

Sampling Analysis Plan

February 2024

Assessment Site:

***YMCA of Greater Tulsa
1208 E. Pine St. Tulsa, Oklahoma***

Project Number: 4690-24

Prepared by:



BLACKSHARE
ENVIRONMENTAL SOLUTIONS

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1.0 INTRODUCTION

1.1 Background

The subject property consists of vacant, grass-covered lot located between N. Peoria Ave and a vacant building and associated parking lot owned and formerly used by the YMCA of Greater Tulsa as a senior center. The subject property is owned by the YMCA and is currently undeveloped. Utility lines run east-west along the northern perimeter of the property. Utility lines as well as overhead electric lines run north-south along the eastern perimeter of the property.

Blackshare Environmental Solutions (Blackshare) conducted a Phase I Environmental Site Assessment (ESA) (report dated March 30, 2023) which identified a Recognized Environmental Condition (REC) for historical use of the property as an electrical substation and recommended conducting a Phase II ESA. The subject property was formerly used as an electrical sub-station by the Public Service Company of Oklahoma (PSO) from at least 1938 until approximately 1980. Following the removal of the onsite electrical sub-station in approximately 1980, a new electrical sub-station was constructed adjacent to the southwest of the subject property. The nearby electrical sub-station is still in operation to this day. However, PCBs in soil are believed to be remnants of the historic onsite electrical sub-station rather than the current nearby electrical sub-station.

Next, Blackshare completed the Phase II ESA (report dated August 22, 2023) which identified PCBs above detection levels in five of the 12 soil samples collected. Groundwater was not encountered in any of the borings at auger refusal and is not believed to be impacted. A map of sample locations, sample depths, and PCB concentrations from the Phase II investigation is included as Attachment A.

A prospective buyer of the property turned these results and report into the Oklahoma Department of Environmental Quality (ODEQ) and, eventually, the Environmental Protection Agency (EPA) seeking guidance on whether cleanup was required or not based on the findings of the investigations. Various investigation and cleanup scenarios were discussed but the transaction with the prospective buyer was eventually cancelled.

As the property owner, the YMCA is interested in addressing the PCB issue to be able to market and/or repurpose the site. Contact with EPA has determined that the cleanup level necessary to return the site to unrestricted use is 1 part per million (ppm) of PCBs. Therefore, the objective of this investigation is to, in combination with previous results, delineate areas of contamination above 1 ppm PCBs. Future actions will include the excavation, transportation, and offsite disposal of impacted soil, as well as backfilling excavated areas with clean fill and site restoration.

The results of this investigation will determine the extent of soil excavation and removal necessary to attain unrestricted use for the property.

With the submittal of this SAP, the YMCA, via Blackshare, is requesting concurrence from EPA to all conditions described herein. Once finalized, the execution of the SAP is designed to allow the YMCA to proceed with conducting an excavation, offsite disposal, and replacement of soil to obtain a release of unrestricted use per all applicable regulations.

1.2 Site Name or Sampling Area

1208 E. Pine St. – YMCA of Greater Tulsa

1.3 Site or Sampling Area Location

1208 E. Pine St.
Tulsa, Oklahoma

1.4 Responsible Agency

Blackshare Environmental Solutions (Blackshare) is conducting the investigation described in this sampling and analysis plan (SAP) for the YMCA of Greater Tulsa (YMCA) in response to cleanup requirements of the Environmental Protection Agency (EPA).

1.5 Project Organization

Table 1-1 provides the names, phone numbers, and email addresses of the person(s) working on the sampling project.

