UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MEMORANDUM

December 28, 2018

SUBJECT: Preferred Alternative for the Non-Time-Critical Removal Action at the Upland Area of the Solvay Coke and Gas Company Site

FROM: Viral Patel
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U.S. EPA, Region 5, Superfund

TO: Solvay Coke and Gas Company Site File

INTRODUCTION

The United States Environmental Protection Agency (EPA), in consultation with the Wisconsin Department of Natural Resources (WDNR), is proposing a cleanup plan for the Upland Area of the Solvay Coke and Gas Plant Site (Solvay Coke Site, or the "site"), located at 311 West Greenfield Avenue, in Milwaukee County, Milwaukee, Wisconsin, through a Non-Time Critical Removal Action.

The proposed cleanup plan is detailed in the Engineering Evaluation/Cost Analysis (EE/CA) Report, which compares five alternatives to address the soil contamination. The purpose of this memorandum is to identify EPA's Preferred Alternative to address contamination.

EPA's Preferred Alternative is **Removal Action Alternative 4.** Major elements of Removal Action Alternative 4 include consolidation of source material within the Area of Contamination, in-situ solidification/stabilization (ISS) of the source material in the Area of Contamination, targeted removal of piping remaining from previous industrial use of the site; covering all remaining contaminated soils with a barrier to prevent direct contact with contaminated soils; long-term maintenance of the soil cover; installing groundwater monitoring wells; and implementing institutional controls to prevent future use of the property incompatible with protection of human health and the environment. This response action is an interim action for source contaminated materials, and contaminated soils. This alternative is estimated to cost $15,864,900.

PUBLIC PARTICIPATION

On December 10th, 2018, EPA posted an advertisement in the Milwaukee Journal, notifying the public that EPA will be soliciting comments on the alternatives presented in the EE/CA Report. The comment period began December 17th, 2018 and runs through January 18th, 2019.

At the end of the comment period, EPA will select a removal action in an Action Memorandum after reviewing and considering all information submitted during the comment period. EPA may modify its Preferred Alternative or select another response action based on new information or public comments. EPA encourages the public to review and comment on all alternatives detailed in the EE/CA Report. For further information, the Administrative Record file is available for review at the Milwaukee Public Library, 814 W. Wisconsin Ave.; at the Bay View Library, 2566 S. Kinnickinnic Ave., Milwaukee; and at the EPA Region 5 office, 7th Floor Records Center, 77 W. Jackson Blvd., Chicago, Illinois. The Administrative Record file is also available online at www.epa.gov/superfund/solvay-coke.

EPA will accept written and emailed comments submitted to the site Community Involvement Coordinator, Susan Pastor, at:

Susan Pastor
Region 5 (SI-6J)
77 West Jackson Blvd.
Chicago, IL, 60604
pastor.susan@epa.gov

Finally, EPA and WDNR staff will be available to answer questions about the proposed response action and other cleanup alternatives evaluated during an open house. The open house is scheduled for Wednesday, Jan. 8th, 2019, at the Bay View Library Community Room, 2566 S. Kinnickinnic Ave. from 2:00 p.m. until 4:30 p.m. The public was noticed of the open house in a December 10, 2018 advertisement in the Milwaukee Journal.

BACKGROUND

Site Setting

The Solvay Coke site Upland Area is the approximately 45-acre property located in the Harbor View neighborhood at 311 E. Greenfield Avenue, in Milwaukee County, Milwaukee, Wisconsin. The Upland Area does not include contaminated sediments associated with the Site in the adjacent Kinnickinnic River. The property location is depicted in Figure No. 1 of the EE/CA Report. The Upland Area boundary is depicted in Figure No. 2 of the EE/CA Report.

Site History

The former Milwaukee Solvay Coke and Gas Company facility was constructed in 1903, and manufactured coke and gas from coal and recovered byproducts from the coking and gas purification processes from 1904 to approximately 1983. The former facility produced coke and gas on the northwestern portion of the property, and stored coal on the northeastern portion of

the property. Tar waste product was neither processed on site nor used as fuel. Tar was collected from several locations at the facility and eventually routed to the tar storage tank for removal.

The southern half of the Upland Area property was used for separate industrial operations consisting of electric railroad, blast furnace, and tannery operations from at least 1883 to circa 1950. This area was then used for coal and coke storage by the coke and gas facility until 1983, when the former coke and gas facility ceased its operations, marking the end of the historical industrial activities that took place at the upland.

In May 2017, We Energies purchased the Upland Area property, and in August 2017, entered into an agreement with the EPA to perform a Non-Time Critical Removal (NTCRA) cleanup on the property. EPA, working with WDNR, is overseeing We Energies' investigation and NTCRA cleanup of the upland.

NATURE AND EXTENT OF CONTAMINATION SUMMARY

Historical industrial activities have contaminated the Upland Area property. Site investigation activities to define the nature and extent of contamination have been conducted at the Site as early as 2001. Most recently, EE/CA support sampling activities were conducted in 2017.

