

EXPLANATION OF SIGNIFICANT DIFFERENCES

Former Kil-Tone Company Superfund Site Operable Unit 2

Site Name and Location

Former Kil-Tone Company Superfund Site
Vineland, Cumberland County, New Jersey

Introduction

The purpose of this Explanation of Significant Differences (ESD) is to explain the United States Environmental Protection Agency's (EPA) changes to the remedy selected in the September 2019 Record of Decision (ROD) for the Former Kil-Tone Company Superfund Site (Site), Operable Unit (OU) 2. The OU2 ROD was prepared by EPA as lead agency for the Site, in consultation with the New Jersey Department of Environmental Protection (NJDEP). The selected remedy described in the OU2 ROD represents the second of four planned remedial phases, or operable units, for the Site.

Under Section 117(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA or Superfund), 42 U.S.C. § 9617(c), EPA is required to publish an ESD when, after issuance of a ROD, subsequent enforcement or remedial action leads to significant, but not fundamental, changes in the selected remedy. Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. §§ 300.435(c)(2)(i) and 300.825(a)(2), set forth the criteria for issuing an ESD and require that an ESD be published if the remedy is modified in a way that it differs significantly, but not fundamentally, in scope, performance, or cost from the remedy selected in the ROD for the Site.

This ESD modifies the remedy selected in the OU2 ROD by providing for permanent relocation of businesses occupying structures that will be demolished to conduct the remedy, as well as appropriate compensation of the owner and/or tenant of such structures, as components of the OU2 remedy. This ESD also provides a brief history of the Site, describes the original remedy, and explains how, subsequent to the finalization of the decision document, issues concerning the scope and performance of the selected remedy were identified.

This ESD and the documents that provide the basis for the modification will be incorporated into the administrative record maintained for the Site in accordance with Section 300.825(a)(2) of the NCP, 40 C.F.R. § 300.825(a)(2). The administrative record file is available for review during business hours at the EPA Region 2 Superfund Records Center, 290 Broadway, New York, NY 10007 (Monday through Friday, 9:00 AM–5:00 PM); at the information repository at the Vineland City Library, 1058 East Landis Ave., Vineland, New Jersey 08360 (for library hours: <http://www.vinelandlibrary.org>); and online at: www.epa.gov/superfund/former-kil-tone.

Site Location, History, Contamination Problems, and Selected Remedy

A. Site Location and Description

The Site includes the former Kil-Tone Company facility (Property) located at 527 East Chestnut Avenue, City of Vineland, Cumberland County, New Jersey, and the areal extent of contamination. The Site also includes residential, commercial and industrial properties in the vicinity of the former Kil-Tone facility, groundwater contamination, and may also include potential sediment and surface water contamination, currently under investigation. The Site has been divided into four OUs. OU2, the subject of this ESD, addresses the Property as well as nearby non-residential properties (commercial/industrial and public areas).

The Property is 3.15 acres and is located in a mixed-use (residential, commercial and industrial) community that has been identified as a community with potential environmental justice (EJ) concerns because EJ index percentiles for many environmental and demographic indicators for the area immediately adjacent to the Site were above state and national averages. According to the 2010 Census, the approximate racial breakdown of the City of Vineland included White (67%), Black or African American (14.2%), Asian (1.7%), and Others (12.9%). The 2010 Census also reported a Hispanic/Latino population of 38%. The total median household income was reported in 2010 at \$54,024 and \$50,690 in 2014. The Property is bordered to the north by East Chestnut Avenue; to the east by South Sixth Street; to the south by Paul Street; and to the west by South East Boulevard, which is next to railroad tracks used for freight transport. Residential, commercial and industrial properties are located throughout the area.

A storm sewer catch basin located in the northwestern corner of the Property discharges into the head of the Tarkiln Branch, a tributary of the Parvin Branch that flows into the Maurice River that flows into Union Lake.

