TETRA TECH

April 1, 2015

Mr. Steve Spurlin
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303

Subject: **Draft Sampling and Analysis Plan, Revision 1**
Bulk Material and Soil Sampling Event
Wrigley Charcoal
EPA Contract No. EP-S4-14-03 (START IV Region 4)
Technical Direction Document (TDD) Number: TT-02-004

Dear Mr. Spurlin:

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) submits this draft sampling and analysis plan for the bulk material and soil sampling to be conducted at the Wrigley Charcoal site located in Lyles, Hickman County, Tennessee.

The technical approach has been prepared for your approval and includes a health and safety plan. Please call Paul Prys at (678) 775-3106 if you have any comments or questions regarding this document.

Sincerely,

Paul Prys
START IV Project Manager

Andrew F. Johnson
START IV Program Manager

Enclosure

cc: Katrina Jones, EPA Project Officer
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DRAFT
SAMPLING AND ANALYSIS PLAN
BULK MATERIAL AND SOIL SAMPLING EVENT

WRIGLEY CHARCOAL
LYLES, HICKMAN COUNTY, TENNESSEE

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 4
Atlanta, Georgia 30303

Contract No.	:	EP-S4-14-03
TDD No.	:	TT-02-004
Date Prepared	:	April 1, 2015
EPA Task Monitor	:	Steve Spurlin
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Appendix

1.0 INTRODUCTION

Under Superfund Technical Assessment and Response Team (START) Contract Number (No.) EP-S4-14-03, Technical Direction Document Number: TT-02-004, the U.S. Environmental Protection Agency (EPA) tasked Tetra Tech, Inc. (Tetra Tech) with preparing a sampling and analysis plan (SAP) for the asbestos bulk material and soil sampling field event that will be conducted at the Wrigley Charcoal Industrial Plastics Company (WC) in Lyles, Hickman County, Tennessee (Appendix A, Figure 1). The purpose of this SAP is to specify the proposed field activities and the type, number, and location of samples to be collected during the field event, as well as to describe the sampling methods to be followed. The sampling event will be led and conducted by the EPA Region 4 Emergency Response and Removal Branch (ERRB) with Tetra Tech's technical assistance.

All activities and procedures discussed and described in this SAP will be conducted in accordance with the approved Tetra Tech Quality Management Plan dated June 2013 (Reference [Ref.] 1). Tetra Tech will carry out site activities in accordance with applicable EPA and other guidance documents to further ensure that all data quality objectives (DQO) are met. These guidance documents specifically apply to various aspects of field events, including sampling locations, sample types, sampling procedures, analytical methods, sample analysis for each type of sample, field quality assurance and quality control (QA/QC), and related topics (Refs. 2 through 5). This SAP is intended as a general, flexible guidance document that will not inhibit discretion and subsequent variation in the approach that is anticipated for the field event resulting from unexpected site conditions, personal observations, and professional opinions of field personnel. These, and possibly other, influences may contribute to deviations in actual field or other project-related activities from the specifications presented in this SAP and the guidance documents cited herein.

The primary objective of the bulk material and soil sampling effort is to evaluate the presence of asbestos in the site building materials and soil that may be disturbed during removal activities. Sampling at the site will include collection of bulk building material samples from in and around the remaining structures, as well as soil samples from a perimeter of 25 feet (ft) around the designated removal area that may have been contaminated with asbestos fibers. All samples will be submitted for asbestos analysis. The sampling and analysis activities will assist in evaluating the presence or absence of asbestos at the site prior to removal activities. A final objective will be to support a risk assessment using the analytical data generated from this field sampling event and the subsequent laboratory analysis of the samples.

The remainder of this SAP for the bulk material and soil sampling field event at the WC site is organized as follows:

- Section 2.0 describes the site background, including its history and general setting.
- Section 3.0 summarizes the proposed sampling activities, including the types of sampling, sampling locations, sampling methods, and sampling procedures.
- Section 4.0 summarizes the laboratory analytical methods.
- Section 5.0 discusses DQOs.
- Section 6.0 summarizes anticipated field activities and presents the field team and its responsibilities.
- Section 7.0 discusses the disposal of investigation-derived waste (IDW).
- Section 8.0 presents the references cited in this SAP.
- Appendix A presents figures showing the site location, site layout, and proposed bulk material and soil sampling areas.
- Appendix B provides tables summarizing samples, sampling equipment and specifications, sampling locations, analytical parameters and methods, required sample containers, preservation methods, and holding times.
- Appendix C provides the site-specific health and safety plan (HASP).

