DRAFT Analysis of Brownfields Cleanup Alternatives

Former Tank Car of America (TCCA) Site
1725 Walnut Avenue
Oreland, PA 19075

Prepared by:

Springfield Township
Montgomery County, Pennsylvania

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In Reference to:

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EPA Brownfield Clean-up Grant 2020

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1. INTRODUCTION AND BACKGROUND

1.1 SITE LOCATION

The former Tank Car Corporation of America site is located at 1725 Walnut Avenue in Oreland, Pennsylvania, a census-designated place (CDP) within and composing nearly one-third of Springfield Township, Montgomery County. The former TCCA site is situated at the intersection of Walnut Avenue and Oreland Mill Road, and is bounded to the East and South by residential neighborhoods, to the West by a light industrial property, and to the North by commuter railroad tracks owned and operated by the Southeastern Pennsylvania Transportation Authority (SEPTA).

There have been no rail car repair/refurbishment operations at the site since 2001. In October 2015, Springfield Township acquired the former TCCA property.

This Analysis of Brownfields Cleanup Alternatives (ABCA) documents concerns the entirety of the former TCCA site and has been prepared to support cleanup that will occur at this site should funding be awarded through the FY21 EPA Brownfields Cleanup Grant.

1.2 PREVIOUS SITE USES AND PREVIOUS CLEANUP AND REMEDIATION

From approximately 1921 until 2001, TCCA owned and operated a facility at the Property to repair or maintain railroad tank cars. Operations at the facility included the rebuilding, repair, alteration, and conversion of rail cars; major and minor fabrication and welded repairs to tanks; and sandblasting and painting of railroad cars. TCCA's former industrial operations at the facility produced hazardous wastes and liquids containing hazardous substances that were placed in a lagoon, and later into buried tanker cars, at the Property. In addition, sandblasting grit containing lead was used and disposed of at the Property.

Between 2007 and 2011, the United States Environmental Protection Agency (USEPA) implemented site characterization and remedial activities at the Site. The characterization activities included the collection and analysis of numerous on-Site surface and subsurface soil samples; the collection and analysis of surface soil samples from adjacent off-site residential properties; the collection and analysis of surface water samples from the property directly north of the Site; and the installation of three new monitoring wells and the sampling of these new wells and three existing monitoring wells. The results of the site characterization activities revealed various compounds, mainly volatile organic compounds (VOCs), polynuclear aromatic hydrocarbon (PAH) compounds, and metals in surface and subsurface soils and ground water at the Site at concentrations exceeding Medium Specific Concentration (MSC) cleanup standards developed pursuant to Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2). P AH and metal exceedances of Act 2 MSCs also appear to have been identified in surface soil samples collected on adjacent off-site residential properties. In response to these results, the USEP A performed significant remedial activities at the Site, which included the removal of hazardous materials, above and underground tanks/tank cars, and visually

impacted soils from the Site. The USEPA also excavated the lagoons and disposed of off-site black tarry material identified in the lagoons, backfilled the lagoons with sandblasting grit, consolidated the sandblasting grit on the property, and capped the consolidated sandblasting grit with clay and modified stone. Although it is not clear, USEPA may have removed sandblasting grit from adjacent residential properties to the Site and consolidated/capped it with the on-Site sandblasting grit.

1.3 SITE ASSESSMENT FINDINGS

Previous environmental assessment activities at the Site include the following:

- May 2006, Groundwater & Soil Sampling, Penn E&R, Inc.
- Feb. 2007, Removal Response Action Plan, Environmental Maintenance Co., Inc.
- April 2009, Public Health Evaluation, US EPA - Agency for Toxic Substances and Disease Registry (ATSDR)
- Nov, 2008-Oct. 2009, Removal Site Evaluation, US EPA
- May-July 2015, Phase I Environmental Site Assessment (ESA), Penn E&R, Inc.
- Sept. 2017 – Soil Sampling – BL Companies, Inc.
- Sept.-Ongoing., 2020, Phase II ESA, BL Companies, Inc.
- Sept. 2020, Hazardous Building Materials Investigation & Waste Disposal Inventory, BL Companies, Inc.

