RECORD OF DECISION

United States Avenue Burn Site

Operable Unit 2

Gibbsboro, New Jersey

U.S. Environmental Protection Agency
Region II
September 2017

528298

<u>DECLARATION STATEMENT</u>

RECORD OF DECISION

SITE NAME AND LOCATION

United States Avenue Burn Site (NJ0001120799), Borough of Gibbsboro, Camden County, New Jersey.
Operable Unit 2 – Soil, Sediment and Surface Water

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedy to address contaminated soil, sediment and surface water at the United States Avenue Burn Site, in the Borough of Gibbsboro, Camden County, New Jersey. The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, (CERCLA) and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record established for this Site.

The State of New Jersey Department of Environmental Protection (NJDEP) concurs, in part, with the selected remedy.

ASSESSMENT OF THE SITE

The remedial action selected in the Record of Decision (ROD) is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

DESCRIPTION OF THE SELECTED REMEDY

The remedy action described in this document addresses the soil, sediment and surface water contamination at the Site, which are contaminated with lead and arsenic. Additional actions may be necessary in the future to investigate the extent of groundwater contamination and potential remediation of groundwater contamination at the Site.

The major components of the selected remedy for the soil include the following:

- Excavation, transportation and disposal of 60,000 cubic yards of contaminated soil;
- Installation of engineering controls including vegetated soil covers in the Burn Site Fenced Area;
- Restoration and revegetation of White Sand Branch and Honey Run Brook flood plain; and
- Institutional controls, such as a deed notice, to prevent exposure to residual soil that exceed levels that allow for unrestricted use.

The major components of the selected remedy for the sediment includes the following:

- Construction of a stream diversion system to allow access to sediment;
- Excavation, transportation and disposal of 825 cubic yards of contaminated sediment;
- Dewatering and processing of excavated sediment; and
- Stream bank and revegetation and restoration.

EPA expects that removal of contaminated sediment, combined with soil removal and/or capping, will result in a decrease of surface water contaminants. Surface water monitoring will be included as part of the remedial action to assess any changes in contaminant conditions over time. If monitoring indicates that contamination levels have not decreased to below standards, EPA may require an action in the future.

DECLARATION OF STATUTORY DETERMINATIONS

Part 1: Statutory Requirements

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost effective and utilizes permanent solutions and treatment technologies to the maximum extent practicable.

Part 2: Statutory Preference for Treatment

The selected remedy does not meet the statutory preference for the use of remedies that involve treatment as a principal element because the contamination will be removed and disposed off-site. Neither the selected remedy nor any of the alternative remedies involved treatment due to technical infeasibility in implementing treatment methods for the contaminants of concern at this Site.

Part 3: Five-Year Review Requirements

Because the remedy will result in contaminants remaining in the soil on Site above levels that allow for unlimited use and unrestricted exposure, a five-year review will be required.

RECORD OF DECISION DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for this Site.

- Contaminants of concern and their respective concentrations may be found in the "Site Characteristics" section.

- Baseline risk represented by the contaminants of concern may be found in the "Summary of Site Risks" section.

- Cleanup levels established for contaminants of concern and the basis for these levels can be found in the "Remedial Action Objectives" section.

- Current and reasonably anticipated future land use assumptions used in the baseline risk assessment and decision document can be found in the "Current and Potential Future Site and Resource Uses" section.

- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and the number of years over which the remedial cost estimates are projected can be found in the "Description of Alternatives" section.

- Key factors that led to selecting the remedy may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

A. Carpenter

Angela Carpenter, Acting Director
Emergency & Remedial Response Division
EPA-Region II

9-29-17

Date

RECORD OF DOCUMENT

DECISION SUMMARY

United States Avenue Burn Site
Gibbsboro
New Jersey

U.S. Environmental Protection Agency
Region II
New York, New York
September 2017

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SITE NAME, LOCATION AND DESCRIPTION

The United States Avenue Burn Site, see Figure 1, (Site or Burn Site), EPA ID # NJ0001120799, is one of three sites which collectively make up what is commonly referred to as the "Sherwin-Williams sites." Located in areas of Gibbsboro and Voorhees, New Jersey, the Sherwin-Williams sites are the *Sherwin-Williams/Hilliard's Creek Superfund Site* located in both Gibbsboro and Voorhees, the *Route 561 Dump Site* in Gibbsboro, and the *United States Avenue Burn Superfund Site* (Burn Site) in Gibbsboro (Figure 2). The Sherwin-Williams sites include source areas from which contaminated soil and sediment have migrated, predominately through natural processes, to downgradient areas within Gibbsboro and Voorhees.

Sherwin-Williams/Hilliards Creek Superfund Site: The Sherwin-Williams/Hilliards Creek Superfund Site includes the Former Manufacturing Plant area, Hilliards Creek and Kirkwood Lake. The Former Manufacturing Plant area is approximately 20 acres in size and is comprised of commercial structures, undeveloped land and the southern portion of Silver Lake. The Former Manufacturing Plant area extends from the south shore of Silver Lake in Gibbsboro and straddles the headwaters of Hilliards Creek. Hilliards Creek is formed by the outflow from Silver Lake. The outflow enters a culvert beneath a parking lot at the Former Manufacturing Plant and resurfaces on the south side of Foster Avenue, Gibbsboro. From this point, Hilliards Creek flows in a southerly direction through the Former Manufacturing Plant area and continues downstream through residential and undeveloped areas. At approximately one mile from its origin, Hilliards Creek empties into Kirkwood Lake. Kirkwood Lake is approximately 25 acres and is located in Voorhees, with residential properties lining its northern shore.

Route 561 Dump Site: The Dump Site is located approximately 700 feet to the southeast of the Former Manufacturing Plant area and is approximately 19 acres. It includes retail businesses, a portion of a residential area, wooded vacant lots and a small creek. A 2.9 acre fenced portion of the Dump Site is located at the base of an earthen dam that forms Clement Lake. The Route 561 Dump Site includes portions of White Sand Branch, a small creek which originates at the Clement Lake dam and flows in a southwest direction for approximately 1,650 feet where it enters the fenced portion of the Burn Site.

Burn Site: The fenced portion of the Burn Site and its associated contamination is approximately 13 acres in size and encloses the remaining 400 feet of White Sand Branch. A 500-foot portion of a small creek, Honey Run, enters the Burn Site where it joins White Sand Branch before it passes beneath United States Avenue and enters Bridgewood Lake in Gibbsboro. The six-acre Bridgewood Lake empties through a culvert beneath Clementon Road and forms a 400-foot long tributary that joins Hilliards Creek at a point approximately 1,000 feet downstream from the Former Manufacturing Plant area (Figure 3).

The U.S. Environmental Protection Agency (EPA) has been designated as the lead agency for cleanup of the Site, with the NJDEP functioning in a support role. Recent investigations at the

Site have been performed by The Sherwin-Williams Company (Sherwin-Williams) under an Administrative Order on Consent (AOC) issued in 1999, with EPA's oversight.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Site History

The former paint and varnish manufacturing plant property in Gibbsboro, New Jersey, was developed in the early 1800s as a saw mill, and later as a grain mill. In 1851, John Lucas & Co., Inc. (Lucas), purchased the property and converted the grain mill into a paint and varnish manufacturing facility that produced oil-based paints, varnishes and lacquers. Sherwin-Williams purchased Lucas in the early 1930s and expanded operations at the facility. Historic features at the Former Manufacturing Plant included wastewater lagoons, above-ground storage tanks, a railroad line and spur, drum storage areas, and numerous production and warehouse buildings. Industrial waste from the facility was burned and discarded in the U.S. Avenue Burn Site. Waste from the facility was also discarded in the Route 561 Dump Site. The facility was closed in 1977 and was sold to a developer in 1981.

In 1978, after plant operations closed, NJDEP directed Sherwin-Williams to excavate and properly dispose of the waste material remaining in the lagoons. During the 1980s, NJDEP entered into several administrative orders with Sherwin-Williams to oversee the characterization of contaminated groundwater and a petroleum-like seep in the Former Manufacturing Plant area.

During the 1990s, NJDEP discovered two additional source areas, the Route 561 Dump Site and the Burn Site. Contamination in both areas is attributable to historic dumping activities associated with the Former Manufacturing Plant. In the mid-1990s, enforcement responsibilities for the Dump Site and the Burn Site were transferred from NJDEP to EPA.

Pre-Remedial Investigation Activities at the Burn Site

The investigations at the Burn Site were conducted in several phases. NJDEP investigated the Landfill Area in 1975 and in 1978 issued an Administrative Order for Sherwin-Williams to remove sludge and contaminated soil from the Landfill Area. Sherwin-Williams removed the majority of the waste in 1979.

In 1991 and 1992, Sherwin-Williams, under NJDEP direction, conducted an investigation of the Landfill Area of the Burn Site. This investigation was conducted as part of a larger investigation of the Former Manufacturing Plant.

In 1993, Sherwin-Williams conducted an additional phase of investigation of the Former Manufacturing Plant that included further sampling of the former Landfill Area. In addition, NJDEP conducted a site investigation within what is now termed the Burn Site Fenced Area in 1994, during which soil samples were collected from within the Burn Area, north of the Burn Area, and north of the Landfill Area, near Honey Run. Sediment and surface water samples were also collected along White Sand Branch and Honey Run.

In 1995, pursuant to an AOC with the EPA, Sherwin-Williams conducted an investigation of the Burn Site Fenced Area. A fence surrounding the Burn Site Fenced Area was installed in June 1995 as part of the EPA AOC. The 1995 investigation consisted of soil, sediment, and groundwater sampling.

In 1996, in response to a letter from EPA, Sherwin-Williams conducted soil sampling of the Railroad Track Area. Based on these results, the EPA issued a Unilateral Administrative Order to Sherwin-Williams to conduct a soil removal action in this area. The soil removal was conducted in 1997. Approximately 2,000 tons of soil and debris and 4,500 gallons of water were removed and disposed off-site.

EPA added the Burn Site to the National Priorities List (NPL) in 1999. Also in 1999, EPA entered into two additional AOCs with Sherwin-Williams. Under the first AOC, Sherwin-Williams conducted additional sampling of Hilliards Creek and Kirkwood Lake to further characterize the extent of contamination. This sampling, which concluded in 2003, included residential properties along Hilliards Creek and Kirkwood Lake.

The second AOC, signed in September 1999, required Sherwin-Williams to conduct a Remedial Investigation/Feasibility Study (RI/FS) for the Route 561 Dump Site, the Burn Site and Hilliards Creek. EPA added the Sherwin-Williams/Hilliards Creek Site, which includes the Former Manufacturing Plant area, Hilliards Creek and Kirkwood Lake, to the NPL in 2008.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA released the RI/FS reports and the Proposed Plan for this remedial action at the Site to the public for comment on July 27, 2017. EPA made these documents available to the public in the administrative record file maintained at the Gibbsboro Borough Hall/Library in Gibbsboro, NJ; the M. Allan Vogelson Regional Branch Library-Voorhees in Voorhees, New Jersey; the EPA Region II Records Center located at 290 Broadway, New York, New York; and online at https://www.epa.gov/superfund/us-avenue-burn. The notice of availability for these documents was published in the Courier-Post on July 27, 2017 and on August 25, 2017. A 60-day public comment period lasted from July 27 through September 27, 2017.

In addition, on August 10, 2017, EPA held a public meeting at the Gibbsboro Senior Center, 250 Haddonfield-Berlin Road, Gibbsboro, New Jersey, to discuss the findings of the RI/FS and to present EPA's Proposed Plan to the community. At this meeting, EPA representatives answered questions about the remedial alternatives developed as part of the FS.

EPA addresses comments it received at the public meeting and during the public comment period in the Responsiveness Summary, which can be found in Appendix V.

SCOPE AND ROLE OF OPERABLE UNIT

Due to the complexity of multiple sites and varying land uses, EPA is addressing the cleanup of the Sherwin-Williams sites in several parts, sometimes dividing work into phases called operable units. Operable Unit 1 (OU1) for all of the Sherwin-Williams sites consists of the residential properties that are to be remediated in accordance with the Record of Decision (ROD) for OU1 which was signed in September 2015.

The selected remedy will address soil, sediment and surface water at the United States Avenue Burn Site as OU2 for the Burn Site. Future RODs or decision documents will address contamination at the Former Manufacturing Plant, sediments at the Sherwin-Williams/Hilliards Creek Superfund Site, and the groundwater beneath all three Sherwin-Williams sites. A response for the Burn Site groundwater will be selected after, and based on the results of, the implementation of this selected remedy for the Burn Site.

SITE CHARACTERISTICS

Physical Setting

The Burn Site is comprised of undeveloped properties, woodlands, wetlands and two small creeks. It has been subdivided into areas based on different phases of the investigation. These subdivisions are described below and shown on Figure 3.

Burn Site Fenced Area. The Burn Site Fenced Area is located on the east side of United States Avenue and is comprised of 12.7 acres surrounded by an eight-foot chain link fence. Sherwin-Williams installed the fence around the Site in September 1995 pursuant to an EPA Administrative Order on Consent.

Burn Area. The Burn Area is approximately 0.4 acres of fenced area located within the northwest corner of the Burn Site Fenced Area. Historic burning of combustible waste, such as paint waste, spent solvents, empty pigment bags and broken pallets, was conducted in this area. This area was fenced by Sherwin-Williams in July 1995 pursuant to an NJDEP directive.

Landfill Area. The Landfill Area is located in the southern portion of the Burn Site Fenced Area. Material dredged from plant wastewater lagoons and facility trash were deposited in disposal pits within this area. Disposal activities in the Landfill Area were also conducted by the municipality which leased the property from Sherwin-Williams for that purpose. The majority of the sludge material was removed from the Landfill Area in 1979 pursuant to an NJDEP Administrative Order.

White Sand Branch. This is a small stream with headwaters originating at Clement Lake. It flows through the Route 561 Dump Site and along the south side of the Vacant Lot of the Dump Site before it enters the northeast corner of the Burn Site. From there, it flows across the northern portion of the Burn Site and joins Honey Run just east of U.S. Avenue, and discharges through a culvert beneath U.S. Avenue into Bridgewood Lake.

Honey Run. This is a small stream that runs from the southeastern corner of the Burn Site to the point where it joins White Sand Branch and discharges into Bridgewood Lake.

Railroad Track Area. This is the railroad track and the area between United States Avenue and Bridgewood Lake, located west of U.S. Avenue. This area commences at the northern end of Bridgewood Lake and extends 600 feet to the south.

Summary of the Remedial Investigation

Remedial Investigation sampling of soil, sediment and surface water by Sherwin-Williams, under EPA oversight, began in 2005 and continued to 2008. Additional groundwater sampling was conducted in 2010 and 2011 and supplemental sampling for the Baseline Ecological Risk Assessment took place in 2015.

Beginning in 2005, the RI for the Burn Site, which included all of the six subareas, was conducted in sequential phases; the scopes of later sampling phases were based on the results of prior phases of investigation.

The results of sample analyses were screened to determine if the levels of contamination posed a potential harm to human health and/or the environment. This was done by comparing the measured values of contaminants to standards that are protective of human health or ecological receptors.

The soil sample analytical results were compared to NJDEP's Residential Direct Contact Soil Remediation Standards (RDCSRS) referred to hereafter as "residential cleanup goals," and the Non-residential Direct Contact Soil Remediation Standards (NRDCSRS), referred to hereafter as "non-residential cleanup goals," depending on the zoning and land use. The sediment sample analytical results were compared to the lowest effect levels for ecological receptors and surface water results were compared to the New Jersey Surface Water Quality Standards (NJSWQS) for Fresh Water. In addition, a human health risk assessment and an ecological risk assessment were conducted to determine if levels of contaminants exceeded EPA's acceptable risk range. Explanations of the results of the human health and ecological risk assessments are explained in separate sections later in this document.

The results of the RI showed that lead and arsenic are the major contaminants of concern in all media tested throughout the Burn Site. Other contaminants were also found and were generally co-located with lead and arsenic.

The full results of the RI can be found in the Burn Site Remedial Investigation Report (February 2017) which is part of the Administrative Record.

Soil:

Soil samples were taken from over 200 sample locations from the ground surface to depths of approximately 34 feet.

Lead and arsenic are the main contaminants of concern and were found most frequently and at the greatest concentrations above the residential cleanup goals. Other contaminants that were found in the soil above the standard include pentachlorophenol, hexavalent chromium and other metals, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). These other contaminants were found less frequently and are co-located with lead and arsenic, therefore they will be addressed with the cleanup goals for lead and arsenic. Based on the sampling results and comparison of that data to the residential cleanup goals, lead and arsenic were identified as the main contaminants of concern in the soil.

The most highly contaminated soil was found at three locations within the Burn Site Fenced Area. These locations are the Landfill Area, White Sand Branch floodplain and the Burn Area. Residual contamination is beneath the United States Avenue.

Contamination in soil is generally found at depths up to 8 feet but can be found in areas up to 28.5 feet deep. The concentration of lead in soils range from less than the NJDEP residential standard of 400 mg/kg to levels exceeding over 20,000 mg/kg in the three areas with the highest contamination (Landfill, White Sand Branch Floodplain and the Burn Area). The concentration of arsenic in soil ranges from less than the NJDEP residential standard of 19 mg/kg to levels exceeding 1,000 mg/kg in the Burn Area.

Sediment:

Sediment samples were taken from more than 30 locations in Honey Run within the Fenced Area and to the southeast outside the Fenced Area and the entirety of White Sand Branch located within the Fenced Area.

Lead and arsenic were found most frequently and at the greatest concentrations above the NJDEP lowest effect levels for ecological receptors of 31 mg/kg for lead and 6 mg/kg for arsenic. Other constituents found above this criterion were cadmium, chromium, copper, cyanide, mercury, zinc, PAHs, pesticides and PCBs. These other constituents were found less frequently and are co-located with lead and arsenic.

Lead and arsenic exceedances were found in sediment throughout Honey Run and White Sand Branch. The concentration of lead varies from below the lowest effect level for ecological receptors to 11,000 mg/kg. The arsenic levels varied from below the lowest effects level for ecological receptors to over 500 mg/kg. For both metals, the highest values were found just south of the Burn Area.

Surface Water:

Surface water samples were collected from eight locations in the Burn Site Fenced Area and in Honey Run from the southeastern portion of the creek located outside of the Fenced Area. Analyses of the surface water showed exceedances of the NJSWQS for Fresh Water for aluminum, iron, zinc, cyanide, arsenic, lead, and cadmium. As with the other media, lead is the main contaminant of concern.

The concentrations of metals in surface water were compared to the NJSWQS for Fresh Water of 5.4 micrograms/Liter (µg/L) for lead and 150 µg/L for arsenic. The total lead and total arsenic values varied from below the NJSWQS for Fresh Water to over 33.5 µg/L for total lead and over 514 µg/L for total arsenic. The highest concentrations in surface water were found just west of where White Sand Branch meets Honey Run within the Burn Site Fenced Area.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The Site is located in an area of Gibbsboro that is currently zoned as “Office/Residential” and “Residential” (Figure 4). Wetlands, such as some parts within the Burn Site Fenced Area and along White Sand Branch and Honey Run Brook, are located within areas zoned as residential.

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 in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes both a human health risk assessment (HHRA) and an ecological risk assessment. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the risk document summarizes the results of the baseline risk assessment for the Site.

Human Health Risk Assessment

A four-step process is utilized for assessing Site-related human health risks for a reasonable maximum exposure scenario:

Hazard Identification – uses the analytical data collected to identify the contaminants of potential concern (COPCs) at the Site for each medium, with consideration of a number of factors explained below;

Exposure Assessment - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed;

Toxicity Assessment - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and

Risk Characterization - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of Site-related risks. The risk characterization also identifies contamination with concentrations which exceed benchmark levels, defined by the National Contingency Plan (NCP) as an excess lifetime cancer risk greater than 1×10^{-6} to 1×10^{-4} (also commonly expressed as: 1E-06 to 1E-04) or a noncancer Hazard Index (HI) greater than 1; contaminants at these concentrations are considered chemicals of concern and are typically those that will require remediation at the Site. Also included in this section is a discussion of the uncertainties associated with these risks.

Hazard Identification

In this step, the COPCs in each medium were identified based on such factors as toxicity, frequency of detection, fate and transport of the contaminants in the environment, concentration, mobility, persistence and bioaccumulation.

The HHRA characterized the risk to human health from exposure to soil, sediment, surface water, and groundwater at the Burn Site. COPCs were determined for each exposure area and medium by comparing the available Site analytical data to appropriate risked-based screening criteria. Analytical data collected to determine the nature and extent of contamination at the Site indicated the presence of metals, volatile organic compounds (VOCs), PAHs, PCBs, and pesticides in soil and groundwater above screening criteria. Additionally, metals in surface water, along with metals and PAHs in sediment were detected above the media-specific, risk-based screening criteria. Media specific COPCs were carried through to the remainder of the quantitative HHRA evaluation.

Only the contaminants of concern, or these chemicals requiring a response, are listed in Appendix II-B, Table 1. Lead was also identified as a COC; the relevant subset of information for lead is summarized in Table 7 of Appendix II-B. However, a full list of all COPCs identified in the human health risk assessment (entitled "*Human Health Risk Assessment for the United*

States Avenue Burn Site" dated September 2016), is available in the administrative record for the Site.

Exposure Assessment

Consistent with Superfund guidance and policy, the HHRA is a baseline human health risk assessment and therefore assumes no remediation or institutional or engineering controls to mitigate or remove hazardous substance releases are in place. Cancer risks and noncancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future land use conditions at the Site. The RME is defined as the greatest exposure that is reasonably expected to occur at a Site.

The Burn Site and associated exposure areas include a mix of residential and office/residential zoning. For the purposes of the HHRA, the Burn Site was divided into five separate exposure areas. These exposure areas are geographic designations created for use in the human health risk assessment in order to define areas with similar anticipated current and future land use or similar levels of contamination. The Burn Site exposure areas are shown in Figure 5 and include the following: Burn Area, Burn Site Fenced Area, Landfill Area, the Railroad Track Area, and South Burn Site Area. Two streams, White Sand Branch and Honey Run Brook run through portions of the Burn Site. Exposure to sediment and surface water from these streams were assessed separately from each other, as part of the exposure area through which they run.

The majority of the Site is currently unused/vacant. A fence surrounding the Burn Area, Burn Site Fenced Area, and Landfill Area currently restrict access to these portions of the Site, therefore, all the receptor populations evaluated at these exposure areas were assumed to be future scenarios. Access to the Railroad Track Area and the South Burn Site Area are not restricted; exposure to these areas for passive recreational activities, such as walking, was considered for the current timeframe (adolescent and adult recreator). Since the future use of the Site is largely unknown, the HHRA conservatively assumed that each exposure area could be developed for either commercial or residential use. As such, the following future receptor populations and routes of exposure were considered on all exposure areas of the Site:

- Adult Utility Worker and Construction Worker: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface and subsurface soils; dermal contact with shallow groundwater.
- Adult Outdoor worker: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils.
- Adolescent and Adult Recreator: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils; incidental ingestion and dermal

contact of sediments along with dermal contact with surface water while wading in White Sand Branch and Honey Run Brook.
- Child and Adult Resident: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils; ingestion, dermal contact and inhalation of vapors during showering and bathing from sitewide groundwater; incidental ingestion and dermal contact of sediments along with dermal contact with surface water while wading in White Sand Branch and Honey Run Brook.

A summary of all the exposure pathways considered in the HHRA can be found in Table 2 (Appendix II-B). Typically, exposures are evaluated using a statistical estimate of the exposure point concentration (EPC) in each media of interest, which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. For lead exposures, the arithmetic mean of all samples collected from the appropriate soil interval was used as the EPC. A summary of the exposure point concentrations for contaminants of concern other than lead in each medium can be found in Appendix II-B, Table 1; lead EPCs are summarized in Table 7. A comprehensive list of exposure point concentrations for all COPCs can be found in the Table 3 series of the HHRA (Gradient, 2016).

Toxicity Assessment

In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects were determined. Potential health effects are contaminant-specific and may include the risk of developing cancer over a lifetime or other noncancer 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 contaminants are capable of causing both cancer and noncancer health effects.

Under current EPA guidelines, the likelihood of carcinogenic risks and noncancer hazards due to exposure to Site chemicals are considered separately. In addition, consistent with current EPA policy, it was assumed that the toxic effects of Site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the HHRA were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA guidance (http://www.epa.gov/oswer/riskassessment/pdf/tier3-toxicityvalue-whitepaper.pdf). This information is presented in Appendix II-B, Table 3 (“Noncancer Toxicity Data Summary”) and

Table 4 (“Cancer Toxicity Data Summary”). Additional toxicity information for all COPCs is presented in the HHRA for the Site.

Risk Characterization

This step summarized and combined outputs of the exposure and toxicity assessments to provide a quantitative assessment of Site risks. Exposures were evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. Exposure from lead was evaluated using appropriate blood lead modeling and is discussed in more detail later in this section.

Noncarcinogenic risks were assessed using an HI approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The key concept for a noncancer HI is that a “threshold level” (measured as an HI of less than or equal to 1) exists at which noncancer health effects are not expected to occur. The estimated intake of chemicals identified in environmental media (*e.g.*, the amount of a chemical ingested from contaminated soil) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur as a result of Site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1, separate HI values are then calculated for those chemicals which are known to act on the same target organ or effect. These discrete HI values are then compared to the threshold limit of 1 to evaluate the potential for noncancer health effects on a specific target organ or effect. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the noncarcinogenic risks associated with these chemicals for each exposure pathway is contained in Table 5 of Appendix II-B.

As summarized in Table 5, the noncancer hazard estimates exceeded EPA's threshold value of 1 for the future resident in all the exposure areas with HIs ranging from 27 to 616. The majority of the noncarcinogenic hazard for these populations were primarily attributable to: arsenic, cobalt, iron, manganese, naphthalene, pentachlorophenol, 1,2,3-trimethylbenzene and 1,2,4-trimethylbenzene in sitewide groundwater; arsenic in surface soils at the BFA exposure area; arsenic, cadmium, iron, manganese and zinc in surface soils of the Burn Area area; and pentachlorophenol in the Burn Site Suspect Material. The adolescent and adult recreator in the Burn Area were found to have HIs of 20 and 13, respectively, which were driven by the presence of arsenic and/or manganese in surface soil. An outdoor worker, construction worker and utility worker present at the Burn Area exposure area were found to exceed the noncancer threshold of 1, with HI estimates ranging from 4 to 102. The contaminants of concern identified for these populations included arsenic and/or manganese in surface and/or subsurface soils. Additionally, the noncancer hazard calculated for a construction worker present at the BFA of 3 was driven by exposure to arsenic in subsurface soils.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen under the conditions described in the *Exposure Assessment*, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unit-less probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the Exposure Assessment. Current Superfund guidance identify the threshold range for determining whether a remedial action is necessary as being an individual lifetime excess cancer risk in exceedance 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.

As summarized in Table 6 of Appendix II-B, the estimated cancer risk for the future resident on all exposure areas within the Site were found to exceed EPA's target risk range of 10^{-6} to 10^{-4}. Total cancer risk exceedances ranged from 6.6 x 10^{-3} to 3.5 x 10^{-2} as a result of exposure to arsenic, chromium (assumed to be in the hexavalent form), benzo(a)pyrene, naphthalene and pentachlorophenol in sitewide groundwater. In addition, exposure to surface soil contaminated with arsenic, hexavalent chromium and/or pentachlorophenol also contributed to exceedances of EPA's target risk range. Exposure by an adult recreator, adolescent recreator, outdoor worker, construction worker and utility worker at the Burn Area exposure area were found to be associated with estimated cancer risks ranging from 6.0 x 10^{-4} to 2.1 x 10^{-3}. Arsenic in surface and subsurface soil was the main COC for these receptor populations.

Lead was detected in site media at elevated concentrations. Because there are no published quantitative toxicity values for lead it is not possible to evaluate risks from lead exposure using the same methodology as for the other COCs. However, since the toxicokinetics (the absorption, distribution, metabolism, an excretion of toxins in the body) of lead are well understood, risks from lead are regulated based on blood lead levels (BLL). In lieu of evaluating risk using typical intake calculations and toxicity criteria, EPA developed models which are used to predict BLL and the probability of a child's BLL exceeding a target threshold concentration. In the Burn Site HHRA, lead risks for child residents were evaluated using EPA's Integrated Exposure Uptake Biokinetic (IEUBK) model; the Adult Lead Methodology (ALM) model was used for all other adolescent and adult receptors. Consistent with EPA's guidance at the time, the risk reduction goal considered in the HHRA was to limit the probability of a child's (or that of a group of similarly exposed individual's) BLL exceeding 10µg/dL to 5% or less.

Since the HHRA was finalized, new scientific information has come to light which indicates adverse health effects are evident at lower blood lead levels. To ensure the proposed Soil Remedy is protective of human health, the lead cleanup goal selected for the Burn Site is based on an updated Regional risk reduction goal to limit the probability of a child's BLL exceeding 5µg/dL to 5% or less.

Table 7 (found in Appendix II-B) summarizes the results of the lead risk evaluation conducted for the Burn Site. With the exception of the South Burn Site Area exposure area, lead was identified as a COC throughout the various exposure areas of the Burn Site for the child resident and construction worker. For a child resident, exposure to lead in various media including surface soil, sediment and/or groundwater resulted in predicted blood lead probabilities ranging from 92% to 100% exceeding the target BLL. The predicted probabilities of exceeding a fetal target BLL for the construction worker exposed to surface and subsurface soils ranged from 8%

to 100%. In addition, lead risks from exposure to surface soil by a recreator, adult resident and outdoor worker on the Burn Area and adult resident on the Railroad Area exceed the risk reduction goal (i.e., the probability of exceeding the target BLL was greater than 5% for these receptor populations). Lead was also identified as a COC for direct contact exposures with the Burn Site suspect material. In summary, as shown in Table 7, lead was identified as a COC for at least one receptor within the Burn Site Fenced Area, Landfill Area, Burn Area and Railroad Track exposure areas.

Because volatile chemicals are present in groundwater beneath the Site, a screening assessment was conducted as part of the HHRA to evaluate if the potential of vapor intrusion (VI) into indoor air would exist in the event buildings were to be constructed overlying the plume. Maximum concentrations of contaminants in groundwater were compared with vapor intrusion screening levels (VISLs) for groundwater. The VISLs are conservative screening values used to indicate if the potential for VI exists. Based on the results of the conservative screening assessment, the HHRA concluded that the potential for VI from volatile compounds in groundwater exists if future buildings/residences were constructed on Site.

In summary, with the exception of the South Burn Site Area, exposure to metals in surface soils, subsurface soils, and sediments found at various exposure areas of the Burn Site were associated with cancer risk and noncancer hazard that exceed EPA’s threshold criteria. In general, arsenic and/or lead were the main contaminants of concern; however, exposure to other chemicals were also identified as exceeding cancer risk or noncancer hazard estimates at some of the exposure areas evaluated (e.g. hexavalent chromium at the Burn Site Fenced Area).

The response action selected in this decision document is necessary to protect the public health or welfare or the environment from actual or threatened releases of contaminants into the environment.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data.

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate actual risks related to the Site.

A noteworthy source of uncertainty in the HHRA for the Burn Site deals with the large number of tentatively identified compounds (TICs) detected at the Site. Toxicity factors are needed to quantify risks and hazards from exposure to chemicals. Out of the 3,475 TICs reported in samples collected from the Burn Site, only seven were found to have published toxicity factors. Since toxicity values were not available for the majority of the detected TICs, risks and hazards could not be quantified for these compounds. The omission of these chemicals from the quantitative risk evaluation tends to underestimate total noncancer and cancer risks.

In instances where the calculated 95% upper confident limit on the mean (UCLM) was greater than the maximum detected value, the maximum concentration was used as the EPC. This can occur when there is limited data, when there are few detects, or when the concentration distribution is highly skewed. The EPC was equal to the maximum concentration for one COPC in the Landfill Area subsurface soil, six COPCs in the Burn Area surface soil, five COPCs in the Landfill Area surface soil, seven COPCs in the Railroad Area surface soil, all COPCs (except lead) in the Burn Site suspect material sample, four COPCs in Burn Site Fenced Area sediment, four COPCs in White Sand Branch surface water and one COPC in Honey Run Brook surface water. Using the maximum concentration as the EPC in these instances is a conservative (*i.e.*, health- protective) assumption, which is likely to overestimate risks.

Residential risk and hazard from direct contact with the Burn Site suspect material at the Burn Site Fenced Area are based on data from one sample. It is unknown to what extent the analytical results from the one sample of Burn Site suspect material represent the material seen at the surface in the Burn Site Fenced Area, nor is the areal extent of the light blue material (i.e., Burn Site suspect material) seen at the surface in the Burn Site Fenced Area known. Based on these considerations, the resident risks from exposure to the Burn Site suspect material are highly uncertain.

Cyanide was identified as a noncancer risk driving chemical for potable use of sitewide groundwater and for exposure to soil by a resident, recreator (adolescent and adult) outdoor worker and construction worker at the Burn Area exposure area and the resident on the Burn Site Fenced Area. However, the inhalation risk from cyanide in groundwater and soil was calculated using the RfC for cyanide ion (CN-) and hydrogen cyanide (HCN) (US EPA, 2014d). Since cyanide speciation data was not collected during the remedial investigation, the form of cyanide present in media sampled at the Site is not known. If the cyanide in groundwater and soil is not in the HCN form, then the cyanide would not be volatilized or inhaled during showering or through soil exposure. Therefore, the risks from cyanide inhalation are likely overestimated if the cyanide in groundwater and soil is in a non-volatile form (*e.g.*, an iron-cyanide complex like the pigment Prussian blue, which is composed of ferric ferrocyanide). Further, when the concentrations of total cyanide found on Site were compared to state and federal cleanup levels (ARARs) for soil and groundwater, no exceedances were found. Based on the ARAR comparison and speciation considerations discussed in the HHRA, cyanide was not retained as a COC for the Burn Site.

In addition to cyanide, thallium found in soils of various exposure areas of the Burn Site was identified as a noncancer hazard driving constituent. As was the case for cyanide, thallium was not retained as COC based on a comparison of on Site concentrations to NJDEP's soil remediation standards. Risks and hazards attributable to these metals (cyanide and thallium) were not included in the risk summary tables found in Appendix II-B of this document.

Exposure to hexavalent chromium in soil was not evaluated in the Railroad nor the South Burn Site exposure areas due to a lack of hexavalent chromium data. If hexavalent chromium is present in these areas, then the risks presented in the HHRA could be underestimated. The historic soil and sediment data used in the Burn Site HHRA may either under- or overestimate the occurrence of hexavalent chromium. However, with time, hexavalent chromium is expected to be reduced to the much less toxic form of trivalent chromium in most environments, and thus the historic data are more likely to be biased high than low for hexavalent chromium. Based on these considerations, it is believed that estimated risks from hexavalent chromium in soil are more likely to be overestimated than underestimated.

Limited hexavalent chromium data were available in sediment. The limited data means there is a high degree of uncertainty associated with the evaluation of Cr (VI) in sediment. The HHRA for the Burn Site used the conservative assumption that total chromium detected in groundwater and surface water was 100% in the form of hexavalent chromium. This assumption likely overestimates risk.

Due to the shallow nature of White Sand Branch and Honey Run Brook (approximately 6 inches), it was assumed that no significant ingestion of surface water would occur during a wading scenario. Any incidental ingestion of surface water while wading would be expected to be minimal and suspected to have a negligible contribution to risk; thus, the exclusion of this pathway is not expected to change the overall conclusions of the risk assessment.

More detailed information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the comprehensive human health risk assessment report for the Site.

Ecological Risk Assessment

A baseline ecological risk assessment (BERA) was conducted to evaluate the potential for ecological risks from the presence of contaminants in surface soil, sediment, and surface water. Media concentrations were compared to ecological screening values as an indicator of the potential for adverse effects to ecological receptors by habitat type.

For the baseline ecological risk assessment, the Burn Site was evaluated based upon four defined ecological exposure areas: Burn Site West, Burn Site East, White Sand Branch and Honey Run Brook (Figure 6). Exposure to both terrestrial wildlife in the upland exposure areas (Burn Site East and Burn Site West) through ingestion of contaminated soil, surface water and biota, and exposure of aquatic wildlife to contaminants in the White Sand Branch and Honey Run Brook exposure areas through ingestion of contaminated sediment, surface water and biota were evaluated. Biological data were collected (benthic invertebrates, fish and soil invertebrates) to assist in understanding site-specific bioaccumulation rates and subsequent exposure to upper trophic level receptors. In addition, concentrations and biological responses (sediment toxicity) to contaminants of concern were evaluated to understand potential community level impacts associated with sediment contaminants of concern. The drivers of ecological risk were lead, arsenic, chromium and zinc.

A complete summary of all exposure scenarios and ecological receptor groups may be found in the baseline ecological risk assessment (BERA) which is part of the Administrative Record.

Summary of the Baseline Ecological Risk Assessment

The BERA provided evidence that contaminants of concern, primarily arsenic, lead, chromium and zinc are present in both aquatic and terrestrial environments within several portions of the Burn Site and pose unacceptable ecological risk to wildlife receptors. The greatest potential for exposure and unacceptable risks to the aquatic community are indicated for localized elevated areas of arsenic, chromium, lead, and zinc in White Sand Branch near the Burn Area, with much lower exposures and risks in Honey Run Brook. Overall, terrestrial wildlife risks are driven by elevated concentrations detected near the Burn Area in the Burn Site East and the northern portion of the Railroad Track Site in the Burn Site West. Concentrations and risk of contaminants of concern decreases significantly with distance from these areas. Insectivorous wildlife (the American Robin and Short-Tailed Shrew) were identified as the wildlife receptors with the highest predicted exposures and hazard quotients in the terrestrial area of the Burn Site. Similarly, the Spotted Sandpiper was identified as the receptor with the highest exposure and hazard quotient associated with the aquatic community in White Sand Branch.

Based on the results of the ecological risk assessment a remedial action is necessary to protect the environment from actual or threatened releases of hazardous substances.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment. The remedial action objectives for contaminated media provided below address the human health and ecological risks at the Site. Remedial action objectives have not been identified for the Burn Site groundwater within this operable unit. However, based on the results of groundwater sampling after implementation of the selected remedy for this operable unit, groundwater RAOs will be identified if necessary.

No remedial action is proposed for surface water, therefore there are no remedial action objectives for surface water. Instead, surface water monitoring is included as part of each sediment remedial alternative except for the no action alternative.

Soil

- Prevent potential current and future unacceptable risks to human and ecological receptors resulting from uptake of soil contaminants by plants, ingestion of contaminated soils and food items by humans and ecological receptors, and direct contact with contaminated soils.

- Minimize migration of Site-related contaminants in the soil to sediment, surface water and groundwater.

Sediment

- Prevent potential current and future unacceptable risks to ecological receptors resulting from uptake of sediment contaminants by plants, ingestion of contaminated sediments and food items by humans and ecological receptors and direct contact with contaminated sediments.

- Minimize migration of Site-related contaminants from the sediment to surface water.

To achieve RAOs, EPA has selected soil and sediment cleanup goals for the primary contaminants of concern which are lead and arsenic. The soil cleanup goals for the contaminants of concern are consistent with New Jersey human health direct contact standards or ecological risk-based goals.

The Burn Site is comprised of undeveloped properties that are zoned for office and residential development, and wetlands. Both areas currently contain ecological habitat. To meet the RAOs, specific soil cleanup goals listed below apply to different areas or land uses of the Site.

Soil ecological cleanup goals are based on the most sensitive terrestrial wildlife receptors and apply to the top foot of soil at all properties in the Burn Site that contain ecological habitat. Residential zoned properties contain ecological habitat. As a result, the ecological cleanup goals apply to the top foot of soil and residential cleanup goals apply to a soil depth of 10 feet.

The soil and sediment cleanup goal for arsenic will be based on the ecological goal and will equal the background value of 19 mg/kg (that is also the NJDEP Residential Direct Contact Soil Remediation Standard).

The soil cleanup goals for lead in the top foot of soil is the ecological cleanup goal of 213 mg/kg since this value is lower than the human health direct contact cleanup goal of 400 mg/kg. The soil cleanup goal for lead below one foot in depth is the human health cleanup goal of 400 mg/kg. Additionally, to achieve the risk reduction goal established for the Site, which is to limit the probability of a child's blood lead level exceeding 5 µg/dL to 5% or less, the average lead concentration across the surface of the remediated area must be at or below 200 mg/kg.

In addition to the direct-contact cleanup goals described above, site-specific impact-to-groundwater levels for unsaturated soil (above the water table) will be determined during remedial design. Finally, saturated soils (below the water table) that contain lead at levels exceeding 1,000 mg/kg are considered source areas to groundwater.

The sediment cleanup goal for lead is the ecological cleanup goal of 213 mg/kg that is based on the most sensitive wildlife receptor.

In summary, the cleanup goals for the Burn Site are as follows:

Soil (direct contact):
Arsenic:

- Residential cleanup goal: 19 mg/kg (to as deep as 10 feet bgs)
- Ecological cleanup goal: 19 mg/kg (to 1 foot)

Lead:

- Residential cleanup goal: 400 mg/kg (to as deep as 10 feet bgs)
- Ecological cleanup goal: 213 mg/kg (to 1 foot)

Soil (impact to groundwater)[1]:

Lead:

- Saturated Soils: 1,000 mg/kg

Sediment:

Arsenic:	19 mg/kg
Lead:	213 mg/kg

DESCRIPTION OF ALTERNATIVES

CERCLA §121(b)(l), 42 U.S.C. §9621(b)(l) requires that a remedial action be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practical. In addition, Section 121(b)(1) of the statue includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

Technologies applicable to soil and/or sediment remediation were identified and screened using effectiveness, implementability, and cost criteria, with emphasis on effectiveness. Those technologies that passed the initial screening were assembled into alternatives for soil and sediment.

For alternatives that incorporate removal of contaminated soil or sediment, the proposed depths of excavation are based on the soil boring data taken during the RI. These depths were used to

[1] Site-specific impact-to-groundwater cleanup goals for contaminated soils in unsaturated soils will be determined during design.

estimate the quantity of soil to be removed and the associated costs. The actual depths and quantity of soil to be removed will be finalized during design and implementation of the selected remedy.

The time frames below for construction do not include the time it will take to negotiate with the potentially responsible party, design the selected remedy or procure necessary contracts. Five-year reviews will be conducted as a component of the alternatives that would leave contamination in place above levels that allow for unlimited use and unrestricted exposure.

For all soil and sediment alternatives requiring five-year reviews, the present-worth cost includes the periodic present worth cost of five-year reviews.

Common Element for Soil and Sediment Alternatives: Surface Water Monitoring

The Feasibility Study included two surface water alternatives, a no action alternative and a surface water monitoring alternative. EPA decided not to carry these forward as separate surface water alternatives. EPA expects that removal of sediment, combined with soil removal and/or capping, will result in a decrease of surface water contaminants to levels below New Jersey Surface Water Quality Standards (NJSWQS). Monitoring would be conducted on a quarterly basis to assess any changes in contaminant conditions over time. If monitoring indicates that contamination levels have not decreased to below the NJSWQS, EPA may require an action in the future. The cost of surface water monitoring is included in sediment alternatives.

Soil Alternatives:

Alternative 1 - No Action

Capital Cost:	*$0*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$0*
Timeframe:	*0 years*

The NCP requires that a "No Action" alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated soil at the Burn Site.

Alternative 2 – Institutional Controls

Capital Cost:	*$319,000*
Annual O&M Cost:	*$8,250*
Present Worth Cost:	*$563,790*
Time Frame including O&M:	*30 years*

This alternative would use Institutional Controls, such as deed notices, to prevent exposure to Site contaminants and monitoring to assess any change in contaminant conditions over time. The existing fences in and around the Burn Site Area would be maintained, and a new fence would be installed around the Railroad Track Area. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 3 – Capping and Institutional Controls

Capital Cost:	*$6,221,305*
Annual O&M Cost:	*$22,000*
Present Worth Cost:	*$6,636,719*
Construction Time Frame:	*5 months*

This alternative would use soil or asphalt covers as the primary method to prevent exposure to contaminants in Site soils. Two feet of soil would be excavated to allow the installation of a two-foot soil cap to prevent contact with soils that exceed the soil cleanup goals.

Approximately 9,500 cubic yards of soil would be excavated to accommodate a cap. The excavated soil would be transported to an appropriate disposal facility.

Institutional controls, such as a deed notice, would be required on all properties where residential soil standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 4 – Excavation, Capping and Institutional Controls

Capital Cost:	*$18,723,716*
Annual O&M Cost:	*$22,000*
Present Worth Cost:	*$19,139,131*
Construction Timeframe:	*8 months*

The Burn Site consists of both residential and non-residential (*i.e.,* the United States Avenue right-of-way) zoned areas. In this alternative, soil within the Burn Site that exceeds the residential cleanup goals, would be removed to approximately ten feet. Any remaining unsaturated soil that exceeds site-specific impact-to-groundwater values[2] would receive an impermeable cap. The impermeable cap would be expected to minimize surface water percolation through the unsaturated soil, thereby reducing the impact on groundwater.

[2] To be determined in remedial design.

Several areas of saturated soil within the Site that exceed 1,000 mg/kg for lead are considered a source of groundwater contamination and would be removed. Based on existing data, soil excavation in these portions of the Site is estimated to extend to as deep as 12 feet.

For the non-residential zoned area (United States Avenue), soil would not be removed and the asphalt of the roadway would serve as a cap, and institutional controls would be established to prevent exposure.

