



Analysis of Brownfields Cleanup Alternatives – Preliminary Evaluation
Former Ascom Hasler
0 & 281 Canal Street
Shelton, Connecticut
January 16, 2024

I. Introduction and Background

a. Site Location

The Site consists of two (2) adjoining parcels of land that encompass 1.87 acres of land located at 0 & 281 Canal Street in Shelton, Connecticut.

a.1 Forecasted Climate Conditions

According to the US Global Change Research Program (USGCRP), climate trends for Connecticut include increased temperatures, increased precipitation with greater variability, increased extreme precipitation events, and rises in sea level. Some of these factors, most specifically increased precipitation that may affect flood waters and stormwater runoff, are most applicable to the cleanup of the Site.

According to the Flood Insurance Rate Map for Fairfield County, Connecticut (Map Number 09001C0305F, Panel 305 of 626, dated June 18, 2010), the majority of the Site is in Zone AO. Zone AO is defined as a special flood hazard area subject to inundation by the 1% annual chance flood (100 year flood). Flood depths have been determined to be 1 to 3 feet. The eastern edge of the Site, immediately adjacent to the Housatonic River, is in Zone AE, an area where the base flood elevation has been determined to be at an elevation of 26 feet above mean sea level.

The Site receives stormwater discharge from the adjoining Canal Street, along the western side, as well as from impervious surfaces currently existing on the Site. Under current Site conditions, increased precipitation and extreme weather could result in additional stormwater runoff to storm water control structures on the Site and to the adjoining Housatonic River.

Based on the nature of the Site and its proposed reuse, changing temperature, rising sea levels, changing dates of ground thaw/freezing, changing ecological zone, and changing groundwater table are not likely to significantly affect the Site.

b. Previous Site Use(s) and any Previous Clean-up/Remediation

The Site contains an industrial building with a footprint of 82,321 square feet that was originally constructed in the late 1800s. The building originally contained a paper mill and later contained a crucible manufacturing business and a wire manufacturing business through the 1960s. The Site was later used for the manufacture and servicing of mailing machines. The Site has most recently been used for vehicle storage, automotive repairs, storage, and office space.

Several former USTs and ASTs were previously located on the Site. These tanks include 10,000-gallon and 20,000-gallon fuel oil USTs that were formerly located on the southeastern portion of the Site parking lot, two (2) 5,000-gallon fuel oil ASTs located inside the northern portion of the building, and former gasoline and acid tanks that were historically located on the northeastern portion of the Site. No remedial actions associated with the former USTs appear to have been conducted.

A spill of 300 gallons of #4 fuel oil to the ground surface was reported at the Site in September 2005. The spill was due to a tank overflow and the spill was contained with saw dust and did not migrate off-site.

Based on the quantities of hazardous wastes historically generated at the Site by previous occupants, the Site appears to qualify as an Establishment as defined by the Connecticut Transfer Act. However, the Site was accepted into the Connecticut Department of Economic and Community Development (DECD) Abandoned Brownfield Cleanup (ABC) Program on February 6, 2023. Under the ABC Program, the Site is exempt from the requirements of the Transfer Act. Entry into the Voluntary Remediation Program, Connecticut General Statutes (CGS) §22a-133x, is required. An Environmental Condition Assessment Form (ECAAF) was filed with the Connecticut Department of Energy & Environmental Protection (CT DEEP) on May 30, 2023, placing the Site into the Voluntary Remediation Program.

c. Site Assessment Findings

Phase I Environmental Site Assessments were conducted on the Site in March 2021 by AECOM and in October 2022 by Berkshire Environmental Services & Technology, LLC (Berkshire). The Phase I reports resulted in the identification of seventeen (17) areas of concern (AOCs) on the Site. The AOCs are defined as follows:

1. Former hazardous waste storage area along the northern side of the Site in a garage building.
2. Cleaning room that was used to clean ink from postage meters.
3. Former exterior transformers located on utility poles along the side of the building.
4. Loading docks and overhead doors located along the east and west sides of the building, further identified as AOC #4a, 4b, 4c, 4d, and 4e.
5. Former 10,000-gallon and 20,000-gallon fuel oil underground storage tanks (USTs) that were formerly located on the southeastern portion of the Site parking lot.
6. Abandoned 9,000-gallon fuel oil UST and two (2) former 5,000-gallon fuel oil ASTs located inside the building, further identified as AOC #6a and 6b.
7. Former gasoline and acid tanks that were historically located on the eastern portion of the Site.
8. Historic Site activities including former occupation of the Site by Driscoll Wire, Naugatuck Crucible, and Hydraulic Repair.
9. Urban fill, as designated on published surficial geologic mapping for the Site area.

10. Shallow release area at the southeast portion of the Site and former acid house location.
11. Release on the eastern side of the Site.
12. Non-aqueous phase petroleum on the Site's northeastern corner.
13. 8,000-gallon fuel oil AST overfill. A spill of 300 gallons of #4 fuel oil due to an overfill was reported on September 27, 2005.
14. Site-wide vehicle storage.
15. Former engine room and machine shops, further identified as AOC #15a, 15b, and 15c.
16. Former oil house.
17. Raceway from the building to the Housatonic River

Subsurface investigations conducted on the Site in 2003, 2004, 2021, and 2023 have documented the presence of soils impacted with extractable total petroleum hydrocarbons (ETPH), polynuclear aromatic hydrocarbons (PAHs), metals, and/or polychlorinated biphenyls (PCBs) in sixteen (16) of the seventeen (17) AOCs. Exceedances of criteria outlined in the Connecticut Remediation Standard Regulations (RSRs) have been documented in nine (9) of the AOCs.

Based on the findings of the subsurface investigations, remedial action is required at the Site in order to achieve compliance with the requirements of the RSRs. Remedial actions at the Site are anticipated to include a combination of impacted soil excavation and disposal and rendering impacted soil inaccessible and environmentally isolated beneath the new building. Soil in areas of the Site that are not to be beneath the building will require excavation and relocation to the portion of the Site that will be beneath the building. Some impacted soil at certain areas 2 feet beneath paved parking areas or 4 feet below grade will be rendered inaccessible. An Environmental Use Restriction (EUR) will be required for the Site to define the presence of inaccessible and environmentally isolated soils. Any surplus impacted soil that cannot be used beneath the building or remain in-place as inaccessible will require disposal.

As volatile organic compounds (VOCs) were not detected on the Site, vapor intrusion is not a significant risk to the Site. By rendering soil inaccessible, risk to occupants of the Site is removed. All accessible soil on the Site will be remediated such that compliance with residential criteria is achieved.

The anticipated remedial actions are detailed in a Remedial Action Plan prepared by Berkshire and dated January 16, 2024.

d. Project Goal

The planned reuse for the Site entails demolition of the existing industrial building and subsequent construction of a new, 4-story multi-unit residential building. Vehicle parking is to be present beneath the first floor of the building, level with grade on the eastern side of the Site. Landscaping

along the riverbank is planned along with reconstruction of a canal lock that was historically located at the northern end of the Site.

II. Applicable Regulations and Cleanup Standards

a. Cleanup Oversight Responsibility

The Site has been placed into the Connecticut Voluntary Remediation Program and has been assigned REM ID #22401 by the CT DEEP. As such, oversight of all investigation and remedial activities has been delegated to a Connecticut Licensed Environmental Professional (LEP) who will verify that investigation and remediation of the Site has been performed in accordance with the RSRs.

b. Cleanup Standards for Major Contaminants

Remediation of the Site will be in accordance with the Connecticut Remediation Standard Regulations (RSRs). Remediation will meet residential criteria. Environmental Land Use Restrictions (EURs) will be used to render soil on the Site inaccessible and environmentally isolated.

c. Laws & Regulations Applicable to the Cleanup

Laws and regulations that are applicable to this cleanup include the Connecticut RSRs and local regulations, including inland wetlands, pertaining to the approval of the project. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed.

