0018 U	0.019 J	0.0019 U	0.19	0.0019 U	0.18 U	0.00033 J	0.036 U [0.0095 U]	0.0018	0.76	0.0018 U
Dieldrin	0.034	0.14	- -	mg/kg	**5.3 J**	0.0058	**0.035 J**	0.00048 J	**0.43**	0.0037 U	**0.24 J**	0.00053 J	**0.084 J**	0.00046 J	0.022 J [0.018 J]	0.0035 U	**4.4**	0.002 J
Endosulfan I	470	470	- -	mg/kg	22 U	0.0019 U	0.018 U	0.0018 U	0.04 U	0.0019 U	0.18 U	0.0019 U	0.18 U	0.0018 U	0.036 U [0.0095 U]	0.0018 U	0.19 U	0.0018 U
Endosulfan II	470	470	- -	mg/kg	43 U	0.0036 U	0.035 U	0.0035 U	0.078 U	0.0037 U	0.35 U	0.0037 U	0.35 U	0.0035 U	0.07 U [0.018 U]	0.0035 U	0.058 NJ	0.0035 U
Endosulfan sulfate	- -	- -	- -	mg/kg	43 U	0.0036 U	0.035 U	0.0035 U	0.078 U	0.0037 U	0.35 U	0.0037 U	0.35 U	0.0035 U	0.07 U [0.018 U]	0.0035 U	0.37 U	0.0035 U
Endrin	19	250	- -	mg/kg	43 U	0.0036 U	0.035 U	0.0035 U	0.078 U	0.0037 U	0.35 U	0.0037 U	0.35 U	0.0035 U	0.07 U [0.018 U]	0.0035 U	0.37 U	0.0035 U
Endrin aldehyde	- -	- -	- -	mg/kg	43 U	0.0036 U	0.035 U	0.0035 U	0.078 U	0.0037 U	0.35 U	0.0037 U	0.35 U	0.0035 U	0.07 U [0.018 U]	0.0035 U	0.068 NJ	0.0035 U
Endrin ketone	- -	- -	- -	mg/kg	43 U	0.0036 U	0.004 J	0.0035 U	0.078 U	0.0037 U	0.35 U	0.0037 U	0.35 U	0.0035 U	0.07 U [0.018 U]	0.0035 U	0.13 J	0.0035 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	**180**	0.041	0.0075 J	0.0012 J	0.14	0.0019 U	0.22	0.00021 J	0.036 J	0.0036	0.036 U [0.0095 U]	0.0077	0.51	0.0014 J
gamma-Chlordane	1.7	1.7	- -	mg/kg	22 U	0.0019 U	0.018 U	0.0018 U	0.056 U	0.0019 U	0.18 U	0.0019 U	0.27 U	0.0018 U	0.033 NJ [0.0095 U]	0.0018 U	0.19 U	0.0018 U
Heptachlor	0.13	0.63	- -	mg/kg	22 U	0.0019 U	0.018 U	0.0018 U	0.04 U	0.0019 U	0.18 U	0.0019 U	0.18 U	0.0018 U	0.036 U [0.0095 U]	0.0018 U	0.19 U	0.0018 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	22 U	0.0019 U	0.018 U	0.0018 U	0.04 U	0.0019 U	0.18 U	0.0019 U	0.18 U	0.0018 U	0.036 U [0.0095 U]	0.0018 U	0.19 U	0.0018 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	220 U	0.019 U	0.18 U	0.018 U	0.4 U	0.019 U	1.8 U	0.019 U	1.8 U	0.018 U	0.36 U [0.095 U]	0.018 U	1.9 U	0.018 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC008	BLC008	BLC009	BLC009	BLC010	BLC010	BLC011	BLC011	BLC013	BLC013	BLC014	BLC014	BLC015	BLC015
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10
Sample Name:	May2016	May2016	Concentration	Units	BLC-SS-08	BLC-SB-08	BLC-SS-09	BLC-SB-09	BLC-SS-10	BLC-SB-10	BLC-SS-11	BLC-SB-11	BLC-SS-13	BLC-SB-13	BLC-SS-14	BLC-SB-14	BLC-SS-15	BLC-SB-15
Detected Semivolatile Organics																		
1,1'-Biphenyl	47	200	- -	mg/kg	0.21 J	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.023 J [0.18 U]	0.18 U	0.17 U	0.19 U
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	0.16 J	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U [0.18 U]	0.18 U	0.17 U	0.19 U
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	0.76 U	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U [0.18 U]	0.18 U	0.17 U	0.19 U
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	0.76 U	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U [0.18 U]	0.18 U	0.17 U	0.19 U
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	0.76 U	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U [0.18 U]	0.18 U	0.17 U	0.19 U
2-Methylnaphthalene	240	3,000	- -	mg/kg	2.5	0.00047 J	0.1 J	0.00074 J	0.063 J	0.0038 U	0.043 J	0.0036 U	0.0019 J	0.0035 U	0.16 J [0.083]	0.0036 U	0.0034 U	0.032
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.26	0.0035 U	0.0099	0.0035 U	0.0095	0.0038 U	0.018	0.0036 U	0.0037 U	0.0035 U	0.0074 [0.0085 U]	0.0036 U	0.0034 U	0.00057 J
Acenaphthylene	- -	- -	- -	mg/kg	0.049	0.0035 U	0.0017 J	0.0035 U	0.0031 J	0.0038 U	0.013	0.0036 U	0.0037 U	0.0035 U	0.0044 [0.0017 J]	0.0036 U	0.0034 U	0.00081 J
Anthracene	18,000	230,000	- -	mg/kg	0.49 J	0.0035 U	0.024	0.0015 J	0.018	0.0038 U	0.051 J	0.0036 U	0.00053 J	0.0035 U	0.026 [0.0047 J]	0.0036 U	0.0034 U	0.0037 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**5.2**	0.0035 U	0.13 J	0.006	0.15 J	0.0038 U	**0.35**	0.0036 U	0.0053	0.0035 U	**0.23 [0.033]**	0.0036 U	0.0034 U	0.022
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**5**	0.0035 U	**0.14 J**	0.01 U	**0.16 J**	0.0038 U	**0.37**	0.0043 U	0.0098 U	0.0035 U	**0.22 [0.038]**	0.0036 U	0.0034 U	**0.025**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**6**	0.00061 J	0.14 J	0.0088	**0.25**	0.0038 U	**0.54 J**	0.00045 J	0.0072	0.0035 U	**0.32 J [0.066]**	0.0036 U	0.0034 U	0.025
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	2.8 J	0.0035 UJ	0.12 J	0.0048 J	0.15 J	0.0038 U	0.23	0.00045 J	0.0053 J	0.0035 U	0.13 J [0.043]	0.0036 U	0.0034 U	0.015
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	**5.1**	0.0035 U	0.15 J	0.0069	0.16 J	0.0038 U	0.47	0.00038 J	0.0062	0.0035 U	0.26 [0.051]	0.0036 U	0.0034 U	0.024
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	0.54 J	0.18 U	0.028 J	0.18 U	0.024 J	0.19 U	0.054 J	0.18 U	0.19 U	0.18 U	0.031 J [0.18 U]	0.18 U	0.17 U	0.19 U
Chrysene	16	290	- -	mg/kg	7.4	0.00056 J	0.18	0.007	0.21	0.0038 U	0.55	0.0036 U	0.0061	0.0035 U	0.3 [0.044]	0.0036 U	0.0034 U	0.026
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**1.8**	0.0035 U	**0.02**	0.0035 U	**0.025 J**	0.0038 U	**0.091 J**	0.0036 U	0.0015 J	0.0035 U	**0.031 [0.015]**	0.0036 U	0.0034 U	0.005
Dibenzofuran	73	1,000	- -	mg/kg	0.79	0.18 U	0.021 J	0.18 U	0.022 J	0.19 U	0.024 J	0.18 U	0.19 U	0.18 U	0.056 J [0.019 J]	0.18 U	0.17 U	0.19 U
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	8.1	0.0035 U	0.3	0.013	0.35	0.0038 U	0.94	0.0036 U	0.01	0.0035 U	0.53 [0.061]	0.0036 U	0.0034 U	0.033
Fluorene	2,400	30,000	- -	mg/kg	0.2	0.0035 U	0.0085	0.00036 J	0.0077	0.0038 U	0.025	0.0036 U	0.0037 U	0.0035 U	0.0078 [0.0011 J]	0.0036 U	0.0034 U	0.00086 J
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	**3.3**	0.0035 U	0.12 J	0.0054	0.14 J	0.0038 U	**0.21**	0.00043 J	0.0049	0.0035 U	0.12 J [0.04]	0.0036 U	0.0034 U	0.014
Naphthalene	3.8	17	- -	mg/kg	1.7	0.0035 U	0.034	0.0035 U	0.025	0.0038 U	0.024	0.0036 U	0.0037 U	0.0035 U	0.082 J [0.052]	0.0036 U	0.0034 U	0.018
Pentachlorophenol	1	4	- -	mg/kg	0.075 UJ	0.0071 UJ	0.0068 UJ	0.0071 UJ	0.0072 UJ	0.38 U	0.34 U	0.36 U	0.37 U	0.35 U	0.34 U [0.34 UJ]	0.36 U	0.34 U	0.37 U
Phenanthrene	- -	- -	- -	mg/kg	5.1	0.00063 J	0.23	0.0057	0.19	0.0038 U	0.59	0.0036 U	0.0044	0.0035 U	0.3 [0.054]	0.0036 U	0.0034 U	0.037
Phenol	19,000	250,000	- -	mg/kg	0.76 U	0.18 U	0.17 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U	0.19 U	0.18 U	0.18 U [0.18 U]	0.18 U	0.17 U	0.19 U
Pyrene	1,800	23,000	- -	mg/kg	6.8	0.0035 U	0.29	0.0093	0.31	0.0038 U	1.1	0.0036 U	0.01	0.0035 U	0.58 [0.063]	0.0036 U	0.0034 U	0.033
Detected Inorganics																		
Arsenic	0.68	3	22.7	mg/kg	22	9.2	5.1	12	9	12	14	8.1	15	12	15 [14]	12	14	7.6
Lead	400	800	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																		
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	**41**	0.0035 U	0.082	0.019	0.0099	0.0038 U	0.27	0.0035 U	0.0037 U	0.0035 U	1.5 [1.3]	0.0037 U	0.0035 U	0.0058
4,4'-DDE	2	9.3	- -	mg/kg	**30**	0.001 J	0.58	0.039	0.036	0.0038 U	1.7	0.0035 U	0.0035 J	0.0035 U	**2.4 [2.9]**	0.0037 U	0.0035 U	0.048
4,4'-DDT	1.9	8.5	- -	mg/kg	**130**	0.0068	0.59	0.1	0.031 J	0.0038 U	**2.1**	0.0035 U	0.0037 U	0.0035 U	**23 [14]**	0.0037 U	0.0035 U	0.02
Aldrin	0.039	0.18	- -	mg/kg	**0.14 J**	0.0018 U	0.0087 U	0.0018 U	0.0018 U	0.002 U	0.018 U	0.0018 U	0.0019 U	0.0018 U	0.027 J [0.17 U]	0.0019 U	0.0018 U	0.0019 U
alpha-BHC	0.086	0.36	- -	mg/kg	**1.7**	0.028	0.0087 U	0.013	0.0018 U	0.002 U	0.0091 J	0.0018 U	0.0019 U	0.00089 J	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.0011 NJ
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.62	0.0018 U	0.0019 J	0.00043 J	0.00026 NJ	0.002 U	0.0071 NJ	0.0018 U	0.0019 U	0.0018 U	0.014 J [0.17 U]	0.0019 U	0.0018 U	0.00088 J
beta-BHC	0.3	1.3	- -	mg/kg	**8.9**	0.097	0.012	0.018	0.0018 U	0.002 U	0.044	0.0018 U	0.0019 U	0.025	**0.17 [0.39]**	0.0019 U	0.0018 U	0.0019 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.28 J	0.024	0.0087 U	0.0012 J	0.0018 U	0.002 U	0.0029 J	0.0018 U	0.0019 U	0.00026 J	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.0019 U
Dieldrin	0.034	0.14	- -	mg/kg	**18**	0.0054	**0.064**	0.0092	0.0076 J	0.0038 U	**0.19**	0.0035 U	0.0037 U	0.0035 U	**3.5 [1.8]**	0.0037 U	0.0035 U	0.0056
Endosulfan I	470	470	- -	mg/kg	0.38 U	0.0018 U	0.0087 U	0.0018 U	0.0018 U	0.002 U	0.018 U	0.0018 U	0.0019 U	0.0018 U	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.00022 NJ
Endosulfan II	470	470	- -	mg/kg	0.74 U	0.0035 U	0.017 U	0.0035 U	0.0035 U	0.0038 U	0.034 U	0.0035 U	0.0037 U	0.0035 U	0.17 U [0.34 U]	0.0037 U	0.0035 U	0.0038 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.74 U	0.0035 U	0.017 U	0.0035 U	0.0035 U	0.0038 U	0.034 U	0.0035 U	0.0037 U	0.0035 U	0.17 U [0.34 U]	0.0037 U	0.0035 U	0.0038 U
Endrin	19	250	- -	mg/kg	2.7	0.0035 U	0.017 U	0.00038 NJ	0.0035 U	0.0038 U	0.034 U	0.0035 U	0.0037 U	0.0035 U	0.038 J [0.34 U]	0.0037 U	0.0035 U	0.0038 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.12 J	0.0035 U	0.017 U	0.0035 U	0.0011 NJ	0.0038 U	0.017 NJ	0.0035 U	0.0037 U	0.0035 U	0.17 U [0.34 U]	0.0037 U	0.0035 U	0.0038 U
Endrin ketone	- -	- -	- -	mg/kg	2	0.0021 J	0.0018 J	0.0035 U	0.0035 U	0.0038 U	0.015 NJ	0.0035 U	0.0037 U	0.0035 U	0.022 J [0.34 U]	0.0037 U	0.0035 U	0.0038 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	**0.68**	0.044	0.0087 U	0.005	0.0018 U	0.002 U	0.018	0.0018 U	0.0019 U	0.0018 U	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.00034 J
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.67 U	0.0018 U	0.0087 U	0.0018 U	0.0018 U	0.002 U	0.018 U	0.0018 U	0.0019 U	0.0018 U	0.078 J [0.17 U]	0.0019 U	0.0018 U	0.0008 NJ
Heptachlor	0.13	0.63	- -	mg/kg	0.38 U	0.0018 U	0.0087 U	0.0018 U	0.0018 U	0.002 U	0.018 U	0.0018 U	0.0019 U	0.0018 U	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.0019 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.38 U	0.0018 U	0.0087 U	0.0018 U	0.0018 U	0.002 U	0.018 U	0.0018 U	0.0019 U	0.0018 U	0.087 U [0.17 U]	0.0019 U	0.0018 U	0.0019 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	3.8 U	0.018 U	0.087 U	0.018 U	0.018 U	0.02 U	0.18 U	0.018 U	0.019 U	0.018 U	0.87 U [1.7 U]	0.019 U	0.018 U	0.019 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC016	BLC016	BLC017	BLC017	BLC018	BLC018	BLC019	BLC019	BLC020	BLC020	BLC021	BLC021
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/25/10	10/25/10	10/26/10	10/26/10	10/27/10	10/27/10
Sample Name:	May2016	May2016	Concentration	Units	BLC-SS-16	BLC-SB-16	BLC-SS-17	BLC-SB-17	BLC-SS-18	BLC-SB-18	BLC-SS-19	BLC-SB-19	BLC-SS-20	BLC-SB-20	BLC-SS-21	BLC-SB-21
Detected Semivolatile Organics																
1,1'-Biphenyl	47	200	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.039 J [0.19 U]	0.21 U	0.61 J [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.18 U [0.19 U]	0.21 U	3.9 U [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.061 J [0.19 U]	0.21 U	3.9 U [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.18 U [0.19 U]	0.21 U	3.9 U [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.18 U [0.19 U]	0.21 U	3.9 U [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.2	0.00042 J	0.0043	0.0035 U	0.24 [0.026]	0.0041 U	1.3 [0.11 J]	0.0036 U	0.086 [0.028]	0.0034 U	0.027	0.0035 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.03 J	0.0035 U	0.0036 U	0.0035 U	0.1 [0.0056]	0.0041 U	3.6 J [0.061 J]	0.0036 U	0.18 [0.033]	0.0034 U	0.0027 J	0.0035 U
Acenaphthylene	- -	- -	- -	mg/kg	0.18 U	0.0035 U	0.0036 U	0.0035 U	0.018 [0.0064]	0.0041 U	0.19 U [0.0032 J]	0.0036 U	0.011 J [0.0037 J]	0.0034 U	0.018 U	0.0035 U
Anthracene	18,000	230,000	- -	mg/kg	0.095 J	0.0035 U	0.0036 U	0.0035 U	0.37 [0.023]	0.0041 U	11 [0.23]	0.0036 U	0.43 [0.091 J]	0.0034 U	0.0084 J	0.0035 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**0.49**	0.0035 U	0.0008 J	0.0035 U	**1 [0.17 J]**	0.0041 U	**14 [0.53]**	0.0036 U	**1.4 [0.26]**	0.00037 J	0.048	0.0035 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.45**	0.0035 U	0.0042 U	0.0035 U	**0.77 [0.19]**	0.0041 U	**12 [0.43]**	0.0043 U	**1.5 [0.27]**	0.0034 U	**0.038**	0.0035 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.59**	0.0035 U	0.0021 J	0.0035 U	**1.2 [0.22]**	0.0041 U	**14 [0.57 J]**	0.00043 J	**1.7 J [0.36]**	0.00044 J	0.052	0.0035 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.39	0.0035 U	0.00087 J	0.0035 U	0.47 [0.19]	0.0041 U	7.8 [0.23]	0.00042 J	0.79 J [0.23]	0.0034 U	0.019	0.0035 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.5	0.0035 U	0.0015 J	0.0035 U	0.8 [0.2]	0.0041 U	**11 [0.45]**	0.0036 U	**1.7 [0.22]**	0.00035 J	0.038	0.0035 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.21 [0.019 J]	0.21 U	5.2 [0.12 J]	0.18 U	0.25 J [0.05 J]	0.18 U	0.18 U	0.18 U
Chrysene	16	290	- -	mg/kg	0.55	0.0035 U	0.0012 J	0.0035 U	0.95 [0.2]	0.0041 U	15 [0.6]	0.0036 U	1.8 [0.32]	0.00042 J	0.061	0.0035 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**0.13 J**	0.0035 U	0.0036 U	0.0035 U	**0.12 J [0.033]**	0.0041 U	**2.2 J [0.048 J]**	0.0036 U	**0.3 J [0.044 J]**	0.0034 U	0.018 U	0.0035 U
Dibenzofuran	73	1,000	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.25 [0.19 U]	0.21 U	5 [0.083 J]	0.18 U	0.11 J [0.032 J]	0.18 U	0.18 U	0.18 U
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.99	0.0035 U	0.001 J	0.0035 U	1.4 [0.31]	0.00051 J	43 [1.4]	0.0036 U	3.2 [0.61]	0.00097 J	0.082	0.0035 U
Fluorene	2,400	30,000	- -	mg/kg	0.027 J	0.0035 U	0.0036 U	0.0035 U	0.097 [0.0049]	0.0041 U	5.4 [0.083 J]	0.0036 U	0.17 [0.034]	0.0034 U	0.0032 J	0.0035 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	**0.35**	0.0035 U	0.00086 J	0.0035 U	**0.45 [0.17 J]**	0.0041 U	**7.6 [0.21]**	0.0036 U	**0.7 [0.18 J]**	0.0034 U	0.019	0.0035 U
Naphthalene	3.8	17	- -	mg/kg	0.12 J	0.0035 U	0.0036 U	0.0035 U	0.27 [0.017]	0.0041 U	**4.5 [0.079 J]**	0.0036 U	0.036 J [0.011]	0.0034 U	0.018 U	0.0035 U
Pentachlorophenol	1	4	- -	mg/kg	7.3 U	0.35 U	0.36 U	0.35 U	0.35 U [0.36 UJ]	0.41 U	7.5 U [0.38 U]	0.36 U	0.65 U [0.41 UJ]	0.34 U	0.36 U	0.35 U
Phenanthrene	- -	- -	- -	mg/kg	0.57	0.0035 U	0.0036 U	0.0035 U	1.5 [0.18 J]	0.0041 U	46 [1.1]	0.0036 U	2.2 [0.45]	0.0034 U	0.067	0.0035 U
Phenol	19,000	250,000	- -	mg/kg	3.8 U	0.18 U	0.19 U	0.18 U	0.18 U [0.19 U]	0.21 U	3.9 U [0.2 U]	0.18 U	0.33 U [0.21 U]	0.18 U	0.18 U	0.18 U
Pyrene	1,800	23,000	- -	mg/kg	0.9	0.0035 U	0.0036 U	0.0035 U	1.9 [0.3]	0.0041 U	33 [1.4]	0.0036 U	3.2 [0.52]	0.0034 U	0.11	0.0035 U
Detected Inorganics																
Arsenic	0.68	3	22.7	mg/kg	**24**	9.6	15	7.5	18 [17]	16	**56 [46]**	8.2	**17 [40]**	8.3	**47**	8.5
Lead	400	800	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	**61**	0.035	0.054 J	0.0034 U	0.09 [0.065]	0.0067	0.12 [0.14]	0.0035 U	0.0055 [0.0041 U]	0.0033 U	0.096	0.0035 U
4,4'-DDE	2	9.3	- -	mg/kg	**6.9**	0.0046	0.64	0.0034 U	0.48 [0.26]	0.00095 J	1.3 [1.2]	0.0035 U	0.039 [0.011 N]	0.0033 U	1.1	0.0035 U
4,4'-DDT	1.9	8.5	- -	mg/kg	**280**	0.14	0.085	0.0036 U	0.23 [0.19]	0.042	0.34 [0.32]	0.0035 U	0.023 [0.011]	0.0033 U	0.46	0.0035 U
Aldrin	0.039	0.18	- -	mg/kg	1.9 U	0.0018 U	0.0038 U	0.0017 U	0.0035 U [0.0019 U]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
alpha-BHC	0.086	0.36	- -	mg/kg	1.9 U	0.00045 NJ	0.0038 U	0.0017 U	0.0012 NJ [0.0013 J]	0.0021 U	0.0018 J [0.0018 J]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.46 J	0.0005 J	0.00051 NJ	0.0017 U	0.0074 [0.0042]	0.0021 U	0.0019 NJ [0.0019 NJ]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
beta-BHC	0.3	1.3	- -	mg/kg	1.9 U	0.022	0.0046	0.0017 U	0.0039 [0.0026]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0041 U]	0.0017 U	0.0094 U	0.0018 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	1.9 U	0.0012 J	0.0038 U	0.0017 U	0.0035 U [0.0019 U]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
Dieldrin	0.034	0.14	- -	mg/kg	**8.5**	0.013	0.014	0.0034 U	0.03 [0.015]	0.0015 J	**0.03 [0.042]**	0.0035 U	0.0059 [0.0028 J]	0.0033 U	0.017 J	0.0035 U
Endosulfan I	470	470	- -	mg/kg	1.9 U	0.0018 U	0.0038 U	0.0017 U	0.0035 U [0.0019 U]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0037 J	0.0018 U
Endosulfan II	470	470	- -	mg/kg	3.7 U	0.0036 U	0.0073 U	0.0034 U	0.0069 U [0.0037 U]	0.0041 U	0.019 U [0.019 U]	0.0035 U	0.0039 U [0.0041 U]	0.0033 U	0.018 U	0.0035 U
Endosulfan sulfate	- -	- -	- -	mg/kg	3.7 U	0.0036 U	0.0073 U	0.0034 U	0.0069 U [0.0037 U]	0.0041 U	0.019 U [0.019 U]	0.0035 U	0.0039 U [0.0041 U]	0.0033 U	0.018 U	0.0035 U
Endrin	19	250	- -	mg/kg	3.7 U	0.0036 U	0.0073 U	0.0034 U	0.00071 NJ [0.00064 NJ]	0.0041 U	0.019 U [0.019 U]	0.0035 U	0.00064 J [0.0041 U]	0.0033 U	0.018 U	0.0035 U
Endrin aldehyde	- -	- -	- -	mg/kg	3.7 U	0.0036 U	0.0073 U	0.0034 U	0.0019 NJ [0.0037 U]	0.0041 U	0.019 U [0.019 U]	0.0035 U	0.0039 U [0.0041 U]	0.0033 U	0.018 U	0.0035 U
Endrin ketone	- -	- -	- -	mg/kg	3.7 U	0.00049 J	0.0073 U	0.0034 U	0.0069 U [0.0013 NJ]	0.0041 U	0.019 U [0.019 U]	0.0035 U	0.0039 U [0.001 NJ]	0.0033 U	0.0033 NJ	0.0035 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	1.9 U	0.00043 J	0.0038 U	0.0017 U	0.00051 J [0.0003 J]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	1.9 U	0.0008 J	0.0038 U	0.0017 U	0.0077 U [0.0042]	0.00025 J	0.0098 U [0.0099 U]	0.0018 U	0.00044 NJ [0.00023 NJ]	0.0017 U	0.0094 U	0.0018 U
Heptachlor	0.13	0.63	- -	mg/kg	1.9 U	0.0018 U	0.0038 U	0.0017 U	0.0035 U [0.0019 U]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.00058 NJ]	0.0017 U	0.0094 U	0.0018 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	1.9 U	0.0018 U	0.0038 U	0.0017 U	0.0035 U [0.0019 U]	0.0021 U	0.0098 U [0.0099 U]	0.0018 U	0.002 U [0.0021 U]	0.0017 U	0.0094 U	0.0018 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	19 U	0.018 U	0.038 U	0.017 U	0.035 U [0.019 U]	0.021 U	0.098 U [0.099 U]	0.018 U	0.02 U [0.021 U]	0.017 U	0.094 U	0.018 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC022	BLC022	BLC023	BLC023	BLC024	BLC024	BLC025	BLC025	BLC026	BLC026	BLC027	BLC027	BLC028	BLC028	BLC029
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1	8 - 12	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10
Sample Name:	May2016	May2016	Concentration	Units	BLC-SS-22	BLC-SB-22	BLC-SS-23	BLC-SB-23	BLC-SS-24	BLC-SB-24	BLC-SS-25	BLC-SB-25	BLC-SS-26	BLC-SB-26	BLC-SS-27	BLC-SB-27	BLC-SS-28	BLC-SB-28	BLC-SS-29
Detected Semivolatile Organics																			
1,1'-Biphenyl	47	200	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.19 U	0.19 U	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.19 U	0.19 U	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.034 J	0.19 U	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.19 U	0.19 U	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.023 J	0.18 U	0.18 U	0.67	0.19 U	0.21	0.18 U	0.18 U	0.17 U	0.17 J	0.18 U
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.13 J	0.0042 U	0.083 J	0.02	0.079 J	0.0036 U	0.061 J	0.0038 U	0.042	0.004 U	0.012	0.0035 U	0.0013 J	0.00064 J	0.019
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0091	0.0042 U	0.02	0.017	0.01	0.0036 U	0.0052	0.0038 U	0.015	0.004 U	0.007 U	0.0035 U	0.0033 U	0.0042 U	0.0069 U
Acenaphthylene	- -	- -	- -	mg/kg	0.005	0.0042 U	0.01	0.0022 J	0.015	0.0036 U	0.011	0.0038 U	0.021 J	0.004 U	0.0015 J	0.0035 U	0.0033 U	0.0042 U	0.0017 J
Anthracene	18,000	230,000	- -	mg/kg	0.036	0.0042 U	0.074 J	0.067 J	0.049 J	0.0036 U	0.02	0.0038 U	0.053	0.004 U	0.0024 J	0.0035 U	0.0033 U	0.00063 J	0.0029 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**0.2 J**	0.0042 U	**0.29**	**0.23**	**0.33**	0.0036 U	0.14 J	0.0038 U	**0.36**	0.004 U	0.021	0.0035 U	0.0023 J	0.0024 J	0.025
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.19 J**	0.0042 U	**0.3**	**0.23**	**0.36**	0.0036 U	**0.16 J**	0.0038 U	**0.35**	0.004 U	**0.03**	0.0035 U	0.0055 U	0.0055 U	**0.031**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.23**	0.0042 U	**0.42**	**0.2 J**	**0.7**	0.0036 U	**0.25 J**	0.0038 U	**0.31**	0.004 U	0.048	0.0035 U	0.0058	0.0025 J	0.039
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.11 J	0.0042 U	0.15 J	0.1 J	0.2 J	0.0036 U	0.083 J	0.0038 U	0.32	0.004 U	0.022	0.0035 U	0.0034	0.0019 J	0.026
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.23	0.0042 U	0.4	0.25	0.42	0.0036 U	0.2	0.0038 U	0.36	0.004 U	0.039	0.0035 U	0.0038	0.0021 J	0.03
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	0.023 J	0.21 U	0.037 J	0.2 U	0.031 J	0.18 U	0.18 U	0.19 U	0.027 J	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
Chrysene	16	290	- -	mg/kg	0.26	0.0042 U	0.4	0.24	0.46	0.0036 U	0.2	0.0038 U	0.4	0.004 U	0.033	0.0035 U	0.0035	0.0024 J	0.033
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**0.039**	0.0042 U	**0.068 J**	**0.029 J**	**0.057 J**	0.0036 U	**0.028**	0.0038 U	**0.077**	0.004 U	0.0082	0.0035 U	0.00085 J	0.00057 J	0.0097
Dibenzofuran	73	1,000	- -	mg/kg	0.035 J	0.21 U	0.041 J	0.2 U	0.038 J	0.18 U	0.027 J	0.19 U	0.025 J	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.39	0.0042 U	0.55	0.43	0.63	0.0036 U	0.22	0.0038 U	0.74	0.004 U	0.026	0.0035 U	0.0041	0.0059	0.028
Fluorene	2,400	30,000	- -	mg/kg	0.013	0.0042 U	0.023	0.016	0.0081	0.0036 U	0.0062	0.0038 U	0.016	0.004 U	0.007 U	0.0035 U	0.0033 U	0.0042 U	0.00091 J
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.098 J	0.0042 U	0.15 J	0.1 J	**0.19 J**	0.0036 U	0.087 J	0.0038 U	**0.31**	0.004 U	0.021	0.0035 U	0.0029 J	0.0017 J	0.025
Naphthalene	3.8	17	- -	mg/kg	0.085 J	0.0042 U	0.05 J	0.012	0.035	0.0036 U	0.024	0.0038 U	0.024	0.004 U	0.007 U	0.0035 U	0.0033 U	0.0042 U	0.0069 U
Pentachlorophenol	1	4	- -	mg/kg	0.38 U	0.42 U	0.36 U	0.4 U	0.43 U	0.36 U	0.35 U	0.38 U	0.37 U	0.4 U	0.35 U	0.35 U	0.33 U	0.42 U	0.34 U
Phenanthrene	- -	- -	- -	mg/kg	0.27	0.0042 U	0.38	0.27	0.28	0.0036 U	0.12 J	0.0038 U	0.33	0.004 U	0.0088	0.0035 U	0.0033 U	0.003 J	0.021
Phenol	19,000	250,000	- -	mg/kg	0.2 U	0.21 U	0.19 U	0.2 U	0.22 U	0.18 U	0.18 U	0.022 J	0.19 U	0.2 U	0.18 U	0.18 U	0.17 U	0.22 U	0.18 U
Pyrene	1,800	23,000	- -	mg/kg	0.44	0.0042 U	0.6	0.47	0.67	0.0036 U	0.27	0.0038 U	0.69	0.004 U	0.032	0.0035 U	0.17 U	0.0045	0.051
Detected Inorganics																			
Arsenic	0.68	3	22.7	mg/kg	18	15	13	6.2	**34**	8	**39**	11	**31**	17	12	11	17	7.6	13
Lead	400	800	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																			
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.0064	0.0042 U	0.21	0.0039 U	0.013	0.0036 U	0.057	0.0039 U	0.0036 U	0.0042 U	0.079	0.0035 U	0.01	0.0043 U	0.024
4,4'-DDE	2	9.3	- -	mg/kg	0.044	0.0042 U	0.25	0.0039 U	0.014	0.0036 U	0.069	0.0039 U	0.0092 N	0.0042 U	1.4	0.0035 U	0.1	0.00051 J	0.058
4,4'-DDT	1.9	8.5	- -	mg/kg	0.029	0.0042 U	0.11	0.0039 U	0.071	0.0036 U	0.27	0.0034 J	0.0062	0.0042 U	0.098	0.0035 U	0.033	0.014	0.033
Aldrin	0.039	0.18	- -	mg/kg	0.002 U	0.0022 U	0.0019 U	0.002 U	0.0022 U	0.0019 U	0.0038 U	0.002 U	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.002 U	0.0022 U	0.00076 J	0.002 U	0.0022 U	0.0019 U	0.00038 J	0.00063 J	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.002 U	0.0022 U	0.0019 U	0.002 U	0.00075 J	0.0019 U	0.0018 U	0.002 U	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.021	0.0022 U	0.0018 U
beta-BHC	0.3	1.3	- -	mg/kg	0.002 U	0.0022 U	0.0019 U	0.002 U	0.006 U	0.0019 U	0.0029 U	0.002 U	0.0034 U	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.002 U	0.0022 U	0.0019 U	0.002 U	0.0011 NJ	0.0019 U	0.0018 U	0.002 U	0.00063 NJ	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
Dieldrin	0.034	0.14	- -	mg/kg	0.0018 J	0.0042 U	0.003 J	0.0039 U	0.0031 J	0.0036 U	0.017	0.0039 U	0.0036 U	0.0042 U	0.0093 J	0.0035 U	0.0013 NJ	0.0043 U	0.0059
Endosulfan I	470	470	- -	mg/kg	0.002 U	0.0022 U	0.001 NJ	0.002 U	0.00067 J	0.0019 U	0.0018 U	0.002 U	0.00023 J	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
Endosulfan II	470	470	- -	mg/kg	0.0039 U	0.0042 U	0.0036 U	0.0039 U	0.0042 U	0.0036 U	0.0035 U	0.0039 U	0.0036 U	0.0042 U	0.035 U	0.0035 U	0.00044 J	0.0043 U	0.0034 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00046 NJ	0.0042 U	0.00058 NJ	0.0004 NJ	0.0016 NJ	0.0036 U	0.00054 J	0.0039 U	0.0036 U	0.0042 U	0.035 U	0.0035 U	0.0033 U	0.0043 U	0.0034 U
Endrin	19	250	- -	mg/kg	0.0039 U	0.0042 U	0.0036 U	0.0039 U	0.0016 NJ	0.0036 U	0.00055 NJ	0.0039 U	0.0036 U	0.0042 U	0.035 U	0.0035 U	0.0012 J	0.0043 U	0.0034 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.0039 U	0.0042 U	0.0017 NJ	0.0039 U	0.0042 U	0.0036 U	0.0035 U	0.0039 U	0.0036 U	0.0042 U	0.035 U	0.0035 U	0.0033 U	0.0043 U	0.0034 U
Endrin ketone	- -	- -	- -	mg/kg	0.0013 J	0.0042 U	0.0017 NJ	0.0039 U	0.0042 U	0.0036 U	0.0012 J	0.0039 U	0.0019 NJ	0.0042 U	0.035 U	0.0035 U	0.0033 U	0.0043 U	0.0034 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.002 U	0.0022 U	0.00032 NJ	0.002 U	0.0011 J	0.0019 U	0.0018 U	0.002 U	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00025 J	0.0022 U	0.0019 U	0.002 U	0.00086 J	0.0019 U	0.0018 U	0.002 U	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.018	0.0022 U	0.0018 U
Heptachlor	0.13	0.63	- -	mg/kg	0.002 U	0.0022 U	0.00062 J	0.002 U	0.0022 U	0.0019 U	0.0018 NJ	0.002 U	0.00036 NJ	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.0011 J	0.0022 U	0.0053 U	0.002 U	0.0022 U	0.0019 U	0.0064 U	0.002 U	0.0019 U	0.0022 U	0.018 U	0.0018 U	0.0017 U	0.0022 U	0.0018 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.02 U	0.022 U	0.019 U	0.02 U	0.022 U	0.019 U	0.018 U	0.02 U	0.019 U	0.022 U	0.18 U	0.018 U	0.0021 NJ	0.022 U	0.018 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC029	BLC030	BLC030	BLC040	BLC040	BLC041	BLC041	BLC042	BLC042	BLC043	BLC043	BLC044	BLC044	BLC045
Sample Depth(Feet):	Residential	Industrial	Background		8 - 12	0 - 1	8 - 12											
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/27/10	10/27/10	10/27/10	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11
Sample Name:	May2016	May2016	Concentration	Units	BLC-SB-29	BLC-SS-30	BLC-SB-30	BLC-SS40	BLC-SS40	BLC-SS-41	BLC-SS-41	BLC-SS-42	BLC-SS-42	BLC-SS-43	BLC-SS-43	BLC-SS-44	BLC-SS-44	BLC-SS-45
Detected Semivolatile Organics																		
1,1'-Biphenyl	47	200	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0036 U	0.048 [0.094 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0036 U	0.0064 J [0.0031 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.0036 U	0.0041 J [0.0065]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0036 U	0.019 J [0.042 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0036 U	0.085 [0.14 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0036 U	**0.067 [0.15 J]**	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0036 U	**0.093 [0.23]**	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0036 U	0.051 [0.15 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0036 U	0.074 [0.15 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0036 U	0.1 [0.19]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.0036 U	**0.019 J [0.025]**	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	73	1,000	- -	mg/kg	0.19 U	0.2 U [0.036 J]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0036 U	0.17 [0.24]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0036 U	0.0068 J [0.0048]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0036 U	0.047 [0.14 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	3.8	17	- -	mg/kg	0.0036 U	0.028 [0.043 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	0.36 U	0.38 U [0.001 J]	0.36 UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0036 U	0.12 [0.14 J]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	19,000	250,000	- -	mg/kg	0.19 U	0.2 U [0.18 U]	0.18 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0036 U	0.18 [0.25]	0.0036 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics																		
Arsenic	0.68	3	22.7	mg/kg	10	**23 [33]**	5.7	6.08	NA	**29**	NA	10.9	NA	**53.6**	NA	5.4	NA	16 [20.6]
Lead	400	800	- -	mg/kg	NA	NA	NA	78.2	NA	75.8	NA	63.7	NA	80.2	NA	22.3	NA	**77.5 [576]**
Detected Pesticides																		
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.0036 U	0.072 [0.14]	0.01	NA	0.0039 U	NA	0.0042 U	NA	0.0042 U	NA	0.0041 U	NA	0.028 J	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.0036 U	0.44 [0.36]	0.0013 J	NA	0.022 J	NA	0.0051 U	NA	0.0072 J	NA	0.007 J	NA	0.093	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0005 J	0.15 [1]	0.02	NA	0.024 J	NA	0.006 U	NA	0.0061 U	NA	0.0059 U	NA	0.11	NA
Aldrin	0.039	0.18	- -	mg/kg	0.0019 U	0.004 U [0.0004 NJ]	0.0018 U	NA	0.0047 U	NA	0.0051 U	NA	0.0051 U	NA	0.0049 U	NA	0.0043 U	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.0019 U	0.0011 NJ [0.0016 J]	0.0018 U	NA	0.0059 U	NA	0.0063 U	NA	0.0064 U	NA	0.0062 U	NA	0.0054 U	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.0019 U	0.00051 NJ [0.0097]	0.0018 U	NA	0.0035 U	NA	0.0038 U	NA	0.0038 U	NA	0.0037 U	NA	0.0032 U	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.0019 U	0.0041 N [0.028]	0.0018 U	NA	0.0042 U	NA	0.0045 U	NA	0.0045 U	NA	0.0044 U	NA	0.0039 U	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.0019 U	0.00075 NJ [0.0035 U]	0.00021 J	NA	0.0024 U	NA	0.0026 U	NA	0.0026 U	NA	0.0025 U	NA	0.0022 U	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.0036 U	**0.0065 J [0.099]**	0.00056 J	NA	0.0065 U	NA	0.007 U	NA	0.0071 U	NA	0.0068 U	NA	0.0078 J	NA
Endosulfan I	470	470	- -	mg/kg	0.0019 U	0.004 U [0.0035 U]	0.0018 U	NA	0.0048 U	NA	0.0052 U	NA	0.0052 U	NA	0.005 U	NA	0.0044 U	NA
Endosulfan II	470	470	- -	mg/kg	0.0036 U	0.0078 U [0.0008 J]	0.0035 U	NA	0.0044 U	NA	0.0047 U	NA	0.0048 U	NA	0.0046 U	NA	0.0041 U	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.0036 U	0.0078 U [0.0068 U]	0.0035 U	NA	0.0042 U	NA	0.0045 U	NA	0.0045 U	NA	0.0044 U	NA	0.0039 U	NA
Endrin	19	250	- -	mg/kg	0.0036 U	0.0078 U [0.0068 U]	0.0035 U	NA	0.0051 U	NA	0.0055 U	NA	0.0056 U	NA	0.0054 U	NA	0.0047 U	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.0036 U	0.0021 NJ [0.0068 U]	0.0035 U	NA	0.0043 U	NA	0.0047 U	NA	0.0047 U	NA	0.0046 U	NA	0.004 U	NA
Endrin ketone	- -	- -	- -	mg/kg	0.0036 U	0.0078 U [0.0013 J]	0.0035 U	NA	0.0042 U	NA	0.0045 U	NA	0.0045 U	NA	0.0044 U	NA	0.0038 U	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.0019 U	0.00053 J [0.00049 J]	0.0018 U	NA	0.0053 U	NA	0.0058 U	NA	0.0058 U	NA	0.0056 U	NA	0.0049 U	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.0019 U	0.004 U [0.01 U]	0.0018 U	NA	0.0043 U	NA	0.0047 U	NA	0.0047 U	NA	0.0046 U	NA	0.004 U	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.0019 U	0.00055 J [0.0035 U]	0.0018 U	NA	0.0068 U	NA	0.0074 U	NA	0.0074 U	NA	0.0072 U	NA	0.0063 U	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.0019 U	0.004 U [0.0035 U]	0.0018 U	NA	0.004 U	NA	0.0043 U	NA	0.0043 U	NA	0.0042 U	NA	0.0037 U	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.019 U	0.04 U [0.035 U]	0.018 U	NA	0.023 U	NA	0.025 U	NA	0.025 U	NA	0.024 U	NA	0.021 U	NA
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	0.042 U	NA	0.046 U	NA	0.046 U	NA	0.044 U	NA	0.039 U	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BLC045	BLC046	BLC046	BLC047	BLC047	BLC048	BLC048	BLC049	BLC049	BLC050	BLC050	BLC051	BLC051	BL-SB-100
Sample Depth(Feet):	Residential	Industrial	Background															0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/22/11	10/24/11	09/20/14
Sample Name:	May2016	May2016	Concentration	Units	BLC-SS-45	BLC-SS-46	BLC-SS-46	BLC-SS-47	BLC-SS-47	BLC-SS-48	BLC-SS-48	BLC-SS-49	BLC-SS-49	BLC-SS-50	BLC-SS-50	BLC-SS-51	BLC-SS-51	BL-SB-100_0_1
Detected Semivolatile Organics																		
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.346
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.712
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0244 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.106 J
Anthracene	18,000	230,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.26
