

Evaluation of Remedial Alternatives & Analysis of Brownfields Cleanup Alternatives (ABCA)

689 Main Street Automania – former automotive sales and service Holyoke, Massachusetts

1. Introduction and Background:

a) *Site Location*

The Site is located at 689 Main Street Holyoke, MA 01040 (Parcel 055-00-009.)

The City of Holyoke has prepared this Analysis of Brownfields Cleanup Alternatives (ABCA) document for the former site of Automania, an automotive sales and service operation located on Main Street (055-00-009) in Holyoke, Massachusetts (the Site). This analysis was prepared in accordance with the programmatic requirements of the Environmental Protection Agency (EPA) Brownfield Cleanup Grant Program. A Site Locus Map and MassGIS Priority Resources map are provided as Figures 1 and 2 in the Appendix.

This document has been prepared to provide the public with a summary of the environmental conditions at the site and allow the public to comment on proposed remediation alternatives and strategies necessary to remove site contamination and achieve regulatory compliance for the property. Once site cleanup and regulatory compliance are achieved for the property, the real and perceived environmental stigmas will have been largely removed allowing for site re-use.

b) *Previous Site Use(s) and any previous cleanup/remediation:*

The Site is a former automotive sales and service facility. The facility is not currently in operation and is vacant. The property contains an approximate 7,840 square foot building located within an approximate 0.467-acre parcel developed as an automotive sales and service facility circa 1940 in a land area that has been used for industrial purposes since around 1900. The City of Holyoke acquired the Site from New England Speed Equipment, Inc. in 1996 via a tax lien judgment. The property is abutted to the northwest by a commercial/light industrial trucking facility; to the northeast by a former gasoline fueling station; to the southwest by Berkshire Street, beyond which is an undeveloped lot and light industrial building; and to the southeast by Main Street, beyond which is several light industrial/commercial buildings and a waste water treatment facility.

The nature of contamination and environmental conditions found on the Site are consistent with historical use of the Site. While there have been significant assessment activities performed on the Site, to date there have been no remediation activities.

c) *Site Assessment Findings & Summary of Brownfields Investigations to date:*

i) *Phases of Assessment Completed:*

- Phase I Targeted Brownfields Assessment completed by Advanced Environmental Solutions, Inc. in 2008
- Phase II report completed by Nobis Engineering, August 2011
- Targeted Brownfields Assessment to complete contamination data performed by Nobis Engineering, January 2013 under Remedial Action Contract No. EP-S1-06-03

ii) *Results of Brownfields Investigations to date:*

1) *A Targeted Brownfields Assessment on behalf of EPA in November 2008, identified the following Recognized Environmental Conditions (RECs):*

- The abutting property to the northeast has been occupied by a gasoline station for more than 30 years. Based upon its proximity to the Site, petroleum releases from associated underground storage tanks (USTs), pump islands, and ancillary piping may have impacted the Site. Additionally, at least one gasoline UST was historically located at or near the northeastern boundary of the Site.
- The Site is located in an area with industrial uses since approximately 1900. Volatile Organic Compounds (VOCs) have been detected in groundwater monitoring wells at a downgradient property. The Site has been impacted by VOCs or other compounds from industrial properties in the vicinity.
- Suspect UST vent pipes were observed on the northwestern side of the Site building. Based upon City of Holyoke Fire Department records, it is possible that USTs permitted in 1950 and 1970 are still present at the Site.
- Two floor drains and a trench drain were observed during Site reconnaissance activities. Oily liquid was observed to be pooled in and around the drains. Additionally, the discharge points of these drains are unknown. There is a potential that a release to the environment from these drains has occurred via pipe leaks, which may have migrated through a Site leaching system.
- Large amounts of staining and pooling of oily liquids were observed in the central and western portions of the Site building around a fuel oil aboveground storage tank (AST), a heater, miscellaneous drums and debris, and in other areas. The concrete building floor was observed to be compromised by cracks, creating a potential migration pathway for contaminants to be released to soil and groundwater underlying the Site.
- Three former hydraulic lifts and one hydraulic reservoir were observed in the western portion of the Site building. It is not known if additional hydraulic lift reservoirs are present at the Site or if hydraulic reservoirs have resulted in a release at the Site.

