

DRAFT
Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Contaminated Soil Site, 400 Washington Street
Easton, PA 15603

Prepared by the Greater Easton Development Partnership

I. Background & Introduction

The purpose of this preliminary Analysis of Brownfields Cleanup Alternatives (ABCA) is to provide information about contamination issues at the 400 Washington Street site (Site) and evaluate possible remedial alternatives. This evaluation will be revised, as necessary, and incorporated into the final Site Cleanup Plan for review by the community, project partners, regulatory oversight agencies, and the United States Environmental Protection Agency (EPA).

a. Site Location

The Site is located at 400 Washington Street in Easton, PA and is identified as the “Site.” The Site is 1.2-acres and currently vacant land. The Site historically operated as a rail yard, rail passenger depot and freight depot from the 1890’s through the late 1970’s. A portion of the site also operated as woodworking and furniture manufacturing facility in the late 1960’s. The site has sat vacant from the late 1970’s to the present and in the early 1990’s all site structures were razed. The site is owned by the Greater Easton Development Partnership (GEDP). Attached are Figure 1 – Site Location Map and Figure 2 – Site Plan.

a.1 Forecasted Climate Conditions

According to the US Global Change Research Program (USGCRP), climate trends for the northeast region of the United States include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. Some of these factors, most specifically increased stormwater runoff related to forecasted precipitation increases, are most applicable to the cleanup of the site.

The site was investigated in 2022 by soil sampling across the site. Soils were analyzed for Target Compound List (TCL) volatile organic compound (VOCs), TCL semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and Resource Conservation and Recovery Act (RCRA) metals. No VOCs, SVOCs, or PCBs were identified at concentration in soils above the Pennsylvania Department of Environmental Protection (PADEP) Residential Soil Medium Specific Concentration (MSCs) or standards. Lead and arsenic were identified in soils across the site at concentrations exceeding the PADEP Residential MSC.

The site sits approximately 120-ft upgradient from the Lehigh River, less than half-mile upgradient from the confluence of the Delaware River. The Lehigh River is designated for the protection of “Cold Water Fishes” (CWF) and serves as the source of raw water to numerous Municipal Water Authorities. The identified onsite soils with elevated

concentrations of lead, in exceedance of the PADEP Soil-to-Groundwater MSC combined with predicted increases in precipitation and stormwater runoff suggests an increased likelihood that impacts associated with the soils will enter Lehigh River and ultimately the Delaware River. As a result of predicted climate change conditions, the transportation of lead laden soils and sediment will have potentially deleterious effects on sensitive, aquatic ecosystems.

According to FEMA Flood Zone Mapping, the Site is located in an area of minimal flood risk. However, the Site is adjacent to a Zone AE area associated with the Lehigh River. Stormwater runoff and surface water from the Site drains into this waterway.

b. Previous Site Uses

The Site is identified as Parcel No / Tax ID: L9SE2D 25 1A and consists of a single, approximately 1.2-acre parcel of commercial real estate with an address of 400 Washington Street, Easton, Northampton County, PA and is located in a mixed-use commercial/residential neighborhood. A map of the Site and the immediate vicinity is included as Figure 1 and an Aerial Location Map is included as Figure 2. The site was purchased by the Greater Easton Development Partnership on March 30, 2023.

The Site historically operated as a rail yard, rail passenger depot and freight depot from the 1890's through the late 1970's. A portion of the site also operated as a woodworking and furniture manufacturing facility in the late 1960's. The site has sat vacant from the late 1970's to the present and in the early 1990's all site structures were razed. The property is currently a vacant lot.

The following assessment activities have taken place on this Site:

- Phase I Environmental Site Assessment, EARTHRES Group, Inc. - July 2022
- Soil Screening Sampling, EARTHRES Group, Inc. – August 2022

Details of the assessment activities are provided in the following section.

c. Site Assessment Findings

Prior to taking ownership of the Site, GEDP had a Phase I Environmental Site Assessment (ESA) completed for the Site, dated July 27, 2022. The Phase I ESA identified the following Recognized Environmental Conditions (RECs) that require further evaluation and investigation:

REC 1 - Rail lines were historically located at the Site. Additionally, the Site was historically used as a rail yard, freight depot and woodworking and furniture manufacturing hub. It is unknown whether regulated substances were transferred to or from rail cars during this time period or if regulated substances were used at the woodworking and furniture manufacturing hub. It is also unknown whether releases may have occurred during transfer activities at the Site during this time period or if any fill material containing regulated substances was used to construct the rail lines.

Based on the findings of the Phase I ESA, a Soil Screening Sampling was completed in August 2022. The “Soil Screening Sampling” event included: a geophysical survey of the entire site and the advancement of eight soil borings for the collection of eight soil samples from the site. Soil samples were analyzed for: volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and Resource Conservation and Recovery Act (RCRA) metals.

The table below provides the terminal depths of each of soil borings and sample collection.