Institutional controls, such as deed notices, would be required for all residentially-zoned areas and United States Avenue where residential standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Approximately 60,000 cubic yards of soil would be removed under this alternative.

Alternative 5 -- Excavation and Institutional Controls

Capital Cost:	*$26,037,848*
Annual O&M:	*$4,950*
Present Worth Cost:	*$26,241,689*
Construction Timeframe:	*10 months*

The Burn Site consists of both residential and non-residential (United States Avenue) zoned areas. In this alternative, all soils exceeding the residential cleanup goals located within residentially zoned area would be removed. Any remaining soil that exceeds ecological cleanup goals in the top foot of soil outside the footprint of the residential soil cleanup goal excavation would also be removed. Soil removal in these portions of the Site is estimated to extend to 18 feet. The excavated areas would be backfilled to the existing grade. By excavating to the residential direct-contact cleanup goals through the full soil column, the alternative is expected to also address deeper soils (both unsaturated and saturated) that act as a source to groundwater.

For the non-residential zoned area (United States Avenue), soil would not be removed and the asphalt roadway would serve as a cap, and institutional controls would be established to minimize the potential for exposure.

Approximately 76,000 cubic yards of soil would be removed under this alternative.

Institutional controls, such as a deed notice, would be required on all properties where residential standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Sediment Alternatives:

Alternative 1 – No Action

Capital Cost:	*$0*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$0*
Timeframe:	*0 years*

The NCP requires that a "No Action" alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated sediment at the Burn Site.

Alternative 2 – Institutional Controls and Monitored Natural Recovery

Capital Cost:	*$229,680*
Annual O&M Cost:	*$11,000*
Present Worth Cost:	*$508,595*
Timeframe including O&M:	*30 years*

Under this alternative, no removal or capping of sediment would be conducted and exposure to contaminants would not be prevented. Periodic monitoring would be performed to determine if contaminant concentrations in surface sediment were declining to a level that is protective of ecological receptors. Institutional controls, such as a deed notice, would be required since contaminants remain above unrestricted levels. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 3 – Dredging, Capping and Natural Recovery

Capital Cost:	*$1,628,905*
Annual O&M Cost:	*$27,500*
Present Worth Cost:	*$2,112,570*
Construction Timeframe:	*3 months*

Under this Alternative, up to one foot of sediment containing contaminants at concentrations exceeding the ecological cleanup goals would be removed from White Sand Branch and Honey Run. In areas where the removal addresses all contamination present at levels above cleanup goals, natural sedimentation will be allowed to restore the stream to its current elevation. In areas where contaminants remain at concentrations greater than the cleanup goals following the removal, a cap will be installed. The cap will consist of six inches of sand, covered by three inches of stone, that would act as an armoring layer. Natural sedimentation would then be allowed to fill in above the armoring layer and reestablish the current elevation of the stream. Approximately 350 cubic yards of sediment would be removed under this alternative.

A minimum of five years of sampling would take place to confirm that restoration was successful and that contaminant levels remain below the cleanup goals.

Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 4 –Dredging

Capital Cost:	*$1,574,335*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$1,716,751*
Construction Timeframe:	*4 months*

This alternative consists of removal of all sediment with Site-related contaminants exceeding ecological cleanup goals from White Sand Branch beginning at the northeast corner of the Burn Site Fenced Area and extending to the location where White Sand Branch combines with Honey Run, from two sections of Honey Run. Sediment in the sections of Honey Run where contaminants of concern were not detected above cleanup goals would undergo additional sampling during design to determine if sediment removal is needed in these sections. No capping of sediments would be necessary since all sediment exceeding the cleanup goals would be removed. Areas where sediment is removed would be backfilled with clean material and the area restored. It is estimated that 825 cubic yards of sediment would be removed under this alternative.

A minimum of five years of sampling would take place to confirm that restoration was successful. Because no contamination would remain above unrestricted levels, five-year reviews would not be required.

COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy, EPA considered the factors set out in CERCLA § 121, 42 U.S.C. § 9621, by conducting a detailed analysis of the viable remedial response measures pursuant to the NCP, 40 CFR § 300.430(e)(9) and OSWER Directive 9355.3-01. The detailed analysis consisted of an assessment of the individual response measure against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each response measure against the criteria. The first part discusses the nine evaluation criteria for the soil and the second part discusses the nine evaluation criteria for the sediment.

Threshold Criteria - The first two criteria are known as "threshold criteria" because they are the minimum requirements that each response measure must meet in order to be eligible for selection as a remedy.

Evaluation of Soil Alternatives

1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or institutional controls.

The No Further Action Alternative, Alternative 1, is not considered protective of human health and the environment, because it does not contain measures to prevent exposure to contaminated soil. This presents an unacceptable human health and/or ecological risk.

Alternative 2 would protect human health by restricting access to the contaminated soil through use of institutional controls, but such controls would not be protective of ecological receptors. Institutional controls also would not address migration of soil contaminants to the sediment, surface water and groundwater.

Alternatives 3, 4 and 5, provide an increasing progression of control of contaminated soil through a combination of excavation and capping. However, Alternative 3 would not completely control migration of soil contaminants at depth to groundwater since only shallow soil would be removed.

Alternatives 4 and 5 would be more protective of human health and the environment than Alternative 3 because sources of groundwater contamination in deep saturated soil would be removed from the Burn Site Fenced Area. Removal and capping of soil under Alternative 4 and more extensive removal of soil under Alternative 5, combined with institutional controls, would prevent exposure to contaminants and are equally protective.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Section 121(d) of CERCLA and NCP § 300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal and state requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes or provides a basis for invoking a waiver.

There are three types of ARARs, chemical-specific, location-specific, and action-specific. These are explained below.

Chemical-Specific: These ARARs include health- or risk-based numerical values or methodologies that establish the acceptable amount or concentration of a chemical in the environment. Where more than one requirement addressing a contaminant is determined to be an ARAR, the most stringent value should be used.

Location-Specific: These ARARs address activities based on geographical or land use concerns. Examples include standards and requirements for addressing wetlands, historic places, floodplains, or sensitive ecosystems and habitats.

Action-Specific: These ARARs address activities or the operation of certain technologies at a site. Examples include regulations concerning the design, construction, and operating characteristics of a treatment system or a landfill.

Applicable chemical-specific ARARs for lead and arsenic in the soil at this Site include the New Jersey Residential and Non-residential Direct Contact Soil Remediation Standards depending on zoning and land use. The New Jersey Surface Water Quality Standards are ARARs for surface water.

Location-specific ARARs include the Federal Fish and Wildlife Coordination Act and the New Jersey Freshwater Wetlands Protection Act and Clean Water Act. Location-specific ARARs affect some portions of the Site, such as the Burn Site Fenced Area, soils around Bridgewood

Lake and the flood plain of White Sand Branch and Honey Run Brook, which are wildlife areas and/or designated wetland areas.

Action-specific ARARs are determined by the specific technology of each alternative. In this case, all the active alternatives include excavation and off-site disposal. Action-specific ARARs include the Federal Resource Conservation and Recovery Act. Also included are the New Jersey Solid Waste Rules and certain portions of the Technical Requirement for Site Remediation.

A complete list of potential ARARs can be found in Appendix II-A.

Alternative 1, No Further Action, will not comply with chemical-, location- or action-specific ARARs.

Alternative 2 would not meet chemical-specific ARARs because no contaminated soil will be removed. Alternative 2 does not involve any construction. Therefore, there are no relevant location- and action-specific ARARs.

Alternative 3 would meet all the chemical-specific standards by excavation of soil or on-site capping. Location- and action-specific ARARs would be met during the construction phase.

Alternatives 4 and 5 would be in compliance with chemical-specific ARARs by removing contaminated soil both in the shallow and deep zones and through capping. Location- and action-specific ARARs would be met by Alternatives 4 and 5 during the construction phase by proper design and implementation of the action including disposal of excavated soil at an appropriate disposal facility.

Primary Balancing Criteria - The next five criteria, criteria 3 through 7, are known as "primary balancing criteria". These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given site-specific data and conditions.

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3. Long-Term Effectiveness and Permanence

A similar degree of long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup levels have been met. This criterion includes the consideration of residual risk that will remain on-site following remediation and the adequacy and reliability of controls.

Alternative 1, No Action Alternative and Alternative 2, Institutional Controls and Monitoring would not provide long-term effectiveness or permanent protection to human health or ecological receptors, or to sediment, groundwater or surface water because the soil contaminants would remain uncontrolled. Under Alternative 2 there would be provisions to monitor the fate and transport of the contaminants.

Alternative 3 provides more long-term effectiveness and permanence than Alternative 2 because surface soil contamination would be removed.

However, Alternative 3 provides less long-term effectiveness and permanence than Alternatives 4 and 5 because contamination in the deep saturated soil, which could act as a source of groundwater contamination, will not be removed. In Alternative 3, although the ecological cleanup goals and residential cleanup goals would be used throughout the Site, enough subsurface contamination would remain that it would likely be necessary to construct caps throughout the entire Site, including along White Sand Branch and Honey Run Brook.

In Alternative 4, surface soil above the residential cleanup, which could act as a source to groundwater contamination, would be removed. Based on the RI soil core data, this alternative includes the removal of contaminated subsurface soils from multiple depths, down to 12 feet, for example in the northern portion of the Burn Site Fenced Area, the Burn Area and the Landfill Area (Figure 7). Also, in Alternative 4, the ecological cleanup goals would be used in the White Sand Branch and Honey Run Brook flood plain. Therefore, Alternative 4 would achieve a greater degree of long-term protectiveness and permanence than Alternative 3.

Alternative 5 offers the greatest degree of long-term permanence by removing all contaminants above the ecological cleanup goals or residential cleanup goals in the surface and accessible subsurface soil.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

All of the active soil alternatives involve removal and/or capping of soil. There is no treatment of the contaminants in any of the alternatives and, therefore, no reduction in toxicity. Removal of the contaminated soil would decrease the volume of contaminants at the Site and capping would decrease accessibility and contaminant mobility. The excavated material would be transferred to a landfill without treatment and therefore the overall reduction of toxicity mobility or volume through treatment would not be achieved.

Alternatives 1 and 2 would not reduce the toxicity, mobility or volume of soil contaminants since no material will be removed or capped.

The amount of contamination removed or capped increases progressively from Alternatives 3 to 4 to 5. Alternative 5 would leave the least amount of contamination on the Site, but would not reduce the toxicity mobility or volume of contaminants any more than the other alternatives because it does not include treatment.

5. Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community and the environment during construction and operation of the remedy until cleanup levels are achieved.

Alternatives 1 and 2 do not present any short-term risks to Site workers or the environment because they do not include any active remediation work.

Under Alternatives 3, 4 and 5, potential adverse short-term effects to the community include increased traffic, noise, road closures and, at times, limited access to businesses.

Risks to Site workers, the community and the environment include potential short-term exposure to contaminants during excavation of soil. Potential exposures and environmental impacts associated with dust and runoff would be minimized with proper installation and implementation of dust and erosion control measures and monitoring. Portions of the Site, such as the Burn Site Fenced Area, have large areas of wetlands. Under Alternatives 3, 4 and 5, it would be necessary to remove trees and vegetation as well as disrupt the small streams and associated wildlife.

Alternatives in which the largest quantity of soil is removed would have the greatest area of impact, would require the longest period of time to complete, and would have the highest potential for short-term adverse effects. Alternatives 3, 4 and 5 would take 5, 8, and 10 months respectively to complete. Among Alternatives 3 through 5, Alternative 3 would take the shortest time to achieve protection of human health and the environment and would, therefore, have the lowest potential for short-term adverse effects.

6. Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Because Alternatives 1 and 2 would not entail any construction, they would be easily implemented.

Alternatives 3 through 5 have common implementability issues related to the removal of contaminated soil. The volume of soil removed under Soil Alternative 5 is greater than under Soil Alternative 3 and 4, so the implementability difficulties are much greater. In particular, the depth of the excavations that would be conducted under Soil Alternative 5 would result in the need to manage much more contaminated groundwater and stabilize much more saturated soil.

In general, Alternative 3, which has the least amount of soil removal and does not remove the subsurface soil, would be the easiest to implement.

The increased volume of soil removal associated with Alternatives 4 and 5 increases the implementation difficulties compared to Alternative 3.

In Alternative 4, deep excavations to remove potential sources of groundwater contamination in the Burn Site Fenced Area present implementability challenges.

Alternative 5 presents the greatest challenges to implement because it requires removing the most soil at the greatest depth. Based on data from the RI, in the Burn Area and Landfill Area excavation to remove contamination greater than the residential cleanup goal would extend 18 feet in depth in the Burn and Landfill areas.

Because of the deep excavation, Alternative 5 would require extensive and rigorous structural supports to safely excavate material on the Burn Site Fenced Area adjacent to United States Avenue. Such structural challenges include the use of structural supports to protect roadways during soil excavation to depths greater than 4 feet. In addition, deeper excavations associated with Alternative 5 would generate ten times the quantity of groundwater among the alternatives. The management of a significant amount of groundwater places additional challenges to implementation of Alternative 5. Excavation in and along White Sand Branch, Honey Run and Bridgewood Lake will require the use of stream diversion technologies and erosion control to prevent downstream transport of contaminated soil during construction.

In general, the depth of the soil to be removed and the total amount for soil to be removed increases from Alternatives 3 to 5. Therefore, Alternative 3 is the easiest to implement. Alternative 4 would be more difficult to implement and Alternate 5 would be the most difficult to implement.

7. Cost

Includes estimated capital and O&M costs, and net present worth value of capital and O&M costs.

The total estimated present worth costs of Alternatives 2, 3, 4 and 5 are $563,790; $6,636,719; $19,139,131; and $26,241,689. Alternative 1 has no cost.

8. State Acceptance

Indicates whether based on its review of the RI/FS reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected remedial measure.

The State of New Jersey concurs with the preferred alternative of soil removal including off-site soil disposal. However, the state does not concur with the capping and institutional control component of the preferred soil alternative unless property owners provide their consent to the placement of a cap and a deed notice.

9. Community Acceptance

Summarizes the public's general response to the response measures described in the Proposed Plan and the RI/FS reports. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about.

EPA solicited input from the community on the remedial alternatives for soils and sediment that were proposed for the Site. Oral comments were recorded from attendees of the public meeting. The attached Responsiveness Summary addresses the comments received during the public comment period. The community (residents, business owners, nearby property owners) had varied positions, from support to reservations about EPA's Proposed Plan. EPA received written and oral comments from residents of Voorhees and Gibbsboro as well as elected officials. These issues raised by the commenters are discussed in EPA's comprehensive response to comments received during the public comment period in the Responsiveness Summary, Appendix V.

Evaluation of Sediment Alternatives

1. Overall Protection of Human Health and the Environment

The No Further Action Alternative, Alternative 1, is not considered protective of human health and the environment, because it does not contain measures to prevent exposure to contaminated sediment. This presents an unacceptable human health and/or ecological risk.

Alternative 2 would protect human health by restricting access to the contaminated sediment through use of institutional controls, but such controls would not be protective of ecological receptors. Institutional controls also would not address migration of sediment contaminants to the surface water.

Alternative 3 would be protective because one foot of contaminated sediment would be removed and the remaining contaminated sediment would be capped.

Alternative 4 would also be protective because sediment contamination above the cleanup goals would be removed.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Sediment cleanup goals are Site-specific, risk-based values. There are no chemical-specific Federal or State of New Jersey standards for the contaminants of concern in sediment.

Location-specific ARARs for the sediment are applicable because White Sand Branch contains wildlife areas. Location-specific ARARs include the Federal Fish and Wildlife Coordination Act and the New Jersey Freshwater Wetlands Protection Act and Clean Water Act.

Action-specific ARARs are determined by the specific technology of each alternative. In this case, all the active alternatives include excavation and off-site disposal. Action-specific ARARs include the Federal Resource Conservation and Recovery Act. Also included are the New Jersey Solid Waste Rules and certain portions of the Technical Requirement for Site Remediation.

A complete list of potential ARARs can be found in Appendix II-A.

Alternative 1, No Further Action, will not comply with location- or action-specific ARARs.

Alternative 2 does not involve any construction. Therefore, there are no location- and action-specific ARARs that apply to this alternative.

Alternatives 3 and 4, which require remedial action, would comply with location- and action-specific ARARs that apply to remediation and filling in floodplains, work in wetland areas, waste management, and storm water management.

3. Long-Term Effectiveness and Permanence

Alternatives 1 and 2 would allow existing contamination, and ecological exposures and risks to continue while natural recovery occurs. Natural recovery alone will not reduce surface sediment concentrations to levels that are protective of ecological receptors.

The cap associated with Alternative 3 would be installed for all of White Sand Branch and portions of Honey Run Brook within the Burn Site Fenced Area. This alternative would be effective in maintaining protection of human health and the environment in the capped section of the water body. Such protectiveness would be permanent as long as the cap remains in place.

Alternative 4 would remove all sediment contamination from the small streams within the Burn Site Fenced Area. Alternative 4 would be more effective in the long-term and have a higher degree of permanence than Alternative 3 since all contaminated sediment would be removed under Alternative 4.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

The major contamination in sediment at the Site is due to the presence of metals. All the active alternatives involve removal and/or capping of the sediment. There is no treatment of the contaminants and, therefore, no reduction of toxicity. Removal of the contaminated sediment would decrease the volume and capping would decrease the mobility of any contamination at the Site. The excavated sediment would be transferred to a landfill without treatment.

Alternatives 1 and 2 would not reduce the toxicity mobility or volume of sediment contaminants. Between the two alternatives that involve sediment excavation, Alternative 3 would remove the least amount of sediment and would include sediment capping. Alternative 4 addresses the same stretch of White Sands Branch and Honey Run Brook as Alternative 3, however more volume of sediment would be removed under Alternative 4 through deeper excavation.

5. Short-Term Effectiveness

Alternatives 1 and 2 do not present any short-term risks to the community, Site workers or the environment because these alternatives do not include any active remediation work.

Alternatives 3 and 4 involve excavation and thus have potential for short-term adverse effects. Potential risks posed to Site workers, the community and the environment during implementation of each of the sediment alternatives could be due to wind-blown or surface water transport of contaminants. Any potential impacts associated with dust and runoff would be minimized through proper installation and implementation of dust and erosion control measures. The areas would be monitored throughout the construction.

The potential risk of sediment releases could increase over the current conditions, due to removal of existing vegetation that currently minimizes sediment movement. There is little difference in the implementation time from the shortest (three months) to the longest (four months). Therefore, Alternatives 3 and 4 are equal in terms of short-term effectiveness.

6. Implementability

Sediment Alternatives 1 and 2 would not include any construction, and therefore they would be easily implemented.

Alternatives 3 and 4 require sediment removal and face similar implementability challenges. Such challenges include access to low lying saturated areas, control of surface water flow, controlling intrusion of groundwater into excavation areas, streambed stabilization and wetland restoration.

The implementability challenges increase with the length of White Sand Branch and Honey Run Brook to be remediated and volume of sediment to be removed. Alternative 3 calls for the least amount of sediment removal and therefore presents the least amount of implementability challenges among the removal alternatives. In contrast, Alternative 4 poses the greatest implementability challenges since it requires the largest remediation area and involves deeper removal of sediment.

7. Cost

The total estimated present worth costs of Alternatives 2, 3, and 4 are $508,595, $2,112,570 and $1,716,751. Alternative 1 has no cost.

8. State Acceptance

Indicates whether based on its review of the RI/FS reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected response measure.

The State of New Jersey concurs with the selected alternative for the sediment of the Site.

9. Community Acceptance

Summarizes the public's general response to the response measures described in the Proposed Plan and the RI/FS reports. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about.

EPA solicited input from the community on the remedial response measures proposed for the Site sediment. Oral comments were recorded from attendees of the public meeting and written comments were also received. The community was supportive of EPA's Proposed Plan for sediment. Appendix V, the Responsiveness Summary, addresses comments received during the public comment period.

PRINCIPAL THREAT WASTE

Principal threat wastes are considered source materials, *i.e.*, materials that include or contain hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to groundwater, surface water, or as a source for direct exposure. Principal threat wastes are those 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. Lead and arsenic in soil and sediment act as sources to surface water contamination. Lead and arsenic in soil contribute to shallow groundwater contamination. These sources are not highly mobile and are not considered principal threat wastes at this Site.

SELECTED REMEDY

Based upon consideration of the results of the Site investigations, the requirements of CERCLA, the detailed analysis of the remedial alternatives and public comments, EPA has determined that soil Alternative 4, Excavation, Capping and Institutional Controls, combined with sediment Alternative 4, Dredging, is the appropriate remedy for the Site. As discussed above, the surface water will be monitored to determine the effectiveness of the implemented soil and sediment remedies. Together, these three elements comprise EPA's selected remedy. The remedy best satisfies the requirements of CERCLA Section 121 and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR § 300.430(e)(9). This remedy includes the following components for the soil, sediment and surface water.

Soil:

The Soil Remedy is Alternative 4 (see Figure 7), which involves excavation, capping, and off-site disposal of soil. The major components of the Soil Remedy include:

- Excavation, transportation and disposal of 60,000 cubic yards of contaminated soil;
- Installation of engineering controls including vegetated soil covers in the Burn Site Fenced Area;
- Restoration and revegetation of White Sand Branch and Honey Run Brook flood plain; and
- Institutional controls, such as a deed notice, to prevent exposure to residual soil that exceed levels that allow for unrestricted use.

This alternative would remove soil within the saturated zones that contribute contaminants to groundwater. By removing these saturated soils, the concentrations of contaminants in groundwater that exceed ground water quality standards is anticipated to be reduced.

All surface soil (to a depth of one foot) of the Burn Site will be removed if concentrations of contaminants are greater than the ecological cleanup goals.

In all other areas within the Burn Site except under United States Avenue, soil will be removed to meet residential standards to depths down to ten feet. Below 10 feet, soil will be removed to twelve feet to target source areas contributing to groundwater contamination. Below twelve feet, contamination will remain above residential standards in some areas and require a deed notice for residentially zoned areas. Soil beneath United States Avenue will remain under the paving which will serve as a cap and will also require a deed notice.

Soil Alternative 4 was chosen because it has fewer uncertainties in addressing the source areas compared to Alternative 3 and will provide an equivalent degree of protection as Soil Alternative 5.

The Soil Remedy was selected over other alternatives because it is expected to achieve substantial and long-term risk reduction through off-site disposal, and is expected to allow the Site to be used for its reasonably anticipated future land use, which is commercial/residential use. The Soil Remedy reduces the risk within a reasonable time frame, at a cost comparable to other alternatives and provides for long-term reliability of the remedy.

The Soil Remedy will achieve cleanup goals that are protective for residential use on floodplain soils adjoining White Sand Branch. Though the remedy would be protective, it would not achieve levels that would allow for unrestricted use and therefore, institutional controls, such as deed notices would be required. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Sediment:

The Sediment Remedy is Alternative 4, which includes excavation of all sediment with contaminant levels greater than the cleanup goals from small streams within the Burn Site Fenced Area that includes White Sand Branch and Honey Run Brook (Figure 8).
The major components of the Sediment Remedy include:

- Construction of a stream diversion system to allow access to sediment;
- Excavation, transportation and disposal of 825 cubic yards of contaminated sediment;
- Dewatering and processing of excavated sediment; and
- Stream bank and wetland revegetation and restoration.

Approximately three feet of sediment would be removed from White Sand Branch, beginning at the northeast corner of the Burn Site Fenced Area and extending to the location where White Sand Branch combines with Honey Run. Another three feet of sediment would be removed from Honey Run in the southeastern portion of the Site within areas that exceed cleanup goals. Under Sediment Alternative 4, additional sampling during design would determine the extent of sediment excavation within Honey Run. After remediation of sediment, the stream banks, riparian zone and wetlands would be monitored for a period of five years to assure successful restoration of these areas.

The Sediment Remedy was selected over other alternatives because it is expected to achieve substantial and long-term risk reduction through off-site disposal of sediment by reducing contaminant levels in White Sand Branch and Honey Run. The Sediment Remedy reduces risk within a reasonable timeframe, at a cost comparable to the other alternatives and provides for long-term reliability of the remedy.

Surface Water:
Surface water monitoring will be conducted on a quarterly basis to assess any changes in contaminant conditions over time. It is expected that removal of contaminated sediment, combined with soil removal, and/or capping will result in a decrease of surface water contaminants to levels below NJSWQS. If monitoring indicates that contamination levels have not decreased to below the NJSWQS, EPA may require an action in the future.

STATUTORY DETERMINATIONS

As was previously noted, CERCLA §121(b)(1) mandates that a remedial action must be protective of human health and the environment, cost-effective, and utilize 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 employ treatment to permanently and significantly reduce the volume, toxicity or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA §121(d) further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4).

Protection of Human Health and the Environment

The selected Soil Remedy will be protective of human health and the environment by removing contaminated surface soil that poses a direct contact threat and subsurface soil that poses a threat to the groundwater. The combination of soil removal and capping will prevent human and wildlife receptor exposure to contaminants. Where the soil is capped, institutional controls such as deed notices will be put in place to ensure that impacts to human health and the environment are minimized.

The selected sediment alternative will be protective by removing the contaminated sediment in White Sand Branch and Honey Run Brook resulting in a reduction of contamination levels to below remediation goals.

In addition, removal of the contaminated soil and sediment is expected to result in contamination levels in the surface water decreasing to below the surface water cleanup goals. Surface water will be monitored to ensure protectiveness.

Implementation of the selected remedy will not present unacceptable short-term risks or adverse cross-media impacts and will therefore be protective of human health and the environment.

Compliance with ARARs

EPA expects that the selected remedy for soil and sediment will comply with federal and New Jersey ARARs. A complete list of potential ARARs can be found in Appendix II-A.

Chemical-specific ARARs are only available for the soil because there are no chemical-specific Federal or State of New Jersey standards for the contaminants of concern in sediment. Sediment cleanup goals are site specific risk-based. The chemical-specific ARARs for lead and arsenic in the soil include the New Jersey Residential and Non-Residential Direct Contact Soil

Remediation Standards. The New Jersey Surface Water Quality Standards are ARARs for surface water.

Location-specific ARARs affect some portions of the soil and sediment at the Site, such as the flood plain of White Sand Branch and Honey Run Brook with the Burn Site Fenced Area which are wildlife areas. Location-specific ARARs include the Federal Fish and Wildlife Coordination Act and the New Jersey Freshwater Wetlands Protection Act and Clean Water Act.

The action-specific ARARs are the same for the soil and sediment because all the active alternatives for soil and sediment include excavation and off-site disposal. For the soil and sediment, action-specific ARARs include the Federal Resource Conservation and Recovery Act. Also included are the New Jersey Solid Waste Rules and certain portions of the Technical Requirement for Site Remediation.

Cost Effectiveness

EPA has determined that the selected remedy is cost-effective and represents a reasonable value for the money to be spent. In making this determination, the following definition was used: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (NCP §300.430 (f)(1)(ii)(D)). EPA evaluated the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, or volume through treatment; and short-term effectiveness). Overall effectiveness was then compared to costs to determine cost effectiveness. The relationship of the overall effectiveness of the selected remedy was determined to be proportional to costs and hence, the selected remedy represents a reasonable value for the money to be spent. The selected remedy is cost-effective as it has been determined to provide the greatest overall protectiveness for its present worth costs.

Utilization of Permanent Solutions and Alternative Treatment Technologies

EPA has determined that the selected remedy utilizes permanent solutions and treatment technologies to the maximum extent that is practicable. The majority of the contaminated soil will be removed. Where soil contaminants remain, a minimum of two feet of soil will be removed and the area will be capped with clean soil in the Burn Site Fenced Area. In White Sand Branch and Honey Run Brook, all contamination above the ecological or the residential cleanup goals will be removed. Under United States Avenue, capping will consist of asphalt.

The selected remedy will provide adequate long-term control of risks to human health and the environment through eliminating and/or preventing exposure to the contaminated sediment, floodplain soils, and surface water. The selected remedy is protective of short-term risks.

Preference for Treatment as a Principal Element

Treatment is not an element of the selected remedy because contaminated soil and sediment are being addressed through a combination of removal and capping.

Five-Year Review Requirements

The selected remedy for the soil involves capping of deeper contaminated soils. Therefore, the remedy expects that contamination will be left in place at levels above those that allow for unlimited use and unrestricted exposure. A five-year review will be conducted within five years of initiation of the remedy action for the Site to ensure that the remedy is, or will be, protective of human health and the environment.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Site was released for public comment on July 27, 2017. The Borough of Gibbsboro requested a 30-day extension of the 30-day comment period. EPA granted the Borough's request, and the comment period closed on September 27, 2017. The Proposed Plan identified Alternative 4 as the preferred alternative to address soil contamination, Alternative 4 to address sediment contamination, and monitoring of surface water. Upon review of all comments submitted, EPA determined that no significant changes to the selected remedy, as it was presented in the Proposed Plan, are warranted.

APPENDIX I

FIGURES

LEGEND

SITE BOUNDARY

STATE PLANE COORDINATES (NAD83)
N 364543.977 , E 361661.885

0 2,000 4,000

SCALE: 1 " = 2,000 '

TITLE:

FIGURE 1
SITE LOCATION MAP

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY,
NEW JERSEY

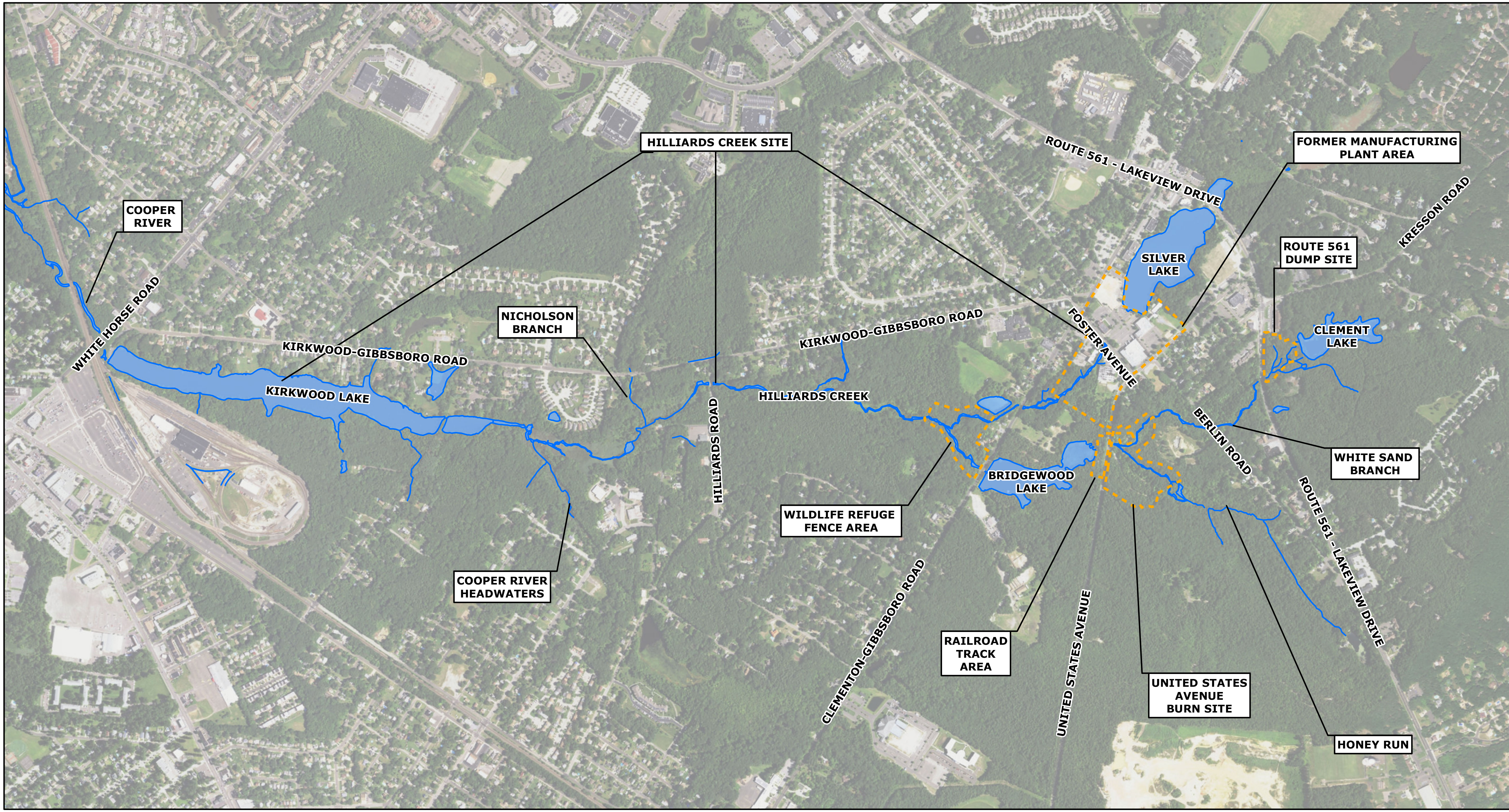
DATE:
01/17/2017

FILENAME:
204027_FIG1_BS_SITE_LOCATION.mxd

THE ELM GROUP
345 WALL STREET, PRINCETON, NEW JERSEY 08540
4936 YORK ROAD, SUITE 1000, HOLICONG, PENNSYLVANIA 18928
612 MAIN STREET, BOONTON, NEW JERSEY 07005
2436 EMRICK BOULEVARD, BETHLEHEM, PENNSYLVANIA 18020
www.exploreELM.com

SOURCE:
1. SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

G:\204027_Sherwin-Williams_Gibbsboro\DATA_MNGT\GIS\Map_Documents\Burn_Site\REPORT FIGURES\204027_FIG1_BS_SITE_LOCATION.mxd



LEGEND

SITE AREAS

WATER BODIES

STREAM CHANNEL

SOURCE:
1.SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY</ACP>
2. NJDEP OPEN WATER AREA OF CAMDEN COUNTY, NEW JERSEY 1986, DEPARTMENT OF ENVIRONMENTAL PROTECTION, 1998.

0 1,000 2,000

SCALE:1 " = 1,000 '

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY,
NEW JERSEY

DATE:
01/17/2017

TITLE:
FIGURE 2
SHERWIN-WILLIAMS GIBBSBORO SITE LOCATION MAP

FILENAME:
204027_FIG2_SW_SITE_LOCATION_MAP.mxd

THE ELM GROUP
345 WALL STREET, PRINCETON, NEW JERSEY 08540
4936 YORK ROAD, SUITE 1000, HOLICONG, PENNSYLVANIA 18928
612 MAIN STREET, BOONTON, NEW JERSEY 07005
2436 EMRICK BOULEVARD, BETHLEHEM, PENNSYLVANIA 18020
www.exploreELM.com

G:\204027_Sherwin-Williams_Gibbsboro\DATA_MNGT\GIS\Map_Documents\Burn_Site\REPORT FIGURES\204027_FIG2_SW_SITE_LOCATION_MAP.mxd

Legend

- Bridgewood Lake
- United States Avenue Burn Site
- Honey Run
- White Sand Branch
- Railroad Track Area
- Approximate Location of Culvert Under United States Avenue
- Fence Boundary
- Perennial Stream Channel

WESTON SOLUTIONS SM

Weston Solutions, Inc.

205 Campus Drive Edison, New Jersey 08837-3939
TEL: (732) 417-5800 Fax: (732) 417-5801
http://www.westonsolutions.com

REPORT DATE: February 2017	PROJECT MANAGER: S. Jones	CLIENT NAME: The Sherwin-Williams Company	DRAWING TITLE: UNITED STATES AVENUE BURN SITE KEY MAP
DRAWING: 19394_BS_Areas_Key_Map.mxd PATH: L:\SHERWIN\GIS\MXD\2017_02_BS_RIR\	CHECKED BY: A. Fischer		
REVISION No. 0	CONTRACT No. DELIVERY ORDER NO.	PROJECT NAME: United States Avenue Burn Site Remedial Investigation Report	
WORK ORDER No. 20076.022.086.0006	DRAWN/MODIFIED BY: P.DiTillio DATE CREATED: 2/3/2017		FIGURE: 3 SCALE: 1 " = 100 ' DATE: 2/28/2017

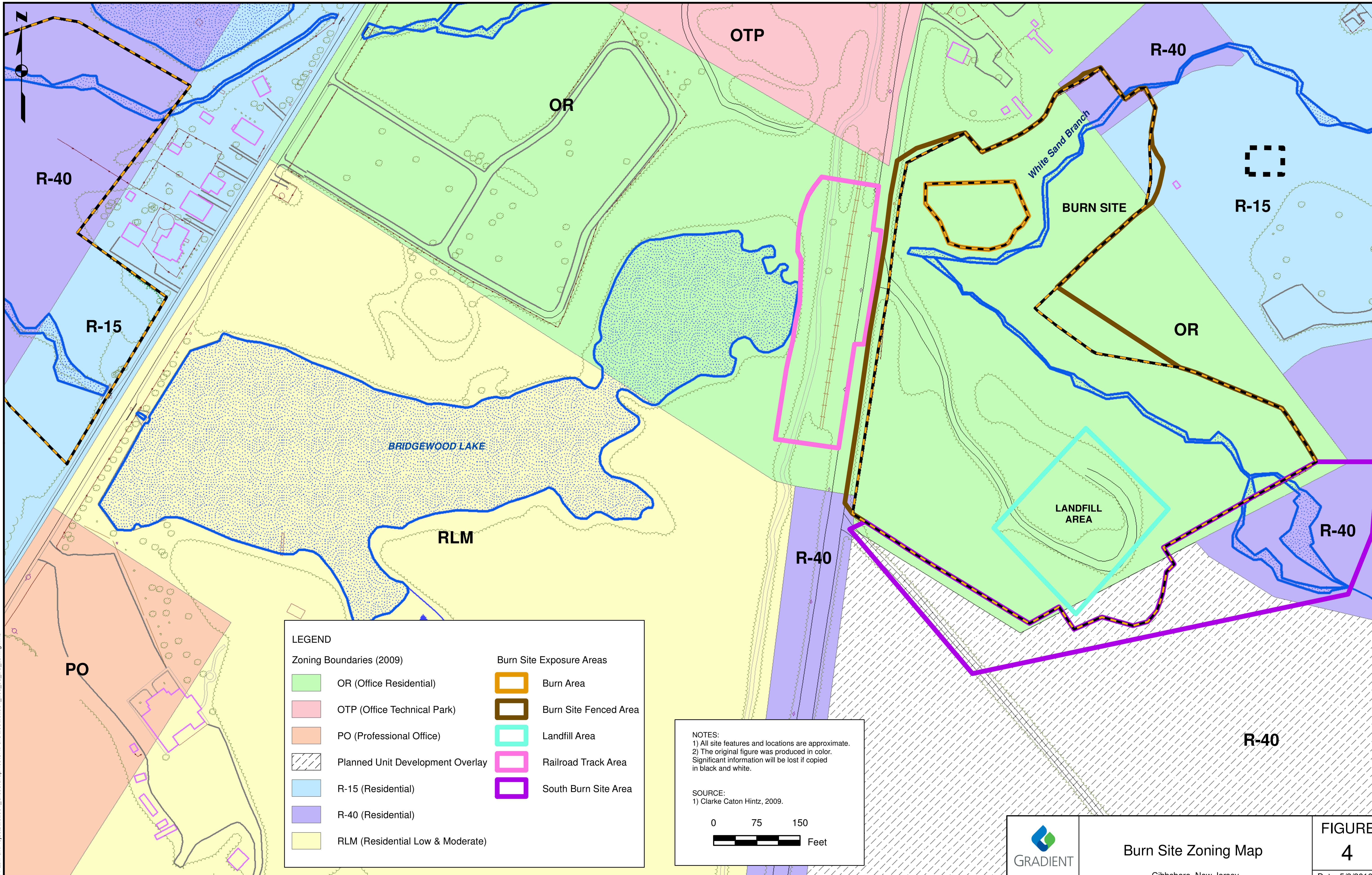
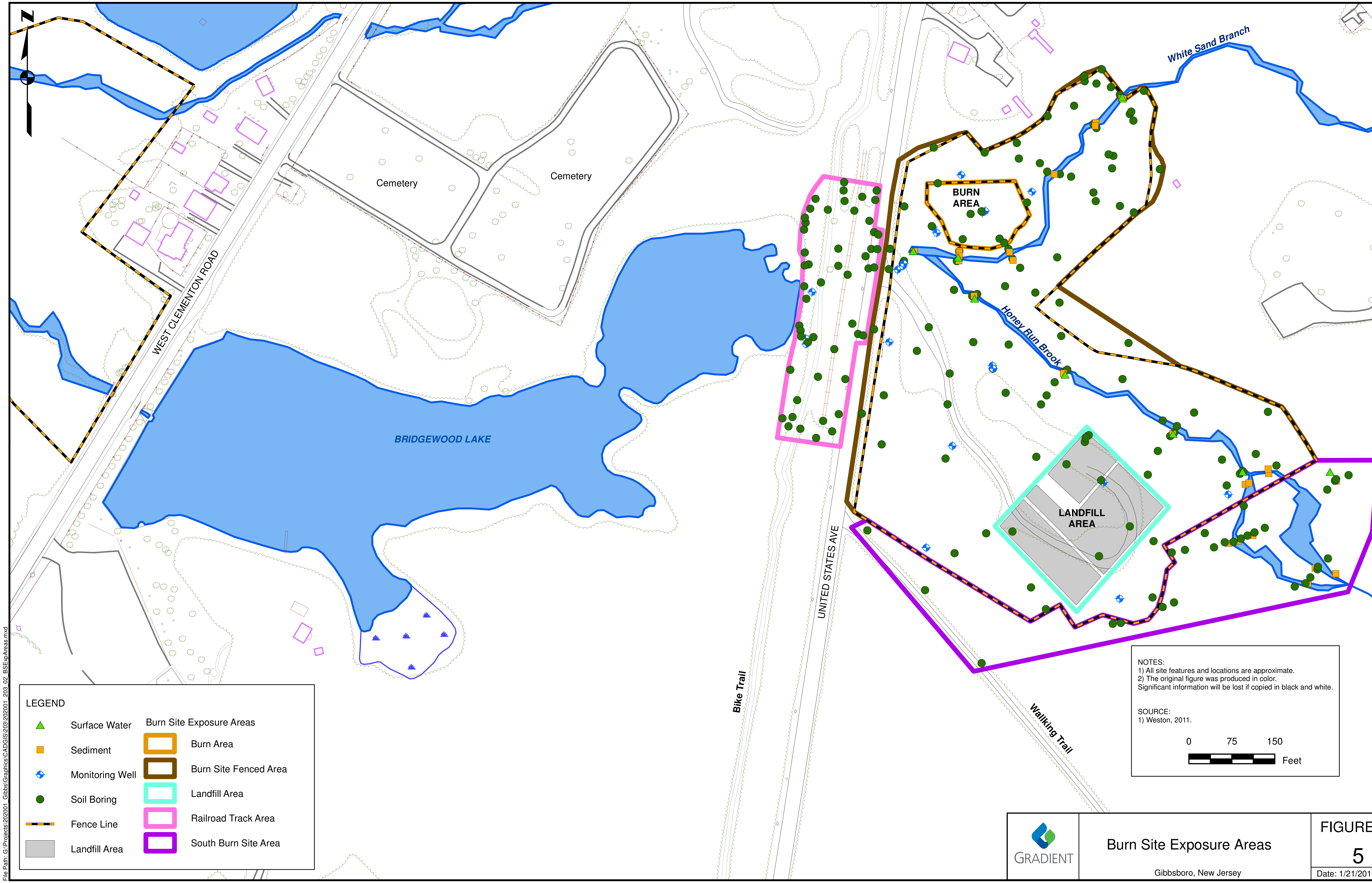


FIGURE 4
Burn Site Zoning Map

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\203\202001_203_03_BS_zoning.mxd