2.0 SITE BACKGROUND

This section describes the site background, including its history and general setting.

2.1 SITE HISTORY

The Wrigley Charcoal Plant Superfund site, which includes the Industrial Plastics site, was placed on the National Priorities List (NPL) in 1989, and includes active remediation and groundwater monitoring of site contaminants, including wood tar chemicals, metals, and creosote, throughout the property. Industrial Plastics is a small-scale recycling facility that conducts metals and plastics recycling, storage of waste products, and other related activities. The Industrial Plastics property consists of a large warehouse, a large processing building, and approximately 5 acres of outside/uncovered storage of processed and unprocessed acrylic, polycarbonate, acrylonitrile butadiene styrene (ABS), polyethylene, polypropylene,

styrene, polyvinyl chloride (PVC), and polyethylene terephthalate (PETG) plastics in totes and piles (Ref. 6).

On December 18, 2013, during an on-site meeting to discuss remediation of the Wrigley Charcoal Plant Superfund site, Region 4 Remedial Branch staff observed an active fire at Industrial Plastics and notified On-Scene Coordinator (OSC) Steve Spurlin and the EPA's Emergency Response and Removal Branch (ERRB). EPA mobilized Tetra Tech START and an Emergency Response and Removal Services (ERRS) contractor to supplement local fire resources and provide community air monitoring support. ERRS utilized soil from a local borrow pit to smother the fire, while Tetra Tech conducted air monitoring activities to protect on-site personnel and the surrounding community. By 09:00 hours on December 20, 2013, ERRS had extinguished the fire and begun placing erosion control barriers (silt fencing and straw wattles) to protect the creek adjacent to the site. On December 20, 2013, all EPA personnel and contractors demobilized from the site (Ref. 6).

On January 27 and February 11, 2015, EPA, Tennessee Department of Environment and Conservation (TDEC), Tetra Tech, and ERRS representatives conducted site visits to discuss bulk material and soil sampling and removal activities.

2.2 SETTING

The former Wrigley Charcoal Plant Superfund site occupies 35 acres, 15 of which are occupied by Industrial Plastics (the IP site) on the southern portion of the property. The IP site is located at 8526 Plant Road, Lyles, Hickman County, Tennessee. The coordinates for the site (as measured from the approximate center of Industrial Plastics) are latitude 35.902826 degrees north and longitude 87.352800 degrees west. The western boundary of the IP site is North Fork Mill Creek with residential neighborhoods surrounding the site. The nearest school, East Hickman Elementary, is located about 2.5 miles northeast of the IP site. The nearest daycare center, TLC Childcare, is located about 2 miles northeast of the IP site. Figures 1 and 2 in Appendix A depict the site location and general site layout.

3.0 PROPOSED SAMPLING PLAN

The purpose of the bulk material and soil sampling event is to evaluate the presence of asbestos in the site building materials and in the surrounding soil at the WC site. The IP site will be divided into two areas for sampling. In the first area, Tetra Tech will collect samples of various building materials from the remaining structures and from loose building materials located inside and around the remaining

structures. In the second area, Tetra Tech will collect surface soil samples along a perimeter of 25 ft around the designated removal area to determine the presence or absence of asbestos fibers. The proposed bulk material and soil sampling locations are presented on Figure 2 in Appendix A. Table 1 in Appendix B outlines the types, numbers, and location criteria of proposed samples and bulk material and soil sampling equipment. Table 2 in Appendix B summarizes the field quality control samples to be collected during the event. Table 3 in Appendix B presents the analytical parameters and methods, required sample containers, preservation methods, and holding times for the bulk material and soil samples. Specific analytical methods are further discussed in Section 4.0 of this SAP.