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.303**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.402**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.32
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.154 J
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.355
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0171 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.244
Fluorene	2,400	30,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0293 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.173**
Naphthalene	3.8	17	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.139 J
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.843
Detected Inorganics																		
Arsenic	0.68	3	22.7	mg/kg	NA	22.6	NA	**54.3**	NA	**38.1**	NA	6.67 J	NA	18	NA	22.7	NA	12.9 J
Lead	400	800	- -	mg/kg	NA	216	NA	**768**	NA	196	NA	54.4	NA	282	NA	**765**	NA	49.7 J
Detected Pesticides																		
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.025 J [0.034 J]	NA	0.0065 J	NA	0.004 U	NA	0.0085 J	NA	0.0093 J	NA	0.0041 U	NA	0.0077 J	0.0111 J
4,4'-DDE	2	9.3	- -	mg/kg	0.77 [0.82]	NA	0.16	NA	0.052	NA	0.11	NA	0.13	NA	0.018 J	NA	0.034 J	0.0061 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.38 [0.42]	NA	0.058	NA	0.041	NA	0.058	NA	0.084	NA	0.024 J	NA	0.077 J	0.0165 J
Aldrin	0.039	0.18	- -	mg/kg	0.0049 U [0.0051 U]	NA	0.0048 U	NA	0.0049 U	NA	0.0051 U	NA	0.0047 U	NA	0.005 U	NA	0.0048 U	0.00378 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.0061 U [0.0064 U]	NA	0.0061 U	NA	0.0061 U	NA	0.0064 U	NA	0.0058 U	NA	0.0062 U	NA	0.006 U	0.00244 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.0036 U [0.0038 U]	NA	0.0036 U	NA	0.0036 U	NA	0.0038 U	NA	0.0035 U	NA	0.0037 U	NA	0.0036 U	0.00524 U
beta-BHC	0.3	1.3	- -	mg/kg	0.0043 U [0.0045 U]	NA	0.0043 U	NA	0.0043 U	NA	0.0046 U	NA	0.0042 U	NA	0.0044 U	NA	0.0043 U	0.00244 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.443 U
delta-BHC	- -	- -	- -	mg/kg	0.0024 U [0.0026 U]	NA	0.0024 U	NA	0.0025 U	NA	0.0026 U	NA	0.0024 U	NA	0.0025 U	NA	0.0024 U	0.00463 U
Dieldrin	0.034	0.14	- -	mg/kg	0.012 J [0.011 J]	NA	0.0067 U	NA	0.0067 U	NA	0.0071 U	NA	0.0065 U	NA	0.0069 U	NA	0.0066 U	0.00488 U
Endosulfan I	470	470	- -	mg/kg	0.005 U [0.0052 U]	NA	0.005 U	NA	0.005 U	NA	0.0053 U	NA	0.0048 U	NA	0.0051 U	NA	0.0049 U	0.00573 U
Endosulfan II	470	470	- -	mg/kg	0.0045 U [0.0048 U]	NA	0.0045 U	NA	0.0046 U	NA	0.0048 U	NA	0.0044 U	NA	0.0047 U	NA	0.0045 U	0.00671 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.0043 U [0.0046 U]	NA	0.0043 U	NA	0.0043 U	NA	0.0046 U	NA	0.0042 U	NA	0.0044 U	NA	0.0043 U	0.0061 U
Endrin	19	250	- -	mg/kg	0.0053 U [0.0056 U]	NA	0.0053 U	NA	0.0053 U	NA	0.0056 U	NA	0.0051 U	NA	0.0054 U	NA	0.0052 U	0.00524 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.0045 U [0.0047 U]	NA	0.0045 U	NA	0.0045 U	NA	0.0048 U	NA	0.0043 U	NA	0.0046 U	NA	0.0044 U	0.00622 U
Endrin ketone	- -	- -	- -	mg/kg	0.0043 U [0.0045 U]	NA	0.0043 U	NA	0.0043 U	NA	0.0046 U	NA	0.0042 U	NA	0.0044 U	NA	0.0042 U	0.00719 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.0055 U [0.0058 U]	NA	0.0055 U	NA	0.0056 U	NA	0.0059 U	NA	0.0053 U	NA	0.0057 U	NA	0.0055 U	0.00475 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.0045 U [0.0047 U]	NA	0.0045 U	NA	0.0045 U	NA	0.0047 U	NA	0.0043 U	NA	0.0046 U	NA	0.0044 U	0.00963 U
Heptachlor	0.13	0.63	- -	mg/kg	0.0071 U [0.0074 U]	NA	0.0071 U	NA	0.0071 U	NA	0.0075 U	NA	0.0068 U	NA	0.0072 U	NA	0.007 U	0.00512 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.0041 U [0.0043 U]	NA	0.0041 U	NA	0.0041 U	NA	0.0049 J	NA	0.004 U	NA	0.0042 U	NA	0.0041 U	0.00792 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.024 U [0.025 U]	NA	0.024 U	NA	0.024 U	NA	0.025 U	NA	0.023 U	NA	0.025 U	NA	0.024 U	0.00597 U
Toxaphene	0.49	2.1	- -	mg/kg	0.044 U [0.046 U]	NA	0.044 U	NA	0.044 U	NA	0.046 U	NA	0.042 U	NA	0.045 U	NA	0.043 U	0.514 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-100	BL-SB-100	BL-SB-101	BL-SB-101	BL-SB-101	BL-SB-101	BL-SB-102	BL-SB-102R	BL-SB-102R	BL-SB-102R	BL-SB-102R
Sample Depth(Feet):	Residential	Industrial	Background		1 - 2	2 - 4	0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	0 - 1	1 - 2	2 - 4	4 - 6
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/30/14	09/30/14	09/30/14	09/30/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-100_1_2	BL-SB-100_2_4	BL-SB-101_0_1	BL-SB-101_1_2	BL-SB-101_2_4	BL-SB-101_4_6	BL-SB-102_0_1	BL-SB-102R_0_1	BL-SB-102R_1_2	BL-SB-102R_2_4	BL-SB-102R_4_6
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0167 U	NA	1.39	0.0339 J	NA	NA	0.362	0.705 J	0.0595 J	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0191 U	NA	1.64	0.0383 J	NA	NA	0.44	0.864 J	0.066 J	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0119 U	NA	0.0617 U	0.012 U	NA	NA	0.0105 U	0.00976 UJ	0.00985 UJ	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.0107 U	NA	0.0556 U	0.0108 U	NA	NA	0.155	0.0535 J	0.0569 J	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0107 U	NA	0.111 J	0.0194 J	NA	NA	0.0884	0.0536 J	0.0754 J	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0382 J	0.0147 U	**0.234 J**	0.06 J	0.0147 U	NA	**0.214**	0.128 J	**0.412 J**	0.0177 UJ	0.0177 UJ
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0143 U	0.0118 U	**0.281 J**	**0.0548 J**	0.0117 U	0.0113 U	**0.256**	**0.11 J**	**0.428 J**	0.0142 UJ	0.0142 UJ
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0428 J	0.0118 U	**0.473**	0.0726 J	0.0117 U	NA	**0.563**	**0.216 J**	**0.57 J**	0.0142 UJ	0.0142 UJ
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0107 U	NA	0.0556 U	0.0108 U	NA	NA	0.203	0.0781 J	0.282 J	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0167 U	NA	0.243 J	0.0379 J	NA	NA	0.193	0.0704 J	0.238 J	NA	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0391 J	NA	0.309 J	0.0587 J	NA	NA	0.265	0.167 J	0.47 J	NA	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00836 U	NA	0.0432 U	0.00839 U	NA	NA	**0.056 J**	0.00683 UJ	**0.079 J**	0.00826 UJ	0.00828 UJ
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0761 J	NA	0.271 J	0.108	NA	NA	0.261	0.155 J	0.81 J	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0143 U	NA	0.0741 U	0.0144 U	NA	NA	0.0126 U	0.0117 UJ	0.0118 UJ	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0119 U	0.00982 U	0.0617 U	0.012 U	NA	NA	**0.18**	0.0636 J	**0.244 J**	0.0118 UJ	0.0118 UJ
Naphthalene	3.8	17	- -	mg/kg	0.0107 U	NA	1.17	0.0282 J	NA	NA	0.278	0.506 J	0.0467 J	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.043 J	NA	0.873	0.086	NA	NA	0.254	0.464 J	0.456 J	NA	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0629 J	NA	0.27 J	0.0835	NA	NA	0.407	0.17 J	0.705 J	NA	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	8.99 J	NA	15.8 J	8.23 J	NA	NA	1.64 J	8.12	5.6	NA	NA
Lead	400	800	- -	mg/kg	27.3 J	NA	71.7 J	44.9 J	NA	NA	7.53 J	11.7 J	81.1 J	NA	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00517 U	NA	0.0052 U	0.00521 U	NA	NA	0.0101 J	0.00417 UJ	0.0171 J	NA	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.00602 U	NA	0.00604 U	0.00606 U	NA	NA	0.0597	0.21 J	0.017 UJ	NA	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0102 U	NA	0.0103 U	0.0103 U	NA	NA	0.0451	0.142 J	0.018 J	NA	NA
Aldrin	0.039	0.18	- -	mg/kg	0.00373 U	NA	0.00375 U	0.00376 U	NA	NA	0.0033 U	0.003 UJ	0.0098 J	NA	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.00241 U	NA	0.00242 U	0.00242 U	NA	NA	0.00213 U	0.00194 UJ	0.00921 J	NA	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00517 U	NA	0.0052 U	0.00521 U	NA	NA	0.00458 U	0.00417 UJ	0.00869 J	NA	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.00241 U	NA	0.00242 U	0.00242 U	NA	NA	0.00213 U	0.00194 UJ	0.00936 J	NA	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.437 U	NA	0.439 U	0.44 U	NA	NA	0.386 U	0.352 UJ	0.362 UJ	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.00457 U	NA	0.00459 U	0.0046 U	NA	NA	0.00404 U	0.00368 UJ	0.00874 J	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.00481 U	NA	0.00484 U	0.00485 U	NA	NA	**0.0903**	0.0162 J	0.00904 J	NA	NA
Endosulfan I	470	470	- -	mg/kg	0.00566 U	NA	0.00568 U	0.00569 U	NA	NA	0.005 U	0.00455 UJ	0.0101 J	NA	NA
Endosulfan II	470	470	- -	mg/kg	0.00662 U	NA	0.00665 U	0.00666 U	NA	NA	0.00585 U	0.00533 UJ	0.00903 J	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00602 U	NA	0.00604 U	0.00606 U	NA	NA	0.00532 U	0.00484 UJ	0.0131 J	NA	NA
Endrin	19	250	- -	mg/kg	0.00517 U	NA	0.0052 U	0.00521 U	NA	NA	0.00458 U	0.00417 UJ	0.00919 J	NA	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.00614 U	NA	0.00617 U	0.00618 U	NA	NA	0.00543 U	0.00494 UJ	0.00859 J	NA	NA
Endrin ketone	- -	- -	- -	mg/kg	0.0071 U	NA	0.00713 U	0.00715 U	NA	NA	0.00628 U	0.00572 UJ	0.0112 J	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00469 U	NA	0.00471 U	0.00473 U	NA	NA	0.00415 U	0.00378 UJ	0.00942 J	NA	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00951 U	NA	0.00955 U	0.00957 U	NA	NA	0.00841 U	0.00765 UJ	0.00789 UJ	NA	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.00505 U	NA	0.00508 U	0.00509 U	NA	NA	0.00447 U	0.00407 UJ	0.0103 J	NA	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00782 U	NA	0.00786 U	0.00788 U	NA	NA	0.00692 U	0.0063 UJ	0.00939 J	NA	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.0059 U	NA	0.00592 U	0.00594 U	NA	NA	0.00521 U	0.00475 UJ	0.0329 UJ	NA	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.508 U	NA	0.51 U	0.511 U	NA	NA	0.449 U	0.409 UJ	0.421 UJ	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-102R	BL-SB-102R	BL-SB-102R	BL-SB-103	BL-SB-103	BL-SB-103	BL-SB-104	BL-SB-104	BL-SB-105	BL-SB-105
Sample Depth(Feet):	Residential	Industrial	Background		10 - 12	12 - 14	14 - 16	0 - 1	1 - 2	2 - 4	0 - 1	1 - 2	0 - 1	1 - 2
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/30/14	09/30/14	09/30/14	09/19/14	09/19/14	09/19/14	09/29/14	09/29/14	09/20/14	09/20/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-102R_10_12	BL-SB-102R_12_14	BL-SB-102R_14_16	BL-SB-103_0_1	BL-SB-103_1_2	BL-SB-103_2_4	BL-SB-104_0_1	BL-SB-104_1_2	BL-SB-105_0_1	BL-SB-105_1_2
Detected Semivolatile Organics														
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0137 U [0.0139 U]	0.014 U	0.014 U	0.139 J	0.0134 U	NA	0.0148 U	0.0309 J	0.0175 U	0.0167 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0157 U [0.0159 U]	0.016 U	0.016 U	0.156 J	0.0153 U	NA	0.017 U	0.0365 J	0.02 U	0.0191 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00982 U [0.00995 U]	0.00999 U	0.00998 U	0.0466 U	0.00959 U	NA	0.0106 U	0.0461 J	0.0125 U	0.0119 U
Acenaphthylene	- -	- -	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.00954 U	0.00886 U	0.0112 U	0.0107 U
Anthracene	18,000	230,000	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.00954 U	0.182	0.0112 U	0.0107 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0147 U [0.0149 U]	0.015 U	0.015 U	0.07 U	0.0144 U	NA	0.0334 J	**0.256**	0.0187 U	0.0179 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0118 U [0.0119 U]	0.012 U	0.012 U	0.056 U	0.0115 U	NA	0.0127 U	**0.188**	0.015 U	0.0143 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0118 U [0.0119 U]	0.012 U	0.012 U	**0.168 J**	0.0115 U	0.0119 U	0.0522 J	**0.258**	0.0418 J	0.0143 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.00954 U	0.121	0.0112 U	0.0107 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0137 U [0.0139 U]	0.014 U	0.014 U	0.0663 J	0.0134 U	NA	0.0197 J	0.0878	0.0186 J	0.0167 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.0433 J	0.258	0.0112 U	0.0107 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00687 U [0.00696 U]	0.00699 U	0.00699 U	0.0326 U	0.00671 U	NA	0.00742 U	**0.0397 J**	0.00874 U	0.00835 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.174 J	0.00863 U	NA	0.0699 J	0.537	0.0632 J	0.0107 U
Fluorene	2,400	30,000	- -	mg/kg	0.0118 U [0.0119 U]	0.012 U	0.012 U	0.056 U	0.0115 U	NA	0.0127 U	0.0802	0.015 U	0.0143 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00982 U [0.00995 U]	0.00999 U	0.00998 U	0.0466 U	0.00959 U	NA	0.0106 U	0.0986	0.0125 U	0.0119 U
Naphthalene	3.8	17	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.00954 U	0.0391 J	0.0112 U	0.0107 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.00884 U [0.00895 U]	0.00899 U	0.00898 U	0.042 U	0.00863 U	NA	0.0463 J	0.641	0.0429 J	0.0107 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0118 U [0.0119 U]	0.012 U	0.012 U	0.164 J	0.0115 U	NA	0.061 J	0.478	0.0533 J	0.0143 U
Detected Inorganics														
Arsenic	0.68	3	22.7	mg/kg	9.81 [12.2]	8.09	11.3	17.3 J	7.95 J	NA	0.929 U	12.4	6.92 J	12 J
Lead	400	800	- -	mg/kg	10.4 [10.8]	8.09	10.3	42.8	45.7	NA	16.4	44.8	44.5 J	28.5 J
Detected Pesticides														
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.000429 U [0.000423 U]	0.000414 U	0.000428 U	0.00521 U	0.000499 U	NA	0.00448 UJ	0.00458 UJ	0.00543 U	0.0051 U
4,4'-DDE	2	9.3	- -	mg/kg	0.000499 U [0.000492 U]	0.000482 U	0.000498 U	0.00985 J	0.00058 U	NA	0.00521 UJ	0.00532 UJ	0.00632 U	0.00593 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.000849 U [0.000836 U]	0.000819 U	0.000846 U	0.0103 U	0.000986 U	NA	0.00885 UJ	0.00905 UJ	0.0107 U	0.0101 U
Aldrin	0.039	0.18	- -	mg/kg	0.00031 U [0.000305 U]	0.000299 U	0.000309 U	0.00376 U	0.00036 U	NA	0.00323 UJ	0.0033 UJ	0.00392 U	0.00368 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.0002 U [0.000197 U]	0.000193 U	0.000199 U	0.00242 U	0.000232 U	NA	0.00208 UJ	0.00213 UJ	0.00253 U	0.00237 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.000429 U [0.000423 U]	0.000414 U	0.000428 U	0.00521 U	0.000499 U	NA	0.00448 UJ	0.00458 UJ	0.00543 U	0.0051 U
beta-BHC	0.3	1.3	- -	mg/kg	0.0002 U [0.000197 U]	0.000193 U	0.000199 U	0.00242 U	0.000232 U	NA	0.00208 UJ	0.00213 UJ	0.00253 U	0.00237 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0362 U [0.0357 U]	0.035 U	0.0361 U	0.44 U	0.0421 U	NA	0.378 UJ	0.386 UJ	0.459 U	0.431 U
delta-BHC	- -	- -	- -	mg/kg	0.000379 U [0.000374 U]	0.000366 U	0.000378 U	0.0046 U	0.000441 U	NA	0.00396 UJ	0.00404 UJ	0.0048 U	0.00451 U
Dieldrin	0.034	0.14	- -	mg/kg	0.000399 U [0.000393 U]	0.000385 U	0.000398 U	0.00485 U	0.000464 U	NA	0.00417 UJ	0.00426 UJ	0.00505 U	0.00475 U
Endosulfan I	470	470	- -	mg/kg	0.000469 U [0.000462 U]	0.000453 U	0.000468 U	0.00569 U	0.000545 U	NA	0.00489 UJ	0.005 UJ	0.00594 U	0.00558 U
Endosulfan II	470	470	- -	mg/kg	0.000549 U [0.000541 U]	0.00053 U	0.000547 U	0.00666 U	0.000638 U	NA	0.00573 UJ	0.00585 UJ	0.00695 U	0.00653 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000499 U [0.000492 U]	0.000482 U	0.000498 U	0.00606 U	0.00058 U	NA	0.00521 UJ	0.00532 UJ	0.00632 U	0.00593 U
Endrin	19	250	- -	mg/kg	0.000429 U [0.000423 U]	0.000414 U	0.000428 U	0.00521 UJ	0.000499 UJ	NA	0.00448 UJ	0.00458 UJ	0.00543 U	0.0051 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.000509 UJ [0.000502 U]	0.000491 U	0.000508 U	0.00618 U	0.000592 U	NA	0.00531 UJ	0.00543 UJ	0.00644 U	0.00605 U
Endrin ketone	- -	- -	- -	mg/kg	0.000589 U [0.00058 U]	0.000568 U	0.000587 U	0.00715 U	0.000685 U	NA	0.00614 UJ	0.00628 UJ	0.00745 U	0.007 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000389 U [0.000384 U]	0.000376 U	0.000388 U	0.00473 U	0.000453 U	NA	0.00406 UJ	0.00415 UJ	0.00493 U	0.00463 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000789 U [0.000777 U]	0.000761 U	0.000786 U	0.00957 U	0.000917 U	NA	0.00823 UJ	0.00841 UJ	0.00998 U	0.00937 U
Heptachlor	0.13	0.63	- -	mg/kg	0.000419 U [0.000413 U]	0.000405 U	0.000418 U	0.00509 U	0.000487 U	NA	0.00437 UJ	0.00447 UJ	0.00531 U	0.00498 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000649 U [0.000639 U]	0.000626 U	0.000647 U	0.00788 U	0.000754 U	NA	0.00677 UJ	0.00692 UJ	0.00821 U	0.00771 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.000489 U [0.000482 U]	0.000472 U	0.000488 U	0.00594 U	0.000569 U	NA	0.0051 UJ	0.00521 UJ	0.00619 U	0.00581 U
Toxaphene	0.49	2.1	- -	mg/kg	0.0421 U [0.0415 U]	0.0407 U	0.042 U	0.511 U	0.049 U	NA	0.439 UJ	0.449 UJ	0.533 U	0.501 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-106	BL-SB-106	BL-SB-106	BL-SB-106	BL-SB-107	BL-SB-107	BL-SB-107	BL-SB-107	BL-SB-108	BL-SB-108	BL-SB-108
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 4
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/19/14	09/19/14	09/19/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-106_0_1	BL-SB-106_1_2	BL-SB-106_2_4	BL-SB-106_4_6	BL-SB-107_0_1	BL-SB-107_1_2	BL-SB-107_2_4	BL-SB-107_4_6	BL-SB-108_0_1	BL-SB-108_1_2	BL-SB-108_2_4
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.396	0.0319 J	NA	NA	0.0783 U	0.0884	NA	NA	0.0275 U	0.013 U	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.495	0.0354 J	NA	NA	0.0895 U	0.106	NA	NA	0.0314 U	0.0149 U	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00986 U	0.00976 U	NA	NA	0.204 J	0.0109 U	NA	NA	0.0196 U	0.00931 U	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.033 J	0.0483 J	NA	NA	0.0503 U	0.00982 U	NA	NA	0.0177 U	0.00838 U	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0206 J	0.0336 J	NA	NA	0.253 J	0.0115 J	NA	NA	0.0177 U	0.00838 U	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0936	0.128	NA	NA	**1.15**	0.0532 J	0.0135 U	NA	0.148	0.014 U	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.0942**	**0.162**	0.0119 U	0.012 U	**1.21**	**0.0508 J**	0.0108 U	0.0119 U	**0.146**	0.0112 U	0.0115 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.173**	**0.329**	0.0119 U	0.012 U	**1.82**	0.0958	0.0108 U	NA	**0.24**	0.0112 U	0.0115 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0718	0.109	NA	NA	0.948	0.06 J	NA	NA	0.0996 J	0.00838 U	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0617 J	0.115	NA	NA	0.826	0.0363 J	NA	NA	0.0891 J	0.013 U	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.115	0.177	NA	NA	1.26	0.0694 J	NA	NA	0.151	0.00838 U	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.0069 U	0.00684 U	NA	NA	**0.217 J**	0.00763 U	0.00631 U	NA	0.0137 U	0.00652 U	NA
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.127	0.157	NA	NA	2.91	0.089	NA	NA	0.363	0.00838 U	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0118 U	0.0117 U	NA	NA	0.0671 U	0.0131 U	NA	NA	0.0236 U	0.0112 U	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0636 J	0.103	NA	NA	**0.769**	0.0404 J	0.00901 U	NA	0.0897 J	0.00931 U	NA
Naphthalene	3.8	17	- -	mg/kg	0.31	0.0281 J	NA	NA	0.0503 U	0.0675 J	NA	NA	0.0177 U	0.00838 U	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.239	0.0637 J	NA	NA	1.66	0.0853	NA	NA	0.0177 U	0.00838 U	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.14	0.157	NA	NA	2.32	0.0765	NA	NA	0.363	0.0112 U	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	8.52 J	**43.6 J**	11.5 J	15.7	12.1 J	6.78 J	NA	NA	**28.4 J**	5.18 J	14.6
Lead	400	800	- -	mg/kg	32.9	164	NA	NA	198 J	30.4 J	NA	NA	**412 J**	18.2 J	15
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00452 U	0.00551 U	NA	NA	0.00952 U	0.00466 U	NA	NA	0.00832 UJ	0.000416 U	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.0143 J	0.00641 U	NA	NA	0.0917 J	0.0256	NA	NA	0.00968 UJ	0.000484 U	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.00893 U	0.0109 U	NA	NA	0.0364 J	0.0092 U	NA	NA	0.0165 UJ	0.000822 U	NA
Aldrin	0.039	0.18	- -	mg/kg	0.00326 U	0.00398 U	NA	NA	0.00687 U	0.00336 U	NA	NA	0.006 UJ	0.0003 U	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.0021 U	0.00256 U	NA	NA	0.00443 U	0.00217 U	NA	NA	0.00387 UJ	0.000193 U	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00452 U	0.00551 U	NA	NA	0.00952 U	0.00466 U	NA	NA	0.00832 UJ	0.000416 U	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.0021 U	0.00256 U	NA	NA	0.00443 U	0.00217 U	NA	NA	0.00387 UJ	0.000193 U	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.382 U	0.465 U	NA	NA	0.804 U	0.393 U	NA	NA	0.703 UJ	0.0351 U	NA
delta-BHC	- -	- -	- -	mg/kg	0.00399 U	0.00487 U	NA	NA	0.00842 U	0.00411 U	NA	NA	0.00736 UJ	0.000368 U	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.0042 U	0.00513 U	NA	NA	0.00886 U	0.00433 U	NA	NA	0.00774 UJ	0.000387 U	NA
Endosulfan I	470	470	- -	mg/kg	0.00494 U	0.00603 U	NA	NA	0.0104 U	0.00509 U	NA	NA	0.0091 UJ	0.000455 U	NA
Endosulfan II	470	470	- -	mg/kg	0.00578 U	0.00705 U	NA	NA	0.0122 U	0.00596 U	NA	NA	0.0106 UJ	0.000532 U	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00525 U	0.00641 U	NA	NA	0.0111 U	0.00541 U	NA	NA	0.00968 UJ	0.000484 U	NA
Endrin	19	250	- -	mg/kg	0.00452 U	0.00551 UJ	NA	NA	0.00952 U	0.00466 U	NA	NA	0.00832 UJ	0.000416 U	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.00536 U	0.00654 U	NA	NA	0.0113 U	0.00552 U	NA	NA	0.00987 UJ	0.000493 U	NA
Endrin ketone	- -	- -	- -	mg/kg	0.0062 U	0.00757 U	NA	NA	0.0131 U	0.00639 U	NA	NA	0.0114 UJ	0.000571 U	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.0041 U	0.005 U	NA	NA	0.00864 U	0.00422 U	NA	NA	0.00755 UJ	0.000377 U	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.0083 U	0.0101 U	NA	NA	0.0175 U	0.00855 U	NA	NA	0.0153 UJ	0.000764 U	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.00441 U	0.00539 U	NA	NA	0.0093 U	0.00455 U	NA	NA	0.00813 UJ	0.000406 U	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00683 U	0.00833 U	NA	NA	0.0144 U	0.00704 U	NA	NA	0.0126 UJ	0.000629 U	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00515 U	0.00628 U	NA	NA	0.0109 U	0.00531 U	NA	NA	0.00949 UJ	0.000474 U	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.444 U	0.541 U	NA	NA	0.935 U	0.457 U	NA	NA	0.817 UJ	0.0408 U	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-108	BL-SB-108	BL-SB-108	BL-SB-109	BL-SB-109	BL-SB-109	BL-SB-109	BL-SB-110	BL-SB-110	BL-SB-110	BL-SB-110
Sample Depth(Feet):	Residential	Industrial	Background		10 - 12	12 - 14	14 - 16	0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 4	4 - 6
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/19/14	09/19/14	09/19/14	09/19/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-108_10_12	BL-SB-108_12_14	BL-SB-108_14_16	BL-SB-109_0_1	BL-SB-109_1_2	BL-SB-109_2_4	BL-SB-109_4_6	BL-SB-110_0_1	BL-SB-110_1_2	BL-SB-110_2_4	BL-SB-110_4_6
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0157 U [0.0157 U]	0.0161 U	0.0157 U	0.0403 J	0.0178 U	NA	NA	0.0133 U	0.027 U	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0179 U [0.018 U]	0.0184 U	0.018 U	0.041 J	0.0204 U	NA	NA	0.0151 U	0.0309 U	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0112 U [0.0112 U]	0.0115 U	0.0112 U	0.0112 U	0.0127 U	NA	NA	0.0433 J	0.0193 U	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0101 U	0.0115 U	NA	NA	0.0522 J	0.0174 U	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0132 J	0.0128 J	NA	NA	0.143	0.0174 U	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0168 U [0.0169 U]	0.0172 U	0.0169 U	0.0769	0.0555 J	NA	NA	**0.533**	0.0522 J	0.015 U	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0134 U [0.0135 U]	0.0138 U	0.0135 U	**0.0782**	**0.0524 J**	0.0118 U	0.0116 U	**0.496**	**0.07 J**	0.012 U	**0.0199 J**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0134 U [0.0135 U]	0.0138 U	0.0135 U	0.131	0.0616 J	NA	NA	**0.686**	0.129	0.012 U	NA
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0642 J	0.0115 U	NA	NA	0.472	0.116 J	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0157 U [0.0157 U]	0.0161 U	0.0157 U	0.0433 J	0.0266 J	NA	NA	0.239	0.0444 J	NA	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0919	0.0663 J	NA	NA	0.488	0.0979 J	NA	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00784 U [0.00786 U]	0.00804 U	0.00787 U	0.00785 U	0.00892 U	NA	NA	**0.0913**	0.0135 U	0.00698 U	NA
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.169	0.108	NA	NA	1.14	0.204	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0134 U [0.0135 U]	0.0138 U	0.0135 U	0.0135 U	0.0153 U	NA	NA	0.0435 J	0.0231 U	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0112 U [0.0112 U]	0.0115 U	0.0112 U	0.0501 J	0.0127 U	NA	NA	**0.329**	0.0193 U	0.00997 U	NA
Naphthalene	3.8	17	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0101 U	0.0115 U	NA	NA	0.00852 U	0.0174 U	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0101 U [0.0101 U]	0.0103 U	0.0101 U	0.0851	0.0749 J	NA	NA	0.606	0.135	NA	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0134 U [0.0135 U]	0.0138 U	0.0135 U	0.139	0.122	NA	NA	0.952	0.158	NA	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	9.41 [11.3]	12.9	6.82	8.41 J	11.1 J	NA	NA	14.8 J	8.4 J	NA	NA
Lead	400	800	- -	mg/kg	11.5 [13.3]	14.6	7.33	48.3 J	60.6 J	NA	NA	107	76.8	NA	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.000493 U [0.000482 U]	0.000488 U	0.000475 U	0.00474 U	0.00548 U	NA	NA	0.00501 U	0.00509 U	NA	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.000573 U [0.000561 U]	0.000567 U	0.000552 U	0.00551 U	0.00637 U	NA	NA	0.00583 U	0.00592 U	NA	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.00417 [0.000953 U]	0.000964 U	0.000939 U	0.00937 U	0.0108 U	NA	NA	0.00991 U	0.0101 U	NA	NA
Aldrin	0.039	0.18	- -	mg/kg	0.000355 U [0.000348 U]	0.000352 U	0.000342 U	0.00342 U	0.00395 U	NA	NA	0.00361 U	0.00367 U	NA	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.000229 U [0.000224 U]	0.000227 U	0.000221 U	0.00221 U	0.00255 U	NA	NA	0.00233 U	0.00237 U	NA	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.000493 U [0.000482 U]	0.000488 U	0.000475 U	0.00474 U	0.00548 U	NA	NA	0.00501 U	0.00509 U	NA	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.000229 U [0.000224 U]	0.000227 U	0.000221 U	0.00221 U	0.00255 U	NA	NA	0.00233 U	0.00237 U	NA	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0416 U [0.0407 U]	0.0412 U	0.0401 U	0.4 U	0.462 U	NA	NA	0.423 U	0.43 U	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.000436 U [0.000426 U]	0.000431 U	0.00042 U	0.00419 U	0.00484 U	NA	NA	0.00443 U	0.0045 U	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.000459 U [0.000449 U]	0.000454 U	0.000442 U	0.00441 U	0.00509 U	NA	NA	0.00466 U	0.00474 U	NA	NA
Endosulfan I	470	470	- -	mg/kg	0.000539 U [0.000527 U]	0.000533 U	0.000519 U	0.00518 U	0.00598 U	NA	NA	0.00548 U	0.00557 U	NA	NA
Endosulfan II	470	470	- -	mg/kg	0.000631 U [0.000617 U]	0.000624 U	0.000607 U	0.00607 U	0.007 U	NA	NA	0.00641 U	0.00651 U	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000573 U [0.000561 U]	0.000567 U	0.000552 U	0.00551 U	0.00637 U	NA	NA	0.00583 U	0.00592 U	NA	NA
Endrin	19	250	- -	mg/kg	0.000493 U [0.000482 U]	0.000488 U	0.000475 U	0.00474 U	0.00548 U	NA	NA	0.00501 U	0.00509 U	NA	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.000585 U [0.000572 U]	0.000578 U	0.000563 U	0.00562 U	0.00649 U	NA	NA	0.00595 U	0.00604 U	NA	NA
Endrin ketone	- -	- -	- -	mg/kg	0.000676 U [0.000662 U]	0.000669 U	0.000652 U	0.00651 U	0.00751 U	NA	NA	0.00688 U	0.00699 U	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000447 U [0.000437 U]	0.000442 U	0.000431 U	0.0043 U	0.00497 U	NA	NA	0.00455 U	0.00462 U	NA	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000906 U [0.000886 U]	0.000896 U	0.000873 U	0.00871 U	0.0101 U	NA	NA	0.00921 U	0.00936 U	NA	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.000482 U [0.000471 U]	0.000476 U	0.000464 U	0.00463 U	0.00535 U	NA	NA	0.0049 U	0.00497 U	NA	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000745 U [0.000729 U]	0.000737 U	0.000718 U	0.00717 U	0.00828 U	NA	NA	0.00758 U	0.0077 U	NA	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.000562 U [0.00055 U]	0.000556 U	0.000541 U	0.0054 U	0.00624 U	NA	NA	0.00571 U	0.0058 U	NA	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.0484 U [0.0473 U]	0.0479 U	0.0466 U	0.465 U	0.537 U	NA	NA	0.492 U	0.5 U	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-110	BL-SB-110	BL-SB-111	BL-SB-111	BL-SB-111	BL-SB-111	BL-SB-112	BL-SB-112	BL-SB-112	BL-SB-113	BL-SB-113
Sample Depth(Feet):	Residential	Industrial	Background		6 - 8	8 - 10	0 - 1	1 - 2	2 - 4	4 - 6	10 - 12	12 - 14	14 - 16	0 - 1	1 - 2
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-110_6_8	BL-SB-110_8_10	BL-SB-111_0_1	BL-SB-111_1_2	BL-SB-111_2_4	BL-SB-111_4_6	BL-SB-112_10_12	BL-SB-112_12_14	BL-SB-112_14_16	BL-SB-113_0_1	BL-SB-113_1_2
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	0.0137 U	0.0139 U	NA	NA	0.0134 U	0.0131 U	0.0139 U	0.0371 J	0.0133 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	NA	0.0156 U	0.0159 U	NA	NA	0.0153 U	0.0149 U	0.0159 U	0.0402 J	0.0152 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	NA	0.00976 U	0.00992 U	NA	NA	0.00957 U	0.00933 U	0.00992 U	0.0652 J	0.00953 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	NA	0.00878 U	0.00892 U	NA	NA	0.00861 U	0.00839 U	0.00892 U	0.00891 U	0.00858 U
Anthracene	18,000	230,000	- -	mg/kg	NA	NA	0.00878 U	0.0123 J	NA	NA	0.00861 U	0.00839 U	0.00892 U	0.263	0.0156 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	NA	NA	0.0325 J	0.0469 J	NA	NA	0.0143 U	0.014 U	0.0149 U	**0.648**	0.0384 J
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0148 U	0.0147 U	**0.0336 J**	**0.0429 J**	0.012 U	0.0119 U	0.0115 U	0.0112 U	0.0119 U	**0.447**	0.0114 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	NA	NA	0.0538 J	0.0712	NA	NA	0.0115 U	0.0112 U	0.0119 U	**0.887**	0.0447 J
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	NA	0.00878 U	0.00892 U	NA	NA	0.00861 U	0.00839 U	0.00892 U	0.434	0.00858 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	NA	0.0206 J	0.0257 J	NA	NA	0.0134 U	0.0131 U	0.0139 U	0.343	0.0165 J
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	NA	0.0365 J	0.0549 J	NA	NA	0.00861 U	0.00839 U	0.00892 U	0.689	0.0355 J
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	NA	NA	0.00683 U	0.00694 U	NA	NA	0.0067 U	0.00653 U	0.00694 U	**0.0879**	0.00667 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	NA	0.0649 J	0.129	NA	NA	0.00861 U	0.00839 U	0.00892 U	1.81	0.0981
Fluorene	2,400	30,000	- -	mg/kg	NA	NA	0.0117 U	0.0119 U	NA	NA	0.0115 U	0.0112 U	0.0119 U	0.0678	0.0114 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	NA	NA	0.00976 U	0.00992 U	NA	NA	0.00957 U	0.00933 U	0.00992 U	**0.371**	0.00953 U
Naphthalene	3.8	17	- -	mg/kg	NA	NA	0.00878 U	0.00892 U	NA	NA	0.00861 U	0.00839 U	0.00892 U	0.0727	0.00858 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	NA	0.034 J	0.0944	NA	NA	0.00861 U	0.00839 U	0.00892 U	1.41	0.0794
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	NA	0.0547 J	0.0949	NA	NA	0.0115 U	0.0112 U	0.0119 U	1.37	0.0718
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	NA	NA	8.21 J	8.95 J	NA	NA	7.13 J	6.49 J	9.76 J	**62.2 J**	13.3 J
Lead	400	800	- -	mg/kg	NA	NA	43.5	27.3	NA	NA	7.07	7.93	6.66 J	19.4	14.6
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	NA	0.00515 U	0.00544 U	NA	NA	0.000452 U	0.00046 U	0.000428 U	**2.53 D**	0.0165
4,4'-DDE	2	9.3	- -	mg/kg	NA	NA	0.00598 U	0.00632 U	NA	NA	0.000525 U	0.000535 U	0.000498 U	0.0973	0.00228
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	NA	0.0102 U	0.0108 U	NA	NA	0.000893 U	0.000909 U	0.000847 U	1.2 DJ	0.0172
Aldrin	0.039	0.18	- -	mg/kg	NA	NA	0.00371 U	0.00392 U	NA	NA	0.000326 U	0.000332 U	0.000309 U	0.0036 U	0.00037 U
alpha-BHC	0.086	0.36	- -	mg/kg	NA	NA	0.00239 U	0.00253 U	NA	NA	0.00021 U	0.000214 U	0.000199 U	0.00233 U	0.000239 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	0.00515 U	0.00544 U	NA	NA	0.000452 U	0.00046 U	0.000428 U	0.0518	0.000513 U
beta-BHC	0.3	1.3	- -	mg/kg	NA	NA	0.00239 U	0.00253 U	NA	NA	0.00021 U	0.000214 U	0.000199 U	0.00233 U	0.000239 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	0.434 U	0.459 U	NA	NA	0.0381 U	0.0388 U	0.0362 U	0.422 U	0.0433 U
delta-BHC	- -	- -	- -	mg/kg	NA	NA	0.00455 U	0.00481 U	NA	NA	0.000399 U	0.000406 U	0.000379 U	0.00442 U	0.000453 U
Dieldrin	0.034	0.14	- -	mg/kg	NA	NA	0.00479 U	0.00506 U	NA	NA	0.00042 U	0.000428 U	0.000398 U	**0.228 J**	0.00206
Endosulfan I	470	470	- -	mg/kg	NA	NA	0.00562 U	0.00594 U	NA	NA	0.000494 U	0.000503 U	0.000468 U	0.00546 U	0.000561 U