In addition, all appropriate permits including notification of Call Before You Dig and required manifests/bills of lading for liquid and soil transportation and disposal, will be procured prior to the project commencing.

III. Cleanup Alternatives

a. Cleanup Alternatives Considered

To address contamination present on the Site, three (3) cleanup alternatives were considered:

Alternative #1: No action

Alternative #2: Excavation with off-site disposal

Alternative #3: Rendering impacted soil inaccessible and environmentally isolated with limited off-site disposal

b. Evaluation of Cleanup Alternatives

To satisfy EPA 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 the exposure of receptors to contamination at the Site. Additionally, No Action will not result in achieving compliance with the requirements of the RSRs, as required by the Voluntary Remediation Program.

Alternative #2: Excavation with off-site disposal is an effective way to eliminate risk at the Site since contamination will be removed and the exposure pathways will no longer exist.

Alternative #3: Rendering impacted soil inaccessible and environmentally isolated is an effective way to prevent residents from coming into direct contact with contaminated soils on the Site as well as to be protective of groundwater. Such measures are permitted in the RSRs provided and EUR is put in place. Excavation and off-site disposal of heavily impacted soil that could present a continued risk to groundwater is an effective means of eliminating this risk pathway.

Climate Change Consideration Notes:

Stormwater on the Site already discharges to the adjoining Housatonic River. Redevelopment of the Site will not result in any additional impervious surfaces to those already in existence. A planned subsurface storm water storage area on the eastern side of the Site will slow overall flows of storm water to the river.

Implementability

Alternative #1: No Action is easy to implement since no actions will be performed.

Alternative #2: Excavation with off-site disposal is moderately difficult to implement. Coordination (e.g., dust suppression and monitoring) during cleanup activities and short-term disturbance to the community (e.g., trucks transporting contaminated soils and backfill) are anticipated. This alternative will also result in the excavation of large portions of the Site to depths of 12 feet below grade or greater. However, ongoing monitoring and maintenance will not be required following excavation and off-site disposal. One consideration that may make excavation slightly more difficult to implement is the increased frequency of heavy rainfall events that has been experienced in recent years in the northeast United States. Although efforts will be made to schedule the work in the dry weather months, the amount of precipitation over a short period of time from one of these heavy rainfall events could raise the groundwater level resulting in the need to dewater excavation areas.

Alternative #3: Rendering impacted soil inaccessible and environmentally isolated is relatively easy to implement, as it will be coordinated with Site work planned as part of the redevelopment process. As the permanent structures will be used to render soil inaccessible and environmentally isolated, no additional maintenance other than routine building maintenance will be necessary to maintain this condition. By limiting the volume of soil that will require removal and off-site disposal, the number of trucks entering and exiting the Site will be reduced along with the amount of backfill required.

Cost

Alternative #1: There is no cost associated with taking no action.

Alternative #2: Excavation with off-site disposal is estimated to cost in excess of \$950,000. If dewatering were to be necessary, the cost would be increased.

Alternative #3: Rendering impacted soil inaccessible and environmentally isolated with limited off-site soil disposal is estimated to cost \$525,000.

c. Recommended Cleanup Alternative

The recommended cleanup alternative is Alternative #3. No action cannot be recommended since it does not address the environmental risks on the Site. Alternative #3 is less costly than Alternative #3 and will be less disruptive during construction activities. Due to the use of the building to render soil inaccessible and environmentally isolated, no additional maintenance beyond routine building maintenance will be required. The cost for Alternative #2 is approximately double the cost of Alternative #3. This alternative would require more extensive excavation of the Site and would result in a greatly increased volume of truck traffic to remove the excavated material. 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 a reference in this effort. The cleanup contractor will be required to follow an idle-reduction policy and use heavy equipment with advanced emissions controls operated on ultra-low sulfur diesel. The excavation work would be conducted during the dry-weather months (summertime) in order to minimize groundwater infiltration into the excavation area. The number of mobilizations to the Site would be minimized and erosion control measures would be used to minimize runoff into environmentally sensitive areas.