3.1 BULK MATERIAL SAMPLING

EPA and Tetra Tech will conduct a visual survey to identify the presence of potential asbestos-containing building materials (ACBM) associated with the remaining structures and debris located at the WC site. After suspect ACBM is identified, representative samples of all homogenous materials will be collected. The number, type, and locations of asbestos samples to be collected will be determined in the field by a Tetra Tech certified asbestos inspector accredited under the EPA Asbestos Model Accreditation Plan, 40 Code of Federal Regulations (CFR) 763, Appendix C (Ref. 7) and in the State of Tennessee under the Asbestos Accreditation Requirements, Rules of Department of Environment and Conservation, Chapter 1200-01-20 (Ref. 8) and the EPA Task Monitor. Bulk asbestos samples will be collected and analyzed in accordance with 40 CFR 763, Appendix C (Ref. 7), and the EPA *Test Method for the Determination of Asbestos in Bulk Building Materials* (EPA/600/R-93/116) (Ref 4). Suspect materials identified during the site visit on January 27, 2015, include cementitious roofing material, black tar-like roofing material, and building brick and associated mortar.

The inspector will visually inspect and touch all suspect ACBM to determine friability. Practical precautions will be used in collecting samples to ensure the safety of the survey personnel. Personal protective equipment, such as half-face or full-face respirators with High-efficiency Particulate Air (HEPA) filters, will be worn, as appropriate.

Sampling will be performed using procedures and precautions to ensure that asbestos fibers are not released. This includes wetting the surface with amended water of the suspect material to be sampled. Samples will be collected by breaking off small pieces with a chisel, coring out a section, or cutting a piece off with a razor knife. The tools will be thoroughly decontaminated after the collection of each sample to minimize the potential for cross-contamination. All bulk samples will be carefully collected and inspected to verify

that all layers or substrates of suspect materials are obtained. Bulk samples will be individually placed in a labeled, sealable canister and delivered to the laboratory for analysis.

3.2 SURFACE SOIL SAMPLING

EPA and Tetra Tech will collect surface soil samples outside of the designated removal area to determine the presence or absence of asbestos and whether or not additional soil removal is necessary. Sampling grids will encompass areas of 25 ft by 50 ft and 100 ft by 100 ft around the perimeter of the designated removal area. A 5-point composite soil sample will be collected from the surface of each grid to a depth of 0 to 1 inch below ground surface (bgs) and homogenized to form one sample for each grid. The proposed sampling grids located around the perimeter of the designated removal area are presented on Figure 2 in Appendix A. All soil samples will be analyzed for asbestos in accordance with the EPA OSWER Asbestos Committee of the Technical Review Workgroup, *Framework for Investigating Asbestos-Contaminated Superfund Sites*, OSWER Directive #9200.0-68 (Ref. 3) and California Environmental Protection Agency Air Resources Board (CARB) Method 435 (Ref. 5).

4.0 ANALYTICAL METHODS

The samples collected during the sampling event at the WC site will be submitted for analysis to a Tetra Tech-subcontracted laboratory. The laboratory analytical methods include: EPA *Test Method for the Determination of Asbestos in Bulk Building Materials* (EPA/600/R-93/116) (Ref 4) and CARB Method 435 (Ref. 5).

Table 3 in Appendix B specifies the analytical methods for each sample matrix, the required sample containers for each sampling media, sample preservation methods, and sample holding times.

5.0 DATA QUALITY OBJECTIVES

Sampling and laboratory analysis will be conducted to determine: (1) the presence or absence of asbestos in the samples collected from the suspect ACBM, (2) the concentrations of asbestos fibers in the surface soils around the perimeter of the designated removal area, and (3) the types of asbestos, if detected. Ultimately, the data will be used to evaluate the extent of the removal activities to be conducted at the WC site.

Field QC samples will be collected during the sampling event to monitor sampling precision and assess the cleanliness of the sampling equipment. Table 2 in Appendix B summarizes the sample designations, types, and sampling rationales for all proposed field QC samples.

The sensitivity requirements for the laboratory analytical methods are as follows:

- The analytical range for the CARB Method 435 (Ref. 5) is 0.25 percent to 100 percent asbestos. The detection limit is 0.25 percent asbestos. This detection limit is based on the application of a 400-point-counting approach.

Level II data packages for suspect asbestos bulk material and surface soil samples will be reviewed for completeness, but will not be validated. It will be the responsibility of the EPA OSC to determine the impact of any data qualifications and limitations on data usability.

Chain-of-custody of the samples collected during the field event will follow the appropriate operating procedures in the EPA Region 4 Science and Ecosystem Support Division, *Field Branches Quality System and Technical Procedures* (Ref. 2).