Endosulfan II	470	470	- -	mg/kg	NA	NA	0.00658 U	0.00696 U	NA	NA	0.000578 U	0.000588 U	0.000548 U	0.00639 U	0.000656 U
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	NA	0.00598 U	0.00632 U	NA	NA	0.000525 U	0.000535 U	0.000498 U	0.00581 U	0.000597 U
Endrin	19	250	- -	mg/kg	NA	NA	0.00515 U	0.00544 U	NA	NA	0.000452 UJ	0.00046 UJ	0.000428 U	0.005 U	0.000513 UJ
Endrin aldehyde	- -	- -	- -	mg/kg	NA	NA	0.0061 U	0.00645 U	NA	NA	0.000536 U	0.000546 U	0.000508 U	0.00593 U	0.000609 U
Endrin ketone	- -	- -	- -	mg/kg	NA	NA	0.00706 U	0.00746 U	NA	NA	0.00062 U	0.000631 U	0.000588 U	0.00686 U	0.000704 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	NA	0.00467 U	0.00493 U	NA	NA	0.00041 U	0.000417 U	0.000389 U	0.00453 U	0.000465 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	0.00945 U	0.00999 U	NA	NA	0.00083 U	0.000845 U	0.000787 U	0.0435 J	0.000943 U
Heptachlor	0.13	0.63	- -	mg/kg	NA	NA	0.00503 U	0.00531 U	NA	NA	0.000441 U	0.000449 U	0.000418 U	0.00488 U	0.000501 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	NA	0.00778 U	0.00822 U	NA	NA	0.000683 U	0.000695 U	0.000648 U	0.00756 U	0.000776 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	NA	0.00586 U	0.0062 U	NA	NA	0.000515 U	0.000524 U	0.000488 U	0.0057 U	0.000585 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	0.505 U	0.534 U	NA	NA	0.0443 U	0.0451 U	0.042 U	**4.81**	0.0504 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-113	BL-SB-113	BL-SB-114	BL-SB-115	BL-SB-115	BL-SB-115	BL-SB-115	BL-SB-116	BL-SB-116	BL-SB-116	BL-SB-117
Sample Depth(Feet):	Residential	Industrial	Background		2 - 4	8 - 10	0 - 1	0 - 1	1 - 2	2 - 4	8 - 10	0 - 1	1 - 2	8 - 10	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/19/14	09/21/14	09/21/14	09/21/14	09/21/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-113_2_4	BL-SB-113_8_10	BL-SB-114_0_1	BL-SB-115_0_1	BL-SB-115_1_2	BL-SB-115_2_4	BL-SB-115_8_10	BL-SB-116_0_1	BL-SB-116_1_2	BL-SB-116_8_10	BL-SB-117_0_1
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	0.0135 U [0.0135 U]	0.0385 J	0.0139 U	0.0136 U	NA	0.0137 U	0.0152 U	0.0158 U	0.0175 U	0.0151 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	0.0155 U [0.0154 U]	0.0413 J	0.0159 U	0.0156 U	NA	0.0157 U	0.0174 U	0.018 U	0.02 U	0.0173 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	0.00967 U [0.00963 U]	0.0099 U	0.00993 U	0.00972 U	NA	0.00979 U	0.0109 U	0.0113 U	0.0125 U	0.0108 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.00891 U	0.00894 U	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.00973 U
Anthracene	18,000	230,000	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.0444 J	0.0323 J	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.0197 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0149 U	0.0145 U [0.0144 U]	**0.182**	0.0488 J	0.0146 U	NA	0.0147 U	0.0163 U	0.0169 U	0.0187 U	0.0587 J
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.012 U	0.0116 U [0.0116 U]	**0.19**	**0.0412 J**	0.0117 U	0.0119 U	0.0117 U	0.0131 U	0.0135 U	0.015 U	**0.0507 J**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.012 U	0.0116 U [0.0116 U]	**0.276**	0.0651 J	0.0117 U	NA	0.0117 U	0.0131 U	0.0135 U	0.015 U	0.0752
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.146	0.00894 U	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.0392 J
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	0.0135 U [0.0135 U]	0.118	0.0226 J	0.0136 U	NA	0.0137 U	0.0152 U	0.0158 U	0.0175 U	0.0317 J
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.212	0.0457 J	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.062 J
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00697 U	0.00677 U [0.00674 U]	0.00693 U	0.00695 U	0.0068 U	NA	0.00685 U	0.00762 U	0.00788 U	0.00875 U	0.00757 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.443	0.113	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.143
Fluorene	2,400	30,000	- -	mg/kg	NA	0.0116 U [0.0116 U]	0.0119 U	0.0119 U	0.0117 U	NA	0.0117 U	0.0131 U	0.0135 U	0.015 U	0.013 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00996 U	0.00967 U [0.00963 U]	0.121	0.00993 U	0.00972 U	NA	0.00979 U	0.0109 U	0.0113 U	0.0125 U	0.0108 U
Naphthalene	3.8	17	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.00891 U	0.00894 U	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.00973 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	0.0087 U [0.00867 U]	0.274	0.0898	0.00875 U	NA	0.00881 U	0.00979 U	0.0101 U	0.0112 U	0.0993
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	0.0116 U [0.0116 U]	0.348	0.0871	0.0117 U	NA	0.0117 U	0.0131 U	0.0135 U	0.015 U	0.124
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	16.9 J	9.59 J [8.25 J]	8.36 J	8.11 J	9.62 J	NA	11.4 J	12.4 J	10.5 J	13.6	7.44 J
Lead	400	800	- -	mg/kg	NA	8.38 [12.6]	20.3	40.4	14.7	NA	12.2	32.3 J	51.2 J	15.5	17.2 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.000428 U	0.000509 U [0.000497 U]	0.00606 J	0.0126	0.000518 U	NA	0.000495 U	0.000951 J	0.000425 U	0.000399 U	0.00428 U
4,4'-DDE	2	9.3	- -	mg/kg	NA	0.000592 U [0.000578 U]	0.0273	0.0413	0.000602 U	NA	0.000576 U	0.0202	0.000495 U	0.000464 U	0.045
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	0.00101 U [0.000983 U]	0.0122 J	0.014	0.0109	NA	0.000979 U	0.00247 J	0.000841 U	0.000788 U	0.0176
Aldrin	0.039	0.18	- -	mg/kg	NA	0.000367 U [0.000358 U]	0.00322 U	0.000379 U	0.000373 U	NA	0.000357 U	0.000337 U	0.000307 U	0.000287 U	0.00309 U
alpha-BHC	0.086	0.36	- -	mg/kg	NA	0.000237 U [0.000231 U]	0.00208 U	0.000245 U	0.000241 U	NA	0.00023 U	0.000217 U	0.000198 U	0.000185 U	0.00199 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000509 U [0.000497 U]	0.00447 U	0.000526 U	0.000518 U	NA	0.000495 U	0.000467 U	0.000425 U	0.000399 U	0.00428 U
beta-BHC	0.3	1.3	- -	mg/kg	NA	0.000237 U [0.000231 U]	0.00208 U	0.000245 U	0.000241 U	NA	0.00023 U	0.000818 J	0.000198 U	0.000185 U	0.00199 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	0.043 U [0.042 U]	0.378 U	0.0444 U	0.0437 U	NA	0.0418 U	0.0395 U	0.0359 U	0.0337 U	0.362 U
delta-BHC	- -	- -	- -	mg/kg	NA	0.00045 U [0.000439 U]	0.00395 U	0.000465 U	0.000458 U	NA	0.000438 U	0.000413 U	0.000376 U	0.000352 U	0.00379 U
Dieldrin	0.034	0.14	- -	mg/kg	0.000398 U	0.000473 U [0.000462 U]	0.00416 U	0.00143 J	0.000482 U	NA	0.000461 U	0.00141 J	0.000396 U	0.000371 U	0.00398 U
Endosulfan I	470	470	- -	mg/kg	NA	0.000556 U [0.000543 U]	0.00489 U	0.000575 U	0.000566 U	NA	0.000541 U	0.000511 U	0.000465 U	0.000436 U	0.00468 U
Endosulfan II	470	470	- -	mg/kg	NA	0.000651 U [0.000636 U]	0.00572 U	0.000673 U	0.000662 U	NA	0.000634 U	0.000598 U	0.000544 U	0.00051 U	0.00548 U
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	0.000592 U [0.000578 U]	0.0052 U	0.000612 U	0.000602 U	NA	0.000576 U	0.000544 U	0.000495 U	0.000464 U	0.00498 U
Endrin	19	250	- -	mg/kg	NA	0.000509 UJ [0.000497 UJ]	0.00447 UJ	0.000526 UJ	0.000518 U	NA	0.000495 U	0.000467 U	0.000425 U	0.000399 U	0.00428 U
Endrin aldehyde	- -	- -	- -	mg/kg	NA	0.000604 U [0.00059 U]	0.0053 U	0.000624 U	0.000614 U	NA	0.000587 U	0.000554 U	0.000504 U	0.000473 U	0.00508 U
Endrin ketone	- -	- -	- -	mg/kg	NA	0.000698 U [0.000682 U]	0.00614 U	0.000722 U	0.000711 U	NA	0.00068 U	0.000641 U	0.000584 U	0.000547 U	0.00588 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	0.000462 U [0.000451 U]	0.00406 U	0.000477 U	0.00047 U	NA	0.000449 U	0.000424 U	0.000386 U	0.000362 U	0.00389 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000935 U [0.000913 U]	0.00822 U	0.000966 U	0.000951 U	NA	0.00091 U	0.000859 U	0.000781 U	0.000733 U	0.00787 U
Heptachlor	0.13	0.63	- -	mg/kg	NA	0.000497 U [0.000485 U]	0.00437 U	0.000514 U	0.000506 U	NA	0.000484 U	0.000457 U	0.000415 U	0.000389 U	0.00418 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	0.000769 U [0.000751 U]	0.00676 U	0.000795 U	0.000783 U	NA	0.000749 U	0.00247 JN	0.000643 U	0.000603 U	0.00648 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	0.00058 U [0.000566 U]	0.0051 U	0.000599 U	0.00059 U	NA	0.000564 U	0.000533 U	0.000485 U	0.000454 U	0.00488 U
Toxaphene	0.49	2.1	- -	mg/kg	0.042 U	0.0499 U [0.0488 U]	0.439 U	0.0516 U	0.0508 U	NA	0.0486 U	0.0459 U	0.0417 U	0.0391 U	0.42 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-117	BL-SB-117	BL-SB-117	BL-SB-118	BL-SB-118R	BL-SB-118R	BL-SB-118R	BL-SB-118R	BL-SB-118R	BL-SB-119	BL-SB-119
Sample Depth(Feet):	Residential	Industrial	Background		1 - 2	2 - 4	8 - 10	0 - 1	0 - 1	1 - 2	2 - 4	4 - 6	8 - 10	0 - 1	1 - 2
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/21/14	09/21/14	09/21/14	09/19/14	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	09/19/14	09/19/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-117_1_2	BL-SB-117_2_4	BL-SB-117_8_10	BL-SB-118_0_1	BL-SB-118R_0_1	BL-SB-118R_1_2	BL-SB-118R_2_4	BL-SB-118R_4_6	BL-SB-118R_8_10	BL-SB-119_0_1	BL-SB-119_1_2
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0155 U	NA	0.0169 U	0.0133 U	0.0284 J	0.0136 UJ	NA	NA	0.0139 U	0.0996 J	0.0472 J
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0177 U	NA	0.0193 U	0.0153 U	0.0318 J	0.0155 UJ	NA	NA	0.0159 U	0.123 J	0.0581 J
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0111 U	NA	0.0121 U	0.00954 U	0.00937 UJ	0.00969 UJ	NA	NA	0.00996 U	0.0605 J	0.00952 U
Acenaphthylene	- -	- -	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.00844 UJ	0.00872 UJ	NA	NA	0.00896 U	0.0958 J	0.00857 U
Anthracene	18,000	230,000	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.0161 J	0.0358 J	NA	NA	0.00896 U	0.27	0.0463 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0166 U	NA	0.0181 U	0.0143 U	0.0773 J	0.14 J	NA	NA	0.0149 U	**0.852**	**0.176**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0133 U	R	0.0145 U	0.0114 U	**0.0744 J**	**0.145 J**	0.0143 UJ	0.0147 UJ	0.012 U	**0.929**	**0.134**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0133 U	NA	0.0145 U	0.0364 J	0.121 J	**0.243 J**	0.0143 UJ	0.0147 UJ	0.012 U	**1.49**	**0.272**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.064 J	0.108 J	NA	NA	0.00896 U	0.706	0.122
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0155 U	NA	0.0169 U	0.0144 J	0.0364 J	0.0923 J	NA	NA	0.0139 U	0.573	0.0367 J
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.0817 J	0.159 J	NA	NA	0.00896 U	0.937	0.201
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00776 U	NA	0.00846 U	0.00667 U	0.00656 UJ	0.00678 UJ	NA	NA	0.00697 U	**0.145**	0.00666 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.135 J	0.236 J	NA	NA	0.00896 U	1.77	0.391
Fluorene	2,400	30,000	- -	mg/kg	0.0133 U	NA	0.0145 U	0.0114 U	0.0112 UJ	0.0116 UJ	NA	NA	0.012 U	0.0683 J	0.0114 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0111 U	NA	0.0121 U	0.00954 U	0.0532 J	0.0961 J	NA	NA	0.00996 U	**0.597**	0.111
Naphthalene	3.8	17	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.00844 UJ	0.00872 UJ	NA	NA	0.00896 U	0.0959 J	0.0398 J
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.00997 U	NA	0.0109 U	0.00858 U	0.069 J	0.0992 J	NA	NA	0.00896 U	1.01	0.195
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0133 U	NA	0.0145 U	0.0114 U	0.116 J	0.217 J	NA	NA	0.012 U	1.5	0.319
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	5.25 J	NA	14.1	7.25 J	10.1	10	NA	NA	14	17.4 J	**54.4 J**
Lead	400	800	- -	mg/kg	14.1 J	NA	17.9	19.3	0.546 U	21.8 J	NA	NA	11.9	56.8	20.9
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00413 U	NA	0.000426 U	0.0123 J	0.0146 J	0.00425 UJ	NA	NA	0.000427 U	0.457	0.0533
4,4'-DDE	2	9.3	- -	mg/kg	0.0048 U	NA	0.000496 U	0.0655	0.0471 J	0.0112 J	NA	NA	0.000497 U	1.45 D	0.571
4,4'-DDT	1.9	8.5	- -	mg/kg	0.00816 U	NA	0.000842 U	0.0511	0.0544 J	0.0293 J	NA	NA	0.000845 U	**10.3 D**	0.362
Aldrin	0.039	0.18	- -	mg/kg	0.00298 U	NA	0.000307 U	0.00326 U	0.0029 UJ	0.00306 UJ	NA	NA	0.000308 U	0.00333 U	0.00329 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.00192 U	NA	0.000198 U	0.0021 U	0.00187 UJ	0.00197 UJ	NA	NA	0.000199 U	0.00933 J	0.0051 J
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00413 U	NA	0.000426 U	0.00452 U	0.00402 UJ	0.00425 UJ	NA	NA	0.000427 U	0.00462 U	0.00457 U
beta-BHC	0.3	1.3	- -	mg/kg	0.00192 U	NA	0.000198 U	0.0021 U	0.00187 UJ	0.00197 UJ	NA	NA	0.000199 U	0.0975	0.018 J
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.349 U	NA	0.036 U	0.382 U	0.34 UJ	0.358 UJ	NA	NA	0.0361 U	0.39 U	0.386 U
delta-BHC	- -	- -	- -	mg/kg	0.00365 U	NA	0.000377 U	0.004 U	0.00356 UJ	0.00375 UJ	NA	NA	0.000378 U	0.00408 U	0.00404 U
Dieldrin	0.034	0.14	- -	mg/kg	0.00384 U	NA	0.000396 U	0.00554 J	0.00374 UJ	0.00395 UJ	NA	NA	0.000398 U	**1.88 D**	0.0244
Endosulfan I	470	470	- -	mg/kg	0.00451 U	NA	0.000466 U	0.00494 U	0.0044 UJ	0.00464 UJ	NA	NA	0.000467 U	0.00505 U	0.00499 U
Endosulfan II	470	470	- -	mg/kg	0.00528 U	NA	0.000545 U	0.00579 U	0.00515 UJ	0.00543 UJ	NA	NA	0.000547 U	0.00591 U	0.00584 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.0048 U	NA	0.000496 U	0.00526 U	0.00468 UJ	0.00494 UJ	NA	NA	0.000497 U	0.00537 U	0.00531 U
Endrin	19	250	- -	mg/kg	0.00413 U	NA	0.000426 U	0.00452 UJ	0.00402 UJ	0.00425 UJ	NA	NA	0.000427 U	0.00462 UJ	0.00457 UJ
Endrin aldehyde	- -	- -	- -	mg/kg	0.0049 U	NA	0.000505 U	0.00536 U	0.00477 UJ	0.00504 UJ	NA	NA	0.000507 U	0.00548 U	0.00542 U
Endrin ketone	- -	- -	- -	mg/kg	0.00566 U	NA	0.000585 U	0.00621 U	0.00552 UJ	0.00583 UJ	NA	NA	0.000586 U	0.00634 U	0.00627 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00374 U	NA	0.000387 U	0.0041 U	0.00365 UJ	0.00385 UJ	NA	NA	0.000388 U	0.00419 U	0.00414 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00758 U	NA	0.000783 U	0.00831 U	0.00739 UJ	0.0078 UJ	NA	NA	0.000785 U	0.0486 JN	0.00839 U
Heptachlor	0.13	0.63	- -	mg/kg	0.00403 U	NA	0.000416 U	0.00442 U	0.00393 UJ	0.00415 UJ	NA	NA	0.000417 U	0.00451 U	0.00446 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00624 U	NA	0.000644 U	0.00684 U	0.00608 UJ	0.00642 UJ	NA	NA	0.000646 U	0.00698 U	0.00691 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.0047 U	NA	0.000486 U	0.00515 U	0.00458 UJ	0.00484 UJ	NA	NA	0.000487 U	0.0354 U	0.00521 U
Toxaphene	0.49	2.1	- -	mg/kg	0.405 U	NA	0.0418 U	0.444 U	0.395 UJ	0.417 UJ	NA	NA	0.0419 U	0.453 U	0.448 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-119	BL-SB-119	BL-SB-119	BL-SB-119	BL-SB-119	BL-SB-119	BL-SB-120	BL-SB-120	BL-SB-120	BL-SB-121	BL-SB-121
Sample Depth(Feet):	Residential	Industrial	Background		2 - 4	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14	0 - 1	1 - 2	8 - 10	0 - 1	1 - 2
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/19/14	09/19/14	09/19/14	09/19/14	06/25/15	06/25/15	09/19/14	09/19/14	09/20/14	09/18/14	09/18/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-119_2_4	BL-SB-119_4_6	BL-SB-119_6_8	BL-SB-119_8_10	BL-SB-119_10_12	BL-SB-119_12_14	BL-SB-120_0_1	BL-SB-120_1_2	BL-SB-120_8_10	BL-SB-121_0_1	BL-SB-121_1_2
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	0.014 U	NA	NA	0.0135 U	0.0138 U	0.0154 U	0.0784 J	0.0196 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	NA	NA	0.0159 U	NA	NA	0.0154 U	0.0158 U	0.0176 U	0.0361 U	0.0224 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	NA	NA	0.00996 U	NA	NA	0.00962 U	0.00988 U	0.011 U	0.0225 U	0.014 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	NA	NA	0.00897 U	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.0203 U	0.0126 U
Anthracene	18,000	230,000	- -	mg/kg	NA	NA	NA	0.00964 J	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.0878 J	0.0126 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.015 U	0.0148 U	NA	0.0351 J	NA	NA	0.0144 U	0.0148 U	0.0165 U	**0.275**	0.021 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.012 U	0.0119 U	NA	**0.0338 J**	0.0119 U	0.012 U	0.0115 U	0.0119 U	0.0132 U	**0.291**	0.0168 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.012 U	0.0119 U	NA	0.0484 J	NA	NA	0.0115 U	0.0119 U	0.0132 U	**0.41**	0.0168 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	NA	NA	0.00897 U	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.281	0.0126 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	NA	NA	0.0229 J	NA	NA	0.0135 U	0.0138 U	0.0154 U	0.168	0.0196 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	NA	NA	0.0353 J	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.343	0.0126 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00698 U	NA	NA	0.00698 U	NA	NA	0.00673 U	0.00692 U	0.00769 U	0.0158 U	0.00981 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	NA	NA	0.0647 J	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.554	0.0474 J
Fluorene	2,400	30,000	- -	mg/kg	NA	NA	NA	0.012 U	NA	NA	0.0115 U	0.0119 U	0.0132 U	0.027 U	0.0168 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00997 U	NA	NA	0.00996 U	NA	NA	0.00962 U	0.00988 U	0.011 U	**0.181**	0.014 U
Naphthalene	3.8	17	- -	mg/kg	NA	NA	NA	0.00897 U	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.0203 U	0.0126 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	NA	NA	0.0413 J	NA	NA	0.00866 U	0.00889 U	0.00989 U	0.385	0.0126 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	NA	NA	0.0569 J	NA	NA	0.0115 U	0.0119 U	0.0132 U	0.556	0.0168 U
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	17.1 J	10.8 J	NA	9.05 J	NA	NA	15.8 J	13.7 J	6.61	**30.2 J**	13.7 J
Lead	400	800	- -	mg/kg	NA	NA	NA	12.2	NA	NA	16.5	16.3	8.08	79.3 J	1.02 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	NA	NA	0.089	NA	NA	0.00532 U	0.00537 U	0.000473 U	0.0419	0.000512 U
4,4'-DDE	2	9.3	- -	mg/kg	NA	NA	NA	0.107	NA	NA	0.00618 U	0.00625 U	0.000549 U	0.288	0.00223
4,4'-DDT	1.9	8.5	- -	mg/kg	0.187	NA	NA	0.509	NA	NA	0.0105 U	0.0106 U	0.00132 J	0.134 J	0.00101 U
Aldrin	0.039	0.18	- -	mg/kg	NA	NA	NA	0.00333 U	NA	NA	0.00383 U	0.00387 U	0.000341 U	0.00355 U	0.000369 U
alpha-BHC	0.086	0.36	- -	mg/kg	NA	NA	NA	0.00215 U	NA	NA	0.00247 U	0.0025 U	0.00022 U	0.00229 U	0.000238 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	NA	0.00462 U	NA	NA	0.00532 U	0.00537 U	0.000473 U	0.00492 U	0.000512 U
beta-BHC	0.3	1.3	- -	mg/kg	NA	NA	NA	0.00215 U	NA	NA	0.00247 U	0.0025 U	0.00022 U	0.00929 J	0.000238 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	0.39 U	NA	NA	0.449 U	0.453 U	0.0399 U	0.415 U	0.0432 U
delta-BHC	- -	- -	- -	mg/kg	NA	NA	NA	0.00408 U	NA	NA	0.0047 U	0.00475 U	0.000418 U	0.00435 U	0.000452 U
Dieldrin	0.034	0.14	- -	mg/kg	**0.0379**	0.0112 J	0.000422 U	**0.0962**	0.000396 U	0.000399 U	0.00495 U	0.005 U	0.000545 J	0.0154 J	0.000476 U
Endosulfan I	470	470	- -	mg/kg	NA	NA	NA	0.00505 U	NA	NA	0.00581 U	0.00587 U	0.000516 U	0.00538 U	0.000559 U
Endosulfan II	470	470	- -	mg/kg	NA	NA	NA	0.00591 U	NA	NA	0.0068 U	0.00687 U	0.000604 U	0.00629 U	0.000654 U
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	NA	NA	0.00537 U	NA	NA	0.00618 U	0.00625 U	0.000549 U	0.00572 U	0.000595 UJ
Endrin	19	250	- -	mg/kg	NA	NA	NA	0.00462 UJ	NA	NA	0.00532 U	0.00537 U	0.000473 U	0.00492 U	0.000512 U
Endrin aldehyde	- -	- -	- -	mg/kg	NA	NA	NA	0.00548 U	NA	NA	0.00631 U	0.00637 U	0.00056 U	0.00584 U	0.000607 U
Endrin ketone	- -	- -	- -	mg/kg	NA	NA	NA	0.00634 U	NA	NA	0.0073 U	0.00737 U	0.000648 U	0.00675 U	0.000702 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	NA	NA	0.00419 U	NA	NA	0.00482 U	0.00487 U	0.000429 U	0.00446 U	0.000464 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	NA	0.00849 U	NA	NA	0.00977 U	0.00987 U	0.000868 U	0.00904 U	0.00094 U
Heptachlor	0.13	0.63	- -	mg/kg	NA	NA	NA	0.00451 U	NA	NA	0.00519 U	0.00525 U	0.000462 U	0.00481 U	0.0005 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	NA	NA	0.00698 U	NA	NA	0.00804 U	0.00812 U	0.000714 U	0.00744 U	0.000773 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	NA	NA	0.00526 U	NA	NA	0.00606 U	0.00612 U	0.000538 U	0.00561 U	0.000583 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	0.453 U	NA	NA	0.522 U	0.527 U	0.0464 U	**1.48**	0.0502 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-121	BL-SB-121	BL-SB-122	BL-SB-122	BL-SB-122	BL-SB-122	BL-SB-122	BL-SB-123	BL-SB-123	BL-SB-123	BL-SB-123
Sample Depth(Feet):	Residential	Industrial	Background		2 - 4	8 - 10	0 - 1	1 - 2	2 - 4	4 - 6	8 - 10	0 - 1	1 - 2	2 - 4	4 - 6
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-121_2_4	BL-SB-121_8_10	BL-SB-122_0_1	BL-SB-122_1_2	BL-SB-122_2_4	BL-SB-122_4_6	BL-SB-122_8_10	BL-SB-123_0_1	BL-SB-123_1_2	BL-SB-123_2_4	BL-SB-123_4_6
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	0.018 U	0.0906 J	0.133	NA	NA	0.0155 U	0.0344 U	0.071 J	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	0.0206 U	0.109 J	0.172	NA	NA	0.0178 U	0.0393 U	0.0773 J	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	0.0129 U	0.0215 U	0.0122 U	NA	NA	0.0111 U	0.0245 U	0.012 U	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	NA	0.0116 U	0.197	0.213	NA	NA	0.00999 U	0.0221 U	0.0108 U	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	NA	0.0116 U	0.147	0.184	NA	NA	0.00999 U	0.236	0.0166 J	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0145 U	0.0193 U	**0.435**	**0.473**	0.0144 U	0.0145 U	0.0167 U	**0.892**	0.0389 J	0.014 U	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0116 U	0.0154 U	**0.713**	**0.672**	0.0116 U	0.0116 U	0.0133 U	**1.06**	**0.0418 J**	0.0112 U	0.0116 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0116 U	0.0154 U	**1.26**	**1.97**	0.0116 U	0.0116 U	0.0133 U	**1.68**	0.0743 J	0.0112 U	NA
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	0.0116 U	1.09	0.606	NA	NA	0.00999 U	1.13	0.0108 U	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	0.018 U	0.421	0.555	NA	NA	0.0155 U	0.593	0.027 J	NA	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	0.0116 U	0.584	0.709	NA	NA	0.00999 U	0.978	0.0428 J	NA	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	NA	0.009 U	**0.176**	**0.209**	0.00674 U	0.00679 U	0.00777 U	**0.259**	0.00843 U	0.00652 U	NA
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	0.0116 U	0.635	0.364	NA	NA	0.00999 U	1.77	0.0522 J	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	NA	0.0154 U	0.0258 U	0.0147 U	NA	NA	0.0133 U	0.0295 U	0.0145 U	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00966 U	0.0129 U	**0.754**	**0.573**	0.00963 U	0.00969 U	0.0111 U	**0.884**	0.012 U	0.00931 U	NA
Naphthalene	3.8	17	- -	mg/kg	NA	0.0116 U	0.0193 U	0.138	NA	NA	0.00999 U	0.0221 U	0.0108 U	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	0.0116 U	0.247	0.195	NA	NA	0.00999 U	1.05	0.081	NA	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	0.0154 U	0.668	0.537	NA	NA	0.0133 U	2.49	0.0559 J	NA	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	12	11.3	**200 J**	**152 J**	14.2	16.8	6.83	11.2 J	18.4 J	NA	NA
Lead	400	800	- -	mg/kg	NA	8.14	119 J	21.1 J	NA	NA	6.5	27.6 J	27.9 J	NA	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	0.000467 U	0.293	0.0808 J	NA	NA	0.00577 J	0.00535 U	0.131 D	NA	NA
4,4'-DDE	2	9.3	- -	mg/kg	NA	0.000543 U	**4.68 D**	0.741 D	0.00257	NA	0.0067	**116 DJ**	0.517 D	0.0113	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	0.000924 U	**3.82 D**	1.43 D	0.00397	NA	0.134 D	**2,740 DJ**	**2.68 D**	0.0504 D	0.307
Aldrin	0.039	0.18	- -	mg/kg	NA	0.000337 U	0.00337 U	0.00378 U	NA	NA	0.000341 U	**0.0847 J**	0.000365 U	0.000299 U	NA
alpha-BHC	0.086	0.36	- -	mg/kg	NA	0.000217 U	0.00638 J	0.0233 J	NA	NA	0.00022 U	**0.153 J**	0.0219 JN	0.000193 U	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000467 U	0.0185 U	0.00524 U	NA	NA	0.000472 U	0.00535 U	0.000507 U	NA	NA
beta-BHC	0.3	1.3	- -	mg/kg	NA	0.000217 U	0.108	0.185	NA	NA	0.00134 J	**71 DJ**	0.161 DJ	0.00474	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	0.0395 U	0.394 U	0.442 U	NA	NA	0.0399 U	**45.3 DJ**	0.132	NA	NA
delta-BHC	- -	- -	- -	mg/kg	NA	0.000413 U	0.00413 U	0.00463 U	NA	NA	0.000418 U	0.16 J	0.002 U	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	NA	0.000435 U	**1.26 D**	**0.407**	0.00145 J	0.00658	0.000694 J	**73.5 DJ**	**0.262 D**	0.00747	**0.0385**
Endosulfan I	470	470	- -	mg/kg	NA	0.000511 U	0.0051 U	0.00573 U	NA	NA	0.000516 U	0.375 JN	0.000554 U	NA	NA
Endosulfan II	470	470	- -	mg/kg	NA	0.000598 U	0.00597 U	0.0067 U	NA	NA	0.000604 U	0.00684 U	0.000648 U	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	0.000543 U	0.00543 U	0.00609 U	NA	NA	0.000549 U	0.00622 U	0.00059 U	NA	NA
Endrin	19	250	- -	mg/kg	NA	0.000467 U	0.00467 U	0.00524 U	NA	NA	0.000472 U	0.0535 U	0.0132	NA	NA
Endrin aldehyde	- -	- -	- -	mg/kg	NA	0.000554 U	0.00554 U	0.00621 U	NA	NA	0.00056 U	0.00634 U	0.000601 U	NA	NA
Endrin ketone	- -	- -	- -	mg/kg	NA	0.000641 U	0.0104 J	0.00719 U	NA	NA	0.000648 U	1.14 DJ	0.00692	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	0.000424 U	0.00616 J	0.0224	NA	NA	0.000429 U	0.12 J	0.014 JN	NA	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000859 U	0.0525 JN	0.00962 U	NA	NA	0.000868 U	**4.42 JN**	0.0296	NA	NA
Heptachlor	0.13	0.63	- -	mg/kg	NA	0.000457 U	0.00456 U	0.00512 U	NA	NA	0.000461 U	0.00522 U	0.000495 U	NA	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	0.000707 U	0.00706 U	0.00792 U	NA	NA	0.000714 U	**0.244 JN**	0.000766 U	0.000626 U	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	0.000533 U	0.00532 U	0.00597 U	NA	NA	0.000538 U	0.00609 U	0.000578 U	NA	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.0393 U	0.0459 U	0.458 U	0.514 U	NA	NA	0.0464 U	0.525 U	0.0498 U	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-123	BL-SB-123	BL-SB-123	BL-SB-124	BL-SB-124	BL-SB-124	BL-SB-124	BL-SB-124	BL-SB-124	BL-SB-125	BL-SB-126
Sample Depth(Feet):	Residential	Industrial	Background		6 - 8	8 - 10	10 - 12	0 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	0 - 1	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/18/14	09/18/14	06/25/15	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/20/14	09/19/14	09/18/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-123_6_8	BL-SB-123_8_10	BL-SB-123_10_12	BL-SB-124_0_1	BL-SB-124_1_2	BL-SB-124_2_4	BL-SB-124_4_6	BL-SB-124_6_8	BL-SB-124_8_10	BL-SB-125_0_1	BL-SB-126_0_1
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	0.017 U	NA	0.0849 U	0.0165 U	NA	NA	NA	0.0148 U	0.177 J	0.0144 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	0.0195 U	NA	0.097 U	0.0188 U	NA	NA	NA	0.0169 U	0.24 J	0.0165 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	0.0122 U	NA	0.215 J	0.0118 U	NA	NA	NA	0.0106 U	0.366	0.0103 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	0.0109 U	NA	0.0546 U	0.0106 U	NA	NA	NA	0.0095 U	2.56	0.00928 U
Anthracene	18,000	230,000	- -	mg/kg	NA	0.0109 U	NA	0.373 J	0.0106 U	NA	NA	NA	0.0095 U	5.08	0.086
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	NA	0.0182 U	NA	**1.14**	0.0177 U	0.0147 U	NA	NA	0.0378 J	**8.73**	**0.425**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	NA	0.0146 U	NA	**1.22**	0.0141 U	0.0117 U	NA	NA	0.0127 U	**9.18**	**0.429**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	NA	0.0146 U	NA	**1.76**	0.0402 J	0.0117 U	NA	NA	0.0631 J	**16.2**	**0.655**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	0.0109 U	NA	0.817	0.0106 U	NA	NA	NA	0.0095 U	5.78	0.368
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	0.017 U	NA	0.809	0.018 J	NA	NA	NA	0.0148 U	**6.13**	0.26
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	0.0109 U	NA	1.37	0.0106 U	NA	NA	NA	0.0448 J	9.99	0.447
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	NA	0.00852 U	NA	**0.216 J**	0.00824 U	0.00685 U	NA	NA	0.00739 U	**1.87**	**0.0876**
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	0.0109 U	NA	3.22	0.0437 J	NA	NA	NA	0.0746	13.8	0.857
Fluorene	2,400	30,000	- -	mg/kg	NA	0.0146 U	NA	0.0728 U	0.0141 U	NA	NA	NA	0.0127 U	0.572	0.0124 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	NA	0.0122 U	NA	**0.661**	0.0118 U	0.00978 U	NA	NA	0.0106 U	**5.91**	**0.294**
Naphthalene	3.8	17	- -	mg/kg	NA	0.0109 U	NA	0.0546 U	0.0106 U	NA	NA	NA	0.0095 U	0.175 J	0.00928 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	0.0109 U	NA	2.3	0.0106 U	NA	NA	NA	0.0095 U	7.2	0.414
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	0.0146 U	NA	2.54	0.0141 U	NA	NA	NA	0.0697 J	12.4	0.834
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	NA	16.4	NA	**337 J**	**56.7 J**	**36**	**23**	5.02	6.6	14.4 J	14.7 J
Lead	400	800	- -	mg/kg	NA	15.8	NA	242 J	23.8 J	NA	NA	0.518 U	6.75	14	12.6 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	0.000525 U	NA	0.00519 U	0.000494 U	NA	NA	NA	0.000452 U	0.0649	0.104
4,4'-DDE	2	9.3	- -	mg/kg	NA	0.00101 J	NA	0.209	0.0123	NA	NA	NA	0.00198	0.171	0.667 D
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	0.00454	NA	0.151	0.0101	NA	NA	NA	0.00197	0.295	0.653 D
Aldrin	0.039	0.18	- -	mg/kg	NA	0.000379 U	NA	0.00374 U	0.000356 U	NA	NA	NA	0.000326 U	0.00363 U	0.00322 U
alpha-BHC	0.086	0.36	- -	mg/kg	NA	0.000244 U	NA	0.00241 U	0.00023 U	NA	NA	NA	0.00021 U	0.00234 U	0.00208 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000525 U	NA	0.00519 U	0.000494 U	NA	NA	NA	0.000452 U	0.00504 U	0.00447 U
beta-BHC	0.3	1.3	- -	mg/kg	NA	0.0079	NA	0.00241 U	0.00023 U	NA	NA	NA	0.00021 U	0.00234 U	0.00208 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	0.0443 U	NA	0.438 U	0.0417 U	NA	NA	NA	0.0382 U	0.426 U	0.377 U
delta-BHC	- -	- -	- -	mg/kg	NA	0.000464 U	NA	0.00458 U	0.000436 U	NA	NA	NA	0.0004 U	0.00445 U	0.00395 U
Dieldrin	0.034	0.14	- -	mg/kg	**0.0739**	0.000489 U	0.000399 U	0.0205 U	0.000459 U	NA	NA	NA	0.000421 U	**0.0504**	**0.0616**
Endosulfan I	470	470	- -	mg/kg	NA	0.000574 U	NA	0.00567 U	0.000539 U	NA	NA	NA	0.000494 U	0.00551 U	0.00488 U
Endosulfan II	470	470	- -	mg/kg	NA	0.000672 U	NA	0.00663 U	0.000631 U	NA	NA	NA	0.000578 U	0.00645 U	0.00571 U
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	0.000611 U	NA	0.00603 U	0.000574 U	NA	NA	NA	0.000526 U	0.0153 J	0.00519 U
Endrin	19	250	- -	mg/kg	NA	0.000525 U	NA	0.00519 U	0.000494 U	NA	NA	NA	0.000452 U	0.00504 UJ	0.00447 U
Endrin aldehyde	- -	- -	- -	mg/kg	NA	0.000623 U	NA	0.00615 U	0.000585 U	NA	NA	NA	0.000536 U	0.00598 U	0.0053 U
Endrin ketone	- -	- -	- -	mg/kg	NA	0.000721 U	NA	0.00712 U	0.000677 U	NA	NA	NA	0.00062 U	0.00692 U	0.00613 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	0.000476 U	NA	0.0047 U	0.000448 U	NA	NA	NA	0.00041 U	0.00457 U	0.00405 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	0.000965 U	NA	0.00953 U	0.000907 U	NA	NA	NA	0.000831 U	0.00926 U	0.00821 U
Heptachlor	0.13	0.63	- -	mg/kg	NA	0.000513 U	NA	0.00507 U	0.000482 U	NA	NA	NA	0.000442 U	0.00492 U	0.00436 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	0.000794 U	NA	0.00784 U	0.000746 U	NA	NA	NA	0.000684 U	0.00762 U	0.00675 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	0.000599 U	NA	0.00591 U	0.000562 U	NA	NA	NA	0.000515 U	0.00574 U	0.00509 U
Toxaphene	0.49	2.1	- -	mg/kg	NA	0.0516 U	NA	0.509 U	0.0484 U	NA	NA	NA	0.0444 U	0.495 U	0.438 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-126R	BL-SB-127
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	10 - 12	12 - 14	14 - 16	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/29/14	09/29/14	09/29/14	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	09/21/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-126R_0_1	BL-SB-126R_1_2	BL-SB-126R_2_4	BL-SB-126R_4_6	BL-SB-126R_6_8	BL-SB-126R_8_10	BL-SB-126R_10_12	BL-SB-126R_12_14	BL-SB-126R_14_16	BL-SB-127_0_1
Detected Semivolatile Organics														
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0333 U	0.0153 U	0.0139 U	0.0139 U	0.0139 U	0.014 U	0.0139 U	0.0139 U	0.0139 U	0.0157 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.038 U	0.0175 U	0.0159 U	0.0159 U	0.0158 U	0.016 U	0.0159 U	0.0159 U	0.0159 U	0.018 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0238 U	0.0109 U	0.00995 U	0.00994 U	0.0099 U	0.00999 U	0.00996 U	0.00994 U	0.00991 U	0.0112 U