Many of these site assessment results are summarized in the Revised Work Plan for Site Assessment Activities, dated October 25, 2018, revised March 15, 2019, August 14, 2019, and September 20, 2019, prepared by BL Companies, which has been provided to EPA along with the Township's application materials.

The following summarizes key findings identified for the Site as a result of the site assessment activities above. Please note that many of these findings subsequently were addressed or remediated through EPA's Removal Action, or are now being further investigation by BL Companies:

- A review of the soil sample results revealed that SVOC exceedances were identified in all soil samples, VOC and metal exceedances were identified were identified in several samples. A review of the water sample results revealed that benzene and numerous SVOCs were detected at concentrations exceeding their Act 2 RUA MSCs.

- The RAP indicated that there were three USTs and seven ASTs located on the property. The material identified in the USTs was a heavy petroleum mixture indicative of a No. 4-6 bunker type oil. With the exception of two tanks, AST-5 (water/ammonia solution) and AST-7 (heating oil), the liquids stored in the ASTs contained VOCs, SVOCs, and metals.

- Subsurface soils are contaminated with volatile and semi-volatile organics. These chemicals present a potential for public health concern if direct contact occurs,

vapor intrusion into nearby dwellings occurs, or contaminants migrate to ground water aquifers accessed for drinking water. None of the contaminants analyzed exceed adult Comparison Values (CVs) for noncancerous health effects, except lead. The ability of PAHs to induce short-term health effects in humans is not clear. Therefore, ATSDR concluded that direct contact with PAR-contaminated soils may result in adverse dermal effects (i.e. rash, irritation, inflammation). The arithmetic mean and maximum lead concentrations identified in surface soils at the Site were 1,145 parts per million (ppm) and 1,980 ppm, respectively. Acute exposure to lead at these concentrations was not expected to result in adverse health effects, but chronic exposures to these lead concentrations may cause adverse health effects.

- As a result of these findings, ATSDR recommended the following actions: Access to the Site should be restricted to reduce potential exposures to trespassers; On-site workers should be informed of the contamination identified at the property and the potential for unhealthy exposures to surface and subsurface soil contaminants; The sources of waste at the Site, including leaking underground tanks and other hazardous waste containers, should be properly addressed to eliminate future exposures; Nearby residents should be informed about conditions at the Site; Elevated VOC concentrations in subsurface soil indicate the potential for vapor intrusion; Future users of the Site, including developers, planners, and future residents, should be made aware

- The removal site evaluation indicated that the Site is covered with sand blasting grit contaminated with elevated inorganic contaminants (i.e. lead) and concentrations of organic contaminants (predominantly PARs such as benzene (a) pyrene). It was noted that exposure to these contaminants may occur via direct contact and incidental inhalation or ingestion pathways. The contaminants in the sandblasting grit could also migrate to surface water as evidenced by contaminants in the drainage pathway, shallow ground water, and surface water. Further, the contaminants in the sandblasting grit could also migrate to adjacent properties through air migration.

- The removal site evaluation also indicated that the subsurface soil at the Site was highly contaminated with organic contaminants similar to those found in the tanks at the Site which suggests that the subsurface soils are likely contaminated by wastes associated with the tanks and/or the former impoundments. In addition, it was noted that subsurface soil is exposed at the surface in a few areas from which direct contact or incidental inhalation or ingestion may occur. However, the subsurface soil predominantly poses a risk of release to shallow and deeper underground water systems. The contamination was observed by the OSC to be present at levels much deeper than the base of the former impoundments which indicates that the contamination is migrating deeper. The shallow ground water contained elevated concentrations or organic and inorganic contaminants, while the deeper ground water was contaminated by low levels of organic constituents.