2) *Phase II sampling environmental assessment performed by Nobis Engineering verified the following conditions:*

- Concentrations of soil and groundwater have been impacted with concentrations of petroleum hydrocarbon constituents, which appear to be attributed to former Site operations. Although the vertical and horizontal extent of impact has not been delineated, the area of impact appears to be localized within the interior of the Site building and has not migrated beyond the Site property boundary.
- There is a Massachusetts Contingency Plan 120- Day Reporting Condition associated with the levels of petroleum and VOC contaminants detected in Site soil and groundwater.
- Based on the results of the subsurface investigation, there do not appear to be upgradient (off-site) sources of Site contamination.

- The results of the dye test conducted at the Site are identified that floor drains may discharge to a nearby storm drain which subsequently discharge to a combined sewer outflow (CSO) located south of the Site. Because the facility is currently inactive, no ongoing discharge from the floor drains at the Site.
- Two suspect USTs are located north of the Site building.
- The hazardous materials survey indicated the presence of asbestos contaminated material (ACM), lead based paint (LBP), and mold in Site building materials. An inventory of additional potential regulated and hazardous materials was produced for the Site that included (but not limited to) fluorescent lights and ballasts, five mercury thermostats, multiple 55-gallon drums, and additional containers and/or tanks of suspect oil and hazardous material (OHM.)

3) *Targeted Brownfields Assessment to complete contamination data performed by Nobis Engineering, January 2013 under Remedial Action Contract No. EP-S1-06-03 In addition to visual assessment of environmental conditions listed previously, subsurface investigations were performed at the Site on October 16, 2012 and October 24, 2012 to assess the extent of soil, groundwater, and soil gas conditions. Please see attached TBA reports and Phase II investigation.*

Soil Results

- Concentrations of CVOCs were detected in a soil sample collected from 8 to 10 feet below ground surface (bgs) at levels exceeding applicable MCP Method 1 Soil Standards. Trichloroethene (TCE) and elevated petroleum hydrocarbon (EPH) were detected in soil at similar depths and concentrations in soil in 2011.
- Concentrations of volatile petroleum hydrocarbon (VPH) were low or non-detect in all soil samples.
- Concentrations of poly-chloroethene (PCE) and C19-C18 hydrocarbons exceed the MCP RCS-2 reporting criteria and are designated as a new MCP 120-day Reporting Condition.

Groundwater Results

- A concentration of vinyl chloride (2.5 g/L) was detected in groundwater at well NOB-203 at a level slightly exceeding the applicable MCP Method 1 Groundwater Standard (2.0 g/L). All other CVOCs, VOCs, and petroleum hydrocarbons groundwater samples collected from NOB-201, NOB-202, and NOB-203 were low or non-detect and below applicable MCP Method 1 Standards and Reportable Concentrations.
- The fingerprint analysis indicated that liquid collected from well NOB-101 is comprised of motor oil. According to the laboratory, the liquid samples does not appear to contain hydraulic fluid or No. 2 fuel oil.
- The fingerprint analysis indicated that liquid collected from well NOB-101 is comprised of motor oil. According to the laboratory, the liquid sample does not appear to contain hydraulic fluid or No. 2 fuel oil.

Soil Gas Results

- Concentrations of petroleum hydrocarbons were detected in soil gas samples. However, the concentrations do not exceed applicable MassDEP (Department of Environmental Protection) Residential Sub-Slab Screening Values.
- A concentration of 1,1,1-trichloroethane (TCA) was detected in a soil gas sample collected from SV-01. This concentration exceeds the applicable MassDEP Residential Sub-Slab Screening Values (210 g/m³). This result suggests that there is a potential of indoor air impact to future receptors under unrestricted future use scenarios.
- Although no floor staining was observed within the vicinity of the soil gas sampling points, there is a potential that surficial releases that may have been associated with former solvent use (equipment/storage) associated with the former facility.

d) Project Goal:

The City of Holyoke has nearly reached complete build-out of its land area, with concentrated development situated between the Connecticut River and the Mount Tom Mountain Range. Thus, Holyoke's potential for growth lies in the redevelopment of its blighted, abandoned, and vacant properties. This project will clean and remediate Site that has sat vacant since 1996 and bring it into compliance with the Massachusetts Contingency Plan. Site cleanup will reduce threats to human health due to the contaminants that are present in the Site soil by removing the affected soil, monitoring groundwater, and demolishing a structure contaminated with ACM, LBP and OHM. The cleanup of this property will provide a healthier and safer environment for the community.