Exceedances of Wisconsin Soil Residual Contaminant Levels

Analytical laboratory data from surface and subsurface samples were used to establish the chemical constituents present and their extent at the Upland Area relative to Wisconsin Soil Residual Contaminant Levels (RCLs).

The RCLs represent reasonable maximum exposure conditions for long-term/chronic exposures for cancer risks within EPA's $1x10^{-6}$ to $1x10^{-4}$ acceptable carcinogenic risk range and a hazard index of 1 under a hypothetical industrial direct contact exposure scenario. Contaminants of concern present in the soils exceeding the RCLs include benzene, carcinogenic polynuclear aromatic hydrocarbons, arsenic, and cyanide. RCL exceedances are assumed to be present in the upper 4 feet of soil across the entire Site.

Non-Aqueous Phase Liquid (NAPL) Source Material

NAPL is composed of liquids that do not readily mix with water, such as gasoline or tarry products; although, the compounds may also partially dissolve in water and act as an ongoing source of contamination to groundwater.

NAPL-impacted materials most likely act as an ongoing source of contamination to groundwater are "source material" consisting of NAPL blebs, hard tar, oil-wetted soils, oil-coated soils, and free product. NAPL source material has been observed at the site. NAPL source material has been observed from 0 feet to 17 below ground surface (bgs). Figure Nos. 5A, 5B, and 12 in the EE/CA Report depict the modeled extent of NAPL source material.

REMOVAL ACTION ALTERNATIVES

Summary of Removal Action Alternatives

Technologies evaluated to address the Upland Area contamination were combined into 5 removal action alternatives (RAAs), summarized as follows:

- **Removal Action Alternative-01**: No further action. The No Further Action alternative is included as a baseline for comparison of other removal action alternatives.
- **Removal Action Alternative-02:** Excavation and off-site disposal of source materials; targeted removal of piping remaining from previous industrial use of the site; covering all remaining contaminated soil (exceeding Wisconsin Soil RCLs) with a barrier to prevent direct contact; long-term maintenance of the soil cover; monitoring and maintenance of the soil cover; installing groundwater monitoring wells; and implementing institutional controls to prevent future use of the property incompatible with protection of human health and the environment.
- **Removal Action Alternative-03:** Excavation and off-site disposal of source materials; chemical in-situ treatment of residuals; targeted removal of piping remaining from previous industrial use of the site; covering all remaining contaminated soil (exceeding Wisconsin Soil RCLs) with a barrier to prevent direct contact; monitoring and maintenance of the soil cover; installing groundwater monitoring wells; and implementing institutional controls to prevent future use of the property incompatible with protection of human health and the environment.
- **Removal Action Alternative-04 (Preferred Alternative):** In-situ solidification/stabilization (ISS) of these contaminants in the Area of Contamination, including consolidation of source materials within the Area of Contamination as necessary to implement the remedy; targeted removal of piping remaining from previous industrial use of the site; covering all remaining contaminated soil (exceeding Wisconsin Soil RCLs) with a barrier to prevent direct contact; monitoring and maintenance of the soil cover; installing groundwater monitoring wells; and implementing institutional controls to prevent future use of the property incompatible with protection of human health and the environment.
- **Removal Action Alternative-05:** Excavation and off-site disposal of source contaminated materials (excluding hard tar) up to 2 feet into the ground water table; targeted removal of piping remaining from previous industrial use of the site; installing source material recovery wells, covering all remaining contaminated soil (exceeding Wisconsin Soil RCLs) with a 6" barrier to prevent direct contact; installation of a groundwater monitoring well network; and implementing institutional controls to prevent future use of the property incompatible with protection of human health and the environment.

Preferred Removal Action Alternative

Based on information currently available, EPA's Preferred Alternative for addressing contamination at the Solvay Coke site is **Removal Action Alternative 4**.

The major components of the RAA-04 includes ISS of source material. ISS is a physical treatment technology that involves blending impacted soil with amendments (cement, bentonite, ground granulated blast furnace slag, etc.), to physically bind (solidify) and/or chemically react with (stabilize) contaminants in soil. This results in a solidified or stabilized mass with reduced contaminant mobility and leachability. ISS isolates contamination from human contact and from groundwater by entombing the contamination in a solid mass of low permeability.

Figure No. 11 of the EE/CA Report depicts the areas currently targeted for ISS treatment. Smaller volumes of contamination may be excavated and consolidated into larger ISS treatment areas, all within the Area of Contamination.

Other major components of RAA-04 include targeted removal of piping remaining from previous industrial use of the site; placement of a barrier to prevent direct contact with soils exceeding Wisconsin soil RCLs; and installation of a groundwater monitoring well network.

Additional components include a pre-design investigation in part to refine the extent of NAPL source material; limited excavation and off-site disposal of contaminated soil and other site materials (i.e., brick); and a Post-Removal Site Control Plan to ensure continued remedy effectiveness. This response action is an interim action for source contaminated materials, covered and covered soils. Total remedy costs are estimated at $15,864,900.