Sample ID	Boring Terminal Depth (ft bgs)	Soil Sample Depth (ft bgs)
SS-1	3.0 (refusal)	0.5-1.0
SS-2	16.0	6.0-6.5
SS-3	13.0 (refusal)	1.5-2.0
SS-4	7.0 (refusal)	4.5-5.0
SS-5	3.0 (refusal)	1.0-1.5
SS-6	1.5 (refusal)	0.5-0.8
SS-7	4.0 (refusal)	3.5-4.0
SS-8	2.0 (refusal)	1.5-1.9

As indicated in the table above, refusal was encountered at varying depths across the site. No indication was provided in the report if multiple attempts were made or step-off borings were attempted.

No TCL VOCs, TCL SVOCs, or PCBs were detected above the applicable PADEP MSCs. Arsenic and lead were detected at concentrations above the PADEP MSC for Soil at SS-5 and SS-7. Arsenic concentrations from soil sample SS-5 were 13.5 mg/kg and lead concentrations were 451 mg/kg. Arsenic concentrations from soil sample SS-7 were 15.2 mg/kg and lead concentrations were 1,230 mg/kg. The PADEP MSC Residential Soil Direct contact for Arsenic is 12 mg/kg and 500 mg/kg for lead. The PADEP MSC Residential Soil-to-Groundwater for arsenic is 29 mg/kg and 450 mg/kg for lead.

A follow up soil sampling event was initiated in November 2022. While no formal report was produced a sampling results figure was provided. According to the figure provided, ten soil borings were advanced across the site for the collection of 23 soil samples which were analyzed for arsenic and lead. Soil boring depths ranged from 1-15 ft bgs and soil sample intervals also varied. No information was provided regarding rationale for sample interval selection. The table below provides the sample location name, boring depth, sample collection intervals, and analytical results.

Soil Boring	Soil Sample	Soil Sample Depth Interval (ft bgs)	Arsenic Concentration (mg/kg)	Lead Concentration (mg/kg)
SS-10	SS-10A	0.5-0.8	9.4	1060
	SS-10B	3.8-4.0	3.9	7.2
SS-11	SS-11A	0.5-1.0	4.2	143
	SS-11B	4.-4.5	6.8	8.9
SS-12	SS-12A	0.5-1.0	8.3	808
	SS-12B	7.0-7.5	15	19.1
	SS-12C	11.5-11.9	27	36.2
SS-13	SS-13A	0.5-1.0	23.6	991
	SS-13B	2.5-3.0	1.9	10.5
SS-14	SS-14A	0.5-1.0	3.7	66
	SS-14B	2.0-2.5	10.2	9.4
SS-15	SS-15A	0.5-1.0	24.7	104
	SS-15B	4.5-4.9	13	25.2
SS-16	SS-16A	0.5-1.0	23.6	841
	SS-16B	8.0-8.5	6.5	6
SS-17	SS-17A	0.5-1.0	6.8	137
	SS-17B	7.0-7.5	6.2	151
	SS-17C	14.5-15	16.1	19.4
SS-18	SS-18A	0.5-1.0	6.9	13.3
	SS-18B	7.0-7.5	4.5	7.5
	SS-18C	14.5-15.0	10.7	9.7

The PADEP Residential Soil Direct Contact MSC for arsenic is 12 mg/kg; lead 500 mg/kg. The PADEP Residential Soil-to-Groundwater MSC for arsenic is 29 mg/kg; lead 450 mg/kg. Based on the data collected to date for the site, arsenic and lead concentrations exceed the PADEP Residential Soil MSCs for lead and arsenic at varying locations and varying depths.

d. Project Goal

This Site has sat vacant for over 40-years and redevelopment is cost prohibitive due to the identified soil impacts from lead and arsenic. The GEDP purchased this to serve as a future trailhead and park. This site has been identified as the most suitable location due to its proximity to both downtown and residential areas of the City of Easton and its relatively flat topography. Conceptual plans have been developed and the final obstacle is the remediation of the identified impacts in Soil.

The project goals are the remediation of the site soils for the safe construction of the public trailhead and park.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility

The cleanup/remediation will be overseen by the PADEP by submission of final reports under the PADEP Voluntary Cleanup Program for approval.

b. Cleanup Standards for Major Contaminants

The planned redevelopment of the site included recreational use therefore the selected cleanup standards will be the PADEP Residential Soil Statewide Health Standard for lead and the Site Specific Standard for arsenic.

c. Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the Federal Davis-Bacon Act, Pennsylvania Department of Environmental Protection Land Recycling Act, 25 Pa Code §250, and all applicable Northampton County and City of Easton by-laws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, all appropriate permits (e.g., PA One Call, hazardous materials/soil transport and disposal manifests) will be obtained prior to the work commencing.

III. Cleanup Alternatives

a. Cleanup Alternatives Considered

To address contamination at the Site, three different alternatives were considered including Alternative #1: No Action, Alternative #2: Capping, and Alternative #3: Removal with Offsite Disposal.

b. Evaluation of Cleanup Alternatives

To satisfy EPA funding-program requirements, the effectiveness, implementability, and cost of each alternative must be considered prior to selecting a recommended cleanup alternative.

