

**DRAFT  
ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES  
FORMER CANON-MAC METALS SITE  
HOUSTON, PENNSYLVANIA**

**Prepared For:**

**REDEVELOPMENT AUTHORITY OF THE COUNTY OF WASHINGTON  
AND HOWARD CONCRETE PUMPING, L.P.**

**Prepared By:**

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.  
PITTSBURGH, PENNSYLVANIA**

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## **1.0 INTRODUCTION AND BACKGROUND**

### **1.1 INTRODUCTION**

This Analysis of Brownfields Cleanup Alternatives (ABCA) for the former Canon-Mac Metals site (Site) was prepared by Civil & Environmental Consultants, Inc. (CEC) on behalf of the current Site owner, Howard Concrete Pumping, L.P. (Howard), and the Redevelopment Authority of the County of Washington (RACW). Howard acquired the Site and has elected to pursue a Release of Liability through the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2).

The cleanup activities of the Site will be undertaken utilizing a loan fund established by the RACW with an approved United States Environmental Protection Agency (EPA) Brownfield Cleanup Revitalization Loan Fund (BCRLF) loan. Pursuant to the RACW BCRLF Agreement, Howard is required to prepare an ABCA. The purpose of the ABCA is to analyze brownfield cleanup alternatives that will remediate or control contaminated media identified at the Site to provide protection of human health and the environment. The ABCA includes information about the Site and its previous use(s), previous cleanup/remediation, Site assessment findings, applicable regulations and cleanup standards, an evaluation of cleanup alternatives considered, and the recommended cleanup alternative.

### **1.2 SITE DESCRIPTION AND HISTORICAL USE**

The Site is comprised of an approximately 47.5-acre irregularly-shaped parcel of land. One commercial building formerly occupied by Canon-Mac Metals is present on Parcel 360-015-00-00-0003-02. Canon-Mac Metals operated a scrap yard on the property until relatively recently.

The Site is located just east of Chartiers Creek, and occupies a hilltop that slopes away in each direction (Figure 1). An unnamed tributary to Chartiers Creek traverses the northeast portion of the Site, flowing from southeast to northwest. A wet, low-lying area that was formerly part of Chartiers Creek is located along the southern border of the Site.

Based on historic resources, the western portion of the Site was developed with a farmstead from at least the 1930s. The farmstead appeared to become abandoned in the 2000s. The eastern portion of the Site was deep-mined and strip-mined in the 1940s and the remaining coal may have been strip mined in the 1970s/1980s. In the late 2000s, the eastern portion of the property was used as a scrap yard by Canon Mac Metals. The site appears to have been inactive for the last couple of years.

### **1.3 PREVIOUS SITE INVESTIGATIONS**

CEC conducted a Phase I Environmental Site Assessment (ESA) of the Site in November 2016. As discussed in our November 29, 2016 Phase I ESA Report, we concluded that there were recognized environmental conditions (RECs) in connection with the Site, primarily associated with the former scrap yard. RECs that were identified in the former scrap yard area during the Phase I ESA include the following:

- The presence of oil stained areas of significant size and uncontrolled puddles of free product (possibly hydraulic oil and/or used motor oil).
- The presence of piles of metal shavings that could potentially contain cutting oil that leached to the ground surface.
- The presence of two ASTs and drums/containers of used oil that could potentially impact the Site via leaks or spills.
- The presence of a crushed automobile battery(s) that may have released regulated substances to the environment; and
- The presence of several feet of fill in the former scrap yard area intermixed with miscellaneous types of solid waste and scrap.

In addition, as discussed in our Phase I ESA Report, between 2007 and 2013 the former occupant, Canon-Mac Metals, received numerous violations from the Pennsylvania Department of Environmental Protection (PADEP), primarily related to unlawful waste management/disposal practices at the property. It was our opinion that further environmental assessment was warranted to evaluate the potential for impacts associated with the identified RECs and improper waste management practices.