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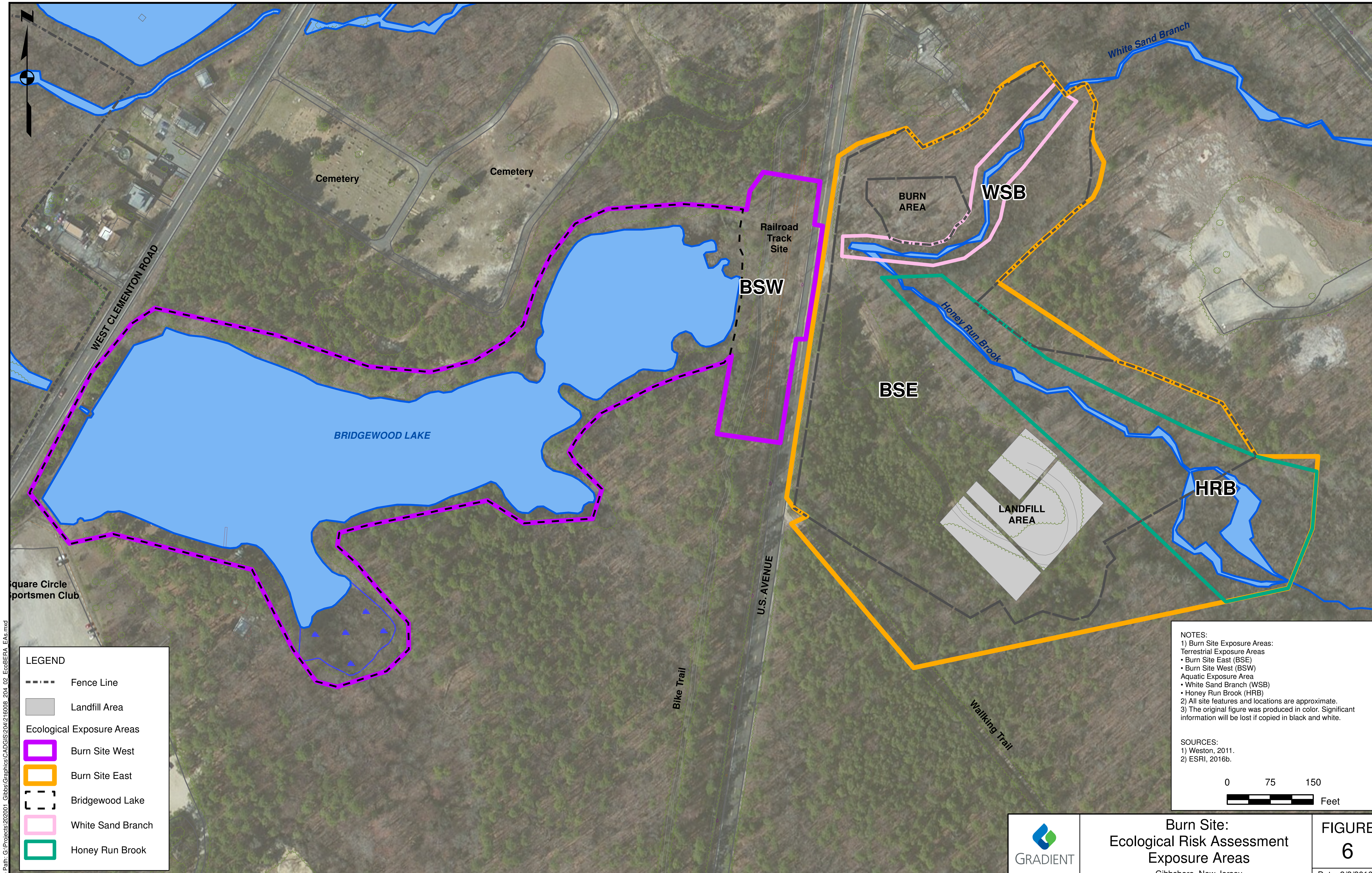


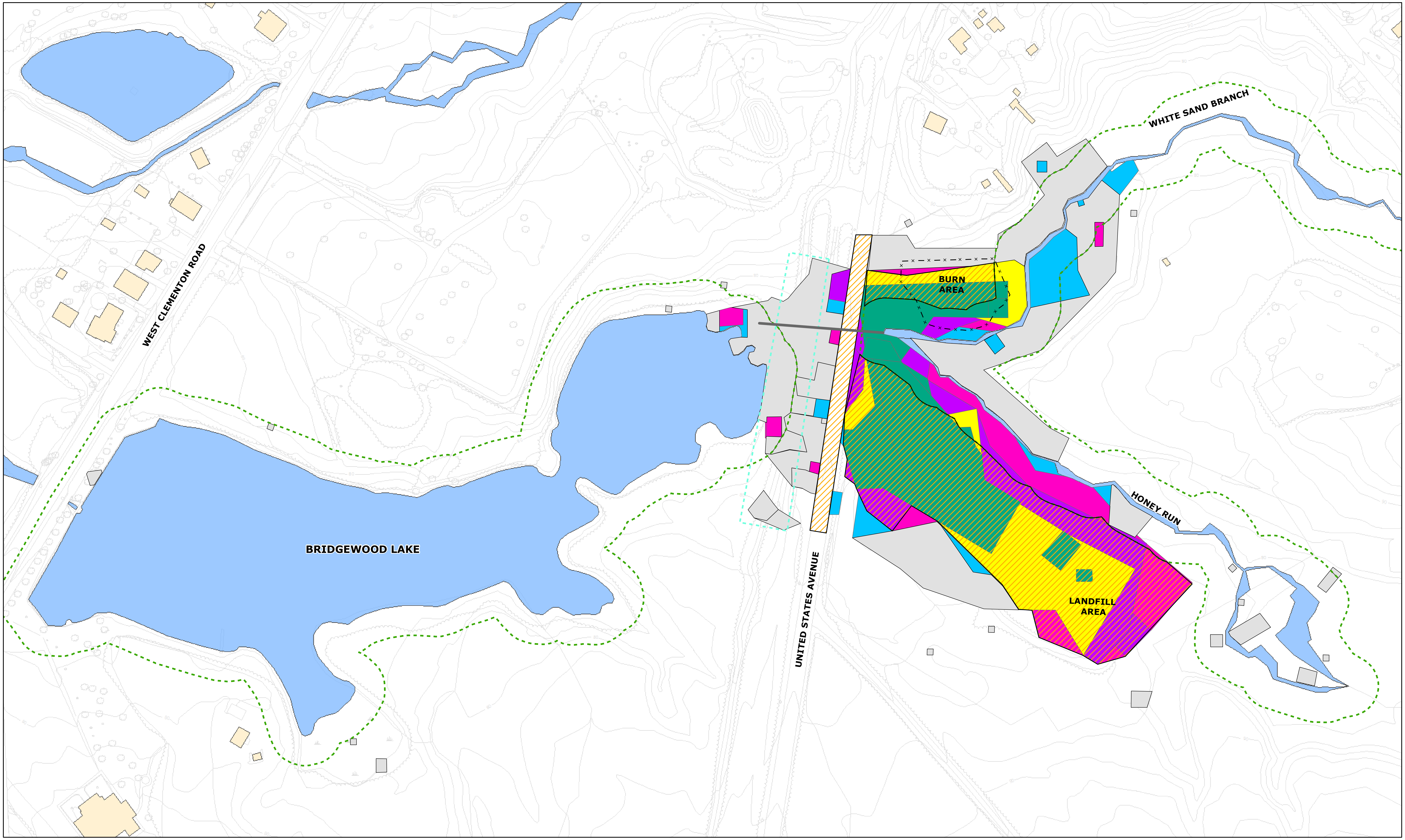
Burn Site:
Ecological Risk Assessment
Exposure Areas

Gibbsboro, New Jersey

FIGURE 6

Date: 2/2/2016

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\204\216008_204_02_EcoBERA_EAs.mxd



LEGEND

- PUBLIC ACCESS AREA
- RIPARIAN BUFFER (50 FEET)
- FENCE BOUNDARY
- AREAS TO BE CAPPED TO ADDRESS RDCSRS
- APPROXIMATE LOCATION OF CULVERT BENEATH U.S. AVENUE

REMOVAL AREAS

- 2 FT EXCAVATION DEPTH
- 4 FT EXCAVATION DEPTH
- 6 FT EXCAVATION DEPTH
- 8 FT EXCAVATION DEPTH
- 10 FT EXCAVATION DEPTH
- 12 FT EXCAVATION DEPTH

NOTES:

1.IN THE ECOLOGICAL HABITAT AREAS ALONG WHITE SAND BRANCH, HONEY RUN AND BRIDGEWOOD LAKE SURFICIAL SOIL (TOP 1 FOOT) EXCEEDING THE SOIL PRGS WOULD BE REMOVED. SUBSURFACE SOIL (DEEPER THAN 1 FOOT) EXCEEDING THE RDCSRS IN THESE AREAS WOULD ALSO BE REMOVED.

2.WEST OF U.S. AVENUE, SOIL OUTSIDE OF THE ECOLOGICAL HABITAT AREAS THAT EXCEEDS THE RDCSRS WOULD BE REMOVED.

3.ON THE BURN SITE SOIL OUTSIDE OF THE ECOLOGICAL HABITAT AREAS THAT EXCEEDS THE RDCSRS WOULD BE REMOVED TO THE DEPTH OF 6 FEET. LIMITED AREAS OF SATURATED SOIL THAT REPRESENT SOURCES OF GROUNDWATER CONTAMINATION FROM 6 TO 12 FEET WOULD BE REMOVED. SOIL AREAS WITH CONCENTRATIONS REMAINING IN PLACE EXCEEDING THE RDCSRS WILL BE CAPPED.

SOURCE:

1.BASEMAP, WESTON SOLUTIONS, 2016

0 100 200

SCALE: 1 " = 100 '

TITLE: FIGURE 7

SOIL ALTERNATIVE 4 – SOIL REMOVAL FOR HUMAN HEALTH AND ECOLOGICAL PROTECTION, GROUNDWATER SOURCE CONTROL, CAPPING AND INSTITUTIONAL CONTROLS

LOCATION:

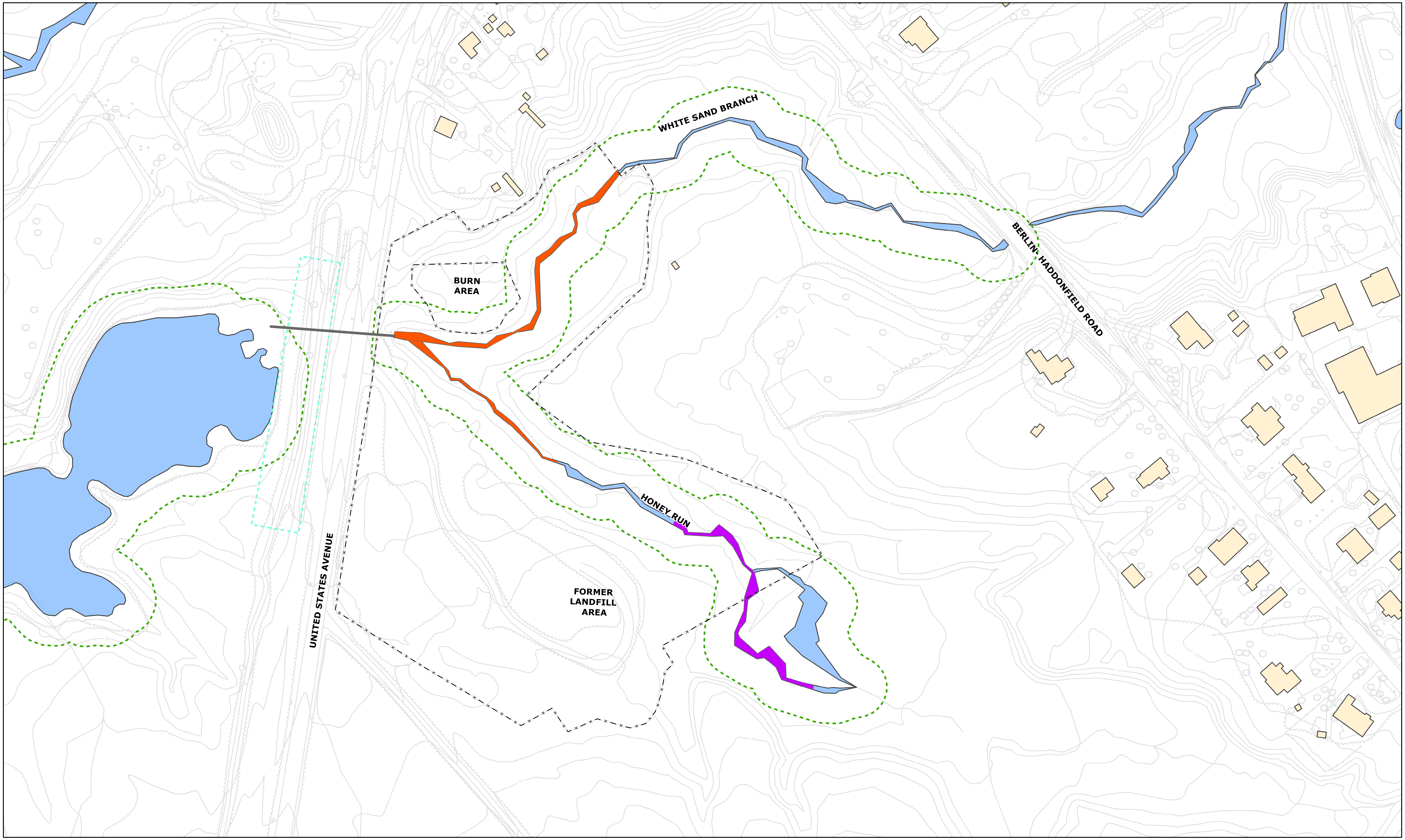
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY
NEW JERSEY

DATE: 06/28/2017

FILENAME: 204027_FIG23_BS_SOIL_ALTERNATE_4_REV2.mxd

THE ELM GROUP
345 WALL STREET, PRINCETON, NEW JERSEY 08540
4936 YORK ROAD, SUITE 1000, HOLICONG, PENNSYLVANIA 18928
612 MAIN STREET, BOONTON, NEW JERSEY 07005
2436 EMRICK BOULEVARD, BETHLEHEM, PENNSYLVANIA 18020
www.exploreELM.com

K:\204027_Sherwin-Williams_Gibbsboro\DATA_MANAGEMENT\GIS\Map_Documents\Burn_Site\REPORT FIGURES\204027_FIG23_BS_SOIL_ALTERNATE_4_REV2.mxd



LEGEND

PUBLIC ACCESS AREA

RIPARIAN BUFFER (50 FEET, APPROXIMATE)

FENCE BOUNDARY

2 FT EXCAVATION DEPTH

2.5 FT EXCAVATION DEPTH

APPROXIMATE LOCATION OF CULVERT BENEATH U.S. AVENUE

SOURCE:
1.BASEMAP, WESTON SOLUTIONS, 2016

0 100 200

SCALE: 1 " = 100 '

TITLE:
FIGURE 8
SEDIMENT ALTERNATIVE 4 - REMOVAL OF ALL SEDIMENT WITH CONTAMINANTS GREATER THAN PRGS

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY
NEW JERSEY

DATE: 01/18/2017

FILENAME: 204027_FIG25B_BS_SEDIMENT_ALTERNATE_4.mxd

THE ELM GROUP

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G:\204027_Sherwin-Williams_Gibbsboro\DATA_MNGT\GIS\Map_Documents\Burn_Site\REPORT FIGURES\204027_FIG25B_BS_SEDIMENT_ALTERNATE_4.mxd

APPENDIX II-A

ARAR TABLES

Table 1
Chemical-Specific Applicable or Relevant and Appropriate Requirements (ARARs)

Media	Authority	Citation	Law/Regulation	Description	ARAR Status
Surface Water	State of New Jersey	N.J.A.C 7:9B	Surface Water Quality Standards	Establishes the water quality standards for State's surface waters based on the type of surface water use including narrative and constituent-specific standards.	ARAR Applicable
Soil	State of New Jersey	N.J.A.C 7:26D	Soil Remediation Standards	Establishes the minimum residential and non-residential direct contact standards for soil remediation.	ARAR Applicable

Table 2
Location-Specific Applicable or Relevant and Appropriate Requirements (ARARs)

Authority	Citation	Law/Regulation	Description	ARAR Status
Federal	16 U.S.C. 1531 *et seq.* 50 C.F.R. §§ 17.21(c), 17.31(a)	Endangered Species Act	The Endangered Species Act provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the U.S. or elsewhere.	ARAR Potentially Applicable
Federal	16 U.S.C. § 662 40 C.F.R. 6.302(g)	Fish and Wildlife Coordination Act	Requires consideration of the effects of a proposed action on wetlands and areas affecting streams (including floodplains), as well as other protected habitats. Federal agencies must consult with the United States Fish and Wildlife Service (USFWS) and the appropriate state agency with jurisdiction over wildlife resources prior to issuing permits or undertaking actions involving the modification of any body of water (including impoundment, diversion, deepening, or otherwise controlled or modified for any purpose).	ARAR Applicable
State of New Jersey	N.J.A.C 7:5C	Endangered Plant Species Program	Details the protection of critical habitats of endangered and threatened species in New Jersey	ARAR Potentially Applicable
State of New Jersey	N.J.S.A. 13:9B-1 N.J.A.C. 7:7A	Freshwater Wetlands Protection Act	Regulates construction or other activities that will have an impact on wetlands	ARAR Applicable
State of New Jersey	N.J.S.A. 58:16A-50 N.J.A.C. 7:13	Flood Hazard Area Control Act	Regulates activities within flood hazard areas that will impact stream carrying capacity or flow velocity to avoid increasing impacts of flood waters, to minimize degradation of water quality, protect wildlife and fisheries, and protect and enhance public health and welfare	ARAR Potentially applicable

Authority	Citation	Law/Regulation	Description	ARAR Status
Federal	40 C.F.R. 6 Appendix A and 40 C.F.R. 9	Executive Order 11988, Floodplain Management	Directs federal agencies to evaluate the potential effects of actions that may be taken in a floodplain and to avoid, to the extent possible, long-term and short-term adverse effects associated with the occupancy and modification of floodplains, and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Applies to federally funded projects.	TBC
Federal	40 C.F.R. 6 Appendix A and 40 C.F.R. 9	Executive Order 11990, Protection of Wetlands	Directs that activities conducted by federal agencies avoid, to the extent possible, long-term and short-term adverse effects associated with the modification or destruction of wetlands. Federal agencies are to avoid direct or indirect support of new construction in wetlands when there are practical alternatives; harm to wetlands must be minimized when there is no practical alternative available. These considerations are applicable to any remedial work in wetlands.	TBC
Federal	OSWER Directive 9280.0-02	EPA's 1985 Policy, Floodplain/Wetlands Assessments for CERCLA	Superfund actions should meet the substantive requirements of E.O. 11988, E.O. 11990 and Appendix A of 40 CFR Part 6.	TBC

Table 3

Action-Specific Applicable or Relevant and Appropriate Requirements (ARARs)

Authority	Citation	Law/Regulation	Description	ARAR Status
Federal	CWA §404 40 C.F.R. Parts 230 to 233	CWA	Regulates the discharge of dredged and fill material into waters of the United States including wetlands and including return flows from such activity.	ARAR Applicable
Federal	42 U.S.C. § 6921 *et seq.*	Resource Conservation and Recovery Act (RCRA)	RCRA establishes requirements for generators, transporters and facilities that manage non- hazardous solid waste, and hazardous wastes, applicable to dredged material management: 40 C.F.R. 257 establishes criteria for use in determining which solid waste disposal facilities and practices pose a reasonable probability of adverse effects on health or the environment. 40 C.F.R. 262 provides general requirements for generators of hazardous waste including registration, manifesting, packaging, recordkeeping and accumulation time. 40 C.F.R. 264 and 265 regulate storage of hazardous waste. 40 C.F.R. 268 contains land disposal restrictions.	ARAR Applicable
Federal	49 U.S.C. §§ 1801-1819 49 C.F.R Parts 107, 171.1-172.604	Hazardous Waste Transportation	Regulates the transportation of hazardous materials, and includes the procedures for the packaging, labeling, manifesting, and transporting of hazardous waste to a licensed off-site disposal facility.	ARAR Applicable

Authority	Citation	Law/Regulation	Description	ARAR Status
State of New Jersey	N.J.A.C 7:8	Stormwater Management Rules	Contains general requirements for stormwater management plans and stormwater control ordinances. Provides the content requirements and procedures for the adoption and implementation of regional stormwater management plans and municipal stormwater management plans.	ARAR Potentially Applicable
State of New Jersey	N.J.A.C 7:14A	Pollutant Discharge Elimination System (NJPDES)	Establishes effluent discharge standards to protect water quality. N.J.A.C. 7:14, Subchapter 12, Appendix B identifies effluent standards (for specified constituents) for remediation projects.	ARAR Applicable
State of New Jersey	N.J.S.A. §13:1E-1, *et seq.* N.J.A.C 7:26	Solid Waste Management Act (NJSWMA) and Rules	Establishes standards and procedures pertaining to, among other things, the management, treatment and disposal of solid wastes. On September 14, 1998, EPA granted New Jersey full program determination of adequacy for all areas of its municipal solid waste landfill program.	ARAR Applicable
State of New Jersey	N.J.A.C 7:26G	Hazardous Waste Management	Procedure for identifying and listing hazardous wastes. Applies to any person who generates, transports, stores, treats or disposes of a hazardous waste. Establishes standards for disposal of hazardous wastes generated during remediation and the requirements for waste transporters, manifesting, and recordkeeping.	ARAR Applicable
State of New Jersey	N.J.A.C 7:26E-5	Technical Requirements for Site Remediation, May 2012	Sets forth technical requirements for site remediation including preliminary assessments, remedial investigations, remedial action work plans, remediation, post remediation monitoring and institutional controls.	ARAR Substantive requirements may be Relevant and Appropriate

Authority	Citation	Law/Regulation	Description	ARAR Status
State of New Jersey	N.J.S.A. § 26:2C *et seq.* N.J.A.C. 7:27	Air Pollution Control Act	Governs emissions that introduce contaminants into the ambient atmosphere for a variety of substances and from a variety of sources; controls and prohibits air pollution, particle emissions and toxic VOC emissions.	ARAR Potentially Applicable
State of New Jersey	N.J.S.A., §13:1g-1 *et seq.* N.J.A.C. 7:20	Noise Control	Regulates noise levels for certain types of activities and facilities such as commercial, industrial, community service and public service facilities. Relevant and appropriate for establishing allowable noise levels.	ARAR Relevant and Appropriate

ARAR – applicable or relevant and appropriate requirement
C.F.R. – Code of Federal Regulations
N.J.A.C. – New Jersey Administrative Code
N.J.S.A. – New Jersey Statutes Annotated
TBC – To Be Considered
U.S.C. – United States Code

APPENDIX II-B

RISK TABLES

Table 1
Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Sitewide Groundwater

Exposure Point	Chemical of Concern[1]	Concentration Detected (Qualifier) Min	Concentration Detected (Qualifier) Max	Concentration Units	Frequency of Detection	Exposure Point Concentration[2] (EPC)	Exposure Point Concentration Units	Statistical Measure
Tap Water (Sitewide)	Arsenic	0.00039(J)	1.7	mg/L	42/52	1.6	mg/L	95% Student's-t UCL
	Chromium*	0.00036(J)	0.01	mg/L	25/52	0.0077	mg/L	95% KM (t) UCL
	Cobalt	0.0012(J)	0.0241(J)	mg/L	15/52	0.0104	mg/L	95% KM (BCA) UCL
	Iron	0.0169(J)	77.3	mg/L	51/52	47	mg/L	95% Student's-t UCL
	Manganese	0.0008(J)	1.4	mg/L	48/52	1.1	mg/L	95% Student's-t UCL
	Benzo(a)pyrene	0.00012	0.0001	mg/L	2/52	0.0001	mg/L	Maximum Concentration
	Naphthalene	0.000019(J)	0.1	mg/L	21/52	0.065	mg/L	95% Student's-t UCL
	Pentachlorophenol	0.000022(J)	0.025	mg/L	18/45	0.025	mg/L	Maximum Concentration
	1,2,3-trimethylbenzene	0.0097	0.13	mg/L	7/52	0.13	mg/L	Maximum Concentration
	1,2,4-trimethylbenzene	0.0032	0.16	mg/L	6/52	0.16	mg/L	Maximum Concentration

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil (0-2 ft bgs)

Exposure Point	Chemical of Concern[1]	Concentration Detected (Qualifier) Min	Concentration Detected (Qualifier) Max	Concentration Units	Frequency of Detection	Exposure Point Concentration[2] (EPC)	Exposure Point Concentration Units	Statistical Measure
Surface soil on BA	Arsenic	7.45	6840(+)	mg/kg	5/5	6840	mg/kg	Maximum Concentration
	Cadmium	1.65(J)	196(J)	mg/kg	5/5	151	mg/kg	95% Student's-t UCL
	Cobalt	2.3(J)	40	mg/kg	5/5	29	mg/kg	95% Student's-t UCL
	Manganese	315	40500	mg/kg	5/5	40500	mg/kg	Maximum Concentration
	Zinc	1258	146000	mg/kg	5/5	99081	mg/kg	95% Student's-t UCL
Surface Soil on BFA	Arsenic	0.37(J)	1190(J+)	mg/kg	106/118	174	mg/kg	97.5% KM (Chebyshev) UCL
	Chromium (hexavalent)	43.7	254	mg/kg	2/13	49	mg/kg	95% KM (t) UCL (for Cr6)

Table 1
Summary of Chemicals of Concern and
Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Suspect Material

Exposure Point	Chemical of Concern	Concentration Detected (Qualifier)		Concentration Units	Frequency of Detection	Exposure Point Concentration[2] (EPC)	Exposure Point Concentration Units	Statistical Measure
		Min	Max					
Burn Site Suspect Material	Pentachlorophenol	6700	6700	mg/kg	1/1	6700	mg/kg	Maximum Concentration

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface and Subsurface Soils (0-10 ft bgs)

Exposure Point	Chemical of Concern[1]	Concentration Detected (Qualifier)		Concentration Units	Frequency of Detection	Exposure Point Concentration[2] (EPC)	Exposure Point Concentration Units	Statistical Measure
		Min	Max					
Soil on BA	Arsenic	0.88(J)	20800	mg/kg	17/17	14256	mg/kg	99% Chebyshev (Mean, Sd) UCL
	Manganese	5.6	40500	mg/kg	17/17	27662	mg/kg	99% Chebyshev (Mean, Sd) UCL
Soil on BFA	Arsenic	0.37(J)	5100	mg/kg	194/231	289	mg/kg	97.5% KM (Chebyshev) UCL

Footnotes:

* Total chromium data in groundwater conservatively assumed to be 100% in the hexavalent form.

(1) Lead was also identified as a site-related COC; the medium-specific EPCs for lead can be found in Table 7.

(2) The UCLs were calculated using EPA's ProUCL software (Version 5); when available, UCLs were used as EPCs.

Definitions:

" +" = Value is the average of a parent sample and a field duplicate sample
EPC = Exposure point concentration
ft bgs = Feet below ground surface
J = Estimated value (qualifier)
mg/kg = Milligrams per kilogram
mg/L = Milligrams per liter
UCL = Upper confidence limit of mean

BA= Burn Area
BFA= Burn Site Fenced Area

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

This table presents the chemicals of concern (COCs) along with exposure point concentrations (EPCs) for each of the COCs detected in site media (*i.e*., the concentration used to estimate the exposure and risk from each COC). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC and how it was derived.

Table 2
Selection of Exposure Pathways

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Soil	Soil (0-10 feet)	Burn Site Fenced Area (BFA) Landfill Area (LF) Burn Area (BA) South Burn Site Area (SBS) Rail Road Area (RR)	Utility Worker	Adult	Ingestion Dermal Inhalation	Quant	Exposure to soil during utility work
				Construction Worker	Adult	Ingestion Dermal Inhalation	Quant	Exposure to soil during future construction activities
Future	Soil	Soil (0-2 feet)	Burn Site Fenced Area (BFA) Landfill Area (LF) Burn Area (BA) South Burn Site Area (SBS) Rail Road Area (RR)	Outdoor Worker	Adult	Ingestion Dermal Inhalation	Quant	Exposure to soil adjacent to future office buildings
Current/Future	Soil	Soil (0-2 feet)	Burn Site Fenced Area (BFA) Landfill Area (LF) Burn Area (BA) South Burn Site Area (SBS) Rail Road Area (RR)	Recreator	Adult	Ingestion Dermal Inhalation	Quant	Exposure to soil while visiting site
					Adolescent	Ingestion Dermal Inhalation	Quant	Exposure to soil while visiting site
Future	Soil	Soil (0-2 feet)	Burn Site Fenced Area (BFA) Landfill Area (LF) Burn Area (BA) South Burn Site Area (SBS) Rail Road Area (RR)	Resident	Adult	Ingestion Dermal Inhalation	Quant	Exposure to soil at future residence
					Child	Ingestion Dermal Inhalation	Quant	Exposure to soil at future residence
Future	Suspect Material	Suspect Material	Burn Site Suspect Material (BSSM)	Resident	Adult	Ingestion Dermal Inhalation	Quant	Exposure to material while residing onsite
					Child	Ingestion Dermal Inhalation	Quant	Exposure to material while residing onsite
Future	Sediment	Sediment	Honey Run Brook, Burn Site Fenced Area (HRB-BFA) White Sand Branch (WSB) Honey Run Brook, South Burn Site Area	Resident	Adult	Ingestion Dermal	Quant	Exposure to sediment while wading
					Child	Ingestion Dermal	Quant	Exposure to sediment while wading
Current/Future	Sediment	Sediment	Honey Run Brook, Burn Site Fenced Area (HRB-BFA) White Sand Branch (WSB) Honey Run Brook, South Burn Site Area	Recreator	Adult	Ingestion Dermal	Quant	Exposure to sediment while wading
					Adolescent	Ingestion Dermal	Quant	Exposure to sediment while wading
Future	Surface Water	Surface Water	Honey Run Brook, Burn Site Fenced Area (HRB-BFA) White Sand Branch (WSB) Honey Run Brook, South Burn Site Area	Resident	Adult	Ingestion Dermal	Quant	Exposure to surface water while wading
					Child	Ingestion Dermal	Quant	Exposure to surface water while wading
Future	Surface Water	Surface Water	Honey Run Brook, Burn Site Fenced Area (HRB-BFA)	Recreator	Adult	Dermal	Quant	Exposure to surface water while wading
					Adolescent	Dermal	Quant	Exposure to surface water while wading
Future	Groundwater	Shallow Groundwater	Burn Site Fenced Area (BFA) South Burn Site Area (SBS)	Utility Worker	Adult	Dermal	Quant	Exposure to groundwater while performing subsurface construction activities
				Construction Worker	Adult	Dermal	Quant	Exposure to groundwater while performing subsurface construction activities
Future	Groundwater	Groundwater	Sitewide	Resident	Adult	Ingestion Dermal Inhalation	Quant	Exposure to groundwater at future residence
					Child	Ingestion Dermal Inhalation	Quant	Exposure to groundwater at future residence

Definitions:

Quant = Quantitative risk analysis performed

Summary of Selection of Exposure Pathways

This table describes the exposure pathways associated with the varying media (soil, sediment, surface water and groundwater) that were evaluated in the risk assessment along with the rationale for the inclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are also included.

Table 3
Noncancer Toxicity Data Summary

Pathway: Ingestion/Dermal

Chemicals of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD for Dermal[1]	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD Target Organ	Date of RfD Source Publication
Arsenic[2]	Chronic	3.0E-04	mg/kg-day	1	3.0E-04	mg/kg-day	Skin	3	IRIS	2/1/1993
Cadmium (soil/sediment)	Chronic	1.0E-03	mg/kg-day	0.025	2.5E-05	mg/kg-day	Renal	10	IRIS (Cadmium in soil)	2/1/1994
Chromium (hexavalent)	Chronic	3.0E-03	mg/kg-day	0.025	7.5E-05	mg/kg-day	None Observed	900	IRIS	9/3/1998
Cobalt	Chronic	3.0E-04	mg/kg-day	1	3.0E-04	mg/kg-day	Endocrine	3000	PPRTV	NA
Lead[3]	Chronic	NA	mg/kg-day	1	NA	mg/kg-day	*See Footnote 3*	NA	NA	NA
Iron	Chronic	7.0E-01	mg/kg-day	1	7.0E-01	mg/kg-day	Gastrointestinal	1.5	PPRTV	NA
Manganese	Chronic	2.4E-02	mg/kg-day	0.04	9.6E-04	mg/kg-day	Nervous system	1	IRIS[4]	5/1/1996
Zinc	Chronic	3.0E-01	mg/kg-day	1	3.0E-01	mg/kg-day	Hematological	3	IRIS	8/3/2005
Naphthalene	Chronic	2.0E-02	mg/kg-day	1	2.0E-02	mg/kg-day	Systemic	3000	IRIS	9/17/1998
Pentachlorophenol	Chronic	5.0E-03	mg/kg-day	1	5.0E-03	mg/kg-day	Hepatic	300	IRIS	9/30/2010
1,2,3-trimethylbenzene	Chronic	NA	NA	1	NA	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	Chronic	NA	NA	1	NA	NA	NA	NA	NA	NA

Pathway: Inhalation

Chemicals of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Inhalation RfD (If available)	Inhalation RfD Units (If available)	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfC Target Organ	Date of RfC Source Publication
Arsenic	Chronic	1.5E-05	mg/m^3	NA	NA	Respiratory	30	CalEPA	12/1/2008
Cadmium (soil/sediment)	Chronic	1.0E-05	mg/m^3	NA	NA	Renal	10	ATSDR	9/1/2012
Chromium (hexavalent)	Chronic	1.0E-04	mg/m^3	NA	NA	Respiratory	300	IRIS	9/3/1998
Cobalt	Chronic	6.0E-06	mg/m3	NA	NA	Respiratory	300	PPRTV	8/25/2008
Lead[3]	Chronic	NA	mg/m^3	NA	NA	*See Footnote 3*	NA	NA	NA
Iron	Chronic	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.0E-05	mg/m^3	NA	NA	Nervous System	1000	IRIS	12/1/1993
Zinc	Chronic	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	Chronic	3.0E-03	mg/m^3	NA	NA	Respiratory	3000	IRIS	9/17/1998
Pentachlorophenol	Chronic	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-trimethylbenzene	Chronic	5.0E-03	mg/m^3	NA	NA	Nervous System	3000	PPRTV	6/28/2010
1,2,4-trimethylbenzene	Chronic	7.0E-03	mg/m^3	NA	NA	Hematological	3000	PPRTV	6/11/2007

Table 3
Noncancer Toxicity Data Summary

Footnotes:

(1) Adjusted RfD for Dermal = Oral RfD x Oral Absorption Efficiency for Dermal (RAGS E, 2004)

(2) An oral relative bioavailability factor of 60% was used when quantifying risks from soil ingestion.

(3) Risks and hazards from lead exposure are not evaluated in the same manner as the other contaminants; See Table 7 for the summary of risks resulting from lead exposure.

(4) The RfD for manganese was based on non-diet contributions as recommended in the IRIS assessment and User's Guide of the RSL tables; a modifying factor of 3 was also used.

Definitions:

ATSDR= Agency for Toxic Substance and Disease Registry

CalEPA= California Environmental Protection Agency

IRIS = Integrated Risk Information System, U.S. EPA

mg/m^3 = Milligrams per cubic meter

mg/kg-day = Milligrams per kilogram per day

NA = Not available

PPRTV = Provisional Peer Reviewed Toxicity Values, U.S. EPA

RfC = reference concentration

RfD = reference dose

Table 4
Cancer Toxicity Data Summary

Pathway: Ingestion/ Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline	Source	Date of Slope Factor Source Publication
Arsenic[1]	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A	IRIS	4/10/1998
Cadmium (soil/sediment)	NA	NA	NA	NA	B1	IRIS (Cadmium in soil)	6/1/1992
Chromium (hexavalent)	5.0E-01	$(mg/kg\text{-}day)^{-1}$	2.0E+01	$(mg/kg\text{-}day)^{-1}$	NA	NJDEP	6/1/2009
Cobalt	NA	NA	NA	NA	NA	NA	NA
Lead[2]	NA	NA	NA	NA	B2	IRIS	11/1/1993
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	D	IRIS	12/1/1996
Zinc	NA	NA	NA	NA	Data inadequate	IRIS	8/3/2005
Benzo(a)pyrene	7.3E+00	$(mg/kg\text{-}day)^{-1}$	7.3E+00	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	11/1/1994
Naphthalene	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	4.0E-01	$(mg/kg\text{-}day)^{-1}$	4.0E-01	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	9/30/2010
1,2,3-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Cancer Slope Factor	Slope Factor Units	Weight of Evidence/ Cancer Guideline	Source	Date of Slope Factor Source Publication
Arsenic	4.3E-03	$(\mu g/m^3)^{-1}$	NA	NA	A	IRIS	4/10/1998
Cadmium (soil/sediment)	1.8E-03	$(\mu g/m^3)^{-1}$	NA	NA	B1	IRIS	6/1/1992
Chromium (hexavalent)	8.4E-02	$(\mu g/m^3)^{-1}$	NA	NA	A	IRIS	9/3/1998
Cobalt	9.0E-03	$(\mu g/m^3)^{-1}$	NA	NA	B2	PPRTV	8/25/2008
Lead[2]	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	NA	NA
Zinc	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	1.1E-03	$(\mu g/m^3)^{-1}$	NA	NA	B2	CalEPA	1/20/2011
Naphthalene	3.4E-05	$(\mu g/m^3)^{-1}$	NA	NA	B2	CalEPA	1/20/2011
Pentachlorophenol	5.1E-06	$(\mu g/m^3)^{-1}$	NA	NA	B2	CalEPA	1/20/2011
1,2,3-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	NA	NA	NA	NA	NA	NA	NA

Footnotes:

(1) An oral relative bioavailability factor of 60% was used when quantifying risks from soil ingestion.

(2) Risks and hazards from lead exposure are not evaluated in the same manner as the other contaminants; See Table 7 for the summary of risks resulting from lead exposure.

Definitions:

CalEPA= California Environmental Protection Agency
IRIS = Integrated Risk Information System, U.S. EPA
NA = Not available
PPRTV = Provisional Peer Reviewed Toxicity Values, U.S. EPA
$(\mu g/m^3)^{-1}$ = Per micrograms per cubic meter
$(mg/kg\text{-}day)^{-1}$ = Per milligrams per kilogram per day

EPA Weight of Evidence (EPA, 1986):

A = Human carcinogen
B1 = Probable Human Carcinogen - based on sufficient evidence of carcinogenicity in animals and limited evidence in humans
B2 = Probable Human Carcinogen - based on sufficient evidence of carcinogenicity in animals and inadequate or no evidence in humans
D = Not classifiable as to human carcinogenicity
Data inadequate = inadequate information to assess carcinogenic potential

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern at the Site. Toxicity data are provided for the ingestion, dermal and inhalation routes of exposure.

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Site Fenced Area (BFA)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	271	1.2	NA	272
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	3.4	0.01	NA	3.4
			Manganese	Nervous System	2.2	0.2	NA	2.5
			Naphthalene	Systemic/ Respiratory[2]	0.2	0.1	15.3	15.6
			Pentachlorophenol	Hepatic	0.2	0.9	NA	1.1
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	18.9	18.9
			1,2,4-Trimethylbenzene	Hematological	NA	NA	16.5	16.5
							Groundwater Hazard Index Total[1] =	**365**
Soil	Surface Soil	Surface Soil on BFA	Arsenic	Skin	4.4	0.53	0.003	4.9
							Soil Hazard Index Total[1] =	**9.3**
							Receptor Hazard Index[1] =	**375**
							Endocrine HI=	**30**
							Gastrointestinal HI=	**4.1**
							Hematological HI=	**17.9**
							Hepatic HI=	**1.9**
							Nervous System HI=	**22.6**
							Renal HI=	**1.1**
							Reproductive HI=	**1.3**
							Respiratory HI=	**15.4**
							Skin HI=	**278**

Scenario Timeframe: Future
Receptor Population: Resident at the Landfill Area (LF)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	271	1.2	NA	272
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	3.4	0.01	NA	3.4
			Manganese	Nervous System	2.2	0.2	NA	2.5
			Naphthalene	Systemic/ Respiratory[2]	0.2	0.1	15.3	15.6
			Pentachlorophenol	Hepatic	0.2	0.9	NA	1.1
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	18.9	18.9
			1,2,4-Trimethylbenzene	Hematological	NA	NA	16.5	16.5
							Groundwater Hazard Index Total[1] =	**365**
							Receptor Hazard Index[1] =	**369**
							Endocrine HI=	**30**
							Gastrointestinal HI=	**4.0**
							Hematological HI=	**18.2**
							Hepatic HI=	**2.0**
							Immunological HI=	**1.4**
							Nervous System HI=	**22.4**
							Renal HI=	**1.3**
							Reproductive HI=	**1.2**
							Respiratory HI=	**15.4**
							Skin HI=	**273**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Area (BA)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	271	1.2	NA	272
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	3.4	0.01	NA	3.4
			Manganese	Nervous System	2.2	0.2	NA	2.5
			Naphthalene	Systemic/ Respiratory[2]	0.2	0.1	15.3	15.6
			Pentachlorophenol	Hepatic	0.2	0.9	NA	1.1
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	18.9	18.9
			1,2,4-Trimethylbenzene	Hematological	NA	NA	16.5	16.5
Groundwater Hazard Index Total[1] =								**365**
Soil	Surface Soil	Surface Soil on BA	Arsenic	Skin/ Respiratory[2]	175	20.8	0.1	196
			Cadmium	Renal	1.9	0.2	0.004	2.1
			Iron	Gastrointestinal	1.7	NA	NA	1.7
			Manganese	Nervous System	21.6	NA	0.2	21.8
			Zinc	Hematological	4.2	NA	NA	4.2
Soils Hazard Index Total[1] =								**251**
Receptor Hazard Index[1] =								**616**
Endocrine HI=								**47**
Gastrointestinal HI=								**6.5**
Hematological HI=								**22.3**
Hepatic HI=								**1.9**
Nervous System HI=								**44.4**
Renal HI=								**3.8**
Reproductive HI=								**2.7**
Respiratory HI=								**15.6**
Skin HI=								**470**

Scenario Timeframe: Future
Receptor Population: Resident in contact with Burn Site Suspect Material (BSSM)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Suspect Material	Suspect Material	Sitewide	Pentachlorophenol	Hepatic	17	10.2	NA	27
Suspect Material Hazard Index Total[1] =								**27**
Receptor Hazard Index[1] =								**27**
Hepatic HI=								**27**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the South Burn Site Area (SBS)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	271	1.2	NA	272
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	3.4	0.01	NA	3.4
			Manganese	Nervous System	2.2	0.2	NA	2.5
			Naphthalene	Systemic/ Respiratory[2]	0.2	0.1	15.3	15.6
			Pentachlorophenol	Hepatic	0.2	0.9	NA	1.1
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	18.9	18.9
			1,2,4-Trimethylbenzene	Hematological	NA	NA	16.5	16.5
							Groundwater Hazard Index Total[1] =	**365**
							Receptor Hazard Index[1] =	**367**
							Endocrine HI=	**29**
							Gastrointestinal HI=	**4.0**
							Hematological HI=	**17.7**
							Hepatic HI=	**1.9**
							Nervous System HI=	**22.6**
							Reproductive HI=	**1.2**
							Respiratory HI=	**15.4**
							Skin HI=	**273**

Scenario Timeframe: Future
Receptor Population: Resident at the Railroad Track Area (RR)
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	271	1.2	NA	272
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	3.4	0.01	NA	3.4
			Manganese	Nervous System	2.2	0.2	NA	2.5
			Naphthalene	Systemic/ Respiratory[2]	0.2	0.1	15.3	15.6
			Pentachlorophenol	Hepatic	0.2	0.9	NA	1.1
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	18.9	18.9
			1,2,4-Trimethylbenzene	Hematological	NA	NA	16.5	16.5
							Groundwater Hazard Index Total[1] =	**365**
							Receptor Hazard Index[1] =	**372**
							Endocrine HI=	**33**
							Gastrointestinal HI=	**3.9**
							Hematological HI=	**17.8**
							Hepatic HI=	**1.9**
							Nervous System HI=	**22.5**
							Renal HI=	**1.0**
							Reproductive HI=	**1.6**
							Respiratory HI=	**15.4**
							Skin HI=	**273**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Site Fenced Area (BFA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	163	0.9	NA	164
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	2.0	0.01	NA	2.0
			Manganese	Nervous System	1.3	0.2	NA	1.5
			Naphthalene	Systemic/ Respiratory[2]	0.1	0.1	26.1	26.3
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	32.2	32.2
			1,2,4-Trimethylbenzene	Hematological	NA	NA	28.1	28.1
							Groundwater Hazard Index Total[1] =	**307**
							Receptor Hazard Index[1] =	**309**
							Endocrine HI=	**30**
							Gastrointestinal HI=	**4.1**
							Hematological HI=	**17.9**
							Hepatic HI=	**1.9**
							Nervous System HI=	**22.6**
							Renal HI=	**1.1**
							Reproductive HI=	**1.3**
							Respiratory HI=	**15.4**
							Skin HI=	**278**

Scenario Timeframe: Future
Receptor Population: Resident at the Landfill Area (LF)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	163	0.9	NA	164
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	2.0	0.01	NA	2.0
			Manganese	Nervous System	1.3	0.2	NA	1.5
			Naphthalene	Systemic/ Respiratory[2]	0.1	0.1	26.1	26.3
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	32.2	32.2
			1,2,4-Trimethylbenzene	Hematological	NA	NA	28.1	28.1
							Groundwater Hazard Index Total[1] =	**307**
							Receptor Hazard Index[1] =	**308**
							Endocrine HI=	**47**
							Gastrointestinal HI=	**2.2**
							Hematological HI=	**28.9**
							Hepatic HI=	**1.3**
							Nervous System HI=	**35.2**
							Respiratory HI=	**26.2**
							Skin HI=	**164**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	163	0.9	NA	164
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	2.0	0.01	NA	2.0
			Manganese	Nervous System	1.3	0.2	NA	1.5
			Naphthalene	Systemic/ Respiratory[2]	0.1	0.1	26.1	26.3
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	32.2	32.2
			1,2,4-Trimethylbenzene	Hematological	NA	NA	28.1	28.1
							Groundwater Hazard Index Total[1] =	**307**
Soil	Surface Soil	Surface Soil on BA	Arsenic	Skin/ Respiratory[2]	16.4	3.5	0.1	20
			Manganese	Nervous System	2.0	NA	0.2	2
							Soil Hazard Index Total[1] =	**42**
							Receptor Hazard Index[1] =	**348**
							Endocrine HI=	**65**
							Gastrointestinal HI=	**2.5**
							Hematological HI=	**29.3**
							Hepatic HI=	**1.2**
							Nervous System HI=	**37.5**
							Respiratory HI=	**26.3**
							Skin HI=	**184**