Table 1-1 – Key Personnel Contact Information and Responsibilities

Title	Name	Phone Number Email Address	Responsibilities
Blackshare Project Manager	Derek Blackshare	(918) 388-0970 (918) 640-0152 cell dblackshare@blackshare-env.com	Overall project coordination
Blackshare Field Personnel	Collin Seabolt	(918) 388-0970 (918) 845-7637 cell cseabolt@blackshare-env.com	Field collection of samples
Blackshare Field Personnel	David Taylor	(918) 388-0970 (918) 895-8344 cell dtaylor@blackshare-env.com	Field collection of samples
Blackshare Field Personnel	Whitney Davis	(918) 388-0970 (918) 671-2616 cell wdavis@blackshare-env.com	Field collection of samples
Great Plains Probing Service Environmental Driller	Louis Novotny	(405) 245-325 Gppsnumber7@aol.com	Operation of direct-push soil boring rig

2.0 PROJECT INVESTIGATION

This section provides specific information on the objectives, methods, and analysis proposed for the investigation.

2.1 Investigation Objectives

The purpose of this investigation is to sample and analyze soils onsite for PBS in order to delineate the extent of the PCBs in soil and achieve site characterization. From the results, a map/diagram will be created which dictates the scope of an excavation event to remediate the site to unrestricted use.

2.2 Investigation Methodology

2.2.1 Summary of Previous Investigations

The previous investigation collected two soil samples – one shall and one deeper – from each of six borings on the site. Five of the 12 samples indicated PCB levels above laboratory detection levels. Four of those five samples were from the shallow samples in the borings and one of those was below 1 ppm (SB-2A). Only one of the deeper samples (SB-2B) yielded results above laboratory detection levels and it was 1.13 ppm.

2.2.2 Proposed Sample Locations/Rationale

The results from the previous investigation indicate the PCB impact is restricted to shallow depths (<2.5'). The one exception to this is the results from sample SB-2B which is a deep sample. The PCB concentration from this sample is 1.13 ppm. To determine the boundaries of this pocket, Blackshare proposes to install four borings – each 5' from the location of SB-2 – in the cardinal directions as indicate on the site map in Attachment B by the green dots. These borings will be advanced to auger refusal with two samples collected, per boring, at depths of 6' and 8'. In addition, one boring will be installed in the location of the previous boring SB-2. Two samples will be collected from it at depths of 8' and 10' bgs or auger refusal. The purpose of these samples is to bound the depth of excavation necessary to remove soil to below 1 ppm.

In addition, another round of borings, 5' farther from SB-2 (represented by yellow dots) will be advanced and samples collected as in the borings described above. However, these samples will not be analyzed until the results of the original samples are received and reviewed. They will only be analyzed if necessary to set boundaries of < 1 ppm PCBs.

Attachment B is a map of the proposed sampling locations for the shallow sample results that are above 1 ppm PCBs (SB-3, SB-4, and SB-5). Blackshare proposes to advance direct-push borings in the locations indicated with red dots on Attachment B. These locations surround each of the three sample locations referenced from the previous investigation (represented by orange dots and boring numbers) in all four cardinal directions at a distance of 10'. Each of the proposed borings will be advanced to a depth of 4' and two soil samples will be collected from each boring at depths of 1' and 3'.

In addition, another round of borings, 10' farther from each of the original borings (represented by purple dots) will be advanced and samples collected as in the borings described above. However, these samples will not be analyzed until the results of the original samples are received and reviewed. They will only be analyzed if necessary to set boundaries of < 1 ppm PCBs.

Note that utilities could be in conflict with any of the proposed boring locations and require them to be moved slightly but particularly for the two closest to N. Peoria Ave.

As directed by EPA, the results of the samples will be used to create maps/diagrams of soil to be excavated and removed to achieve unrestricted use for the site and documentation from EPA indicating that a cleanup has been completed to achieve that objective per all applicable regulations. The results from the investigation will be used to delineate the area containing PCBs above cleanup levels (1 ppm) so that an excavation map/diagram can be created at the conclusion of this investigation. Boundaries will be set in the four cardinal directions by results of < 1 ppm PCBs with the points connected by a circular arc. It will be the primary scope item so that the excavation of impacted soil can be bid by contractors. The results will also be used as confirmation samples such that none will need to be collected or analyzed after excavation is complete with the exception of one composite sample collected from backfill to ensure it is unimpacted by PCBs.