6.0 FIELD WORK SUMMARY

Tetra Tech and EPA will conduct bulk material and soil sampling activities at the WC site in March 2015; the exact dates are to be determined. Tetra Tech will provide all bulk material and soil analytical results to EPA in an electronic format. Proposed sampling activities are described in Section 3.0 of this SAP. The Tetra Tech field team leader or the EPA OSC may change sampling locations and the number of samples to be collected in response to site conditions at the time of the field event. Sampling will be conducted, and field quality control samples will be collected, in accordance with the guidance documents presented in Section 1.0 (Refs. 2 through 5; 7).

Tetra Tech will follow the health and safety protocol during the sampling event as outlined in the site-specific HASP presented in Appendix C. Anticipated field team members and their responsibilities are as follows:

- Steve Spurlin, EPA — On-Scene Coordinator
- Paul Prys, Tetra Tech — Field Team Leader
- Todd Taylor, Tetra Tech — Field Team Member

All specific training requirements for personnel will be addressed in the site-specific HASP (Appendix C). EPA reserves the right to conduct oversight of sampling.

7.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE

Various types of IDW will be generated during the bulk material and soil sampling event at the WC site. The IDW will generally consist of disposable latex or nitrile gloves, boot covers, Tyvek (or similar) protective garments, duct tape, plastic bags, and spent breathing air cartridges. These items are used mainly during sample collection to prevent cross-contamination during sampling activities and to provide protection and sanitary conditions to personnel throughout field work. The IDW listed above will be placed inside a plastic bag-lined steel drum that has a steel lid; additional lined drums will be used as needed to accommodate the volume of IDW generated. Tetra Tech will stage the IDW at the site for disposal during removal activities. The IDW will be considered to be contaminated with asbestos and will be disposed with the asbestos-contaminated debris generated during removal activities.

8.0 REFERENCES

1. Tetra Tech, Inc. (Tetra Tech). 2013. *Quality Management Plan*. EPA Region 4, Superfund Technical Assessment and Response Team (START) III. Revision 2. June.

2. U.S. Environmental Protection Agency (EPA). 2010 through 2013. Region 4 Science and Ecosystem Support Division (SESD). *Field Branches Quality System and Technical Procedures: Control of Records (SESDPROC-002-R6)*, October 2014; *Sample and Evidence Management (SESDPROC-005-R2)*, January 2013; *Logbooks (SESDPROC-010-R5)*, May 2013; *Global Positioning System (SESDPROC-110-R3)*, April 2011; *Soil Sampling (SESDPROC-300-R3)*, August 2014; *Waste Sampling (SESDPROC-302-R2)*, January 2013; *Bulk Sampling for Asbestos (SESDGUID-104-R1)*, June 2013; *Field Sampling Quality Control (SESDPROC-011-R4)*, February 2013; *Packing, Marking, Labeling and Shipping of Environmental and Waste Samples (SESDPROC-209-R2)*, April 2011; *Management of Investigation Derived Waste (SESDPROC-202-R3)*, July 2014; *Field Equipment Cleaning and Decontamination (SESDPROC-205-R2)*, December 2011; *Equipment Inventory and Management (SESDPROC-108-R4)*, February 2013; and *Field Measurement Uncertainty* (SESDPROC-014-R1), April 2012. On-Line Address: http://www.epa.gov/region4/sesd/fbqstp/index.html.

3. EPA. 2008. Asbestos Committee of the Technical Review Workgroup of the Office of Solid Waste and Emergency Response (OSWER). *Framework for Investigating Asbestos-Contaminated Superfund Sites*. OSWER Directive #9200.0-68. September.

4. EPA. 1993. Office of Research and Development. Test Method EPA/600/R-93/116, *Method for the Determination of Asbestos in Bulk Building Materials*. July.

5. California Environmental Protection Agency, Air Resources Board (ARB). 1991. *Method 435, Determination of Asbestos Content of Serpentine Aggregate*. Adopted June 6. This method can be found at the following web address: http://www.epa.gov/ttn/emc/ctm.html.

6. Tetra Tech. 2014. Comprehensive Environmental Response, Compensation, and Liability Act Emergency Response Report, Wrigley Industrial Plastics Company Fire, Lyles, Hickman County, Tennessee. February 26.

