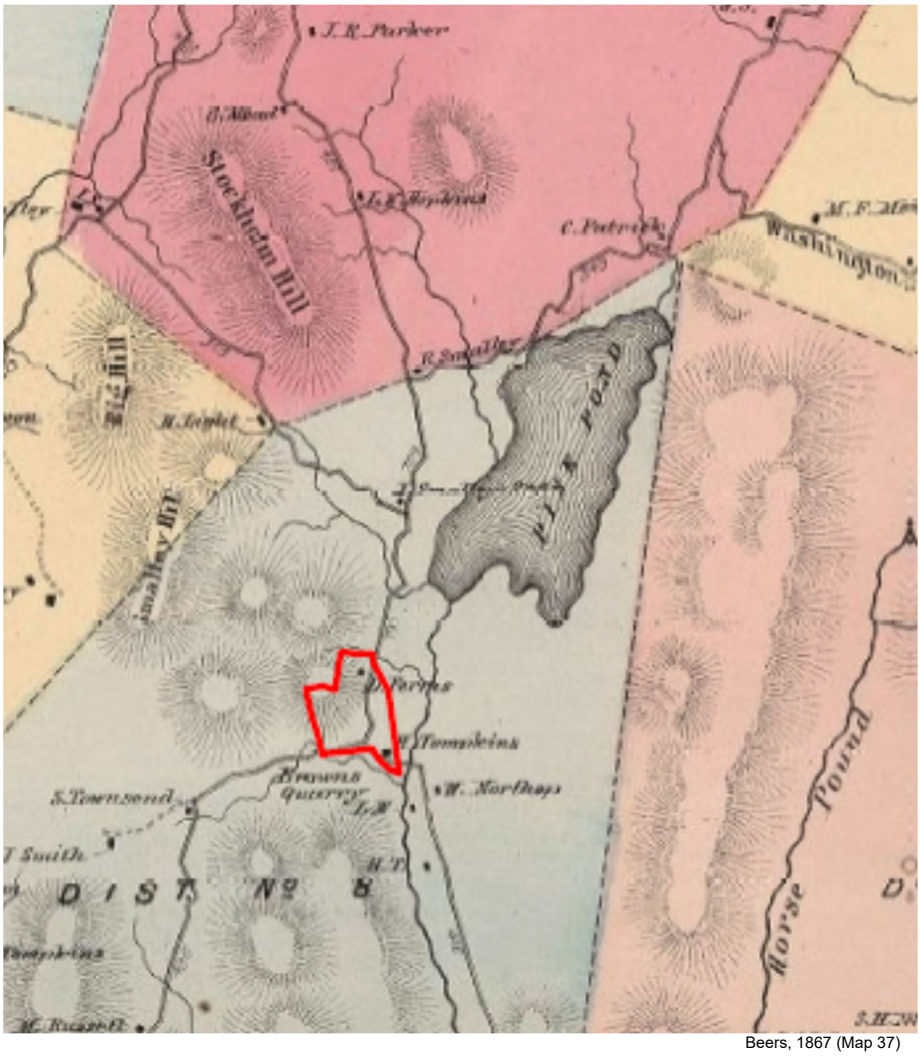
RECORD OF DECISION

Arsenic Mine Superfund Site
Operable Unit 1
Kent, Putnam County, New York



Beers, 1867 (Map 37)

United States Environmental Protection Agency
Region II
New York, New York
June 2020

598776

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Arsenic Mine Superfund Site
Kent, Putnam County, New York

Superfund Site Identification Number: NYD982531469
Operable Unit: 01

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the U.S. Environmental Protection Agency's (EPA's) selection of an early action for the Arsenic Mine Superfund Site (Site), chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §§ 9601-9675, and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300. This decision document explains the factual and legal basis for selecting a remedy to dissociate the residents from exposure to arsenic-contaminated soils at the Site. The attached index (see **Appendix III**) identifies the items that comprise the Administrative Record upon which the selected remedy is based.

The New York State Department of Environmental Conservation (NYSDEC) was consulted on the proposed remedy in accordance with CERCLA Section 121(f), 42 U.S.C. § 9621(f), and it concurs with the selected remedy (see **Appendix IV**).