Based on the results of the Phase I ESA, a Phase II ESA was performed in late 2016. The purpose of the Phase II investigation was to collect data to evaluate the condition of onsite soils and shallow groundwater, if encountered, in the area of the former scrap yard to identify the extent of buried waste and assess if significant releases of regulated substances have occurred at the Site.

The Phase II ESA consisted of excavating 11 test pits at the Site in the area of the former scrap yard (Figure 2). In general, test pits were advanced through onsite fill/waste materials until the

underlying soils were encountered. In five locations, the test pit was advanced to the top of bedrock (maximum depth of 10 feet). During the test pit investigation, a CEC scientist provided oversight and collected samples of soil/waste materials encountered in the test pits. Soils were screened for evidence of organic contamination by visual examination (staining), olfactory examination (odors), and by using a photoionization detector (PID). A total of ten (10) soil samples were collected for laboratory analyses. In general, sampling targeted the soil zone exhibiting the greatest evidence of contamination (i.e. elevated PID readings, odors, staining, etc.). In areas where contamination appeared to be present at the near-surface, a second sample was collected from a greater depth to evaluate the potential vertical migration of surface contamination. Soil samples were submitted for laboratory analysis of Target Compound List (TCL) volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and Priority Pollutant (PP) metals. In addition, four of the soil samples were also analyzed for toxicity characteristic leaching procedure (TCLP) lead. CEC field personnel also collected three samples of pooled oil that was observed onsite and submitted the samples for laboratory analysis of PCBs.

Based on observations made during the Phase II ESA, waste materials consisting of metal, plastic, glass, and wood were encountered in 9 of the 11 test pits and were intermixed with the silty clay fill. Waste was encountered at the surface and extended to a maximum depth of approximately four feet bgs. Petroleum odors and/or soil staining were observed in six of the 11 test pits, and were primarily encountered in the upper two feet of material, but faint odors were noted as deep as four feet bgs. Elevated PID readings were also encountered in several of the test pits, and were generally limited to the upper four feet of material.

All three samples of oil pooled on the ground surface contained detectable concentrations of PCB-1242. As such, these oils are considered “PCB-containing”, but do not contain PCBs at concentrations that qualify them as a regulated waste under the Toxic Substances Control Act (TSCA).

Ten soil samples (seven surface and three subsurface) were collected from the site and were submitted for laboratory analysis of TCL-VOCs, TCL-SVOCs, PCBs, and PP metals. In

addition, four of the soil samples were also analyzed for TCLP lead. In general, the sampling program targeted areas at the site exhibiting the greatest evidence of contamination (i.e. staining, visible waste, etc.). In areas where contamination appeared to be present at the near-surface, a second sample was collected from a greater depth to evaluate the potential vertical migration of surface contamination.

TCLP lead was not detected in the four soil samples at concentrations that exceed the regulatory threshold for the characteristic of toxicity. Therefore, these soils are not considered hazardous for lead.

Five of the surface soil samples contained detectable concentrations of VOCs, SVOCs, PCBs and/or metals that were less than their respective Act 2 direct-contact (DC) and soil-to-groundwater (SGW) Medium-Specific Concentrations (MSCs). In contrast, the surface soil sample from TP-7 contained concentrations of benzene, methylene chloride and naphthalene that were greater than the SGW MSCs, while the surface soil sample from TP-8 contained a concentration of nickel that was greater than the SGW MSC. The presence of benzene, naphthalene, nickel, and methylene chloride at concentrations greater than the SGW MSCs represent a potential for impacts to onsite groundwater. Because groundwater was not encountered in any of the test pits, no groundwater samples were collected.

#### **1.4 NATURE OF THREAT TO PUBLIC HEALTH**

The nature of the threat to public health is the exposure to free product and other contaminants in Site soil through direct contact or ingestion of soil. Considering the impacted area will be covered with the planned future building, the primary risk of exposure is during onsite construction activities where Site grading and other subsurface work will potentially pose an exposure risk to site construction workers through direct contact with contaminated soil.