B. Site History

The Property was the site of pesticide manufacturing operations from about 1916 to about 1933. Starting in or about 1916, the former Kil-Tone Company manufactured, among other things, the pesticide lead arsenate at the Property. In 1926, the Property was purchased by John Lucas & Company, which created a new subsidiary named the Lucas Kil-Tone Company that continued to manufacture arsenic-based pesticides on the Property until on or about 1933, at which point pesticide manufacturing ceased. Since 2008, Urban Sign and Crane, Inc., a sign making and installation business, has leased the building at the Site.

Lead arsenate is a pentavalent form of inorganic arsenic and contains about 22 percent arsenic. Inorganic arsenics are known to be acutely toxic. Among the products manufactured at the Property were Green Cross Dry Powdered Arsenate of Lead, Green Cross Standard Arsenate of Lead, Green Cross Sulpho-arsenate Powder, Green Cross Sulphur and Arsenate Lead Mixture, Modified Kil-Tone, Improved Kil-Tone, Fruit Kil-Tone, Bordeaux Mixture, Dry Powdered Arsenate of Zinc, and Beetle Mort.

C. Contamination Problems

An August 2014 investigation of the Property by NJDEP found arsenic at concentrations as high as 740 parts per million (ppm) in the top six inches of soil, and at concentrations as high as 5,800 ppm between 3.5 to 4 feet below ground. Groundwater beneath the Property had concentrations of arsenic of 8.1 micrograms per liter ($\mu\text{g/L}$) to 14,000 $\mu\text{g/L}$. As a result of its investigation, on November 14, 2014, the NJDEP referred the Site to EPA.

From January 2015 through February 2016, EPA conducted several sampling events at the Site to determine the nature and extent of contamination. Sampling results identified arsenic and lead in soils at the Property, as well as in soils in the vicinity of the Property including at residential, commercial and industrial properties. Arsenic and lead were also found in groundwater, surface water and sediment samples collected by EPA. On April 5, 2016, EPA placed the Site on the National Priorities List.

In April 2016, EPA initiated a removal action to address potential exposure to surface soil contaminated with arsenic and lead at residential properties in the vicinity of the Property. Clean topsoil was placed over portions of 26 residential properties as an interim measure until a permanent remedy was selected and implemented to prevent exposure to arsenic and lead contaminated soil. Additional removal work was done farther from the Property in the flood plain of the Tarkiln Branch. Clean soil was placed on six residential properties in the flood plain and fencing was installed at portions of two public housing developments along the Tarkiln. These additional removal activities are also interim measures designed to prevent exposure to and migration of arsenic and lead contaminated soil until a final remedy is selected and implemented.

In September 2016, EPA signed a ROD for OU1 of the Site, which addresses residential properties in the vicinity of the Property. The ROD included the excavation of an estimated 21,000 cubic yards of soil contaminated primarily with arsenic and lead from approximately 57 residential properties in the vicinity of the Site, and the remedy is being conducted in phases. During Phase 1 of the OU1 remedial action, six residential properties were remediated and restored to conditions allowing unrestricted future use, including continued residential use. Phase 1 was initiated in 2017 and completed 2018. During Phase 2 of the OU1 remedial action, an additional 26 residential properties were remediated and restored to conditions allowing unrestricted future use, including residential use. Phase 2 was initiated in 2018 and completed in 2020. At least 48 additional residential properties have been identified for Phase 3 of the OU1 remedial action, which EPA currently expects to be the last phase of remedial action for OU1. The design for Phase 3 of the remedial action was completed in 2021 and the remedial action was initiated in 2022 and is ongoing. In July 2021, an ESD was signed which provided for permanent relocation of residents as part of the OU1 remedy based on the need to excavate contaminated soil from beneath the house, the structural integrity of the house, the ongoing risk to human health and the environment if the contamination were to remain in place, and the cost of remediating the contaminated soil underneath the structure if it were to remain standing. The ESD also provided that EPA might determine relocation to be necessary at additional residential properties.