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The selected remedy to dissociate the residents from exposure to arsenic-contaminated soils at the Site includes the following components:

- Offers of acquisition of certain affected properties and permanent relocation of the affected residents who accept EPA's offer;
- Following permanent relocation, demolition of vacated structures;

- Utilization of institutional controls[1] (*e.g.,* easements) to limit the current and future use of the properties; and
- Until the residents from each affected residence are permanently relocated, or until a final remedy is completed, periodic inspections and maintenance of the existing protective measures at each occupied residence, as necessary, to ensure the effectiveness of these measures in eliminating exposure pathways in the areas where these measures were installed.

Engineering controls (*e.g.,* fencing) will be utilized to prevent trespassing once structures are vacated. It is anticipated that the fencing will be removed once the footprint of the demolition was restored (*e.g.,* backfilled and seeded).

The remedy also includes the preparation of a plan related to the inspection and maintenance of the existing protective measures.

The environmental benefits of the selected remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy and NYSDEC's Green Remediation Policy.[2] This will include consideration of green remediation technologies and practices.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in CERCLA Section 121, 42 U.S.C. § 9621, because of the following: (1) it is protective of human health and the environment; (2) it meets a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains the legally applicable or relevant and appropriate requirements under federal and state laws; (3) it is readily implementable; (4) it is cost-effective; and (5) it utilizes permanent solutions to the maximum extent practicable. Although the selected remedy will not satisfy the statutory preference for treatment as a principal element of the remedy (*i.e.,* reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment), future actions at the site are expected to do so.

The statutory requirement for a five-year review is not triggered by the implementation of this action.

[1] Institutional controls are non-engineered actions or requirements, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a remedy.

[2] See http://epa.gov/region2/superfund/green_remediation and http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf.

ROD DATA CERTIFICATION CHECKLIST

The ROD contains the remedy selection information noted below. More details may be found in the Administrative Record file for this decision.

- Contaminants of concern and their respective concentrations (see ROD, **Page 6** and **Appendix II, Table 1**);
- Baseline risk represented by the contaminants of concern (see ROD, **Pages 8 - 9** and **Appendix II, Tables 5 - 6**);
- Current and reasonably-anticipated future land use assumptions and current and potential future beneficial uses of groundwater relied upon in the baseline risk assessment and ROD (see ROD, **Page 5**);
- Estimated capital, periodic inspections and maintenance, and present-worth costs, the discount rate, and the number of years over which the remedy cost estimates are projected (see ROD, **Page 19** and **Appendix II, Tables 7 - 10**); and
- Key factors used in selecting the remedy (*i.e.*, how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) (see ROD, **Page 18**).

AUTHORIZING SIGNATURE

Evangelista, Pat

Digitally signed by Evangelista, Pat
Date: 2020.06.29 13:57:15 -04'00'

See Signature Block

Pat Evangelista, Director
Superfund and Emergency Management Division

Date

RECORD OF DECISION FACT SHEET
EPA REGION II

Site

Site name:	Arsenic Mine Site
Site location:	Kent, Putnam County, New York
HRS score:	Not Applicable
Listed on the NPL:	November 8, 2019

Record of Decision

Date signed:	June 29, 2020
Selected remedy:	Offers of acquisition of certain affected properties and permanent relocation of the affected residents who accept EPA's offer. Following permanent relocation, vacated structures will be demolished. This alternative also includes institutional controls (*e.g.,* easements) to limit current and future use of the properties. Until the residents from each affected residence are permanently relocated, or until a final remedy is completed, periodic inspections and maintenance of the existing protective measures, as necessary, will be performed at each occupied residence to ensure the effectiveness of these measures in eliminating exposure pathways in the areas where these measures were installed.
Capital cost:	$5.6 million
Inspection and maintenance cost:	$330,000 for one year
Present-worth cost:	$5.83 million
Lead	EPA
Primary Contact:	Mark Granger, Remedial Project Manager, (212) 637-3351
Secondary Contact:	Joel Singerman, Chief, Central New York Remediation Section, (212) 637-4258

Waste

Waste type:	Arsenic
Waste origin:	On-site mining activities
Contaminated media:	Soil

DECISION SUMMARY

Arsenic Mine Superfund Site
Operable Unit 1
Kent, Putnam County, New York

United States Environmental Protection Agency
Region II
New York, New York
June 2020

