U.S. Environmental Protection Agency

Matteo & Sons, Inc. Superfund Site

Operable Unit 1

West Deptford Township, New Jersey

July 2019

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the remedial alternatives considered for the first operable unit (OU 1) of the Matteo & Sons, Inc. Superfund Site (site) and identifies the preferred remedial alternative along with the rationale for the preference.

The Proposed Plan was developed by the United States Environmental Protection Agency (EPA), the lead agency for the site, in consultation with the New Jersey Department of Environmental Protection (NJDEP), the support agency. EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9617(a) (CERCLA, commonly known as Superfund), and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The nature and extent of contamination at the site and the remedial alternatives summarized in this Proposed Plan are described in detail in the Final Remedial Investigation (RI) and Feasibility Study (FS) Reports which are included in the administrative record. EPA encourages the public to review these reports for a comprehensive understanding of the RI/FS conducted at the site.

EPA's preferred alternative for OU 1 is Alternative 4, which includes excavation, off-site disposal of source materials and contaminated soils, and an asphalt cap over the active scrapyard. This is the first of three OUs at this Superfund site. The remedy for the second OU, which addresses single-family, residential properties located in and adjacent to the Tempo Development in West Deptford, New Jersey (located within one mile of OU 1), is in the remedial design phase. The third and final OU will address any groundwater, surface water and sediment impacts.

MARK YOUR CALENDAR

Public Comment Period – July 3 to August 2, 2019

EPA will accept written comments on the Proposed Plan during the public comment period. Written comments should be addressed to:

Lawrence A. Granite, Project Manager
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 10007
Email: granite.larry@epa.gov

For further information on Matteo & Sons, Inc. Superfund site OU 1, please contact Mr. Granite or

Natalie Loney
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U.S. Environmental Protection Agency
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Email: loney.natalie@epa.gov

Public Meeting – July 17, 2019 at 6:30 PM

EPA will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Study. Oral and written comments will also be accepted at the meeting. The meeting will be held at:

RiverWinds Community Center
1000 RiverWinds Drive
West Deptford, NJ 08086
EPA's website for the Matteo & Sons, Inc. Site:
https://www.epa.gov/superfund/matteo-and-sons

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Community Role in the Selection Process

This Proposed Plan is being issued to inform the public of EPA's preferred alternative and to solicit public comments pertaining to the remedial alternatives evaluated, including the preferred alternative. Changes to the preferred alternative, or a change from the preferred alternative to another alternative(s), may be made if public comments or additional information indicate that such a change would result in a more appropriate remedial action. EPA is soliciting public comments on all of the alternatives considered in the Proposed Plan because EPA may select a remedy other than the preferred alternative. This Proposed Plan is available to the public for a public comment period that concludes on August 2, 2019.

A public meeting will be held during the public comment period to present the conclusions of the RI/FS, elaborate further on the basis for identifying the preferred alternative, and receive public comments. The public meeting will include a presentation by EPA of the preferred alternative and the other evaluated alternatives. Information on the public meeting and submitting written comments can be found in the "Mark Your Calendar" text box on page 1.

Comments received at the public meeting and during the comment period will be documented in a responsiveness summary section of a Record of Decision (ROD) in which EPA will select a remedy for OU 1. The ROD will explain the cleanup remedy selected and the basis for the selection.

Scope and Role of the Action

The site is being addressed as three operable units. OU 1, which is addressed by this Proposed Plan, primarily consists of the Matteo property (see Figure 1).

A September 2017 ROD addressed the remediation of single-family, residential properties located in and adjacent to the Tempo Development in West Deptford, New Jersey (OU 2). Therefore, this Proposed Plan does not address OU 2.

One additional OU, OU 3, to address groundwater and surface water/sediment, is anticipated. EPA wants to further assess those media, after the waste at OU 1 is removed, to determine if any action is warranted.

SITE BACKGROUND

Site Description

The Matteo & Sons Superfund Site (Figure 1), OU 1, is located at 1708 U.S. Highway 130 (Crown Point Road) in West Deptford Township, Gloucester County, New Jersey. The OU 1 study area is located in an industrialized area, along a busy highway. The study area consists of the Matteo property, nearby properties and portions of Hessian Run and Woodbury Creek. The study area has been divided into several areas based on site physical features, historical information and the locations of samples collected during the RI and previous investigations. These areas are described below:

- Matteo property – 82.5 acres of contiguous upland areas and adjacent mudflats located between the confluence of Woodbury Creek, Hessian Run, and U.S. Highway 130. The Matteo property includes the scrapyard area, the open field/waste disposal area, and the rental home area.

- Scrapyard area – The southeastern portion of the Matteo property that supports an active scrap metal recycling business is approximately 10 acres and largely paved or covered with crushed stone.

- Rental home area – This 2.3-acre property with a rental home owned by the Matteo family is separated from the scrapyard area by a chain-link fence and gate.

- Open field/waste disposal area – This area is approximately 53 acres and consists primarily of heavily vegetated, undeveloped land, including several distinct waste disposal areas.

- Tidal mudflats – The Matteo property also includes approximately 17.2 acres of tidal mudflats within Hessian Run that are below water at high tide.

- Mira Trucking – This property is across the street from the Matteo property and also contains a significant amount of battery casing waste which originated from the Matteo property. Mira Trucking formerly operated on the property to stage large trucks on the western and southern portions of the property. The property is approximately 4 acres in size.

- Willow Woods property – A manufactured-home community of approximately 14.5 acres, is adjacent to the southwestern border of the site.

- Woodbury Creek – A primary tributary of the Delaware River, which is south of the Matteo property, with deep narrow channels and extensive tidal flats along its northern and southern shores.

- Hessian Run – A tributary of Woodbury Creek adjacent to the northern boundary of the Matteo property, with its farthest upstream reaches just east of U.S. Highway 130. Hessian Run is primarily extensive tidal flats (mud flats) with small shallow channels (less than two to three feet below sea level) extending through the flats.

The western portion of the Matteo property (more than half of the property) is within the Federal Emergency Management Agency Special Flood Hazard Area, subject to inundation by a 100-year flood event.

Geology and Hydrology

Three geologic units are encountered at the site: from shallow to deep, they are the Cape May Formation, the Merchantville Formation and the Magothy Formation. The Merchantville Formation is considered an aquitard. It is encountered beneath the Cape May Formation in the eastern and southern portions of the site where it is approximately 20 feet thick. The formation thins and eventually pinches out in the western portion of the site. The Magothy Formation extends at least to the maximum drilled depth (approximately 100 feet below ground surface [bgs]).

Two groundwater flow systems are present at the site: a shallow perched flow system and a deep regional flow system. The perched flow system is observed from approximately five to fourteen feet bgs. The extent of this perched water zone mirrors the extent of the Merchantville Formation. Generally, the perched groundwater flows radially away from the topographically elevated scrapyard area. In the eastern portion of the site and along the northern shoreline, the perched groundwater flows north discharging to Hessian Run; the remainder flows toward the topographically lower western portion of the site where the Merchantville Formation is absent.

The deep regional flow system is described as a single hydrologic unit, referred to as the Potomac-Raritan-Magothy (PRM) aquifer system. The average horizontal hydraulic conductivity in the PRM is 13.6 feet/day. The regional deep groundwater flows to the southeast. The potable wells at the Matteo facility and the rental home currently pump water from this deep aquifer.