7. EPA. Model Accreditation Plan, 40 *Code of Federal Regulations* (CFR) 763, Appendix C.

8. Tennessee Department of Environment and Conservation (TDEC). 2009. Asbestos Accreditation Requirements, Rules of Department of Environment and Conservation, Chapter 1200-01-20. June.

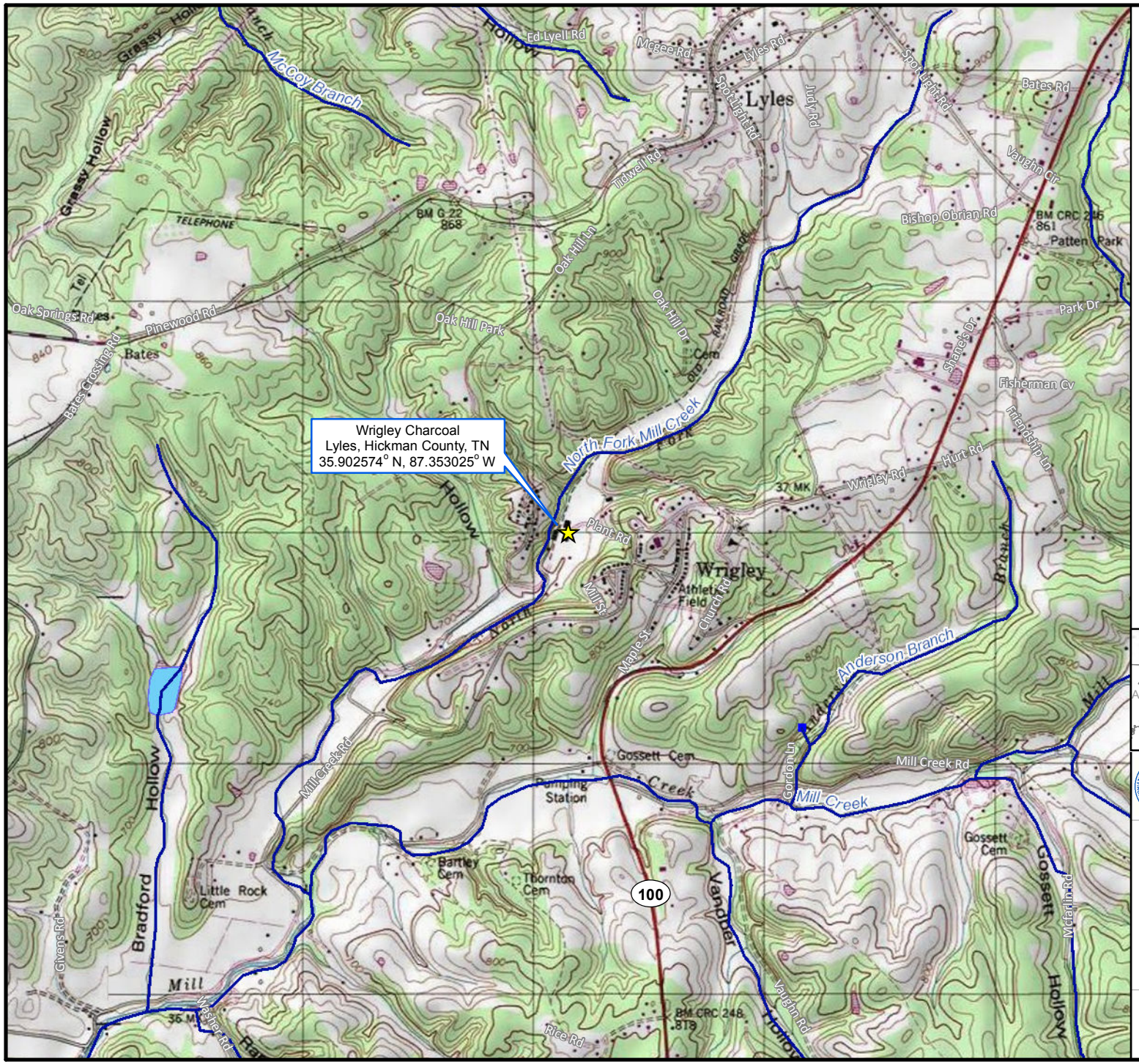
APPENDIX A

FIGURES

(Two Pages)

FIGURE

1 SITE LOCATION
2 SITE LAYOUT WITH PROPOSED SAMPLING AREAS



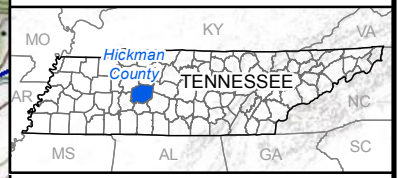
Legend

☆ Site Location

N
W E
S

0 1,000 2,000
Feet

Map Sources:
USGS 7.5 Minute Topographic Quadrangle Maps:
Texas Hollow, TN 1968 & Lyles, TN 1992.
National Hydrology Dataset, 2015.