Additionally, demolition and cleanup will facilitate the Site's redevelopment as part of an area wide redevelopment plan. The City is attempting to leverage attractive, well-located properties to spur private investment and revitalization of its downtown through a number of projects; because of the multiple inquiries surround availability of this Site, it is an integral part of the City's redevelopment plans.

2. Applicable Regulations and Cleanup Standards

a) Cleanup Oversight Responsibility:

Oversight of clean-up activities will be the responsibility of a Licensed Site Professional (LSP) recognized by the Massachusetts Department of Environmental Protection (MassDEP.) LSP services will be procured by the City of Holyoke under federal, state and municipal requirements. All required documentation will be filed with MassDEP on behalf of the City by the contracted LSP.

b) Cleanup Standards for Major Contaminants:

Cleanup standards will be based on the following Massachusetts Contingency Plan (MCP) directives and criteria: *Feasibility directives and criterion are specifically articulated in MGL c. 21E §3A, with respect to achieving a permanent solution and achieving or approaching a background condition:*

"Permanent solutions...shall be required if the department finds that a level of no significant risk does not yet exist, that permanent solutions are feasible, and that immediate implementation of

such solutions would be more cost-effective than phased implementation of temporary and permanent solutions” [MGL c. 21E §3A(f)]

“Where feasible, a permanent solution shall include a measure or measures designed to reduce to the extent possible the level of oil or hazardous materials in the environment to the level that would exist in the absence of the site of concern.” [MGL c. 21E §3A(g)]

Additionally, cleanup activities will proceed under all applicable federal and state standards for cleanup of identified contaminants. Any compounds of concern will be cleaned up using risk-based standards as required by federal and state regulation.

c) *Laws and Regulations Applicable to Cleanup:*

All contracted services will be procured by the City of Holyoke under federal, state and municipal requirements. All necessary permitting will be obtained before beginning the cleanup project. Project is subject to the Brownfields Revitalization act, the Davis-Bacon act, and MWE-MME standards.

3. Evaluation of Cleanup Alternatives:

As indicated in the Targeted Brownfields Assessment performed by Nobis Engineering, January 2013 under Remedial Action Contract No. EP-S1-06-03, Nobis identified, evaluated and selected three potential cleanup alternatives that:

- (1) are likely to achieve a level of No Significant Risk (NSR) at the Site, and
- (2) address MCP issues regarding source elimination/control and restoration to background.

a) *Initial Screening of Remedial Technologies*

A remedial technology was judged to be acceptable for further evaluation if:

- (1) it was likely to reduce risks to human health and the environment to levels that would permit the achievement of a MCP Permanent Solution (Response Action Outcome Statement [RAO])
- (2) the technology appeared to be technically and economically feasible for the Site.

Five general classes of potentially applicable remedial technologies (RTs) for the Site were identified and screened that may reduce levels of CVOCs and petroleum hydrocarbons in Site groundwater. Technologies in each of these categories were evaluated during the preliminary screening to facilitate a comprehensive review of technologies applicable for the Site. Alternatives from the following categories were evaluated during the preliminary screening:

- No Action
- Institutional Controls
- Building Demolition
- Passive Containment
- Active Treatment/Containment
- Ex-Situ Technologies
- In-Situ Treatment Technologies
- Monitoring

b) Evaluation of Cleanup Alternatives

In developing cleanup alternatives for the Site, it was determined that a combination of several remedial technologies would be required to be able to obtain a MCP Permanent Solution. The following cleanup alternatives were subsequently developed from a combination of cleanup technologies as an integrated approach and are summarized below.

Alternative #1: Building Demolition, Active Treatment (UST, trench drain, hydraulic lift and equipment/debris removal), Ex-Situ Technologies (Soil Excavation and Dewatering), In-Situ Treatment (ISCO/ISB), Monitoring

Alternative #2: Building Demolition, Active Treatment/Containment (UST and hydraulic lift and equipment/debris removal, Soil Vapor Extraction/Air Sparge [SVE/AS]), Monitoring

Alternative #3: Building Demolition, Active Treatment (UST and hydraulic lift and equipment/debris removal), Institutional Controls, Active Containment (SSDS), Passive Containment (Vapor Barrier), Monitoring

The identified cleanup alternatives were evaluated with respect to the criteria established in the MCP for a detailed evaluation (310 CMR 40.0858). These criteria are:

- a. **Comparative effectiveness.** This criterion provides an evaluation of the effectiveness of the cleanup alternatives in achieving a Permanent or Temporary Solution; reusing, recycling, destroying, detoxifying or treating OHM; and reducing levels of residual OHM to background levels.
- b. **Comparative reliability.** This criterion evaluates the degree of certainty that the cleanup alternative will be successful and the effectiveness of any measures required to treat residues or remaining waste or control emissions or discharges to the environment.
- c. **Comparative implementability.** This criterion evaluates the comparative difficulty in implementing the cleanup alternative. It includes an evaluation of:
 - The technical complexity of the cleanup alternative;
 - Integration of the cleanup alternative with facility operations or other remedial actions;
 - Necessary monitoring, operations, maintenance or site access;
 - Availability of necessary services, materials, equipment or specialists;
 - Availability, capacity and location of off-site treatment, storage and disposal facilities; and
 - Whether the cleanup alternative meets the requirements for any necessary regulatory approvals, permits or licenses.
- d. **Comparative cost.** This criterion includes evaluation of implementation costs, including design, construction and, if necessary, operation and maintenance costs, costs of environmental restoration, and costs of consumption of energy resources.
- e. **Comparative risks.** This criterion includes an evaluation of short-term on-site and off-site risks posed by implementation of the cleanup alternative associated with excavation, transport, disposal, containment, construction, operation or maintenance activities, or discharges from the remedial system; on-site and off-site risks posed by the cleanup alternative until the remedial objectives are attained; and potential risks to human health,

public welfare, the environment posed by residual contamination once the remedial action is completed.

- f. **Comparative benefits.** This criterion includes an evaluation of the benefit of restoring natural resources, providing for the productive reuse of the site, the avoided costs associated with relocating people, and the avoided lost property value of the site.
- g. **Comparative timeliness.** This criterion includes an evaluation of timeliness of the cleanup alternative in eliminating uncontrolled sources and attaining a condition of NSR.
- h. **Comparative effect upon non-pecuniary interests.** This includes an evaluation of the cleanup alternative effect on non-pecuniary issues such as aesthetic issues.

c) **Feasibility Evaluation:**

Nobis conducted a feasibility evaluation, based on the following MCP directives and criteria:

Criteria on making determinations on feasibility are subsequently provided in MGL c. 21E §3A(h). This subsection establishes a presumption that response actions required pursuant to subsections (f) and (g), referenced above, shall be deemed feasible, UNLESS a showing is made that:

- *No technology exists to achieve the remedial goal; or*
- *The costs of conducting, or risks resulting from, the remedial action would not be justified by the benefits, considering such factors as potential damage to the environment or health, costs of environmental restoration, long-term operations and maintenance costs, and non-pecuniary values; or*
- *Individuals with the necessary expertise to conduct the necessary remedial actions would not be available; or*
- *The only available alternative for achieving the remedial goal would necessitate land disposal other than at the site itself and no off-site facility is available that is in full compliance with applicable regulations.*

Based on these guidelines, **implementation of remedial measures described as Alternative #1 [Building Demolition, Active Treatment (UST Removal); Ex-Situ Treatment (Soil Excavation and Dewatering), In-Situ Treatment, Monitoring] is a feasible option and will likely achieve a MCP Permanent Solution.**

d) **Selection of Remedial Action Alternative:**

Alternative #1: Building Demolition, Active Treatment (UST and hydraulic lift and equipment/debris removal), Ex-Situ Technologies (Soil Excavation and Dewatering), In-Situ Treatment (ISCO/ISB), Monitoring

Cleanup alternative #1 ranked the highest of the three cleanup alternatives and is a highly beneficial remedial option.

1. **Building demolition:** The existing Site property building will be demolished to accommodate remediation within the building footprint.

2. Active Treatment (UST and hydraulic lift and equipment/debris removal): Removal of the suspect USTs and containerized waste will remove a potential source of petroleum hydrocarbon impact to soil and groundwater.

3. Ex-Situ Technologies (Soil Excavation/Dewatering): Soil excavation associated with the USTs and within the building footprint, along with limited dewatering, will result in source removal

4. In-Situ Treatment: ISCO and ISB are beneficial measures to allow for remediation of residual contamination (post-soil excavation/dewatering)

5. Monitoring: Groundwater monitoring is a beneficial measure to allow for productive Site reuse. There is moderate interruption to Site occupants.