3.0 SAMPLING METHODOLOGY

Drilling Services will be performed by a State of Oklahoma licensed driller (Great Plains Probing Service) using a direct push method via a tractor mounted Geoprobe. Soil samples will be collected from the boring continuously using a macro-core sampler equipped with four-foot polyvinyl chloride (PVC) sampling tubes. Sampling equipment will be decontaminated prior to the beginning of the project and after each boring. Soil samples will be collected continuously and observed to document soil lithology, color, moisture content, and sensory evidence of impairment.

The soil samples will be collected via grab samples as individual aliquots using lab-prepared sample containers. Two soil samples will be collected from each of the soil borings as described in section 2.2.2. Each sample will consist of a shallower sample attributed by an "A" and a deeper sample attributed by a "B" (IE. SB-#A and SB-#B).

One duplicate sample will be collected from a random, unspecified sample collection location for Quality Assurance / Quality Control.

The field sampler will collect soil samples while wearing gloves. Gloves will be replaced following the collection of each sample. The soil samples will be collected directly from the PVC sampling tubes after the PVC sampling tubes have been sliced down the middle using a hooked blade. The hooked blade will be decontaminated between the slicing of each sampling tube.

3.1 Project Data Management

All samples collected at the site will be logged on a standard chain of custody (COC) form (Attachment C) by the collector with the sample ID as well as the date and time the sample was collected. Each sample container will be clearly marked with the same information.

All samples collected will be taken to Green Country Testing, in Tulsa, OK. Green Country Testing is an Oklahoma Department of Environmental Quality (ODEQ) accredited lab with the capability to run all of the analyses required for this project. Samples will be transported to the lab on ice.

When the samples are delivered to Green Country Testing, they will be relinquished under the COC form. Once the analyses are complete, Green Country Testing will provide Blackshare with a report of the results.

Table 3-1: Contaminants of Concern

Analytical Parameter (Contaminants of Concern) – Method	Matrix
PCBs in Soil – SW8082A	Soil

The lab will provide the results to Blackshare in writing within a standard turnaround time.

4.0 FIELD METHODS AND PROCEDURES

4.1 Field Equipment

4.1.1 List of Equipment Needed

Soil samples will be collected from a 4-foot PVC macro-core sleeve using disposable gloves. No equipment will be used that will require calibration. See Table 6-1 for a comprehensive list of equipment.

Table 4-1: Field and Sampling Equipment

Description of Equipment	Material (if applicable)	Dedicated (Yes/No)
Tractor-mounted Geoprobe Rig		No
Geoprobe 4-foot Core Sampler	Steel	No
4-foot PVC macro-core sleeve	PVC	Yes
Sample Containers	Glass	Yes
Disposable Gloves	Latex	Yes
Field Notes	Paper	No
Camera	Various	No

4.2 Decontamination Procedures

Decontamination will be necessary of some nondedicated equipment such as the Geoprobe 4-foot core sampler. This equipment will be decontaminated using water, a solution of Alconox detergent, and a scrub brush between borings in order to avoid cross contamination. All dedicated equipment to be used will be disposable and will be disposed of after each sample is taken to avoid cross contamination.

5.0 SAMPLE CONTAINERS, PRESERVATION, PACKAGING AND SHIPPING

The type of sample containers, volumes, and preservatives are listed in section 7.1 through 7.3. The containers are pre-cleaned and will not be rinsed prior to sample collection.

5.1 Soil Samples

PCBs in Soil – SW8082A: Each soil sample collected for analysis by method SW8082A will be collected in one 8oz glass jar with no preservatives.

5.2 Packaging

All sample containers will be placed in a strong-outside container (a rigid-sided cooler). The following outlines the packaging procedures that will be followed for samples.