Site History

OU 1 primarily consists of an approximately 80-acre area which includes an active scrap metal recycling facility and an inactive landfill. Hessian Run is adjacent to its northern border. In 1968, the NJDEP identified an inactive incinerator at the property. In April 1971, NJDEP approved James Matteo & Sons, Inc.'s request to operate the incinerator to burn copper wire. In May of that year, the company submitted a plan to operate a "sweating fire box" to melt lead battery terminals for lead reclamation. This lead melting operation continued until approximately 1985. In 1972, NJDEP observed landfilling of crushed battery casings and household waste in an area of wetlands adjacent to Hessian Run. This operation was apparently performed in conjunction with the lead-melting operation, as there were several reports of battery waste incineration and subsequent on-site ash disposal. These land uses resulted in the contamination of soil, sediment and groundwater with lead, antimony and polychlorinated biphenyls (PCBs). EPA placed the Matteo & Sons, Inc. Site on the National Priorities List in September 2006.

Enforcement History

A consent decree (CD) in the civil action *United States of America v. James Matteo & Sons, Inc.* (Matteo), 1:10-cv-06405 (D.N.J.) was approved and entered by the United States District Court for the District of New Jersey in January 2011. Based upon financial and insurance information, the United States determined that James Matteo & Sons, Inc. had limited financial ability to pay EPA's response costs incurred and to be incurred at the site. As a result, the United States settled the case for $820,000 plus an additional sum for interest as well as other considerations such as access for remedial activities and the establishment of institutional controls (ICs). The CD requires Matteo to fully cooperate with all of EPA's future Superfund activities at the site.

PRINCIPAL THREATS

Approximately 56,200 cubic yards of battery casings mixed with soil and sediment and municipal waste originally placed along the shore of Hessian Run act as the source of lead contamination to surface soil, subsurface soil, groundwater, surface water and sediment. In addition, the soil immediately beneath the battery casings and waste mixed with battery casings was also found to contain high lead concentrations due to the leaking of acid and lead-containing chemicals from the battery casings. The sediment adjacent to the battery casings disposal area also contains scattered battery casings and high concentrations of lead. Approximately 11,000 cubic yards of battery casings are also present at the property formerly occupied by Mira Trucking.

Principal threat wastes are identified by the NCP (40 CFR 300.430) as source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or would present a significant risk to human health or the environment should exposure occur.

For this site, the battery casing waste exhibits elevated concentrations of lead and is characteristically hazardous (D-008 for lead). Collectively, battery casings mixed with municipal waste, soil and sediment are considered source materials because these materials serve as a continued source of contamination to other media through wind entrainment, stormwater runoff, inundating tidal water and infiltration from precipitation. Therefore, these source materials are considered principal threat waste.

NATURE AND EXTENT OF CONTAMINATION

In the open field/waste disposal area and the scrapyard area, the majority of approximately 19,500 cubic yards of soil with lead contamination exceeding the NJDEP non-residential direct contact soil remediation standard (NRDCSRS) of 800 milligrams per kilogram (mg/kg) is concentrated in the upper four feet of soils in and near the scrapyard area and is directly associated with the waste disposal areas along the shoreline of Hessian Run. The highest lead concentration in soil was 94,100 mg/kg at two to four feet bgs near the former incinerator in the northeastern corner of the open field/waste disposal area adjacent to the scrapyard area. In the four- to eight-foot bgs interval, lead contamination exceeded NRDCSRS at two locations immediately adjacent to the battery casing disposal areas. In the eight- to twelve-foot bgs interval, lead was below the NRDCSRS but exceeded the NJDEP impact to groundwater (IGW) criterion of 90 mg/kg at one location near the former incinerator in the northeastern corner of the open field/waste disposal area adjacent to the scrapyard area; none of the other deep soil samples exceeded the IGW criterion.

RI sampling following an EPA removal action at the Willow Woods residential community detected lead below the NJDEP Residential Direct Contact Soil Remediation Standard (RDCSRS) of 400 mg/kg. The average lead concentration is 25.8 mg/kg. At the rental home area, lead exceeded the RDCSRS in one sample which was located near the driveway to the scrapyard area.

Elevated concentrations of antimony and zinc were generally co-located with the lead contamination in the upper four feet of soils in the scrapyard area, whereas antimony and lead were elevated in the waste disposal areas. This pattern suggests that lead, antimony and zinc were related to the metal reclamation processes in the scrapyard area, while the lead and antimony are associated with the remaining battery casings/ash or other waste in the disposal areas.

Elevated concentrations of PCBs were found in the scrapyard area and in the open field/waste disposal area, with the majority of contamination in the upper four feet. High PCB concentrations greater than 200 mg/kg were detected at two locations, one in the scrapyard between ground surface and four feet bgs and one in the open field/waste disposal area between four and eight feet bgs. The NRDCSRS for total PCBs is 1 mg/kg.

Other inorganics, including arsenic, iron, manganese and vanadium, were also identified at elevated levels, but are likely concentrated in soil due to the presence of naturally-occurring glauconite in the Merchantville Formation found onsite. The primary constituents of the glauconitic soils are aluminum, calcium, iron, magnesium, potassium and sodium, but several studies have also shown it to be rich in trace elements such as antimony, arsenic, barium, beryllium, boron, cadmium, chromium, lead, manganese and vanadium. Polycyclic aromatic hydrocarbons (PAHs), specifically benzo(a)pyrene, were also detected at elevated concentrations in some areas of the site; however, the distribution pattern is not similar to the site-related metals or PCBs and was determined to be associated with urban soils. Only one sample contained PAH concentrations at significantly higher levels, but this sample was collected near the roadway at the rental home area. Therefore, the presence of these chemicals in soils is not considered to be related to past disposal practices onsite and instead due to urban runoff from the road.

Total lead concentrations exceeded the groundwater screening criterion of 5 micrograms per liter (µg/L) at five shallow wells, whereas dissolved lead only exceeded the criterion at one well that is screened within a battery casing disposal area, with total and dissolved lead concentrations as high as 573J and 43.3 µg/L, respectively. Compared to the lead levels observed in groundwater during a previous investigation, lead concentrations have significantly decreased.

Antimony exceeded the groundwater screening criterion of 6 µg/L at one shallow well not located within the battery casing disposal areas.

Tetrachloroethene, trichloroethene and vinyl chloride were detected in site groundwater monitoring wells, but no evidence was found of their historical or current use at the site. Tetrachloroethene and trichloroethene were detected in monitoring wells upgradient to the east of the site in the shallow perched aquifer. These chemicals, however, were not detected at concentrations exceeding the RI groundwater screening criteria in any of the monitoring wells on-site. Therefore, the chemicals are likely originating from an off-site contaminant source. Vinyl chloride is present in the deep regional aquifer with the highest levels off-site to the southeast. Vinyl chloride was detected in one of 17 shallow groundwater monitoring well samples, but not in any other media on-site, suggesting that the vinyl chloride plume is not associated with past disposal practices at the site.

The three potable wells on or adjacent to the site do not appear to be affected by site-related contaminants as only aluminum and sodium were detected above the New Jersey Drinking Water

Standards. Although these wells are not currently impacted by site contamination, they are in close proximity to groundwater contamination and considered threatened. Iron and manganese, in addition to other metals such as arsenic and aluminum, were detected at levels above RI groundwater screening criteria within groundwater monitoring wells onsite as well. These metals were, however, detected at higher levels in the deep regional aquifer in comparison to the shallow perched zone. This is likely caused by the anaerobic geochemistry of the deep aquifer and the presence of glauconitic soils of the Merchantville Formation. The distribution of these analytes does not indicate they are related to disposal practices at the site.

SUMMARY OF SITE RISKS

As part of the RI/FS, a baseline risk assessment was conducted to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site if no actions to mitigate such releases are taken, under current and future soil, groundwater, surface water and sediment uses. The baseline risk assessment includes a human health risk assessment (HHRA) and a Screening Level Ecological Risk Assessment (SLERA).

Human Health Risk Assessment

EPA conducted a four-step HHRA to assess site-related cancer risks and noncancer health hazards in the absence of any remedial action. The four-step process is comprised of: Hazard Identification, Exposure Assessment, Toxicity Assessment and Risk Characterization (refer to the text box "What is Human Health Risk and How is it Calculated").