Scenario Timeframe: Future
Receptor Population: Resident in contact with Burn Site Suspect Material
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Suspect Material	Suspect Material	Suspect Material	Pentachlorophenol	Hepatic	2	1.7	NA	3
							Suspect Material Hazard Index Total[1] =	**3**
							Receptor Hazard Index[1] =	**3**
							Hepatic HI=	**3**

Scenario Timeframe: Future
Receptor Population: Resident at the South Burn Site Area (SBS)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	163	0.9	NA	164
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	2.0	0.01	NA	2.0
			Manganese	Nervous System	1.3	0.2	NA	1.5
			Naphthalene	Systemic/ Respiratory[2]	0.1	0.1	26.1	26.3
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	32.2	32.2
			1,2,4-Trimethylbenzene	Hematological	NA	NA	28.1	28.1
							Groundwater Hazard Index Total[1] =	**307**
							Receptor Hazard Index[1] =	**307**
							Endocrine HI=	**47**
							Gastrointestinal HI=	**2.2**
							Hematological HI=	**28.9**
							Nervous System HI=	**35.2**
							Respiratory HI=	**26.2**
							Skin HI=	**164**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Railroad Track Area (RR)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tapwater	Arsenic	Skin	163	0.9	NA	164
			Cobalt	Endocrine	2	0.003	NA	2
			Iron	Gastrointestinal	2.0	0.01	NA	2.0
			Manganese	Nervous System	1.3	0.2	NA	1.5
			Naphthalene	Systemic/ Respiratory[2]	0.1	0.1	26.1	26.3
			1,2,3-Trimethylbenzene	Nervous System	NA	NA	32.2	32.2
			1,2,4-Trimethylbenzene	Hematological	NA	NA	28.1	28.1
							Groundwater Hazard Index Total[1] =	**307**
							Receptor Hazard Index[1] =	**312**
							Endocrine HI=	**51**
							Gastrointestinal HI=	**2.2**
							Hematological HI=	**28.9**
							Nervous System HI=	**35.2**
							Respiratory HI=	**26.2**
							Skin HI=	**164**

Scenario Timeframe: Future
Receptor Population: Recreator at the Burn Area (BA)
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface Soil on BA	Arsenic	Skin/ Respiratory[2]	12.7	2.06	0.0193	14.8
			Manganese	Nervous System	1.6	NA	0.034321	1.6
							Soils Hazard Index Total[1] =	**20**
							Receptor Hazard Index[1] =	**20**
							Endocrine HI=	**3**
							Nervous System HI=	**2**
							Skin HI=	**15**

Scenario Timeframe: Future
Receptor Population: Recreator at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface Soil on BA	Arsenic	Skin/ Respiratory[2]	7.0	1.48	0.02	8.5
							Soils Hazard Index Total[1] =	**13**
							Receptor Hazard Index[1] =	**13**
							Endocrine HI=	**3**
							Skin HI=	**9**

Scenario Timeframe: Future
Receptor Population: Outdoor Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface Soil on BA	Arsenic	Skin/ Respiratory[2]	10.5	2.2	0.03	12.8
			Manganese	Nervous System	1.3	NA	0.05	1.4
							Soils Hazard Index Total[1] =	**18.9**
							Receptor Hazard Index[1] =	**18.9**
							Endocrine HI=	**3.9**
							Skin HI=	**12.9**

Table 5
Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Utility Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Soil	Soil on BA	Arsenic	Skin/ Respiratory[2]	3.2	0.52	0.003	3.7
							Soils Hazard Index Total[1] =	**4**
							Receptor Hazard Index[1] =	**4**
							Skin HI=	**3.7**

Scenario Timeframe: Future
Receptor Population: Construction Worker at the Burn Site Fenced Area (BFA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Soil	Soil on BFA	Arsenic	Skin/ Respiratory[2]	1.6	0.26	0.001	1.9
							Soils Hazard Index Total[1] =	**2.9**
							Receptor Hazard Index[1] =	**3.2**
							Skin HI=	**2.3**

Scenario Timeframe: Future
Receptor Population: Construction Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Hazard Quotient			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Soil	Soil on BA	Arsenic	Skin/ Respiratory[2]	81	12.9	0.07	94
			Manganese	Nervous System	3	NA	0.04	3
							Soils Hazard Index Total[1] =	**102**
							Receptor Hazard Index[1] =	**102**
							Endocrine HI=	**2**
							Nervous System HI=	**3**
							Skin HI=	**94**

Footnotes:
(1) The Hazard Index (HI) shown in this table represents the summed Hazard Quotients (HQs) for all chemicals of potential concern (COPCs) at the site, not just those requiring remedial action (*i.e*., the chemicals of concern [COCs]), which are identified in this table.
(2) RfD target organ or effect/ RfC target organ or effect

Definitions:
NA = Not available

Table 6
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Site Fenced Area (BFA) and Honey Run Brook (HRB)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	3.2E-02
			Chromium*	2.3E-04	7.5E-05	NA	3.0E-04
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	9.9E-04
			Naphthalene	NA	NA	9.0E-04	9.0E-04
			Pentachlorophenol	1.3E-04	4.8E-04	NA	6.1E-04
						Groundwater Risk Total[1]=	**3.5E-02**
Soil	Surface Soil	Surface Soil on BFA	Arsenic	2.2E-04	3.2E-05	8.20E-08	2.6E-04
			Chromium (hexavalent)	2.2E-04	NA	1.25E-06	2.2E-04
						Soil Risk Total[1]=	**5.2E-04**
						Total Risk[1]=	**3.5E-02**

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Site Fenced Area (BFA) and White Sand Branch (WSB)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	3.2E-02
			Chromium*	2.3E-04	7.5E-05	NA	3.0E-04
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	9.9E-04
			Naphthalene	NA	NA	9.0E-04	9.0E-04
			Pentachlorophenol	1.3E-04	4.8E-04	NA	6.1E-04
						Groundwater Risk Total[1]=	**3.5E-02**
Soil	Surface Soil	Surface Soil on BFA	Arsenic	2.2E-04	3.2E-05	8.20E-08	2.6E-04
			Chromium (hexavalent)	2.2E-04	NA	1.25E-06	2.2E-04
						Soil Risk Total[1]=	**5.2E-04**
						Total Risk[1]=	**3.5E-02**

Scenario Timeframe: Future
Receptor Population: Resident at the Landfill Area (LF)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	**3.2E-02**
			Chromium*	2.3E-04	7.5E-05	NA	**3.0E-04**
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	**9.9E-04**
			Naphthalene	NA	NA	9.0E-04	**9.0E-04**
			Pentachlorophenol	1.3E-04	4.8E-04	NA	**6.1E-04**
						Groundwater Risk Total[1]=	**3.5E-02**
						Total Risk[1]=	**3.5E-02**

Table 6
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident at the Burn Area (BA)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	3.2E-02
			Chromium*	2.3E-04	7.5E-05	NA	3.0E-04
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	9.9E-04
			Naphthalene	NA	NA	0.001	9.0E-04
			Pentachlorophenol	1.3E-04	4.8E-04	NA	6.1E-04
						Groundwater Risk Total=	**3.5E-02**
Soil	Surface Soil	Surface soil on BA	Arsenic	8.9E-03	1.2E-03	3.2E-06	1.0E-02
						Soil Risk Total[1]=	**1.0E-02**
						Total Risk[1]=	**4.5E-02**

Scenario Timeframe: Future
Receptor Population: Resident in contact with Burn Site Suspect Material (BSSM)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Suspect Material	Suspect Material	Suspect Material	Pentachlorophenol	3.9E-03	2.7E-03	3.8E-09	6.6E-03
						Suspect Material Risk Total[1]=	**6.6E-03**
						Total Risk[1]=	**6.6E-03**

Scenario Timeframe: Future
Receptor Population: Resident at the South Burn Site Area (SBS)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	3.2E-02
			Chromium*	2.3E-04	7.5E-05	NA	3.0E-04
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	9.9E-04
			Naphthalene	NA	NA	0.001	9.0E-04
			Pentachlorophenol	1.3E-04	4.8E-04	NA	6.1E-04
						Groundwater Risk Total=	**3.5E-02**
						Total Risk[1]=	**3.5E-02**

Scenario Timeframe: Future
Receptor Population: Resident at the Railroad Track Area (RR)
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Groundwater	Sitewide Groundwater	Tap Water	Arsenic	3.1E-02	1.7E-04	NA	3.2E-02
			Chromium*	2.3E-04	7.5E-05	NA	3.0E-04
			Benzo(a)pyrene	5.6E-05	9.3E-04	NA	9.9E-04
			Naphthalene	NA	NA	0.001	9.0E-04
			Pentachlorophenol	1.3E-04	4.8E-04	NA	6.1E-04
						Groundwater Risk Total=	**3.5E-02**
						Total Risk[1]=	**3.5E-02**

Table 6
Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Recreator at the Burn Area (BA)
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface soil on BA	Arsenic	8.2E-04	1.3E-04	1.8E-07	9.5E-04
						Soil Risk Total[1]=	**9.5E-04**
						Total Risk[1]=	**9.5E-04**

Scenario Timeframe: Future
Receptor Population: Recreator at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface soil on BA	Arsenic	1.2E-03	2.5E-04	4.6E-07	1.4E-03
						Soil Risk Total[1]=	**1.4E-03**
						Total Risk[1]=	**1.4E-03**

Scenario Timeframe: Future
Receptor Population: Outdoor Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Surface soil on BA	Arsenic	1.7E-03	3.6E-04	6.7E-07	2.1E-03
						Soil Risk Total[1]=	**2.1E-03**
						Total Risk[1]=	**2.1E-03**

Scenario Timeframe: Future
Receptor Population: Utility Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Soil on BA	Arsenic	5.2E-04	8.3E-05	6.2E-08	6.0E-04
						Soil Risk Total[1]=	**6.0E-04**
						Total Risk[1]=	**6.0E-04**

Scenario Timeframe: Future
Receptor Population: Construction Worker at the Burn Area (BA)
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Surface Soil	Soil on BA	Arsenic	5.2E-04	8.3E-05	6.2E-08	6.0E-04
						Soil Risk Total[1]=	**6.0E-04**
						Total Risk[1]=	**6.0E-04**

Footnotes:

* Total chromium data in groundwater conservatively assumed to be 100% in the hexavalent form.

(1) Total Risk values represent cumulative estimates from exposure to all chemicals of potential concern (COPCs) as identified in the RAGS D table 2 series, and not only from those identified in this table (i.e, the chemicals of concern [COCs]).

Table 7
Risk Characterization Summary - Lead
Medium-Specific Exposure Point Concentration and Resultant Risks

Scenario Timeframe: Future
Receptor Population: Resident (Child)

Exposure Area	Exposure Media	Lead Exposure Point Concentration[1] (EPC)	EPC Units	Geometric Mean Blood Lead Level (ug/dL)	Lead Risk[2]
Burn Site Fenced Area (BFA) and Honey Run Brook (HRB)	Soil (0-0.5ft) + Sediment (0-0.5ft) + Groundwater*	573	mg/kg	21 (5.9)*	94% (13%)*
Burn Site Fenced Area (BFA) and White Sand Branch (WSB)	Soil (0-0.5ft) + Sediment (0-0.5ft) + Groundwater*	814	mg/kg	22 (7.7)*	95% (28%)*
Landfill Area (LF)	Soil (0-0.5ft) + Groundwater*	957	mg/kg	22 (8.6)*	95% (38%)*
Burn Area (BA)	Soil (0-0.5ft) + Groundwater*	55,600	mg/kg	NA[3]	100%[3]
Burn Site Suspect Material (BSSM)	Suspect Material + Groundwater*	783	mg/kg	21 (7.4)*	95% (26%)*
Railroad Track Area (RR)	Soil (0-0.5ft) + Groundwater*	298	mg/kg	19 (3.6)*	92% (1%)*

Scenario Timeframe: Future
Receptor Population: Resident (Adult)

Exposure Area	Exposure Media	Lead Exposure Point Concentration[1] (EPC)	EPC Units	Geometric Mean Blood Lead Level (ug/dL)	Lead Risk[2]
Burn Area (BA)	Soil (0-2ft)	31,224	mg/kg	73	100%
Railroad Track Area (RR)	Soil (0-2ft)	2,015	mg/kg	5.6	12%

Scenario Timeframe: Future
Receptor Population: Recreator

Burn Area (BA)	Soil (0-2ft)	31,224	mg/kg	32	96%

Scenario Timeframe: Future
Receptor Population: Outdoor Worker

Exposure Area	Exposure Media	Lead Exposure Point Concentration[1] (EPC)	EPC Units	Geometric Mean Blood Lead Level (µg/dL)	Lead Risk[2]
Burn Area (BA)	Soil (0-2ft)	31,224	mg/kg	47	99%

Scenario Timeframe: Future
Receptor Population: Construction Worker

Exposure Area	Exposure Medium	Lead Exposure Point Concentration[1] (EPC)	EPC Units	Geometric Mean Blood Lead Level (ug/dL)	Lead Risk[2]
Burn Site Fenced Area (BFA)	Soil (0-10ft)	2,153	mg/kg	8.1	29%
Landfill Area (LF)	Soil (0-10ft)	4,055	mg/kg	14	67%
Burn Area (BA)	Soil (0-10ft)	22,020	mg/kg	73	100%
Railroad Track Area (RR)	Soil (0-10ft)	1,203	mg/kg	5.0	8%

Footnotes:
* Predicted blood lead level probabilities for the child resident includes exposure to sitewide groundwater using the lead EPC of 320 micrograms per liter (µg/L). Values provided in parentheses include results of the IEUBK model using the default drinking water lead concentration of 4 µg/L.
(1) The lead EPC in soil was the arithmetic mean of all samples collected from a given soil depth interval.
(2) Lead risks are expressed as the probability of having a blood lead level greater than 10 micrograms per deciliter (µg/dL). However, the current regional EPA risk reduction goal is to limit the probability of a child's blood lead concentration exceeding 5 µg/dL to 5% or less.
(3) The EPC is outside of the range of values for which the IEUBK has been calibrated and validated; thus, the model could not estimate a blood lead level. Based on the results for other exposure areas, the probability of exceeding the site risk reduction goal was estimated as 100%.

Definitions:
ft = feet below ground surface
IEUBK = Integrated Exposure Uptake Biokinetic
mg/kg = milligram per kilogram
NA = not available
µg/dL = microgram per deciliter

APPENDIX III

ADMINISTRATIVE RECORD INDEX

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/27/2017

REGION ID: 02

Site Name: UNITED STATES AVENUE BURN
CERCLIS ID: NJ0001120799
OUID: 02
SSID: 02GE
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
510504	7/27/2017	ADMINISTRATIVE RECORD INDEX FOR OU2 FOR THE UNITED STATES AVENUE BURN SITE	3	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
178408	09/30/1999	ADMINISTRATIVE ORDER ON CONSENT FOR REMEDIAL INVESTIGATION / FEASIBILITY STUDY FOR INDEX NO. II CERCLA-02-99-2035 FOR ROUTE 561, UNITED STATES AVENUE BURN AND SHERWIN-WILLIAMS/HILLIARDS CREEK SITE	65	Legal Instrument		FOX,JEANNE (US ENVIRONMENTAL PROTECTION AGENCY)|MUSZYNSKI,WILLIAM,J (US ENVIRONMENTAL PROTECTION AGENCY)
473199	09/01/2016	HUMAN HEALTH RISK ASSESSMENT (HHRA) FOR THE UNITED STATES AVENUE BURN SITE	1832	Report	(THE SHERWIN-WILLIAMS COMPANY)	(GRADIENT CORPORATION)
473197	09/15/2016	TRANSMITTAL OF THE REVISED HUMAN HEALTH RISK ASSESSMENT FOR THE UNITED STATES AVENUE BURN SITE	1	Letter	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)
473198	09/15/2016	GRADIENT RESPONSE TO EPA COMMENTS DATED 08/10/2016 REGARDING THE REVISED 05/04/2016 HUMAN HEALTH RISK ASSESSMENT FOR THE UNITED STATES AVENUE BURN SITE	3	List/Index	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)
473191	10/04/2016	COMMENTS AND RESPONSE OF THE REVISED 10/04/2016 BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) FOR THE UNITED STATES AVENUE BURN SITE	4	List/Index	(US ENVIRONMENTAL PROTECTION AGENCY)	(THE SHERWIN-WILLIAMS COMPANY)
473188	10/17/2016	EPA APPROVAL OF THE REVISED SEPTEMBER 2016 HUMAN HEALTH RISK ASSESSMENT HHRA) FOR THE UNITED STATES AVENUE BURN SITE	1	Letter	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)	PUVOGEL,RICHARD (US ENVIRONMENTAL PROTECTION AGENCY)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/27/2017

REGION ID: 02

Site Name: UNITED STATES AVENUE BURN
CERCLIS ID: NJ0001120799
OUID: 02
SSID: 02GE
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
473193	11/01/2016	COMMENTS AND RESPONSE OF THE REVISED NOVEMBER 2016 REMEDIAL INVESTIGATION REPORT FOR THE UNITED STATES AVENUE BURN SITE	6	List/Index	(US ENVIRONMENTAL PROTECTION AGENCY)	(THE SHERWIN-WILLIAMS COMPANY)
473190	11/01/2016	BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) FOR THE UNITED STATES AVENUE BURN SITE	2166	Report	(THE SHERWIN-WILLIAMS COMPANY)	(GRADIENT CORPORATION)
473192	12/05/2016	TRANSMITTAL OF THE REVISED BASELINE ECOLOGICAL RISK ASSESSMENT FOR THE UNITED STATES AVENUE BURN SITE	1	Letter	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)
473187	12/12/2016	EPA APPROVAL OF THE REVISED 12/05/2016 BASELINE ECOLOGICAL RISK ASSESSMENT (BERA) FOR THE UNITED STATES AVENUE BURN SITE	2	Letter	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)
473196	02/01/2017	REMEDIAL INVESTIGATION REPORT OU1 FOR THE UNITED STATES AVENUE BURN SITE	1259	Report	(THE SHERWIN-WILLIAMS COMPANY)	(WESTON SOLUTIONS)
473194	02/28/2017	CORRESPONDENCE REGARDING SUBMITTAL OF THE REVISED REMEDIAL INVESTIGATION REPORT FOR THE UNITED STATES AVENUE BURN SITE	2	Letter	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)
473301	05/04/2017	US EPA APPROVAL OF THE FEBRUARY 2017 REMEDIAL INVESTIGATION REPORT OU2 FOR THE UNITED STATES AVENUE BURN SITE	1	Letter	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)	KLIMCSAK,RAYMOND (US ENVIRONMENTAL PROTECTION AGENCY)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

07/27/2017

REGION ID: 02

Site Name: UNITED STATES AVENUE BURN
CERCLIS ID: NJ0001120799
OUID: 02
SSID: 02GE
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
457961	06/01/2017	US EPA COMMENT LETTER ON THE DRAFT JANUARY 2017 FEASIBILITY STUDY FOR OU2 FOR THE UNITED STATES AVENUE BURN SITE	28	Letter		(US ENVIRONMENTAL PROTECTION AGENCY)
457959	06/01/2017	TRANSMITTAL OF THE FEASIBILITY STUDY FOR OU2 FOR THE UNITED STATES AVENUE BURN AND THE SHERWIN-WILLIAMS/HILLARDS CREEK SITE	1	Letter	NACE,JULIE (US ENVIRONMENTAL PROTECTION AGENCY)	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)
457960	06/01/2017	FEASIBILITY STUDY FOR OU2 FOR THE UNITED STATES AVENUE BURN SITE	266	Letter	(THE SHERWIN-WILLIAMS COMPANY)	(THE ELM GROUP INCORPORATED)
503735	07/06/2017	US EPA APPROVAL OF THE REVISED FEASIBILITY STUDY DATED 06/01/2017 WITH ONE EXCEPTION FOR THE UNITED STATES AVENUE BURN SITE	2	Letter	STROEBEL,KENNETH (THE SHERWIN-WILLIAMS COMPANY)	NACE,JULIE (US ENVIRONMENTAL PROTECTION AGENCY)
510561	07/20/2017	PROPOSED PLAN FOR OU2 FOR THE UNITED STATES AVENUE BURN SITE	28	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)

APPENDIX IV

STATE LETTER OF CONCURRENCE

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Site Remediation & Waste Management Program
Mail Code 401-406
P.O. Box 420
Trenton, New Jersey 08625-0420
Telephone: 609-292-1250

BOB MARTIN
Commissioner

SEP 27 2017

Mr. John Prince, Acting Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency Region II
290 Broadway
New York, NY 10007-1866

RE: Sherwin-Williams Sites – United States Avenue Burn Site
Gibbsboro, Camden County, New Jersey
PI No. G000004382, EA No. RPC000005

Dear Mr. Prince:

The New Jersey Department of Environmental Protection (Department) has reviewed the Record of Decision for the United States Avenue Burn Site, Operable Unit 2, prepared by the U.S. Environmental Protection Agency (EPA) Region II, which addresses soil, sediments and surface water.

The Preferred Alternative includes:

- Soil excavation, with capping and institutional controls as needed.
- Sediment excavation and surface water monitoring.

The Department concurs with the selected remedy for sediment and surface water and with the preferred alternative for soil on those properties that will not require a deed notice. However, in regards to properties where the selected remedy for soil includes capping and deed notices, the Department cannot concur with the selected remedy until property owner consent has been obtained. If property owner consent is obtained, the Department will concur with the overall selected remedy.

Should you wish to discuss this matter further please feel free to contact me at (609) 292-1250.

Sincerely,

Mark J. Pedersen
Assistant Commissioner

CC: Lynn Vogel, NJDEP, BCM

APPENDIX V

RESPONSIVENESS SUMMARY

APPENDIX V

RESPONSIVENESS SUMMARY

Operable Unit 2 of the United States Avenue Burn Site

Gibbsboro, New Jersey

INTRODUCTION

This Responsiveness Summary provides a summary of the public's comments and concerns regarding the Proposed Plan for Operable Unit 2 of the United States Avenue Burn Superfund Site ("Site") and EPA's responses to those comments.

All comments summarized in this document have been considered in EPA's final decision for the selection of the cleanup response for the Site. This Responsiveness Summary is divided into the following sections:

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

This section provides the history of the community involvement and interests regarding the Site.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES

This section contains summaries of oral and written comments received by EPA at the public meeting and during the public comment period, and EPA's responses to these comments.

The last section of this Responsiveness Summary includes attachments, which document public participation in the remedy selection process for this Site. They are as follows:

Attachment A contains the Proposed Plan that was distributed to the public for review and comments;

Attachment B contains the public notices that appeared in the Courier-Post

Attachment C contains the transcripts of the public meeting; and

Attachment D contains the public comments received during the public comment period. (Note: personal information, such as email addresses, home addresses, and phone numbers contained in the letters and emails were redacted to protect the privacy of the commenters).

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

The subject of this Record of Decision and Responsiveness Summary is the second Operable Unit (OU2) of the United States Avenue Burn Superfund Site located in Gibbsboro, New Jersey. The United States Avenue Burn Superfund Site along with the Sherwin-Williams/Hilliards Creek Superfund Site and the Route 561 Dump Site comprise the three Sites and are collectively referred to as the "Sherwin-Williams Sites" located in Gibbsboro and Voorhees, New Jersey. Public interest in the "Sherwin-Williams Sites" has been high.

EPA has held public meetings for these Sites for many years. On July 27, 2017, EPA released the Proposed Plan and supporting documentation for the cleanup response for OU2 of the United States Avenue Burn Site to the public for comment. EPA made these documents available to the public in the administrative record repositories maintained at the EPA Region 2 office (located at 290 Broadway, New York, New York), the Gibbsboro Hall/Library (49 Kirkwood Road, Gibbsboro, New Jersey) and the M. Allan Vogelson Regional Branch Library – Voorhees (203 Laurel Road, Voorhees, New Jersey). These documents were also available online (www.epa.gov/superfund/us-avenue-burn). EPA published a notice of availability for these documents in the Courier-Post and opened a public comment period from July 27, 2017 to August 28, 2017.

On August 10, 2017, EPA held a public meeting at the Gibbsboro Senior Center at 250 Haddonfield-Berlin Road in Gibbsboro to discuss the Proposed Plan for OU2 of the United States Avenue Burn Superfund Site. The purpose of this meeting was to inform local officials and interested citizens about the Superfund process, to present the Proposed Plan for the Site and to respond to questions. At the meeting, EPA reviewed the history of the Site, the results of the investigation of contamination at the Site, and details about the Proposed Plan before taking questions from meeting attendees. The transcript of this public meeting is included in this Responsiveness Summary as Attachment C.

During the public comment period, EPA received a request to extend the public comment period. EPA granted the request and extended the public comment period thirty days. EPA issued a press release and placed a public notice in the Courier-Post announcing the extension of the public comment period to September 27, 2017.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES

A. SUMMARY OF QUESTIONS AND EPA'S RESPONSES FROM THE PUBLIC MEETING CONCERNING THE UNITED STATES AVENUE BURN SITE – AUGUST 10, 2017. A public meeting was held August 10, 2017, at 7:00 pm at the Gibbsboro Senior Center, 250 Haddonfield-Berlin Road, Gibbsboro, New Jersey. Following a brief presentation of the investigation findings, EPA presented the Proposed Plan and preferred alternative for the Burn Site, received comments from interested citizens, and responded to questions regarding the remedial alternatives under consideration. Comments and questions raised by the public following EPA's presentation are categorized by relevant topics and presented as follows:

Comment #1: One commenter asked if United States Avenue will act as a cap and if it would be possible to install sewer utilities beneath United States Avenue.

EPA Response: The asphalt and the underlying roadbed beneath United States Avenue will serve as a cap to protect against exposures to contaminants that exceed residential cleanup standards. Although it is not expected that residential development will take place within the footprint of United States Avenue, a deed notice for United States Avenue will outline the necessary steps needed to be taken if it becomes necessary to access the area beneath the asphalt for utility installation. The overall intent of the deed notice is to protect against soils exceeding residential standards beneath United States Avenue from being used as fill for residential properties.

Comment #2: One commenter asked about residential property tax abatements.

EPA Response: Local and state tax authorities are responsible for all appraisal activities in the community. It is beyond EPA's authority to appraise property or adjust tax status, and EPA does not request tax authorities to re-assess properties. Property owners may want to consult with local government officials about the possibility of property tax abatements or adjustments, based on impacts on property values from pollution concerns; however, this is beyond the authority of the federal government.

Comment #3: Several commenters asked about the Superfund process as it has been applied to the entire area affected by Sherwin-Williams. These questions included inquiries about the timeline for the different Record of Decisions, and remediation activities for the cleanup of Kirkwood Lake.

EPA Response: EPA established the remedial Investigation and Feasibility Study as part of the Superfund process for gathering the information necessary to select a remedy that is appropriate for the Site and to fulfill statutory mandates.

EPA also established a two-step remedy selection process, in which a preferred remedial action is presented to the public for comment in a Proposed Plan, which summarizes preliminary conclusions as to why that option appears most favorable based on the information available and considered during the Feasibility Study. Following receipt and evaluation of public comments on the Proposed Plan, EPA makes a final decision and documents the selected remedy in a Record of Decision.

Beginning 2015, EPA committed to issuing a Record of Decision each year to address the Sherwin-Williams Sites. In 2015, a Record of Decision was issued for the residential properties associated with the Sherwin-Williams Sites. The selected remedy for the residential properties is currently in remedial design and remedial action. Eight (8) residential properties have been cleaned up and approximately fifty (50) more residential properties are in the design phase. In 2016, EPA issued a Decision Document which documented the response action for the Route 561 Dump Site soil and sediment. The selected response action for the Route 561 Dump Site is currently in the remedial design stage. This Record of Decision, for the United States Avenue Burn Site soils, sediment and surface water, will be signed in September 2017. In 2018, a Record of Decision is planned for the Former Manufacturing Plant Area. In 2019, a Record of Decision is planned for the Waterbodies. Both the Former Manufacturing Plant and Waterbodies are in the remedial Investigation phase. Each of these components of the Sherwin-Williams Sites are progressing through the Superfund process concurrently with each component at a different steps in the process.

Comment #4: One commenter asked about of the discovery of the Burn Site.

EPA Response: New Jersey Department of Environmental Protection inspected the Burn Site in 1974. This led to an NJDEP investigation and an NJDEP Administrative Order for Sherwin-Williams to remove sludge and contaminated soil from the Burn Site Landfill Area in 1978. This was the earliest NJDEP investigation and removal action for the Burn Site.

Comment #5: One commenter asked about the timeline for the completion of remediation for the Burn Site.

EPA Response: After the Record of Decision is issued for the Burn Site, Sherwin-Williams will be offered an opportunity to conduct the remedial design and remedial action for the selected remedy. If Sherwin-Williams agrees to conduct the work, EPA will enter into negotiations with Sherwin-Williams to reach an agreement on the terms and conditions under which the work will be conducted. The terms and conditions would be specified in a legal instrument (Administrative Order on Consent or a judicial Consent Decree). There is no specific time limit for this negotiation, however negotiations at similar sites have generally taken six months to a year to complete. Remedial design is expected to take eighteen months followed by remedial action which is estimated to take approximately one year. The estimated time frame for remedial action will be refined during the remedial design.

Comment #6: One commenter asked about the short term risks during construction of the selected remedy.

EPA Response: During the remedial action phase, short term risks to Site workers and the surrounding community may include exposure to airborne dust and exposure to soil and water from erosion. Protective measures for both of these risks will be put in place during implementation of the remedy.

The design of the remedial action will specify methods to be used to suppress, control and monitor dust. EPA will conduct oversight of the air monitoring work and will review air monitoring data to ensure protectiveness. The design will also specify methods to control erosion in accordance with state and local requirements. EPA will conduct oversight of the water quality monitoring and will review water quality monitoring data to ensure protectiveness.

This monitoring will ensure that contamination does not migrate out of the remediation area during construction. Sherwin-Williams will be required to submit a health and safety plan to protect workers, and the surrounding community, during construction.

Comment #7: A commenter asked if the residential properties were safe as they wait for remediation. In addition, the commenter wanted to know if the list of properties checked for contamination was publicly available. The commenter also asked how an owner was notified if a residential property was found to have the contamination.

EPA Response: EPA's decision to take action is based on the current and potential risk should long term exposure occur. This risk is determined during the risk assessment. The owners of each residential property investigated were provided analytical results of sampling conducted on their property, along with the conclusions of the human health risk assessment for their property. Further, the owners were advised of ways to reduce exposure, or direct contact with potentially contaminated media while the remedial action is being implemented.

The properties affected by the contamination are listed, but actual addresses are protected and not released, in the Residential Operable Unit 1 Remedial Investigation Report and Feasibility Study. These documents are available to the public in the Administrative Record and can be found here: https://www.epa.gov/superfund/sherwin-williams

Prior to initial sampling of the soil at a residential property, property owners are first contacted and asked for permission to access their property to conduct soil sampling. During these initial meetings, the schedule for sampling and providing sample results to residents is usually discussed with property owners.

Comment #8: One commenter asked about EPA policy for notification of local residents about information and issues pertaining to Superfund Sites.

EPA Response: As legally required, EPA publishes public notices in the local newspaper in advance of any public meeting or public comment period. In accordance with the National Contingency Plan (NCP), EPA has Community Involvement Coordinators for every Superfund Site. This coordinator, as well as the Remedial Project Manager, keeps the community informed.

Comment #9: One commenter asked about the extent of lead and arsenic contamination throughout the Burn Site.

EPA Response: The most highly contaminated soil was found at three locations within the Burn Site Fenced Area. These locations are the Landfill Area, White Sand Branch floodplain and the Burn Area. Contamination in soil is generally found at depths down to 8 feet but can be found in areas down to 28.5 feet deep. The concentration of lead in soils range from less than the NJDEP residential standard of 400 milligrams/kilogram (mg/kg) to levels exceeding over 20,000 mg/kg in the three areas with the highest contamination (Landfill, White Sand Branch Floodplain and the Burn Area). The concentration of arsenic in soil ranges from less than the NJDEP residential standard of 19 mg/kg to levels exceeding 1,000 mg/kg in the Burn Area.

Sediment samples were taken from more than 30 locations in Honey Run within the Fenced Area and to the southeast outside the Fenced Area and the entirety of White Sand Branch located within the Fenced Area. Lead and arsenic were found most frequently and at the greatest concentrations above the NJDEP lowest effect levels for ecological receptors of 31 mg/kg for lead and 6 mg/kg for arsenic. Lead and arsenic exceedances were found in sediment throughout Honey Run and White Sand Branch. The concentration of lead varies from below the lowest effect level for ecological receptors to 11,000 mg/kg. The arsenic levels varied from below the lowest effects level for ecological receptors to over 500 mg/kg. For both metals, the highest values were found just south of the Burn Area.

More detailed information on the extent of contamination within the United States Avenue Burn Site is documented within the Remedial Investigation Report. This report is a public record and may be accessed here: https://www.epa.gov/superfund/us-avenue-burn

Comment #10: One commenter asked about the cooperation of the local government with regard to the cleanup efforts.

EPA Response: EPA and Sherwin-Williams work closely with the local government of Gibbsboro and will continue to do so throughout the remedial design and remedial action phases at the United States Avenue Burn Site.

Comment #11: One commenter asked if residential areas such as Cameo Village and Cedar Croft Heights have been tested?

EPA Response: Cameo Village and Cedarcroft Heights are two subdivisions that include homes north of Kirkwood Road. The two subdivisions include the entire neighborhood from Haddon Avenue to Farnwood Road and to the end of Winding Way. These two subdivisions have not been tested.

Through detailed sampling during remedial investigation, remedial design and remedial action at the West Clementon residential properties, results indicate the extent of contamination is limited to West Clementon residential properties and does not extend past them. The school, located between the West Clementon residential properties and these subdivisions, has been sampled and no contamination has been found.

Based on the following lines of evidence, it was concluded that the limits, or extent, of soil contamination has been defined, or mapped.

a. The extent of contamination was delineated on the West Clementon residential properties,
b. Areas outside this delineation, such as the school, showed no contamination during sampling, and
c. The contamination migration pathway is through Hilliards Creek that flows away from these subdivisions.

Comment #12: One commenter wanted to know if certificates would be issued by EPA stating that residential properties are clean after remediation is complete.

EPA Response: After remediation is completed on a residential property, EPA will provide the property owner a letter that documents the completion of the cleanup conducted on the property. A map will be enclosed with the letter indicating the location of the soil samples that delineated the depth and area of remediation. A data table containing the soil sample analytical results taken from locations used to delineate the remediation area(s) will also be enclosed with the letter. The letter will provide an explanation of the information contained on the map and data table which will serve to document the completion of the cleanup.

Comment #13: One commenter wanted to know if their residential property would be addressed as part of the Burn Site.

EPA Response: All residential properties that have been found to have contamination are being addressed under the Residential Operable Unit whether or not they are located near, or impacted by, the Former Manufacturing Plant, the Route 561 Dump Site, or the United States Avenue Burn Site.

Comment #14: One commenter wanted to know who currently holds the title for the Burn Site.

EPA Response: Ward Sand & Gravel currently holds the title (Block 21, Lot 8.03, Block 23 Lot 1 and Block 25 Lot 1) for most of the land known as the United States Avenue Burn Site. The Borough of Gibbsboro owns the railroad corridor and NE lobe of Bridgewood Lake (Block 42 Lot 5.01 and Block 19.02 Lot 1) and the northeast portion of the Burn Site (Block 22 Lots 4.01 and 4.03).

Comment #15: One commenter asked what would legally occur if the lake cleanup caused recontamination on their properties that already have letters issued from the EPA stating that the properties are clean to standards.

EPA Response: The clean-up of the lake will be conducted in a way that would minimize the risk of recontamination of the residential properties. If recontamination were to occur, then EPA and Sherwin-Williams would work to address the recontamination. Sherwin-Williams would be legally responsible for the cleanup of residential properties if, during a remediation process of Kirkwood Lake, residential properties were re-contaminated by Sherwin-Williams' actions.

Comment #16: One commenter asked why Sherwin-Williams has an opportunity to accept, or decline, the work.

EPA Response: The involvement and participation of potentially responsible parties (PRP) is central to the Superfund program. This participation may result from a willingness on the part of the PRP to take the initiative to clean up their Sites and from negotiations with EPA under which the company undertakes the work. However, private party participation may also be compelled by administrative or judicial action by EPA and the Department of Justice. In either case, PRPs follow the same process EPA follows; at each stage of the process, potentially responsible party design and construction of the remedy are subject to EPA's approval and oversight.

Comment #17: One commenter expressed frustration about the long period of time that it is taking to address the Burn Site.

EPA Response: Sites that are listed on the National Priority List (NPL) pose some of the highest risks to human health and the environment and are the most complicated sites in the nation. The EPA Superfund Process is a complicated process that includes multiple steps and the involvement of multiple stakeholders. These steps include discovery of the Site, listing the Site on the National Priorities List, remedial investigation, human health and ecological risk assessments, feasibility studies, public comment periods, remedial design and remedial action, and monitoring. All of these steps, along with the legal actions and documents that drive them, involve multiple stakeholders and the cooperation of a potentially responsible party. Due to these complexities, these investigations, studies, documents and negotiations take time to complete.

Comment #18: One commenter asked if EPA has the authority to issue a Unilateral Administrative Order (UAO) and if EPA has the ability to use a UAO if Sherwin-Williams becomes uncooperative.

EPA Response: Yes. Under CERCLA Section 106, EPA can order parties to perform cleanup work under the following circumstances: (1) if potentially responsible parties do not agree to perform the cleanup work through a judicial consent decree or an administrative order on consent (AOC), or (2) they refuse to perform work they previously agreed to perform under a settlement agreement. These orders, known as unilateral administrative orders, require parties to undertake a response action, which is either a short or long-term cleanup. EPA can issue a UAO when it finds there may be an imminent and substantial endangerment to the public health or the environment. If PRPs do not comply with a UAO, courts may: (1) assess penalties; (2) require the PRP to pay up to three times what it cost EPA to do the cleanup (treble damages); or (3) issue a judicial order requiring the PRP to do the cleanup.

Comment #19: One commenter wanted to know if there were any current risks or dangers from living near the Site.

EPA Response: Exposure pathways, such as drinking contaminated groundwater, or ingesting contaminated soil and sediment, are currently controlled at the Site. Areas with high levels of soil and sediment contamination are fenced to limit public access. The United States Avenue acts as a cap for contaminants beneath the roadway. In addition, the public water supply is not affected by contamination from the Site. EPA encourages the public to read the United States Avenue Burn Site Remedial Investigation Report. This report characterizes the nature and extent of contamination, as well as risks to human health and the environment. This report is part of the Administrative

Record and can be found here: www.epa.gov/superfund/us-avenue-burn

B. WRITTEN COMMENTS AND EPA'S RESPONSES RECEIVED DURING THE PUBLIC COMMENT PERIOD FROM THE COMMUNITY - The public comment period is the time during which EPA accepts comments from the public on proposed actions and decisions. The public comment period initially ran from July 27, 2017 to August 28, 2017, however, a 30-day extension was requested and subsequently granted. Therefore, EPA's public comment period for the Proposed Plan for OU2 ran from July 27, 2017 to September 27, 2017. EPA accepted comments during the extended comment period. EPA's responses to the comments are provided below.

Comment #21: The Borough of Gibbsboro, and another commenter, stated that an alternative which considers the complete removal of contaminated soils and sediment, without a capping component, be evaluated and used. The Borough expressed an interest in having unlimited and unrestricted use of the land without the need for deed notices, or five-year reviews, on any of the property. The Borough expressed concern that the New Jersey Department of Environmental Protection is giving semi-concurrence to the preferred alternative.

EPA Response: The material found in the soil and sediment at the United States Avenue Burn Site poses an unacceptable risk to human health and/or the environment. CERCLA requires that a remedy be protective of human health and the environment by management of the risk posed by the Site. Consistent with the Superfund Program expectations, EPA is expected to use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where treatment is impracticable. EPA is also expected to use institutional controls, such as deed restrictions to supplement engineering controls for short- and long-term management to prevent or limit exposure to contaminants.

EPA must evaluate and balance remedial alternatives using nine criteria as referenced in the Proposed Plan and the record of decision. Complete removal of residual levels of contaminants at depth presents greater implementability (one of the nine criteria) issues by increasing excavation depths below the groundwater table, increasing the volume of soil to be dewatered and removed and provides minimal gain in contaminant mass removal or long-term risk reduction. Potential short-term risks (another one of the nine criteria) to Site workers and the community would be increased by the escalation in volume of soil excavated and increase of water containment and treatment generated by excavation to depth.

In reference to the commenter stating that the New Jersey Department of Environmental Protection (NJDEP) is not in concurrence with the remedy, NJDEP has submitted a letter that states concurrence with the preferred alternative selected by EPA, but NJDEP cannot concur with the use of deed notices until the property owner has consented to the notice. This step, consent to deed notices, has not yet occurred.

Comment #22: The Borough of Gibbsboro commented that the selected remedy should include removal of all contamination from the United States Avenue Right of Way so testing and potential disposal of contaminated soils does not have to occur if a sewer utility is built.

EPA Response: See response to Comment #1 and Comment #21.

Comment #23: The Gibbsboro Planning/Zoning Board commented that specific placement of construction trailers, 30-day notice of remediation activities, contracts with local police to manage construction traffic, dust suppression and air monitoring plan, and a plan to protect residents during construction be coordinated closely with the Borough and consider Borough input and obtain Borough approval. The Borough also commented that should any businesses be required to vacate their properties during the cleanup process, that their expenses be covered by Sherwin- Williams.

EPA Response: EPA and Sherwin-Williams will coordinate with the Borough of Gibbsboro on the placement of the support facility. Local residents and businesses will be informed of the tentative schedule during the remedial design phase, and provided advance notice of any work to be done on or near their properties. Activities associated with the remedial action will be coordinated with local emergency services (police, fire and EMS) to ensure public safety. Components of a remedial action work plan will detail methods for dust and soil erosion control and monitoring. EPA’s preference is to address risks posed by contamination by using cleanup methods that allow people to safely remain in their businesses. There is no need for businesses to be relocated during construction. The specific methods used to protect Site workers, and the community, will include engineering controls and air monitoring that will be specified in the remedial design phase of the remedy and further detailed in a remedial action work plan. Such plans and measures to be taken will be communicated to the affected community.

Comment #24: The Gibbsboro Borough Council and the Planning/Zoning Board commented that specific plans for the management of stockpiled contaminated soil including Site selection, security, public disclosure, transportation routes, and volume and time restrictions be closely coordinated with and approved by the Borough.

EPA Response: The selection of staging areas for soil and sediment that will be removed from the Burn Site, will be coordinated with the Borough. These staging areas will be secured and have restricted access. All options for Site selection of the staging areas, including the offer from the Borough of Block 24, Lot 1.03, will be considered during the remedial design. Coordination with the public will be conducted through public availability sessions, Sherwin-Williams community outreach efforts, the EPA's United States Avenue Burn Site Superfund website, and the EPA and Sherwin-Williams Community Involvement Coordinators, as well as EPA Remedial Project Manager. The transportation plan for the removal of material will be included in the remedial action work plan. The Borough of Gibbsboro will be consulted in the development of this plan. Based on EPA’s experience at other soil remediation sites, it is not feasible to load large quantities of soil in drums. Soil and sediment will not be containerized in sealed drums and will be handled, shipped and disposed in bulk. Every effort will be made to limit the amount of time that soil and sediment is stored in the staging areas. Readily available screened fencing can be used to limit the visibility of the staging areas to the public during construction.

Comment #25: The Gibbsboro Borough Council and the Planning/Zoning Board commented that there should be a plan outlining the decontamination procedures of vehicles used to transport contaminated soils.

EPA Response: Decontamination procedures will be developed as part of a remedial action work plan. This plan will be shared with the Borough of Gibbsboro.

Comment #26: The Gibbsboro Borough Council commented that all work must comply with local ordinances regarding commercial operations and noise.

EPA Response: EPA is in agreement that all work must comply with local ordinances regarding hours of operation and noise abatement.

Comment #27: The Borough of Gibbsboro commented that the costs of remediation pale in comparison to Sherwin-Williams fiscal ability to pay for complete removal.

EPA Response: A company's fiscal ability to pay for a cleanup alternative is not a criterion for remedy selection.

Comment #28: The Borough of Gibbsboro commented that the Borough was required to construct an alternative sewage conveyance from the southern end of town around the former manufacturing plant and stated that Sherwin-Williams should reimburse the community for costs incurred for such work. The Borough commented that they should not be restricted in any way from providing sanitary sewer service to existing and future residents and businesses that will require this service and that it places an unfair financial burden on future development to perform testing and potential disposal of contaminated soils.

EPA Response: The recovery of Borough costs from Sherwin-Williams is outside the scope of the remedy selection process and is an issue to be resolved between Sherwin-Williams and the Borough. For the portion of United States Avenue located adjacent to the Burn Site that is to be addressed as a component of the Burn Site soil remedy, soil sampling indicates residual levels of contaminants below portions of this section of the road. During design, Sherwin-Williams will be responsible for additional sampling to be conducted beneath the road to identify the specific area that will require a deed notice. The roles of responsibility for the operation and maintenance activities associated with the United States Avenue cap will be developed with the input of the Borough of Gibbsboro and Sherwin-Williams. The responsibility for implementing an approved Operation and Maintenance Plan for the capped area would also include provisions for the handling of material beneath the cap should it become necessary to install subsurface utilities beneath it.