- During the Phase I ESA Site reconnaissance, Penn E&R observed four aboveground storage tanks (ASTs). The ASTs included a 275-gallon waste oil tank located in the Maintenance Shop, a 1,000-gallon diesel fuel AST located in the Paint Shop, and a 10,000-gallon fuel oil AST and a 500-gallon diesel fuel AST located outside of the Boiler House. The ASTs appeared to be in fair condition with no obvious signs of leakage. In addition, seven ASTs/tank cars were historically used by TCCA to store hazardous materials. Most of these tanks were located to the north of the Maintenance Shop. These ASTs were subsequently decommissioned and removed from the Site by the USEP A and others.

- In addition to the current ASTs mentioned above, Penn identified several 55-gallon drums inside of the Maintenance Shop, Boiler House, and Paint Shop. Although the drums appeared to be in good condition with no apparent signs of leakage, the contents of the drums are unknown. Penn E&R observed a small wooden storage closet in the Boiler House which contains chemistry equipment and several small bottles of various chemicals and mixtures. Penn E&R conducted visual asbestos and lead-based paint surveys at the Site as part of this Phase I ESA. Based on the age of the Site buildings, it is possible that asbestos-containing material (ACM) and lead-based paint (LBP) could be present within the building materials. Suspect ACM observed during Penn E&R's visual assessment included insulation on the furnace and associated piping in the Boiler House. Painted surfaces observed in the Office building may contain LBP.

- As part of the ongoing Phase II ESA being conducted by BL Companies, a Hazardous Building Materials & Waste Disposal Inventory revealed that approximately 100 linear feet of roof sealant and approximately 500 square feet of 9-inch by 9-inch, resilient floor tile would be classified as Category I non-friable ACMs. In addition, approximately 500 square feet of joint compound; approximately 38,000 square feet of transit type wall and/or roof panels; approximately 100 linear feet of window glaze; and approximately 20 square feet of boiler backer board panel would be classified as Category II non-friable ACMs. Additionally, the Site buildings contain PACMs in the form of boiler and HVAC units; electrical conduit insulation; and approximately 2,000 square feet of roofing materials on the Office Building (upper roof) and Boiler House that were not sampled as part of the survey.

1.4 PROJECT GOAL

In 2015, the Township acquired the former TCCA site to remediation and redevelop the site for public use. The proposed redevelopment of the Site will include construction of a small community park that conceptually will include a baseball field, a walking path, open recreational space, and a single structure as a restroom facility. The redevelopment plans are intended to eliminate a source of local blight and to restore the Site to a useful purpose to benefit the community and local area residents

2. APPLICABLE REGULATIONS AND CLEANUP STANDARDS

2.1 CLEANUP OVERSIGHT AND RESPONSIBILITY

The cleanup will be overseen by an environmental professional, BL Companies in coordination with Springfield Township staff and environmental Counsel, Post & Schell, P.C. The Site has been entered into the Pennsylvania DEP Voluntary Cleanup Program (Act 2). All documents prepared for the Site will be submitted to the PA DEP.

2.2 CLEANUP STANDARDS FOR MAJOR CONTAMINANTS

The cleanup standards for the Site will be site-specific standards as provided for in the rules and regulations of Pennsylvania's Land Recycling and Environmental Remediation Standards Act of 1995 (Act 2).

2.3 LAWS AND REGULATIONS APPLICABLE TO THE CLEANUP

Laws and regulations that are applicable to this cleanup include the Brownfields Revitalization Act, the Federal Davis-Bacon Act, state environmental laws, and Township by-laws. Federal, state, and local laws regarding procurement of contractors to conduct the cleanup will be followed. In addition, all appropriate permits and notifications will be obtained prior to commencement of the work.

3. EVALUATION OF CLEANUP ALTERNATIVES

Based on the planned redevelopment of the Site, including the abatement by removal of all asbestos, and the removal and proper disposal of all Universal Waste are considered presumptive remedies, and cleanup alternatives were not considered for these contaminants and/or tasks.

To address contamination at the Site, three different cleanup alternatives were considered and are described below:

Alternative 1 - No Action:

Alternative 2 – Remediation, Demolition, Hot Spot Removal, and Capping:
Demolition of Site buildings containing hazardous materials and waste to eliminate those materials and remove blight. Remove hot spots of soil contamination as warranted. Cap residual soil contaminants with clean fill material brought to the property from off-site. Implement Activity and Use Limitations (AULs) requiring maintenance of the cap and prohibiting extraction of groundwater.