The HHRA began with selecting COPCs in the various media (*i.e.*, soil, groundwater, surface water, and sediment) that could potentially cause adverse effects in exposed populations. COPCs are selected by comparing the maximum detected concentrations of each chemical identified with state and federal risk-based screening values. The screening of each COPC was conducted separately for each exposure area.

The Matteo site includes a mix of residential and commercial zoning. For the purposes of the HHRA, the site was divided into five separate exposure areas. These exposure areas are geographic designations created for the risk assessment to define areas with similar anticipated current and future land use or similar levels of contamination. The areas evaluated in the HHRA include the Scrapyard Area, Rental Home Area, Open Field Waste Disposal Area, Willow Woods and Woodbury Creek/Hessian Run. Some pathways were also evaluated for the entire "Matteo property", which includes the Scrapyard Area, Open Field Waste Disposal Area and the Rental Home Area. For this scenario, it was assumed that future redevelopment could result in one large contiguous soil exposure area (*e.g.*, residential) or that exposure to groundwater would occur on a site-wide basis. The scrapyard is currently active, and both the rental home and Willow Woods are presently occupied. The remaining portions of the Matteo Property are vacant but can be accessed by trespassers or recreational users. The Willow Woods property is residential and currently supplied with potable water from a municipal supply. The Matteo Property, however, is not connected to the public water system and two potable wells are located onsite. One well services the rental home and the other provides water to an office within the Scrapyard Area. Both the rental home and scrapyard office are supplied with bottled water for drinking and cooking purposes by Matteo Brothers Management, but there are no current restrictions on the use of well water. As a result, the HHRA considered both current and potential future exposure pathways associated with soil, groundwater, surface water, sediment and fish consumption. As previously discussed, however, groundwater, as well as surface water and sediment in Hessian Run and Woodbury Creek will be further assessed as a separate OU. Note that while potential risks caused by exposure to groundwater are included in the risk assessment, groundwater risks will be further evaluated as part of OU 3.

Risks and hazards from exposure to site soil and groundwater were evaluated for the following current and future receptors:

- Site Worker (adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils within the Scrapyard Area.
- Trespasser (adolescent [6-18 years] and adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils within the Open Field Waste Disposal Area.
- Recreational User (adolescent [6-18 years] and adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils within the Open Field Waste Disposal Area.
- Resident (child [0-6 years] and adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils at the Rental Home or Willow Woods; ingestion, dermal contact and inhalation of vapors during showering and bathing from sitewide groundwater.

Pathways specific to future scenarios only included:

- Construction/Utility Worker (adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface (0-2 feet bgs) and subsurface soils (2-10 feet bgs) from across the Matteo Property as well as Willow Woods.
- Resident (child [0-6 years] and adult): incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils across the Matteo Property.

WHAT IS *HUMAN HEALTH* RISK AND HOW IS IT CALCULATED?

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current and future land uses. A four-step process is utilized to assess site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at a site in various media (*e.g.*, soil, surface water, and sediment) are identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and potential for bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of contaminated soil. Factors relating to the exposure assessment include, but are not limited to, the concentrations that people might be exposed to and the potential frequency and duration of exposure. Using these factors, a reasonable maximum exposure scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment*:* In this step, the types of adverse health effects associated with chemical exposures and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects, such as changes in the normal functions of organs within the body (*e.g.*, changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health effects.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a one-in-ten-thousand excess cancer risk; or one additional cancer may be seen in a population of 10,000 as a result of exposure to site contaminants under the conditions explained in the Exposure Assessment. Current guidelines for acceptable exposures are an individual lifetime excess cancer risk of 10^{-4} to 10^{-6} (corresponding to a one in ten thousand to a one in a million excess cancer risk) with 10^{-6} being the point of departure. For non-cancer health effects, a hazard index (HI) is calculated. An HI represents the sum of the individual non-carcinogenic exposure levels compared to their corresponding reference doses. The key concept for a non-cancer HI is that a threshold level (measured as an HI of 1) exists below which non-cancer health effects are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard.

The vapor intrusion pathway was also evaluated since VOCs unrelated to the site are present in shallow groundwater. However, very low levels of three VOCs, including trans-1,2-DCE, PCE, and methyl tert-butyl ether, were detected in the shallow groundwater at concentrations below 1 μg/L. These concentrations are below their respective target groundwater concentrations for protection of indoor air and federal MCLs. Furthermore, it was determined that the Merchantville clay present onsite can impose significant impedance to upward migration of vapors from underlying deep groundwater. Based on these factors, the vapor intrusion pathway is considered incomplete.

For contaminants other than lead, exposure point concentrations were estimated using either the maximum detected concentration of a contaminant or the 95% upper-confidence limit (UCL) of the average concentration. Chronic daily intakes were calculated based on the reasonable maximum exposure (RME), which is the highest exposure reasonably anticipated to occur at the site. The RME is intended to estimate a conservative exposure scenario that is still within the range of possible exposures.

It is not possible to evaluate risks from lead exposure using the same methodology as for the other COPCs because there are no published quantitative toxicity values for lead. Instead, screening levels were developed using the Integrated Exposure Uptake Biokinetic (IEUBK) and Adult Lead Model (ALM) based on EPA guidance at the time of the assessment. Both models evaluate risk based on average or typical exposure parameter values. Therefore, the EPCs for lead were the arithmetic mean of all the samples within the exposure area from the appropriate depth interval. Exposures to lead were evaluated qualitatively by comparing the arithmetic mean concentration in soil to EPA screening levels derived from the IEUBK and ALM models (400 mg/kg for residential and 800 mg/kg for commercial) and the mean concentration in groundwater to the New Jersey Ground Water Quality Standard for Class IIA (5 µg/L).

Summary of the Human Health Risk Assessment

In the risk assessment, two types of toxic health effects were evaluated for COPCs other than lead: cancer risk and noncancer hazard. Calculated cancer risk estimates for each receptor were compared to EPA's target risk range of $1x10^{-6}$ (one-in-one million) to $1x10^{-4}$ (one-in-ten thousand). The calculated noncancer hazard index (HI) estimates were compared to EPA's target threshold value of 1. This section provides an overview of the human health risks resulting from exposures to contaminants exceeding the target cancer risk and noncancer hazard thresholds in soil and groundwater. Risks associated with lead are discussed separately. A complete discussion of all risks from the Matteo OU 1 Site can be found in the Human Health Risk Assessment which is contained in the Administrative Record.

Surface Soil

Risks and hazards were evaluated for current and potential future exposure to surface soil in the Scrapyard Area, Rental Home Area, Willow Woods, Open Field Waste Disposal Area and across the Matteo Property. Table 1-1 summarizes the cancer risks and noncancer hazards for the receptor populations in each exposure area. Aroclor 1260 was a major contributor of risk and hazard above EPA thresholds within the Scrapyard Area and across the Matteo Property. PAHs contributed to elevated cancer risk in the Rental Home Area and across the Matteo Property. Exposure to vanadium across the Matteo Property yielded noncancer hazard above the EPA threshold of unity as well. As discussed previously, however, the presence of PAHs and vanadium are due to sources unrelated to the Matteo site. No exposure pathway yielded risk or hazard above EPA thresholds from the Open Field Waste Disposal Area and Willow Woods exposure areas.

Table 1-1: Summary of hazard and/or risk exceedances for surface soil by exposure area

Receptor	Hazard Index	Cancer Risk
Scrapyard Area		
Current/future site worker (adult)	**20**	**3×10^{-4}**
Open Field Waste Disposal Area		
Current/Future Trespasser (adolescent)	0.6	3×10^{-6}
Current/Future Recreational User (adolescent)	0.6	3×10^{-6}
Rental Home Area		
Current Resident (child/adult)	0.9	**9×10^{-3}**
Willow Woods		
Current/Future Resident (child/adult)	0.5	7×10^{-5}
Matteo Property		
Future Resident (child/adult)	**40**	**4×10^{-3}**

*Bold indicates value above the acceptable risk range or value.