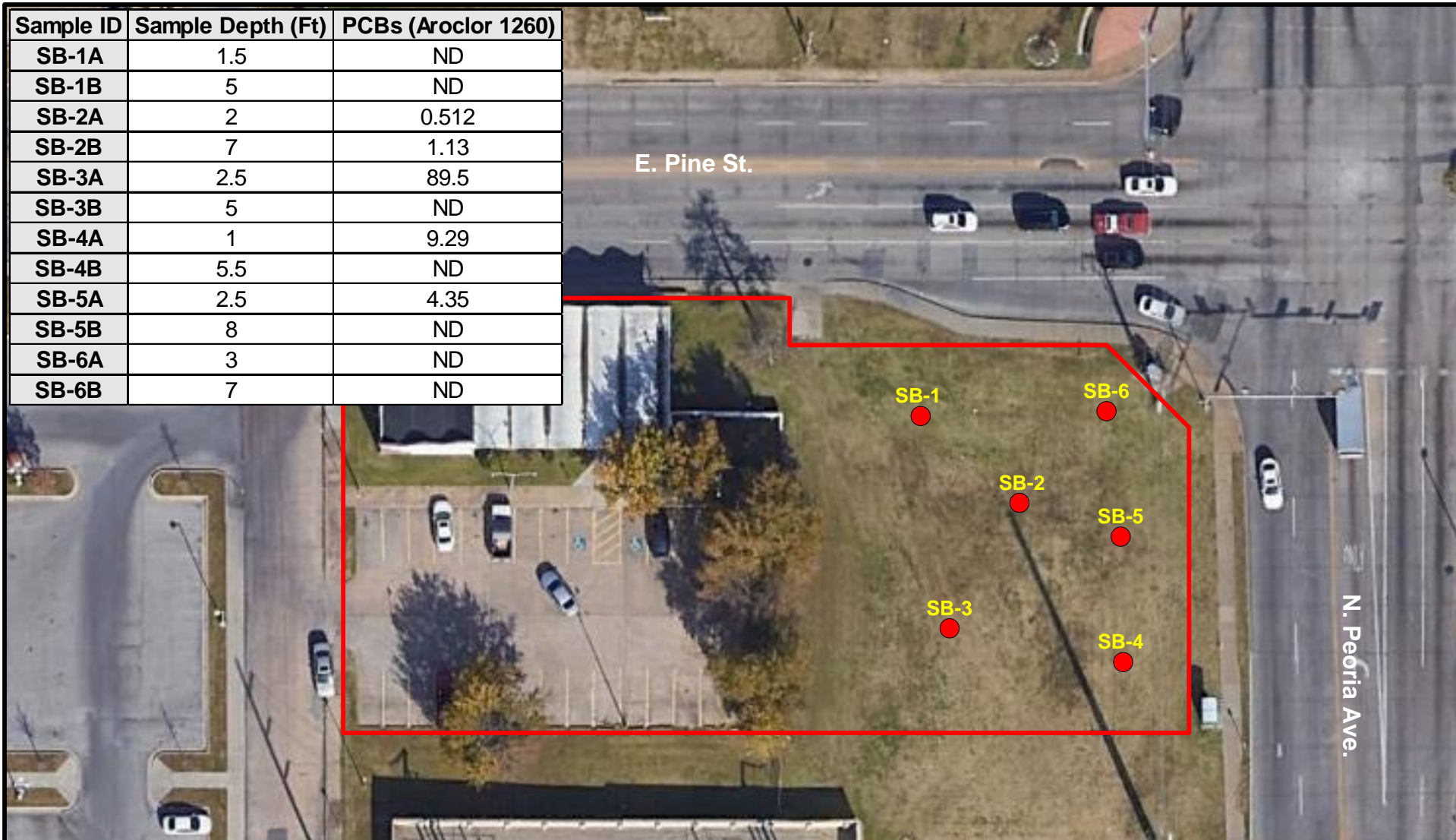
1. When ice is used, pack it in zip-locked, double plastic bags. Seal the drain plug of the cooler with fiberglass tape to prevent melting ice from leaking out of the cooler.
2. The bottom of the cooler should be lined with bubble wrap to prevent breakage during travel.
3. Secure bottle/container tops with clear tape and custody seal all container tops.
4. Affix sample labels onto the containers with clear tape.
5. Wrap all glass sample containers in bubble wrap to prevent breakage.
6. Seal all sample containers in heavy duty plastic zip-lock bags. Write the sample numbers on the outside of the plastic bags with indelible ink.
7. Place samples in a sturdy cooler(s) lined with a large plastic trash bag. Enclose the appropriate COC(s) in a zip-lock plastic bag affixed to the underside of the cooler lid.