Acenaphthylene	- -	- -	- -	mg/kg	0.0214 U	0.00982 U	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Anthracene	18,000	230,000	- -	mg/kg	0.0214 U	0.0209 J	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**0.165**	0.079	0.0149 U	0.0149 U	0.0148 U	0.015 U	0.0149 U	0.0149 U	0.0149 U	0.0168 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.226**	**0.0815**	0.0119 U	0.0119 U	0.0119 U	0.012 U	0.0119 U	0.0119 U	0.0119 U	0.0135 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.397**	0.13	0.0119 U	0.0119 U	0.0119 U	0.012 U	0.0119 U	0.0119 U	0.0119 U	0.0135 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.158 J	0.0613 J	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.155 J	0.0413 J	0.0139 U	0.0139 U	0.0139 U	0.014 U	0.0139 U	0.0139 U	0.0139 U	0.0157 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.187	0.0878	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.0166 U	0.00764 U	0.00696 U	0.00696 U	0.00693 U	0.00699 U	0.00697 U	0.00696 U	0.00694 U	0.00786 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.284	0.164	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Fluorene	2,400	30,000	- -	mg/kg	0.0285 U	0.0131 U	0.0119 U	0.0119 U	0.0119 U	0.012 U	0.0119 U	0.0119 U	0.0119 U	0.0135 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.138 J	0.0525 J	0.00995 U	0.00994 U	0.0099 U	0.00999 U	0.00996 U	0.00994 U	0.00991 U	0.0112 U
Naphthalene	3.8	17	- -	mg/kg	0.0214 U	0.00982 U	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.139 J	0.1	0.00895 U	0.00895 U	0.00891 U	0.00899 U	0.00896 U	0.00895 U	0.00892 U	0.0101 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.921	0.159	0.0119 U	0.0119 U	0.0119 U	0.012 U	0.0119 U	0.0119 U	0.0119 U	0.0135 U
Detected Inorganics														
Arsenic	0.68	3	22.7	mg/kg	**36.1**	**79.6**	**26.1**	9.43	14.8	17.2	14.1	14.4	10.1	10.7 J
Lead	400	800	- -	mg/kg	68.5 J	31.8	24.3	18.3	13.3	15.9	12.3	11.5	8.95	27.9 J
Detected Pesticides														
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	**177 DJ**	1.54 DJ	0.152 D	0.00889	0.000411 U	0.000409 U	0.000416 U	0.00122 J	0.000422 U	0.000404 U
4,4'-DDE	2	9.3	- -	mg/kg	**34.1 DJ**	0.999 DJ	0.096 D	0.0163	0.000477 U	0.000475 U	0.000483 U	0.00351	0.000491 U	0.00047 U
4,4'-DDT	1.9	8.5	- -	mg/kg	**1,390 DJ**	**17.8 DJ**	**4.14 D**	0.12 D	0.00319	0.000808 U	0.000821 U	0.025	0.0012 J	0.000799 U
Aldrin	0.039	0.18	- -	mg/kg	0.0375 UJ	0.0033 UJ	0.000301 U	0.000309 U	0.000296 U	0.000295 U	0.0003 U	0.000306 U	0.000304 U	0.000291 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.206 UJ	0.00213 UJ	0.00569	0.0002 U	0.000191 U	0.00019 U	0.000193 U	0.000197 U	0.000196 U	0.000188 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.0521 UJ	0.00458 UJ	0.000418 U	0.000429 U	0.000411 U	0.000409 U	0.000416 U	0.000424 U	0.000422 U	0.000404 U
beta-BHC	0.3	1.3	- -	mg/kg	**16.2 DJ**	**0.657 DJ**	0.0935 D	0.00861	0.00502	0.00232 J	0.00314 J	0.00355	0.00712	0.000188 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	4.4 UJ	0.387 UJ	0.0853	0.0362 U	0.0347 U	0.0345 U	0.0351 U	0.0358 U	0.0356 U	0.0341 U
delta-BHC	- -	- -	- -	mg/kg	0.046 UJ	0.00405 UJ	0.00037 U	0.000379 U	0.000363 U	0.000361 U	0.000367 U	0.000374 U	0.000373 U	0.000357 U
Dieldrin	0.034	0.14	- -	mg/kg	**7.56 DJ**	**0.258 JN**	**0.0496 D**	0.00909	0.000382 U	0.00038 U	0.000745 J	0.000786 J	0.000393 U	0.000376 U
Endosulfan I	470	470	- -	mg/kg	0.0569 UJ	0.00501 UJ	0.000457 U	0.000469 U	0.000449 U	0.000447 U	0.000454 U	0.000463 U	0.000461 U	0.000442 U
Endosulfan II	470	470	- -	mg/kg	0.0666 UJ	0.00586 UJ	0.000535 U	0.000549 U	0.000525 U	0.000523 U	0.000532 U	0.000542 U	0.00054 U	0.000517 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.0605 UJ	0.00533 UJ	0.000486 U	0.000499 U	0.000477 U	0.000475 U	0.000483 U	0.000493 U	0.000491 U	0.00047 U
Endrin	19	250	- -	mg/kg	0.0521 UJ	0.00458 UJ	0.000418 U	0.000429 U	0.000411 U	0.000409 U	0.000416 U	0.000424 U	0.000422 U	0.000404 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.0618 UJ	0.00544 UJ	0.000496 U	0.000509 U	0.000487 U	0.000485 U	0.000493 U	0.000503 U	0.000501 U	0.00048 U
Endrin ketone	- -	- -	- -	mg/kg	0.0714 UJ	0.00629 UJ	0.000574 U	0.000589 U	0.000563 U	0.000561 U	0.00057 U	0.000581 U	0.000579 U	0.000555 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.0619 J	0.0416 UJ	0.00188 JN	0.000389 U	0.000372 U	0.000371 U	0.000377 U	0.000384 U	0.000383 U	0.000367 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.0957 UJ	0.00842 UJ	0.0301	0.000789 U	0.000754 U	0.000751 U	0.000763 U	0.000779 U	0.000775 U	0.000743 U
Heptachlor	0.13	0.63	- -	mg/kg	0.0509 UJ	0.00448 UJ	0.000408 U	0.000419 U	0.000401 U	0.000399 U	0.000406 U	0.000414 U	0.000412 U	0.000395 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.0787 UJ	0.00693 UJ	0.000632 U	0.000649 U	0.000621 U	0.000618 U	0.000628 U	0.000641 U	0.000638 U	0.000611 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.0593 UJ	0.00522 UJ	0.000476 U	0.000489 U	0.000468 U	0.000466 U	0.000474 U	0.000483 U	0.000481 U	0.000461 U
Toxaphene	0.49	2.1	- -	mg/kg	5.11 UJ	0.45 UJ	0.041 U	0.0421 U	0.0403 U	0.0401 U	0.0408 U	0.0416 U	0.0414 U	0.0397 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-127	BL-SB-127	BL-SB-128	BL-SB-128	BL-SB-128	BL-SB-129	BL-SB-129	BL-SB-129	BL-SB-129	BL-SB-130	BL-SB-131
Sample Depth(Feet):	Residential	Industrial	Background		1 - 2	8 - 10	0 - 1	1 - 2	8 - 10	0 - 1	1 - 2	2 - 4	8 - 10	0 - 1	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/21/14	09/21/14	09/21/14	09/21/14	09/21/14	09/21/14	09/21/14	09/21/14	09/21/14	09/18/14	09/18/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-127_1_2	BL-SB-127_8_10	BL-SB-128_0_1	BL-SB-128_1_2	BL-SB-128_8_10	BL-SB-129_0_1	BL-SB-129_1_2	BL-SB-129_2_4	BL-SB-129_8_10	BL-SB-130_0_1	BL-SB-131_0_1
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0163 U	0.017 U	0.0155 U	0.0163 U	0.0162 U	0.015 U	0.0152 U	NA	0.0157 U	0.0146 U	0.61
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0186 U	0.0194 U	0.0177 U	0.0187 U	0.0186 U	0.0172 U	0.0174 U	NA	0.018 U	0.0167 U	0.897
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0116 U	0.0122 U	0.0111 U	0.0117 U	0.0116 U	0.0107 U	0.0109 U	NA	0.0112 U	0.0104 U	2.51
Acenaphthylene	- -	- -	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.00937 U	0.0203 U
Anthracene	18,000	230,000	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.0515 J	4.58
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0174 U	0.0182 U	0.0166 U	0.0175 U	0.0174 U	0.0161 U	0.0163 U	NA	0.0169 U	0.151	**7**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0139 U	0.0146 U	0.0133 U	0.014 U	0.0139 U	0.0129 U	0.013 U	NA	0.0135 U	**0.139**	**5.62**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0139 U	0.0146 U	0.0133 U	0.014 U	0.0139 U	0.0129 U	0.013 U	NA	0.0135 U	**0.202**	**8.52 D**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.112	3.53
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0163 U	0.017 U	0.0155 U	0.0163 U	0.0162 U	0.015 U	0.0152 U	NA	0.0157 U	0.084	**2.92**
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.164	7
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00814 U	0.00851 U	0.00776 U	0.00817 U	0.00812 U	0.00751 U	0.00761 U	NA	0.00787 U	0.00729 U	**1.03**
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.341	19.8 D
Fluorene	2,400	30,000	- -	mg/kg	0.0139 U	0.0146 U	0.0133 U	0.014 U	0.0139 U	0.0129 U	0.013 U	NA	0.0135 U	0.0125 U	2.8
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0116 U	0.0122 U	0.0111 U	0.0117 U	0.0116 U	0.0107 U	0.0109 U	NA	0.0112 U	0.0878	**3.15**
Naphthalene	3.8	17	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.00937 U	2.05
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0105 U	0.0109 U	0.00998 U	0.0105 U	0.0104 U	0.00965 U	0.00978 U	NA	0.0101 U	0.237	20.6 D
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0139 U	0.0146 U	0.0133 U	0.014 U	0.0139 U	0.0129 U	0.013 U	NA	0.0135 U	0.343	15.6 D
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	8.88 J	17.1	10.5 J	6.33 J	16.7	7.04 J	9.95 J	NA	15	9.13 J	13 J
Lead	400	800	- -	mg/kg	19.6 J	19.3	17.6 J	19 J	17.4	23.2 J	32.6 J	NA	17.4	29.4 J	14.3 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00036 U	0.000409 U	0.00425 U	0.000406 U	0.000405 U	0.0865	0.00057 J	NA	0.000415 U	**3.44 D**	**3.56 D**
4,4'-DDE	2	9.3	- -	mg/kg	0.000418 U	0.000475 U	0.00494 U	0.000472 U	0.000471 U	0.227 D	0.000888 J	NA	0.000482 U	**3.07 D**	1.08 D
4,4'-DDT	1.9	8.5	- -	mg/kg	0.000711 U	0.000808 U	0.0084 U	0.00161 U	0.000801 U	0.991 D	0.00819	NA	0.00421	**72.9 D**	**9.67 D**
Aldrin	0.039	0.18	- -	mg/kg	0.000259 U	0.000295 U	0.00306 U	0.000293 U	0.000292 U	0.00102 U	0.000279 U	NA	0.000299 U	0.000322 U	0.00354 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.000167 U	0.00019 U	0.00198 U	0.000189 U	0.000189 U	0.00364 J	0.00018 U	NA	0.000193 U	0.0208 U	0.063
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00036 U	0.000409 U	0.00425 U	0.000406 U	0.000405 U	0.0108 J	0.000387 U	NA	0.000415 U	0.000447 U	0.0049 U
beta-BHC	0.3	1.3	- -	mg/kg	0.000167 U	0.00019 U	0.00198 U	0.000189 U	0.00115 J	0.0363	0.00018 U	NA	0.000193 U	**0.636 D**	0.188
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0304 U	0.0345 U	0.359 U	0.0343 U	0.0342 U	0.119 U	0.0327 U	NA	0.035 U	3.77 U	0.414 U
delta-BHC	- -	- -	- -	mg/kg	0.000318 U	0.000361 U	0.00375 U	0.000359 U	0.000358 U	0.00125 U	0.000342 U	NA	0.000367 U	0.000395 U	0.00433 U
Dieldrin	0.034	0.14	- -	mg/kg	0.000335 U	0.00038 U	0.00395 U	0.000378 U	0.000377 U	**0.118**	0.00036 U	0.0168	0.000386 U	**0.402 D**	**0.272**
Endosulfan I	470	470	- -	mg/kg	0.000393 U	0.000447 U	0.00464 U	0.000444 U	0.000443 U	0.00154 U	0.000423 U	NA	0.000453 U	0.000489 U	0.00536 U
Endosulfan II	470	470	- -	mg/kg	0.00046 U	0.000523 U	0.00543 U	0.000519 U	0.000518 U	0.0018 U	0.000495 U	NA	0.000531 U	0.000572 U	0.00627 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000418 U	0.000475 U	0.00494 U	0.000472 U	0.000471 U	0.00164 U	0.00045 U	NA	0.000482 U	0.00052 U	0.0057 U
Endrin	19	250	- -	mg/kg	0.00036 U	0.000409 U	0.00425 U	0.000406 U	0.000405 U	0.00141 U	0.000387 U	NA	0.000415 U	0.000447 U	0.0049 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.000427 U	0.000485 U	0.00504 U	0.000482 U	0.000481 U	0.00167 U	0.000459 U	NA	0.000492 U	0.00053 U	0.00582 U
Endrin ketone	- -	- -	- -	mg/kg	0.000494 U	0.000561 U	0.00583 U	0.000557 U	0.000556 U	0.00193 U	0.000532 U	NA	0.000569 U	0.000613 U	0.00673 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000326 U	0.000371 U	0.00385 U	0.000368 U	0.000368 U	0.00969	0.000351 U	NA	0.000376 U	0.0406 U	0.00445 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000661 U	0.000751 U	0.0078 U	0.000746 U	0.000745 U	0.0183 J	0.000712 U	NA	0.000762 U	0.248 D	0.0454 JN
Heptachlor	0.13	0.63	- -	mg/kg	0.000351 U	0.000399 U	0.00415 U	0.000397 U	0.000396 U	0.00138 U	0.000378 U	NA	0.000405 U	0.000437 U	0.00479 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000544 U	0.000618 U	0.00642 U	0.000614 U	0.000613 U	0.00213 U	0.000586 U	NA	0.000627 U	0.000676 U	0.00741 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00041 U	0.000466 U	0.00484 U	0.000463 U	0.000462 U	0.00161 U	0.000441 U	NA	0.000473 U	0.00051 U	0.00559 U
Toxaphene	0.49	2.1	- -	mg/kg	0.0353 U	0.0401 U	0.417 U	0.0399 U	0.0398 U	0.138 U	0.038 U	NA	0.0407 U	0.0439 U	0.481 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-132	BL-SB-132	BL-SB-132	BL-SB-133	BL-SB-133	BL-SB-133	BL-SB-133	BL-SB-133	BL-SB-134	BL-SB-134	BL-SB-134
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	0 - 1	1 - 2	2 - 4	4 - 6	8 - 10	0 - 1	1 - 2	2 - 4
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/21/14	09/21/14	09/21/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-132_0_1	BL-SB-132_1_2	BL-SB-132_2_4	BL-SB-133_0_1	BL-SB-133_1_2	BL-SB-133_2_4	BL-SB-133_4_6	BL-SB-133_8_10	BL-SB-134_0_1	BL-SB-134_1_2	BL-SB-134_2_4
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.016 U	0.016 U	NA	0.0976 J	0.0163 U	NA	NA	0.0153 U	0.0155 U	0.0161 U [0.0161 U]	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0183 U	0.0183 U	NA	0.12 J	0.0187 U	NA	NA	0.0175 U	0.0177 U	0.0184 U [0.0184 U]	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0114 U	0.0114 U	NA	0.0234 U	0.0117 U	NA	NA	0.0109 U	0.011 U	0.0115 U [0.0115 U]	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.0103 U	0.0103 U	NA	0.0315 J	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0339 J	0.0103 U	NA	0.0268 J	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**0.185**	0.0171 U	0.0147 U	**0.162**	0.0175 U	0.0148 U	NA	0.0164 U	0.0166 U	0.0172 U [0.0173 U]	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.195**	0.0137 U	0.0118 U	**0.446**	0.014 U	0.0118 U	NA	0.0131 U	0.0133 U	0.0138 U [0.0138 U]	NA
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.296**	0.0137 U	0.0118 U	**0.691**	0.014 U	0.0118 U	NA	0.0131 U	0.0133 U	0.0138 U [0.0138 U]	NA
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.132	0.0103 U	NA	0.806	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.119	0.016 U	NA	0.281	0.0163 U	NA	NA	0.0153 U	0.0155 U	0.0161 U [0.0161 U]	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.224	0.0103 U	NA	0.244	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.008 U	0.008 U	NA	**0.199**	0.00817 U	0.00689 U	NA	0.00764 U	0.00773 U	0.00803 U [0.00805 U]	NA
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.321	0.0103 U	NA	0.259	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0137 U	0.0137 U	NA	0.0281 U	0.014 U	NA	NA	0.0131 U	0.0133 U	0.0138 U [0.0138 U]	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.115	0.0114 U	NA	**0.585**	0.0117 U	0.00985 U	NA	0.0109 U	0.011 U	0.0115 U [0.0115 U]	NA
Naphthalene	3.8	17	- -	mg/kg	0.0103 U	0.0103 U	NA	0.102 J	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.151	0.0103 U	NA	0.145 J	0.0105 U	NA	NA	0.00982 U	0.00994 U	0.0103 U [0.0104 U]	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.346	0.0381 J	NA	0.267	0.014 U	NA	NA	0.0131 U	0.0133 U	0.0138 U [0.0138 U]	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	16.5 J	7.12 J	NA	16.8 J	**58.1 J**	16.1	12.8	11.2	8.83 J	8.33 J [8.72]	NA
Lead	400	800	- -	mg/kg	44.2 J	9.55 J	NA	23 J	40.3 J	NA	NA	9.14	21.8 J	38.9 J [54.9]	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00194 U	0.00252	NA	0.0129 J	0.000509 U	NA	NA	0.000483 U	0.0137 J	0.00151 U [0.00167 U]	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.119 D	0.0289	NA	0.259	0.0022	NA	NA	0.000561 U	0.199 D	0.00766 [0.00722]	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0393	0.0219 J	NA	0.225	0.00201 U	NA	NA	0.000955 U	0.107 D	0.0059 J [0.00601]	NA
Aldrin	0.039	0.18	- -	mg/kg	0.000355 U	0.000352 U	NA	0.00364 U	0.000367 U	NA	NA	0.000348 U	0.000305 U	0.000276 U [0.000305 U]	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.000229 U	0.000227 U	NA	0.00235 U	0.000237 U	NA	NA	0.000225 U	0.000197 U	0.000178 U [0.000196 U]	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.000492 U	0.000488 U	NA	0.00505 U	0.000509 U	NA	NA	0.000483 U	0.00167 U	0.000382 U [0.000422 U]	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.000229 U	0.00189 J	NA	0.0788	0.000237 U	NA	NA	0.000225 U	0.00326 JN	0.000178 U [0.000196 U]	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0415 U	0.0412 U	NA	0.426 U	0.0429 U	NA	NA	0.0408 U	0.0357 U	0.0323 U [0.0357 U]	NA
delta-BHC	- -	- -	- -	mg/kg	0.000435 U	0.000431 U	NA	0.00446 U	0.00045 U	NA	NA	0.000427 U	0.000374 U	0.000338 U [0.000373 U]	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.00194 U	0.00193 U	NA	**0.0396**	0.000473 U	0.000387 UJ	NA	0.000449 U	**0.0446**	0.0016 [0.00155 J]	0.000397 U
Endosulfan I	470	470	- -	mg/kg	0.000538 U	0.000533 U	NA	0.00552 U	0.000556 U	NA	NA	0.000528 U	0.000463 U	0.000418 U [0.000462 U]	NA
Endosulfan II	470	470	- -	mg/kg	0.000629 U	0.000624 U	NA	0.00646 U	0.000651 U	NA	NA	0.000618 U	0.000541 U	0.000489 U [0.00054 U]	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000572 U	0.000567 U	NA	0.00587 U	0.000592 U	NA	NA	0.000561 U	0.000492 U	0.000444 U [0.000491 U]	NA
Endrin	19	250	- -	mg/kg	0.000492 U	0.000488 U	NA	0.00505 U	0.000509 U	NA	NA	0.000483 U	0.000423 U	0.000382 U [0.000422 U]	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.000583 U	0.000578 U	NA	0.00599 U	0.000603 U	NA	NA	0.000573 U	0.000502 U	0.000453 U [0.000501 U]	NA
Endrin ketone	- -	- -	- -	mg/kg	0.000675 U	0.000669 U	NA	0.00693 U	0.000698 U	NA	NA	0.000663 U	0.000581 U	0.000524 U [0.00058 U]	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000446 U	0.000442 U	NA	0.00458 U	0.000461 U	NA	NA	0.000438 U	0.000384 U	0.000347 U [0.000383 U]	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000903 U	0.000896 U	NA	0.00927 U	0.000935 U	NA	NA	0.000887 U	0.000778 U	0.000702 U [0.000776 U]	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.00048 U	0.000476 U	NA	0.00493 U	0.000497 U	NA	NA	0.000472 U	0.000413 U	0.000373 U [0.000413 U]	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000743 U	0.000737 U	NA	0.00763 U	0.000769 U	NA	NA	0.00073 U	0.00064 U	0.000578 U [0.000639 U]	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00056 U	0.000556 U	NA	0.00575 U	0.00058 U	NA	NA	0.00055 U	0.000482 U	0.000436 U [0.000481 U]	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.0483 U	0.0479 U	NA	0.495 U	0.0499 U	NA	NA	0.0474 U	0.0415 U	0.0375 U [0.0415 U]	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-134	BL-SB-135	BL-SB-135	BL-SB-135	BL-SB-135	BL-SB-135	BL-SB-136	BL-SB-136	BL-SB-136	BL-SB-136	BL-SB-137
Sample Depth(Feet):	Residential	Industrial	Background		8 - 10	0 - 1	1 - 2	2 - 4	4 - 6	8 - 10	0 - 1	1 - 2	2 - 4	4 - 6	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/21/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/18/14	09/17/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-134_8_10	BL-SB-135_0_1	BL-SB-135_1_2	BL-SB-135_2_4	BL-SB-135_4_6	BL-SB-135_8_10	BL-SB-136_0_1	BL-SB-136_1_2	BL-SB-136_2_4	BL-SB-136_4_6	BL-SB-137_0_1
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0155 U	0.209	0.516	NA	NA	0.0157 U	0.0625 J	0.0155 U [0.0187 U]	NA	NA	0.0134 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0177 U	0.248	0.658	NA	NA	0.0179 U	0.0761	0.0177 U [0.0214 U]	NA	NA	0.0153 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0111 U	0.0112 U	0.012 U	NA	NA	0.0112 U	0.0113 U	0.0111 U [0.0134 U]	NA	NA	0.00957 U
Acenaphthylene	- -	- -	- -	mg/kg	0.00995 U	0.0101 U	0.0108 U	NA	NA	0.0101 U	0.0101 U	0.00995 U [0.012 U]	NA	NA	0.0663
Anthracene	18,000	230,000	- -	mg/kg	0.00995 U	0.086	0.0185 J	NA	NA	0.0101 U	0.0196 J	0.00998 J [0.012 U]	NA	NA	0.0574 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0166 U	**0.342**	0.0808	0.0149 U	NA	0.0168 U	0.0437 J	0.0607 J [0.0201 U]	NA	NA	**0.187**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0133 U	**0.314**	**0.0699 J**	0.0119 U	0.0117 U	0.0134 U	**0.0445 J**	**0.0873 [0.016 U]**	0.0113 U	0.0117 U	**0.22**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0133 U	**0.479**	0.106	0.0119 U	NA	0.0134 U	0.0892	0.0932 [0.016 U]	NA	NA	**0.445**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.00995 U	0.233	0.0552 J	NA	NA	0.0101 U	0.0101 U	0.0545 J [0.012 U]	NA	NA	0.148
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0155 U	0.191	0.0359 J	NA	NA	0.0157 U	0.0346 J	0.0394 J [0.0187 U]	NA	NA	0.162
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.00995 U	0.365	0.0867	NA	NA	0.0101 U	0.0595 J	0.0634 J [0.012 U]	NA	NA	0.251
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00774 U	**0.0453 J**	0.00839 U	0.00695 U	NA	0.00783 U	0.00788 U	0.00774 U [0.00936 U]	NA	NA	**0.0495 J**
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.00995 U	0.701	0.132	NA	NA	0.0101 U	0.0604 J	0.0746 [0.012 U]	NA	NA	0.236
Fluorene	2,400	30,000	- -	mg/kg	0.0133 U	0.0134 U	0.0144 U	NA	NA	0.0134 U	0.0135 U	0.0133 U [0.016 U]	NA	NA	0.0115 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0111 U	**0.193**	0.0404 J	0.00992 U	NA	0.0112 U	0.0113 U	0.043 J [0.0134 U]	NA	NA	0.135
Naphthalene	3.8	17	- -	mg/kg	0.00995 U	0.15	0.483	NA	NA	0.0101 U	0.0101 U	0.00995 U [0.012 U]	NA	NA	0.00861 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.00995 U	0.501	0.303	NA	NA	0.0101 U	0.078	0.0463 J [0.012 U]	NA	NA	0.0637 J
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0133 U	0.664	0.134	NA	NA	0.0134 U	0.0664 J	0.092 [0.016 U]	NA	NA	0.294
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	12.1	**30.7 J**	**31.1 J**	14.4	8.18	9.02	13.3 J	11.7 J [11.3 J]	NA	NA	**112 J**
Lead	400	800	- -	mg/kg	14.3	61 J	64.3 J	NA	NA	8.52	25.7 J	38.5 J [44.8 J]	NA	NA	31.6 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.000427 U	0.044	0.1 DJ	NA	NA	0.00049 U	0.0377	0.000872 J [0.000489 U]	NA	NA	0.12
4,4'-DDE	2	9.3	- -	mg/kg	0.000496 U	0.944 D	**2.32 D**	0.0011 J	0.000487 U	0.000938 J	0.866 D	0.0103 J [0.00378 J]	NA	NA	0.701
4,4'-DDT	1.9	8.5	- -	mg/kg	0.000844 U	0.459 J	1.35 D	NA	NA	0.0026	0.109	0.00248 JN [0.00193 U]	NA	NA	0.683
Aldrin	0.039	0.18	- -	mg/kg	0.000308 U	0.00352 U	0.000379 U	NA	NA	0.000353 U	0.0035 U	0.000348 U [0.000353 U]	NA	NA	0.00613 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.000199 U	0.00227 U	0.071 D	NA	NA	0.000228 U	0.00226 U	0.000225 U [0.000228 U]	NA	NA	0.00395 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.000427 U	0.00488 U	0.0205 JN	NA	NA	0.00049 U	0.00485 U	0.000483 U [0.000489 U]	NA	NA	0.0085 U
beta-BHC	0.3	1.3	- -	mg/kg	0.000367 J	0.00227 U	**0.485 D**	0.0106	0.000195 U	0.000228 U	0.00493 J	0.000671 J [0.00375 UB]	NA	NA	0.00395 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.036 U	0.412 U	0.444 U	NA	NA	0.0414 U	0.41 U	0.0408 U [0.0413 U]	NA	NA	0.718 U
delta-BHC	- -	- -	- -	mg/kg	0.000377 U	0.00431 U	0.0138	NA	NA	0.000433 U	0.00429 U	0.000427 U [0.000432 U]	NA	NA	0.00751 U
Dieldrin	0.034	0.14	- -	mg/kg	0.000527 J	**0.041**	**0.215 D**	0.000392 U	0.00039 U	0.000456 U	0.0244	0.000679 J [0.000455 U]	NA	NA	0.00791 U
Endosulfan I	470	470	- -	mg/kg	0.000466 U	0.00534 U	0.000575 U	NA	NA	0.000535 U	0.00531 U	0.000528 U [0.000535 U]	NA	NA	0.00929 U
Endosulfan II	470	470	- -	mg/kg	0.000546 U	0.00625 U	0.000672 U	NA	NA	0.000627 U	0.00621 U	0.000617 U [0.000626 U]	NA	NA	0.0109 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000496 U	0.00568 U	0.000611 U	NA	NA	0.00057 U	0.00565 U	0.000561 U [0.000569 U]	NA	NA	0.00989 U
Endrin	19	250	- -	mg/kg	0.000427 U	0.00488 U	0.000526 U	NA	NA	0.00049 U	0.00485 U	0.000483 U [0.000489 U]	NA	NA	0.0085 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.000506 U	0.00579 U	0.000624 U	NA	NA	0.000581 U	0.00576 U	0.000573 U [0.00058 U]	NA	NA	0.0101 U
Endrin ketone	- -	- -	- -	mg/kg	0.000586 U	0.0067 U	0.0057	NA	NA	0.000672 U	0.00666 U	0.000662 U [0.000671 U]	NA	NA	0.0117 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000387 U	0.00443 U	0.0354	NA	NA	0.000444 U	0.0044 U	0.000438 U [0.000444 U]	NA	NA	0.00771 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000784 U	0.00897 U	0.0611	NA	NA	0.0009 U	0.00892 U	0.000887 U [0.000899 U]	NA	NA	0.0156 U
Heptachlor	0.13	0.63	- -	mg/kg	0.000417 U	0.00477 U	0.000513 U	NA	NA	0.000479 U	0.00474 U	0.000471 U [0.000478 U]	NA	NA	0.0083 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000645 U	0.00738 U	0.000795 U	NA	NA	0.000741 U	0.00734 U	0.00073 U [0.00074 U]	NA	NA	0.0129 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.000486 U	0.00556 U	0.000599 U	NA	NA	0.000558 U	0.00553 U	0.00055 U [0.000558 U]	NA	NA	0.00969 U
Toxaphene	0.49	2.1	- -	mg/kg	0.0419 U	0.479 U	0.0516 U	NA	NA	0.0481 U	0.476 U	0.0474 U [0.048 U]	NA	NA	0.834 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-137	BL-SB-137	BL-SB-137	BL-SB-138	BL-SB-139	BL-SB-139	BL-SB-140	BL-SB-140	BL-SB-141	BL-SB-141	BL-SB-141
Sample Depth(Feet):	Residential	Industrial	Background		1 - 2	2 - 4	8 - 10	0 - 1	0 - 1	1 - 2	0 - 1	1 - 2	0 - 1	1 - 2	2 - 4
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/17/14	09/17/14	09/17/14	09/17/14	09/16/14	09/16/14	09/16/14	09/16/14	09/17/14	09/17/14	09/17/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-137_1_2	BL-SB-137_2_4	BL-SB-137_8_10	BL-SB-138_0_1	BL-SB-139_0_1	BL-SB-139_1_2	BL-SB-140_0_1	BL-SB-140_1_2	BL-SB-141_0_1	BL-SB-141_1_2	BL-SB-141_2_4
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0137 U [0.0137 U]	NA	0.0138 U	0.0218 J	0.0139 U	0.0139 U	0.0135 U	0.014 U	0.036 J	0.0135 U	0.0137 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0156 U [0.0157 U]	NA	0.0158 U	0.0228 J	0.0158 U	0.0159 U	0.0154 U	0.016 U	0.0432 J	0.0154 U	0.0156 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00975 U [0.0098 U]	NA	0.00985 U	0.00959 U	0.0099 U	0.00995 U	0.00961 U	0.00999 U	0.00964 U	0.00962 U	0.00977 U
Acenaphthylene	- -	- -	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.00864 U	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.0673	0.00866 U	0.0088 U
Anthracene	18,000	230,000	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.0456 J	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.056 J	0.00866 U	0.0088 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0146 U [0.0147 U]	0.0178 U	0.0148 U	0.131	0.0148 U	0.0149 U	0.0144 U	0.015 U	0.141	0.0144 U	0.0147 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0117 U [0.0118 U]	0.0142 U	0.0118 U	**0.139**	0.0119 U	0.0119 U	0.0115 U	0.012 U	**0.197**	0.0115 U	0.0117 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0117 U [0.0118 U]	0.0142 U	0.0118 U	**0.213**	0.04 J	0.0377 J	0.0714	0.012 U	**0.415**	0.0115 U	0.0117 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.108	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.162	0.00866 U	0.0088 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0137 U [0.0137 U]	NA	0.0138 U	0.0893	0.0139 U	0.0139 U	0.0173 J	0.014 U	0.125	0.0135 U	0.0137 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.146	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.193	0.00866 U	0.0088 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00683 U [0.00686 U]	0.0083 U	0.00689 U	0.00672 U	0.00693 U	0.00696 U	0.00673 U	0.007 U	**0.0496 J**	0.00673 U	0.00684 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.295	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.172	0.00866 U	0.0088 U
Fluorene	2,400	30,000	- -	mg/kg	0.0117 U [0.0118 U]	NA	0.0118 U	0.0115 U	0.0119 U	0.0119 U	0.0115 U	0.012 U	0.0116 U	0.0115 U	0.0117 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00975 U [0.0098 U]	NA	0.00985 U	0.0898	0.0099 U	0.0335 J	0.0409 J	0.00999 U	0.136	0.00962 U	0.00977 U
Naphthalene	3.8	17	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.00864 U	0.00891 U	0.00895 U	0.00865 U	0.00899 U	0.00868 U	0.00866 U	0.0088 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.00878 U [0.00882 U]	NA	0.00886 U	0.177	0.00891 U	0.00895 U	0.0154 J	0.00899 U	0.0607 J	0.00866 U	0.0088 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0117 U [0.0118 U]	NA	0.0118 U	0.254	0.0119 U	0.0119 U	0.038 J	0.012 U	0.196	0.0115 U	0.0117 U
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	10.1 J [7.96 J]	9.77	15.2 J	0.971 UJ	15.7	10.6	10.8	11.9	**30.8 J**	12.9 J	1.52 J
Lead	400	800	- -	mg/kg	132 [9.83 J]	NA	177 J	7.61 J	8.1 J	28.6 J	17.8 J	70.6 J	118 J	22.6 J	3.89 J
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.325 [0.216]	NA	0.000425 U	0.218	0.00288	0.00346 J	0.000421 U	0.0114	0.0131 J	0.000429 U	0.00042 U
4,4'-DDE	2	9.3	- -	mg/kg	0.501 D [0.419]	NA	0.000494 U	0.187	0.0235	0.00369	0.00771	0.0005 U	0.0647	0.000499 U	0.000489 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.307 [0.145]	NA	0.00084 U	0.152	0.00269 J	0.00161 J	0.000833 UJ	0.0118 J	0.115	0.000848 U	0.000831 U
Aldrin	0.039	0.18	- -	mg/kg	0.0031 U [0.00303 U]	NA	0.000306 U	0.00306 U	0.000298 U	0.000308 U	0.000304 U	0.00031 U	0.00303 U	0.000309 U	0.000303 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.002 U [0.00195 U]	NA	0.000198 U	0.00197 U	0.000192 U	0.000199 U	0.000196 U	0.0002 U	0.00196 U	0.0002 U	0.000195 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00429 U [0.0042 U]	NA	0.000425 U	0.00424 U	0.000413 U	0.000427 U	0.000421 U	0.00043 U	0.00421 U	0.000429 U	0.00042 U
beta-BHC	0.3	1.3	- -	mg/kg	0.0134 J [0.0138 J]	NA	0.000198 U	0.00197 U	0.000192 U	0.000199 U	0.000196 U	0.0002 U	0.00196 U	0.0002 U	0.000195 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.363 U [0.355 U]	NA	0.0359 U	0.358 U	0.0348 U	0.0361 U	0.0356 U	0.0363 U	0.355 U	0.0362 U	0.0355 U
delta-BHC	- -	- -	- -	mg/kg	0.0038 U [0.00371 U]	NA	0.000375 U	0.00375 U	0.000365 U	0.000378 U	0.000372 U	0.00038 U	0.00372 U	0.000379 U	0.000371 U
Dieldrin	0.034	0.14	- -	mg/kg	0.004 U [0.00391 U]	NA	0.000395 U	0.00395 U	0.000384 U	0.000397 U	0.000392 U	0.0004 U	0.00391 U	0.000399 U	0.000391 U
Endosulfan I	470	470	- -	mg/kg	0.00469 U [0.00459 U]	NA	0.000464 U	0.00464 U	0.000451 U	0.000467 U	0.00046 U	0.00047 U	0.0046 U	0.000469 U	0.000459 U
Endosulfan II	470	470	- -	mg/kg	0.00549 U [0.00537 U]	NA	0.000543 U	0.00543 U	0.000528 U	0.000547 U	0.000539 U	0.00055 U	0.00538 U	0.000549 U	0.000538 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00499 U [0.00488 U]	NA	0.000494 U	0.00494 U	0.00048 U	0.000497 U	0.00049 U	0.0005 U	0.00489 U	0.000499 U	0.000489 U
Endrin	19	250	- -	mg/kg	0.00429 U [0.0042 U]	NA	0.000425 U	0.00424 U	0.000413 U	0.000427 U	0.000421 U	0.00043 U	0.00421 U	0.000429 U	0.00042 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.00509 U [0.00498 U]	NA	0.000504 U	0.00503 U	0.000489 U	0.000507 U	0.0005 U	0.00051 U	0.00499 U	0.000509 U	0.000498 U
Endrin ketone	- -	- -	- -	mg/kg	0.00589 U [0.00576 U]	NA	0.000583 U	0.00582 U	0.000566 U	0.000586 U	0.000578 U	0.000589 U	0.00577 U	0.000589 U	0.000577 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.0039 U [0.00381 U]	NA	0.000385 U	0.00385 U	0.000374 U	0.000388 U	0.000382 U	0.00039 U	0.00382 U	0.000389 U	0.000381 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00789 U [0.00772 U]	NA	0.00078 U	0.0078 U	0.000758 U	0.000785 U	0.000774 U	0.000789 U	0.00773 U	0.000788 U	0.000772 U
Heptachlor	0.13	0.63	- -	mg/kg	0.00419 U [0.0041 U]	NA	0.000415 U	0.00415 U	0.000403 U	0.000417 U	0.000412 U	0.00042 U	0.00411 U	0.000419 U	0.00041 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00649 U [0.00635 U]	NA	0.000642 U	0.00642 U	0.000624 U	0.000646 U	0.000637 U	0.000649 U	0.00636 U	0.000649 U	0.000635 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00489 U [0.00479 U]	NA	0.000484 U	0.00484 U	0.00047 UJ	0.000487 UJ	0.00048 UJ	0.00049 UJ	0.0048 U	0.000489 U	0.000479 U
Toxaphene	0.49	2.1	- -	mg/kg	0.421 U [0.412 U]	NA	0.0417 U	0.417 U	0.0405 U	0.0419 U	0.0413 U	0.0422 U	0.413 U	0.0421 U	0.0412 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-142	BL-SB-142	BL-SB-142	BL-SB-142	BL-SB-143	BL-SB-143	BL-SB-143	BL-SB-143	BL-SB-144	BL-SB-144	BL-SB-144
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 4	4 - 6	10 - 12	12 - 14	14 - 16
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/17/14	09/17/14	09/17/14	09/17/14	09/16/14	09/16/14	09/16/14	09/16/14	09/16/14	09/16/14	09/16/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-142_0_1	BL-SB-142_1_2	BL-SB-142_2_4	BL-SB-142_4_6	BL-SB-143_0_1	BL-SB-143_1_2	BL-SB-143_2_4	BL-SB-143_4_6	BL-SB-144_10_12	BL-SB-144_12_14	BL-SB-144_14_16
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0139 U	0.0139 U	NA	NA	0.0134 U	0.0287 J	NA	NA	0.0138 U [0.0139 U]	0.0139 U	0.0137 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0406 J	0.0159 U	NA	NA	0.0153 U	0.0332 J	NA	NA	0.0157 U [0.0159 U]	0.0159 U	0.0157 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00996 U	0.00996 U	NA	NA	0.00955 U	0.0608 J	NA	NA	0.00984 U [0.00996 U]	0.00992 U	0.00979 U