Surface and Subsurface Soil

Exposure to surface and subsurface soil by a future construction worker was considered in Willow Woods and across the Matteo Property. As shown in Table 1-2, exposure to surface and subsurface soils at the Matteo Property were associated with noncancer estimates that exceed EPA's threshold criteria. Aroclor 1254 and Aroclor 1260 were the primary chemicals contributing to elevated hazard in this exposure area. The cancer risks for this receptor were within the target risk range.

Table 1-2: Summary of hazard and/or risk exceedances for surface/subsurface soil by exposure area

Receptor	Hazard Index	Cancer Risk
Willow Woods		
Future Construction Worker	0.04	3×10^{-7}
Matteo Property		
Future Construction Worker	**9**	8×10^{-6}

Groundwater

Cancer risks and noncancer hazards from exposure to contaminated groundwater were evaluated for current residents at the Rental Home Area and future residents across the Matteo Property. For each scenario, both the cancer risk and noncancer hazard estimates exceeded EPA thresholds, as shown on Table 1-3. Arsenic, antimony, iron, vanadium and vinyl chloride were the primary chemicals contributing to elevated risk and hazard in this media. With the exception of antimony, the presence of these chemicals is due to sources unrelated to the site. Additionally, these chemicals were either not detected in the potable wells onsite or were present below federal MCLs and NJ Groundwater Quality Standards during the RI. However, EPA believes there are potential impacts to the potable wells in the future.

Table 1-3: Summary of hazard and/or risk exceedances for exposure to groundwater

Receptor	Hazard Index	Cancer Risk
Rental Home Area		
Future Resident (child/adult)	**27**	**1×10^{-3}**
Matteo Property		
Future Resident (child/adult)	**27**	**1×10^{-3}**

Lead Results

Exposures to lead were evaluated qualitatively by comparing the concentrations identified in each media to federal and state screening levels or standards established for soil and groundwater. These screening levels were exceeded in both media, thus contributing to elevated risk for current/future residents (Matteo Property soils, Rental Home soils, and sitewide groundwater), current/future site workers (Scrapyard Area soils), construction workers (Matteo Property soils) and current/future recreational users and trespassers (Open Field Waste Disposal Area soils). Lead screening levels were not exceeded for residential soils within Willow Woods.

Summary Conclusions of the HHRA

The risks and hazards for current and/or future site workers (Scrapyard Area), residents (Matteo Property) and construction workers (Matteo Property) exceeded EPA thresholds due to PCBs in soil. Antimony also contributed to elevated risk in groundwater. Lead screening levels were exceeded in both soil and groundwater, thus contributing to elevated risk for current/future residents (Matteo Property and Rental Home), site workers (Scrapyard Area), and recreational users/trespassers (Open Field Waste Disposal Area) as well as future construction workers (Matteo Property). Therefore, lead, antimony and PCBs were the primary site-related chemicals contributing to elevated risk and hazard at the site.

Risks for current resident exposure to groundwater were conservatively estimated since all risk-driving chemicals were either not detected in the potable wells onsite or were present below federal MCLs and NJ Ground Water Quality Standards during the RI. Additional risks and hazards were attributed to PAHs and vanadium in soil as well as arsenic, iron, vanadium and vinyl chloride in groundwater. As discussed, the presence of these chemicals is due to sources unrelated to the site.

Ecological Risk Assessment

<u>SLERA</u>

As part of the RI/FS, a SLERA was conducted to evaluate the potential for ecological risks at the site. No federally listed or proposed threatened or endangered species are known to exist within the vicinity of the site. The NJDEP Natural Heritage Program reported the occurrence of the great blue heron (*Ardea herodias*), a species of special concern, near the site. No other species or communities of concern were noted on or within 1/4 mile of the site.

The site is considered to be in an "Environmentally Sensitive Area" according to New Jersey regulations because it contains critical wildlife habitat, which are areas known to serve an essential role in maintaining wildlife, particularly in wintering, breeding and migrating. Further, ecotones, or edges between two types of habitat (such as wetlands and uplands), are a particularly valuable critical wildlife habitat.

The SLERA evaluated exposure of ecological receptors to chemicals in site media through direct contact and dietary habits. Media evaluated included soil, sediment, surface water, porewater and seep water.

Dietary exposure risks were identified using food chain models for bioaccumulative chemicals detected in sediment and soil. The hazard quotient (HQ) method was employed, comparing total dose to toxicity reference values (TRVs) for each species evaluated. Ten species representing the avian and mammalian communities inhabiting the site were evaluated using food chain exposure modeling.

The SLERA determined that there are contaminants in all site media at levels that may cause adverse effects to ecological receptors via both direct exposure and dietary exposure. Multiple chemicals were determined to be risk drivers, but lead was the most prominent, affecting all site media and causing risk via both direct and dietary exposure.

Step 3a Ecological Risk Assessment

The Step 3a ERA was conducted to refine the list of chemicals of potential concern that were identified in the SLERA. Results of the Step 3a evaluation indicated fewer risks from exposure to chemicals detected in site media when compared to the SLERA. Metals continue to be the primary risk driver in all site media based on direct exposure.

Chemicals present in sediment pose little risk to ecological receptors based on food chain exposure models. The only exception was exposure to lead for piscivorous birds based on the great blue heron model where an HQ of 1.2 was calculated. Since the daily dose of lead calculated is so close to the TRV to which it is compared, and with the conservative assumptions used such as a site foraging factor of 1.0, and assuming the great blue heron's diet consists only of fish, risk from exposure to lead in sediment is most likely overestimated.

Chemicals identified as risk drivers in soil based on food chain exposure models consist primarily of the site-related metals lead and zinc. Pesticides, PCB Aroclors and dioxins were also noted as risk drivers based on the American robin and short-tailed shrew models used to represent insectivorous birds and mammals. Only PCBs are considered to be site-related.

EPA has determined that the Preferred Alternative identified in this Proposed Plan is necessary to protect public health or welfare or the environment from actual or threatened releases of pollutants or contaminants from this site which may present an imminent and substantial endangerment to public health or welfare.

REMEDIAL ACTION OBJECTIVES

Remedial Action Objectives (RAOs) are defined as media-specific goals for protecting human health and the environment. RAOs are developed through an evaluation of data generated during the RI, including: the identified contaminants of concern (COCs), impacted media of interest, fate and transport processes, receptors at risk, and the associated pathways of exposure included in the conceptual site model. RAOs also include preliminary remediation goals (PRGs), which are determined via an evaluation of risk, applicable or relevant and appropriate requirements (ARARs) and advisories, criteria or guidance to be considered (TBC), and other technical and policy considerations that may be applicable to the site.

The following RAOs were developed for OU 1:

- Source Materials:
    - Eliminate migration of contamination from the source materials to surface water, sediment, soil and groundwater
    - Eliminate exposure of human and ecological receptors to source materials at concentrations exceeding the PRGs
- Soil:
    - Reduce or eliminate exposure to contaminated soil at concentrations exceeding the PRGs by human and ecological receptors
    - Minimize or eliminate contaminant migration to sediments, groundwater, and surface water
- Groundwater:
    - Eliminate exposure to contaminated groundwater

Elevated concentrations of contaminants, such as lead, that are present in limited areas of the shallow aquifer are generally co-located with some areas of battery casing waste. EPA anticipates that these limited areas of elevated concentrations in groundwater will be addressed by the proposed remedial alternative and will confirm this through monitoring after implementation of the source/soil remedy. These findings, including the need for additional remedial actions to address any remaining groundwater contamination, if needed, will be documented in a future decision document. Additionally, remediation of sediment and surface water will be evaluated as part of a future decision document for OU 3.