Effectiveness – Including Climate Change Considerations

Alternative #1: No Action is not effective in controlling or preventing the exposure of receptors to contamination at the Site. This would also prevent any type of reuse or redevelopment.

Alternative #2: Capping. Capping of the site would prevent direct contact of potential receptors. In the event a pervious cap were utilized, this would enable the potential for the constituents of concern to leach into groundwater. In the event an impervious cap were utilized, this would increase stormwater runoff and reduce an existing pervious land feature. Either capping action would not remove the identified soil impacts and would prohibit the planned reuse. The planned reuse include a public trailhead and park.

Alternative #3: Removal with Offsite Disposal is an effective way to clear the Site for reuse and redevelopment. This would enable the removal of identified lead impacted soils, and

prevent stormwater runoff from the Site impacting the Lehigh River. Additionally, this alternative would facilitate the planned redevelopment of the Site into a public trailhead and park. This alternative would also include a PADEP statistical analysis of the arsenic concentrations for safe reuse with no remediation required for arsenic.

General Climate Consideration Notes:

The targeted removal of impacted soils would enable the site to be redeveloped with limited to no restriction or impervious capping. In consideration of climate change and increases in rainfall, the redevelopment of the site, as proposed, would maintain the amount of pervious surfaces and enable onsite infiltration. The targeted removal of impacted soils would also allow for onsite infiltration without the risk of the identified contaminants of concern leaching into groundwater or being transported via overland flow into the Lehigh River.

Implementability

- Alternative #1: No Action is easy to implement since no actions will be conducted.
- Alternative #2: Capping is moderately difficult to implement, would involve the trucking of certified clean soil to cap 1.2-acres and would involve noise disturbance to the surrounding community. This remedy would require a deed restriction, limiting future reuse to protect the integrity of the cap and annual monitoring in perpetuity to ensure the cap remaining in place. Therefore, this alternative is considered unrealistic.
- Alternative #3: Removal with Off-Site Disposal, this alternative is moderately easy to implement. The concentrations of arsenic in soils have been determined to be safe for recreators, site workers and site construction workers, therefore no further action is required for the arsenic in soil. The project would involve the excavation of limited areas of lead impacted soil, minimal trucking for the removal and disposal of impacted soils, and post excavation sampling of the soils to ensure the cleanup remedy was successful. Upon completion of the soil removal and appropriate confirmatory soil sampling; the Site would be entered into the Pennsylvania Department of Environmental Protection Act 2 voluntary cleanup program.

Cost

- Alternative #1 – No Action – No cost
- Alternative #2 – Capping \$1.2 million. Capping the entire 1.2-acre site pursuant the PADEP Guidance “The Use of Caps as Activity and Use Limitations”.
- Alternative #3 – Removal and Off Site Disposal \$200,000

c. Recommended Cleanup Alternative


The recommended cleanup alternative is Alternative #3 Removal with Off Site Disposal. Alternative #1: No Action cannot be recommended since it does not address site risks. Alternative #2: Capping is ultimately more expensive as the entire site would need to be capped and annually inspected. Additionally, once the cap was in place it could not be disturbed or punctured, thus limiting any recreational development. Any future potential use of the Site would require additional remedial measures. Alternative #3 Removal with Off Site Disposal would remove the lead impacted soils and enable unlimited future reuse. For these reasons Alternative #3 is the recommended alternative.

Green and Sustainable Remediation Measures for Selected Alternative

To make the selected alternative greener, or more sustainable, several techniques are planned. The most recent Best Management Practices (BMPs) issued under ASTM Standard E-2893: Standard Guide for Greener Cleanups will be used as reference in this effort. The Greater Easton Development Partnership will require the cleanup contractor to follow an idle reduction policy and use heavy equipment with advanced emissions controls operated on ultra-low sulfur diesel. The cleanup work would be conducted during dry-weather months (summertime) in order to minimize groundwater infiltration into the cleanup area, in turn reducing dewatering needs and the amount of dewatering liquids requiring disposal/treatment. The number of mobilizations to the Site would be minimized and erosion control measures would be used to minimize runoff into environmentally sensitive areas (i.e., Lehigh River). In addition, the GEDP plans to ask bidding cleanup contractors to propose additional green remediation techniques in their response to the Request for Proposals for the cleanup contract.

Project Greater Easton Development Partnership 400 Washington Street, Easton Northampton County, Pennsylvania	 AMO ENVIRONMENTAL DECISIONS <i>Environmental Risk & Remediation Consultants</i>	Figure 1
		Date 9/23/2024
	Figure Name Site Location – 400 Washington St	Scale 1:20000



<p>Project</p> <p>Greater Easton Development Partnership 400 Washington Street, Easton Northampton County, Pennsylvania</p>	 <p>AMO ENVIRONMENTAL DECISIONS <i>Environmental Risk & Remediation Consultants</i></p>	<p>Figure</p> <p>2</p>
		<p>Date</p> <p>9/23/2024</p>
	<p>Figure Name</p> <p>Site Boundary – 400 Washington St</p>	<p>Scale</p> <p>1:2000</p>