Comment #29: The Borough of Gibbsboro commented that EPA did not sufficiently weigh the Borough's comments for the Route 561 Dump Site Decision Document. The Borough expects public comments will be adequately weighed in EPA's remedy decision for the United States Avenue Burn Site.

EPA Response: EPA appreciates the Borough of Gibbsboro's cooperation over the years in addressing the Sherwin-Williams Sites. In addition, EPA values the Borough's comments and has incorporated them to the extent possible. Community acceptance is one of the nine criteria established by the EPA to evaluate remedial alternatives.

Comment #30: Senator Norcross expressed his dismay over the amount of time it has taken to get to this point, but was heartened by the progress that has been made in the past few years. The Senator stated that the EPA should consider the situation from the point of view of a resident of the community by using input from residents of the community and taking every possible measure to clean these sites up as quickly as possible, including concurrently remediating multiple sites.

EPA Response: EPA understands the frustration on the part of the commenter concerning the length of time the project has taken. To address this issue, EPA has added resources to the Sherwin-Williams sites, and in 2015, committed to issue a Record of Decision each year for the operable units associated with the Sherwin-Williams sites. EPA is meeting that commitment. EPA issued a Record of Decision for residential properties in 2015, a Decision Document for the Route 561 Dump Site soil and sediment in 2016, and has issued this Record of Decision for the United States Avenue Burn Site soil and sediment in 2017. Sherwin-Williams is moving forward with remedial investigations and feasibility studies, under EPA oversight, that will enable EPA to issue a Record of Decision for the Former Manufacturing Plant Soils and Sediments in 2018 and waterbodies in 2019.

Work is being conducted concurrently at each of the Sherwin-Williams sites which includes multiple remedial investigations associated with the Sherwin-Williams Hilliards Creek Superfund Site, specifically the waterbodies that include Silver Lake, Bridgewood Lake, Hilliards Creek and Kirkwood Lake, as well as the soil and sediment and groundwater associated with the Former Manufacturing Plant. While these remedial investigations are ongoing, work on the technical aspects of the remedial design for residential properties continues as negotiations to conduct remedial action on residential properties between EPA, the Department of Justice and Sherwin-Williams moves forward. During these activities, both the cleanup of eight residential properties and negotiations for an Administrative Order on Consent with Sherwin-Williams to conduct the remedial design and remedial action for the Route 561 Dump Site were completed. The design for the Route 561 Dump Site is currently being conducted.

Though the operable units of each of the Sherwin-Williams sites are in different phases of the Superfund process, work at each site is being conducted concurrently to move toward remediation of all sites as quickly as possible.

EPA is sensitive to the needs of the community and has provided an opportunity for the public to comment on the Proposed Plan. Based upon a request, EPA provided the public an extended opportunity to comment on the Proposed Plan. Input from the community was given consideration in the evaluation of the nine criteria for remedy selection and additional community outreach and engagement will continue through the remedial design and remedial action phases of the Sherwin-Williams sites.

ATTACHMENT A

PROPOSED PLAN

Superfund Proposed Plan

U.S. Environmental Protection Agency, Region II

United States Avenue Burn Site
Operable Unit 2
Gibbsboro, New Jersey

July 2017

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the Preferred Alternative to address contaminated soil, sediment, and surface water at the United States Avenue Burn Superfund Site ("The Burn Site"). The Burn Site is located in Gibbsboro, New Jersey (Figure 1). The contamination is associated with the former Sherwin-Williams paint and varnish manufacturing plant located in Gibbsboro, New Jersey.

The Preferred Alternative calls for the excavation of sediment; and excavation and capping, as necessary, of soil. Excavated material will be disposed of offsite. Surface water will be monitored. Institutional controls will be implemented as needed. Groundwater contamination will be evaluated as a separate Operable Unit and addressed in a future Proposed Plan.

A comprehensive Remedial Investigation (RI) took place under a 1999 Administrative Order on Consent (AOC) with the Sherwin-Williams Company (Sherwin-Williams). The RI activities were conducted by Sherwin-Williams and were overseen by the U.S. Environmental Protection Agency (EPA). The RI included sampling of soil, sediment, surface water and groundwater throughout the Burn Site. The results of this investigation identified areas within the Burn Site where remedial action is required.

This Proposed Plan contains descriptions and evaluations of the cleanup alternatives considered for the Burn Site. This Proposed Plan was developed by EPA, the lead agency, in consultation with the New Jersey Department of Environmental Protection (NJDEP), the support agency. EPA, in consultation with NJDEP, will select a final remedy for contaminated soil, sediment, surface water after reviewing and considering all information submitted during the 30-day public comment period.

MARK YOUR CALENDARS

PUBLIC COMMENT PERIOD
July 27 – August 28, 2017
EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING
August 10, 2017 from 7:00 P.M. to 9:00 P.M.
EPA will hold a public meeting to explain the Proposed Plan and alternatives presented in the Feasibility Study. Oral and written comments will also be accepted at the meeting. The meeting will be held at the Gibbsboro Senior Center, 250 Haddonfield-Berlin Road, Gibbsboro, New Jersey 08026

For more information, see the Administrative Record at the following locations:

EPA Records Center, Region 2
290 Broadway, 18th Floor
New York, New York 10007-1866
(212) 637-4308
Hours: Monday-Friday – 9 A.M. to 5 P.M. by appointment

Gibbsboro Borough Hall/Library
49 Kirkwood Road
Gibbsboro, New Jersey 08026
For Library Hours:
http://www.gibbsborotownhall.com/index.php/library

M. Allan Vogelson Regional Branch Library – Voorhees
203 Laurel Road
Voorhees, New Jersey 08043
For Library Hours:
http://www.camdencountylibrary.org/voorhees-branch

Send comments on the Proposed Plan to:

Julie Nace, Remedial Project Manger
U.S. EPA, Region 2
290 Broadway, 19th Floor
New York, NY 10007-1866
Telephone: 212-637-4126
Email: nace.julie@epa.gov

EPA's website for the United States Avenue Burn Site is: https://www.epa.gov/superfund/us-avenue-burn

EPA, in consultation with NJDEP, may modify the Preferred Alternative or select another response action presented in this Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on the alternatives presented in this Proposed Plan.

EPA is issuing this Proposed Plan as part of its community relations program under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or Superfund) 42 U.S.C. 9617(a), and Section 300.435(c)(2) (ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This Proposed Plan summarizes information that can be found in greater detail in the Burn Site RI and Feasibility Study (FS) reports as well as other related documents contained in the Administrative Record. The location of the Administrative Record is provided on the previous page. EPA and NJDEP encourage the public to review these documents to gain a more comprehensive understanding of the site-related Superfund activities performed by Sherwin-Williams, under EPA and NJDEP oversight.

SITE DESCRIPTION

Three sites collectively make up what is commonly referred to as the "Sherwin-Williams Sites," which are located in areas of Gibbsboro and Voorhees, New Jersey. These sites are the *Sherwin-Williams/Hilliard's Creek Superfund Site* located in both Gibbsboro and Voorhees, the *Route 561 Dump Site* in Gibbsboro and the *United States Avenue Burn Superfund Site* in Gibbsboro (Figure 2). The Sites represent source areas from which contaminated soil and sediment have migrated, predominantly through natural processes, to downgradient areas within Gibbsboro and Voorhees.

Sherwin-Williams/Hilliards Creek Superfund Site: The Sherwin-Williams/Hilliards Creek Superfund Site includes the Former Manufacturing Plant area, Hilliards Creek and Kirkwood Lake. The Former Manufacturing Plant area of the Sherwin-Williams/Hilliards Creek Superfund Site is approximately 20 acres in size and is comprised of commercial structures, undeveloped land and the southern portion of Silver Lake. The Former Manufacturing Plant area extends from the south shore of Silver Lake in Gibbsboro, New Jersey, and straddles the headwaters of Hilliards Creek. Hilliards Creek is formed by the outflow from Silver Lake. The outflow enters a culvert beneath a parking lot at the Former Manufacturing Plant and resurfaces on the south side of Foster Avenue, Gibbsboro. From this point, Hilliards Creek flows in a southerly direction through the Former Manufacturing Plant area and continues downstream through residential and undeveloped areas. At approximately one mile from its origin, Hilliards Creek empties into Kirkwood Lake. Kirkwood Lake is approximately 25 acres, located in Voorhees, New Jersey with residential properties lining its northern shore.

Route 561 Dump Site: The Route 561 Dump Site is located approximately 700 feet to the east of the Former Manufacturing Plant area. It includes retail businesses, a portion of a residential area, wooded vacant lots and a small creek. A fenced portion of the Route 561 Dump Site is located at the base of an earthen dam that forms Clement Lake. White Sand Branch is a small creek which originates at the dam and flows in a southwest direction for approximately 1,650 feet where it enters the fenced portion of the Burn Site.

United States Avenue Burn Superfund Site: The fenced portion of the Burn Site and its associated contamination is approximately thirteen acres in size and encloses the remaining 400 feet of White Sand Branch. A 500-foot portion of a small creek, Honey Run Brook, enters the Burn Site where it joins White Sand Branch before it passes beneath United States Avenue and enters Bridgewood Lake in Gibbsboro. The six-acre Bridgewood Lake empties through a culvert beneath Clementon Road and forms a 400-foot long tributary that joins Hilliards Creek at a point approximately 1,000 feet downstream from the Former Manufacturing Plant area.

SITE HISTORY

The former paint and varnish manufacturing plant property in Gibbsboro, New Jersey, was developed in the early 1800s as a saw mill, and later as a grain mill. In 1851, John Lucas & Co., Inc. (Lucas), purchased the property and converted the grain mill into a paint and varnish manufacturing facility that produced oil-based paints, varnishes and lacquers. Sherwin-Williams purchased Lucas in the early 1930s and expanded operations at the facility. Historic features at the Former Manufacturing Plant included wastewater lagoons, above-ground storage tanks, a railroad line and spur, drum storage areas, and numerous production and warehouse buildings. The facility was closed in 1977 and was sold to a developer in 1981.

In 1978, after plant operations closed, NJDEP directed Sherwin-Williams to excavate and properly dispose of the waste material remaining in the lagoons. During the 1980s, NJDEP entered into several administrative orders with Sherwin-Williams to oversee the characterization of contaminated groundwater and a petroleum-like seep in the Former Manufacturing Plant area. During the 1990s, NJDEP discovered two additional source areas, the Route 561 Dump Site and the Burn Site. Contamination in both areas are attributable to historic dumping activities associated with the Former Manufacturing Plant.

In the mid-1990s, enforcement responsibilities for the Dump Site and the Burn Site were transferred from NJDEP to EPA. Under an AOC with EPA, Sherwin-Williams was directed to further characterize and delineate the extent of contamination associated with these areas and to fence them off to minimize the potential for human exposure. EPA proposed the Dump Site to the National Priorities List (NPL) in 1998[1]. The Burn Site was added to the NPL in 1999.

In 1998, EPA sampled the upper portions of Hilliards Creek and several residential properties. Contaminants (mainly lead and arsenic) were detected in these soil and sediment samples. EPA then entered into two additional AOCs with Sherwin-Williams in 1999. Under the first AOC, Sherwin-Williams conducted additional sampling of Hilliards Creek and Kirkwood Lake to further characterize the extent of contamination. This sampling, which concluded in 2003, included residential properties along Hilliards Creek and Kirkwood Lake. The second AOC, signed in September 1999, required Sherwin-Williams to conduct a Remedial Investigation/Feasibility Study (RI/FS) for the Route 561 Dump Site, the Burn Site and Hilliards Creek. The Sherwin-Williams/Hilliards Creek Site, which includes the Former Manufacturing Plant (FMP) area, Hilliards Creek and Kirkwood Lake, was added to the NPL in 2008.

SITE CHARACTERISTICS OF THE BURN SITE

The Burn Site is comprised of undeveloped properties, woodlands, wetlands and two small creeks. It has been subdivided into areas based on different phases of the investigation. These subdivisions are described below and shown on Figure 3.

Burn Site Fenced Area. The Burn Site Fenced Area is located on the east side of United States Avenue and is comprised of 12.7 acres surrounded by an eight-foot chain link fence. Sherwin-Williams installed the fence around the site in September 1995 pursuant to an EPA Administrative Order on Consent.

Burn Area. The Burn Area is approximately 0.4 acres of fenced area located within the northwest corner of the Burn Site Fenced Area. Historic burning of combustible waste, such as paint waste, spent solvents, empty pigment bags and broken pallets, was conducted in this area. This area was fenced by Sherwin-Williams in July 1995 pursuant to an NJDEP directive.

Landfill Area. The Landfill Area is located in the southern portion of the Burn Site Fenced Area. Material dredged from plant wastewater lagoons and facility trash were deposited in disposal pits within this area. Disposal activities in the Landfill Area were also conducted by the municipality which leased the property from Sherwin-Williams for that purpose. The majority of the sludge material was removed from the Landfill Area in 1979 pursuant to an NJDEP Administrative Order.

White Sand Branch. This is a small stream with headwaters originating at Clement Lake. It flows through the Route 561 Dump Site and along the south side of the Vacant Lot before it enters the northeast corner of the Burn Site. From there, it flows across the

[1] The *National Priorities List* (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation. At some sites proposed for the NPL, EPA has entered into an enforcement agreement with a private party prior final placement on the NPL, whereby the private party agrees to proceed with Superfund investigations or cleanup at the site. In certain circumstances (including at the Dump Site), EPA has elected not to finalize the NPL listing as long as Superfund work proceeds in accordance with the enforcement agreement, but EPA maintains the site as "proposed" so that it can be quickly finalized on the NPL if conditions change.

northern portion of the Burn Site and joins Honey Run just east of U.S. Avenue, and discharges through a culvert beneath U.S. Avenue into Bridgewood Lake.

Honey Run. This is a small stream that runs from the southeastern corner of the Burn Site to the point where it joins White Sand Branch and discharges into Bridgewood Lake.

Railroad Track Area. This is the railroad track and the area between the railroad track and Bridgewood Lake, located west of U.S. Avenue. This area commences at the northern end of Bridgewood Lake and extends 600 feet to the south.

Summary of Burn Site Investigations

Pre-Remedial Investigation Activities

The investigations at the Burn Site were conducted in several phases. NJDEP investigated the Landfill Area in 1975 and in 1978 issued an Administrative Order for Sherwin-Williams to remove sludge and contaminated soil from the Landfill Area. Sherwin-Williams removed the majority of the waste in 1979.

In 1991 and 1992, Sherwin-Williams, under NJDEP direction, conducted an investigation of the Landfill Area of the Burn Site. This investigation was conducted as part of a larger investigation of the FMP.

In 1993, Sherwin-Williams conducted an additional phase of investigation of the FMP that included further sampling of the former Landfill Area. In addition, NJDEP conducted a site investigation within what is now termed the Burn Site Fenced Area in 1994, during which soil samples were collected from within the Burn Area, north of the Burn Area, and north of the Landfill Area, near Honey Run. Sediment and surface water samples were also collected along White Sand Branch and Honey Run.

In 1995, pursuant to an AOC with the EPA, Sherwin-Williams conducted an investigation of the Burn Site Fenced Area. A fence surrounding the Burn Site Fenced Area was installed in June 1995 as part of the EPA AOC. The 1995 investigation consisted of soil, sediment, and groundwater sampling.

In 1996, in response to a letter from EPA, Sherwin-Williams conducted soil sampling of the Railroad Track Area. Based on these results, the EPA issued a Unilateral Administrative Order to Sherwin-Williams to conduct a soil removal action in this area. The soil removal was conducted in 1997. Approximately 2,000 tons of soil and debris and 4,500 gallons of liquid (primarily rain water) were removed and disposed off-site.

Summary of the Remedial Investigation

The full results of the RI can be found in the Burn Site Remedial Investigation Report (February 2017) which is part of the Administrative Record.

RI sampling of soil, sediment and surface water by Sherwin-Williams, under EPA oversight, began in 2005 and continued to 2008. Additional groundwater sampling was conducted in 2010 and 2011 and supplemental sampling for the Baseline Ecological Risk Assessment took place in 2015.

Beginning in 2005, the RI for the Burn Site, which included all of the six subareas, was conducted in sequential phases; the scopes of later sampling phases were based on the results of prior phases of investigation.

The results of sample analyses were screened to determine if the levels of contamination posed a potential harm to human health and/or the environment. This was done by comparing the measured values of contaminants to standards that are protective of human health or ecological receptors.

The soil sample analytical results were compared to NJDEP's Residential Direct Contact Soil Remediation Standards (RDCSRS) referred to hereafter as residential cleanup goals, and the Non-residential Direct Contact Soil Remediation Standards (NRDCSRS), referred to hereafter as non-residential cleanup goals, depending on the zoning and land use. The sediment sample analytical results were compared to the lowest effect levels for ecological receptors and surface water results were compared to the New Jersey Surface Water Quality Standards (NJSWQS) for Fresh Water. In addition, a human health risk assessment and an ecological risk assessment were conducted to determine if levels of contaminants exceeded EPA's acceptable risk range. Explanations of the results of the human health and ecological risk assessments are explained in separate sections later in this document.

The results of the RI showed that lead and arsenic are the major contaminants of concern in all media tested throughout the Burn Site. Other contaminants were also found and they were generally co-located with lead and arsenic.

Soil:

Soil samples were taken from over 200 sample locations from the ground surface to depths of approximately 34 feet.

Lead and arsenic are the main contaminants of concern and were found most frequently and at the greatest concentrations above the NJDEP RDCSRS. Other contaminants that were found in the soil above the standard include pentachlorophenol, hexavalent chromium and other metals, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). These other contaminants were found less frequently and are co-located with lead and arsenic therefore they would be addressed with the cleanup goals for lead and arsenic. Based on the sampling results and comparison of that data to the NJDEP RDCSRS, lead and arsenic were identified as the main contaminants of concern in the soil.

The most highly contaminated soil was found at three locations within the Burn Site Fenced Area. These locations are the Landfill Area, White Sand Branch floodplain and the Burn Area. It is likely that there is contamination under United States Avenue since soil contamination was found in samples on both sides of United States Avenue between the Burn Site Fenced Area and the Railroad Track Area.

Contamination in soil is generally found at depths up to 8 feet but can be found in areas up to 28.5 feet deep. The concentration of lead in soils range from less than the NJDEP residential standard of 400 milligrams/kilogram (mg/kg) to levels exceeding over 20,000 mg/kg in the three areas with the highest contamination (Landfill, White Sand Branch Floodplain and the Burn Area). The concentration of arsenic in soil ranges from less than the NJDEP residential standard of 19 mg/kg to levels exceeding 1,000 mg/kg in the Burn Area.

WHAT ARE THE "CONTAMINANTS OF CONCERN" (COCs)?

EPA has identified two metals as the primary contaminants of concern at the Burn Site that pose the greatest potential risk to human health and the environment.
The primary contaminants of concern at the US Avenue Burn Site are lead and arsenic.

Lead: Lead was historically used as a pigment in paint. As a pigment, lead II chromate "chrome yellow" and lead II carbonate "white lead" being the most common. Lead is hazardous. At high levels of exposure lead can cause nervous system damage, stunted growth, kidney damage, and delayed development. Lead is considered a possible carcinogen.

Arsenic: Arsenic compounds began to be used in agriculture as ingredients in insecticides, rodenticides, herbicides, wood preservers and pigments in paints. Long-term exposure to high levels of inorganic arsenic (e.g. through drinking-water and food) are usually observed in the skin, and include pigmentation changes and skin lesions. Often, prolong exposure can lead to skin cancer. In addition to skin cancer, long-term exposure may lead to cancers of the bladder and lungs.

Sediment:

Sediment samples were taken from more than 30 locations in Honey Run within the Fenced Area and to the southeast outside the Fenced Area and the entirety of White Sand Branch located within the Fenced Area.

Lead and arsenic were found most frequently and at the greatest concentrations above the NJDEP lowest effect levels for ecological receptors of 31 mg/kg for lead and 6 mg/kg for arsenic. Contaminants in sediment that exceed the lowest effect level criteria generally require further evaluation. Other constituents found above this criterion were cadmium, chromium, copper, cyanide, mercury and zinc, PAHs, pesticides and PCBs. These other constituents were found less frequently and are co-located with lead and arsenic.

Lead and arsenic exceedances were found in sediment throughout Honey Run and White Sand Branch. The concentration of lead varies from below the lowest effect level for ecological receptors to 11,000 mg/kg. The arsenic levels varied from below the lowest effects level for ecological receptors to over 500 mg/kg. For both metals, the highest values were found just south of the Burn Area.

Surface Water:

Surface water samples were collected from eight locations in the Burn Site Fenced Area and in Honey Run from the southeastern portion of the creek located outside of the Fenced Area. Analyses of the surface water showed exceedances of the NJSWQS for Fresh Water for aluminum, iron, zinc, cyanide, arsenic, lead, and cadmium. As with the other media, lead is the main contaminant of concern.

The concentrations of metals in surface water were compared to the NJSWQS for Fresh Water of 5.4 micrograms/Liter (µg/L) for lead and 150 µg/L for arsenic. The total lead and total arsenic values varied from below the NJSWQS for Fresh Water to over 33.5 µg/L for total lead and over 514 µg/L for total arsenic. The highest concentrations in surface water were found just west of where White Sand Branch meets Honey Run within the Burn Site Fenced Area.

SCOPE AND ROLE OF OPERABLE UNIT

Due to the complexity of multiple sites and varying land uses, EPA is addressing the cleanup of the Sherwin-Williams sites in several phases called operable units. Operable Unit 1 (OU1) consists of the Residential Properties associated with each of the three Sherwin-Williams Sites that are to be remediated in accordance with the Record of Decision which was signed in September 2015.

This Proposed Plan addresses Operable Unit 2 (OU2) of the Burn Site which consists of soil, sediments, and surface water. The soil located beneath United States Avenue will not removed as the road acts a protective cap and this is protective of human health.

Groundwater contamination will be evaluated as a separate Operable Unit and addressed in a future Proposed Plan.

PRINCIPAL THREAT WASTE

Although lead and arsenic in soil and sediment act as sources to surface water contamination and contribute to groundwater contamination, these sources are not highly mobile and are not considered principal threat wastes at this Site.

WHAT IS A "PRINCIPAL THREAT"?

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP 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 ground water, surface water or air, or acts as a source for direct exposure. Contaminated ground water generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in ground water may be viewed as source material. Principal threat wastes are those 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. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

SUMMARY OF SITE RISKS

As part of the RI/FS, a baseline risk assessment consisting of a human health risk assessment (HHRA) and a baseline ecological risk assessment (BERA) were conducted to estimate 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 caused by hazardous substance exposure in the absence of any actions to control or mitigate these exposures under current and future site uses.

In the HHRA, cancer risk and noncancer health hazard estimates are based on current and future reasonable maximum exposure scenarios. They were developed by taking into account various health protective estimates about the concentrations, frequency and duration of an individual's exposure to chemicals selected as contaminants of concern (COCs), as well as the toxicity of these contaminants.

For the ecological risk assessment, representative ecological receptors were identified for each exposure area. Measurement and assessment endpoints were developed during the BERA to identify those receptors and areas where unacceptable risks are present.

WHAT IS 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 for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the contaminants of concern (COCs) at the Site in various media (*i.e.*, soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and 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 and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that 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 hazards, 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 hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of Site risks for all COCs. 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 people as a result of exposure to Site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10^{-4} to 10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk.

For non-cancer health effects, a "hazard index" (HI) is calculated. The key concept for a non-cancer HI is that a "threshold" (measured as an HI of less than or equal to 1) exists below which non-cancer health hazards are not expected to occur. The goal of protection is 10^{-6} for cancer risk and an HI of 1 for a non-cancer health hazard. Chemicals that exceed a 10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at the Site.

The site was divided into specific exposure areas that differed for the human health risk assessment and the ecological risk assessment.

For the human health risk assessments, the Burn Site was divided into five exposure areas. These exposure areas include the Burn Area, Burn Site Fenced Area, Landfill Area, Railroad Track Area and South Burn Site Area.

For the baseline ecological risk assessment, the Burn Site was evaluated based upon four defined ecological exposure areas: Burn Site West, Burn Site East, White Sand Branch and Honey Run Brook.

Human Health Risk Assessment

As part of the RI/FS, a baseline human health risk assessment was conducted to estimate current and future effects of contaminants on human health and the environment. A baseline human health risk assessment is an analysis of the potential adverse human health effects caused by hazardous-substance exposure in the absence of any actions to control or mitigate these exposures under current and future land uses.

A four-step human health risk assessment process was used for assessing Site-related cancer risks and noncancer health hazards. The four-step process is comprised of: Hazard Identification of Chemicals of Concern (COCs), Exposure Assessment, Toxicity Assessment, and Risk Characterization (see adjoining box "What is Risk and How is it Calculated" for more details on the risk assessment process).

The Burn Site and associated exposure areas include a mix of residential and office/residential zoning. For the purposes of the HHRA, the Burn Site was divided into five separate exposure areas. These exposure areas are geographic designations created for the risk assessment in order to define areas with similar anticipated current and future land use or similar levels of contamination. The Burn Site exposure areas are shown in Figure 4 and include the following: Burn Area, Burn Site Fenced Area, Landfill Area, the Railroad Track Area, and South Burn Site Area. Two streams, White Sand Branch and Honey Run Brook, run through portions of the Burn Site. Exposure to sediment and surface water from these streams were assessed separately from each other, as part of the exposure area which they run through.

The majority of the Site is currently unused/vacant. A fence surrounding the Burn Area, Burn Site Fenced Area, and Landfill Area currently restricts access to these portions of the site, therefore all the receptor populations evaluated at these exposure areas were assumed to be future scenarios. Access to the Railroad Track Area and the South Burn Site Area are not restricted; exposure to these areas for passive recreational activities such as walking, was considered for the current timeframe (adolescent and adult recreator). Since the future use of the site is largely unknown, the HHRA conservatively assumed that each exposure area could be developed for either commercial or residential use. As such, the following future receptor populations and routes of exposure were considered on all exposure areas of the Site:

- Adult Utility Worker and Construction Worker: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface and subsurface soils; dermal contact with shallow groundwater.
- Adult Outdoor worker: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils.
- Adolescent and Adult Recreator: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils; incidental ingestion and dermal contact of sediments along with dermal contact with surface water while wading in White Sand Branch and Honey Run Brook.
- Child and Adult Resident: incidental ingestion, dermal contact and inhalation of particulates and volatiles released from surface soils; ingestion, dermal contact and inhalation of vapors during showering and bathing from sitewide groundwater; incidental ingestion and dermal contact of sediments along with dermal contact with surface water while wading in White Sand Branch and Honey Run Brook.

For COCs other than lead, two types of toxic health effects were evaluated in the risk assessment: 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.

The total cancer and noncancer risk hazard estimates for all receptors summed across all pathways and media are summarized in Table 1. For overall completeness, exposure to sitewide groundwater was evaluated in the HHRA for the Site. However, since groundwater is not being addressed as part of this decision document, the result of the risk assessment associated with exposure to groundwater is not summarized below.

Summary of the Human Health Risk Assessment

This section provides an overview of the human health risks from the major COCs. A complete discussion of all risks from the Burn 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 potential current and future exposure to surface soil on each exposure area. Table 1-1 below summarizes the receptor populations in each exposure area that were found to exceed EPA's cancer risk range and/or noncancer threshold criteria. COCs in surface soil varied per exposure area and the receptor populations evaluated. For the Burn Area, arsenic accounted for the majority of the risk and hazard; additional metals that contributed to elevated hazard estimates at the Burn Area included cadmium, copper, manganese, and zinc. The main COCs in the Burn Site Fenced Area were arsenic and hexavalent chromium.

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

Receptor	Hazard Index	Cancer Risk
Burn Site Fenced Area		
Future Resident (child/adult)	9	5.2E-04
The COCs in surface soil at the Burn Site Fenced Area were arsenic and hexavalent chromium.		
Burn Area		
Future Outdoor Worker	19	2.1E-03
Future Adolescent Recreator	20	9.5E-04
Future Adult Recreator	13	1.4E-03
Future Resident (child/adult)	251	1.0E-02
The COCs in surface soil at the Burn Area varied by receptor but included: arsenic and other metals.		

Surface and Subsurface Soil

Exposure to surface and subsurface soil by a future construction and utility worker present at each exposure area of the Burn Site were considered. As shown in Table 1-2, only the Burn Site Fenced Area and Burn Area were associated with cancer and noncancer estimates that exceeded EPA's threshold criteria. Arsenic was identified as the main COC for surface and subsurface soils at the Burn Site Fenced Area and Burn Area. In addition to arsenic, the presence of manganese also contributed to elevated hazard estimates for the construction worker on the Burn Area.

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

Receptor	Hazard Index	Cancer Risk
Burn Site Fenced Area		
Future Construction Worker	3	1.3E-05
The COC for surface/subsurface soil at the Burn Site Fenced Area was arsenic.		
Burn Area		
Future Utility Worker	4	6.0E-04
Future Construction Worker	102	6.0E-04
The COCs in surface/subsurface soil at the Burn Area varied by receptor but included: arsenic and manganese.		

Burn Site Suspect Material

Cancer risk and noncancer hazard was calculated for an adult and child resident who may come into contact with a solid material which was found on portions of the Burn Site. One sample of this material was analyzed and used to evaluate potential risks through direct contact exposures. Results of the risk assessment are summarized in Table 1-3. Pentachlorophenol was identified as the sole COC for the Burn Site suspect material.

Table 1-3: Summary of hazard and risk exceedances for the Burn Site Suspect Materials

Receptor	Hazard Index	Cancer Risk
Burn Site Suspect Material		
Future Resident (child/adult)	29	6.6E-03
The COC for the Burn Site Suspect Material was pentachlorophenol.		

Surface Water and Sediment

Exposure to surface water and sediments of the White Sand Branch and Honey Run Brook by future child and adult residents, along with future adolescent and adult recreator who may wade in these shallow streams were evaluated on the exposure areas which they run through. Results of the HHRA found that exposure to surface water and sediment did not exceed EPA's cancer risk range or noncancer threshold for any receptor evaluated. Therefore, there were no COCs identified in the surface water or sediment of White Sand Branch and Honey Run Brook.

Lead Results

Since there are no published quantitative toxicity values for lead, it is not possible to evaluate cancer and non-cancer risk estimates from lead using the same methodology as for the other COCs. Consistent with EPA guidance, exposure to lead was evaluated separately from the other contaminants using appropriate blood lead modeling. The results of the lead risk evaluation conducted in the HHRA are summarized in Table 2.

The risk reduction goal considered in the HHRA was to limit the probability of a child's target blood lead level exceeding 10 micrograms per deciliter (µg/dL) to 5% or less. Since the HHRA was finalized, new scientific information has come to light which indicates that adverse health effects are evident at lower blood lead levels. To ensure that the proposed soil remedy is protective of human health, the lead cleanup goal selected for the site is based on an updated Regional risk reduction goal to limit the probability of a child's blood lead level exceeding 5 µg/dL to 5 % or less.

With the exception of the South Burn Site exposure area, lead was identified as a COC throughout the various exposure areas of the Burn Site for the child resident and construction worker. For a child resident, exposure to lead in various media including surface soil, sediment and/or groundwater resulted in predicted blood lead probabilities ranging from 92% to 100% exceeding the target blood lead level (BLL). The predicted probabilities of exceeding the target BLL for the construction worker exposed to surface and subsurface soils ranged from 8% to 100%. In addition, lead risks from exposure to surface soil by a recreator, adult resident and outdoor worker on the BA and adult resident on the RR area exceed the risk reduction goal (i.e., the probability of exceeding the target BLL was greater than 5% for these receptor populations). Lead was also identified as a COC for direct contact exposures with the Burn Site Suspect Material. In summary, as shown in Table 2, lead was identified as a COC for at least one receptor within the Burn Site Fenced, Landfill, Burn, and Railroad Track exposure areas.

Summary Conclusions of the HHRA

In summary, with the exception of the South Burn Site, exposure to metals in surface soils, subsurface soils, and sediments found at various exposure areas of the Burn Site were found to exceed EPA's threshold criteria. In general, arsenic and/or lead were the main COCs; however, exposure to other metals were also identified as exceeding cancer risk and noncancer hazard estimates at some of the exposure areas evaluated (e.g. hexavalent chromium at the Burn Site Fenced Area).

Based on the results of the human health risk assessment a remedial action is necessary to protect public health, welfare and the environment from actual or threatened releases of hazardous substances.

Ecological Risk Assessment

A baseline ecological risk assessment was conducted to evaluate the potential for ecological risks from the presence of contaminants in surface soil, sediment, surface water and groundwater. Media concentrations were compared to ecological screening values as an indicator of the potential for adverse effects to ecological receptors by habitat type.

Exposure to both terrestrial wildlife in the upland exposure areas (Burn Site East and Burn Site West) through ingestion of contaminated soil and biota, and exposure of aquatic wildlife to contaminants in the White Sand Branch and Honey Run Brook exposure areas through ingestion of contaminated sediment, surface water and biota were evaluated. Biological data were collected (benthic invertebrates, fish and soil invertebrates) to assist in understanding site-specific bioaccumulation rates and subsequent exposure to upper trophic level receptors. In addition, COC concentrations and biological responses (sediment toxicity) were evaluated to understand potential community level impacts associated with sediment COCs. The drivers of ecological risk were lead, arsenic, chromium and zinc.

A complete summary of all exposure scenarios and ecological receptor groups may be found in the baseline ecological risk assessment (BERA) which is part of the Administrative Record.

Summary of the Baseline Ecological Risk Assessment

The BERA provided evidence that COCs, primarily arsenic, lead, chromium and zinc are present in both aquatic and terrestrial environments within several portions of the Burn Site and pose unacceptable ecological risk to wildlife receptors. The greatest potential for exposure and unacceptable risks to the aquatic community are indicated for localized elevated areas of arsenic, lead and zinc in White Sand Branch near the Burn Area, with much lower exposures and risks in Honey Run Brook. Overall, terrestrial wildlife risks are driven by elevated concentrations detected near the Burn Area in the Burn Site East and the northern portion of the Railroad Track Site in the Burn Site West. COC concentrations and risk decreases significantly with distance from these areas. Insectivorous wildlife (the American Robin and Short-Tailed Shrew) were identified as the wildlife receptors with the highest predicted exposures and hazard quotients in the terrestrial area of the Burn Site. Similarly, the Spotted Sandpiper was identified as the receptor with the highest exposure and hazard quotient associated with the aquatic community in White Sand Branch.

Based on the results of the ecological risk assessment a remedial action is necessary to protect the environment from actual or threatened releases of hazardous substances.

Based on the full risk assessment, it is EPA's current judgment that the Preferred Alternatives identified in this Proposed Plan are necessary to protect public health or the environment from actual or threatened releases of hazardous `substances into the environment.

REMEDIAL ACTION OBJECTIVES

The following remedial action objectives (RAOs) for contaminated media address the human health and ecological risks at the Burn Site:

Soil

- Prevent potential current and future unacceptable risks to human and ecological receptors resulting from uptake of soil contaminants by plants, ingestion of contaminated soils and food items by humans and ecological receptors, and direct contact with contaminated soils.

- Minimize migration of site-related contaminants in the soil to sediment, surface water and groundwater.

Sediment

- Prevent potential current and future unacceptable risks to ecological receptors resulting from uptake of sediment contaminants by plants, ingestion of contaminated sediments by humans and ecological receptors and direct contact with contaminated sediments.

- Minimize migration of site-related contaminants from the sediment to surface water.

To achieve RAOs, EPA has selected soil and sediment cleanup goals for the major COCs. The soil cleanup goals for the COCs are consistent with New Jersey human health direct contact standards or ecological risk-based goals.

The Burn Site is comprised of undeveloped properties that are zoned for office and residential development, and wetlands. Both areas currently contain ecological habitat. To meet the RAOs, specific soil cleanup goals listed below apply to different areas or land uses of the Site.

Soil ecological cleanup goals are based on the most sensitive terrestrial wildlife receptors and apply to the top foot of soil at all properties in the Burn Site that contain ecological habitat. Residential zoned properties contain ecological habitat. As a result, the ecological cleanup goals apply to the top foot of soil and residential cleanup goals apply through the remaining soil depth.

The soil and sediment cleanup goal for arsenic will be based on the ecological goal and will equal the background value of 19 mg/kg (that is also the NJDEP Residential Direct Contact Soil Remediation Standard).

The soil cleanup goals for lead in the top foot of soil is the ecological cleanup goal of 213 mg/kg since this value is lower than the human health direct contact cleanup goal of 400 mg/kg. The soil cleanup goal for lead below one foot in depth is the human health cleanup goal of 400 mg/kg. Additionally, to achieve the risk reduction goal established for the Site, which is to limit the probability of a child's blood lead level exceeding 5 µg/dL to 5% or less, the average lead concentration across the surface of the remediated area must be at or below 200 mg/kg.

The sediment cleanup goal for lead is the ecological cleanup goal of 213 mg/kg that is based on the most sensitive wildlife receptor.
Site-specific impact to groundwater levels for unsaturated soil will be determined during remedial design. Saturated soil that contains lead at levels exceeding 1000 mg/kg are considered source areas to groundwater contamination.

The cleanup goals for the Burn Site are as follows:

Soil:

Arsenic:

- Non-residential cleanup goal: 19 mg/kg
- Residential cleanup goal: 19 mg/kg
- Ecological cleanup goal: 19 mg/kg

Lead:

- Residential cleanup goal: 400 mg/kg
- Ecological cleanup goal: 213 mg/kg

Sediment:

Arsenic:	19 mg/kg
Lead:	213 mg/kg

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected remedy be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practical. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

Potential technologies applicable to soil or sediment remediation were identified and screened by effectiveness, implementability, and cost criteria, with emphasis on effectiveness. Those technologies that passed the initial screening were then assembled into remedial alternatives.

For the soil and sediment alternatives, the proposed depths of excavation are based on the soil boring data taken during the RI. These depths were used to estimate the quantity of soil to be removed and the associated costs. The actual depths and quantity of soil to be removed will be finalized during design and implementation of the selected remedy. Full descriptions of each proposed remedy can be found in the FS which is part of the Administrative Record.

The time frames below are for construction and do not include the time to negotiate with the responsible parties, design a remedy or the time to procure necessary contracts. Five-year reviews will be conducted as a component of the alternatives that would leave contamination in place above levels that allow for unlimited use and unrestricted exposure.

For all soil and sediment alternatives, the Present Worth Cost includes the periodic present worth cost of five-year reviews.

Soil Alternatives:

Alternative 1 - No Action

Capital Cost:	*$0*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$0*
Timeframe:	*0 years*

The NCP requires that a “No Action” alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated soil at the Burn Site.

Alternative 2 – Institutional Controls and Monitoring

Capital Cost:	*$319,000*
Annual O&M Cost:	*$8,250*
Present Worth Cost:	*$563,790*
Time Frame including O&M:	*30 years*

This alternative would use Institutional Controls, such as deed notices, to prevent exposure to site contaminants and monitoring to assess any change in contaminant conditions over time. The existing fences in and around the Burn Site Area would be maintained, and a new fence would be installed around the Railroad Track Area. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 3 – Capping and Institutional Controls

Capital Cost:	*$6,221,305*
Annual O&M Cost:	*$22,000*
Present Worth Cost:	*$6,636,719*
Construction Time Frame:	*5 months*

This alternative would use soil or asphalt covers as the primary method to prevent exposure to contaminants in site soils. Two feet of soil would be excavated to allow the installation of a two-foot soil cap to prevent contact with soils that exceed the soil cleanup goals.

Approximately 9,500 cubic yards of soil would be excavated to accommodate a cap. The excavated soil would be transported to an appropriate disposal facility.

Institutional controls, such as a deed notice, would be required on all properties where residential soil standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 4 – Excavation, Capping and Institutional Controls

Capital Cost:	*$18,723,716*
Annual O&M Cost:	*$22,000*
Present Worth Cost:	*$19,139,131*
Construction Timeframe:	*8 months*

The Burn Site consists of both residential and non-residential (United States Avenue) zoned areas. In this alternative, soil within the Burn Site that exceeds the residential cleanup goals, would be removed to approximately ten feet. Soil located below ten feet that exceeds the cleanup goals would be capped with clean soil. Remaining unsaturated soil that exceed site-specific impact-to-groundwater values would receive an impermeable cap. The impermeable cap would be expected to minimize surface water percolation through the soil thereby reducing the impact on groundwater. Several areas of saturated soil within the Site that are a source of groundwater contamination would be removed. Soil removal in these portions of the Site is estimated to extend to 12 feet. Removal of saturated soil that acts as a source of groundwater contamination would also result in areas of deep excavation, between four to twelve feet.

For the non-residential zoned area (United States Avenue), soil would not be removed and the asphalt roadway would serve as a cap, and institutional controls would be established to prevent exposure.

Institutional controls, such as deed notices, would be required for all residential areas and United States Avenue where residential standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Approximately 60,000 cubic yards of soil would be removed under this alternative.

Alternative 5 -- Excavation and Institutional Controls

Capital Cost:	*$26,037,848*
Annual O&M:	*$4,950*
Present Worth Cost:	*$26,241,689*
Construction Timeframe:	*10 months*

The Burn Site consists of both residential and non-residential (United States Avenue) zoned areas. In this alternative, all soils exceeding the residential cleanup goals located within residentially zoned area would be removed. Any remaining soil that exceeds ecological cleanup goals in the top foot of soil outside the footprint of the residential soil cleanup goal excavation would also be removed.

Since all the accessible contaminated soils would be removed from excavated areas, no capping would be necessary in the excavated areas. There would be no need for a soil cap as all soils that exceed residential cleanup goals would be removed. There would also be no need for an impermeable cap to protect groundwater, as all unsaturated soil that exceed site-specific impact-to-groundwater values would be excavated. Soil removal in these portions of the Site is estimated to extend to 18 feet.

For the non-residential zoned area (United States Avenue), soil would not be removed and the asphalt roadway would serve as a cap, and institutional controls would be established to minimize the potential for exposure.

Approximately 76,000 cubic yards of soil would be removed under this alternative.

Institutional controls, such as a deed notice, would be required on all properties where residential standards are not met. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Common Elements: Surface Water

Surface water monitoring is included as part of each remedial alternative except for No Action. Monitoring would be conducted on a quarterly basis to assess any changes in contaminant conditions over time. It is expected that removal of sediment, combined with soil removal, and/or capping will result in a decrease of surface water contaminants to levels below NJSWQS. If monitoring indicates that contamination levels have not decreased to below the NJSWQS, EPA may require an action in the future.

Sediment Alternatives:

Alternative 1 – No Action

Capital Cost:	*$0*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$0*
Timeframe:	*0 years*

The NCP requires that a “No Action” alternative be evaluated to establish a baseline for comparison with other remedial alternatives. Under this alternative, no action would be taken to remediate the contaminated sediment at the Burn Site.

Alternative 2 – Institutional Controls and Monitored Natural Recovery

Capital Cost:	*$229,680*
Annual O&M Cost:	*$11,000*
Present Worth Cost:	*$508,595*
Timeframe including O&M:	*30 years*

Under this alternative, no removal or capping of sediment would be conducted and exposure to contaminants would not be prevented. Periodic monitoring would be performed to determine if contaminant concentrations in surface sediment were declining to a level that is protective of ecological receptors. Institutional controls, such as a deed notice, would be required since contaminants remain above unrestricted levels. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 3 – Dredging, Capping and Natural Recovery

Capital Cost:	*$1,628,905*
Annual O&M Cost:	*$27,500*
Present Worth Cost:	*$2,112,570*
Construction Timeframe:	*3 months*

Under this Alternative, up to one foot of sediment containing contaminants at concentrations exceeding the ecological cleanup goals would be removed from White Sand Branch and Honey Run. In areas where one foot of sediment is removed to meet the ecological cleanup goals, natural sedimentation would be allowed to restore the stream to its previous elevation. A cap would be installed on areas of the stream where levels of contaminants exceeding the cleanup goals remain after excavation. The cap would consist of six inches of sand, covered by three inches of stone that would act as an armoring layer. Natural sedimentation would then fill in above the armoring layer and reestablish the previous elevation of the stream. Approximately 350 cubic yards of sediment would be removed under this alternative.

A minimum of five years of sampling would take place to confirm that restoration was successful and that contaminant levels remain below the cleanup goals.

Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Alternative 4 –Dredging

Capital Cost:	*$1,574,335*
Annual O&M Cost:	*$0*
Present Worth Cost:	*$1,716,751*
Construction Timeframe:	*4 months*

This alternative consists of removal of all sediment with site-related contaminants exceeding ecological cleanup goals from White Sand Branch beginning at the northeast corner of the Burn Site Fenced Area and extending to the location where White Sand Branch combines with Honey Run, from two sections of Honey Run. Sediment in the sections of Honey Run where COC were not detected above cleanup goals would undergo additional sampling during design to determine if sediment removal is needed in these sections. No capping of sediments would be necessary since all sediment exceeding the cleanup goals would be removed. Areas where sediment is removed would be backfilled with clean material and the area restored.

It is estimated that 825 cubic yards of sediment would be removed under this alternative. A minimum of five years of monitoring would be conducted to ensure that the concentration of contaminants in the sediments remain below the cleanup goals. Because no contamination would remain above unrestricted levels, five-year reviews would not be required.

EVALUATION OF ALTERNATIVES

The NCP lists nine criteria that EPA uses to evaluate the remedial alternatives individually and against each other 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. Seven of the nine evaluation criteria are discussed below. The final two criteria, "State Acceptance" and "Community Acceptance" are discussed at the end of the document. A detailed analysis of each of the alternatives is in the FS report.