To achieve RAOs, EPA has selected soil PRGs for site-related COCs identified at the site. Based on the RI and baseline risk assessments, the site-related COCs include lead, antimony, zinc and PCBs. The soil PRGs for these COCs are consistent with New Jersey human health direct contact standards or ecological risk-based goals. Site background metal concentrations were also taken into consideration. The specific soil PRGs provided below apply to different areas or land uses of the site.

The scrapyard area and Mira Trucking property are zoned as commercial. Therefore, the soil PRGs in these areas were based on the NJ NRDCSRS for lead (800 mg/kg), antimony (450 mg/kg), zinc (110,000 mg/kg) and PCBs (1 mg/kg). The NJ RDCSRS are considered applicable for the rental home property. The soil PRGs in this area are 400 mg/kg for lead, 31 mg/kg for antimony, 23,000 mg/kg for zinc and 0.2 mg/kg for PCBs. The current RDCSRS for lead is based on a child blood lead level of 10 micrograms per deciliter (µg/dL). However, recent toxicological evidence outlined in a December 2016 EPA memorandum “Updated Scientific Considerations for Lead in Soil Cleanups” suggests that adverse health effects are associated with lower blood lead levels. To achieve a lead risk reduction goal consistent with recent toxicological findings, the average lead concentration across the surface of the remediated area must be at or below 200 mg/kg, which corresponds to a child blood lead level of 5 µg/dL.

Based on the HHRA, lead and PCBs are the only site-related soil contaminants that pose unacceptable human health risks. However, lead, zinc, and PCBs pose ecological risks based on the Step 3A food chain models. Ecological risk-based PRGs were developed for lead and zinc in soil for the open field/waste disposal area of the Matteo property. Moreover, the ecological risk-based PRGs developed for lead and zinc in the Step 3A ecological risk assessment are lower than the background values for the site; therefore, the background values for lead and zinc, 128 and 106 mg/kg, respectively, are selected as the cleanup goals for surface soil (0 to 1 feet bgs) for the open field/waste disposal area. The NJ NRDCSRS are considered applicable for PCBs and antimony in this area and for all COCs in soil at depths below 1 foot based on current and anticipated land use.

Groundwater at the site is classified as Class IIA, suitable for drinking water use. Although the groundwater is not currently utilized as a source of potable water, there are three wells on or near the site that could potentially be used as drinking water.

SUMMARY OF REMEDIAL ALTERNATIVES

The FS identifies and evaluates remedial action alternatives. RAOs were developed for the site, and then technologies were identified and screened based on overall implementability, effectiveness, and cost. Remedial alternatives consisting of one or more technologies were assembled and analyzed in detail with respect to seven of the nine criteria for remedy selection under CERCLA. The remaining criteria, state and community acceptance, will be addressed in the ROD following the public comment period.

Remedial Alternatives

CERCLA Section 121(b)(1), 42 U.S.C. §9621(b)(1), mandates that remedial actions be protective of human health and the environment, be cost effective, and use permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which use, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a site. The NCP establishes an expectation that treatment will be used to address the principal threats posed by a site wherever practicable (40 C.F.R. Section

300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to other media or acts as a source for direct exposure. For this site, the battery casing waste exhibits elevated concentrations of lead and is characteristically hazardous (D-008 for lead). Collectively, battery casings mixed with municipal waste, soil and sediment are considered source materials because these materials serve as a continued source of contamination to other media through wind entrainment, stormwater runoff, inundating tidal water and infiltration from precipitation. Therefore, these source materials are considered principal threat waste. The principal threat waste is not amenable to treatment technologies due to its heterogeneous nature. As noted above, CERCLA Section 121(d), 42 U.S.C. §9621(d), specifies that a remedial action must require a level or standard of control of the hazardous substances, pollutants, and contaminants which at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4), 42 U.S.C. §9621(d)(4).

Remedial alternatives for the site are summarized below. Capital costs are those expenditures that are required to construct a remedial alternative. O&M costs are those post-construction costs necessary to ensure or verify the continued effectiveness of a remedial alternative and are estimated on an annual basis. Present worth is the amount of money which, if invested in the current year, would be sufficient to cover all the costs over time associated with a project, calculated using a discount rate of seven percent and up to a 30-year time interval. Construction time is the time required to construct and implement the alternative and does not include the time required to design the remedy or procure contracts for design and construction.

Common Elements

Five alternatives were developed including a “No Action” alternative. The No Action alternative provides a baseline for comparison with the other active remedial alternatives. Because no remedial activities would be implemented under the No Action alternative, long-term human health and environmental risks would remain the same as those identified in the BHHRA and SLERA, except for any changes due to incidental natural attenuation. There are no capital, maintenance or monitoring costs associated with the No Action alternative.

Alternatives 2 through 5 would include the following common elements:

- Pre-design investigation
- Remedial design
- Excavation of source materials
- Restoration of the shoreline of Hessian Run
- ICs as needed (e.g., establishment of a groundwater classification exception area)
- Excavation and off-site disposal of source materials and contaminated soil from the property formerly utilized by Mira Trucking
- Connection to city water for the on-site residence, the water supply for the current commercial facility on the site, and a nearby commercial property, if the connection has not been previously made
- Removal of lead-contaminated soil at the rental home area
- Long-term monitoring of sediments/surface water and groundwater
- Five-year reviews

Alternative 1: No Action

Capital Cost	$0
Annual O&M Cost	$0
Present Worth Cost	$0
Time Frame	0 months

The NCP requires EPA to consider the No-Action alternative. Under this alternative, no additional actions would be taken. Contaminated soil and battery waste would remain in its current location and the potential for migration of contaminants would not be reduced or eliminated. Environmental monitoring would not be performed. In addition, no further restrictions on land-use would be pursued. Current site exposures and risks would remain.

Alternative 2: Excavation, Stabilization, Construction of a Landfill for On-Site Containment of Source Material, Capping of Soils, Asphalt Cap over Scrapyard

Capital Cost	$ 33,339,000
Annual O&M Cost	$ 435,000
Present Worth Cost	$ 38,463,000
Time Frame	3 to 3.5 years

Under Alternative 2, source materials at the Matteo property would be excavated, dewatered as necessary, then placed in an on-site engineered containment cell above the 100-year flood zone. To remove the source materials along the bank of Hessian Run, a temporary berm or dam or sheet piling would be installed to block tidal water from entering the excavation area. Dewatering of the excavation area would be conducted as necessary when excavation would be performed below the water table. Contaminated soils exceeding the NRDCSRS for lead in the open field/waste disposal area and contaminated soil from the rental home property would be excavated, stabilized as necessary, and consolidated on top of the PCB-contaminated area in the open field/waste disposal area. The remaining contaminated area exceeding the PRGs in the open field/waste disposal area would be covered using imported clean fill and top soil. Soil erosion control measures would be implemented.

Contaminated soil at the scrapyard area is currently partially capped. During the remedial action, all remaining contaminated areas would be covered with asphalt or similar material. A stormwater management system would also be designed and installed to minimize the impact of stormwater runoff from the asphalt to the surrounding areas.

The shoreline along Hessian Run would be restored for slope stability and erosion controls. A minimum of one foot of clean fill would be placed to cover the excavated area after source materials are removed. Post-excavation sampling would be performed to assure cleanup standards were met after source material removal. After restoration, much of this area would be naturally inundated with tidal water. Therefore, the aforementioned clean fill will become sediment which would be subject to additional evaluation in OU 3.

A groundwater monitoring program would be developed and implemented to assess the effect of removing source material. ICs would be implemented. Routine inspection and maintenance of the engineered containment cell and caps would be performed. Five-year Reviews would be required to determine if the remedy continued to be protective of human health and the environment over time.