D. The OU2 Remedy

EPA issued the OU2 ROD in September 2019. The OU2 ROD identified remedial action objectives (RAOs), which are specific goals to protect human health and the environment. The following RAOs were established for OU2 of the Site:

- Prevent current and potential future unacceptable risks to human receptors resulting from direct contact with contaminated soil;
- Prevent migration of chemicals of concern (COCs) from the OU2 properties to other areas via overland flow and air dispersion;
- Prevent or reduce the migration of COCs from soil to groundwater; and
- Prevent current and potential future unacceptable risks to ecological receptors resulting from direct contact with contaminated soil.

The major components of the remedy selected in the OU2 ROD include the following:

- Excavation of an estimated 57,800 cubic yards of soil contaminated with arsenic and lead from the former Kil-tone Company property and approximately 40 non-residential properties in the vicinity of the former Kil-Tone Company property, not to exceed the depth of the groundwater table;
- Off-site disposal of excavated contaminated soil, and backfilling of excavated areas with clean fill;
- Restoration of the affected properties;
- Institutional controls;
- Engineering controls, if necessary; and
- Long-term monitoring.

The description of the remedy goes on to say that excavation activities associated with remediation may require the demolition and replacement of secondary structures, such as garages and sheds, as well as surfaces including asphalt and driveways. In cases where contamination extends below more permanent structures (buildings, offices, etc.), effort will be undertaken to avoid demolition (underpinning, etc). In cases where this is infeasible, other options will be considered, including engineering and institutional controls.

The contaminants of concern and remediation goals outlined in the OU2 ROD were as follows:

	Arsenic (mg/kg)	Lead (mg/kg)
Residential Soil	19	400 ¹
Non-Residential Soil	19	800
Impact to Groundwater	19	400/800 ²
Ecological (Plants)	69	500
Ecological (Soil Invertebrates)	93.7	3,162

¹ The OU2 ROD also indicated that an average concentration across the surface of the remediated area for residential properties must be at or below 200 mg/kg, with no single point above 400 mg/kg, which corresponds to a child blood lead level of 5 µg/dL.

² The OU2 ROD indicated that the impact to groundwater value was “under development.” Sampling and analyses conducted during the pre-design investigation to support the OU2 remedial design determined that residential and non-residential direct contact soil cleanup levels would be protective of groundwater. As outlined in the OU2 ROD, this finding has been memorialized in a technical memorandum that has been incorporated into the site file.

In September 2019, EPA initiated the design of the OU2 remedy to address non-residential properties at and in the vicinity of former Kil-Tone facility. Phase 1 of the design, which included the majority of the OU2 properties to be addressed, was finalized in September 2022 and the remedial action is expected to be initiated in 2023. Phase 2 of the design is expected to be completed in 2023.

Description of Significant Differences

The remedy selected in the OU2 ROD includes excavation of contaminated soil (not-to-exceed the depth of the groundwater table), off-site disposal of the excavated soil, back filling with clean fill, and restoration of the affected properties.

The OU2 ROD specifies that excavation activities may require the demolition and replacement of structures such as sheds, garages and the removal of asphalt and driveways, but it does not provide for complete demolition of an entire structure and permanent relocation of the commercial occupants, although the ROD does state that in cases where contamination extends below more permanent structures (buildings, offices, etc.), effort will be undertaken to avoid demolition (underpinning, etc), and that in cases where this is infeasible, other options will be considered, including engineering and institutional controls.

The Property is part of Phase 2 of the OU2 remedial design, which is still being finalized. On the Property is a large, single-story slab-on-grade structure approximately 27,000 square feet in size. Sampling results indicate that soil beneath the structure is heavily contaminated with arsenic and lead at levels posing a risk to human health and/or the environment. The contamination extends down to, and below, the water table. Sampling conducted by EPA as part of the design from 2019 through 2022 found arsenic concentrations as high as 11,800 ppm and lead concentrations as high as 96,100 ppm in soil underneath the structure. It is estimated that the volume of contaminated soil beneath the structure is more than 18,000 cubic yards, with at least 7,200 cubic

yards in the saturated soil, and this arsenic contamination can act as an ongoing source to groundwater contamination.