THE NINE SUPERFUND EVALUATION CRITERIA

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

2. Compliance with Applicable or Relevant and Appropriate Requirements (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 (TMV) 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 contamination 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 operations 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/Support Agency Acceptance considers whether the State agrees with the 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.

Evaluation of Soil Alternatives

1. Overall Protection of Human Health and the Environment

Alternative 1, No Action, would not be protective of human health or the environment since it does not include measures to prevent exposure to contaminated soil.

Alternative 2 would protect human health by restricting access to the contaminated soil through use of institutional controls, but such controls would not be protective of ecological receptors. It also would not address the source of groundwater contamination or prevent migration of soil contaminants to the surface water.

Alternatives 3, 4 and 5 provide an increasing progression of control of contaminated soil through a combination of excavation and capping. However, Alternative 3 would not completely control migration of soil contaminants at depth to groundwater since only shallow soil would be removed. In addition, Alternative 3 would not address sources of groundwater contamination in deep saturated soils that would be removed in Alternatives 4 and 5.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Actions taken at any Superfund site must meet all applicable or relevant and appropriate requirements under federal and state laws or provide grounds for invoking a waiver of those requirements.

Alternative 1 and Alternative 2 would not meet chemical-specific ARARs.

Alternatives 4 and 5 would be in compliance with chemical-specific ARARs by removing contaminated soil both in the shallow and deep zones and through capping.

Action-specific ARARs would be met by Alternatives 3 through 5 during the construction phase by proper design and implementation of the action including disposal of excavated soil at the appropriate disposal facility.

3. Long-Term Effectiveness and Permanence

Alternatives 1 and 2 would not provide long-term effectiveness or permanent protection to ecological receptors, groundwater or surface water because the soil contaminants would remain uncontrolled.

Alternative 3 does not provide as great a degree of long-term effectiveness and permanence in controlling sources of groundwater contamination when compared to Alternatives 4 and 5 because deep saturated soil contamination that acts as a source to groundwater contamination will not be removed from the Burn Site Fenced Area.

By removing contaminants exceeding the cleanup goals from the White Sand Branch and Honey Run flood plain, and removing contaminated soil to a deeper depth, Alternative 4 would achieve a greater degree of long-term protectiveness and permanence than Alternative 3. In addition, Alternative 4 would require capping on portions of the Burn Site Fenced Area. Alternative 5 offers the greatest degree of long-term permanence by removing almost all contaminants and relying the least on capping.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

Alternatives 1 and 2 would not reduce the toxicity, mobility or volume of soil contaminants since no material will be removed or capped.

For the soil alternatives that involve removal and/or capping of soil, there is no treatment of the contaminants and therefore, no reduction in toxicity. Removal of the contaminated soil would decrease the volume of contaminants at the Site and capping would decrease contaminant mobility. The excavated material would be transferred to a landfill without treatment and therefore the overall reduction of toxicity mobility or volume through treatment would not be achieved. The amount of contamination removed or capped increases progressively from Alternatives 3 to 5. Alternative 5 would leave the least amount of contamination on the Site, but would not reduce the toxicity mobility or volume of contaminants any more than the other alternatives.

5. Short-Term Effectiveness

Short-term effectiveness considers the effects the implementation of an alternative will have on the community, workers and the environment and the amount of time until an alternative effectively protects human health and the environment.

Alternatives 1 and 2 do not present any short-term risks to site workers or the environment because they do not include active remediation work.

Under Alternatives 3 through 5, potential adverse short-term effects to the community include increased traffic, noise, and road closures.

Risks to site workers, the community and the environment include potential short-term exposure to contaminants during excavation of soil. Potential exposures and environmental impacts associated with dust and runoff would be minimized with proper installation and implementation of dust and erosion control measures and monitoring. Portions of the Site, such as Honey Run and White Sand Branch, consist of large areas of wetlands. Under Alternatives 3 through 5, it would be necessary to remove trees and vegetation as well as disrupt the small streams and associated wildlife.

Alternatives in which the largest quantity of soil is removed would have the greatest area of impact, would require the longest period of time to complete, and would have the highest potential for short–term adverse effects. Alternatives 3, 4 and 5 would take 5, 8, and 10 months, respectively, to complete. Among Alternatives 3 through 5, Alternative 3 would take the shortest time to achieve protection of human health and the environment and would, therefore, have the lowest potential for short-term adverse effects. Alternative 5 would take the longest time to implement and would have the highest potential for short-term adverse effects.

6. Implementability

Because Alternatives 1 and 2 would not entail any construction, they would be easily implemented.

Alternatives 3 through 5 have common implementability issues related to the removal of contaminated soil and installation of the caps. These include short-term traffic disruption on United States Avenue. The amount of disruption depends on the location of the contaminated soil, the amount of soil removed and the amount of time it takes for removal.

The increased volume of soil removal associated with Alternative 4 and 5 increases the implementation difficulties compared to Alternative 3.

In Alternatives 4 and 5, deep excavations to remove groundwater source areas in the Burn Site Fenced Area present implementability challenges. Alternative 5 presents greater implementability challenges than Alternative 4 due to the additional volume of soil to be removed.

In general, the amount of soil to be removed and area to be capped increases from Alternatives 3 to 5. Therefore, alternative 3 is the easiest to implement and alternatives 4 and 5 would be more difficult to implement.

7. Cost

The total estimated present worth costs increase with the amount of material removed. The estimated costs are $0 for Alternative 1, $563,790 for Alternative 2, $6,636,719 for Alternative 3, $19,139,131 for Alternative 4, and $26,241,689 for Alternative 5.

Evaluation of Sediment Alternatives

1. Overall Protection of Human Health and the Environment

Alternative 1 is not protective of human health or the environment because no action would be taken to address sediment contamination.

Alternative 2 would use institutional controls to protect human health by restricting access to the contaminated sediment during the time it takes for natural recovery. However, institutional controls would not be protective of ecological receptors because they do not control wildlife access. In addition, the amount of time to achieve natural recovery would be unacceptably long.

Alternative 3 would be protective because one foot of contaminated sediment would be removed and the remaining contaminated sediment would be capped.

Alternative 4 would be protective because sediment contamination above the cleanup goals would be removed.

2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Sediment cleanup goals are risk-based and, therefore, there are no chemical-specific ARARs. Alternatives 3 and 4 which require remedial action would comply with action and location specific ARARs that apply to remediation and filling in floodplains, work in wetland areas, waste management, and storm water management.

3. Long-Term Effectiveness and Permanence

Alternatives 1 and 2 would allow existing contamination, and ecological exposures and risks to continue while natural recovery occurs. Natural recovery alone will not reduce surface sediment concentrations to levels that are protective of ecological receptors.

The cap associated with Alternative 3 would be installed in Honey Run and White Sand Branch. This alternative would be effective in maintaining protection of human health and the environment in the capped section of the water body. Such protectiveness would be permanent as long as the cap remains in place. This alternative would require more maintenance to ensure long-term effectiveness.

Alternative 4 would remove all sediment contamination from the small streams within White Sand Branch and portions of Honey Run. Alternative 4 would be more effective and have a higher degree of permanence than Alternative 3 since all contaminated sediment would be removed under Alternative 4.

4. Reduction of Toxicity, Mobility, or Volume through Treatment

The major contamination in sediment at the Site is due to the presence of metals. All the alternatives, except No Action, involve removal and/or capping of the sediment. There is no treatment of the contaminants and, therefore, no reduction of toxicity. Removal of the contaminated sediment would decrease the volume and capping would decrease the mobility of any contamination at the Site. The excavated sediment would be transferred to a landfill without treatment.

Since removal and containment are the technologies that will be used for the remediation of sediment, none of the alternatives provide reduction of toxicity, mobility, or volume through treatment.

5. Short-Term Effectiveness

Alternatives 1 and 2 do not present any short-term risks to the community, site workers or the environment because these alternatives do not include any active remediation work.

Alternatives 3 and 4 involve excavation and thus have potential for short-term adverse effects. Potential risks posed to site workers, the community and the environment during implementation of each of the sediment alternatives could be due to wind-blown or surface water transport of contaminants. Any potential impacts associated with dust and runoff would be minimized through proper installation and implementation of dust and erosion control measures. The areas would be monitored throughout the construction.

The potential risk of sediment release could increase with Alternatives 3 and 4 due to removal of existing vegetation. There is little difference in the implementation time from the shortest (three months) to the longest (four months). Therefore, Alternatives 3 and 4 are equal in terms of short-term effectiveness.

6. Implementability

Sediment Alternatives 1 and 2 would not include any construction, and therefore they would be easily implemented.

Alternatives 3 and 4 require sediment removal and face similar implementability challenges. Such challenges include access to low lying saturated areas, control of surface water flow, controlling intrusion of groundwater into excavation areas, streambed stabilization and wetland restoration.

The implementability challenges increase with the length of White Sand Branch and Honey Run to be remediated and volume of sediment to be removed. Alternative 3 calls for the least amount of sediment removal and therefore presents the least amount of implementability challenges among the alternatives. In contrast, Alternative 4 poses the greatest implementability challenges since it requires the largest remediation area and involves deeper removal of sediment.

7. Cost

The total estimated present worth costs are $0 for

Alternative 1, $508,595 for Alternative 2, $2,112,570 for Alternative 3 and $1,716,751 for Alternative 4.

PREFERRED ALTERNATIVE

The preferred soil alternative for cleanup of the Burn Site is Alternative 4, Excavation, Capping and Institutional Controls. For the sediment, the preferred alternative is Alternative 4, Excavation. As discussed above, the surface water will be monitored to determine the effectiveness of the implemented soil and sediment remedies. Together, these three elements comprise EPA's Preferred Alternative.

Soil:
The Preferred Soil Alternative 4 (Figure 5) involves excavation, capping, and off-site disposal of soil. The major components of the Preferred Soil Alternative include:

- Excavation, transportation and disposal of 60,000 cubic yards of contaminated soil;
- Excavation of soil to depths ranging from 2 feet to 12 feet.
- Installation of engineering controls;
- Restoration and revegetation of White Sand Branch and Honey Run flood plain; and
- Institutional controls, such as a deed notice, to prevent exposure to residual soil that exceed levels that allow for unrestricted use.

This alternative would remove soil within the saturated zones that contribute contaminants to groundwater. By removing these saturated soils, the concentrations of contaminants in groundwater that exceed ground water quality standards (GWQS) is anticipated to be reduced.

All surface soil (to a depth of one foot) within the ecological areas of the Burn Site will be removed if concentrations of contaminants are greater than the ecological cleanup goals.

In all other areas within the Burn Site except under United States Avenue, soil will be removed to meet residential standards at depths ranging from two feet to twelve feet. Soil beneath United States Avenue will remain under the paving which will serve as a cap.

Soil Alternative 4 was chosen because it has fewer uncertainties in addressing the source areas compared to Alternative 3 and will provide an equivalent degree of protection as Soil Alternative 5.

The Preferred Soil Alternative was selected over other alternatives because it is expected to achieve substantial and long-term risk reduction through off-site disposal, and is expected to allow the Site to be used for its reasonably anticipated future land use, which is commercial/residential. The Preferred Soil Alternative reduces the risk within a reasonable time frame, at a cost comparable to other alternatives and provides for long-term reliability of the remedy.

The Preferred Soil Alternative would achieve cleanup goals that are protective for residential use on floodplain soils adjoining White Sand Branch. Though the remedy would be protective, it would not achieve levels that would allow for unrestricted use and therefore, institutional controls, such as deed notices would be required. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure.

Sediment:
The Preferred Sediment Alternative 4 (Figure 6) includes excavation of sediment with contaminant levels greater than the cleanup goals from Honey Run and White Sand Branch. The major components of the Preferred Sediment Alternative include:

- Construction of a stream diversion system to allow access to sediments;
- Excavation, transportation and disposal of 825 cubic yards of contaminated sediment;
- Dewatering and processing of excavated sediment; and
- Stream bank and revegetation and restoration.

Approximately three feet of sediment would be removed from White Sand Branch, beginning at the northeast corner of the Burn Site Fenced Area and extending to the location where White Sand Branch combines with Honey Run. Another three feet of sediment would be removed from Honey Run in the southeastern portion of the Site within areas that exceed cleanup goals. Under Sediment Alternative 4, additional sampling during design would determine the extent of sediment excavation within Honey Run.

After remediation of sediment, the stream banks, riparian zone and wetlands would be monitored for a period of five years to assure successful restoration of these areas.

The Preferred Sediment Alternative was selected over other alternatives because it is expected to achieve substantial and long-term risk reduction through off-site disposal of sediment by reducing contaminant levels in White Sand Branch and Honey Run. The Preferred Sediment Alternative 4 reduces risk within a reasonable timeframe, at a cost comparable to the other alternatives and provides for long-term reliability of the remedy.

Surface Water:
Surface water monitoring would be conducted on a quarterly basis to assess any changes in contaminant conditions over time. It is expected that removal of contaminated sediment, combined with soil removal, and/or capping will result in a decrease of surface water contaminants to levels below NJSWQS. If monitoring indicates that contamination levels have not decreased to below the NJSWQS, EPA may require an action in the future.

The Preferred Alternatives are believed to provide the best balance of tradeoffs among the alternatives based on the information available to EPA at this time. EPA believes the Preferred Alternatives would be protective of human health and the environment, would comply with ARARs, would be cost-effective and would utilize permanent solutions. The selected alternatives may change in response to public comment or new information. The total present worth cost for both the soil and sediment preferred alternatives is $20,855,882.

Consistent with EPA Region 2's Clean and Green policy, EPA will evaluate the use of sustainable technologies and practices with respect to implementation of a selected remedy.

State Acceptance

The state of New Jersey concurs with the preferred alternatives of sediment and soil removal including off-site soil disposal. However, the state cannot concur with the capping and institutional control component of the preferred soil alternative unless property owners provide their consent to the placement of a cap and a deed notice.

Community Acceptance

Community acceptance of the Preferred Alternatives will be evaluated after the public comment period ends and will be described in the Record of Decision. Based on public comment, the Preferred Alternatives could be modified from the version presented in this proposed plan. The Record of Decision is the document that formalizes the selection of the remedy for a site.

COMMUNITY PARTICIPATION

EPA provided information regarding the cleanup of the Burn Site through meetings, the Administrative Record file for the Burn Site and announcements published in the local newspaper. EPA encourages the public to gain a more comprehensive understanding of the Site and the RI activities that have been conducted at them.

The dates for the public comment period; the date, the 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 on EPA's Preferred Alternative for the United States Avenue Burn Site contact:

Julie Nace
Remedial Project Manager
Nace.Julie@epa.gov
(212) 637-4126

Pat Seppi
Community Relations
Seppi.Pat@epa.gov
(212) 637-3679

U.S. EPA
290 Broadway 19th Floor
New York, New York 10007-1866

On the Web at:
https://www.epa.gov/superfund/us-avenue-burn

LEGEND

SITE BOUNDARY

STATE PLANE COORDINATES (NAD83)
N 364543.977 , E 361661.885

N

0 2,000 4,000

SCALE: 1 " = 2,000 '

TITLE:

FIGURE 1
SITE LOCATION MAP

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY,
NEW JERSEY

DATE:
01/17/2017

FILENAME:
204027_FIG1_BS_SITE_LOCATION.mxd

THE ELM GROUP
345 WALL STREET, PRINCETON, NEW JERSEY 08540
4936 YORK ROAD, SUITE 1000, HOLICONG, PENNSYLVANIA 18928
612 MAIN STREET, BOONTON, NEW JERSEY 07005
2436 EMRICK BOULEVARD, BETHLEHEM, PENNSYLVANIA 18020
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SOURCE:
1. SOURCES: ESRI, HERE, DELORME, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), SWISSTOPO, MAPMYINDIA, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

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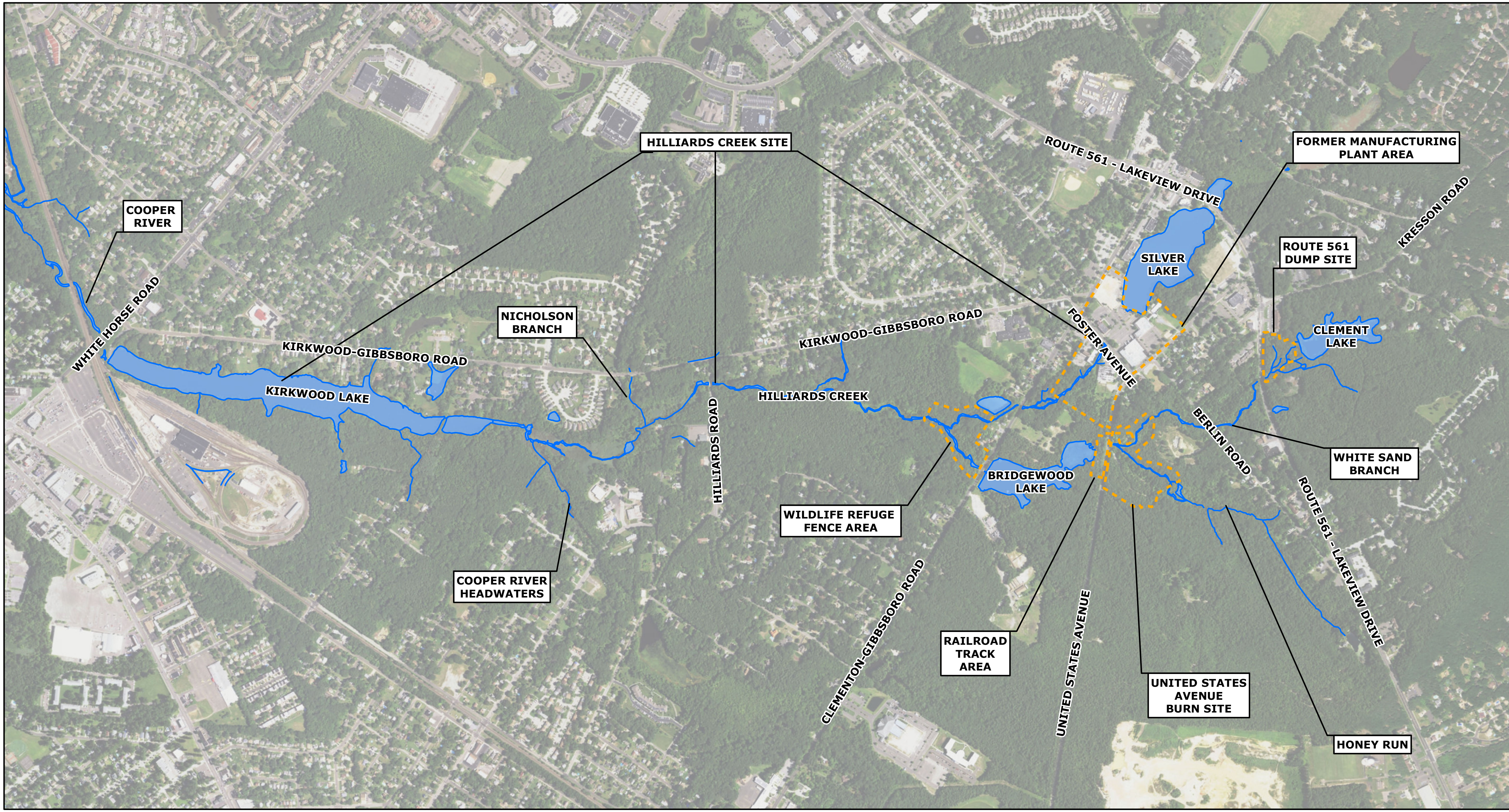

LEGEND

- SITE AREAS
- WATER BODIES
- STREAM CHANNEL

SOURCE:
1.SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY</ACP>
2. NJDEP OPEN WATER AREA OF CAMDEN COUNTY, NEW JERSEY 1986, DEPARTMENT OF ENVIRONMENTAL PROTECTION, 1998.

N

0 1,000 2,000

SCALE:1 " = 1,000 '

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY,
NEW JERSEY

DATE:
01/17/2017

TITLE:
FIGURE 2
SHERWIN-WILLIAMS GIBBSBORO SITE LOCATION MAP

FILENAME:
204027_FIG2_SW_SITE_LOCATION_MAP.mxd

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Note:
Shaded areas depict the locations where RI activties were conducted.

Legend

- Bridgewood Lake
- United States Avenue Burn Site
- Honey Run
- White Sand Branch
- Railroad Track Area
- Approximate Location of Culvert Under United States Avenue
- Fence Boundary
- Perennial Stream Channel

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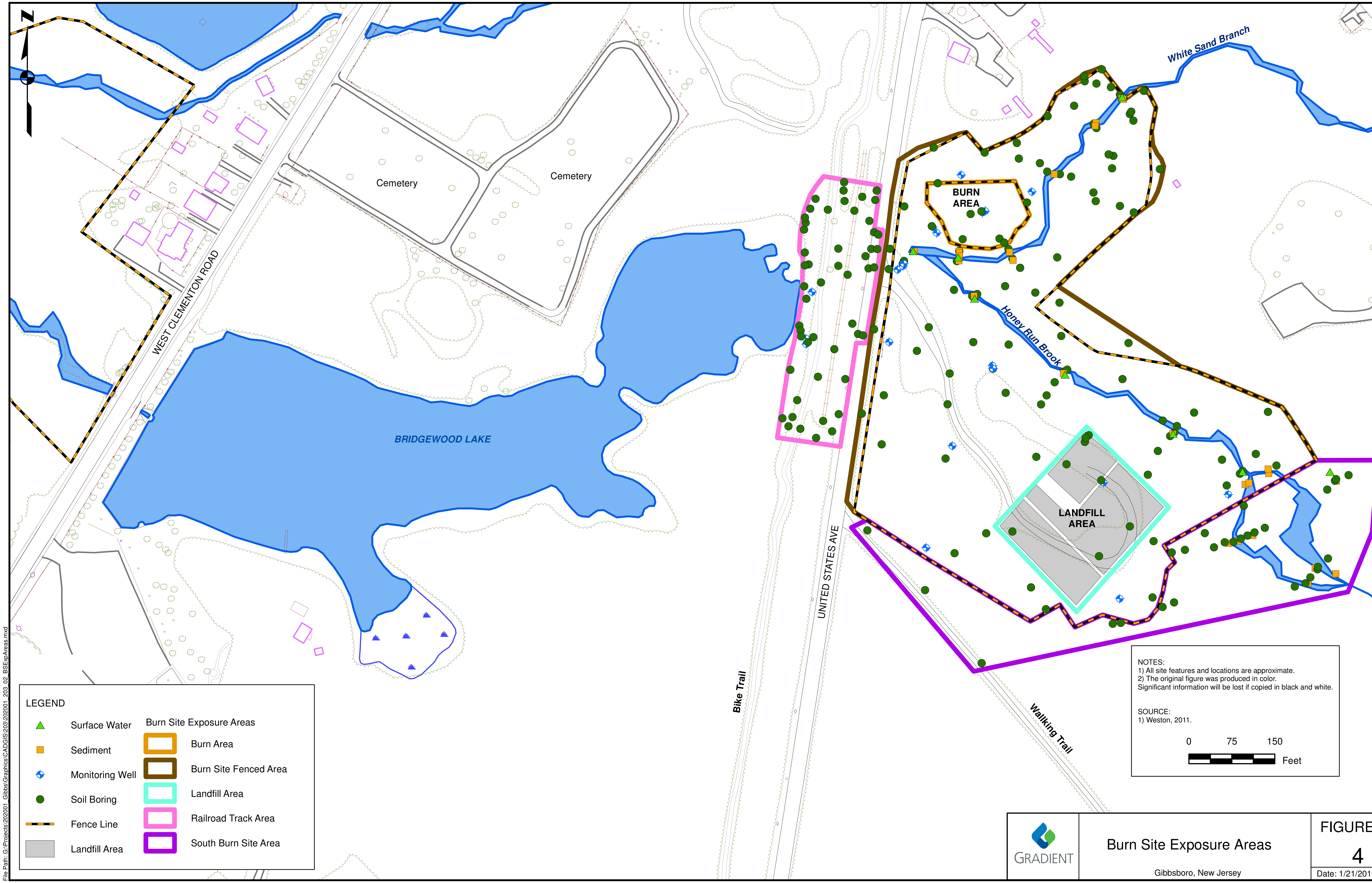
http://www.westonsolutions.com

REPORT DATE: February 2017	PROJECT MANAGER: S. Jones	CLIENT NAME: The Sherwin-Williams Company	DRAWING TITLE: UNITED STATES AVENUE BURN SITE KEY MAP
DRAWING: 19394_BS_Areas_Key_Map.mxd PATH: L:\SHERWIN\GIS\MXD\2017_02_BS_RIR\	CHECKED BY: A. Fischer		
REVISION No. 0	CONTRACT No. DELIVERY ORDER NO.	PROJECT NAME: United States Avenue Burn Site Remedial Investigation Report	
WORK ORDER No. 20076.022.086.0006	DRAWN/MODIFIED BY: P.DiTillio DATE CREATED: 2/3/2017		FIGURE: 3 SCALE: 1 " = 100 ' DATE: 2/28/2017



GRADIENT

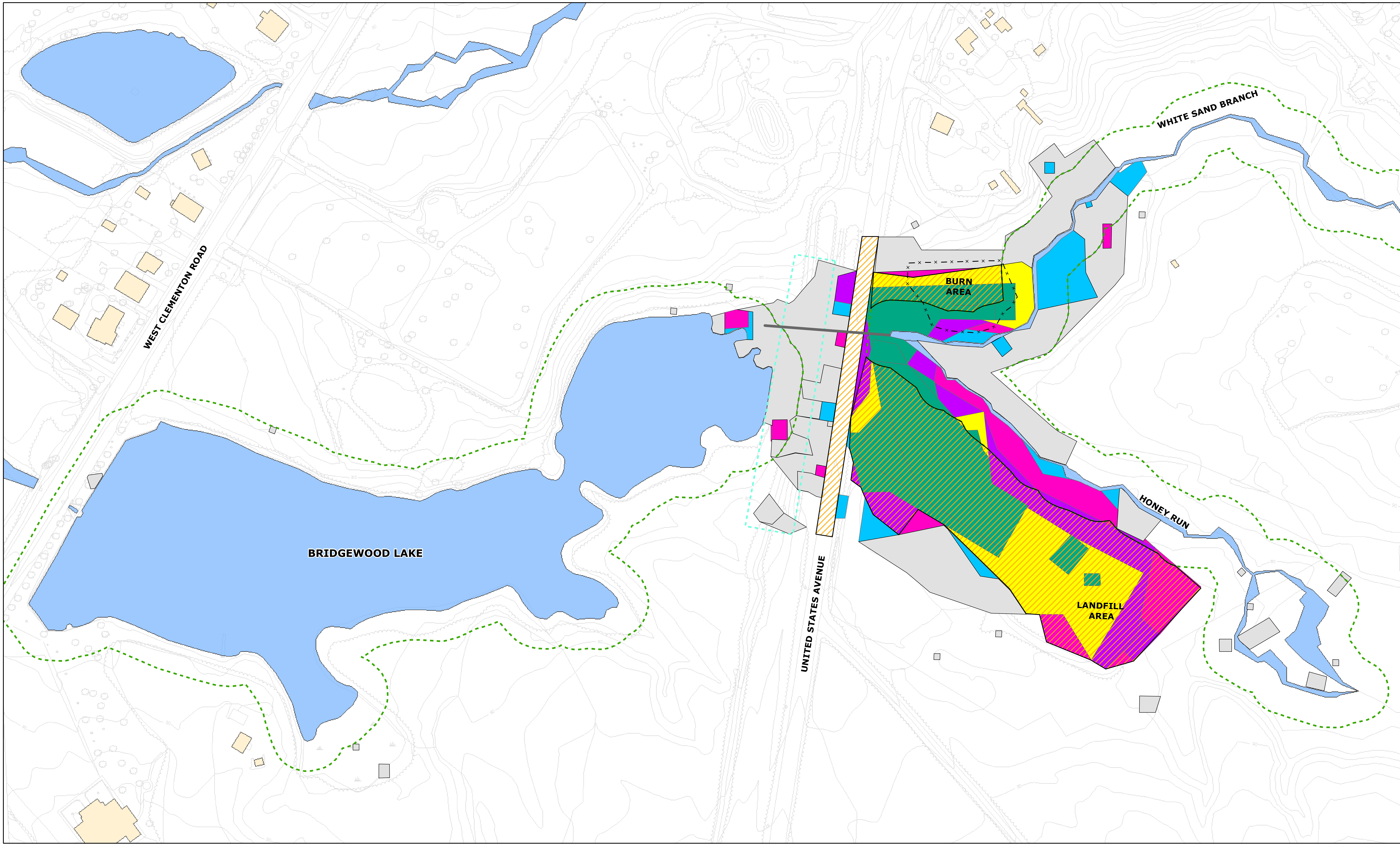
Burn Site Exposure Areas

Gibbsboro, New Jersey

FIGURE 4

Date: 1/21/2016

File Path: G:\Projects\202001_Gibbs\Graphics\CADGIS\203\202001_203_02_BSExpAreas.mxd



LEGEND

PUBLIC ACCESS AREA

RIPARIAN BUFFER (50 FEET)

FENCE BOUNDARY

AREAS TO BE CAPPED TO ADDRESS RDCSRS

APPROXIMATE LOCATION OF CULVERT BENEATH U.S. AVENUE

REMOVAL AREAS

2 FT EXCAVATION DEPTH

4 FT EXCAVATION DEPTH

6 FT EXCAVATION DEPTH

8 FT EXCAVATION DEPTH

10 FT EXCAVATION DEPTH

12 FT EXCAVATION DEPTH

NOTES:

1. IN THE ECOLOGICAL HABITAT AREAS ALONG WHITE SAND BRANCH, HONEY RUN AND BRIDGEWOOD LAKE SURFICIAL SOIL (TOP 1 FOOT) EXCEEDING THE SOIL PRGS WOULD BE REMOVED. SUBSURFACE SOIL (DEEPER THAN 1 FOOT) EXCEEDING THE RDCSRS IN THESE AREAS WOULD ALSO BE REMOVED.
2. WEST OF U.S. AVENUE, SOIL OUTSIDE OF THE ECOLOGICAL HABITAT AREAS THAT EXCEEDS THE RDCSRS WOULD BE REMOVED.
3. ON THE BURN SITE SOIL OUTSIDE OF THE ECOLOGICAL HABITAT AREAS THAT EXCEEDS THE RDCSRS WOULD BE REMOVED TO THE DEPTH OF 6 FEET. LIMITED AREAS OF SATURATED SOIL THAT REPRESENT SOURCES OF GROUNDWATER CONTAMINATION FROM 6 TO 12 FEET WOULD BE REMOVED. SOIL AREAS WITH CONCENTRATIONS REMAINING IN PLACE EXCEEDING THE RDCSRS WILL BE CAPPED.

SOURCE:
1. BASEMAP, WESTON SOLUTIONS, 2016

0 100 200

SCALE: 1 " = 100 '

TITLE:

FIGURE 5

SOIL ALTERNATIVE 4 – SOIL REMOVAL FOR HUMAN HEALTH AND ECOLOGICAL PROTECTION, GROUNDWATER SOURCE CONTROL, CAPPING AND INSTITUTIONAL CONTROLS

LOCATION:

UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY
NEW JERSEY

DATE: 06/28/2017

FILENAME: 204027_FIG23_BS_SOIL_ALTERNATE_4_REV2.mxd

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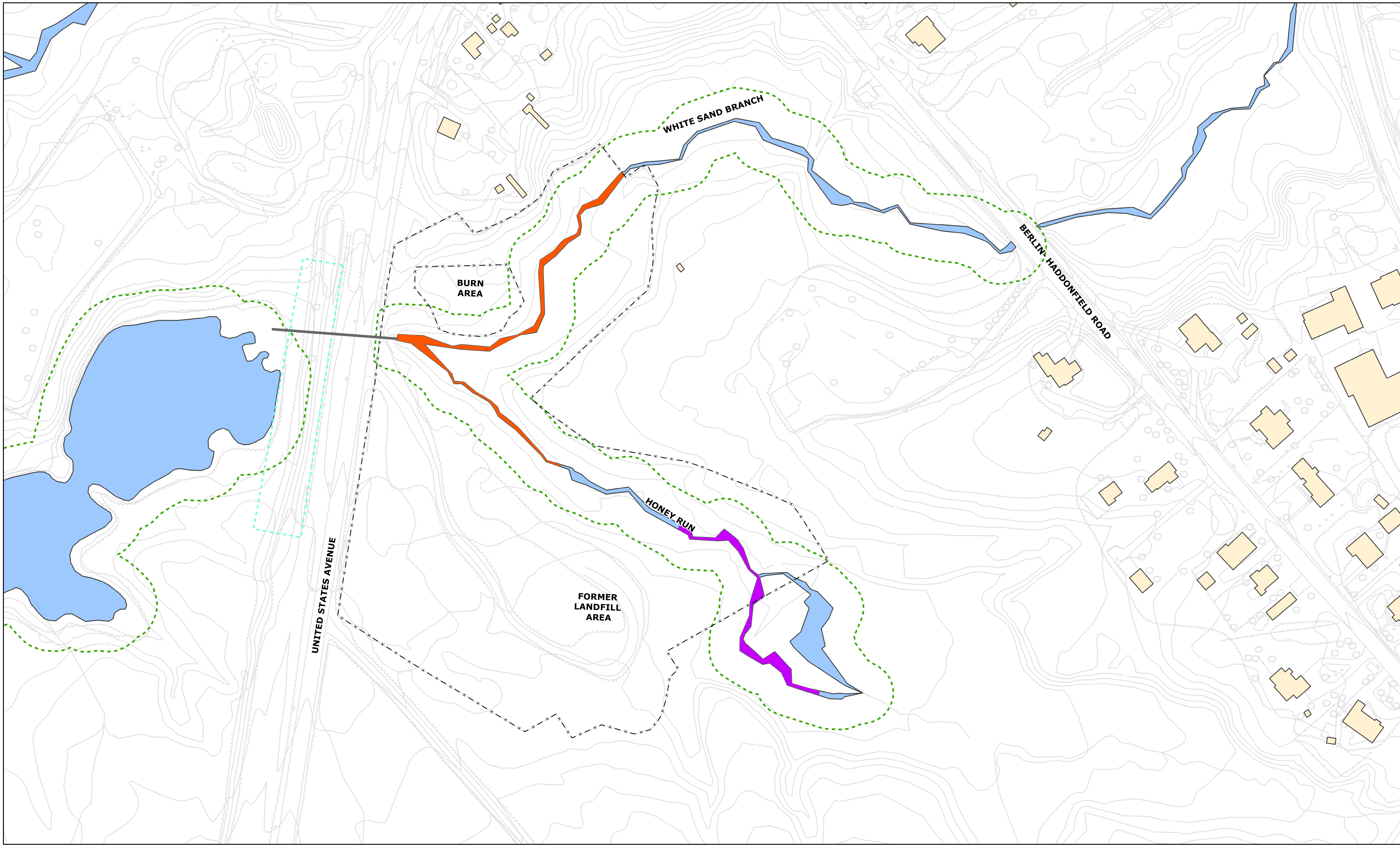

LEGEND

PUBLIC ACCESS AREA

RIPARIAN BUFFER (50 FEET, APPROXIMATE)

FENCE BOUNDARY

2 FT EXCAVATION DEPTH

2.5 FT EXCAVATION DEPTH

APPROXIMATE LOCATION OF CULVERT BENEATH U.S. AVENUE

SOURCE:
1.BASEMAP, WESTON SOLUTIONS, 2016

0 100 200

SCALE: 1 " = 100 '

TITLE: FIGURE 6
SEDIMENT ALTERNATIVE 4 - REMOVAL OF ALL SEDIMENT WITH CONTAMINANTS GREATER THAN PRGS

LOCATION:
UNITED STATES AVENUE BURN SITE
GIBBSBORO, CAMDEN COUNTY
NEW JERSEY

DATE: 01/18/2017

FILENAME: 204027_FIG25B_BS_SEDIMENT_ALTERNATE_4.mxd

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Table 1 Summary of Total Cancer Risks and Non-Cancer Hazards by Exposure Area

Exposure Area	Utility Worker		Construction Worker		Outdoor Worker		Adolescent Recreator		Adult Recreator	
	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard
BFA	2E-05	0.1	2E-05	**3**	6E-05	0.9				
BFA + HRB							4E-05	0.9	4E-05	0.6
BFA + WSB							5E-05	**1.1**	7E-05	0.8
LF	5E-06	0.1	5E-06	**2**	8E-06	0.3	4E-06	0.3	6E-06	0.2
BA	**6E-04**	**4**	**6E-04**	**102**	**2E-03**	**19**	**1E-03**	**20**	**1E-03**	**13**
SBS	4E-07	0.01	4E-07	0.4	3E-06	0.1	3E-06	0.1	4E-06	0.08
RR	8E-07	0.03	8E-07	0.8	6E-06	**1.2**	5E-06	0.9	4E-06	0.8

Exposure Area	Resident (All Media)			Resident (Soil Only)		
	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard, Child	Non-Cancer Hazard, Adult	Total Excess Lifetime Cancer Risk	Non-Cancer Hazard, Child	Non-Cancer Hazard, Adult
BFA + HRB	**4E-02**	**375**	**309**	**5E-04**	**9**	**3**
BFA + WSB	**4E-02**	**376**	**309**	**5E-04**	**9**	**3**
LF	**3E-02**	**369**	**308**	5E-05	**4**	1
BA	**4E-02**	**616**	**348**	**1E-02**	**251**	**42**
BSSM	**7E-03**	**29**	**4**	**7E-03**	**29**	**4**
SBS	**3E-02**	**367**	**307**	2E-05	**2**	0.2
RR	**3E-02**	**372**	**312**	9E-05	**7**	**5**

Notes:

BOLD – Cancer Risk > 1 x 10^{-4} or Hazard Index > 1.

Blank – Receptor not evaluated in this exposure area.

Table 2 Summary of Lead Risks

Exposure Area	Exposed Media	Receptor	Lead EPC (mg/kg)	Child Lead Risk includes Groundwater Lead EPC[1]		Child Lead Risk includes IEUBK Default Water Conc.[2]	
				GM BLL (µg/dL)	Predicted Probability of BLL > 10 µg/dL (%)	GM BLL (µg/dL)	Predicted Probability of BLL > 10 µg/dL (%)
BFA + HRB	Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs)	Recreator	888	1.9	0.1%		
BFA + HRB	Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs)	Adult Resident	888	3.0	1%		
BFA + HRB	Soil (0-0.5 ft bgs) + Sediment (0-0.5 ft bgs)	Child Resident	573	21	**94%**	5.9	**13%**
BFA + WSB	Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs)	Recreator	1,449	2.4	0.5%		
BFA + WSB	Soil (0-2 ft bgs) + Sediment (0-0.5 ft bgs)	Adult Resident	1,129	3.6	3%		
BFA + WSB	Soil (0-0.5 ft bgs) + Sediment (0-0.5 ft bgs)	Child Resident	814	22	**95%**	7.7	**28%**
BFA	Soil (0-10 ft bgs)	Utility Worker	2,153	1.3	0.01%		
BFA	Soil (0-10 ft bgs)	Construction Worker	2,153	8.1	**29%**		
BFA	Soil (0-2 ft bgs)	Outdoor Worker	888	2.3	0.4%		
LF	Soil (0-2 ft bgs)	Recreator	653	1.6	0.06%		
LF	Soil (0-2 ft bgs)	Adult Resident	653	2.5	1%		
LF	Soil (0-0.5 ft bgs)	Child Resident	957	22	**95%**	8.6	**38%**
LF	Soil (0-10 ft bgs)	Utility Worker	4,055	1.5	0.04%		
LF	Soil (0-10 ft bgs)	Construction Worker	4,055	14	**67%**		
LF	Soil (0-2 ft bgs)	Outdoor Worker	653	2.0	0.2%		
BA	Soil (0-2 ft bgs)	Recreator	31,224	32	**96%**		
BA	Soil (0-2 ft bgs)	Adult Resident	31,224	73	**100%**		
BA	Soil (0-0.5 ft bgs)	Child Resident	55,600	Note 3	**100%**	Note 3	**100%**
BA	Soil (0-10 ft bgs)	Utility Worker	22,020	3.9	4%		
BA	Soil (0-10 ft bgs)	Construction Worker	22,020	73	**100%**		
BA	Soil (0-2 ft bgs)	Outdoor Worker	31,224	47	**99%**		
BSSM	Suspect Material	Adult Resident	783	2.8	1%		
BSSM	Suspect Material	Child Resident	783	21	**95%**	7.4	**26%**
RR	Soil (0-2 ft bgs)	Recreator	2,015	3.0	1%		
RR	Soil (0-2 ft bgs)	Adult Resident	2,015	5.6	**12%**		
RR	Soil (0-0.5 ft bgs)	Child Resident	298	19	**92%**	3.6	1%
RR	Soil (0-10 ft bgs)	Utility Worker	1,203	1.2	0.006%		
RR	Soil (0-10 ft bgs)	Construction Worker	1,203	5.0	**8%**		
RR	Soil (0-2 ft bgs)	Outdoor Worker	2,015	4.0	4%		

Notes:

BLL – Blood Lead Level; EPC – Exposure Point Concentration; ft bgs – Feet Below Ground Surface; GM – Geometric Mean; IEUBK – Integrated Exposure Uptake Biokinetic Model.

BOLD – Predicted probability > 5%.

(1) The sitewide groundwater EPC is 320 µg/L.

(2) The default drinking water concentration used by the IEUBK model is 4 µg/L.

(3) The EPC is outside of the range of values for which the IEUBK has been calibrated and validated; thus, the model will not estimate a BLL. Based on other results for other exposure areas, the probability is estimated as 100%.

ATTACHMENT B

PUBLIC NOTICE

Djokovic will sit out rest of 2017 with elbow injury

HOWARD FENDRICH
ASSOCIATED PRESS

GARETH FULLER/PA VIA AP
Novak Djokovic receives medical treatment during his Wimbledon match against Tomas Berdych on July 12. Djokovic will miss the rest of this season because of an injured right elbow.

For more than a year, Novak Djokovic's right elbow hurt when he hit serves or forehands. The pain kept getting worse, and now he's going to give his arm a chance to heal by sitting out the rest of 2017.

Djokovic will miss the U.S. Open, ending his streak of participating in 51 consecutive Grand Slam tournaments, and aims to return to the ATP tour in January. He made the announcement Wednesday — exactly a year to the day after Roger Federer said he would be sidelined for the second half of last season.

"This is one of those injuries where nothing can really help instantly. You just have to allow natural rehabilitation to take its course," Djokovic said. "Professionally, this is not, obviously, an easy decision for me."

Since entering his first major tournament at the 2005 Australian Open, Djokovic has never missed one, the third-longest active run among men and seventh-longest in history.

In that time, the 30-year-old Serb has won 12 Grand Slam titles, including the U.S. Open in 2011 and 2015. Only three men have won more major tennis singles championships: Federer (19), Rafael Nadal (15) and Pete Sampras (14).

"The remarkable series has come to an end," Djokovic said. "My body has its limits, and I have to respect that and be grateful for all that I have achieved so far."

He said that Andre Agassi, with whom he recently began working on a part-time basis, will be his coach after the hiatus. Djokovic plans to start with a tuneup tournament ahead of the Australian Open at the start of 2018.

"He supports my decision to take a break and remains my head coach," Djokovic said about Agassi, also noting that he'll be looking for a new fitness trainer. "He is going to help me get back into shape and bounce back strong after the recovery period."

Djokovic made his announcement via Facebook, his website and at a news conference in Belgrade, Serbia.

His last match was on July 12, when he stopped playing during his Wimbledon quarterfinal against Tomas Berdych because the elbow was too painful. Djokovic said then he had been struggling with the elbow on his racket-swinging arm for about 1½ years, which he reiterated Wednesday. He said he does not need surgery.

Since winning the 2016 French Open to become the eighth man to complete a career Grand Slam and the first man in nearly a half-century to win four consecutive major trophies, Djokovic's form has dipped. His ranking dropped from No. 1 to No. 4; he failed to defend any of those major titles.

He acknowledged Wednesday that he "felt worn out" and "flat" after the run of success that culminated at Roland Garros in 2016.

"I was searching for myself, for motivation," he said.

Djokovic made it past the quarterfinals at only one of the past five majors: last year's U.S. Open, where he lost in the final to Stan Wawrinka.

Djokovic, who also mentioned Wednesday that his wife is expecting their second child, reached at least the semifinals at Arthur Ashe Stadium each of the past 10 years. That includes seven appearances in the final.

Henri Laaksonen of Switzerland, who is ranked 95th, will get Djokovic's spot in the field at Flushing Meadows. This year's U.S. Open starts Aug. 28.

"All the doctors I've consulted, and all the specialists I have visited, in Serbia and all over the world, have agreed that this injury requires rest. A prolonged break from the sport is inevitable," Djokovic said. "I'll do whatever it takes to recover."

Federer demonstrated the benefits of a break last year, sitting out after Wimbledon to let his surgically repaired left knee heal fully.

He missed the Rio Olympics and U.S. Open and dropped out of the top 10 in the rankings.

But Federer was rejuvenated at age 35 when he returned at the beginning of this season and won the Australian Open to end a 4½-year Grand Slam drought, plus titles at Indian Wells and Miami. He took more time off after that, missing the clay-court circuit, and returned for the grass, winning his eighth Wimbledon championship and 19th major title overall this month.