Alternative 3: Excavation, Off-Site Disposal of Source Materials, Stabilization and Capping of Contaminated Soils, Asphalt Cap over Scrapyard

Capital Cost	$65,835,000
Annual O&M Cost	$124,000
Present Worth Cost	$67,098,000
Time Frame	2.5 to 3 years

Alternative 3 is similar to Alternative 2, except that the source materials would be disposed of off-site as hazardous waste in a Subtitle C landfill as opposed to being contained on-site in an engineered containment cell. Therefore, inspection and maintenance for an on-site containment cell, and associated ICs, would not be necessary in Alternative 3 as compared to Alternative 2. The remaining components would be identical to Alternative 2.

***Alternative 4**:* **Excavation and Off-site Disposal of Source Materials and Contaminated Soils, and Asphalt Cap over Scrapyard**

Capital Cost	$71,460,000
Annual O&M Cost	$85,000
Present Worth Cost	$72,245,000
Time Frame	3 to 3.5 years

Under Alternative 4, source materials and contaminated soils in areas other than the scrapyard area would be excavated and disposed of off-site. Compared to Alternative 3, a large volume of PCB and lead contaminated soils in the open field/waste disposal area, approximately 24,000 cubic yards, would be excavated for off-site disposal at a Subtitle D landfill if non-hazardous, a Subtitle C landfill if hazardous, or a Toxic Substances Control Act (TSCA) disposal facility for PCB TSCA waste rather than covered in place. Excavation of source materials and contaminated soils would be performed in the same manner as described in Alternative 3. Contaminated soil at the scrapyard area that requires capping would be capped with asphalt or similar material as described under Alternative 2. Inspection and maintenance of a cap in the open field/waste disposal area, and associated ICs, would not be necessary under Alternative 4 since no cap would be present. The remaining components would be the same as Alternative 3.

Alternative 5: Excavation and Off-Site Disposal of Source Material and all Contaminated Soils

Capital Cost	$82,032,000
Annual O&M Cost	$ 50,000
Present Worth Cost	$82,383,000
Time Frame	3 to 3.5 years

Under Alternative 5, source materials and all contaminated soils, including below the scrapyard, would be excavated and shipped off-site for disposal at a Subtitle D landfill if non-hazardous, a Subtitle C landfill if hazardous, or a TSCA disposal facility for PCB TSCA waste. Other components would be the same as for Alternative 4. Long-term inspection and maintenance of caps would not be necessary under Alternative 5.

Comparative Analysis of Alternatives

Nine criteria are used to evaluate the different remediation alternatives individually and against each other in order to select a remedy. This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria, noting how it compares to the other options under consideration. The nine evaluation criteria are discussed below. A detailed analysis of each alternative can be found in the FS report.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES

1. Overall Protection of Human Health and the Environment evaluates whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.

2. Compliance with ARARs evaluates whether the alternative meets federal and state environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.

3. Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contaminant present.

5. Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, the community, and the environment during implementation.

6. Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.

7. Cost includes estimated capital and annual operation and maintenance costs, as well as present-worth cost. Present-worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.

8. State Acceptance considers whether the State agrees with EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.

9. Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

Overall Protection of Human Health and the Environment

Alternative 1, No Action, would not meet the RAOs and would not be protective of human health and the environment since no actions would be taken. Waste and soils highly contaminated with lead and other contaminants would remain in place and would continue to pose unacceptable risks to human health and the environment.

For Alternatives 2, 3, 4 and 5, RAOs would be met over time and would provide protection to human health and the environment through different degrees of containment, off-site disposal, ICs, and long-term monitoring.

Alternative 2 would require the most maintenance over time to assure its protectiveness, as it would include a hazardous waste landfill containing principal threat waste located near a residential neighborhood and the 100-year floodplain. It would also require ICs, such as a deed notice, to assure protectiveness over time.

Alternatives 3 and 4 require less maintenance compared to Alternative 2, with Alternative 3 requiring maintenance of capped waste both in the floodplain and in an upland area (beneath the current scrapyard), and Alternative 4 only requiring maintenance of capped waste in the upland area (under the current scrapyard). Both alternatives would require ICs to assure long-term protectiveness.

Alternative 5 would require no maintenance to remain protective, as it includes excavation and disposal of all waste material off-site.

Compliance with ARARs

ARARs for the site include the Resource Conservation and Recovery Act (RCRA), TSCA and New Jersey Residential and Non-Residential Direct Contact Soil Remediation Standards. In addition, EPA's memorandum "Updated Scientific Considerations for Lead in Soil Cleanups" dated December 22, 2016 is a TBC.

Alternative 1, No Action, would not address site contamination and would not comply with chemical-specific soil ARARs established for the protection of human health and the environment. Action-specific ARARs do not apply to the No Action alternative since no remedial action would be conducted.

Alternative 2 would include the creation of a hazardous waste landfill for untreated principal threat waste (battery casings and associated soils). This would be consistent with RCRA requirements.

Alternatives 2, 3, 4 and 5 could meet the RAOs and PRGs over the long term. Alternatives 2, 3, 4 and 5 would all include groundwater monitoring. Alternatives 3, 4 and 5 include excavation and off-site disposal of principal threat waste in compliance with RCRA Land Disposal Restrictions.

Long-Term Effectiveness and Permanence

Alternative 1, No Action, would not be effective or permanent since there would be no mechanisms to prevent or monitor migration and exposure to contaminated soils at the site.

Alternatives 2, 3, 4 and 5 would provide long-term protectiveness and permanence; however, each alternative would require varying degrees of long-term maintenance and controls in order to remain protective.

Alternative 2 would require the most engineering controls to remain effective over time, as it includes on-site capping of principal threat wastes.

Excavation and off-site disposal of the principal threat waste (battery casings) from the site, included in Alternatives 3, 4 and 5, would make it much easier to achieve long-term effectiveness compared to Alternative 2.

Alternatives 3 and 4 would include excavation and off-site disposal of principal threat wastes and other contaminated soils. However, Alternative 3 leaves capped waste in the floodplain, requiring potentially significant maintenance and engineering controls to assure protectiveness over the long term. Alternative 4 does not leave any capped waste in the floodplain and offers more long-term effectiveness compared to Alternative 3. The adequacy and reliability of the caps required under Alternatives 2, 3 and 4 rely on routine inspection and maintenance, as well as the enforcement of ICs over time.

Alternative 5 has the greatest degree of long-term effectiveness as it removes all waste from the site and does not require maintenance.

Reduction of Toxicity, Mobility, or Volume

Alternative 1, No Action, would not provide any reduction of toxicity, mobility or volume of contaminants since no remedial action would be conducted.

Alternative 2 would reduce mobility of principal threat waste and contaminated soils through containment of the source materials in a landfill and through capping other contaminated soils in place. Further, soils with the highest lead contamination (greater than 800 parts per million) would be stabilized on-site to further limit migration. This alternative offers no reduction of toxicity or volume of contaminated source materials and soils.

In Alternatives 3, 4 and 5, the reduction of toxicity, mobility, and volume of source material on-site would be achieved by the removal of the battery casings for off-site disposal. Off-site disposal would include off-site treatment to meet Universal Treatment Standards prior to landfill disposal. The toxicity and volume of contamination would not be changed. Alternative 3, and to a lesser degree Alternative 4, would include on-site capping of contaminated soils, which reduces the mobility, but not the toxicity or volume. Alternative 3 would include on-site capping of all soil contamination (excluding battery casings, which would be disposed of off-site) and includes some stabilization of the most contaminated soils (with lead levels greater than 800 ppm) prior to landfilling, which would further decrease mobility. Alternative 4 only includes a cap over contaminated soils in the scrapyard and would remove all other contaminated soils at the site.

Alternative 5 would be the most effective in reducing toxicity, mobility and volume of contamination at the site as all contaminated material would be treated and/or disposed of off-site.