United States Environmental Protection Agency
Region 4

FIGURE 1

Site Location

TDD Name: Wrigley Charcoal

TDD No.: TT-02-004

City:	County:	State:
Lyles	Hickman	Tennessee

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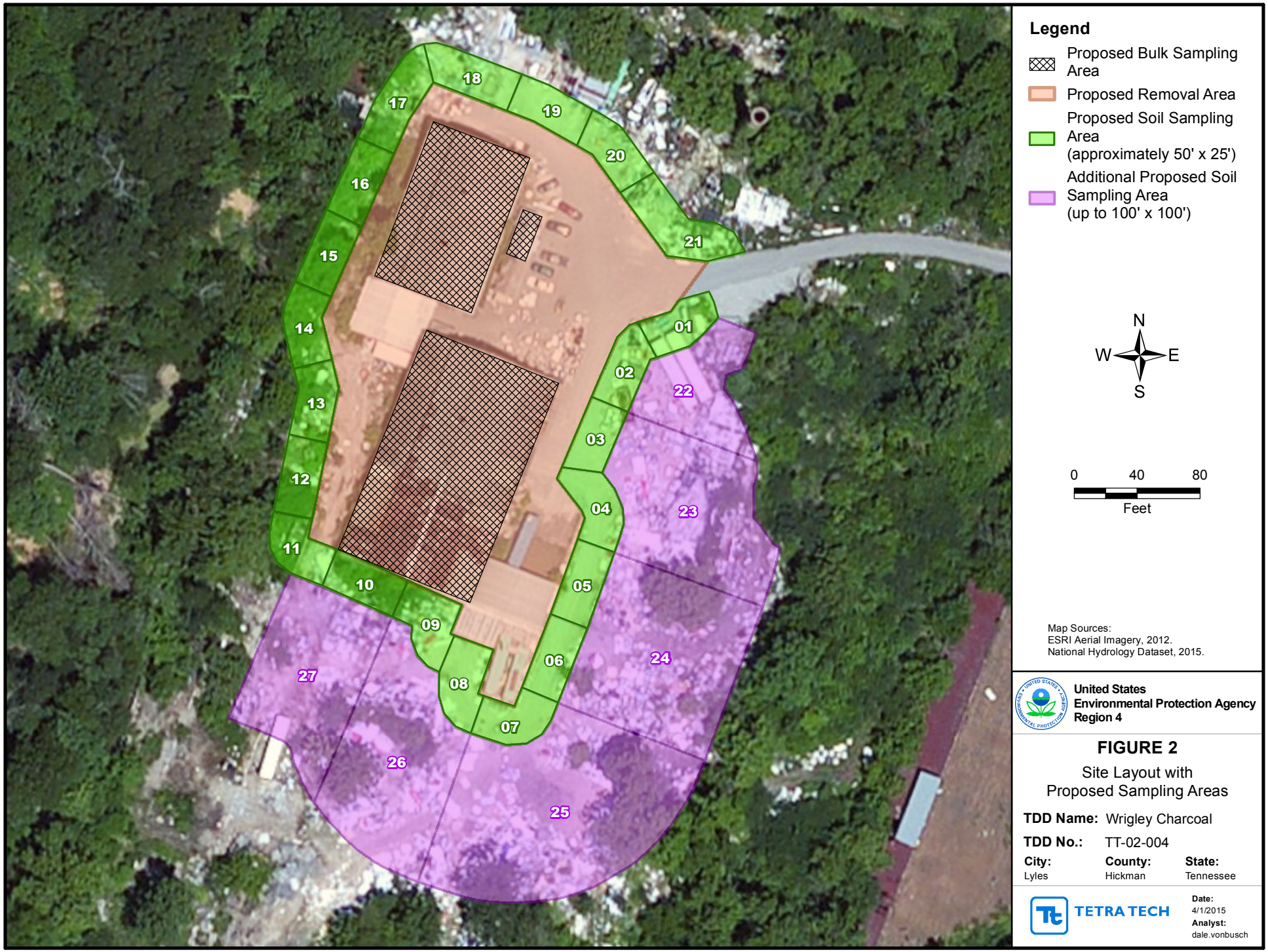
Date: 2/23/2015
Analyst: dale.vonbusch