"Well, I hope it's not a trend," Federer said about lengthy absences, the day after he won Wimbledon. "You've got to have the same issues that I had. I didn't just walk away from the game for six months last year just because I was in the mood to. I actually had to, so it's a big difference there, as well. But, yes, everybody needs to manage their own schedules."

Harry Kalas' son returns to Philly with Astros

MEGHAN MONTEMURRO
THE NEWS JOURNAL

PHILADELPHIA – His father's presence can still be found throughout Citizens Bank Park.

There's the plaque on the Phillies' Wall of Fame, not far from his statue near Harry the K's restaurant. His "*T his ball is ... outta here!*" call continues to be played after a Phillie hits a home run while a video of him singing Frank Sinatra's "High Hopes" can be seen on the scoreboard after a Phillies win.

Although eight years have passed since long-time Phillies broadcaster Harry Kalas unexpectedly died before a game, he remains a part of the organization.

Todd Kalas, in his first season as the TV play-by-play announcer for the Houston Astros, appreciates the bond between his father and the fans. Harry Kalas' Hall of Fame career in Philadelphia lasted 39 years (1971-2009).

"I always look at the plaque and know how much dad loved the city of Philadelphia," said Kalas, 51. "His relationship with Phillies fans is something you don't see very often so it always warms my heart to see that. ... I love the fact his legacy lives on as strong as it does.

"I never discount how big of an impact he made here and how important his relationship with Philadelphia fans was," he added. "I will always cherish the fact that the memories still linger on here."

Todd Kalas, Harry's oldest son, spent three years (1994-96) on the Phillies' TV broadcast team with his father before joining the Tampa Bay Rays TV broadcast team where he spent 19 seasons (1998-2016).

"It's always great coming back to Philly," Kalas said. "As much as I love the Tampa Bay market – I still feel like that's my most recent home – Philly's still my hometown."

No matter how long he might be away from the city that continues to adore his father, Todd Kalas' connection to the fans and franchise remains strong.

"I knew going into [Monday's] game it was going to be a great night, catching up with people," Kalas said. "People here in the Phillies' organization have been great to me through the years. They're like my second family."

Haddonfield pooch named a top dog

CELESTE E. WHITTAKER
@CP_CWHITTAKER

HADDONFIELD – Aladdin, a 6-year-old pit bull, has come a long way from when he was rescued four years ago, just 18 pounds with 12 teeth missing and broken back legs and tail.

He is a certified pet therapy dog who travels all around the country doing good work, helping to relax and heal others, and he recently earned a huge honor for it.

Aladdin was named Therapy Dog of the Year by the American Humane Association and is one of seven finalists for the 2017 American Humane Association's Hero Dog Awards. The public can submit one vote per day through Aug. 30 at www.herodogawards.org.

Each of the seven finalists won top honors in their individual categories from a field of 188 overall initial nominees. The category Aladdin finished tops in was Therapy Dog.

The seven finalists receive $2,500 for their designated charity partner with the overall winner's charity partner getting an additional $5,000 for a grand total of $7,500, according to the American Humane Association.

"It is quite an honor," said Aladdin's owner, Michele Schaffer-Stevens. "He was one of 30 dogs chosen for his therapy work. They went through three rounds of voting and he won overall. He beat out some pretty amazing dogs. It was a huge honor for us."

Aladdin lives in Haddonfield with Schaffer-Stevens, and travels around the country with her making visits to those in need. His story and his work have drawn national attention.

Schaffer-Stevens said they have been asked to appear on the Harry Connick Jr. show in New York next month. In the spring, Aladdin appeared on "Dog Whisperer" Cesar Milan's show as his "inspirational dog" and has made many other appearances over the years.

The pair will fly out to Los Angeles for the Hero Dog Awards gala on Sept. 16 at the Beverly Hilton, which will be broadcast as a two-hour special on the Hallmark Channel this fall.


PHOTO PROVIDED
Aladdin, a therapy dog from Haddonfield, is shown at an Austin, Texas animal shelter. Aladdin was named Therapy Dog of the Year by the American Humane Association.

"The American Humane Hero Dog Awards celebrate the tremendously important roles dogs play in our lives," said American Humane president and CEO Dr. Robin Ganzert in a statement. "The American public and our special judging panel now have an extraordinarily tough task ahead of them in determining who our top dog will be because all are worthy winners."

Schaffer-Stevens has had Aladdin for about four years now. The dog has grown to about 46 pounds and is thriving and in his element helping and encouraging people.

Aladdin was rescued by Lilo's Promise Animal Rescue in Voorhees, where Michele is the community outreach director. She helps nurse emaciated dogs back to health.

Schaffer-Stevens said he can sense sadness and pain and "instinctively knows when someone needs support" and "gently reminds people to treat everyone with kindness."

"Channel 10 used him last week in Clear the Shelters event," she said. "That's what he is and that's what our platform is. He's just another shelter dog. People tend to think that you get your second-hand dog in a shelter. All he needed was a little bit of love and he's done amazing things.

"Normally a dog like him would be euthanized when they come into the shelter because the shelter doesn't have funding to put money into a dog like that, because they don't know what their temperament will be until they're healthy."

Aladdin is a popular fellow. His Facebook page, Aladdin Nation, has nearly 18,000 likes and he has more than 1,700 followers on Instagram, AladdinNationBrindleBrothers.

Among some of his duties, Aladdin is a Ronald McDonald House Ambassador dog. He's an ambassador for State Farm Insurance for the company's Kindness is Powerful program, visiting schools throughout the country.

He's also a trained crisis response dog and spent a week in Orlando last year after the nightclub shooting, doing therapy visits and fundraising for the Victims Fund, Schaffer-Stevens said.

Schaffer-Stevens said he's also an ambassador dog for Tito's Vodka for Dog People Campaign and has helped raise more than $300,000 for rescues and shelters through that initiative, and also works with Veterans and PACT for Animals. They were in Austin, Texas last week at an animal center.

"When you think about him, if he had been euthanized, for me, all the lives he's touched, that would be a horrible thing because he's helped so many people," Schaffer-Stevens said.

"He's just one little dog and he's done so much stuff."

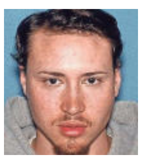
Celeste E. Whittaker; cwhittaker@gannettnj.com; (856) 486-2437

Snapchat photo leads to rape charge in Camden County

JIM WALSH
@JIMWALSH_CP

CAMDEN – An 18-year-old woman was found bruised and bloodied in a Gibbsboro man's bedroom by police alerted to a disturbing photo on a Snapchat account.

Mason Mallon, 24, was charged with aggravated sexual assault and other offenses after officers discovered the woman at his home on the 100 block of West Clementon Road, the Camden County Prosecutor's Office said Friday.


Mallon

The woman, described as disoriented and "covered in blood," was treated at an area hospital.

A friend of the victim contacted police after being alarmed by a picture on Mallon's Snapchat account, the prosecutor's office said. The victim appeared to be unconscious in the photo.

Mallon also was charged Aug. 19 with sexual assault, aggravated assault, criminal restraint and invasion of privacy, the prosecutor's office said.

According to the state Department of Corrections, Mallon was paroled in November 2015 after serving a one- to three-year term for possessing a weapon for an unlawful purpose.

Details of that August 2013 offense were not available.

Mallon is being held in Camden County Jail pending a detention hearing Tuesday.

An investigation remains ongoing. Anyone with information is asked to call Prosecutor's Detective Allison Dube-Smith at (856) 225-7105.

Jim Walsh; (856) 486-2646; jwalsh@gannettnj.com

ATTACHMENT C

PUBLIC MEETING TRANSCRIPT

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region II

- -

UNITED STATES AVENUE BURN SITE

SUPERFUND SITE PUBLIC MEETING

- -

Gibbsboro Senior Center
250 Haddonfield-Berlin Road
Gibbsboro, New Jersey

August 10, 2017
7:00 p.m.

P R E S E N T:

PAT SEPPI,
EPA, Community Liaison

JULIE NACE, EPA, Project Manager
U.S. Avenue Burn Site

RICHARD PUVOGEL, EPA, Chief Remediation Section

ULA KINAHAN, EPA, Human Health Risk Assessor

RAY KLIMCSAK, EPA, Project Manager Residential and Former Manufacturing Plant

RENEE GELBLATT, EPA, Project Manager Dump Site

ELIAS RODRIGUEZ, EPA Public Information Officer

LYNN VOGEL, NJDEP Case Manager

MAYOR ED CAMPBELL, Mayor of Gibbsboro, NJ

MARY CRUZ,
District Director for Congressman Norcross

MAYOR CAMPBELL: On behalf of Council, I would like to welcome everyone here today. We'd like to begin today by honoring our country, and ask that you all rise and pledge allegiance to the flag.

(Pledge of Allegiance.)

MAYOR CAMPBELL: Again, I'd like to welcome you here. This is our Senior Center in Pole Hill Park, which is a former Air Force base. Some logistics, there are restrooms if you go out the back door, go to the right. Men's and women's restrooms are over there. If you want to bowl or play pool, that's over in the back, but I think we're all here for more serious matters.

We are very pleased that this is the third of five expected decisions on how the Superfund sites in Gibbsboro and Voorhees are going to be cleaned up. I'm very, very pleased that the tempo has quickened and a lot of individuals and governments have been weighing in to get more resources added to this. I think Sherwin-Williams, EPA, and DEP have all responded, and we are very, very happy to see that.

Lastly, I'd like to thank the EPA. We had a teleconference last week, and a number of my questions were answered. So, I appreciate that. You know, we often disagree on things, and there's a lot of heated back-and-forth between the public, myself, and the government agencies, and yourselves, but we really do appreciate what you're doing to get this cleaned up, and the work that Sherwin-Williams has done. Sherwin-Williams bought a lot of this, and they're trying to help. We're all on the same team here. So, thank you. And folks, we really want your input. Thank you.

MS. SEPPI: Thank you, Mayor. Again, thank you for attending our proposed plan for the U.S. Avenue Burn Site here this evening. The reason that we're here tonight is to present EPA's preferred remedy to clean up the site. So, I'd first like to start by asking the people from DEP and EPA to stand up and introduce themselves. Rich, do you want to start?

MR. PUVOGEL: I'm Rich Puvogel. I'm the Chief of the Central New Jersey remediation section.

MS. NACE: I'm Julie Nace. I'm the project manager for the United States Avenue Burn Site.

MS. KINAHAN: I'm Ula Kinahan, and I'm the EPA Human Health Risk Assessor.

MR. KLIMCSAK: I'm Ray Klimcsak. I'm the project manager for the residential portion and the former paint plant.

MS. GELBLATT: Renee Gelblatt. I'm the project manager for the Dump Site.

MR. RODRIGUEZ: Elias Rodriguez, EPA Public Information Officer.

MS. VOGEL: I'm Lynn Vogel. I'm the New Jersey DEP Case Manager.

MS. SEPPI: And I also want to mention that we have a staffer from Congressman Norcross' office here.

MS. CRUZ: I'm Mary Cruz. I'm the District Director. We've been working very closely with the Mayor and the EPA to help speed things along. If you need us, you know where to find us.

MS. SEPPI: Thank you. We do ask you all to sign in. We're trying to generate an e-mail to reach out to you about upcoming meetings or information about work going on the Site. So, we'd appreciate if you would all sign in. I also hope that you'll be able to look at the proposed plan. It's on our website. I have a couple copies up here. I think in the presentation we do have a link to the website, right? So, yeah, we can give that to anybody who would like to read the proposed plan online.

So, tonight's meeting is a little bit more formal than a lot of the meetings that we have at EPA. This is a public meeting, and you'll notice we have a court reporter, Nancy, here, and she's here because we're in the middle of a public comment period. It began on July 27th and it will end on August 25th, a 30-day comment period. So, some of you may have already submitted comments to Julie, if you've read the plan, and if not, we will be taking comments tonight, and Nancy will prepare a transcript of the meeting in its entirety. So, at the end of the presentation, again, we'll be taking your questions and comments. If you should think of something after you leave here tonight, you can certainly send those comments or questions in to Julie, again, until August 25th, close of business.

Now, once the comments are in, EPA will prepare our final decision document for the Site. It's called a Record of Decision. We call it a ROD for short. And as part of that ROD, there will be a Responses in Summary, which will have all of your comments and questions answered and responded to. And when that comes out, that Record of Decision, what I'll do is I'll send an e-mail to everybody who's on the sign-in sheet tonight with a link that you can read the final Record of Decision, as well as the Responses in Summary.

One thing I know it's difficult to do, we do ask, if possible, if you could hold your questions for Julie until after her presentation, until the end, because a lot of times it gets us off track, and a lot of times the questions are answered in the presentation. It's a relatively short presentation, and then we'll certainly open up the floor to your questions and comments. One other thing, for Nancy, our court reporter, when you come up to

the mic to ask a question, if you could state
your name and spell it so she makes sure she
has the right information about you for the
Responses in Summary. So, that's all I have,
and I'd like to turn this over to Julie.
            MS. NACE: I just want to mention I
think there's a discrepancy on the public
comment period that I'll fix, but because of
the day it ended and when the weekend fell I
think it's open until August 28th.
            MS. SEPPI: Yes.
            MS. NACE: The presentation is about
fifteen or twenty minutes, and then we'll take
any questions.
            The purpose of this presentation
tonight is to show you the alternatives EPA
considered to address soil and sediment
contamination at the Burn Site and to provide
further details on the proposed remedy. The
presentation will be divided into three parts.
First, I'll give you a quick overview of the
Superfund process, then a summary of what we
found at the Burn Site, and then a presentation
of the alternatives that the EPA considered to
address the contamination. And again, at the

end of the presentation we'll take all of your questions.

The next two slides are going to show you an overview of the Superfund process. So, EPA's Superfund processes are responsible for cleaning up contaminated land. Cleaning up Superfund sites is complex, with many phases, and this slide summarizes that. The first step, on your left, is discovery of a contaminated site. The second step is to put it on the National Priority List, and this is what happened at the United States Avenue Burn Site. At this point, EPA conducts what they call a remedial investigation to find out what contaminants are there and how widespread they are. EPA needs to determine if there's an unacceptable risk to human health and the environment at this stage in the process, and if there is, EPA will identify alternatives to address this risk. Alternatives for the Site are presented and evaluated in a feasibility study. That's the last square, and I'll talk more about that a little later in the presentation.

So, the block with the red border on

the left is where the Burn Site process is right now. We've evaluated different alternatives, and EPA is here to share the proposed plan with you and give you an opportunity to comment. But there's a few more steps after this one. So, EPA needs to select a remedy and formalize that decision in something called a Record of Decision. The remedy needs to then be designed, and finally, the remedy needs to be implemented. That's your overview of the Superfund process, and I'm going to move right into the second part of the presentation, which is what was found at the Site during the investigation.

This is a photo of all of the Sherwin-Williams' sites. There's also a map on one of the easels, if you want to look afterwards. I'll point out right about here you have the town boundary between Gibbsboro and Voorhees, Route 561, United States Avenue, Kirkwood Road, and all of the lakes, Silver Lake, Bridgewood Lake, Kirkwood Lake. And at this point I just want to point out that all of those water bodies and the creeks that connect them are being investigated separately from the

Burn Site. We're calling that a Water Bodies Unit.

Now, all of the main sites have been separated into what EPA calls Operable Units to make cleanup more effective. You can see the separate units on this site. They're outlined in orange. They have the FMP, the Former Manufacturing Plant, the Dump Site, and why we're here tonight, the Burn Site.

So, the next slide I'm going to zoom in on is the Burn Site. And there's a map over to my left, also, if you want to look at it afterwards. So, one more time, this is United States Avenue and this is Bridgewood Lake, just to orient you. This site was historically used to get rid of waste from paint manufacturing. It was burned here and also disposed of in a landfill. The pink area is the 14-acre fenced portion of the Burn Site, and it's currently zoned for office and residential development. Within the fenced area, you can see the burn area and the landfill area. Outside of the fenced area and across United States Avenue we have the railroad track area, and all of the soils around Bridgewood Lake are also part of the Burn Site.

Now I'm going to go into a series of maps that show you what we found when we were sampling. So, this map shows soil samples within the fenced area. Each point represents a soil sample, or a boring, and these samples were taken at varying depths up to about 30 feet. And along these borings, there's samples every two feet. So, there's many, many samples within the fenced area.

On this map, the red dots show samples that were above cleanup goals, and the green shows samples that were below cleanup goals. You can see red samples near the burn area and the landfill area, where we would expect to find them. I can zoom in if this is hard to see. And all of this is available on the website.

So, this is another map showing soil samples, but now we've moved across United States Avenue into the railroad track area. Samples were taken in the road throughout the railroad area and around the lake. There are pockets of areas that are above cleanup goals, mainly in the railroad track area, but also around the lake. There's some all the way on this slide, and some on the bottom of the slide. Besides soil samples, we also took sediment samples. This map shows sediment samples within the Burn Site. Sediment is the wet dirt located in the streams. These samples were down to about 3 feet, and again at every foot down to that 3-foot depth. Red is above cleanup goals, green is below.

So, through this investigation, EPA found that the main contaminants at the side were lead and arsenic, and found that they pose an unacceptable risk that needs to be addressed. So, as part of the Superfund process, EPA needs to evaluate alternatives from a feasibility study that addresses this contamination.

So, this moves us right along into the third and final part of the presentation. So, in order to develop alternatives and what is going to be done at the Site, EPA first identifies very broad objectives called Remedial Action Objectives. The next slide will show you the main objectives for the Site. So, again, there are overall goals that we want to meet at the Site. EPA wants to prevent current and future unacceptable risks to human health and environment, and minimize movement of the contaminants. What does this mean? EPA doesn't want anyone to ingest the contaminants, and they don't want anyone to touch them or have contact with skin. We don't want the contaminants to move anywhere. So, any proposed alternative needs to meet these objectives.

The next slide will show you the five alternatives that were evaluated for soil remediation at the Burn Site. Alternative 1 is no action. This is always presented as a point of comparison, meaning what would happen at the Site if EPA did no cleanup. Alternative 2 does not involve any removal of contaminated soils, but instead uses institutional controls like a deed notice to control exposure. Alternative 3 removes contaminated soil from the surface and places a cap on the site. Alternative 4 removes soil to a depth of 10 feet to allow for residential construction, and then deeper to 12 feet to remove sources of groundwater contamination, and place a soil cap on any residual deep contamination. Alternative 5 move soils down to 18 feet. So, Alternatives 2 through 5 will all have a deed notice, and a deed notice just means if you dig below the soil cap, you need to inform the State, but it doesn't restrict development. And in all of the alternatives, United States Avenue pavement will act as a cap for any contamination found under the roadway.

The next slide will show you the four alternatives we considered for sediment. Again, Alternative 1 is no action, just for comparison. Alternative 2 does not involve the removal of any contaminated sediment, but uses institutional controls, again, like deed notices, to control exposure. Alternative 3 removes some of the soil, and places a cap over the rest of the contaminated sediment, and Alternative 4 removes all of the contaminated sediment.

So, we have a list of alternatives, and now we need a means to evaluate them. So, EPA uses nine criteria to evaluate alternatives. I'll go through them a little more slowly. The first two are called

Threshold Criteria. If alternatives don't meet these thresholds, they're not considered. So, they have to be protective of human health and the environment, and they have to be compliant with State and federal regulations. If a remedy meets these criteria, then it can be considered. Then we use the next five criteria, called Balancing Criteria, to compare the alternatives. Some of them are long-term effectiveness. How adequate and reliable is the alternative? Is there residual risk? Things like short-term effectiveness, what are the short-term risks to the community during construction? What are the impacts to workers at the Site? What are the environmental impacts from the length construction? And is it technically feasible? What kind of permits do we need? What are the availability of services and materials? And we also look at cost. Finally, there are two more criteria called Modifying Criteria, at the bottom. So, EPA gets the State of New Jersey's input and community input and takes this into consideration when making a decision.

So, we have our list of

alternatives. Now we have the tools to evaluate them, and the next slide will show you this. Down the left side of this slide, this lists all of the criteria. On the top you'll see the different alternatives. So, right now you're just looking at Alternative 1, no action. You can see it does not meet the first two threshold criteria, so it's not considered. So, we move on to Alternative 2. This is just using institutional controls or deed notices. Again, this is not protective and it's not compliant, so it's not considered. Alternative 3, this is the one with the surface cap. We felt that this affected the permanence of the solution for residential construction in the future by just putting a surface cap on it, so it didn't rate that highly in long-term effectiveness compared to the next two alternatives, which I'll show at the same time, because we compared them to each other.

Alternative 4 and 5, I'll put up at the same time. Alternative 4 removes all contaminated soil to 10 feet to allow for residential construction, and then part of the other contamination to 12 feet. Alternative 5 removes contamination to 18 feet. So, both 4 and 5 involve extensive excavation of the soil. As we excavated the Burn Site, we quickly hit water, as the groundwater table is very high. This makes excavating difficult at depths. The deeper you go, the more complicated it gets, and less effective. And we're dealing with more and more amounts of water. So, though Alternative 5 goes deeper, this alternative only removes a small percentage more of the contaminants than Alternative 4, but has substantial more impact on the community during construction. Both use deed notices to control exposure to residual contamination left at the Site. So, looking at all of these Balancing Criteria, EPA is proposing Alternative 4.

Again, just a quick summary, Alternative 4 removes contaminated soil to 12 feet, allows for residential development, United States Avenue will act as a cap for any contamination left to meet the roadway, and deed notices will address any residual contamination left at the Site. The cost is approximately $19 million, and once actual construction begins, it's estimated to take about eight months to complete.

This is a map of proposed Alternative 4. I also have it on the easel to my right, and you're welcome to stand up and look at it afterwards. These are all proposed areas of excavation. During design, more sampling will determine exact locations. The different colors show different depths of contamination and excavation, and the depth of excavation is based on data we collected during the investigation. So, all of the gray areas are a 2-foot excavation, and that ranges over this whole footprint and pockets around Bridgewood Lake. The deepest areas are yellow and green. Those are the 10 and 12-foot excavations. But I encourage you to go up to the map afterwards and look at it more carefully.

Now I'm going to go through the same process again, but for sediment. This is the same table I'm using with the criteria down the left side and the alternatives across the top. Alternative 1, no action. Again, it's not protected, nor compliant, so it's not considered. Alternative 2 only uses deed notices, and it's not protected, nor compliant, so we didn't consider it. So, we really looked at 3 and 4. Alternative 3 removes part of the surface soil and places a cap, and Alternative 4 removes all of the sediment. We felt that Alternative 3 lacked permanence, as the cap was vulnerable to the energy and stream flow and could be compromised in the future. Because of this, EPA is proposing Alternative 4, removing all of the contaminated sediment.

This is a quick summary of Alternative 4. It will move all contaminated soil down to 2-and-a-half feet. Once all contaminated soil is removed, clean fill will be placed on the Site, and the Site will be restored. The cost is approximately $1.7 million, and once construction begins, it's estimated to take about four months to complete.

This is, again, a map of proposed areas of excavation, and during design more sampling will determine exact locations. The orange area is 2-and-a-half foot depth and the purple area is 2-foot.

This is our estimated timeline for

the whole project. So, currently, we're in gray. It's 2017. We're collecting comments from the public and we'll be focusing on writing the Record of Decision. Moving into next year, 2018, EPA will be negotiating legal agreements with Sherwin-Williams and more sampling will be conducted. In 2019, design will be completed. In 2020, construction of the remedy will begin, and anything after that will be monitoring of the completed remedy.

So, a quick recap, EPA evaluated different alternatives to address lead and arsenic contamination at the Burn Site. EPA is proposing soil and sediment remedies. Again, you can take a look at them here, and now is your opportunity to comment. So, I want to thank you for your time, and I'm going to turn the presentation back over to Pat Seppi to take any questions.

MS. SEPPI: Thank you, Julie. So, I just wanted to remind you when you come up to the mic to ask a question or give a comment, please remember to state your name for Nancy so she'll have it for the record.

MS. NACE: One thing, I know I don't

have a handout, but if you Google United States Avenue Burn Superfund Site, this will pop up and you'll be able to see everything online.

TRACY HAINES: Tracy Haines, 15 United States Avenue. The cap that's proposed for Alternative 4, that is something that we would like to be looked at, because people on United States Avenue do not have access to sewer. It was prohibited, because when the sewer in town was installed, for every so many cubic feet of removal to put the sewer system in, the pipes and all, that it would have to be sent out for testing. Well, now we know. So, United States Avenue residents, we want to be part of the sewer system. So, we want that to be part of this project as well.

MS. NACE: Okay. The Mayor brought up this point as part of a conversation last week. We're talking about putting sewer utilities under the road. Is that what you're asking?

TRACY HAINES: Yes.

MS. NACE: So, we're going to talk about this more in the design phase.

TRACY HAINES: Okay. Where will we

find out how that's going?

MS. NACE: We'll be in constant contact with the Mayor.

TRACY HAINES: So, we can check with him?

MS. NACE: Yes. Or call me. Ray would like to say something.

MR. KLIMCSAK: Ray Klimcsak. I'm heading up the residential portion. I'm also heading up what's being termed the Former Manufacturing Plant. You know, your parents' property is a little unique. You know, behind it is the Burn Site, and across the street is the former plant. I do want to make clear that the contamination that is present at the Former Manufacturing Plant is going to be looked at under another operable unit, and we know from sampling there that there's different contaminants other than lead and arsenic. So, I'm not sure if your parents stretch of U.S. Avenue will be looked at under the Burn Site or what's been proposed for the next targeted Record of Decision, which is the FMP soils, which is targeted for next year. So, we'll take a comment, but I just want to be clear, when Julie speaks of U.S. Avenue, it's really that stretch in between the Burn Site and the railroad track. So, it's a very small stretch of U.S. Avenue. Whereas, where your parents live, that's across the street from the former plant.

TRACY HAINES: So, the Burn Site, you're talking about it's where the warehouse and the railroad tracks are?

MR. KLIMCSAK: Foster Avenue, 2 Foster and 1 Foster. There's different contaminants there. That's where the plant was.

TRACY HAINES: Not the side towards Paper Road.

MR. KLIMCSAK: No. That's in the back, and that's still being looked at, actually, under the Former Manufacturing Plant.

MARIE HAINES: We do have three wells put in the back.

MR. KLIMCSAK: Correct. Yes.

MS. SEPPI: I'm sorry. Could you just state your name?

MARIE HAINES: Marie Haines.

MR. HAINES: Paper Road is Marlton

Avenue they're talking about?

MR. KLIMCSAK: Yeah. But I just want to be clear, the portion of U.S. Avenue that Julie just looked at, the Burn Site is a very small stretch in between Bridgewood Lake, the railroad track, and the Burn Site.

MARIE HAINES: If you're looking to the street, the Burn Site is by the railroad track?

MS. NACE: The railroad track area, yeah. That's the part that we're working on right now.

MARIE HAINES: Right. And the main thing that she said that we want is the sewage. And in order to get that, we were told that the Borough would have to dig up the street and pay to have it all, what do they have to do, send it away and get it checked for contaminants. But I want to be done if it has to be done. I want sewage.

MR. WOOLNER: My name is Brian Woolner, W-O-O-L-N-E-R. I'm here about 9 United States Avenue. I can't blacktop the driveway. Dodd & Company Realtors built it. I can't blacktop the driveway because you all don't want the runoff to go into the street. I have a cesspool. So, what do you want to do? I'll tell you what you ought to do. The four or five houses that are there, we shouldn't even have to pay property taxes. It's a disgrace. I pay over $10,000 a year for a building that I can't put public sewer in. So, are you all going to just stand there?

MS. SEPPI: We were waiting for the question.

MR. WOOLNER: Is 9 United States Avenue part of --

MS. SEPPI: Part of the Site? Is that what you're asking?

MR. WOOLNER: Yes. And you're not going to dig up U.S. Avenue? You're going to leave all that crap underneath, right?

MR. KLIMCSAK: No. Again, to clarify, tonight's presentation on the portion of U.S. Avenue that Julie spoke about is solely that stretch shown in the hashed area, because that's the stretch of U.S. Avenue between the Burn Site and the Railroad Track Site. Where you live, Brian, or where Dodd Realty is, is being looked at as the Former Manufacturing

Plant, which is the targeted ROD for next year. There is groundwater contamination that we know is present at the former FMP area. We've done sub slab soil gas sampling at your property and other residential properties. I can't tell you now what will be done with U.S. Avenue, because we haven't looked at that remedy yet.

MR. WOOLNER: Well, we would like to know what you all are planning to do. Meanwhile, the taxes keep (Indicating.) I know the Mayor is here, and he needs to hear that I am fed up paying taxes on this building. See my point?

MR. KLIMCSAK: Yes.

MS. SEPPI: Absolutely.

MR. WOOLNER: Here's another question. I'm responsible for 1194 and 1196 Gibbsboro Road in Kirkwood. What are you doing about the lake?

MR. KLIMCSAK: As Julie mentioned, that's being looked at as part of what's being termed the Water Bodies Record of Decision. So, what will be looked at is Silver Lake, Bridgewood Lake, and Kirkwood Lake. You just mentioned two addresses on Kirkwood Lake. I mean, EPA is looking at those homes.

MR. WOOLNER: They were all around there parading around and surveying, and what got me was you all would start surveying here today, and then tomorrow you're all the way down there. I said, well, wait a minute, are you all done already here? Oh, no, we'll be back.

MR. KLIMCSAK: EPA recently approved the work plan for the sampling of fifty-six properties. Brian, I don't know if I want to talk about your properties tonight in front of the public. We can talk about the two addresses.

MR. WOOLNER: I don't care what you talk about. We're all in the same mess. All these meetings come out to be the same thing. What are you going to do about dredging Kirkwood Lake? Is that on the plan?

MR. KLIMCSAK: That's part of the Water Bodies Record of Decision.

MR. WOOLNER: You're sure? You're sure? And there's going to be money left for that?

MS. SEPPI: It's not EPA money.

Maybe Rich can explain.

MR. PUVOGEL: Right. The funding that comes for these remedies is through Sherwin-Williams. They're the responsible party. It's the EPA's purpose to try and get the polluters to pay for what they're responsible for.

MR. WOOLNER: And if Sherwin-Williams cannot pay, then what?

MR. PUVOGEL: If Sherwin-Williams cannot pay, then the Superfund takes over the work and EPA takes the lead on the Site.

MR. WOOLNER: Because here's my gut feeling. All this money is being spent to clean up Gibbsboro, and it should be. And I don't know who read the newspaper article in the Courier a couple days ago, but you all got the days wrong. You're talking about thirty years. That's a bunch of crap. In 1962, my grandfather was Justice of the Peace. Kirkwood Lake one day was green, another day it was red. That was 1962. It's a little more than thirty years ago. So, I think what's going to happen is all this money is going to be spent cleaning up Gibbsboro, and it should be. It's been a mess for years. But then nobody is going to have any money to do anything with Kirkwood Lake, and it's going to wind up like the lake in Clementon, dried up. Because Kirkwood Lake right now, the water table is down. You can go spray those spatterdocks all you want. The water table is not what it was.

MR. KLIMCSAK: Just to clarify, EPA is not spraying the vegetation in the lake.

MR. WOOLNER: Oh, no. Make sure that's in the record, after all.

MAYOR CAMPBELL: Ray, can I suggest you talk about the residential properties, the decision on how they're going to get cleaned up that's in implementation? Because there are people here who have residences in Voorhees and others places in Gibbsboro.

MR. KLIMCSAK: Yeah, you know, Brian had questions on specific properties. I'm not in a position to talk about those, but --

MAYOR CAMPBELL: You've already decided you have to take all of the soil out of the residential properties.

MR. KLIMCSAK: Right.

MAYOR CAMPBELL: And

Sherwin-Williams is in the process of designing them, and eight of the properties in Gibbsboro have been already cleaned up. It's just time that they're working off the residential properties. That's decided. The number one priority is to clean up residential properties. Right?

MR. KLIMCSAK: That's correct.

MS. SEPPI: Does somebody else have a question? Please come up to the mic.

MS. EHLY: My name is Kathie Ehly, E-H-L-Y. I live at 1200 Gibbsboro Road, Kirkwood, New Jersey. I've lived there for sixty-eight years. How do you plan on getting down my property to clean the lake? You are not coming on my property. There's no way, on any of the houses on Gibbsboro Road, that a bulldozer, tractor, whatever, can get down there and dig up 20 feet of my property. I've lived there for sixty-eight years. I'm still alive. The arsenic and lead has been there for years and years and years. The lake has no more channel. Now I've been told that the spatterdocks, when they do kill them, it's carcinogenic chemicals that they're using. So, the arsenic and lead, big deal. Big deal. They're spraying it with this carcinogenic materials, and granted, yes, they do die. None of the fish have died in that lake because of the arsenic and lead. We still have all of the wildlife down there. I don't know what the big thing is. Dredge the friggin' lake.

MS. SEPPI: It's not really a question, so okay, thank you. Thank you. Does anyone else have a question or a comment or a statement?

MR. LAFFERTY: My name is Brad Lafferty, L-A-F-F-E-R-T-Y, 38 Winding Way, Gibbsboro, and I have a lot of questions. I'm about to learn how this all works. So, my first question is how did you discover the Site? You talked about all your steps, so I figured we might want to ask you how did you discover the Site and when did you discover the Site being contaminated?

MR. KLIMCSAK: The State of New Jersey did site investigations years ago. I don't know the exact year.

MR. LAFFERTY: Are we talking four or five, ten, twenty, thirty?

MR. KLIMCSAK: The plant closed in 1978, and I think DEP had Sherwin-Williams under an order, a legal order.

MAYOR CAMPBELL: 1975 was the first action.

MR. KLIMCSAK: And then EPA got involved in the '90s, through '95, put fencing around it, and then EPA issued an order for remedial investigation in 1999, if we're talking solely about the Burn Site. So, sampling occurred through 2000, and we're here today.

MR. LAFFERTY: Seventeen years later, okay.

MR. KLIMCSAK: If that's the math, that's correct.

MR. LAFFERTY: Would you agree that's the math?

MR. KLIMCSAK: Sure.

MR. LAFFERTY: You just said 1999, 2000.

MR. KLIMCSAK: Yes. Yes.

MR. LAFFERTY: And we're supposed to believe that this will be completed in three years, is what your model said, that the cleaning of this will be completed in three years.

MR. LAFFERTY: So, it was unclear, when you say you discovered, just so I'm clear, did you discover because you said you had had reports, that the Mayor reached out to you, that you discovered sickness amongst children or adults?

MR. KLIMCSAK: When the plant operated, DEP actively enforced regulations. You know, as an active facility, DEP did active investigations, they responded to spills. The Burn Site was a dumping area, and through the years I think Lucas, who originally owned it before Sherwin-Williams allowed the Borough to dump municipal waste there, so it was a landfill. So, that's how it got discovered.

MR. LAFFERTY: So, in other words, you reached out on your own? It wasn't something that the town reached out?

MR. KLIMCSAK: Well, DEP had it early, and then referred it over to the federal government, to the EPA.

MR. LAFFERTY: The alternative that you recommended, number 4, I believe, how dangerous are the effects of those around the area? In other words, when you talk about digging, cleaning 12 foot, I think you said, how far and who is it that would know the possible effects of unearthing that, everything that's there?

MS. NACE: So, under construction?

MR. LAFFERTY: Under construction, the airborne effects to the health of people. I believe you are the authority?

MS. KINAHAN: Yes. So, during removals, there's a lot of health and safety things that go on, dust suppression, so that the chemicals that we're excavating are not transported. There's air monitoring stations to ensure that the residents and the people around the excavation are not exposed.

MR. LAFFERTY: But it's possible they could be, right?

MS. KINAHAN: It's all monitored. There's actual monitors around the whole excavation area to make sure it doesn't happen.

MR. LAFFERTY: And what is your professional opinion of how far of a reach it has?

MS. KINAHAN: Well, it all depends on wind direction and wind speed. Again, that's why there's actually monitoring stations.

MR. LAFFERTY: And I understand you have monitoring stations, but my situation is a little more serious than you saying it depends. I have a 4 year-old daughter that's battling cancer right now, blocks from the site. So, you need to give me a little bit more than that.

MR. PUVOGEL: Let me try to answer your question. The water table over here in the Burn Site area is fairly shallow. Most of the digging we've done is beneath the water table. So, there's a minimal amount of dust being generated. The majority of the soil is going to have to be de-watered because it's going to be so wet. This is what we call the short-term effects while we implement the remedy. That's one of the criteria Julie went through. We looked at exposures to air. We set up air monitoring stations around the digs to, one, protect the workers, and two, protect anyone around the area. Air monitoring is done on, usually, a constant basis while digging is done. Piles that are stockpiled during excavations before they're shipped offsite are covered so that it reduces any erosion from rain or runoff. There's silt fencing put around the areas that are dug to prevent erosion from the area and to contain the dig area. Again, this dig area is going to be sloped in towards the excavation, and we expect rain water, or more water, to come into the excavation that will have to be de-watered instead of rolling off to other areas of the Site.

The technology that we have, the air monitoring, the experience that we have digging these areas out, it's general technology that's been used before, and it's made to protect the surrounding area while this work is being done.

MR. LAFFERTY: Great. And thank you for that information. So, within those three years it would take to clean that up, are we supposed to expect the soil, especially these fifty-six properties that you graciously told us about that you're still testing on, that we're supposed to trust everything is as safe as it is now? Is that something that we can find a list of those properties that you plan to check? Do I know that my house is being checked by you instead of people that I'm hiring to check? I mean, is that public record?

MR. KLIMCSAK: The fifty-six properties are public record.

MR. LAFFERTY: Is that something we would already be notified, we would already know?

MR. PUVOGEL: The folks have been contacted already. Also, the EPA's website for residential cleanup is up, all of the information, the studies that have been done for the residential areas. So, it identifies the properties and where they are.

MR. LAFFERTY: Okay. So, tell me this, being that it's clear that everybody, and I might be new here, has known about this problem for longer than I've lived in the town, I bought here approximately eight years ago, and I've never received any notice at all about the concerns that are in my backyard. Can anybody explain that, whether it be you, the

EPA, or if you want to shift the blame to the Mayor, I believe the Mayor is here, and we've never met, but you will know me soon.

MR. KLIMCSAK: I'm not sure what you're asking.

MR. LAFFERTY: Is it your policy to notify the residents of a small town about everything that's going on this way? Because there's a lot of people, I mean, businesses, I was at Masso's today and the owner told me he had no idea about this meeting. I talked to neighbors of mine, that if it wasn't for us or a Neighborhood Watch committee, would not have known about this meeting. I believe that you're probably an organization that has our addresses that we could probably receive some sort of letter to let us know. It almost seems like something that's been going on this long deserves a little bit more notification.

MR. KLIMCSAK: In defense of the Mayor, the Borough puts up notifications on their website.

MR. LAFFERTY: Oh, is that right? Okay.

MAYOR CAMPBELL: It's been in our

town newsletter many times.

MR. LAFFERTY: In your Town Crier that I have here that there's nothing listed from June, the most recent one? I have it here, if you can show me where it is.

MAYOR CAMPBELL: This meeting was announced after that.

MR. LAFFERTY: Oh, okay.

MR. PUVOGEL: And we also published the public meeting dates and public comment period in a local paper. Pat, what paper was it, do you know?

MS. SEPPI: Courier Post.

MR. LAFFERTY: That's how I found out.

MS. SEPPI: That's why I'm asking everybody to give me their e-mail, and I sent out a link to the proposed plan, as well as the information about the meeting to anybody who is on that list. And the more people we can get on that list, the more people we can reach out to.

MR. LAFFERTY: I look forward to getting your e-mails.

MS. SEPPI: You will, I'm sure.

MR. LAFFERTY: In the meantime, I'd like to know, since I do believe you're probably the expert on this and know more than we do here, so I do rely on you, although I sound upset, we had a rough road, and I never thought I would know, maybe, the reason why, but when I talk to so many people in my neighborhood, and would love to hear from more people, if any are here, that have battled cancer with children, especially, I find there are three or four or five cases just in my block, which I'm told now as of recent that it's not a coincidence, and then I receive information about this, and started to do some research along with my counsel to find out that there's a lot going on. And I'd like to know what your responsible is, then, for public health, as to how far could this expand through soil, through air. I did read your packet of information, of your findings, and it seems like the lead and arsenic levels are not just moderately high, but they're unbelievably high. So, I'd like to hear and see if it confirms what I know about how far it can go. And we're talking about an isolated area here. I'm hearing people talking about living on United States Avenue, but I'm hoping you'll agree with me that it's far more than those people who have to be concerned about this.

MR. KLIMCSAK: The DOH, the New Jersey Department of Health, and the ATSDR prepared public health consultation reports for each of the three sites, when they were either proposed on the NPL, the National Priorities List, or were listed as a Superfund site. So, I mean, those are available for public record.

MR. LAFFERTY: Okay. I'm still asking for your professional opinion.

MS. KINAHAN: That is a very good point, because I think there's a difference in what Ray is trying to explain, is that I, as an EPA human health representative, I don't look at past exposures. I look at current and future exposures so that we can demonstrate the needs and take action based on a Superfund chemical release. So, that's why he mentioned DOH and ATSDR. You know, that was the point. They're the ones that kind of look at health exposure, cancer cluster studies, and things like that.

MR. LAFFERTY: Would you agree that you have found or you have knowledge of cancer clusters in our area?

MS. KINAHAN: So, again, EPA doesn't look at cancer cluster studies. That's not my personal expertise. It's separate. And I can talk to you afterwards and show you how we do things, and the proposed plan, and you know, also, the history that you asked about, and give you a copy of our link.

MR. LAFFERTY: Okay. And lastly, again, because I'm new, apparently, can you tell me your experience with our local government as far as how resistant they have been to cleaning the Site over the years? I've been told that our Mayor has been around for a long time, and it seems like a lot of people know him, but I'm curious, because I've read a lot of articles that illustrated, and yes, I know you can't believe everything you read, however, I have found repeatedly that people have claimed to have resistance, EPA themselves have claimed to have resistance from the Mayor in cleaning up.

MR. BONSALL: Why don't you ask us,

the governing body? I've been here thirty years as a Councilman, and I take offense to that.

MR. LAFFERTY: I didn't see you hiding in the back of the room. I'm sorry.

MR. BONSALL: I'm not hiding. I've been here.

MR. LAFFERTY: Well, then, why don't you answer my question?

MR. BONSALL: What's your question? We have not been resistant.

MR. LAFFERTY: I'm also asking a neutral party, not somebody that has, obviously, a stake in the answer.

MS. SEPPI: I'm sorry to interrupt, but if you would please --

MR. LAFFERTY: Yeah, I mean, that's very professional of you.

MR. BONSALL: It's very ignorant of you.

MR. KLIMCSAK: Sir, in answer to your question, because you directed it to us, I will go on the record that the Mayor has been very vocal, at times very critical of EPA.

MS. SEPPI: Yes.

MR. LAFFERTY: Okay. That's my question.

MR. KLIMCSAK: And it has moved the EPA to speed up the process.

MS. SEPPI: Absolutely. And I think the Mayor said it well in his introduction, and I think you were here for that, there have been many times that we agree and disagree, and we've gone back and forth about a lot of things. But on the whole, we've spent a lot of time talking to the Mayor, and he spends a lot of time talking to us.

MR. LAFFERTY: So, the lapse in time, the exorbitant amount of time to clean this has been just --

MS. SEPPI: I hate to say it, but that's the way most Superfund cleanup sites go. It does take a long, inordinate amount of time. But I also have to give Gibbsboro some credit, because the Mayor came to our regional administer and said things have got to speed up. So, Sherwin-Williams put more people working on the job. And we told the Mayor that we would have a Record of Decision every year for five years, and so far we've had three of them. So, in the long run, I know it seems like such a long time to clean up one of these sites, but this is not any different than most of the other sites that we've worked on.

MR. LAFFERTY: I'm glad to hear that that's the case, and I promise you, we will find out. Thank you for your time.

MS. SEPPI: Thank you.

MAYOR CAMPBELL: One of the reasons this is taking so long is it's an incredibly complex network contamination. The discovery process has been ongoing, literally, for thirty-five years, finding more and more pockets. I think the EPA, DEP, Sherwin-Williams believes we now understand everywhere that there's contamination. We are in, we started a couple years ago, the beginning of the end. I give Congressman Norcross, EPA, DEP a lot of credit. When we complained, and it wasn't just me, the Congressman, Camden County, the Kirkwood Road folks, our residents, just the groundswell of a demand, because it's been forty years, for a quickening of the pace, it has been responded to. So, I think EPA, Sherwin-Williams deserves credit for quickening this pace. It's still going to take long time, but it is quickening significantly. We're working all these solutions in parallel.

MR. LUSCOMBE: I'm James Luscombe, L-U-S-C-O-M-B-E. I guess the question is you've named certain sites, and this is really about just the Burn Avenue Site. I understand that.

MS. SEPPI: Right, tonight's meeting is.

MR. LUSCOMBE: Have all of the residential, like Cameo Village, and Cedar Croft Heights, have all of the neighborhoods been tested?

MR. KLIMCSAK: You know, back when sampling started in 2005, if anybody that was not connected to municipal water and had a private well, their wells were sampled. And I can tell you within a half-mile radius of each of the sites, I think there were only five residents that had a potable well. The eight homes that Mayor Campbell discussed in Gibbsboro that were addressed, they were actually outside the flood plain, but they're adjacent to where the former plant was. It looks like most likely fill might have been placed back when the plant was around in the 1800s. The rest of the homes are either around Hilliards Creek or Kirkwood Lake. We sampled homes that were in close proximity to the Dump Site. The homes on U.S. Avenue that I briefly spoke about, there's only one that's really adjacent to the actual fenced area, whereas, the other homes are being looked at under the Former Manufacturing Plant. So, there was a 2015 Record of Decision for residential properties. It has the remedial investigation report. It has the feasibility study. You could look at that, but that's where EPA and Sherwin-Williams did a very close and comprehensive look at homes that could be impacted.