Acenaphthylene	- -	- -	- -	mg/kg	0.0498 J	0.00897 U	NA	NA	0.0086 U	0.0358 J	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Anthracene	18,000	230,000	- -	mg/kg	0.0416 J	0.00897 U	NA	NA	0.0323 J	0.147	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.137	0.0149 U	NA	NA	0.154	**0.322**	0.0852 U	0.0172 U	0.0148 U [0.0149 U]	0.0149 U	0.0147 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.201**	0.012 U	0.0143 U	NA	**0.145**	**0.334**	0.0681 U	0.0137 U	0.0118 U [0.0119 U]	0.0119 U	0.0117 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.356**	0.012 U	0.0143 U	NA	**0.274**	**0.474**	0.128 J	0.0137 U	0.0118 U [0.0119 U]	0.0119 U	0.0117 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.138	0.00897 U	NA	NA	0.103	0.204	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.141	0.0139 U	NA	NA	0.0877	0.155	NA	NA	0.0138 U [0.0139 U]	0.0139 U	0.0137 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.207	0.00897 U	NA	NA	0.192	0.363	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**0.0384 J**	0.00697 U	0.00837 U	NA	**0.0525 J**	**0.0667**	0.0397 U	0.00802 U	0.00689 U [0.00697 U]	0.00695 U	0.00685 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.149	0.00897 U	NA	NA	0.358	0.708	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Fluorene	2,400	30,000	- -	mg/kg	0.012 U	0.012 U	NA	NA	0.0115 U	0.0691	NA	NA	0.0118 U [0.0119 U]	0.0119 U	0.0117 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.128	0.00996 U	NA	NA	0.108	**0.193**	0.0568 U	0.0115 U	0.00984 U [0.00996 U]	0.00992 U	0.00979 U
Naphthalene	3.8	17	- -	mg/kg	0.00896 U	0.00897 U	NA	NA	0.0086 U	0.0498 J	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0456 J	0.00897 U	NA	NA	0.134	0.583	NA	NA	0.00885 U [0.00896 U]	0.00893 U	0.00881 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.16	0.012 U	NA	NA	0.324	0.652	NA	NA	0.0118 U [0.0119 U]	0.0119 U	0.0117 U
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	**41.4 J**	**69.3 J**	7.92	14.1	4.86	11.5	NA	NA	12.1 [9.39]	12.3	8.73
Lead	400	800	- -	mg/kg	**744 J**	5.32 J	14.1	NA	8 J	83.2 J	NA	NA	18.8 [19.9]	16.1	15.2
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.141	0.292 D	NA	NA	0.000425 U	0.00773 J	NA	NA	0.000408 U [0.000418 U]	0.000426 U	0.000427 U
4,4'-DDE	2	9.3	- -	mg/kg	0.442	0.221 D	NA	NA	0.000494 U	0.00758 J	NA	NA	0.000475 U [0.000486 U]	0.000495 U	0.000497 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.121	**6.18 D**	0.0519 D	0.178 D	0.00145 J	0.0143 J	NA	NA	0.000807 U [0.00165 U]	0.000841 U	0.000845 U
Aldrin	0.039	0.18	- -	mg/kg	0.00308 U	0.000301 U	NA	NA	0.000306 U	0.000307 U	NA	NA	0.000294 U [0.000301 U]	0.000307 U	0.000308 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.00198 U	0.00165 U	NA	NA	0.000198 U	0.000198 U	NA	NA	0.00019 U [0.000194 U]	0.000198 U	0.000199 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00427 U	0.0019 JN	NA	NA	0.000425 U	0.000426 U	NA	NA	0.000408 U [0.000418 U]	0.000426 U	0.000427 U
beta-BHC	0.3	1.3	- -	mg/kg	0.00614 J	0.0115 J	NA	NA	0.000198 U	0.000198 U	NA	NA	0.00019 U [0.000194 U]	0.000198 U	0.000199 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.36 U	0.0935	NA	NA	0.0359 U	0.0359 U	NA	NA	0.0345 U [0.0353 U]	0.0359 U	0.0361 U
delta-BHC	- -	- -	- -	mg/kg	0.00377 U	0.000369 U	NA	NA	0.000376 U	0.000376 U	NA	NA	0.000361 U [0.000369 U]	0.000376 U	0.000378 U
Dieldrin	0.034	0.14	- -	mg/kg	0.00639 J	**0.0576 D**	0.00677	0.000866 J	0.000395 U	0.000396 U	NA	NA	0.00038 U [0.000388 U]	0.000396 U	0.000398 U
Endosulfan I	470	470	- -	mg/kg	0.00466 U	0.000456 U	NA	NA	0.000464 U	0.000465 U	NA	NA	0.000446 U [0.000456 U]	0.000465 U	0.000467 U
Endosulfan II	470	470	- -	mg/kg	0.00546 U	0.000534 U	NA	NA	0.000544 U	0.000545 U	NA	NA	0.000522 U [0.000534 U]	0.000544 U	0.000547 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00496 U	0.000485 U	NA	NA	0.000494 U	0.000495 U	NA	NA	0.000475 U [0.000486 U]	0.000495 U	0.000497 U
Endrin	19	250	- -	mg/kg	0.00427 U	0.000417 U	NA	NA	0.000425 U	0.000426 U	NA	NA	0.000408 U [0.000418 U]	0.000426 U	0.000427 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.00506 U	0.000495 U	NA	NA	0.000504 U	0.000505 U	NA	NA	0.000484 U [0.000495 U]	0.000505 U	0.000507 U
Endrin ketone	- -	- -	- -	mg/kg	0.00586 U	0.000572 U	NA	NA	0.000583 U	0.000584 U	NA	NA	0.00056 U [0.000573 U]	0.000584 U	0.000586 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00387 U	0.000378 U	NA	NA	0.000385 U	0.000386 U	NA	NA	0.00037 U [0.000379 U]	0.000386 U	0.000388 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00784 U	0.00642 JN	NA	NA	0.000781 U	0.000782 U	NA	NA	0.00075 U [0.000767 U]	0.000782 U	0.000785 U
Heptachlor	0.13	0.63	- -	mg/kg	0.00417 U	0.000407 U	NA	NA	0.000415 U	0.000416 U	NA	NA	0.000399 U [0.000408 U]	0.000416 U	0.000417 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00645 U	0.000631 U	NA	NA	0.000642 U	0.000644 U	NA	NA	0.000617 U [0.000631 U]	0.000643 U	0.000646 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00486 U	0.0032 U	NA	NA	0.000484 UJ	0.000485 UJ	NA	NA	0.000465 U [0.000476 U]	0.000485 U	0.000487 U
Toxaphene	0.49	2.1	- -	mg/kg	0.419 U	**0.791 J**	0.042 U	0.0419 U	0.0417 U	0.0418 U	NA	NA	0.0401 U [0.041 U]	0.0418 U	0.0419 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-145	BL-SB-145	BL-SB-145	BL-SB-145	BL-SB-145	BL-SB-145	BL-SB-146	BL-SB-146R	BL-SB-146R	BL-SB-146R	BL-SB-146R
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	0 - 1	0 - 1	1 - 2	2 - 4	4 - 6
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/16/14	09/16/14	09/16/14	09/16/14	09/20/14	09/16/14	09/17/14	09/30/14	09/30/14	09/30/14	09/30/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-145_0_1	BL-SB-145_1_2	BL-SB-145_2_4	BL-SB-145_4_6	BL-SB-145_6_8	BL-SB-145_8_10	BL-SB-146_0_1	BL-SB-146R_0_1	BL-SB-146R_1_2	BL-SB-146R_2_4	BL-SB-146R_4_6
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0139 U	0.0139 U	NA	NA	NA	NA	0.0371 J	0.014 UJ	0.0137 UJ	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0158 U	0.0158 U	NA	NA	NA	NA	0.0443 J	0.016 UJ	0.0157 UJ	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0099 U	0.0099 U	NA	NA	NA	NA	0.00971 U	0.00999 UJ	0.00982 UJ	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.00891 U	0.00891 U	NA	NA	NA	NA	0.0702	0.00899 UJ	0.00883 UJ	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0104 J	0.0203 J	NA	NA	NA	NA	0.0467 J	0.0205 J	0.0181 J	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0492 J	0.127	NA	NA	NA	NA	0.0818	0.0573 J	0.0485 J	NA	NA
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.0461 J**	**0.0946**	**0.359**	**0.209 J**	0.0148 U	0.0143 U	**0.091**	**0.0549 J**	**0.0469 J**	0.0143 UJ	0.0135 UJ
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0902	**0.197**	**0.466**	**0.253 J**	0.0148 U	0.0143 U	**0.175**	0.0926 J	0.0764 J	NA	NA
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.00891 U	0.0857	NA	NA	NA	NA	0.0871	0.0411 J	0.0338 J	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0272 J	0.0705	NA	NA	NA	NA	0.0605 J	0.0314 J	0.0252 J	NA	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0523 J	0.136	NA	NA	NA	NA	0.103	0.0585 J	0.0475 J	NA	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00693 U	**0.048 J**	0.0334 U	0.0397 U	NA	NA	0.0068 U	0.00699 UJ	0.00687 UJ	NA	NA
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0982	0.278	NA	NA	NA	NA	0.148	0.0974 J	0.0839 J	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0119 U	0.0119 U	NA	NA	NA	NA	0.0117 U	0.012 UJ	0.0118 UJ	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0507 J	0.0929	NA	NA	NA	NA	0.072	0.0377 J	0.00982 UJ	NA	NA
Naphthalene	3.8	17	- -	mg/kg	0.00891 U	0.00891 U	NA	NA	NA	NA	0.0301 J	0.00899 UJ	0.00883 UJ	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.053 J	0.118	NA	NA	NA	NA	0.0837	0.0492 J	0.0497 J	NA	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0879	0.258	NA	NA	NA	NA	0.125	0.0897 J	0.0744 J	NA	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	11.7	8.22	NA	NA	NA	NA	**97.4 J**	8.13	9.24	NA	NA
Lead	400	800	- -	mg/kg	**507 J**	66 J	102	NA	NA	NA	66.1 J	96.6 J	6.49 J	NA	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00443 JN	0.000418 U	NA	NA	NA	NA	0.00429 U	0.0043 UJ	0.00426 UJ	NA	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.0081 J	0.00371 J	NA	NA	NA	NA	0.00499 U	0.005 UJ	0.0065 J	NA	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0318 J	0.0089 J	NA	NA	NA	NA	0.00848 U	0.00849 UJ	0.0376 J	NA	NA
Aldrin	0.039	0.18	- -	mg/kg	0.000281 U	0.000301 U	NA	NA	NA	NA	0.00309 U	0.0031 UJ	0.00307 UJ	NA	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.000181 U	0.000194 U	NA	NA	NA	NA	0.00199 U	0.002 UJ	0.00198 UJ	NA	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00039 U	0.000418 U	NA	NA	NA	NA	0.00429 U	0.0043 UJ	0.00426 UJ	NA	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.000181 U	0.000194 U	NA	NA	NA	NA	0.00199 U	0.002 UJ	0.00198 UJ	NA	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0329 U	0.0353 U	NA	NA	NA	NA	0.362 U	0.363 UJ	0.36 UJ	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.000345 U	0.000369 U	NA	NA	NA	NA	0.00379 U	0.0038 UJ	0.00376 UJ	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.000363 U	0.000389 U	NA	NA	NA	NA	0.00399 U	0.004 UJ	0.00396 UJ	NA	NA
Endosulfan I	470	470	- -	mg/kg	0.000426 U	0.000457 U	NA	NA	NA	NA	0.00469 U	0.0047 UJ	0.00466 UJ	NA	NA
Endosulfan II	470	470	- -	mg/kg	0.000499 U	0.000534 U	NA	NA	NA	NA	0.00549 U	0.0055 UJ	0.00545 UJ	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000453 U	0.000486 U	NA	NA	NA	NA	0.00499 U	0.005 UJ	0.00495 UJ	NA	NA
Endrin	19	250	- -	mg/kg	0.00039 U	0.000418 U	NA	NA	NA	NA	0.00429 U	0.0043 UJ	0.00426 UJ	NA	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.000463 U	0.000496 U	NA	NA	NA	NA	0.00509 U	0.0051 UJ	0.00505 UJ	NA	NA
Endrin ketone	- -	- -	- -	mg/kg	0.000535 U	0.000573 U	NA	NA	NA	NA	0.00589 U	0.0059 UJ	0.00584 UJ	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.000354 U	0.000379 U	NA	NA	NA	NA	0.00389 U	0.0039 UJ	0.00386 UJ	NA	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.000717 U	0.00165 U	NA	NA	NA	NA	0.00788 U	0.00789 UJ	0.00783 UJ	NA	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.000381 U	0.000408 U	NA	NA	NA	NA	0.00419 U	0.0042 UJ	0.00416 UJ	NA	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00059 U	0.000632 U	NA	NA	NA	NA	0.00648 U	0.00649 UJ	0.00644 UJ	NA	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.000444 U	0.000476 UJ	NA	NA	NA	NA	0.00489 U	0.0049 UJ	0.00485 UJ	NA	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.0383 U	0.041 U	NA	NA	NA	NA	0.421 U	0.422 UJ	0.418 UJ	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-147	BL-SB-147	BL-SB-147	BL-SB-147	BL-SB-148	BL-SB-148	BL-SB-148R	BL-SB-148R	BL-SB-148R	BL-SB-148R	BL-SB-148R
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	0 - 1	1 - 2	2 - 4	4 - 6	6 - 8
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/17/14	09/17/14	09/17/14	09/17/14	09/16/14	09/16/14	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-147_0_1	BL-SB-147_1_2	BL-SB-147_2_4	BL-SB-147_4_6	BL-SB-148_0_1	BL-SB-148_1_2	BL-SB-148R_0_1	BL-SB-148R_1_2	BL-SB-148R_2_4	BL-SB-148R_4_6	BL-SB-148R_6_8
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0855	0.0339 J	NA	NA	0.0338 J	0.139 U	0.126 J	0.766 J	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0985	0.0368 J	NA	NA	0.0463 J	0.159 U	0.168 J	0.767 J	NA	NA	NA
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00956 U	0.00987 U	NA	NA	0.00968 U	0.0992 U	0.00972 UJ	2.88 J	NA	NA	NA
Acenaphthylene	- -	- -	- -	mg/kg	0.0086 U	0.0464 J	NA	NA	0.00871 U	0.0892 U	0.0913 J	0.878 J	NA	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	0.0186 J	0.0797	NA	NA	0.0168 J	0.181 J	0.106 J	10.1 J	NA	NA	NA
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0506 J	**0.17**	0.0176 U	0.0169 U	0.0752	**0.628 J**	**0.362 J**	**16.4 DJ**	**1.37 J**	0.0401 J	0.0177 UJ
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.0503 J**	**0.196**	0.0141 U	0.0135 U	**0.0696**	**0.606 J**	**0.44 J**	**14.8 J**	**1.06 J**	0.0145 UJ	0.0142 UJ
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0824	**0.364**	0.0141 U	0.0135 U	0.121	**1.03**	**0.744 J**	**19.3 DJ**	**1.49 J**	0.0429 J	0.0142 UJ
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0086 U	0.145	NA	NA	0.0433 J	0.327 J	0.306 J	9.4 J	NA	NA	NA
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.0321 J	0.107	NA	NA	0.0353 J	0.277 J	0.269 J	**2.9 J**	0.179 J	0.021 J	NA
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0499 J	0.207	NA	NA	0.0798	0.687	0.398 J	15.4 J	1.35 J	0.0441 J	NA
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00669 U	**0.0445 J**	0.00823 U	0.0079 U	**0.0344 J**	**0.337 J**	**0.0879 J**	**1.07 J**	**0.186 J**	0.00845 UJ	0.00828 UJ
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0783	0.25	NA	NA	0.138	1.27	0.508 J	43.5 DJ	NA	NA	NA
Fluorene	2,400	30,000	- -	mg/kg	0.0115 U	0.0118 U	NA	NA	0.0116 U	0.119 U	0.0117 UJ	4.76 J	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.00956 U	0.138	0.0118 U	0.0113 U	0.0601 J	**0.531 J**	**0.284 J**	**8.8 J**	**0.56 J**	0.0121 UJ	0.0118 UJ
Naphthalene	3.8	17	- -	mg/kg	0.0546 J	0.00888 U	NA	NA	0.00871 U	0.0892 U	0.0972 J	0.574 J	NA	NA	NA
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0963	0.171	NA	NA	0.081	0.771	0.241 J	37 DJ	NA	NA	NA
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.0723	0.239	NA	NA	0.136	1.15	0.494 J	34.8 DJ	NA	NA	NA
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	**37.5 J**	15.6 J	13.8	NA	8.19	20.1	9.54	12.5	NA	NA	NA
Lead	400	800	- -	mg/kg	110 J	9.22	NA	NA	27.1 J	187 J	3.44 J	56.6 J	NA	NA	NA
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00427 U	0.0084 U	NA	NA	0.00165 U	0.0484	0.0167 J	0.0504 DJ	NA	NA	NA
4,4'-DDE	2	9.3	- -	mg/kg	0.0692	0.00976 U	NA	NA	0.00165 U	0.0169 U	0.0918 J	0.0401 J	NA	NA	NA
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0412	0.0166 U	NA	NA	0.00362 J	0.0332 J	0.0541 J	0.616 DJ	NA	NA	NA
Aldrin	0.039	0.18	- -	mg/kg	0.00308 U	0.00605 U	NA	NA	0.000302 U	0.00308 U	0.00304 UJ	0.00307 UJ	NA	NA	NA
alpha-BHC	0.086	0.36	- -	mg/kg	0.00199 U	0.00391 U	NA	NA	0.000195 U	0.00199 U	0.00196 UJ	0.00198 UJ	NA	NA	NA
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00427 U	0.0084 U	NA	NA	0.000418 U	0.00428 U	0.00422 UJ	0.00426 UJ	NA	NA	NA
beta-BHC	0.3	1.3	- -	mg/kg	0.00199 U	0.00391 U	NA	NA	0.000195 U	0.00199 U	0.00196 UJ	0.0327 UJ	NA	NA	NA
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.361 U	0.709 U	NA	NA	0.0353 U	0.361 U	0.356 UJ	0.36 UJ	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	0.00378 U	0.00742 U	NA	NA	0.00037 U	0.00378 U	0.00373 UJ	0.00376 UJ	NA	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	0.00398 U	0.00781 U	NA	NA	0.000389 U	0.00398 U	0.00392 UJ	0.0168 UJ	NA	NA	NA
Endosulfan I	470	470	- -	mg/kg	0.00467 U	0.00918 U	NA	NA	0.000457 U	0.00467 U	0.00461 UJ	0.00465 UJ	NA	NA	NA
Endosulfan II	470	470	- -	mg/kg	0.00547 U	0.0107 U	NA	NA	0.000535 U	0.00547 U	0.00539 UJ	0.00545 UJ	NA	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00497 U	0.00976 U	NA	NA	0.000486 U	0.00497 U	0.0049 UJ	0.00495 UJ	NA	NA	NA
Endrin	19	250	- -	mg/kg	0.00427 U	0.0084 U	NA	NA	0.000418 U	0.00428 U	0.00422 UJ	0.00426 UJ	NA	NA	NA
Endrin aldehyde	- -	- -	- -	mg/kg	0.00507 U	0.00996 U	NA	NA	0.000496 U	0.00507 U	0.005 UJ	0.00505 UJ	NA	NA	NA
Endrin ketone	- -	- -	- -	mg/kg	0.00587 U	0.0115 U	NA	NA	0.000574 U	0.00587 U	0.00578 UJ	0.00584 UJ	NA	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00388 U	0.00762 U	NA	NA	0.000379 U	0.00388 U	0.00382 UJ	0.00386 UJ	NA	NA	NA
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00785 U	0.0154 U	NA	NA	0.000768 U	0.00786 U	0.00774 UJ	0.00782 UJ	NA	NA	NA
Heptachlor	0.13	0.63	- -	mg/kg	0.00418 U	0.0082 U	NA	NA	0.000409 U	0.00418 U	0.00412 UJ	0.00416 UJ	NA	NA	NA
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00646 U	0.0127 U	NA	NA	0.000632 U	0.00647 U	0.00637 UJ	0.00644 UJ	NA	NA	NA
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00487 U	0.00957 U	NA	NA	0.000477 U	0.00487 U	0.0048 UJ	0.00485 UJ	NA	NA	NA
Toxaphene	0.49	2.1	- -	mg/kg	0.42 U	0.824 U	NA	NA	0.041 U	0.42 U	0.414 UJ	0.418 UJ	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-149	BL-SB-149	BL-SB-149	BL-SB-149	BL-SB-150	BL-SB-150	BL-SB-150	BL-SB-150	BL-SB-151	BL-SB-151	BL-SB-151
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 4	4 - 6	0 - 1	1 - 2	2 - 3
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/16/14	09/16/14	09/16/14	09/16/14	09/17/14	09/17/14	09/17/14	09/17/14	09/16/14	09/16/14	09/16/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-149_0_1	BL-SB-149_1_2	BL-SB-149_2_4	BL-SB-149_4_6	BL-SB-150_0_1	BL-SB-150_1_2	BL-SB-150_2_4	BL-SB-150_4_6	BL-SB-151_0_1	BL-SB-151_1_2	BL-SB-151_2_3
Detected Semivolatile Organics															
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.139 U	0.031 J	NA	NA	0.0386 J [0.0332 J]	0.116	NA	NA	0.138 U	0.0211 J	0.0138 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.159 U	0.0359 J	NA	NA	0.045 J [0.0412 J]	0.144	NA	NA	0.157 U	0.0198 J	0.0158 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.0994 U	0.00997 U	NA	NA	0.0157 J [0.0165 J]	0.303	NA	NA	0.0984 U	0.0561 J	0.0227 J
Acenaphthylene	- -	- -	- -	mg/kg	0.0895 U	0.0545 J	NA	NA	0.12 [0.0895]	0.0795	NA	NA	0.0973 J	0.0116 J	0.00886 U
Anthracene	18,000	230,000	- -	mg/kg	0.0895 U	0.0498 J	NA	NA	0.146 [0.102]	0.596	NA	NA	0.176 J	0.158	0.068
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.149 U	0.147	NA	NA	**0.396 [0.312]**	**1.45**	0.0183 U	0.0167 U	**0.671**	**0.399**	**0.238**
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.119 U	**0.187**	0.0142 U	0.0136 U	**0.43 [0.326]**	**1.25**	0.0147 U	0.0133 U	**0.69**	**0.41**	**0.245**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.381 J**	**0.354**	0.0142 U	0.0136 U	**0.729 [0.58]**	**1.84**	0.0147 U	0.0133 U	**1.26**	**0.473**	**0.299**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.0895 U	0.138	NA	NA	0.298 [0.226]	0.747	NA	NA	0.459 J	0.244	0.152
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.139 U	0.11	NA	NA	0.318 [0.199]	0.704	NA	NA	0.392 J	0.222	0.124
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.0895 U	0.191	NA	NA	0.431 [0.37]	1.5	NA	NA	0.763	0.39	0.223
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.0696 U	**0.0648 J**	0.00826 U	0.00791 U	**0.0947 [0.0595 J]**	**0.258**	0.00855 U	0.00777 U	**0.346 J**	**0.0667**	**0.0581 J**
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.0895 U	0.198	NA	NA	0.567 [0.565]	2.72	NA	NA	1.31	0.847	0.461
Fluorene	2,400	30,000	- -	mg/kg	0.119 U	0.012 U	NA	NA	0.0228 J [0.0119 U]	0.383	NA	NA	0.118 U	0.0576 J	0.0178 J
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0994 U	0.135	NA	NA	**0.271 [0.208]**	**0.685**	0.0122 U	0.0111 U	**0.593 J**	**0.222**	0.143
Naphthalene	3.8	17	- -	mg/kg	0.0895 U	0.0264 J	NA	NA	0.0411 J [0.0388 J]	0.365	NA	NA	0.0885 U	0.0184 J	0.0133 J
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.0895 U	0.0912	NA	NA	0.308 [0.276]	2.48	NA	NA	0.773	0.67	0.264
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.119 U	0.227	NA	NA	0.496 [0.47]	2.21	NA	NA	1.29	0.811	0.453
Detected Inorganics															
Arsenic	0.68	3	22.7	mg/kg	14.3	**178**	15.6	13.4	**88.2 J [6.98 J]**	12.1 J	14.4	NA	12.8	22.4	1.13 U
Lead	400	800	- -	mg/kg	52.9 J	101 J	NA	NA	88.2 J [218 J]	116 J	NA	NA	390 J	137 J	**45,500**
Detected Pesticides															
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.012 JN	0.00734 JN	NA	NA	0.00967 J [0.0151 J]	0.00402 U	NA	NA	0.0043 U	0.00166 U	0.000415 U
4,4'-DDE	2	9.3	- -	mg/kg	0.000487 U	0.0184 J	NA	NA	0.0671 [0.157]	0.00468 U	NA	NA	0.005 U	0.000488 U	0.000482 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0205 J	0.0141 J	NA	NA	0.0491 [0.0789]	0.00795 U	NA	NA	0.0085 U	0.000829 U	0.00082 U
Aldrin	0.039	0.18	- -	mg/kg	0.000302 U	0.000296 U	NA	NA	0.00303 U [0.00307 U]	0.0029 U	NA	NA	0.0031 U	0.000302 U	0.000299 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.00166 U	0.000191 U	NA	NA	0.00195 U [0.00198 U]	0.00187 U	NA	NA	0.002 U	0.000195 U	0.000193 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.000419 U	0.000411 U	NA	NA	0.0042 U [0.00425 U]	0.00402 U	NA	NA	0.0043 U	0.000419 U	0.000415 U
beta-BHC	0.3	1.3	- -	mg/kg	0.00322 U	0.000191 U	NA	NA	0.00195 U [0.00198 U]	0.00187 U	NA	NA	0.002 U	0.000195 U	0.000193 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.0354 U	0.0347 U	NA	NA	0.355 U [0.359 U]	0.34 U	NA	NA	0.363 U	0.0354 U	0.035 U
delta-BHC	- -	- -	- -	mg/kg	0.00037 U	0.000363 U	NA	NA	0.00371 U [0.00376 U]	0.00356 U	NA	NA	0.0038 U	0.000371 U	0.000366 U
Dieldrin	0.034	0.14	- -	mg/kg	0.00422 JN	0.00162 U	NA	NA	0.00391 U [0.00396 U]	0.00374 U	NA	NA	0.004 U	0.00039 U	0.000386 U
Endosulfan I	470	470	- -	mg/kg	0.000458 U	0.000449 U	NA	NA	0.00459 U [0.00465 U]	0.0044 U	NA	NA	0.0047 U	0.000458 U	0.000453 U
Endosulfan II	470	470	- -	mg/kg	0.000536 U	0.000526 U	NA	NA	0.00538 U [0.00544 U]	0.00515 U	NA	NA	0.0055 U	0.000536 U	0.00053 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.000487 U	0.000478 U	NA	NA	0.00489 U [0.00494 U]	0.00468 U	NA	NA	0.005 U	0.000488 U	0.000482 U
Endrin	19	250	- -	mg/kg	0.000419 U	0.000411 U	NA	NA	0.0042 U [0.00425 U]	0.00402 U	NA	NA	0.0043 U	0.000419 U	0.000415 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.000497 U	0.000487 U	NA	NA	0.00498 U [0.00504 U]	0.00477 U	NA	NA	0.0051 U	0.000497 U	0.000492 U
Endrin ketone	- -	- -	- -	mg/kg	0.000575 U	0.000564 U	NA	NA	0.00577 U [0.00583 U]	0.00552 U	NA	NA	0.0059 U	0.000575 U	0.000569 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00038 U	0.000373 U	NA	NA	0.00381 U [0.00386 U]	0.00365 U	NA	NA	0.0039 U	0.00038 U	0.000376 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00077 U	0.000755 U	NA	NA	0.00772 U [0.00781 U]	0.00739 U	NA	NA	0.0079 U	0.00077 U	0.000762 U
Heptachlor	0.13	0.63	- -	mg/kg	0.00166 U	0.000401 U	NA	NA	0.0041 U [0.00415 U]	0.00393 U	NA	NA	0.0042 U	0.00041 U	0.000405 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.000634 U	0.000621 U	NA	NA	0.00635 U [0.00643 U]	0.00608 U	NA	NA	0.0065 U	0.000634 U	0.000627 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.000478 UJ	0.000468 UJ	NA	NA	0.00479 U [0.00485 U]	0.00458 U	NA	NA	0.0049 U	0.00322 U	0.00318 U
Toxaphene	0.49	2.1	- -	mg/kg	0.0411 U	0.0403 U	NA	NA	0.412 U [0.417 U]	0.395 U	NA	NA	0.422 U	0.0412 U	0.0407 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-151	BL-SB-151A	BL-SB-151B	BL-SB-151C	BL-SB-151R	BL-SB-151R	BL-SB-151R	BL-SB-151R	BL-SB-151R	BL-SB-152
Sample Depth(Feet):	Residential	Industrial	Background		2 - 3	2 - 4	2 - 4	2 - 4	0 - 1	1 - 2	2 - 4	4 - 6	6 - 8	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		06/24/15	06/24/15	06/24/15	06/24/15	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	09/16/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-151_2_3	BL-SB-151A_2_4	BL-SB-151B_2_4	BL-SB-151C_2_4	BL-SB-151R_0_1	BL-SB-151R_1_2	BL-SB-151R_2_4	BL-SB-151R_4_6	BL-SB-151R_6_8	BL-SB-152_0_1
Detected Semivolatile Organics														
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	0.124 J	0.0475 J	NA	NA	NA	0.0296 J
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	NA	NA	NA	0.156 J	0.0569 J	NA	NA	NA	0.0374 J
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	NA	NA	NA	NA	0.0198 UJ	0.00975 UJ	NA	NA	NA	0.00984 U
Acenaphthylene	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.136 J	0.0579 J	NA	NA	NA	0.00886 U
Anthracene	18,000	230,000	- -	mg/kg	NA	NA	NA	NA	0.195 J	0.0708 J	NA	NA	NA	0.0242 J
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	**0.742 J**	**0.256 J**	**1.13 J**	0.0182 UJ	0.018 UJ	0.0771
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	NA	NA	NA	NA	**0.2 J**	**0.355 J**	**1.04 J**	0.0146 UJ	0.0144 UJ	**0.0801**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	**1.29 J**	**0.621 J**	**1.38 J**	0.0146 UJ	0.0144 UJ	0.149
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.494 J	0.254 J	NA	NA	NA	0.0554 J
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	NA	NA	NA	0.187 J	0.196 J	NA	NA	NA	0.0561 J
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	NA	NA	NA	0.854 J	0.322 J	NA	NA	NA	0.0836
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	NA	NA	NA	NA	**0.128 J**	**0.0454 J**	**0.19 J**	0.00849 UJ	0.0084 UJ	**0.0375 J**
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	NA	NA	NA	NA	1.3 J	0.483 J	NA	NA	NA	0.105
Fluorene	2,400	30,000	- -	mg/kg	NA	NA	NA	NA	0.0238 UJ	0.0117 UJ	NA	NA	NA	0.0118 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	NA	NA	NA	NA	**0.449 J**	**0.222 J**	**0.558 J**	0.0121 UJ	0.012 UJ	0.0714
Naphthalene	3.8	17	- -	mg/kg	NA	NA	NA	NA	0.0922 J	0.04 J	NA	NA	NA	0.023 J
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.591 J	0.297 J	NA	NA	NA	0.0555 J
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	NA	NA	NA	NA	1.17 J	0.591 J	NA	NA	NA	0.111
Detected Inorganics														
Arsenic	0.68	3	22.7	mg/kg	NA	NA	NA	NA	14.5	**56.4**	10.9	9.89	NA	12.6
Lead	400	800	- -	mg/kg	25.8	56.4	55.6	74.4	159 J	67.7 J	NA	NA	NA	26.6 J
Detected Pesticides														
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	NA	NA	NA	0.0308 J	**30.8 DJ**	0.00491 UJ	0.000512 UJ	NA	0.00167 U
4,4'-DDE	2	9.3	- -	mg/kg	NA	NA	NA	NA	0.131 J	**24.5 DJ**	0.00571 UJ	0.000595 UJ	NA	0.00386 JN
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	NA	NA	NA	0.0663 J	**591 DJ**	0.0097 UJ	0.00692 J	NA	0.00516 J
Aldrin	0.039	0.18	- -	mg/kg	NA	NA	NA	NA	0.00307 UJ	0.0305 UJ	NA	NA	NA	0.000304 U
alpha-BHC	0.086	0.36	- -	mg/kg	NA	NA	NA	NA	0.00198 UJ	**0.164 J**	0.00228 UJ	0.000238 UJ	NA	0.000196 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	0.00426 UJ	0.0423 UJ	NA	NA	NA	0.000421 U
beta-BHC	0.3	1.3	- -	mg/kg	NA	NA	NA	NA	0.00198 UJ	**7.76 DJ**	0.00228 UJ	0.000238 UJ	NA	0.000196 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	0.36 UJ	357 UJ	NA	NA	NA	0.0356 U
delta-BHC	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.00377 UJ	0.0374 UJ	NA	NA	NA	0.000372 U
Dieldrin	0.034	0.14	- -	mg/kg	NA	NA	NA	NA	0.00397 UJ	**8.76 DJ**	0.00457 UJ	0.000476 UJ	NA	0.00167 U
Endosulfan I	470	470	- -	mg/kg	NA	NA	NA	NA	0.00466 UJ	0.0462 UJ	NA	NA	NA	0.000461 U
Endosulfan II	470	470	- -	mg/kg	NA	NA	NA	NA	0.00545 UJ	0.0541 UJ	NA	NA	NA	0.000539 U
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.00496 UJ	0.0492 UJ	NA	NA	NA	0.00049 U
Endrin	19	250	- -	mg/kg	NA	NA	NA	NA	0.00426 UJ	0.0423 UJ	NA	NA	NA	0.000421 U
Endrin aldehyde	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.00506 UJ	0.0501 UJ	NA	NA	NA	0.0005 U
Endrin ketone	- -	- -	- -	mg/kg	NA	NA	NA	NA	0.00585 UJ	0.058 UJ	NA	NA	NA	0.000578 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	NA	NA	NA	0.00387 UJ	0.0453 J	NA	NA	NA	0.000382 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	0.00783 UJ	**2.94 J**	NA	NA	NA	0.000774 U
Heptachlor	0.13	0.63	- -	mg/kg	NA	NA	NA	NA	0.00417 UJ	0.0413 UJ	NA	NA	NA	0.00424
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	NA	NA	NA	0.00645 UJ	0.0639 UJ	NA	NA	NA	0.00167 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	NA	NA	NA	NA	0.00486 UJ	0.0482 UJ	NA	NA	NA	0.00048 UJ
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	0.418 UJ	4.15 UJ	NA	NA	NA	0.0414 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-152R	BL-SB-153	BL-SB-153
Sample Depth(Feet):	Residential	Industrial	Background		0 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	8 - 10	10 - 12	0 - 1	1 - 2
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	09/30/14	06/24/15	06/24/15	09/17/14	09/17/14
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-152R_0_1	BL-SB-152R_1_2	BL-SB-152R_2_4	BL-SB-152R_4_6	BL-SB-152R_6_8	BL-SB-152R_8_10	BL-SB-152R_8_10	BL-SB-152R_10_12	BL-SB-153_0_1	BL-SB-153_1_2
Detected Semivolatile Organics														
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-methyl-Naphthalene	18	73	- -	mg/kg	0.0138 UJ	0.0138 UJ	NA	NA	NA	NA	NA	NA	0.0367 J	0.0137 U
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	240	3,000	- -	mg/kg	0.0157 UJ	0.0158 UJ	NA	NA	NA	NA	NA	NA	0.0479 J	0.0157 U
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	3,600	45,000	- -	mg/kg	0.00984 UJ	0.00988 UJ	NA	NA	NA	NA	NA	NA	0.00987 U	0.00982 U
Acenaphthylene	- -	- -	- -	mg/kg	0.0784 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.14	0.00884 U
Anthracene	18,000	230,000	- -	mg/kg	0.0843 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.0847	0.00884 U
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	**0.336 J**	0.0148 UJ	**0.255 J**	0.0176 UJ	**0.184 J**	R	0.015 U	0.0147 U	**0.441**	0.0147 U
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	**0.336 J**	0.0119 UJ	**0.149 J**	0.0141 UJ	**0.146 J**	R	0.012 U	0.0117 U	**0.386**	0.0118 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	**0.583 J**	0.0119 UJ	**0.304 J**	0.0141 UJ	**0.195 J**	R	0.012 U	0.0117 U	**0.758**	0.0118 U
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	0.224 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.286	0.00884 U
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	0.221 J	0.0138 UJ	NA	NA	NA	NA	NA	NA	0.207	0.0137 U
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	0.361 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.704	0.00884 U
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	**0.0542 J**	0.00692 UJ	**0.0442 J**	0.00822 UJ	0.00805 UJ	NA	NA	NA	**0.104**	0.00687 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	2,400	30,000	- -	mg/kg	0.577 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.588	0.00884 U
Fluorene	2,400	30,000	- -	mg/kg	0.0118 UJ	0.0119 UJ	NA	NA	NA	NA	NA	NA	0.0118 U	0.0118 U
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	**0.215 J**	0.00988 UJ	0.121 J	NA	NA	NA	NA	NA	**0.238**	0.00982 U
Naphthalene	3.8	17	- -	mg/kg	0.00885 UJ	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.0403 J	0.00884 U
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	- -	- -	- -	mg/kg	0.165 J	0.00889 UJ	NA	NA	NA	NA	NA	NA	0.172	0.00884 U
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	1,800	23,000	- -	mg/kg	0.513 J	0.0119 UJ	NA	NA	NA	NA	NA	NA	0.589	0.0118 U
Detected Inorganics														
Arsenic	0.68	3	22.7	mg/kg	15.5	5.18	NA	NA	NA	NA	NA	NA	**157 J**	15.3 J
Lead	400	800	- -	mg/kg	64.2 J	7.9 J	NA	NA	NA	NA	NA	NA	153 J	14.8 J
Detected Pesticides														
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDD	2.3	9.6	- -	mg/kg	0.00424 UJ	0.00408 UJ	NA	NA	NA	NA	NA	NA	0.00423 U	0.00042 U
4,4'-DDE	2	9.3	- -	mg/kg	0.00493 UJ	0.00474 UJ	NA	NA	NA	NA	NA	NA	0.0167 U	0.000489 U
4,4'-DDT	1.9	8.5	- -	mg/kg	0.0172 J	0.00807 UJ	NA	NA	NA	NA	NA	NA	0.0224	0.00083 U
Aldrin	0.039	0.18	- -	mg/kg	0.00306 UJ	0.00294 UJ	NA	NA	NA	NA	NA	NA	0.00305 U	0.000303 U
alpha-BHC	0.086	0.36	- -	mg/kg	0.00197 UJ	0.0019 UJ	NA	NA	NA	NA	NA	NA	0.00197 U	0.000195 U
alpha-Chlordane	1.7	1.7	- -	mg/kg	0.00424 UJ	0.00408 UJ	NA	NA	NA	NA	NA	NA	0.00423 U	0.00042 U
beta-BHC	0.3	1.3	- -	mg/kg	0.00197 UJ	0.0019 UJ	NA	NA	NA	NA	NA	NA	0.00197 U	0.000195 U
Chlordane (technical)	1.7	1.7	- -	mg/kg	0.358 UJ	0.344 UJ	NA	NA	NA	NA	NA	NA	0.357 U	0.0355 U
delta-BHC	- -	- -	- -	mg/kg	0.00375 UJ	0.00361 UJ	NA	NA	NA	NA	NA	NA	0.00374 U	0.000371 U
Dieldrin	0.034	0.14	- -	mg/kg	0.00394 UJ	0.0038 UJ	NA	NA	NA	NA	NA	NA	0.00394 U	0.000391 U
Endosulfan I	470	470	- -	mg/kg	0.00463 UJ	0.00446 UJ	NA	NA	NA	NA	NA	NA	0.00463 U	0.000459 U
Endosulfan II	470	470	- -	mg/kg	0.00542 UJ	0.00522 UJ	NA	NA	NA	NA	NA	NA	0.00542 U	0.000537 U
Endosulfan sulfate	- -	- -	- -	mg/kg	0.00493 UJ	0.00474 UJ	NA	NA	NA	NA	NA	NA	0.00492 U	0.000489 U
Endrin	19	250	- -	mg/kg	0.00424 UJ	0.00408 UJ	NA	NA	NA	NA	NA	NA	0.00423 U	0.00042 U
Endrin aldehyde	- -	- -	- -	mg/kg	0.00503 UJ	0.00484 UJ	NA	NA	NA	NA	NA	NA	0.00502 U	0.000498 U
Endrin ketone	- -	- -	- -	mg/kg	0.00581 UJ	0.0056 UJ	NA	NA	NA	NA	NA	NA	0.00581 U	0.000576 U
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	0.00384 UJ	0.0037 UJ	NA	NA	NA	NA	NA	NA	0.00384 U	0.000381 U
gamma-Chlordane	1.7	1.7	- -	mg/kg	0.00779 UJ	0.0075 UJ	NA	NA	NA	NA	NA	NA	0.00778 U	0.000772 U
Heptachlor	0.13	0.63	- -	mg/kg	0.00414 UJ	0.00399 UJ	NA	NA	NA	NA	NA	NA	0.00414 U	0.00041 U
Heptachlor epoxide	0.07	0.33	- -	mg/kg	0.00641 UJ	0.00617 UJ	NA	NA	NA	NA	NA	NA	0.0064 U	0.000635 U
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	320	4,100	- -	mg/kg	0.00483 UJ	0.00465 UJ	NA	NA	NA	NA	NA	NA	0.00483 U	0.000479 U
Toxaphene	0.49	2.1	- -	mg/kg	0.416 UJ	0.4 UJ	NA	NA	NA	NA	NA	NA	0.416 U	0.0412 U