Alternative 3 - Remediation, Demolition, Removal of all Impacted Soil, and Active Groundwater Treatment:
Demolition of Site buildings containing hazardous materials and waste to eliminate those materials and remove blight. Removal of all impacted soil detected on the site. Actively treat groundwater. Implement Activity and Use Limitations (AULs) to prohibit extraction of groundwater as necessary.

3.1 ANALYSIS OF CLEANUP ALTERNATIVES

To satisfy the U.S. Environmental Protection Agency (EPA) requirements, the effectiveness, ease of implementability, resiliency to climate change, and cost of each alternative were considered prior to selecting a recommended cleanup alternative.

3.1.1 Effectiveness

Alternative 1 - No Action:
This alternative is not effective in controlling or preventing the exposure of others to contamination at the Site.

Alternative 2 – Remediation, Demolition, Hot Spot Removal, and Capping:
This alternative is effective and meets the requirements of applicable regulations. Although all impacted soil will not be removed, and groundwater will not be treated, exposure pathways to residual impacts will be eliminated through capping and the implementation of AULs, significantly mitigating the risk associated with these residual contaminants.

Alternative 3 - Removal of all Impacted Soil, and Active Groundwater Treatment:
This alternative and meets the requirements of applicable regulations. Since all impacts soil and hazardous materials would be removed from the Site, risk associated with the historic contaminants would be significantly reduced or eliminated.

3.1.2 Feasibility and Ease of Implementation

Alternative 1 - No Action:
This alternative is easy to implement as no actions will be conducted.

Alternative 2 – Remediation, Demolition, Hot Spot Removal, and Capping:
This alternative would utilize standard techniques for the abatement of hazardous building materials, hot spot removal, and capping.

This alternative is practical and implementable.

Alternative 3 - Removal of all Impacted Soil, and Active Groundwater Treatment:
This alternative would utilize standard techniques for the abatement of hazardous building materials, impacted soil removal, and groundwater treatment.

This alternative is not feasible because it would be very costly. Removing all impacted soil at the property also would require special approval from EPA, because a significant portion of the impacted soil and hazardous materials were consolidated on-site and capped by EPA. Finally, groundwater treatment technologies may not be capable of restoring groundwater to background conditions.

3.1.3 Resiliency to Climate Change

Alternative 1 - No Action:
This alternative will not be resilient to climate change.

Alternative 2 – Remediation, Demolition, Hot Spot Removal, and Capping:
Since all residual soil impacts would be capped beneath several feet of clean fill material, and all impacted groundwater is many feet beneath the ground, this alternative would be resilient to climate change.

Alternative 3 - Removal of all Impacted Soil, and Active Groundwater Treatment:
This alternative would remove source area soils and therefore would be resistant to climate change.

3.1.4 Cost Effectiveness

Alternative 1 - No Action:
There would be no cost associated with Alternative 1, though no remediation would be completed.

Alternative 2 – Remediation, Demolition, Hot Spot Removal, and Capping:
The cost of Alterative 2 is estimated to be $600,000 - $800,000, and is believed to be the most cost-effective remediation alternative available.

Alternative 3 - Removal of all Impacted Soil, and Active Groundwater Treatment:
The cost of Alternative 3 would be extremely costly. While the costs have not been estimated by a qualified environmental consultant, the Township understands this work would cost several millions of dollars.

3.2 RECOMMENDED CLEANUP ALTERNATIVE

The recommended cleanup alternatives for each type of identified contamination at the Site are presented below: ***The recommended cleanup alternative is Alternative 2 - Remediation, Demolition, Hot Spot Removal, and Capping.***

Alternative 1 - No Action: Cannot be recommended since it does not address site risks.

Alternative 3 is prohibitively expensive, not necessary to mitigate against significant site risks, would require EPA approval, and has not been recommended by any environmental consultants or by PA DEP.

Alternative 2 is the only viable alternative to allow the Township to redevelop the site into a public park.