MAYOR CAMPBELL: Gibbsboro School was also tested.

MR. KLIMCSAK: Gibbsboro Elementary School, because we looked at prior ownership, which dated back to John Lucas, when the plant was initiated in the 1850s, and just aerials that show disturbance, and we didn't find anything in the soil at the Gibbsboro Elementary School.

MAYOR CAMPBELL: And Cameo Village was a vineyard way back when.

MR. LUSCOMBE: Okay. There's a million Facebook groups out there, Gibby guys and gals, memories of living in Gibbsboro, and I remember seeing something fairly recently in the memories of living in Gibbsboro Facebook group where someone had mentioned that half the people that lived on Edgehill Road, I think, have cancer. Now, this may have been when the plant was active and they were breathing in the fumes.

MAYOR CAMPBELL: Does anybody know just from being alive what your probability is of getting cancer in your lifetime?

MS. JOHNSTON: Not as high as it is living in this area, I can tell you that.

MS. SEPPI: Could you give us your name, please?

MS. JOHNSTON: Alice Johnston.

MS. SEPPI: Thank you.

MAYOR CAMPBELL: Just being alive, you have almost a 50/50 chance of getting cancer.

MR. JOHNSTON: My name is Bill Johnston, J-O-H-N-S-T-O-N. I live on Kirkwood Lake. My property is going to require remediation. I'd like to know if and when the remediation is completed, am I going to be issued a certificate or certification if my property is clean?

MR. KLIMCSAK: That has been the practice what was done with the eight properties completed so far. It documents the areas that were excavated, it documents the clean samples that identify the excavation areas, and it's documented that certified clean fill was put in place of the contaminated soil that was removed. So, yes.

MR. JOHNSTON: And that will specifically state that my property is free of contaminants?

MR. KLIMCSAK: Yes.

MR. JOHNSTON: So, if I have to sell my property, I don't have to say there's a possibility that it's still contaminated?

MR. KLIMCSAK: I mean, that paperwork is what you want to hang onto, in case of selling.

MR. JOHNSTON: That's what I wanted to know.

MS. SEPPI: Does anyone have a question about the Burn Site, in particular? If not, we can certainly go off into other areas, too, but I want to make sure we get all of the questions about the Site we're here to talk about.

MARIE HAINES: I just want to know the difference between the Burn Site and -- I live on United States Avenue. They burned right next door to me. For years, the fire was there day and night. Which one am I in?

MR. KLIMCSAK: You're sandwiched in between two. I don't really know a better way to put it. I mean, your home is probably right up here, Mrs. Haines. Tonight we were talking about the United States Avenue Burn Site, which is shown here, it's colored, you know, and U.S. Avenue, if you were to go up, the former lagoons that were part of the former plant were here. I mean, Cedar Grove Cemetery is here. You're across, and part of your backyard looks into the Burn Site.

MARIE HAINES: The Burn Site is down here, and it goes up to here?

MR. KLIMCSAK: Well, it's sort of encompassed in these colored areas.

MARIE HAINES: Because I just knew these burned day and night for years and years.

MR. KLIMCSAK: Right.

MS. SEPPI: Thank you. Do you have a question?

MR. MAWSON: My name is Skip Mawson, or Thomas Mawson, M-A-W-S-O-N. I live on Kirkwood Lake, so I have an interest there, obviously, but as far as the Burn Site, and this is either for you or for Ed, who currently holds title to this property?

MAYOR CAMPBELL: Tri Borough Sand and Stone. The Borough has the option to acquire it for a dollar, and we're in the process of exercising that option.

MR. MAWSON: What are the future plans for that? Is it going to be part of Blueberry Hill or something else?

MAYOR CAMPBELL: To be determined. All of the land down United States Avenue there, we own about 150 acres.

MR. MAWSON: Myself and a lot of us frequent Blueberry Hill, and this is adjacent to it. That's a concern I have, and a number of other people I know have that really enjoy that area.

MAYOR CAMPBELL: Blueberry Hill is dedicated open space.

MR. MAWSON: And hopefully, this will become part of it once it's remediated.

MAYOR CAMPBELL: First we have to acquire it.

MR. PUVOGEL: Once Sherwin-Williams is done the remediation, what we would do is to re-vegetate the area, replant it to what it was previously.

MR. MAWSON: It's all forested now, right?

MR. PUVOGEL: Right. We'd plant trees, plant grass. But if there's some plans up ahead that it doesn't make that worthwhile to do it, we work with the local Borough, the local township, to find out what the plans are, and work closely with them during the design phase to find out what it is. We don't want to plant something if it's going to be redeveloped shortly thereafter. So, after it's excavated and backed up with clean fill, it would be replanted.

MR. WU: My name is K.K. Wu. As I recall, last year at the public meeting, the Burn Site is supposed to be Ray from the EPA is the project manager, and right now we switch to Julie, right?

MS. NACE: Last year when the Dump Site was presented, Renee was the project manager.

MR. WU: I asked the question who is going to be the project manager for the Burn Site, and they said Ray? At that time, they did not mention anything about Renee.

MR. KLIMCSAK: Renee had the public meeting for the Dump Site in June. Julie was hired in December and picked up for the Burn Site.

MS. NACE: We put in more resources.

MAYOR CAMPBELL: This is how they're working them all in parallel, more people.

MR. WU: This is to speed it up? That's good news.

MS. SEPPI: Well, actually, that was

your recommendation. So, we listened to you.
MR. WU: Yeah, that's good. And the question is, according to the newspaper, the local newspaper, Richard mentioned about the timetable for the Kirkwood Lake. He put something like remediation on Kirkwood Lake will start in 2018 or 2019. I was just wondering, is it still true?
MR. PUVOGEL: No, I don't think that's an accurate quote.
MS. JOHNSTON: I remember that from last year's meeting. That is absolutely the timeframe that was given by the EPA.
MAYOR CAMPBELL: The ROD was originally 2018. I think now it's 2019. That's the ROD. That's when they're going to decide how it will be cleaned.
MS. JOHNSTON: My name is Alice Johnston. I'm sure all of the folks at the EPA know me. I know a lot of people in the room. I represent Voorhees residents in regards to Kirkwood Lake. Again, the frustration level is like through the roof here, because I'm sitting here listening to the Burn Site, and your timeframe here is finishing up in 2021. Last

year, when we were at this meeting in the summer, the timeframe began for Kirkwood Lake being started was 2018. I can't believe that you're even going to be looking at that at this point if you have the water bodies at the end of your list. Why, again, are we not doing things concurrently? I mean, I don't understand. And you want to come in and remediate the residential properties, like we're supposed to be excited about this, and yet the lake is still going to be full of contaminants, it's dying, by the way, and then what, ten years later you'll come in and clean the lake out, and in the meantime all of the contaminants are going to get washed up in our yards, because the lake floods routinely. I don't understand the rationale. I just am beyond. And I have no idea how you're going to get to a number of the properties unless you come from the lake side to get into the properties, because really, there's no access. And I have three properties on the lake. I grew up on two of those properties. I've had cancer twice, okay, I'm a two-time survivor, and for anyone -- and Ed, I'm sorry, I don't mean to be disrespectful of your position in the town, but the cancer rate has got to be significantly higher in this area than it is in the general population. And I one time counted about ten years ago the homes from the left of me to the right of me, and within a fifteen-home section, eleven homes had people with cancer in them. And serious cancers, not basal cell carcinoma. There should be a study done. There should be a cluster study done in this area. But that aside, you know, that's a major concern, I think. In fact, you know, someone, an older Gibbsboro resident that was here last year, sat here and told me names of five different people who had brain cancer in Gibbsboro itself, over that person's lifetime. Someone should look into this. Someone should look into it. And, actually, when I went to Fox Chase the first time, they said, oh, you're very low risk. Well, low risk? Now I'm a two-time survivor of cancer. So, we are just frustrated beyond belief. I know you feel like this is moving along. We're forty years dealing with this, and the lake is dying. Now you're wanting to come on our properties, dig everything up, and come back in another, whatever, I don't know how many years, because this is getting put off and put off and put off. Where are we? When are you really going to get the lake done? And do it concurrently. Don't come in and dig up our properties and come back in five years and dig up the lake and make another big mess. And in the meantime we've got recontamination because you didn't clean the lake in the first place. Please, help me out here.

MR. WU: Yeah.

MS. JOHNSTON: What's taking so long? I don't understand. I really don't. I don't work this way, so it's difficult for me to understand. This is not rocket science. Honestly, it's really not that hard. Thank you. I'm sorry. This is a very, very sore subject with me.

MR. WU: I just want to support my point, the local news reporter was in the meeting last year, and I want to give you a copy.

MR. PUVOGEL: Thanks.

MR. HAINES: I have something I'd

like to say. Albert Haines. I have heard everything, Lucas paint works and the Sherwin-Williams paint works has caused cancer and stuff like this and all. It seems that there's some pockets here, and there's some pockets there. I got news for ya. I've had the building on United States Avenue almost all of my life, except for a few months when I was first born, I have lived on United States Avenue. I have breathed in the lacquer fumes when they cooked the lacquer. Okay? The varnish. And that's worse. You can't breathe when you breathe in the varnish fumes. But we did when we were kids. Okay? I never got cancer from it. I still haven't gotten cancer from living on United States Avenue, across from the most contaminated place around, really. We used to go down to what they call the Burn Site and collect bottles, and stuff like that and all. Okay? Whatever the guys were throwing out from the paint works, we tried to get a couple bucks, you know, we at least got 50 cents to go to the movies, even though we had to walk through Clementon to go to the movies, or Berlin. But still, I'm here.

I'm still alive. My kids grew up there.

TRACY HAINES: And he's eighty-two.

CHRISTEN LAFFERTY: Let me ask you a question.

MR. HAINES: Go ahead.

MS. SEPPI: Could you give us your name, please?

CHRISTEN LAFFERTY: Christen Lafferty. Do you have any children?

MR. HAINES: Two.

CHRISTEN LAFFERTY: Do you have grandchildren?

MR. HAINES: One.

CHRISTEN LAFFERTY: Any great grandchildren?

MR. HAINES: No.

CHRISTEN LAFFERTY: Have they ever had cancer?

MARIE HAINES: I'm his wife. I've had it twice.

TRACY HAINES: And he had it once. He got it from the Navy Yard, asbestosis.

MR. HAINES: This is my youngest girl.

CHRISTEN LAFFERTY: The problem that

I have, and my husband has, is that you're directly affected by cancer when you see a 4 year-old daughter going through chemo. We don't know what it's caused by, but it's a sore subject. So, that's why we're concerned. God bless you. You've lived here your whole life. But you know what? I have a 4 year-old that has leukemia.

MR. HAINES: Okay. I feel sorry for you.

CHRISTEN LAFFERTY: I don't want you to feel sorry for me.

MR. HAINES: Not sorry, but I commend you for, really, putting up a fight. Okay? Both of ya.

MS. SEPPI: We're really getting off track here. I understand, you know --

MR. HAINES: This is important. This gentleman right here, he's my neighbor.

MS. SEPPI: Which gentleman?

MR. HAINES: He's got four kids, four adorable little girls. Right, Scott?

SCOTT: That's right.

MR. HAINES: This is one of the best fathers I know of, besides me. But really, I would not like to see this gentleman move, him and his family. That would break my heart. Their oldest girl was born with cancer. Oh, don't shake your head. She's the most adorable little girl you'd ever want to meet.

MR. LAFFERTY: God bless her.

MS. SEPPI: I'm sorry. We really don't want to interrupt, but --

MR. KELLEHER: If there's a possibility of getting cancer, it should be checked. Whether you get it or you don't, if there's a possibility, it should be checked.

MR. HAINES: And she's now cancer free. She's cancer free. Thank you for your patience.

MS. SEPPI: We're trying to get everything written down so when you see this transcript --

MR. HAINES: I know.

MS. SEPPI: Nancy needs to have all of the information.

MR. HAINES: Okay.

MS. SEPPI: And you know what? We, all of us, believe me, in the EPA, we truly, truly understand your concern about health, especially children's health. And I think what Ula said is it would be in your best interest to read those documents from the New Jersey Department of Health, and I don't know if you know who ATSDR is, they're a federal health agency, and it's the Agency For Toxic Substances and Disease Registry. And if you need their names or numbers, call Ula, call me, and we'll set you up with them to talk with them, and even get the documents so you can take a look at them. But they would be the person to talk to. And again, you know, like Ula said, one of the most difficult things about working at EPA is we don't have any information about past exposure. We can't say yes, you live there, and that's why this happened. And it's very frustrating for us not to be able to do it, but that's the way it works. Right, Ula?

MS. KINAHAN: That's absolutely right.

CHRISTEN LAFFERTY: It's just frustrating for us because we hear this child has cancer, and they're all young children. So, it's got to be -- and they're all in

Gibbsboro. And it happens in every town, I understand that.

MS. SEPPI: So, yes, do your due diligence. Do as much as you possibly can.

MR. LAFFERTY: We have. Unfortunately, we had to. But we're interested in talking to you or anybody else.

MR. KELLEHER: My name is Ed Kelleher, K-E-L-L-E-H-E-R. I reside in Voorhees Township, and we're one of the properties along Kirkwood Lake that is scheduled for property remediation. Something has gotten lost here, I think. Let's start with Sherwin-Williams. Ballpark, what, a $12 billion corporation? I've been tracking their annual reports for the last several years. They have been accruing, literally, hundreds of millions of dollars. I don't know how much it is by now, cumulative, $800 million $900 million, at least, over the last three, four years, and it's earmarked for remediation of former paint manufacturing facilities, two in particular, and this is one. They've got all the money in the world. EPA, I hear, that's not your responsibility to do epidemiological studies, cancer clusters, et cetera. That's something Sherwin-Williams should have done, and a long time ago. This thing has been going on. I was new to Kirkwood when I moved in thirty-eight years ago, thirty-nine years ago now. I had no idea of the history. I didn't know Sherwin-Williams had pulled the plug the year before because of new regulations that came in. They knew what they were doing. They're responsible. They've got all the money in the world. It's been a disgrace, and it's been going on for forty years. I'm seventy-five. I'll be seventy-six soon. I live on that lake. I now have no expectation of seeing it cleaned and remediated. For God's sake, please, the resources are there, Sherwin-Williams has all the money in the world. They are not the PRP. They're the responsibility party. They signed administrative consent. Put resources into this and clean the damn thing up.

MR. LAFFERTY: Agreed. Thank you.

MR. KELLEHER: Please.

(Applause.)

MS. JOHNSTON: Just in case anyone

forgot, I'm Alice Johnston. I didn't get an answer, by the way, in my rant when I stood up a few minutes ago, but what is the timeframe for cleaning up the lake, and are we still going to insist that we clean the residential properties first and then come back years later to clean the lake? I would really like to have some sort of a response and a timeline regarding that.

MR. KLIMCSAK: Two answers, then.

MS. JOHNSTON: Oh, and one other question, Ray. I'm sorry, I don't mean to interrupt you. Julie, you directed us to look for documents regarding epidemiological studies or cluster studies. Is that a State agency or a federal agency that you were referencing?

MS. NACE: It was State and federal. The New Jersey Department of Health.

MS. KINAHAN: We work together.

MR. KLIMCSAK: ATSDR and New Jersey Department of Health. And the reports are called the Health Consultation Report, and it would be for each of the three sites.

MS. JOHNSTON: Thank you for that clarification. So, can you please, please, talk to me about the plan for the residential properties, and the lake, and whether those can be done together, simultaneously, and not all this piecemeal stuff that we've been talking about.

MR. KLIMCSAK: So, Julie is also the project manager for what is being termed the Water Bodies, which includes Bridgewood Lake, Silver Lake, and Kirkwood Lake, and the process of getting to that ROD has already begun, with Julie receiving the documents from Sherwin-Williams to get to a final approved remedial investigation report, and eventually a final feasibility study. So, that process has started with the target of getting to a ROD in 2020.

MS. JOHNSTON: Now the ROD is 2020?

MR. KLIMCSAK: Sorry, 2019. Forgive me.

MS. JOHNSTON: We added resources but we lost two years. How does that happen?

MR. KLIMCSAK: I know you said that last year someone said -- I can look back at that.

MS. JOHNSTON: Yeah, it wasn't just

me, Ray. There were other people in the room. I wouldn't make up this number, trust me.

MR. KLIMCSAK: Be that as it may, EPA and Sherwin-Williams, we prioritize to clean up the residential properties. There are a lot of people that want their homes cleaned up. We understand you want the lake cleaned up. There are people that call, that want to sell their property, and they want their properties cleaned up.

MS. JOHNSTON: So, let me understand this. You're going to come in and remediate my property, and you'll give me a clean deed, and then you'll come back and clean the lake, but in the meantime I've been recontaminated, so where does that leave me, legally?

MR. KLIMCSAK: I mean, we would re-sample, if necessary, but the contamination that occurred most likely occurred when the plant was in operation for 120 years. It's now been closed for forty.

MS. JOHNSTON: Am I going to live long enough that I can sell my house? Because we plan on retiring at some point. I don't mean to be disrespectful, but this is so frustrating.

MR. KLIMCSAK: I understand, Alice.

MS. EHLY: I don't care about my property being cleaned up. I want the lake cleaned up. I don't care about my property. My property is not that contaminated. I've lived there for sixty-eight years. My kids were raised there. I don't care about the arsenic and lead on my property. It's so minute. I want the lake cleaned up, period. We can't even go out in the boat because you hit bottom. Before, years ago, people used to go swimming in that lake. People used to come from Philadelphia and had Kirkwood Lake as a resort to swim in. There was a park over there. We go ice skating on the lake. The lake has no depth to it whatsoever. Nothing. Nothing.

MS. JOHNSTON: And on that note, now behind my house, my principal property where I live, boats cannot even come through there anymore. The County cannot come through and spray their lovely chemicals anymore to kill the spatterdocks because the boats get stuck. They can't maneuver back there. So, in the period of time that we've been coming here for these meetings, and this is five years now since we organized the Kirkwood Lake Environmental Committee, and since that time we lost that much depth, just behind my house.

MS. EHLY: And they lost it behind my house, because sometimes those airboats get stuck behind my house.

MS. JOHNSTON: If this timeline doesn't change, we won't have a lake. We won't have a lake by the time you guys get to it.

MR. JOHNSTON: And then you'll have a mosquito problem.

MR. WU: These people are so frustrated. Their lives are really suffering. You know, just tell the people in here what is the reasonable timetable for them, so at least they can see the light through the tunnel. I mean, you know, I am not living on a lake. I am far from them. But I can feel their pain, you know, really bad. You know, last year you tell them something, and this year it is different. You know, give them a reasonable timetable that the lake will be cleaned up so they have something to bring home and feel better. That's what I'm asking you, Richard.

MR. PUVOGEL: Well, the strategy that we worked out is to clean the upland portions first that are contaminating the lake, attack those, or remediate those upland portions, the Burn Site, which is upland of Kirkwood Lake and Bridgewood Lake, and the Dump Site, which is also upgrade of Bridgewood Lake and Kirkwood Lake, and the FMP, which is the next Record of Decision that we want to go for next year, address those first, and then clean up the water bodies downgrade of those next. That process, you're asking why it can't go on at the same time. It's the complexities of cleaning up the upland portions and the water bodies directly below them. It's a complex process.

MS. JOHNSTON: I understand it's complex, but in the last five years I've had dredging experts sitting on my committee, laying out plans for how this can be done. It really is not rocket science. I'm not saying it's a piece of cake, but it's really not all that difficult. People know how to do this, and it could easily be done. It's more about getting it done. It's not the technology. It's not whether it can be done.

MR. WU: The technology is there.

MR. PUVOGEL: The technology is there, but we have to look at the investigations first, come to a conclusion that there is a risk that we can take an action on, and then after that's done we have to negotiate with the responsible parties and see if they're willing to conduct the work, and if they are, we work with them, do an order.

MS. JOHNSTON: If they're willing? Isn't there an order of consent?

MR. PUVOGEL: There's an order of consent for the investigation. When the investigations are completed and the Record of Decision is signed, then we have to go through another set of negotiations with them to conduct the work. First, before we enter that discussion, we ask them are you willing to perform the work. That's the way it works. The potential responsibility parties can say no, and I want to implement the remedy you chose, you can do it, the EPA, or they can say yes, we'll take on the work and do it. So, we stop the investigation phase, turn to them and say are you willing to go to the next step, what Julie showed us. When they give us their answer that they're willing, we start negotiations on the legal instruments that makes them conduct that work. It's a legal process that we can't circumvent. By law, we have to follow that.

MS. JOHNSTON: It gives them an opportunity to drag everything out.

MR. JOHNSTON: Excuse me. Has anybody taken into consideration all of this investigating we're doing, or all of this negotiating, and all that stuff, has anybody considered tracking the contamination further downstream?

MR. KLIMCSAK: There was some limited sampling done below the Kirkwood Lake dam. It didn't show that much, but I wouldn't say that there wouldn't be further investigations to ensure that.

MR. JOHNSTON: I would think the longer you wait, the more chance there is of further contamination, maybe down into the Cooper River.

MS. EHLY: It's already contaminated, Bill.

MR. JOHNSTON: The longer you wait, the worse it gets.

MR. LUSCOMBE: James Luscombe again. In a given week or month, how many hours would you say each of you spend working on this project?

MR. KLIMCSAK: Julie is assigned to the Burn Site.

MS. NACE: The majority of my hours.

MR. LUSCOMBE: So, six hours a day?

MS. NACE: Yes, especially recently.

MR. KLIMCSAK: My full-time job is the Sherwin-Williams sites, the residential portion, the Former Manufacturing Plant. Before Julie picked up the Burn Site, I had the Burn Site. Before Renee had the Dump Site, I had the Dump Site, and we've added resources.

MS. NACE: Yeah, my full-time job is the Burn Site and the Water Bodies. I spend all of my days working on this.

MAYOR CAMPBELL: They don't do the studies. Sherwin-Williams does the work. They direct it.

MR. LUSCOMBE: So, it's a matter of if you are waiting two months for Sherwin-Williams to do a study, then you don't have anything to do?

MR. KLIMCSAK: There's not much waiting around, sir. I wish I could say to you -- I do cost recovery with Sherwin-Williams. I work on unilateral orders and legal agreements. We have many roles as a project manager. We're not sitting and waiting.

MR. LUSCOMBE: Across the country, or --

MR. KLIMCSAK: Region 2 is comprised of New York, New Jersey, and the Virgin Islands. Rich is my section chief, and he manages Central New Jersey.

MR. PUVOGEL: As the Mayor mentioned, we put more resources on it. In a time of dwindling resources, we've been able to get more resources on more project management on this site with Renee and Julie.

MR. LUSCOMBE: What's the biggest delay? Is it Sherwin-Williams? Is it waiting for studies? Is it meeting with attorneys?

MR. KLIMCSAK: I mean, the Superfund

process --

MR. LUSCOMBE: All I keep hearing is it gets pushed a year or two years later down the road, and it keeps going.

MR. KLIMCSAK: The Superfund process is a complicated process. We do human health risk assessment process. We do ecological risk process. We work with the State. I mean, we work with the DOT. It's multi-faceted.

MR. LUSCOMBE: Do you find your delays are mostly getting responses back from other departments, getting studies done? Is it Sherwin-Williams? Because it's forty years we're talking.

MR. KLIMCSAK: EPA hasn't been involved for forty years.

MR. LUSCOMBE: I understand.

MR. KLIMSCAK: Two years ago, in January of 2015, we came to the public and we said our goal is to get a ROD, a Record of Decision, a year. We started with the residential ROD in 2015. It was then followed with the decision document for the Dump Site in 2016. 2017, we're here for the Burn Site. The FMP, the soils, that's targeted for 2018, the

Water Bodies 2019, and there may still be a deep groundwater element associated with the FMP. That's a potential next Record of Decision.

MS. JOHNSTON: Wait. You just said 2019, and Rich said 2020.

MR. KLIMCSAK: He corrected himself. So, the one thing, we're talking the Dump Site, we're talking the Burn Site, I know you're relatively new, I haven't seen you come to these meetings before, and why aren't we addressing Kirkwood Lake. I mean, the contamination at the Dump Site, at the Burn Site, these were areas that were used to dump the waste. The concentrations of lead and arsenic within these areas are in the 50,000 parts per million, 80,000 parts per million. You know, within the sediments, it's lower than that. I'm not saying it's irrelevant, but it's much, much lower. The focus is to focus on the most contaminated areas that are upstream and move downstream.

MR. KELLEHER: Two things. I want to pick up on that last point. A moment ago you said unilateral. What is that? Do you have compulsion, power, authority? Can you make decisions without the cooperation of Sherwin-Williams in certain areas? It's the first time I've heard that.

MR. KLIMCSAK: In some cases we do an administrative order on consent. In other cases we do a unilateral administrative order for remedial design, and then that's followed by a consent decree for remedial action.

MR. PUVOGEL: For remedial design, we issue or we work with Sherwin-Williams or potentially responsible parties and negotiate and administer an order consent for the design. For the cleanup, we engage the Department of Justice, EPA's attorneys, and Sherwin-Williams' attorneys, and negotiate a consent decree that gets lodged in the court, that's subject to another public comment period. That's the process.

MR. KELLEHER: Is this for each different ROD?

MR. KLIMSCAK: Yes.

MR. KELLEHER: So, all these years we've been putting all this shit into the water and into the Burn Site, we're responsible, we got the money, it's already allocated, and that's not enough? We have to go through each step? Sherwin-Williams has the money. It's in their pocket. They do not want to spend one nickel one day sooner than they have to. It sits there. It's accrued. It's generating additional interest while we wait and wait and wait. These guys will say we want to do this, and they'll say, well, no, let's see about that. Right? We'll let you know. And then it's back and forth. Then you got the lawyers talking to lawyers. It's all billable hours, so what do they care? All the while, the clock keeps ticking. I'm tired of it. Tired of it.

MR. HAINES: What do you propose we do?

MS. JOHNSTON: Move it.

MR. KELLEHER: Move it. Right. Kirkwood Lake, there it is. They used to have a channel 9 feet deep.

MR. HAINES: Whoa, whoa.

MR. KELLEHER: It's 2-and-a-half feet deep now. No, you had your say up here before, sir. It needs to be dredged. There's not a question about it. Picture a scummy bathtub, and then you put up that wall, dam, right? We're collecting all that crap. The water gets shallower. The silt gets deeper. Are there higher concentrations upstream? Of course. When you get into it, digging, is there protection, airborne, all that stuff? They haven't been manufacturing since 1978, so the stuff isn't coming down. You're cleaning it up up there. Scour out this damn bathtub, and there's very little coming down. That's a better result, don't you think?

MR. PUVOGEL: I don't agree.

MR. KELLEHER: Why not?

MR. PUVOGEL: The data shows that the highest concentrations are in the upland areas.

MR. KELLEHER: I can see that. I'm not contesting it.

MR. PUVOGEL: You can't clean out below before you clean the upland area. It makes sense that if you want to clean up the area at large, you start at the highest concentrations first.

MR. KELLEHER: It's moving. It's not coming down to Hilliards Creek. It's not coming down to Kirkwood Lake. You know, we used to have a problem of absorption, right? All the crap coming down, sinking into the silt. It's so bad, now we have desorption. You understand? Clean all that crap out. And for the benefit of Sherwin-Williams, I don't give a flyin' hoot. Dredge it now. When it's all done, ten years later, when you're planning to dredge the lake after I'm in the ground, let them do it again. They put the crap in the ground. They deserve to clean it up.

MS. SEPPI: Thank you. Does anybody have any more questions about the Burn Site? Because I don't know, Mayor, do we have to be out of here shortly?

MAYOR CAMPBELL: No. We're fine.

MS. SEPPI: Sir, you had a question? Come up to the mic, please.

MR. HEAD: My name is Steven Head, H-E-A-D. A very simple question. Is Sherwin-Williams here tonight? Anybody from Sherwin-Williams?

MAYOR CAMPBELL: They have a representative here.

MR. HEAD: Do they have a

representative here?

MS. SEPPI: They do.

ELAINE RICHARDSON: We're here. We're listening here tonight. We're not here to make any statements.

MR. HEAD: You sound like a lawyer to me.

MS. SEPPI: Any other questions about the Burn Site presentation?

MS. PROCOPIO: My name is Rita Procopio, P-R-O-C-O-P-I-O, 19 Winding Way, Gibbsboro. I don't live near the lake, but we're all in this together. As a resident of this town for seventeen years, with pets that drink the water, children, a child, as a resident, what is my danger? Am I at harm just because I live and breathe and drink this water?

MR. KLIMCSAK: It was mentioned earlier, in case you weren't here, that when we identified the different sites, we looked at a half-mile radius round the sites to see if anybody had potable wells and were not connected to municipal water, and if there were people with potable wells, we sampled and provided that data to the residents.

MS. PROCOPIO: So, the answer? I like direct answers.

MR. KLIMCSAK: I can't talk about other people's data.

MS. PROCOPIO: Right. I just want to know if I'm in danger. I'm a cancer high-risk as well, so I feel your pain. And just because someone survived it, we're all predisposed to it, and we're at a higher predisposition because of our genetics. I don't need environmental screwing me over because I got bad genetics.

MS. SEPPI: You're drinking public water, right? You're connected to the public water supply?

MS. PROCOPIO: I am, but I'm not educated in water supply and plumbing. I'm a teacher of 1st grade children. That's all I need to know. But I need to know when my cats drink the water, when I drink the water, when I'm hosing anything, I want to know that I'm safe. That's what I need to know.

MS. SEPPI: That's a very good question. Ula?

MS. KINAHAN: So, when you're connected to the public water supply, they actually test it on a regular basis.

MS. PROCOPIO: How regular?

MS. KINAHAN: I'm not the water supplier, so I don't know, but --

MR. PUVOGEL: It's generally on a quarterly basis.

MS. KINAHAN: So, you're not exposed, your potable water what you're ingesting.

MS. PROCOPIO: Is it airborne?

MS. KINAHAN: Soil can be airborne, like we talked about before. It could be on your clothes, you could bring it into your house. I know before we talked about the measures you can take to limit exposure before your yards are remediated, you know, wiping down surfaces. Any time you bring in the soil that may be contaminated into your indoor air, you could continuously be exposed. It's in your dust. You could be touching it. Children, especially, because they have high hand-to-mouth contact. So, there's tons of ways to reduce it.

MAYOR CAMPBELL: I think we should start with if you live directly adjacent to an area, if you're going inside the fenced area, you need to worry about the things you're talking about. She lives a mile, three-quarters of mile from the site.

MS. PROCOPIO: Yeah, I'm just concerned. I have a right to know. Full disclosure here.

MS. KINAHAN: Yes. And I can give you a lot of tools that I know I've shared with others about gardening. Again, if you have sampling --

MR. KLIMCSAK: You're not one of the properties that are in proximity or sampled.

MS. KINAHAN: So, you do not have elevated concentration levels of chemicals on your lawn.

MS. SEPPI: You shouldn't have any concern about drinking the public water.

MS. PROCOPIO: And the soil? Don't plant a garden any time soon, right, is what you're saying?

MS. SEPPI: Again, your home is not one of the homes that are near an area of concern.

MS. PROCOPIO: Isn't it all interconnected when it all comes down to it?

MS. KINAHAN: Again, there were RIs, remedial investigations, and they are public record, and I do invite everyone to read them. They do have a lot of information about how the contamination is transported through the groundwater, or through the sediment, surface water, soil. So, again, this is why everything takes so long, because before we can decide on the appropriate remedy, we have to really do the studies, and do a health risk assessment, and do an ecological risk assessment, and take that all into account when you select the preferred remedy.

MS. SEPPI: In addition to that, there are hundreds and hundreds of samples that are taken, too, and all that data has to be analyzed. So, it is a time-consuming effort, absolutely.

MS. KINAHAN: But there are papers I can give you that could give you information. So, if you see me afterwards.

MS. PROCOPIO: Yeah, okay. Thank

you.

MS. SEPPI: Thank you. So, if there aren't any other questions, we thank you all for coming tonight. Make sure, if you signed in, I'll have your e-mail, and I'll let you know when we have the Record of Decision and the Responses in Summary that addresses your comments, and I'll send out a link for that.

MAYOR CAMPBELL: When you leave tonight, please go out at the light. Go through the parking lot and go out at the light. It's a lot safer.

MS. SEPPI: One last thing, this presentation, Julie will send it to me and I'll post it on our web page. Give it a couple days. Probably early next week. That way if you want to refer to that, it's there. The next public comment is August 28th.

(Public meeting concluded at 8:41 p.m.)

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C E R T I F I C A T I O N

I hereby certify that the proceedings and evidence noted are contained fully and accurately in the stenographic notes taken by me in the foregoing matter, and that this is a correct transcript of the same.

____

NANCY CARIDES, RPR, CRR
Notary Public

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.)

ATTACHMENT D

WRITTEN COMMENTS

Nace, Julie

From: Donna Yavorsky <dyavorsk@gmail.com>
Sent: Wednesday, August 30, 2017 2:58 PM
To: Nace, Julie
Subject: EPA's Cleanup for Gibbsboro

I fully support the following statement by the Sierra Club:

"The EPA is extending the comment period for their clean-up plan that will fail and people need to come out against the asphalt cap. We are concerned with this plan because it includes a cap over some of the lead and arsenic contamination that may fail. The only way we can to adequately protect public health is to remove all of the contamination. Arsenic is carcinogenic and lead exposure can have serious impacts adults and children. Lead exposure in children can cause reading and learning disabilities, impaired hearing, reduced attention spans, and other behavioral problems," **said Jeff Tittel, Director of the New Jersey Sierra Club.** "The sites near Gibbsboro must be fully cleaned-up because they are toxic and dangerous to the people living nearby. If they continue with this plan, they also need to include regular monitoring, not every five years because all caps eventually fail."

Donna Yavorsky
dyavorsk@gmail.com

August 18, 2017

Julie Nace, Remedial Project Manager
US EPA
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Edward G. Campbell, III
Mayor • *Ext. 160*

Anne D. Levy, RMC
Borough Clerk • *Ext. 105*

RE: Public Comments Regarding the Proposed Plan for the United States Avenue Burn Site/Operable Unit 2 Gibbsboro, New Jersey

Transmitted by email and US Mail

Dear Julie,

On behalf of the Borough of Gibbsboro I want to thank you and EPA for extending the comment period for thirty (30) days to enable proper evaluation of the proposed plan by the public. I also want to thank you and EPA for your efforts on behalf of our citizens.

This letter constitutes the official comments from the Borough of Gibbsboro regarding the above referenced plan. The comments have been vetted and approved by the Borough's Environmental Commission, Sustainable (Green) Gibbsboro Team, Planning/Zoning Board, and the Borough Council. They should be evaluated as though separate submissions were made by each entity. This letter serves to provide a unified position of the local government on behalf of residents and property owners:

1) **The Borough of Gibbsboro concurs with EPA's strategy regarding the order of decisions that EPA is undertaking to remediate the three major sources of contamination in Gibbsboro.** We fully support the rationale behind EPA's priorities as scientifically sound. Residential properties are the highest priority, then the upstream sites, and finally the stream corridors downstream to Kirkwood Lake.

2) **Direct that an Evaluation of a Complete Cleanup be Performed** - In evaluating the alternatives considered by EPA we note that there was no alternative that considered the complete removal of contaminated soils and sediment. While considering approaches that yield less than complete cleanup may be appropriate when the government is funding a cleanup, it is difficult for this community to understand why it is not, at the minimum, an alternative to be considered when there is a responsible party. Further the estimated costs to cleanup the three operable units for which EPA has rendered plans or decisions pale in comparison to Sherwin Williams' fiscal ability to fully remedy the environmental damage in Gibbsboro.

   The Borough of Gibbsboro is in the process of exercising its option to acquire most of the land known as the US Avenue Burn Site from Tri-Boro under a perpetual option agreement. Specifically, Gibbsboro is acquiring Block 23 Lot 1 and Block 25 Lot 1. The Borough also owns the railroad corridor, known as Block 22 Lots 4.01, 4.03, and 4.01, which is adjacent to the USA Avenue Burn Site, portions of which are in the scope of the

Route 561 Dump Site. . If United States Avenue were to be vacated, Gibbsboro would also own the contaminated right of way. That makes Gibbsboro the sole stakeholder for this site.

From EPA's Proposed Plan we note the following: "The Preferred Soil Alternative would achieve cleanup goals that are protective for residential use on floodplain soils adjoining White Sand Branch. Though the remedy would be protective, ***it would not achieve levels that would allow for unrestricted use and therefore, institutional controls, such as deed notices would be required. Five-year reviews would be conducted since contamination would remain above levels that allow for unlimited use and unrestricted exposure. "*** Leaving contamination above levels that would not allow unlimited and unrestricted use is unacceptable to Gibbsboro as a community and property owner. In furtherance of this position we note comments in the plan attributed to the State of New Jersey: "The State of New Jersey concurs with the preferred alternatives of sediment and soil removal including offsite soil disposal. ***However, the state cannot concur with the capping and institutional control component of the preferred soil alternative unless property owners provide their consent to the placement of a cap and a deed notice."***

As the property owner, Gibbsboro cannot consent to a plan that has not evaluated an option to remove <u>all</u> contamination, even contamination at depth, from the soil and sediments of the site and thereby to avoid deed notices being required on any properties. Removal of all contamination will eliminate the need for five year reviews to determine the effectiveness of the remedy.

3) **Ensure the United States Avenue Right of Way is Free of Contamination** - Based on previous testing by Gibbsboro around 1989 within United States Avenue, Berlin Road and Foster Avenue, NJ DEP would not allow Gibbsboro to construct sanitary sewer lines or force mains in portions of those roads. The Borough of Gibbsboro requests that US EPA and Sherwin Williams remove contaminated soil within the Berlin Road, United States Avenue, and Foster Avenue right of ways as part of the US Avenue Burn Site and the former manufacturing plant remedies. Further the Borough was required to construct an expensive alternative to pump sewage from the southern end of town around the former manufacturing plant. We want Sherwin Williams to remedy this situation and reimburse the community for those costs incurred around 1990. We request that US EPA ensure that the Borough is not restricted in any way from providing sanitary sewer service to existing and future residents and businesses that will require this service and that economical future service may be provided on the Lindenwold side of White Sands Branch. It is unfair to place an unspecified financial burden on future development to perform testing and potential disposal of contaminated soils.

4) **Regarding the implementation of a Soil Removal Process**:
   a. The location of any construction trailer must be approved by the Gibbsboro Planning/Zoning Board via Site Plan approval which will address the location, screening, ingress and egress.
   b. Local residences and businesses must be notified of a tentative schedule involving the cleanup of the site at least 30 days in advance. Final confirmation must be supplied seven days in advance. The Gibbsboro Police and Fire Departments and the governing body must receive the same notices.

c. Sherwin Williams and its contractors should contract with the Borough of Gibbsboro for local police to provide security for activities within or near to roadways and to provide safe access to roads for construction traffic.
d. The implementation plan needs to address how dust will be controlled and, depending on the plan, how they will collect and dispose of contaminated particles and dust.
e. Monitors must be installed to monitor air quality.
f. If any residents or businesses will be required to vacate their properties during the cleanup process, their expenses must be covered by Sherwin Williams. If they do not need to vacate the properties, how will they be protected from exposure during the cleanup process?

5) **Regarding the offsite (with respect to the property from which they are removed) stockpiling of contaminated soils:**
   a. Any site selected for offsite storage of contaminated soils must be approved by the Gibbsboro Borough Council and Planning/Zoning Board.
   b. Any areas that are to be used to stockpile contaminated soils need to be secured from public access.
   c. Consider using Block 24 Lot 1.03 for soil stockpiling. This lot is located off Berlin Road, fronts Honey Run and the White Sands Branch, and adjoins the confluence of the streams. It is a deep lot and relatively secluded. The Borough would consider purchasing the lot and leasing it to Sherwin Williams to be used to house a construction trailer and stockpiling for both the 561 Dump Site and the US Avenue Burn Site.
   d. Proposed storage areas should be disclosed to the public and approved by the local municipality.
   e. Transportation routes to local stockpiling sites must be disclosed to the public and approved by the Gibbsboro Borough Council and Planning/Zoning Board.
   f. The transportation of contaminated soils must be in vehicles that are loaded such that no material or dust will escape.
   g. Offsite storage of contaminated soils must be within a volume that is not easily penetrated.
   h. No material should be stored offsite more than seven days.
   i. Offsite storage must be screened such that it cannot be seen from any residence, business, public building, public recreation area, or public street.

6) **Regarding the stockpiling of contaminated soils on site:**
   a. Any properties on which contaminated soils are temporarily stored need to be secured from public access.
   b. Proposed areas must be disclosed to the public and approved by the Borough of Gibbsboro.
   c. The onsite storage of contaminated soils must be in sealed drums or within a volume that is not easily penetrated.
   d. No material should be stored on site more than 24 hours.

7) **Regarding the decontamination of vehicles used to transport contaminated soils:**
   a. A process needs to be established to remove contaminated particles from trucks before allowing transit on public streets.
   b. The process must also address the collection and security of contaminated particles removed during the decontamination process.
   c. The process needs to be disclosed to the public and the Borough of Gibbsboro governing body.

8) **Regarding the hours of operation:**
   a. All work within Gibbsboro must comply with local ordinances regarding commercial operations and noise.

The Borough Council and its Boards were very disappointed in EPA's weight of "Community Acceptance" with respect to its decision for the Route 561 Dump Site where there was overwhelming opposition from Gibbsboro to the selected remedy yet EPA went forward without modification. Our expectation is that EPA will appropriately weigh Gibbsboro's input for this decision and restore faith in EPA's Plan which states "Community acceptance of the Preferred Alternatives will be evaluated after the public comment period ends and will be described in the Record of Decision. Based on public comment, the Preferred Alternatives could be modified from the version presented in this proposed plan. The Record of Decision is the document that formalizes the selection of the remedy for a site."

Please do not hesitate to contact me should you have any questions regarding the Borough's comments.

Sincerely,

Edward G. Campbell, III
Mayor
Gibbsboro Borough

cc: Anne D. Levy, Borough Clerk
The Honorable Donald Norcross, U. S. Congressman (D-01, NJ)
The Honorable Jeffrey Nash, Camden County Freeholder
The Honorable Michael Mignogna, Mayor, Voorhees Township
Andrew Kricun, P.E., BCEE, Executive Director/Chief Engineer, CCMUA
Peter Fontaine, Cozen O'Connor
Chris Orlando, Camden County Counsel
Raymond Klimcsak, US EPA
Renee Gelblat, US EPA
Pat Seppi, US EPA
Rich Puvogel, US EPA
Lynn Vogel, NJ DEP
Gibbsboro Borough Council
Gibbsboro Planning/Zoning Board
Gibbsboro Environmental Commission
Gibbsboro Board of Education

US Avenue Burn Site Public Comments.docx

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September 26, 2017

Renee Gelblat, Remedial Project Manager
U.S. EPA – Region 2
290 Broadway, 19th Floor
New York, N.Y. 10007

Dear Ms. Gelbat,

I write to you with regard to the Environmental Protection Agency's (EPA) proposal to remove lead and arsenic contaminated soil and sediment at the United States Avenue Burn Superfund site in Gibbsboro, N.J.

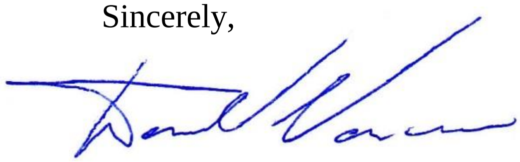
More than 40 years ago, Rep. Jim Florio, who represented South Jersey in Congress from 1975-1990, began to grow concerned with the consequences of the industrial age he saw around him. As he walked around our community he saw contaminated sites, including the Sherwin Williams/Hilliard's Creek sites, that damaged property values and more importantly, jeopardized the health and safety of the people living there. For that reason, he authored the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as Superfund legislation). Unfortunately, 40 years later, the Sherwin Williams/Hilliard's Creek/Kirkwood Lake site is still contaminated.

While I am appalled by the amount of time it has taken to get to this point, I am heartened by the progress that has been made in the past few years. However, regardless of the progress made over last few years, I urge you to consider the situation from the point of a resident of our community. Many of these men and women have lived here for years and have seen little to no progress prior to the beginning of remediation efforts and shovels in the ground that began just a few years ago. Every day that passes is another day that their children play in the yard or they go out for a walk with their families and pets, concerned about the environment around them.

With these things in mind, I urge you to consider input from residents of the community that must live with the consequences of this clean up effort. These individuals derserve the peace of mind that, in the near future, they will be able to enjoy a community that has been cleaned up to the highest standards and that is free of hazards to their health. Furthermore, I urge you to take every possible meausre to clean these sites up as quickly as possible, including concurrently remediating multiple sites. I believe these actions will go a long way to assure the constituents of Gibbsboro and Voorhees that every effort is being made to return these areas to thier natural state as quickly as possible.

Thank you for your consideration and please don't hesitate to contact Vince Sarubbi of my office at vincent.sarubbi@mail.house.gov or 202-225-6501.

Sincerely,



Donald Norcross
Member of Congress

CC: EPA Region 2 Administrator Judith Enck