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		BL-SB-153	BL-SB-154	BL-SB-154	BL-SB-154	BL-SB-154	SB-A1	SB-A2	SB-A3	SB-A4	SB-A5	SB-A6	SB-A7	SB-A8
Sample Depth(Feet):	Residential	Industrial	Background		2 - 4	0 - 1	1 - 2	2 - 4	4 - 6	11 - 12	8 - 11	9 - 12	9 - 12	10 - 12	10 - 12	8 - 12	10 - 12
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		09/17/14	09/17/14	09/17/14	09/17/14	09/17/14	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11
Sample Name:	May2016	May2016	Concentration	Units	BL-SB-153_2_4	BL-SB-154_0_1	BL-SB-154_1_2	BL-SB-154_2_4	BL-SB-154_4_6	SB-A1	SB-A2	SB-A3	SB-A4	SB-A5	SB-A6	SB-A7	SB-A8
Detected Semivolatile Organics																	
1,1'-Biphenyl	47	200	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
3&4-Methylphenol	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Acetophenone	7,800	120,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	0.0378 J	0.0977 [0.0546 J]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Benzaldehyde	170	820	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
2-Methylnaphthalene	240	3,000	- -	mg/kg	NA	0.0464 J	0.125 [0.0697]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	0.517 J	ND	ND	ND	ND [ND]	ND
Acenaphthene	3,600	45,000	- -	mg/kg	NA	0.0099 U	0.01 U [0.0099 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Acenaphthylene	- -	- -	- -	mg/kg	NA	0.00891 U	0.009 U [0.00891 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	NA	0.0324 J	0.028 J [0.0176 J]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	0.0185 U	0.0774	0.0823 [0.0549 J]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.0148 U	**0.101**	**0.0868 [0.0579 J]**	0.0136 U	0.0143 U	**0.0583 JB**	**0.0523 JB**	**0.0651 JB**	0.1 U	0.056 UQ	0.058 U	**0.058 U [0.0604 J]**	0.057 U
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	0.0148 U	**0.172**	**0.165 [0.0924]**	0.0136 U	0.0143 U	**0.189 B**	**0.175 B**	**0.2 B**	ND	ND	ND	NA	**0.191**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	NA	0.0623 J	0.0685 [0.0383 J]	NA	NA	0.235	0.213	0.243	ND	ND	ND	NA	ND
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	NA	0.0714	0.06 J [0.0437 J]	NA	NA	ND	ND	ND	ND	ND	ND	NA	ND
Benzoic acid	250,000	3,300,000	- -	mg/kg	NA	NA	NA	NA	NA	0.531 JB	0.434 JB	0.504 JB	0.896 JB	ND	0.555 JB	0.537 JB [0.56 JB]	0.561 JB
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	NA	0.104	0.106 [0.0642 J]	NA	NA	ND	ND	ND	ND	ND	ND	NA	ND
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.00866 U	0.00693 U	0.007 U [0.00693 U]	NA	NA	**0.265**	0.052 U	**0.275**	0.1 U	0.056 UQ	0.058 U	**0.058 U [0.282]**	0.057 U
Dibenzofuran	73	1,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	0.743 B	ND	ND	0.29 JB	ND [ND]	0.341 JB
Fluoranthene	2,400	30,000	- -	mg/kg	NA	0.0937	0.134 [0.0869]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Fluorene	2,400	30,000	- -	mg/kg	NA	0.0119 U	0.012 U [0.0119 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	0.0124 U	0.0581 J	0.0558 J [0.0356 J]	NA	NA	**0.413**	**0.377**	**0.426**	ND	ND	ND	**ND [0.434]**	ND
Naphthalene	3.8	17	- -	mg/kg	NA	0.00891 U	0.0831 [0.045 J]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Pentachlorophenol	1	4	- -	mg/kg	NA	NA	NA	NA	NA	0.285	ND	0.296 JB	ND	ND	0.314 JB	ND [ND]	0.287 JB
Phenanthrene	- -	- -	- -	mg/kg	NA	0.0484 J	0.122 [0.0578 J]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Phenol	19,000	250,000	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Pyrene	1,800	23,000	- -	mg/kg	NA	0.109	0.129 [0.0765]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Detected Inorganics																	
Arsenic	0.68	3	22.7	mg/kg	18.2	4.24 J	1.06 UJ [7.86 J]	NA	NA	8.22	13.4	10.3	8.16	9.6	10.6	15 [11.9]	10.7
Lead	400	800	- -	mg/kg	NA	152 J	3.31 J [268 J]	NA	NA	7.1	11.6	7.68	7.9	7.92	9.17	11.8 [10.6]	9.6
Detected Pesticides																	
2,4' DDD	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
2,4'-DDE	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
2,4'-DDT	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [0.0219]	ND
trans-Nonachlor	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
4,4'-DDD	2.3	9.6	- -	mg/kg	NA	0.00409 U	0.00427 U [0.00424 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
4,4'-DDE	2	9.3	- -	mg/kg	NA	0.00476 U	0.00497 U [0.01 J]	NA	NA	ND	ND	ND	ND	ND	ND	ND [0.0866 D]	ND
4,4'-DDT	1.9	8.5	- -	mg/kg	NA	0.00808 U	0.00845 U [0.0104 J]	NA	NA	ND	ND	ND	ND	ND	ND	0.00538 J [0.055 D]	ND
Aldrin	0.039	0.18	- -	mg/kg	NA	0.00295 U	0.00308 U [0.00306 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
alpha-BHC	0.086	0.36	- -	mg/kg	NA	0.0019 U	0.00199 U [0.00197 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
alpha-Chlordane	1.7	1.7	- -	mg/kg	NA	0.00409 U	0.00427 U [0.00424 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
beta-BHC	0.3	1.3	- -	mg/kg	NA	0.0019 U	0.00199 U [0.00197 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	0.345 U	0.361 U [0.358 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	NA	0.00361 U	0.00378 U [0.00375 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	NA	0.0038 U	0.00398 U [0.00395 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Endosulfan I	470	470	- -	mg/kg	NA	0.00447 U	0.00467 U [0.00464 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	470	470	- -	mg/kg	NA	0.00523 U	0.00547 U [0.00543 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	0.00476 U	0.00497 U [0.00493 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	19	250	- -	mg/kg	NA	0.00409 U	0.00427 U [0.00424 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Endrin aldehyde	- -	- -	- -	mg/kg	NA	0.00485 U	0.00507 U [0.00503 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Endrin ketone	- -	- -	- -	mg/kg	NA	0.00561 U	0.00586 U [0.00582 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	NA	0.00371 U	0.00388 U [0.00385 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
gamma-Chlordane	1.7	1.7	- -	mg/kg	NA	0.00751 U	0.00785 U [0.00779 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Heptachlor	0.13	0.63	- -	mg/kg	NA	0.00399 U	0.00417 U [0.00414 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Heptachlor epoxide	0.07	0.33	- -	mg/kg	NA	0.00618 U	0.00646 U [0.00641 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Hexachlorobenzene	0.21	0.96	- -	mg/kg	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Methoxychlor	320	4,100	- -	mg/kg	NA	0.00466 U	0.00487 U [0.00483 U]	NA	NA	ND	ND	ND	ND	ND	ND	ND [ND]	ND
Toxaphene	0.49	2.1	- -	mg/kg	NA	0.401 U	0.419 U [0.416 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Location ID:	USEPA	USEPA	Kent_Regional		SB-A9	SS-A1	SS-A2	SS-A3	SS-A4	SS-A5	SS-A6	SS-A7	SS-A8	SS-A9
Sample Depth(Feet):	Residential	Industrial	Background		10 - 12	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 4	0 - 1	0 - 1
Date Collected:	Soil RSL rev	Soil RSL rev	Soil		12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11	12/06/11
Sample Name:	May2016	May2016	Concentration	Units	SB-A9	SS-A1	SS-A2	SS-A3	SS-A4	SS-A5	SS-A6	SS-A7	SS-A8	SS-A9
Detected Semivolatile Organics														
1,1'-Biphenyl	47	200	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	23	350	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
3&4-Methylphenol	- -	- -	- -	mg/kg	ND	0.321	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Acetophenone	7,800	120,000	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.238 J]	ND	ND	ND	ND
1-methyl-Naphthalene	18	73	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	6,300	82,000	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
2,4-Dimethylphenol	1,300	16,000	- -	mg/kg	ND	0.354	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Benzaldehyde	170	820	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
2-Methylnaphthalene	240	3,000	- -	mg/kg	ND	9.4	ND	ND	ND	ND [1.17]	ND	ND	ND	0.872
4,6-Dinitro-2-methylphenol	5.1	66	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Acenaphthene	3,600	45,000	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Acenaphthylene	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	18,000	230,000	- -	mg/kg	ND	0.408	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Benzo(a)anthracene	0.16	2.9	- -	mg/kg	ND	**0.727**	ND	0.0831 J	ND	ND [0.0868 J]	ND	ND	ND	ND
Benzo(a)pyrene	0.016	0.29	- -	mg/kg	0.063 U	**0.556 B**	**0.0658 JB**	**0.202 B**	**0.0589 JB**	**0.198 B [0.145]**	**0.15**	**0.0679 J**	**0.0632 J**	**0.125**
Benzo(b)fluoranthene	0.16	2.9	- -	mg/kg	ND	**0.812 B**	**0.208 B**	**0.457 B**	**0.193 B**	**0.474 B [0.357]**	**0.322**	**0.215**	**0.205**	**0.276**
Benzo(g,h,i)perylene	- -	- -	- -	mg/kg	ND	0.579	0.247	0.336	0.237	0.503 [0.297]	0.331	0.258	ND	0.274
Benzo(k)fluoranthene	1.6	29	- -	mg/kg	ND	0.105 J	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Benzoic acid	250,000	3,300,000	- -	mg/kg	0.683 B	ND	0.535 JB	0.529 JB	0.503 JB	0.883 JB [0.775 B]	0.587 JB	0.601 B	0.608 B	0.597 B
Carbazole	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	16	290	- -	mg/kg	ND	0.747	ND	0.13 J	ND	0.116 J [0.131 J]	0.0978 J	ND	ND	0.0683 J
Dibenzo(a,h)anthracene	0.016	0.29	- -	mg/kg	0.063 U	**0.342**	0.059 U	0.059 U	0.058 U	**0.478 [0.292]**	**0.303**	0.06 U	0.06 U	**0.284**
Dibenzofuran	73	1,000	- -	mg/kg	ND	2.57	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Di-n-butylphthalate	6,300	82,000	- -	mg/kg	ND	ND	ND	0.591 J	ND	ND [0.338 JB]	ND	0.265 JB	ND	0.25 JB
Fluoranthene	2,400	30,000	- -	mg/kg	ND	0.743	ND	0.0701 J	ND	ND [0.128 J]	0.0983 J	ND	ND	ND
Fluorene	2,400	30,000	- -	mg/kg	ND	0.164	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.16	2.9	- -	mg/kg	ND	**0.518**	**0.433**	**0.527**	**0.42**	**0.766 [0.463]**	**0.514**	**0.446**	**0.438**	**0.457**
Naphthalene	3.8	17	- -	mg/kg	ND	**6.25**	ND	ND	ND	0.0989 J [0.747]	ND	ND	ND	0.271
Pentachlorophenol	1	4	- -	mg/kg	0.298 JB	ND	0.292 JB	0.298 JB	0.28 JB	0.452 JB [ND]	ND	0.321 JB	0.292 JB	ND
Phenanthrene	- -	- -	- -	mg/kg	ND	4.81	ND	ND	ND	0.161 [0.652]	0.109 J	ND	ND	0.472
Phenol	19,000	250,000	- -	mg/kg	ND	0.266	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Pyrene	1,800	23,000	- -	mg/kg	ND	0.81	ND	0.107 J	ND	ND [0.122 J]	0.106 J	ND	ND	ND
Detected Inorganics														
Arsenic	0.68	3	22.7	mg/kg	20.8	9.79 Q	14.8	8.98	11.8	13.5 [8.7]	7.22	8.91	14.6	13.8
Lead	400	800	- -	mg/kg	16.3	19.8 Q	36.8	40.8	13.9	48.7 [30.9]	32.1	32.4	14.9	18.7
Detected Pesticides														
2,4' DDD	- -	- -	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.656 D]	ND	ND	ND	ND
2,4'-DDE	- -	- -	- -	mg/kg	ND	ND	ND	ND	ND	ND [1.05 DE]	ND	ND	ND	ND
2,4'-DDT	- -	- -	- -	mg/kg	ND	ND	ND	ND	ND	ND [6.31 D]	ND	ND	ND	ND
trans-Nonachlor	- -	- -	- -	mg/kg	ND	0.0198	ND	0.00589	ND	0.00335 J [ND]	ND	ND	ND	ND
4,4'-DDD	2.3	9.6	- -	mg/kg	ND	ND	ND	ND	ND	**ND [5.17]**	ND	ND	ND	ND
4,4'-DDE	2	9.3	- -	mg/kg	ND	ND	ND	0.0224	ND	0.442 D [0.503 J]	0.00602 J	ND	ND	0.0041 J
4,4'-DDT	1.9	8.5	- -	mg/kg	ND	0.00807 J	ND	0.0141	ND	**0.0985 D [24.9 D]**	ND	ND	ND	ND
Aldrin	0.039	0.18	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
alpha-BHC	0.086	0.36	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.0115]	ND	ND	ND	ND
alpha-Chlordane	1.7	1.7	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.115 D]	ND	ND	ND	ND
beta-BHC	0.3	1.3	- -	mg/kg	ND	ND	ND	ND	ND	0.0132 [0.0277]	ND	ND	ND	ND
Chlordane (technical)	1.7	1.7	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
delta-BHC	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.034	0.14	- -	mg/kg	ND	ND	ND	0.00383 J	ND	**0.00956 [0.268 D]**	0.00236 J	ND	ND	ND
Endosulfan I	470	470	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan II	470	470	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan sulfate	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	19	250	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.0108]	ND	ND	ND	ND
Endrin aldehyde	- -	- -	- -	mg/kg	ND	0.00651 N	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Endrin ketone	- -	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
gamma-BHC (Lindane)	0.57	2.5	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
gamma-Chlordane	1.7	1.7	- -	mg/kg	ND	ND	ND	ND	ND	ND [0.159 DNJ]	ND	ND	ND	ND
Heptachlor	0.13	0.63	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Heptachlor epoxide	0.07	0.33	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Hexachlorobenzene	0.21	0.96	- -	mg/kg	ND	0.0266	0.0179	ND	ND	ND [ND]	ND	ND	ND	ND
Methoxychlor	320	4,100	- -	mg/kg	ND	ND	ND	ND	ND	ND [ND]	ND	ND	ND	ND
Toxaphene	0.49	2.1	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table A-1
Summary of Soil Sample Analytical Results for all Depth Ranges
Corrective Action Plan
Former Black Leaf Chemical Site, Louisville, Kentucky