Concentrations of arsenic in groundwater in the vicinity of this structure were detected as high as 29,000 parts per billion (ppb) and up to 5,000 ppb under/adjacent to the building (the New Jersey Groundwater Quality Standard for arsenic is 3 ppb). The Tarkiln Branch, which originates at the northwest corner of the Property, and which is the focus of OU4 of the Site, may also be impacted by this contamination. Consistent with the OU2 ROD, contaminated soil lying beneath the building will be excavated and sent off-site for disposal.

According to EPA's National Superfund Permanent Relocation Interim Policy, and EPA's OSWER Directive: 9355.0-71P, Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions, permanent relocation should be considered as part of a remedial action only if there is a risk to human health that cannot be effectively addressed by the cleanup, or where the structure is an impediment to a protective cleanup. The structure on the Property obstructs access to the contaminated soil beneath the structure and prevents the excavation of contaminated soil that exceeds the cleanup criteria in the OU2 ROD and that may be a source of groundwater contamination. The structure therefore impedes implementation of the OU2 remedy on the Property. EPA has determined that permanent relocation of the business currently operating at the Property is more cost-effective and environmentally preferable to lifting or moving the structure, which would be difficult to undertake from engineering perspective, may not be successful, and would be too costly to pursue given the uncertainty of success. As required, Superfund-related permanent relocations and property acquisitions would be conducted under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

During implementation of the OU2 remedial action, EPA may identify additional properties where EPA determines that permanent relocation is appropriate to effectively perform the OU2 cleanup, because there is a risk to human health that cannot effectively be addressed by cleanup or where the structure is an impediment to a protective cleanup, consistent with EPA's National Superfund Permanent Relocation Interim Policy, and EPA's OSWER Directive: 9355.0-71P, Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions. The modifications described in this ESD will apply to and include permanent relocation of businesses occupying any such additional commercial structures that EPA determines need to be demolished to remove impediments to the effective implementation of a protective cleanup for OU2.

Support Agency Comments

The State of New Jersey concurs with this ESD. The State's letter providing its concurrence is dated April 20, 2023 and is located in the administrative record maintained for the Site.

Affirmation of Statutory Determinations

EPA, after consultation with NJDEP, is issuing this ESD to modify the selected OU2 remedy to provide for permanent relocation of businesses occupying structures that will be demolished to

conduct the remedy, and property acquisition and/or compensation for the value of demolished structures. The OU2 remedy, as modified by this ESD, still satisfies the requirements of Section 121 of CERCLA, 42 U.S.C. § 9621.

The remedy, as modified by this ESD, will be protective of human health and the environment and will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action.

The modified remedy is technically feasible, cost-effective, and represents the maximum extent to which permanent solutions and treatment technologies can be used in a practicable manner at the Site.

This ESD does not alter the five-year review requirements outlined in the OU2 ROD.

Public Participation Compliance

In accordance with the NCP, a formal public comment period is not required when issuing an ESD. A notice briefly summarizing this ESD will be published in a major local newspaper of general publication in accordance with Section 300.435(c)(2)(i) of the NCP, 40 C.F.R. § 300.435(c)(2)(i).

This ESD and the documents that provide the basis for the decision to modify the OU2 remedy to provide for permanent relocation of businesses, and property acquisition and/or compensation for the value of demolished structures, will be incorporated into the administrative record for the Site in accordance with Section 300.825(a)(2) of the NCP, 40 C.F.R. § 300.825(a)(2). The administrative record file is available for review during business hours at the EPA Region 2 Superfund Records Center, 290 Broadway, New York, NY 10007 (Monday through Friday, 9:00 AM–5:00 PM); at the information repository at the Vineland City Library, 1058 East Landis Ave. Vineland, New Jersey 08360 (for library hours: <http://www.vinelandlibrary.org>); and online at: www.epa.gov/superfund/former-kil-tone.

Pat Evangelista Digitally signed by Pat Evangelista
Date: 2023.05.16 16:16:02 -04'00'

Pat Evangelista, Director
Superfund & Emergency Management Division
U.S. EPA, Region 2

May 16, 2023
Date