File: L:\TT-02-004_Wrigley_Charcoal\mxds\Site_Location_022315.mxd



Map Sources:
ESRI Aerial Imagery, 2012.
National Hydrology Dataset, 2015.

United States Environmental Protection Agency Region 4

FIGURE 2

Site Layout with Proposed Sampling Areas

TDD Name: Wrigley Charcoal

TDD No.: TT-02-004

City:	County:	State:
Lyles	Hickman	Tennessee

TETRA TECH

Date: 4/1/2015

Analyst: dale.vonbusch

File: L:\TT-02-004_Wrigley_Charcoal\mxds\Proposed_Sampling-Removal_Areas_040115.mxd

APPENDIX B

TABLES

(Three Pages)

TABLE

TABLE 1
WRIGLEY CHARCOAL
BULK MATERIAL AND SOIL SAMPLING:
SAMPLES, SAMPLING EQUIPMENT AND SPECIFICATIONS, AND SAMPLING LOCATIONS

Station ID	Sample Designation	Sampling Equipment	Sampling Location and Number of Samples
Bulk Material Sampling			
WCBXX	WC-BXX-MMMM-##	Hand tools and plastic bags	Remaining site structures. Number of samples of each suspect asbestos-containing building material will be determined in the field.
Surface Soil Sampling			
WCXX	WC-AS-XX-mmddyy	Stainless steel spoon, stainless steel bowl, and two 4-ounce glass jars.	Within each grid area located around the perimeter of the designated removal area. Collect surface soil samples from each grid area as a multi-point composite consisting of five aliquots from each grid location. Collect each aliquot by digging at the ground surface to a depth of 0 to 1 inch.

Notes:

##	=	Sample number to be selected in the field.
AS	=	Asbestos soil sample
B	=	Building
BXX	=	Building identification number, where XX = 01, 02, 03, etc.
ID	=	Identification
mmddyy	=	Date of sample (month, day, and year)
MMMM	=	Suspect asbestos-containing building material. Material designation to be selected in the field.
WC	=	Wrigley Charcoal site
XX	=	Soil sampling grid area, where XX = 01, 02, 03, etc.

TABLE 2
WRIGLEY CHARCOAL
BULK MATERIAL AND SOIL SAMPLING:
FIELD QUALITY CONTROL SAMPLES

Station ID	Sample Designation	Sample Type	Rationale
(Original Sample Station ID)	*(Original Sample Designation)*-DUP	Field Duplicate Sample	Measure both field and laboratory precision. One field duplicate sample will be collected for every 20 samples.

Notes:

DUP = Field duplicate sample
ID = Identification

TABLE 3
WRIGLEY CHARCOAL
BULK MATERIAL AND SOIL SAMPLING:
ANALYTICAL PARAMETERS AND METHODS, REQUIRED SAMPLE CONTAINERS, PRESERVATION METHODS, AND HOLDING TIMES

Analytical Parameter	Matrix	Analytical Method	Number and Type of Sample Container or Sampling Media	Sample Preservation Method	Sample Holding Time
Asbestos	Bulk material	EPA/600/R-93/116[a]	Number of samples TBD and plastic bags	None; store in a cool, dark location	Indefinite
Asbestos	Soil	CARB Method 435[b]	Two 4-ounce glass jars with Teflon-lined lids	None; store in a cool, dark location	Indefinite

Notes:

[a] = Environmental Protection Agency (EPA). 1993. *Test Method EPA/600/R-93/116, Method for the Determination of Asbestos in Bulk Building Materials*. July.

[b] = California Environmental Protection Agency, Air Resources Board (CARB). 1991. *Method 435, Determination of Asbestos Content of Serpentine Aggregate*. Adopted June 6.

TBD = To be determined

APPENDIX C

LEVEL 2 HEALTH AND SAFETY PLAN

(62 Pages)