Notes:
mg/kg = milligrams per kilogram
U = not detected
J = estimated value
H = sample analyzed outside of hold time
B = compound found in the blank and the sample
N = Spike sample recovery not within control limits
R = Rejected
Q = QC Limits Exceeded
D = Reanalyzed at a Higher Dilution
NA = Not Analyzed
USEPA = United States Environmental Protection Agency
RSL = Regional Screening Level
1. Green-shaded concentrations exceed USEPA Residential RSLs (May 2016).
2. Grey-shaded concentrations exceed USEPA Industrial RSLs (May 2016) and/or Kentucky Regional Background Soil Concentration (Arsenic)
3. Arsenic concentrations are shaded based on comparison to the maximum concentrations in the Kentucky Regional Background Soil Guidance.
4. Duplicate concentrations are presented in brackets.

APPENDIX B

Arsenic Evaluation Calculation

KDEP RAS 2008 Memorandum Statistics Summary (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

KDEP RAS 2008 Memorandum Requirements	Baseline		After Proposed Samples Removed	
Mean arsenic concentration (should be less than 13.12 mg/kg)	25.06	mg/kg	10.99	mg/kg
Percentage of data points less than 10.6 mg/kg (should be less than 50%)	68	%	50	%
Percentage of data points greater than 22.7 mg/kg (should be 0%)	25	%	0	%

RA-70 Memorandum Statistics Calculations for Baseline Soil (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

25.06	mg/kg	AVERAGE
41.17	mg/kg	STANDARD DEVIATION

Using RA-70 Memorandum Values:

110	Total number of samples in dataset
75	Total number of samples greater than (>) 10.6 mg/kg.
68%	Percent of samples greater than (>) 10.6 mg/kg.
27	Total number of samples greater than (>) 22.7 mg/kg.
25%	Percent of samples greater than (>) 22.7 mg/kg.

Notes:

Non-detected samples were retained in the dataset as half of the detection limit (USEPA 1998, KYDEP 2004).
The maximum of duplicate samples was included in the dataset/calculations.
Pink/red cells have conditional formatting for the following rules:

- Site arithmetic mean (average) cannot exceed 13.12 mg/kg
- Percent of samples greater than 10.6 mg/kg (or 60th percentile) should not exceed 50%
- Percent of samples greater than 22.7 mg/kg (or 95% percentile) should not exceed 0%

0-1 ft bgs Dataset:

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BLC-SS-01	0 - 1	10/25/2010	7.4	0.43
BLC-SS-02	0 - 1	10/25/2010	11	0.34
BLC-SS-03	0 - 1	10/25/2010	5.6	0.47
BLC-SS-04	0 - 1	10/25/2010	9.5	0.38
BLC-SS-05	0 - 1	10/25/2010	8.7	0.40
BLC-SS-06	0 - 1	10/25/2010	15	0.24
BLC-SS-07	0 - 1	10/25/2010	24	0.03
BLC-SS-08	0 - 1	10/25/2010	22	0.07
BLC-SS-09	0 - 1	10/25/2010	5.1	0.48
BLC-SS-10	0 - 1	10/25/2010	9	0.39
BLC-SS-11	0 - 1	10/25/2010	14	0.27
BLC-SS-13	0 - 1	10/27/2010	15	0.24
BLC-SS-14	0 - 1	10/27/2010	15	0.24
BLC-SS-15	0 - 1	10/27/2010	14	0.27
BLC-SS-16	0 - 1	10/27/2010	24	0.03
BLC-SS-17	0 - 1	10/27/2010	15	0.24
BLC-SS-18	0 - 1	10/27/2010	18	0.17
BLC-SS-19	0 - 1	10/25/2010	56	0.75
BLC-SS-20	0 - 1	10/26/2010	40	0.36
BLC-SS-21	0 - 1	10/27/2010	47	0.53
BLC-SS-22	0 - 1	10/27/2010	18	0.17

RA-70 Memorandum Statistics Calculations for Baseline Soil (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BLC-SS-23	0 - 1	10/27/2010	13	0.29
BLC-SS-24	0 - 1	10/27/2010	34	0.22
BLC-SS-25	0 - 1	10/27/2010	39	0.34
BLC-SS-26	0 - 1	10/27/2010	31	0.14
BLC-SS-27	0 - 1	10/27/2010	12	0.32
BLC-SS-28	0 - 1	10/27/2010	17	0.20
BLC-SS-29	0 - 1	10/27/2010	13	0.29
BLC-SS-30	0 - 1	10/27/2010	33	0.19
BLC-SS40		9/22/2011	6.08	0.46
BLC-SS-41		9/22/2011	29	0.10
BLC-SS-42		9/22/2011	10.9	0.34
BLC-SS-43		9/22/2011	53.6	0.69
BLC-SS-44		9/22/2011	5.4	0.48
BLC-SS-45		9/22/2011	20.6	0.11
BLC-SS-46		9/22/2011	22.6	0.06
BLC-SS-47		9/22/2011	54.3	0.71
BLC-SS-48		9/22/2011	38.1	0.32
BLC-SS-49		9/22/2011	6.67	0.45
BLC-SS-50		9/22/2011	18	0.17
BLC-SS-51		9/22/2011	22.7	0.06
SS-A1	0 - 4	12/6/2011	9.79	0.37
SS-A2	0 - 4	12/6/2011	14.8	0.25
SS-A3	0 - 4	12/6/2011	8.98	0.39
SS-A4	0 - 4	12/6/2011	11.8	0.32
SS-A5	0 - 4	12/6/2011	13.5	0.28
SS-A6	0 - 4	12/6/2011	7.22	0.43
SS-A7	0 - 4	12/6/2011	8.91	0.39
SS-A8	0 - 1	12/6/2011	14.6	0.25
SS-A9	0 - 1	12/6/2011	13.8	0.27
BL-SB-100_0_1	0 - 1	9/20/2014	12.9	0.30
BL-SB-101_0_1	0 - 1	9/20/2014	15.8	0.22
BL-SB-102_0_1	0 - 1	9/20/2014	1.64	0.57
BL-SB-102R_0_1	0 - 1	9/30/2014	8.12	0.41
BL-SB-103_0_1	0 - 1	9/19/2014	17.3	0.19
BL-SB-104_0_1	0 - 1	9/29/2014	0.4645	0.60
BL-SB-105_0_1	0 - 1	9/20/2014	6.92	0.44
BL-SB-106_0_1	0 - 1	9/19/2014	8.52	0.40
BL-SB-107_0_1	0 - 1	9/20/2014	12.1	0.31
BL-SB-108_0_1	0 - 1	9/20/2014	28.4	0.08
BL-SB-109_0_1	0 - 1	9/20/2014	8.41	0.40
BL-SB-110_0_1	0 - 1	9/19/2014	14.8	0.25
BL-SB-111_0_1	0 - 1	9/19/2014	8.21	0.41
BL-SB-113_0_1	0 - 1	9/19/2014	62.2	0.90
BL-SB-114_0_1	0 - 1	9/19/2014	8.36	0.41
BL-SB-115_0_1	0 - 1	9/19/2014	8.11	0.41

RA-70 Memorandum Statistics Calculations for Baseline Soil (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BL-SB-116_0_1	0 - 1	9/21/2014	12.4	0.31
BL-SB-117_0_1	0 - 1	9/21/2014	7.44	0.43
BL-SB-118_0_1	0 - 1	9/19/2014	7.25	0.43
BL-SB-118R_0_1	0 - 1	9/30/2014	10.1	0.36
BL-SB-119_0_1	0 - 1	9/19/2014	17.4	0.19
BL-SB-120_0_1	0 - 1	9/19/2014	15.8	0.22
BL-SB-121_0_1	0 - 1	9/18/2014	30.2	0.12
BL-SB-122_0_1	0 - 1	9/18/2014	200	4.25
BL-SB-123_0_1	0 - 1	9/18/2014	11.2	0.34
BL-SB-124_0_1	0 - 1	9/20/2014	337	7.58
BL-SB-125_0_1	0 - 1	9/19/2014	14.4	0.26
BL-SB-126_0_1	0 - 1	9/18/2014	14.7	0.25
BL-SB-126R_0_1	0 - 1	9/29/2014	36.1	0.27
BL-SB-127_0_1	0 - 1	9/21/2014	10.7	0.35
BL-SB-128_0_1	0 - 1	9/21/2014	10.5	0.35
BL-SB-129_0_1	0 - 1	9/21/2014	7.04	0.44
BL-SB-130_0_1	0 - 1	9/18/2014	9.13	0.39
BL-SB-131_0_1	0 - 1	9/18/2014	13	0.29
BL-SB-132_0_1	0 - 1	9/18/2014	16.5	0.21
BL-SB-133_0_1	0 - 1	9/18/2014	16.8	0.20
BL-SB-134_0_1	0 - 1	9/21/2014	8.83	0.39
BL-SB-135_0_1	0 - 1	9/18/2014	30.7	0.14
BL-SB-136_0_1	0 - 1	9/18/2014	13.3	0.29
BL-SB-137_0_1	0 - 1	9/17/2014	112	2.11
BL-SB-138_0_1	0 - 1	9/17/2014	0.4855	0.60
BL-SB-139_0_1	0 - 1	9/16/2014	15.7	0.23
BL-SB-140_0_1	0 - 1	9/16/2014	10.8	0.35
BL-SB-141_0_1	0 - 1	9/17/2014	30.8	0.14
BL-SB-142_0_1	0 - 1	9/17/2014	41.4	0.40
BL-SB-143_0_1	0 - 1	9/16/2014	4.86	0.49
BL-SB-145_0_1	0 - 1	9/16/2014	11.7	0.32
BL-SB-146_0_1	0 - 1	9/17/2014	97.4	1.76
BL-SB-146R_0_1	0 - 1	9/30/2014	8.13	0.41
BL-SB-147_0_1	0 - 1	9/17/2014	37.5	0.30
BL-SB-148_0_1	0 - 1	9/16/2014	8.19	0.41
BL-SB-148R_0_1	0 - 1	9/30/2014	9.54	0.38
BL-SB-149_0_1	0 - 1	9/16/2014	14.3	0.26
BL-SB-150_0_1	0 - 1	9/17/2014	88.2	1.53
BL-SB-151_0_1	0 - 1	9/16/2014	12.8	0.30
BL-SB-151R_0_1	0 - 1	9/30/2014	14.5	0.26
BL-SB-152_0_1	0 - 1	9/16/2014	12.6	0.30
BL-SB-152R_0_1	0 - 1	9/30/2014	15.5	0.23
BL-SB-153_0_1	0 - 1	9/17/2014	157	3.20
BL-SB-154_0_1	0 - 1	9/17/2014	4.24	0.51

RA-70 Memorandum Statistics Calculations for Post Removal (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

ALL EXCAVATED SAMPLES REMOVED

10.99	mg/kg	AVERAGE
5.09	mg/kg	STANDARD DEVIATION

Using RA-70 Memorandum Values:

54	Total number of samples in dataset
27	Total number of samples greater than (>) 10.6 mg/kg.
50%	Percent of samples greater than (>) 10.6 mg/kg.
0	Total number of samples greater than (>) 22.7 mg/kg.
0%	Percent of samples greater than (>) 22.7 mg/kg.

Description: Proposed excavation samples were removed from the dataset before calculating the arithmetic mean.

Notes:

Yellow samples are proposed excavated samples that are removed from the dataset before evaluation

Non-detected samples were retained in the dataset as half of the detection limit (USEPA 1998, KYDEP 2004).

The maximum of duplicate samples was included in the dataset/calculations.

Pink/red cells have conditional formatting for the following rules:

- Site arithmetic mean (average) cannot exceed 13.12 mg/kg
- Percent of samples greater than 10.6 mg/kg (or 60th percentile) should not exceed 50%
- Percent of samples greater than 22.7 mg/kg (or 95% percentile) should not exceed 0%

0-1 ft bgs Dataset:

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BLC-SS-01	0 - 1	10/25/2010		
BLC-SS-02	0 - 1	10/25/2010		
BLC-SS-03	0 - 1	10/25/2010		
BLC-SS-04	0 - 1	10/25/2010		
BLC-SS-05	0 - 1	10/25/2010		
BLC-SS-06	0 - 1	10/25/2010	15	0.79
BLC-SS-07	0 - 1	10/25/2010		
BLC-SS-08	0 - 1	10/25/2010		
BLC-SS-09	0 - 1	10/25/2010	5.1	1.16
BLC-SS-10	0 - 1	10/25/2010	9	0.39
BLC-SS-11	0 - 1	10/25/2010		
BLC-SS-13	0 - 1	10/27/2010	15	0.79
BLC-SS-14	0 - 1	10/27/2010		
BLC-SS-15	0 - 1	10/27/2010	14	0.59
BLC-SS-16	0 - 1	10/27/2010		
BLC-SS-17	0 - 1	10/27/2010	15	0.79
BLC-SS-18	0 - 1	10/27/2010		
BLC-SS-19	0 - 1	10/25/2010		
BLC-SS-20	0 - 1	10/26/2010		
BLC-SS-21	0 - 1	10/27/2010		

RA-70 Memorandum Statistics Calculations for Post Removal (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BLC-SS-22	0 - 1	10/27/2010	18	1.38
BLC-SS-23	0 - 1	10/27/2010		
BLC-SS-24	0 - 1	10/27/2010		
BLC-SS-25	0 - 1	10/27/2010		
BLC-SS-26	0 - 1	10/27/2010		
BLC-SS-27	0 - 1	10/27/2010	12	0.20
BLC-SS-28	0 - 1	10/27/2010	17	1.18
BLC-SS-29	0 - 1	10/27/2010	13	0.39
BLC-SS-30	0 - 1	10/27/2010		
BLC-SS40		9/22/2011	6.08	0.96
BLC-SS-41		9/22/2011		
BLC-SS-42		9/22/2011	10.9	0.02
BLC-SS-43		9/22/2011		
BLC-SS-44		9/22/2011	5.4	1.10
BLC-SS-45		9/22/2011	20.6	1.89
BLC-SS-46		9/22/2011	22.6	2.28
BLC-SS-47		9/22/2011		
BLC-SS-48		9/22/2011		
BLC-SS-49		9/22/2011	6.67	0.85
BLC-SS-50		9/22/2011	18	1.38
BLC-SS-51		9/22/2011	22.7	2.30
SS-A1	0 - 4	12/6/2011		
SS-A2	0 - 4	12/6/2011	14.8	0.75
SS-A3	0 - 4	12/6/2011	8.98	0.39
SS-A4	0 - 4	12/6/2011	11.8	0.16
SS-A5	0 - 4	12/6/2011		
SS-A6	0 - 4	12/6/2011		
SS-A7	0 - 4	12/6/2011	8.91	0.41
SS-A8	0 - 1	12/6/2011	14.6	0.71
SS-A9	0 - 1	12/6/2011		2.16
BL-SB-100_0_1	0 - 1	9/20/2014		
BL-SB-101_0_1	0 - 1	9/20/2014	15.8	0.94
BL-SB-102_0_1	0 - 1	9/20/2014	1.64	1.84
BL-SB-102R_0_1	0 - 1	9/30/2014	8.12	0.56
BL-SB-103_0_1	0 - 1	9/19/2014	17.3	1.24
BL-SB-104_0_1	0 - 1	9/29/2014	0.4645	2.07
BL-SB-105_0_1	0 - 1	9/20/2014	6.92	0.80
BL-SB-106_0_1	0 - 1	9/19/2014	8.52	0.49
BL-SB-107_0_1	0 - 1	9/20/2014		
BL-SB-108_0_1	0 - 1	9/20/2014		
BL-SB-109_0_1	0 - 1	9/20/2014	8.41	0.51
BL-SB-110_0_1	0 - 1	9/19/2014		
BL-SB-111_0_1	0 - 1	9/19/2014	8.21	0.55
BL-SB-113_0_1	0 - 1	9/19/2014		
BL-SB-114_0_1	0 - 1	9/19/2014	8.36	0.52

RA-70 Memorandum Statistics Calculations for Post Removal (0-1 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Sample Name:	Sample Depth (Feet):	Date Collected:	Arsenic (mg/kg)	Grubb's Test Z-Score:
BL-SB-115_0_1	0 - 1	9/19/2014	8.11	0.57
BL-SB-116_0_1	0 - 1	9/21/2014	12.4	0.28
BL-SB-117_0_1	0 - 1	9/21/2014	7.44	0.70
BL-SB-118_0_1	0 - 1	9/19/2014	7.25	0.73
BL-SB-118R_0_1	0 - 1	9/30/2014	10.1	0.18
BL-SB-119_0_1	0 - 1	9/19/2014		
BL-SB-120_0_1	0 - 1	9/19/2014	15.8	0.94
BL-SB-121_0_1	0 - 1	9/18/2014		
BL-SB-122_0_1	0 - 1	9/18/2014		
BL-SB-123_0_1	0 - 1	9/18/2014		
BL-SB-124_0_1	0 - 1	9/20/2014		
BL-SB-125_0_1	0 - 1	9/19/2014		
BL-SB-126_0_1	0 - 1	9/18/2014		
BL-SB-126R_0_1	0 - 1	9/29/2014		
BL-SB-127_0_1	0 - 1	9/21/2014	10.7	0.06
BL-SB-128_0_1	0 - 1	9/21/2014	10.5	0.10
BL-SB-129_0_1	0 - 1	9/21/2014	7.04	0.78
BL-SB-130_0_1	0 - 1	9/18/2014		
BL-SB-131_0_1	0 - 1	9/18/2014		
BL-SB-132_0_1	0 - 1	9/18/2014	16.5	1.08
BL-SB-133_0_1	0 - 1	9/18/2014		
BL-SB-134_0_1	0 - 1	9/21/2014	8.83	0.42
BL-SB-135_0_1	0 - 1	9/18/2014		
BL-SB-136_0_1	0 - 1	9/18/2014	13.3	0.45
BL-SB-137_0_1	0 - 1	9/17/2014		
BL-SB-138_0_1	0 - 1	9/17/2014	0.4855	2.06
BL-SB-139_0_1	0 - 1	9/16/2014	15.7	0.92
BL-SB-140_0_1	0 - 1	9/16/2014	10.8	0.04
BL-SB-141_0_1	0 - 1	9/17/2014		
BL-SB-142_0_1	0 - 1	9/17/2014		
BL-SB-143_0_1	0 - 1	9/16/2014	4.86	1.20
BL-SB-145_0_1	0 - 1	9/16/2014	11.7	0.14
BL-SB-146_0_1	0 - 1	9/17/2014		
BL-SB-146R_0_1	0 - 1	9/30/2014	8.13	0.56
BL-SB-147_0_1	0 - 1	9/17/2014		
BL-SB-148_0_1	0 - 1	9/16/2014	8.19	0.55
BL-SB-148R_0_1	0 - 1	9/30/2014		
BL-SB-149_0_1	0 - 1	9/16/2014		
BL-SB-150_0_1	0 - 1	9/17/2014		
BL-SB-151_0_1	0 - 1	9/16/2014		
BL-SB-151R_0_1	0 - 1	9/30/2014		
BL-SB-152_0_1	0 - 1	9/16/2014	12.6	0.32
BL-SB-152R_0_1	0 - 1	9/30/2014		
BL-SB-153_0_1	0 - 1	9/17/2014		
BL-SB-154_0_1	0 - 1	9/17/2014	4.24	1.33

APPENDIX C

ProUCL Output

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Result (4,4'-DDD)

General Statistics

Number of Valid Data	108	Number of Detected Data	22
Number of Distinct Detected Data	22	Number of Non-Detect Data	86
		Percent Non-Detects	79.63%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00057	Minimum Detected	-7.47
Maximum Detected	0.325	Maximum Detected	-1.124
Mean of Detected	0.038	Mean of Detected	-4.457
SD of Detected	0.0735	SD of Detected	1.61
Minimum Non-Detect	0.00036	Minimum Non-Detect	-7.929
Maximum Non-Detect	0.0084	Maximum Non-Detect	-4.78

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	95
Number treated as Detected	13
Single DL Non-Detect Percentage	87.96%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.535	Shapiro Wilk Test Statistic	0.984
5% Shapiro Wilk Critical Value	0.911	5% Shapiro Wilk Critical Value	0.911
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00863	Mean	-6.787
SD	0.0358	SD	1.712
95% DL/2 (t) UCL	0.0143	95% H-Stat (DL/2) UCL	0.00797
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-9.077
		SD in Log Scale	2.645
		Mean in Original Scale	0.0078
		SD in Original Scale	0.036
		95% t UCL	0.0135
		95% Percentile Bootstrap UCL	0.0138
		95% BCA Bootstrap UCL	0.0171
		95% H-UCL	0.0108

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.488	Data appear Lognormal at 5% Significance Level
Theta Star	0.078	

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

nu star	21.46
A-D Test Statistic	0.886
5% A-D Critical Value	0.802
K-S Test Statistic	0.802
5% K-S Critical Value	0.195

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.325
Mean	0.00775
Median	0.000001
SD	0.036
k star	0.116
Theta star	0.0666
Nu star	25.14
AppChi2	14.72
95% Gamma Approximate UCL (Use when n >= 40)	0.0132
95% Adjusted Gamma UCL (Use when n < 40)	0.0133

Note: DL/2 is not a recommended method.