Short-Term Effectiveness

Alternative 1, No Action, would not have short-term impacts since no action would be implemented.

Alternative 2 would have the most short-term impacts, as it includes the construction of a containment cell for hazardous waste near Willow Woods, a manufactured home community that is adjacent to the site. The construction of this containment cell is complex and would raise the surface in the area by about six feet, which would significantly change the topography. Drainage would be managed in a way that would minimize impacts to Willow Woods and the scrapyard area.

There would be minimal short-term impacts to the local community and workers for Alternatives 3, 4 and 5 because the associated excavation, capping and stabilization activities would occur within the OU 1 property boundary, and not involve the construction of a containment cell for principal threat waste, as in Alternative 2.

Alternatives 2, 3, 4 and 5 are all expected to take approximately three years to implement. All of the alternatives would generate dust and noise, which would be controlled to minimize impact to the nearby Willow Woods community. In addition, there would be short-term impacts related to the removal of the source materials and contaminated soils off site under Alternatives 3, 4 and 5. However, transport of material from the site is not expected to pose significant issues as the site is located near major highways.

Implementability

All alternatives are implementable. Services, materials and experienced vendors are readily available for all of the alternatives. During remedial design, site-specific design parameters for the selected alternative would be developed. Alternative 2 would be the most difficult to implement as it would require creating a containment cell and moving a substantial volume (approximately 56,200 cubic yards) of source materials from the shoreline of Hessian Run to the cell, which would be located in close proximity to a manufactured home community. Long-term inspection and maintenance of the containment cell would be challenging and resource intensive, but also critical to assure long-term protection of human health and the environment.

Alternative 3 would involve the excavation and off-site disposal of source material which is principal threat waste. In addition, under this alternative, soils with high levels of lead contamination would be stabilized and placed under a cap with lesser contaminated soils. Several capped areas would be located within the floodplain, making the maintenance of the caps challenging.

Alternative 4 would involve excavation and off-site disposal of all contaminated soils except those underlying the active scrapyard, which would be capped in place. This alternative is relatively easy to implement, using standard excavation and transportation options. Coordination with the owner of the scrapyard would be required to minimize impact on the operations there. Alternative 5 would be similarly implementable as Alternative 4, with more disruption to scrapyard activities during excavation of that area.

In accordance with CERCLA, no permits would be required for on-site work (although such activities would comply with substantive requirements of otherwise-required permits).

Cost

A summary of the cost estimates for each alternative is presented in Appendix A of the FS report. In summary, Alternative 1 is No Action and has no cost. The highest operation and maintenance cost are related to Alternative 2, and then Alternative 3 related to managing capped areas on site and within the floodplain. Depending on flooding patterns, these costs are difficult to estimate over time and could increase. Alternative 4 only includes maintenance of the capped area under the scrapyard and Alternative 5 has no capped areas to maintain. Alternative 4 is cost effective compared to Alternative 3 as it removes significantly more contaminated soils and requires significantly less operation and maintenance for approximately 5 million dollars more, which is approximately 7 percent of the overall cost of Alternative 4. All alternatives (except No Action) include costs for long-term sampling of groundwater, public water connection for the residential property on site, excavation of soils from the residential property on site and excavation of soils on the property formerly utilized by Mira Trucking. A cost summary of the remedial alternatives is displayed on Table 2.

State Acceptance

The State of New Jersey is reviewing EPA's preferred remedy as presented in this Proposed Plan.

Community Acceptance

Community acceptance of the preferred alternative will be assessed in the ROD following review of the public comments received during the public comment period.

PREFERRED ALTERNATIVE

EPA is identifying Alternative 4 as the preferred alternative because it satisfies the two threshold criteria (protection of human health and the environment and compliance with ARARs) and provides the best balance of tradeoffs among the other alternatives with respect to the five balancing criteria (short-term effectiveness; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; implementability; and cost). The major components of the preferred alternative are as follows:

- Excavation and off-site disposal of source materials;
- Excavation and off-site disposal of all contaminated soils in the open field/waste disposal area, the rental home area and the property formerly occupied by Mira Trucking;
- Restoration following excavation;
- Restoration of shoreline of Hessian Run;
- Capping of contaminated soil in the active scrap metal recycling facility;
- Inspection and maintenance of the cap in the active scrap metal recycling facility;
- Connection to city water for several properties with private wells;
- ICs as needed; and
- Long-term monitoring of groundwater.

The preferred alternative is protective of human health and the environment and would meet the RAOs.

BASIS FOR THE REMEDY PREFERENCE

Under Alternative 4, principal threat wastes/source materials would be removed from the site. Alternative 4 is the alternative with the highest level of removal of contaminated soil from the undeveloped portions of the site, while contaminated soils underlying and in close proximity to the active scrapyard would be capped. Contamination within the 100-year flood zone would be removed from the site, obviating the need for long-term maintenance of a cap in a flood-prone area. Contaminated areas outside the scrapyard would be restored to provide habitat to an ecologically sensitive area.

The total estimated present worth cost for the preferred alternative is $72,245,000. Details of the cost estimates for all alternatives are presented in the FS Report. This is an engineering cost estimate that is expected to be within the range of plus 50 percent to minus 30 percent of the actual project cost.

Consideration will be given during the remedial design to technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy. This would include green remediation technologies and practices.

Because the preferred alternative would result in contaminants remaining above levels that allow for unrestricted use and unlimited exposure, CERCLA five-year reviews would be required.

Based upon the information available, EPA believes the preferred alternative meets the threshold criteria (protection of human health and the environment and compliance with ARARs) and provides the best balance of tradeoffs among the other alternatives with respect to the balancing criteria. The preferred alternative satisfies the following statutory requirements of Section 121(b) of CERCLA: 1) it is protective of human health and the environment; 2) it complies with ARARs; 3) it is cost effective; 4) it utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and, 5) it satisfies the preference for treatment.

With respect to the two modifying criteria of the comparative analysis (state acceptance and community acceptance), this Proposed Plan is under review by the State of New Jersey and community acceptance will be evaluated upon the close of the public comment period.

COMMUNITY PARTICIPATION

EPA and NJDEP provided information regarding the cleanup of the Matteo & Sons, Inc. Superfund Site to the public through meetings, the administrative record file for the site and announcements published in the *South Jersey Times*. EPA and NJDEP encourage the public to gain a more comprehensive understanding of the site and the Superfund activities that have been conducted. The dates for the public comment period; the date, location and time of the public meeting; and the locations of the administrative record file are provided on the front page of this Proposed Plan.

FOR FURTHER INFORMATION

The administrative record file, which contains copies of the Proposed Plan and supporting documentation, is available at the following locations:

West Deptford Free Public Library
420 Crown Point Road
West Deptford, NJ 08086
(856) 845 - 5593
Please refer to website for hours:
http://www.westdeptford.lib.nj.us/

EPA Region 2 Superfund Records Center
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-4308
Hours: Mon – Fri, 9:00 AM-5:00 PM

In addition, the entire administrative record is available on-line at:
https://www.epa.gov/superfund/matteo-and-sons