#### **1.5 CLEANUP/REUSE GOALS**

Howard's goal for the Site cleanup is to remediate the Site to the extent necessary to render it usable for non-residential purposes. Howard plans to use the Site for the location of an office building and other commercial buildings to support their growing business. Redevelopment of this property will bring it back into productive use after several years of being vacant and unused, and the new non-residential structures will create additional local jobs. The work will be completed in a sustainable manner while retaining the protectiveness of achieving one of the Act 2 cleanup standards.

## 2.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

The Site cleanup will be performed under Pennsylvania's Act 2. Act 2 requires the Site investigation and cleanup be performed under the oversight of a Pennsylvania Licensed Professional Geologist or Engineer. Reports documenting Site investigation and cleanup activities must also be approved by the PADEP. As described above, the Site will be cleaned up to the applicable Act 2 Cleanup Standards for a non-residential land use. For this property, the cleanup will be completed in accordance with the Act 2 Statewide Health Standard, the Act 2 Site-Specific Standard, or a combination of both standards, as allowed by the regulations.

The Statewide Health Standard (25 Pa. Code §250.301) requires cleanup of soil and/or groundwater to the Act 2 MSCs, which are risk-based numeric values calculated based on a target risk of  $1 \times 10^{-5}$  and a target hazard quotient of 1. For this property, the non-residential direct contact MSCs for regulated substances in soil (0 to 15 feet) and the non-residential soil to groundwater MSCs for a used aquifer will be used to determine attainment with the Statewide Health Standard.

The Site-Specific Standard (25 Pa. Code §250.401) allows the remediator to eliminate potential exposure pathways through engineering or institutional controls and to conduct a site-specific risk assessment. The risk assessment will be conducted according to the approaches specified by the PADEP under Act 2 as well as standard and customary EPA approaches as needed. Resulting cancer risks will be compared to the PADEP benchmark of  $1 \times 10^{-4}$  and non-cancer hazard indices will be compared to the PADEP benchmark of 1 to determine attainment with the Site-Specific Standard.

In addition to meeting Act 2 requirements, appropriate permits will be obtained prior to the work commencing.

### 3.0 EVALUATION OF CLEANUP ALTERNATIVES

#### 3.1 CLEANUP ALTERNATIVES AND ESTIMATED COSTS

Three alternatives are considered for addressing the contaminated soil and onsite waste/debris as discussed below.

##### Alternative #1: No Action

This alternative would involve no action and leaving the site in its current condition.

The primary advantage to this alternative is cost savings.

Disadvantages: No action at this Site would result in no redevelopment of the Site for productive re-use. As a result the existing contaminants would remain un-addressed in the environment and the potential for exposure would not be minimized.

Effectiveness: A no-action alternative is effective in providing short-term protection of human health and the environment since there are no current receptors at the site and because there are no risks to the community and workers during its implementation. A no-action alternative is not effective in promoting the re-development of the property, since no future protection to human health and the environment would be provided.

Implementability: A no-action alternative would consist of doing nothing at the site; therefore, there are no implementability issues.

##### Alternative #2: Soil Excavation to Remove Contaminated Soil and Debris

This alternative would involve the wholesale removal of up to 2.5 feet of material over an area of approximately 4.5 acres in order to remove all contaminated soil and soil intermixed with miscellaneous waste/debris. The regulated substances (drums/buckets of apparent used oil),

pools of oil on the ground surface, and waste materials buried onsite would be removed and properly disposed in order to achieve compliance with state and federal regulations.

Based on the conditions observed during the Phase II ESA, the following order-of-magnitude estimates were developed for the cost of excavation and waste removal.