8. Fill empty space in the cooler with bubble wrap or styrofoam peanuts to prevent movement and breakage during shipment.
9. Ice used to cool samples will be double sealed in two zip lock plastic bags and placed on top and around the samples to chill them to the correct temperature.


ATTACHMENT A

Previous Phase II Investigation Map

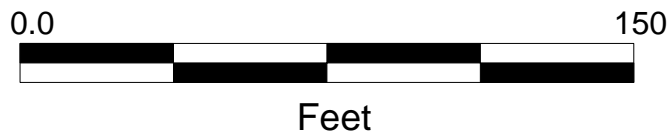
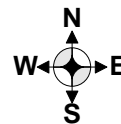
Sample ID	Sample Depth (Ft)	PCBs (Aroclor 1260)
SB-1A	1.5	ND
SB-1B	5	ND
SB-2A	2	0.512
SB-2B	7	1.13
SB-3A	2.5	89.5
SB-3B	5	ND
SB-4A	1	9.29
SB-4B	5.5	ND
SB-5A	2.5	4.35
SB-5B	8	ND
SB-6A	3	ND
SB-6B	7	ND



Tulsa County, Oklahoma
Parts of NE/4 S36, T20N, R12E

Property Boundary 

Sample Location 



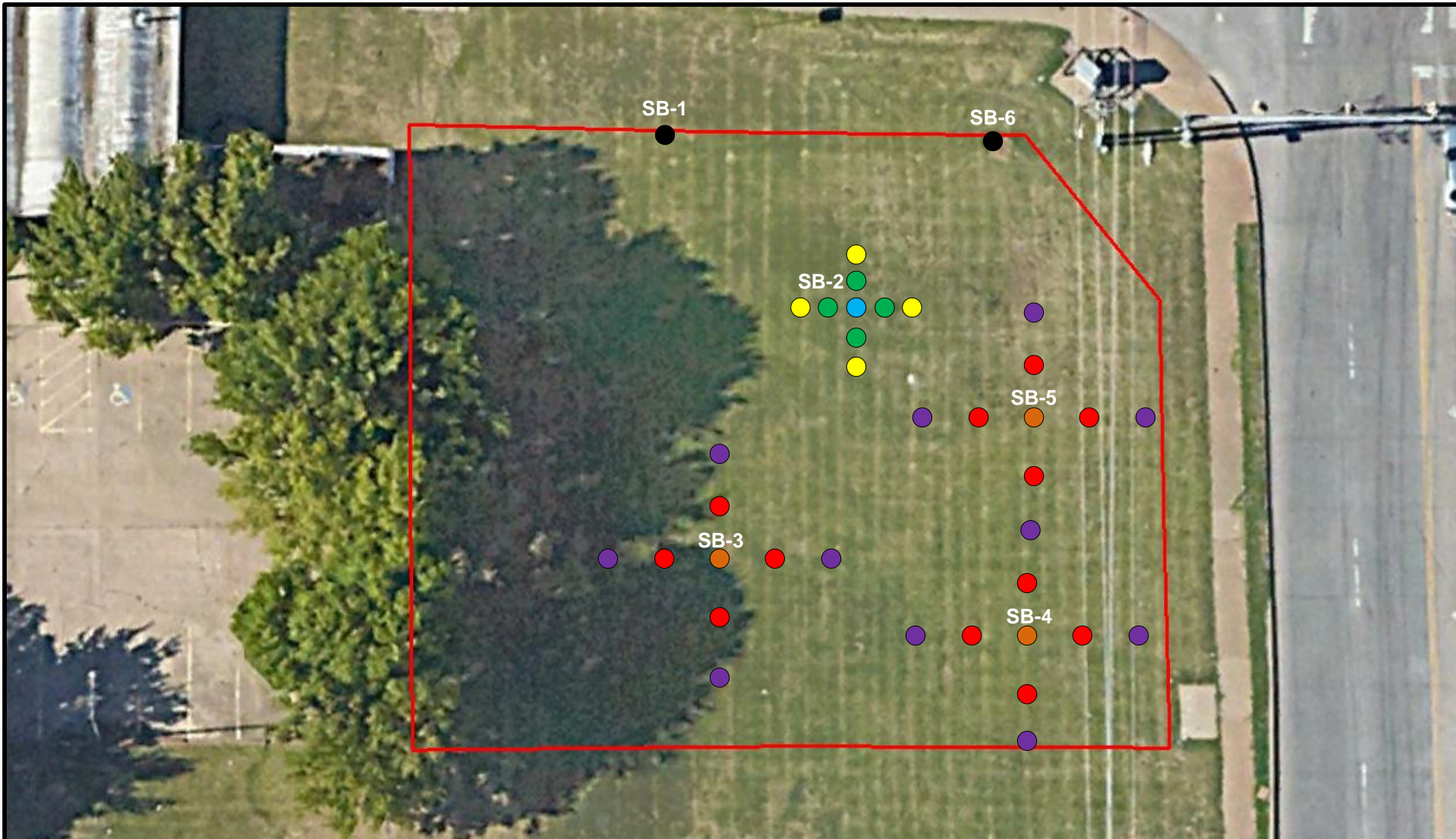
Sample Location Map

1208 E. Pine St.
Tulsa, Oklahoma

PROJECT NO.: 4612-23 DATE: 08/09/2023

ATTACHMENT B

Sampling Area Map



Tulsa County, Oklahoma
Parts of NE/4 S36, T20N, R12E

Project Boundary

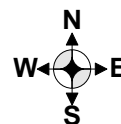
Proposed Sample Locations

Previous Phase II

Deep Sample Locations above 1 ppm

Shallow Sample Locations above 1 ppm

Deep / Shallow Sample Locations below 1 ppm



0.0 Feet 40.0



Sample Location Map


1208 E. Pine St.
Tulsa, Oklahoma