FIGURE 1 - SITE PLAN

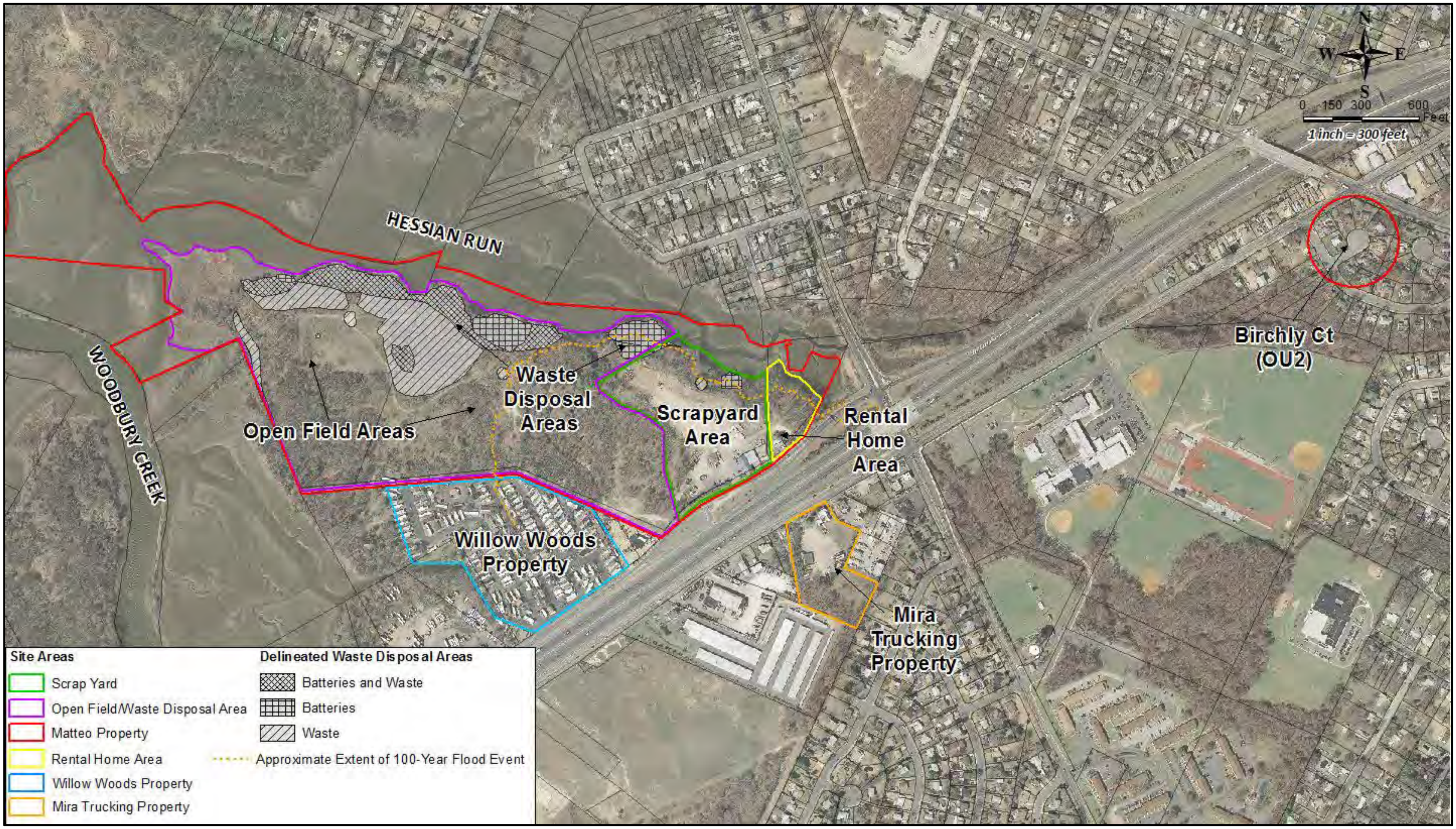

FIGURE 2 – APPLICATION OF PRGs

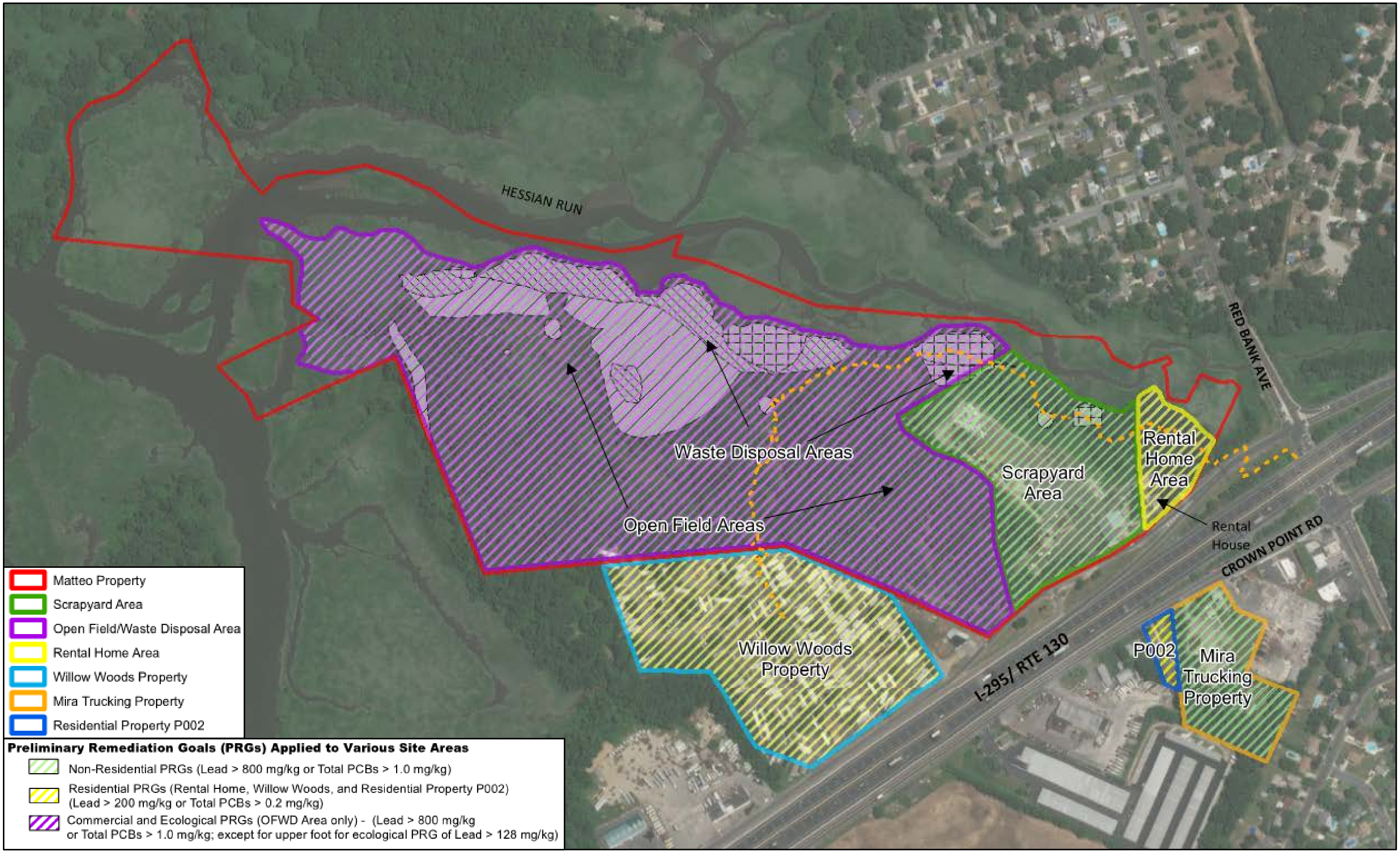

Table 2 - Cost Table

Cost Item	Alternative 1 – No Action	Alternative 2 – Excavation, Stabilization, On-site Containment, and Capping	Alternative 3 – Excavation, Off-site Disposal of Source Materials, Stabilization, and Capping	Alternative 4 – Excavation, Off-site Disposal of Source Materials and Contaminated Soils, and Capping	Alternative 5 – Excavation and Off-site Disposal
Capital Costs	$0	$33,339,000	$65,835,000	$71,460,000	$82,032,000
Annual O&M Cost	$0	$435,000	$124,000	$85,000	$50,000
Present Worth of O&M and LTM	$0	$5,124,000	$1,263,000	$785,000	$351,000
TOTAL PRESENT WORTH	$0	$38,463,000	$67,098,000	$72,245,000	$82,383,000