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.00824
SD	0.0357
SE of Mean	0.00352
95% KM (t) UCL	0.0141
95% KM (z) UCL	0.014
95% KM (jackknife) UCL	0.0138
95% KM (bootstrap t) UCL	0.0238
95% KM (BCA) UCL	0.0157
95% KM (Percentile Bootstrap) UCL	0.0143
95% KM (Chebyshev) UCL	0.0236
97.5% KM (Chebyshev) UCL	0.0302
99% KM (Chebyshev) UCL	0.0433

Potential UCLs to Use (4,4'-DDD)

95% KM (Chebyshev) UCL	0.0236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (4,4'-DDE)

General Statistics

Number of Valid Data	114	Number of Detected Data	41
Number of Distinct Detected Data	40	Number of Non-Detect Data	73
		Percent Non-Detects	64.04%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00051	Minimum Detected	-7.581
Maximum Detected	0.501	Maximum Detected	-0.691
Mean of Detected	0.0276	Mean of Detected	-5.032
SD of Detected	0.08	SD of Detected	1.571
Minimum Non-Detect	0.000418	Minimum Non-Detect	-7.78
Maximum Non-Detect	0.017	Maximum Non-Detect	-4.075

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	104
Number treated as Detected	10
Single DL Non-Detect Percentage	91.23%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.35	Shapiro Wilk Test Statistic	0.958
5% Shapiro Wilk Critical Value	0.941	5% Shapiro Wilk Critical Value	0.941
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0108	Mean	-6.491
SD	0.0492	SD	1.718
95% DL/2 (t) UCL	0.0184	95% H-Stat (DL/2) UCL	0.0108
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-7.577
		SD in Log Scale	2.226
		Mean in Original Scale	0.01
		SD in Original Scale	0.0494
		95% t UCL	0.0177
		95% Percentile Bootstrap UCL	0.0188
		95% BCA Bootstrap UCL	0.0248
		95% H-UCL	0.013

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.431	Data appear Lognormal at 5% Significance Level	
Theta Star	0.064		
nu star	35.38		
A-D Test Statistic	2.609	Nonparametric Statistics	
5% A-D Critical Value	0.825	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.825	Mean	0.0104
5% K-S Critical Value	0.147	SD	0.0491
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00466

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.501
Mean	0.00993
Median	0.000001
SD	0.0494
k star	0.132
Theta star	0.0751
Nu star	30.15
AppChi2	18.61
95% Gamma Approximate UCL (Use when n >= 40)	0.0161
95% Adjusted Gamma UCL (Use when n < 40)	0.0162

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.0181
95% KM (z) UCL	0.018
95% KM (jackknife) UCL	0.0178
95% KM (bootstrap t) UCL	0.0346
95% KM (BCA) UCL	0.0201
95% KM (Percentile Bootstrap) UCL	0.0193
95% KM (Chebyshev) UCL	0.0307
97.5% KM (Chebyshev) UCL	0.0395
99% KM (Chebyshev) UCL	0.0567

Potential UCLs to Use (4,4'-DDE)	
95% KM (Chebyshev) UCL	0.0307

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (4,4'-DDT)

General Statistics

Number of Valid Data	116	Number of Detected Data	53
Number of Distinct Detected Data	50	Number of Non-Detect Data	63
		Percent Non-Detects	54.31%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0005	Minimum Detected	-7.601
Maximum Detected	4.14	Maximum Detected	1.421
Mean of Detected	0.138	Mean of Detected	-3.947
SD of Detected	0.571	SD of Detected	1.78
Minimum Non-Detect	0.000711	Minimum Non-Detect	-7.249
Maximum Non-Detect	0.0166	Maximum Non-Detect	-4.098

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	89
Number treated as Detected	27
Single DL Non-Detect Percentage	76.72%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.405	Lilliefors Test Statistic	0.0786
5% Lilliefors Critical Value	0.122	5% Lilliefors Critical Value	0.122
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0639	Mean	-5.519
SD	0.39	SD	2.028
95% DL/2 (t) UCL	0.124	95% H-Stat (DL/2) UCL	0.0592
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.164
		SD in Log Scale	2.422
		Mean in Original Scale	0.0631
		SD in Original Scale	0.39
		95% t UCL	0.123
		95% Percentile Bootstrap UCL	0.132
		95% BCA Bootstrap UCL	0.179
		95% H-UCL	0.0946

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.337	Data appear Lognormal at 5% Significance Level	
Theta Star	0.409		
nu star	35.68		
A-D Test Statistic	4.33	Nonparametric Statistics	
5% A-D Critical Value	0.852	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.852	Mean	0.0633
5% K-S Critical Value	0.132	SD	0.389
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0364

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	4.14
Mean	0.0629
Median	0.000001
SD	0.39
k star	0.124
Theta star	0.508
Nu star	28.7
AppChi2	17.48
95% Gamma Approximate UCL (Use when n >= 40)	0.103
95% Adjusted Gamma UCL (Use when n < 40)	0.104

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.124
95% KM (z) UCL	0.123
95% KM (jackknife) UCL	0.123
95% KM (bootstrap t) UCL	0.344
95% KM (BCA) UCL	0.141
95% KM (Percentile Bootstrap) UCL	0.133
95% KM (Chebyshev) UCL	0.222
97.5% KM (Chebyshev) UCL	0.291
99% KM (Chebyshev) UCL	0.426
Potential UCLs to Use (4,4'-DDT)	
95% KM (Chebyshev) UCL	0.222

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (alpha-BHC)

General Statistics

Number of Valid Data	108	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	96
		Percent Non-Detects	88.89%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00045	Minimum Detected	-7.706
Maximum Detected	0.36	Maximum Detected	-1.022
Mean of Detected	0.0375	Mean of Detected	-5.13
SD of Detected	0.102	SD of Detected	1.889
Minimum Non-Detect	0.000167	Minimum Non-Detect	-8.698
Maximum Non-Detect	0.00391	Maximum Non-Detect	-5.544

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	100
Number treated as Detected	8
Single DL Non-Detect Percentage	92.59%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.392	Shapiro Wilk Test Statistic	0.925
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0046	Mean	-7.897
SD	0.0347	SD	1.585
95% DL/2 (t) UCL	0.0101	95% H-Stat (DL/2) UCL	0.00201
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-12.86
		SD in Log Scale	3.397
		Mean in Original Scale	0.00417
		SD in Original Scale	0.0347
		95% t UCL	0.00972
		95% Percentile Bootstrap UCL	0.0108
		95% BCA Bootstrap UCL	0.0149
		95% H-UCL	0.00449

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.327	Data appear Lognormal at 5% Significance Level	
Theta Star	0.115		
nu star	7.852		
A-D Test Statistic	1.21	Nonparametric Statistics	
5% A-D Critical Value	0.812	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.812	Mean	0.00457
5% K-S Critical Value	0.263	SD	0.0345
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00347

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.36
Mean	0.00417
Median	0.000001
SD	0.0347
k star	0.112
Theta star	0.0372
Nu star	24.22
AppChi2	14.02
95% Gamma Approximate UCL (Use when n >= 40)	0.0072
95% Adjusted Gamma UCL (Use when n < 40)	0.00726

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.0103
95% KM (z) UCL	0.0103
95% KM (jackknife) UCL	0.00997
95% KM (bootstrap t) UCL	0.0634
95% KM (BCA) UCL	0.0144
95% KM (Percentile Bootstrap) UCL	0.0112
95% KM (Chebyshev) UCL	0.0197
97.5% KM (Chebyshev) UCL	0.0262
99% KM (Chebyshev) UCL	0.0391
Potential UCLs to Use (alpha-BHC)	
95% KM (Chebyshev) UCL	0.0197

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (arsenic)

General Statistics

Number of Valid Data	146	Number of Detected Data	145
Number of Distinct Detected Data	111	Number of Non-Detect Data	1
		Percent Non-Detects	0.68%

Raw Statistics

Minimum Detected	1.52
Maximum Detected	43.6
Mean of Detected	11.55
SD of Detected	5.055
Minimum Non-Detect	1.13
Maximum Non-Detect	1.13

Log-transformed Statistics

Minimum Detected	0.419
Maximum Detected	3.775
Mean of Detected	2.37
SD of Detected	0.392
Minimum Non-Detect	0.122
Maximum Non-Detect	0.122

UCL Statistics

Normal Distribution Test with Detected Values Only

Lilliefors Test Statistic	0.119
5% Lilliefors Critical Value	0.0736

Data not Normal at 5% Significance Level

Lognormal Distribution Test with Detected Values Only

Lilliefors Test Statistic	0.0654
5% Lilliefors Critical Value	0.0736

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method

Mean	11.47
SD	5.119
95% DL/2 (t) UCL	12.17

Maximum Likelihood Estimate(MLE) Method

Mean	11.46
SD	5.124
95% MLE (t) UCL	12.17
95% MLE (Tiku) UCL	12.16

Assuming Lognormal Distribution

DL/2 Substitution Method

Mean	2.35
SD	0.461
95% H-Stat (DL/2) UCL	12.49

Log ROS Method

Mean in Log Scale	2.363
SD in Log Scale	0.401
Mean in Original Scale	11.49
SD in Original Scale	5.079
95% t UCL	12.19
95% Percentile Bootstrap UCL	12.22
95% BCA Bootstrap UCL	12.32
95% H UCL	12.21

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	6.579
Theta Star	1.755
nu star	1908
A-D Test Statistic	1.246
5% A-D Critical Value	0.754
K-S Test Statistic	0.754
5% K-S Critical Value	0.0779

Data follow Appr. Gamma Distribution at 5% Significance Level

Data Distribution Test with Detected Values Only

Data Follow Appr. Gamma Distribution at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	11.48
SD	5.088
SE of Mean	0.423
95% KM (t) UCL	12.18

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	43.6
Mean	11.47
Median	10.75
SD	5.127
k star	2.873
Theta star	3.992
Nu star	839
AppChi2	772.8
95% Gamma Approximate UCL (Use when n >= 40)	12.45
95% Adjusted Gamma UCL (Use when n < 40)	12.46

Note: DL/2 is not a recommended method.

95% KM (z) UCL	12.17
95% KM (jackknife) UCL	12.16
95% KM (bootstrap t) UCL	12.34
95% KM (BCA) UCL	12.3
95% KM (Percentile Bootstrap) UCL	12.19
95% KM (Chebyshev) UCL	13.32
97.5% KM (Chebyshev) UCL	14.12
99% KM (Chebyshev) UCL	15.68

Potential UCLs to Use (arsenic)	
95% KM (BCA) UCL	12.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (benzo(a)anthracene)

General Statistics

Number of Valid Data	143	Number of Detected Data	37
Number of Distinct Detected Data	37	Number of Non-Detect Data	106
		Percent Non-Detects	74.13%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.00037	Minimum Detected	-7.902
Maximum Detected	1.37	Maximum Detected	0.315
Mean of Detected	0.191	Mean of Detected	-3.003
SD of Detected	0.307	SD of Detected	2.17
Minimum Non-Detect	0.0035	Minimum Non-Detect	-5.655
Maximum Non-Detect	0.0852	Maximum Non-Detect	-2.463

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	128
Number treated as Detected	15
Single DL Non-Detect Percentage	89.51%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.63	Shapiro Wilk Test Statistic	0.894
5% Shapiro Wilk Critical Value	0.936	5% Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0548	Mean	-4.557
SD	0.175	SD	1.523
95% DL/2 (t) UCL	0.079	95% H-Stat (DL/2) UCL	0.0475
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.756
		SD in Log Scale	2.258
		Mean in Original Scale	0.0513
		SD in Original Scale	0.175
		95% t UCL	0.0756
		95% Percentile Bootstrap UCL	0.077
		95% BCA Bootstrap UCL	0.0862
		95% H-UCL	0.0802

Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.454	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.422		
nu star	33.59		
A-D Test Statistic	0.548	**Nonparametric Statistics**	
5% A-D Critical Value	0.818	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.818	Mean	0.0504
5% K-S Critical Value	0.154	SD	0.175
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0148

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	1.37
Mean	0.0514
Median	0.000001
SD	0.176
k star	0.109
Theta star	0.47
Nu star	31.28
AppChi2	19.5
95% Gamma Approximate UCL (Use when n >= 40)	0.0824
95% Adjusted Gamma UCL (Use when n < 40)	0.0828

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.075
95% KM (z) UCL	0.0748
95% KM (jackknife) UCL	0.0747
95% KM (bootstrap t) UCL	0.0894
95% KM (BCA) UCL	0.0748
95% KM (Percentile Bootstrap) UCL	0.0749
95% KM (Chebyshev) UCL	0.115
97.5% KM (Chebyshev) UCL	0.143
99% KM (Chebyshev) UCL	0.198

Potential UCLs to Use (benzo(a)anthracene)	
95% KM (t) UCL	0.075

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (benzo(a)pyrene)

General Statistics

Number of Valid Data	188	Number of Detected Data	37
Number of Distinct Detected Data	37	Number of Non-Detect Data	151
		Percent Non-Detects	80.32%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0199	Minimum Detected	-3.917
Maximum Detected	1.06	Maximum Detected	0.0583
Mean of Detected	0.203	Mean of Detected	-2.116
SD of Detected	0.249	SD of Detected	0.994
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.1	Maximum Non-Detect	-2.303

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	170
Number treated as Detected	18
Single DL Non-Detect Percentage	90.43%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.67	Shapiro Wilk Test Statistic	0.956
5% Shapiro Wilk Critical Value	0.936	5% Shapiro Wilk Critical Value	0.936
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0453	Mean	-4.594
SD	0.135	SD	1.409
95% DL/2 (t) UCL	0.0615	95% H-Stat (DL/2) UCL	0.0355
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	0.493	Mean in Log Scale	-5.143
SD	0.28	SD in Log Scale	1.874
95% MLE (t) UCL	0.526	Mean in Original Scale	0.0438
95% MLE (Tiku) UCL	0.598	SD in Original Scale	0.135
		95% t UCL	0.06
		95% Percentile Bootstrap UCL	0.0606
		95% BCA Bootstrap UCL	0.0644
		95% H UCL	0.0515

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	1.028	Data appear Lognormal at 5% Significance Level	
Theta Star	0.197		
nu star	76.05		
A-D Test Statistic	1.348	Nonparametric Statistics	
5% A-D Critical Value	0.775	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.775	Mean	0.0559
5% K-S Critical Value	0.149	SD	0.131
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0097

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	1.06
Mean	0.0399
Median	0.000001
SD	0.136
k star	0.1
Theta star	0.398
Nu star	37.66
AppChi2	24.61
95% Gamma Approximate UCL (Use when n >= 40)	0.061
95% Adjusted Gamma UCL (Use when n < 40)	0.0612

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.072
95% KM (z) UCL	0.0719
95% KM (jackknife) UCL	0.0692
95% KM (bootstrap t) UCL	0.0781
95% KM (BCA) UCL	0.0853
95% KM (Percentile Bootstrap) UCL	0.078
95% KM (Chebyshev) UCL	0.0982
97.5% KM (Chebyshev) UCL	0.116
99% KM (Chebyshev) UCL	0.152

Potential UCLs to Use (benzo(a)pyrene)	
95% KM (t) UCL	0.072
95% KM (% Bootstrap) UCL	0.078

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (benzo(b)fluoranthene)

General Statistics

Number of Valid Data	166	Number of Detected Data	53
Number of Distinct Detected Data	51	Number of Non-Detect Data	113
		Percent Non-Detects	68.07%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00043	Minimum Detected	-7.752
Maximum Detected	1.49	Maximum Detected	0.399
Mean of Detected	0.231	Mean of Detected	-2.804
SD of Detected	0.317	SD of Detected	2.364
Minimum Non-Detect	0.0035	Minimum Non-Detect	-5.655
Maximum Non-Detect	0.0168	Maximum Non-Detect	-4.086

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	124
Number treated as Detected	42
Single DL Non-Detect Percentage	74.70%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.234	Lilliefors Test Statistic	0.196
5% Lilliefors Critical Value	0.122	5% Lilliefors Critical Value	0.122
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0776	Mean	-4.455
SD	0.207	SD	1.784
95% DL/2 (t) UCL	0.104	95% H-Stat (DL/2) UCL	0.0859
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.223
		SD in Log Scale	2.391
		Mean in Original Scale	0.0761
		SD in Original Scale	0.207
		95% t UCL	0.103
		95% Percentile Bootstrap UCL	0.104
		95% BCA Bootstrap UCL	0.111
		95% H-UCL	0.186

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.464	Data Follow Appr. Gamma Distribution at 5% Significance Level	
Theta Star	0.498		
nu star	49.15		
A-D Test Statistic	1.101	Nonparametric Statistics	
5% A-D Critical Value	0.82	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.82	Mean	0.0744
5% K-S Critical Value	0.129	SD	0.207
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean	0.0162

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	1.49
Mean	0.0765
Median	0.000001
SD	0.207
k star	0.118
Theta star	0.648
Nu star	39.21
AppChi2	25.86
95% Gamma Approximate UCL (Use when n >= 40)	0.116
95% Adjusted Gamma UCL (Use when n < 40)	0.116

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.101
95% KM (z) UCL	0.101
95% KM (jackknife) UCL	0.101
95% KM (bootstrap t) UCL	0.112
95% KM (BCA) UCL	0.102
95% KM (Percentile Bootstrap) UCL	0.103
95% KM (Chebyshev) UCL	0.145
97.5% KM (Chebyshev) UCL	0.176
99% KM (Chebyshev) UCL	0.236

Potential UCLs to Use (benzo(b)fluoranthene)	
95% KM (t) UCL	0.101

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (beta-BHC)

General Statistics

Number of Valid Data	110	Number of Detected Data	26
Number of Distinct Detected Data	26	Number of Non-Detect Data	84
		Percent Non-Detects	76.36%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.000367	Minimum Detected	-7.91
Maximum Detected	0.097	Maximum Detected	-2.333
Mean of Detected	0.0169	Mean of Detected	-5.004
SD of Detected	0.0272	SD of Detected	1.403
Minimum Non-Detect	0.000167	Minimum Non-Detect	-8.698
Maximum Non-Detect	0.00391	Maximum Non-Detect	-5.544

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	93
Number treated as Detected	17
Single DL Non-Detect Percentage	84.55%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.587	Shapiro Wilk Test Statistic	0.978
5% Shapiro Wilk Critical Value	0.92	5% Shapiro Wilk Critical Value	0.92
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00441	Mean	-7.374
SD	0.0148	SD	1.803
95% DL/2 (t) UCL	0.00674	95% H-Stat (DL/2) UCL	0.00542
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-8.646
		SD in Log Scale	2.343
		Mean in Original Scale	0.00407
		SD in Original Scale	0.0148
		95% t UCL	0.00641
		95% Percentile Bootstrap UCL	0.0064
		95% BCA Bootstrap UCL	0.00743
		95% H-UCL	0.00634

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.61	Data Follow Appr. Gamma Distribution at 5% Significance Level
Theta Star	0.0277	
nu star	31.71	
A-D Test Statistic	1.032	Nonparametric Statistics
5% A-D Critical Value	0.793	Kaplan-Meier (KM) Method
K-S Test Statistic	0.793	Mean 0.0043
5% K-S Critical Value	0.179	SD 0.0147
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean 0.00143

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.097
Mean	0.00399
Median	0.000001
SD	0.0149
k star	0.129
Theta star	0.0309
Nu star	28.46
AppChi2	17.29
95% Gamma Approximate UCL (Use when n >= 40)	0.00657
95% Adjusted Gamma UCL (Use when n < 40)	0.00662

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.00667
95% KM (z) UCL	0.00665
95% KM (jackknife) UCL	0.00645
95% KM (bootstrap t) UCL	0.00888
95% KM (BCA) UCL	0.00775
95% KM (Percentile Bootstrap) UCL	0.00694
95% KM (Chebyshev) UCL	0.0105
97.5% KM (Chebyshev) UCL	0.0132
99% KM (Chebyshev) UCL	0.0185
Potential UCLs to Use (beta-BHC)	
95% KM (t) UCL	0.00667

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (dibenzo(a,h)anthracene)

General Statistics

Number of Valid Data	154	Number of Detected Data	18
Number of Distinct Detected Data	18	Number of Non-Detect Data	136
		Percent Non-Detects	88.31%

Raw Statistics		**Log-transformed Statistics**	
Minimum Detected	0.00057	Minimum Detected	-7.47
Maximum Detected	0.342	Maximum Detected	-1.073
Mean of Detected	0.144	Mean of Detected	-2.638
SD of Detected	0.125	SD of Detected	1.653
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.1	Maximum Non-Detect	-2.303

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	146
Number treated as Detected	8
Single DL Non-Detect Percentage	94.81%

UCL Statistics

Normal Distribution Test with Detected Values Only		**Lognormal Distribution Test with Detected Values Only**	
Shapiro Wilk Test Statistic	0.846	Shapiro Wilk Test Statistic	0.819
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0219	Mean	-5.195
SD	0.0616	SD	1.269
95% DL/2 (t) UCL	0.0301	95% H-Stat (DL/2) UCL	0.016
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.802
		SD in Log Scale	1.88
		Mean in Original Scale	0.0178
		SD in Original Scale	0.0623
		95% t UCL	0.0261
		95% Percentile Bootstrap UCL	0.0265
		95% BCA Bootstrap UCL	0.0288
		95% H-UCL	0.0105

Gamma Distribution Test with Detected Values Only		**Data Distribution Test with Detected Values Only**	
k star (bias corrected)	0.738	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.195		
nu star	26.58		
A-D Test Statistic	0.668	**Nonparametric Statistics**	
5% A-D Critical Value	0.774	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.774	Mean	0.0176
5% K-S Critical Value	0.211	SD	0.0621
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.00516

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.342
Mean	0.0181
Median	0.000001
SD	0.0626
k star	0.105
Theta star	0.172
Nu star	32.43
AppChi2	20.42
95% Gamma Approximate UCL (Use when n >= 40)	0.0288
95% Adjusted Gamma UCL (Use when n < 40)	0.0289

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.0261
95% KM (z) UCL	0.0261
95% KM (jackknife) UCL	0.0243
95% KM (bootstrap t) UCL	0.0264
95% KM (BCA) UCL	0.0597
95% KM (Percentile Bootstrap) UCL	0.05
95% KM (Chebyshev) UCL	0.0401
97.5% KM (Chebyshev) UCL	0.0498
99% KM (Chebyshev) UCL	0.0689
Potential UCLs to Use (dibenzo(a,h)anthracene)	
95% KM (t) UCL	0.0261

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (dieldrin)

General Statistics

Number of Valid Data	128	Number of Detected Data	35
Number of Distinct Detected Data	35	Number of Non-Detect Data	93
		Percent Non-Detects	72.66%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00046	Minimum Detected	-7.684
Maximum Detected	0.0962	Maximum Detected	-2.341
Mean of Detected	0.0121	Mean of Detected	-5.624
SD of Detected	0.0217	SD of Detected	1.589
Minimum Non-Detect	0.000335	Minimum Non-Detect	-8.001
Maximum Non-Detect	0.00781	Maximum Non-Detect	-4.852

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

		Number treated as Non-Detect	117
		Number treated as Detected	11
		Single DL Non-Detect Percentage	91.41%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.583	Shapiro Wilk Test Statistic	0.923
5% Shapiro Wilk Critical Value	0.934	5% Shapiro Wilk Critical Value	0.934
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00402	Mean	-6.999
SD	0.0123	SD	1.523
95% DL/2 (t) UCL	0.00583	95% H-Stat (DL/2) UCL	0.0042
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-8.805
		SD in Log Scale	2.27
		Mean in Original Scale	0.00336
		SD in Original Scale	0.0125
		95% t UCL	0.00519
		95% Percentile Bootstrap UCL	0.00529
		95% BCA Bootstrap UCL	0.00607
		95% H-UCL	0.00406

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.496	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.0244		
nu star	34.71		
A-D Test Statistic	1.631	Nonparametric Statistics	
5% A-D Critical Value	0.81	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.81	Mean	0.0037
5% K-S Critical Value	0.157	SD	0.0123
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.00111

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.0962
Mean	0.00331
Median	0.000001
SD	0.0125
k star	0.135
Theta star	0.0245
Nu star	34.65
AppChi2	22.19
95% Gamma Approximate UCL (Use when n >= 40)	0.00517
95% Adjusted Gamma UCL (Use when n < 40)	0.0052

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.00553
95% KM (z) UCL	0.00552
95% KM (jackknife) UCL	0.0055
95% KM (bootstrap t) UCL	0.0068
95% KM (BCA) UCL	0.0055
95% KM (Percentile Bootstrap) UCL	0.00556
95% KM (Chebyshev) UCL	0.00852
97.5% KM (Chebyshev) UCL	0.0106
99% KM (Chebyshev) UCL	0.0147
Potential UCLs to Use (dieldrin)	
95% KM (Chebyshev) UCL	0.00852

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (gamma-BHC (lindane))

General Statistics

Number of Valid Data	105	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	93
		Percent Non-Detects	88.57%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00021	Minimum Detected	-8.468
Maximum Detected	0.044	Maximum Detected	-3.124
Mean of Detected	0.00968	Mean of Detected	-5.88
SD of Detected	0.0156	SD of Detected	1.751
Minimum Non-Detect	0.000326	Minimum Non-Detect	-8.029
Maximum Non-Detect	0.00762	Maximum Non-Detect	-4.877

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	101
Number treated as Detected	4
Single DL Non-Detect Percentage	96.19%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.627	Shapiro Wilk Test Statistic	0.956
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.00179	Mean	-7.499
SD	0.00588	SD	1.262
95% DL/2 (t) UCL	0.00274	95% H-Stat (DL/2) UCL	0.00167
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-8.617
		SD in Log Scale	1.331
		Mean in Original Scale	0.00125
		SD in Original Scale	0.00592
		95% t UCL	0.00221
		95% Percentile Bootstrap UCL	0.00235
		95% BCA Bootstrap UCL	0.00281
		95% H-UCL	0.0006105

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.438	Data appear Gamma Distributed at 5% Significance Level	
Theta Star	0.0221		
nu star	10.51		
A-D Test Statistic	0.549	Nonparametric Statistics	
5% A-D Critical Value	0.784	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.784	Mean	0.00136
5% K-S Critical Value	0.259	SD	0.00588
Data appear Gamma Distributed at 5% Significance Level		SE of Mean	0.0006007

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.044
Mean	0.00121
Median	0.000001
SD	0.00596
k star	0.136
Theta star	0.00886
Nu star	28.64
AppChi2	17.43
95% Gamma Approximate UCL (Use when n >= 40)	0.00198
95% Adjusted Gamma UCL (Use when n < 40)	0.002

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.00236
95% KM (z) UCL	0.00235
95% KM (jackknife) UCL	0.00227
95% KM (bootstrap t) UCL	0.0056
95% KM (BCA) UCL	0.00276
95% KM (Percentile Bootstrap) UCL	0.00261
95% KM (Chebyshev) UCL	0.00398
97.5% KM (Chebyshev) UCL	0.00511
99% KM (Chebyshev) UCL	0.00734

Potential UCLs to Use (gamma-BHC (lindane))	
95% KM (t) UCL	0.00236

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Result (indeno(1,2,3-cd)pyrene)

General Statistics

Number of Valid Data	143	Number of Detected Data	31
Number of Distinct Detected Data	31	Number of Non-Detect Data	112
		Percent Non-Detects	78.32%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.00043	Minimum Detected	-7.752
Maximum Detected	0.56	Maximum Detected	-0.58
Mean of Detected	0.248	Mean of Detected	-2.154
SD of Detected	0.205	SD of Detected	1.769
Minimum Non-Detect	0.0034	Minimum Non-Detect	-5.684
Maximum Non-Detect	0.0568	Maximum Non-Detect	-2.868

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	120
Number treated as Detected	23
Single DL Non-Detect Percentage	83.92%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.848	Shapiro Wilk Test Statistic	0.81
5% Shapiro Wilk Critical Value	0.929	5% Shapiro Wilk Critical Value	0.929
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	0.0575	Mean	-4.733
SD	0.138	SD	1.644
95% DL/2 (t) UCL	0.0766	95% H-Stat (DL/2) UCL	0.0505
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.457
		SD in Log Scale	2.151
		Mean in Original Scale	0.0559
		SD in Original Scale	0.139
		95% t UCL	0.0751
		95% Percentile Bootstrap UCL	0.0748
		95% BCA Bootstrap UCL	0.0775
		95% H-UCL	0.0807

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only	
k star (bias corrected)	0.73	Data do not follow a Discernable Distribution (0.05)	
Theta Star	0.34		
nu star	45.24		
A-D Test Statistic	1.093	Nonparametric Statistics	
5% A-D Critical Value	0.786	Kaplan-Meier (KM) Method	
K-S Test Statistic	0.786	Mean	0.0547
5% K-S Critical Value	0.164	SD	0.138
Data not Gamma Distributed at 5% Significance Level		SE of Mean	0.0118

ProUCL Output for Soil Samples After Proposed Soil Removal (1-16 feet)
Former Black Leaf Chemical Site, Louisville, Kentucky

Assuming Gamma Distribution	
Gamma ROS Statistics using Extrapolated Data	
Minimum	0.000001
Maximum	0.56
Mean	0.0548
Median	0.000001
SD	0.139
k star	0.106
Theta star	0.518
Nu star	30.27
AppChi2	18.71
95% Gamma Approximate UCL (Use when n >= 40)	0.0887
95% Adjusted Gamma UCL (Use when n < 40)	0.0892

Note: DL/2 is not a recommended method.

95% KM (t) UCL	0.0742
95% KM (z) UCL	0.074
95% KM (jackknife) UCL	0.0739
95% KM (bootstrap t) UCL	0.0768
95% KM (BCA) UCL	0.0809
95% KM (Percentile Bootstrap) UCL	0.0768
95% KM (Chebyshev) UCL	0.106
97.5% KM (Chebyshev) UCL	0.128
99% KM (Chebyshev) UCL	0.172
Potential UCLs to Use (indeno(1,2,3-cd)pyrene)	
95% KM (Chebyshev) UCL	0.106

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

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