Site Cleanup:

Removal of Drums and Containers .....	\$11,000
Excavation, Transportation & Disposal of Petroleum Contaminated Soil .....	\$50,000
Removal, Transportation & Disposal of Surface Waste/Debris .....	\$1,100,000
Removal, Transportation & Disposal of Electronic Waste, Universal Waste, Construction Debris, etc. ....	<u>\$6,000</u>
Site Cleanup Subtotal .....	\$1,167,000
25% Contingency .....	<u>\$291,750</u>
Site Cleanup Total .....	\$1,458,750

Act 2 Activities:

NIR Preparation and Submittal, Legal Ad and Municipality Notice .....	\$2,000
Review of Background Information and Site Characterization Work Plan .....	\$5,000
Confirmatory Sampling .....	\$25,000
RIR/CP .....	\$30,000
Final Report .....	<u>\$15,000</u>
Act 2 Subtotal .....	\$77,000

Estimated Total Cost: .....\$1,535,750

Disadvantages include: 1) the need to import clean soil to backfill the excavated areas, the cost of which is not included above; 2) the cost to prepare excavation and erosion and sedimentation control plans which are not included in the above costs; 3) increased traffic on local roads due to the high quantity of soil to be removed for off-site disposal; and 4) increased excavation costs to completely remove the area of impacted soil and intermixed debris.

Effectiveness: This alternative would be highly-effective since the impacted subsurface soil and intermixed debris potentially resulting in unacceptable exposure to future receptors will be removed from the Site.

Implementability: There are no technical, administrative, or other impediments to removing impacted soil and intermixed debris from the Site. However, significant excavation and hauling could generate fugitive dust, truck traffic, and excess noise that may impact the nearby residents in the short-term.

Alternative #3: Soil Excavation to Only Remove Limited Areas of Contaminated Soil and Intermixed Debris

Based on initial conversations with PADEP, they indicated that removal of limited areas of contaminated soil and surface debris would be sufficient to meet Act 2 requirements. Attainment demonstration testing of remaining soils would be needed to document achievement of Act 2 state-wide health standards. Site development would eliminate future exposure routes to remaining intermixed debris.

Site Cleanup:

Removal of Drums and Containers .....	\$11,000
Excavation, Transportation & Disposal of Petroleum Contaminated Soil .....	\$50,000
Removal, Transportation & Disposal of Surface Debris .....	\$220,000
Removal, Transportation & Disposal of Electronic Waste, Universal Waste, Construction Debris, etc. ....	<u>\$6,000</u>
Site Cleanup Subtotal.....	\$287,000
25% Contingency .....	<u>\$72,000</u>
Site Cleanup Total.....	\$359,000

Act 2 Activities:

NIR Preparation and Submittal, Legal Ad and Municipality Notice .....	\$2,000
Review of Background Information and Site Characterization Work Plan .....	\$5,000
Confirmatory Sampling .....	\$25,000
RIR/CP .....	\$30,000
Final Report .....	<u>\$15,000</u>
Act 2 Subtotal .....	\$77,000

Estimated Total Cost:.....\$436,000

Disadvantages include: 1) not all intermixed debris would be removed from the Site.

Effectiveness: This alternative would be effective since the impacted soil potentially resulting in unacceptable exposure to future receptors and limited amounts of intermixed debris will be removed from the site. Additionally, future Site development will eliminate exposure to remaining intermixed debris.

Implementability: There are no technical, administrative, or other impediments to removing impacted soil from the Site. Excavation and hauling could generate fugitive dust, truck traffic, and excess noise that may impact the nearby residents in the short-term, but not to the extent that would result from implementation of Alternative #2.

### **3.2 RECOMMENDED CLEANUP ALTERNATIVE**

Based on the above evaluation, the recommended cleanup alternative is “Alternative #3: Soil Excavation to Only Remove Limited Areas of Contaminated Soil and Intermixed Debris”. This alternative was evaluated with the PADEP and determined to be sufficient in accordance with Act 2 Cleanup Standards.

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## FIGURES

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