PROJECT NO.: 4690-24 DATE: 02/06/2024

ATTACHMENT C

Example Form - Chain of Custody

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

 BLACKSHARE <small>ENVIRONMENTAL SOLUTIONS</small> 5109 S. Wheeling Tulsa, OK 74105 918/388-0970 918/388-0971(fax)						REPORTING LABORATORY: Green Country Testing						CLIENT/PROJECT NAME: 1208 E. Pine St.							
						DATE:						YMCA of Greater Tulsa							
						NAME:						PROJECT NUMBER: 4690-24							
						ADDRESS: 6825 E. 38th St. Tulsa, OK						PROJECT LOCATION: Tulsa, OK							
CONTACT: PHONE: (918) 828-9977																			
ANALYSIS REQUESTED																			
SAMPLER: Collin Seabolt, David Taylor, Whitney Davis						PCBs(SW8082A)													CONDITION UPON RECEIPT
PRIME LAB ID NO.	NO. & SIZE OF BOTTLE	FIELD IDENTIFICATION / SAMPLE NO.	DATE	TIME	SAMPLE TYPE (LIQUID, SLUDGE. ETC.)														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
	1-8oz Jar				Soil														
COC SEAL DATE:			RELINQUISHED BY: (SIGN)			DATE/TIME:			RECEIVED BY: (SIGN)			DATE/TIME:			DATA RESULTS TO:				
CARRIER:			RELINQUISHED BY: (SIGN)			DATE/TIME:			RECEIVED BY: (SIGN)			DATE/TIME:			cseabolt@blackshare-env.com & dblackshare@blackshare-env.com				
BILL TO:																			