TABLE OF CONTENTS

SITE NAME, LOCATION, AND DESCRIPTION

The Arsenic Mine site (Site) is located in Kent, Putnam County, New York (see **Appendix I, Figure 1)** and includes an historic former mine, previously known as Pine Pond Mine, Silver Mine, and Brown's Serpentine Mine. There are two former entry shafts. The Site includes the northern mine shaft, which is located on private property. The Site includes undeveloped and residential properties around and downslope from the northern mine shaft, near the intersection of Gipsy Trail Road and Mt. Nimham Court. See **Appendix I, Figure 2**. A second shaft, the southern mine shaft, is located in the adjacent Nimham Mountain Multi-Use Area, a state recreational area.

The Site is situated in the Hudson Highlands area, which is a northeast-southwest trending band of igneous and metamorphic rocks that extends from New England through New York. The Hudson Highlands are almost entirely blanketed by a thin layer of glacial till with frequent bedrock outcroppings.

The area is sparsely populated, and the terrain is highly variable, with steep, forested hillsides. Occupied properties in the area consist of single-family residential homes. See **Figure 1**. Public water is not available in the area; residents rely on private wells for their drinking water.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Mining operations at the Site were conducted intermittently from the mid-1800s through approximately 1918. The mine contains arsenopyrite, a metal ore that was used in ammunition, pesticides, pigments, and other industrial uses. During the mining operations, rocks were crushed on-Site to concentrate the ore. The arsenic-contaminated waste materials, which are known as tailings, were disposed of in areas surrounding the mine pits/shafts. Mining operations ceased in 1918 reportedly because of the lack of a satisfactory smelting forge nearby for processing the ore.

While the area has naturally high levels of arsenic in the soil and groundwater, significantly higher levels of arsenic are found on the residential properties at the Site as a result of the dispersal of arsenic associated with the mine tailings relative to the northern mine entrance.

In 1987, residents living in a house at the Site that is adjacent to the northern mine entrance were hospitalized as a result of exposure to arsenic from their drinking-water well that had been installed through tailings from the mining operations. The U.S. Environmental Protection Agency (EPA) installed a cistern at that residence for drinking water. The collection portion of the cistern system failed, however, so the collection tanks were adapted for water deliveries as an alternative drinking-water supply. During the late 1980s and early 1990s, the Putnam County Department of Health (PCDOH), in conjunction with EPA and the New York State Department of Health (NYSDOH), conducted limited soil sampling on those properties near the northern mine entrance, and

that revealed significant concentrations of arsenic in surface soils. The PCDOH placed a warning sign near the northern mine entrance indicating the presence of elevated arsenic levels in soil. Because of naturally-elevated regional arsenic concentrations in the soil, manmade deposition of arsenic-laden materials related to the past mining operations was not delineated at that time.

In 2016, the owner of the above-mentioned cistern requested EPA's assistance with necessary repairs. During the repairs, it was determined that sediments with high concentrations of arsenic were entering the collection tanks. While these sediments were not affecting the water, in 2017 and 2018 EPA collected soil samples on and around the location of previous mining operations to determine their source. In 2018, EPA also conducted potable water sampling at seven residential properties located in the vicinity of the mine and the former mining operations; these residential properties have since been designated as part of the Site. In April 2019, EPA initiated quarterly drinking-water assessments to ensure protectiveness of the residents. Because the groundwater underlying the Site is known to contain elevated levels of arsenic, treatment systems were recommended by PCDOH and have been installed on most of the private drinking-water wells within the Site. Drinking-water quality has been found to be acceptable.

Additionally in April 2019, the EPA Removal Program mobilized to perform interim measures to protect public health and reduce direct contact threats relative to surface soil contamination by paving or adding stone to driveways, creating stone or woodchip walkways, covering residential high-use, worn areas with woodchips, excavating soil in dog pens and backfilling with woodchips, and providing residents with indoor and outdoor door mats and boot brushes. High efficiency air (HEPA) particulate vacuums, which contain filters capable of capturing extremely small particles, were provided to each household in an effort to reduce indoor dust.

NYSDOH released a Health Consultation in April 2019, in which it evaluated shallow residential soils at the Site. The conclusion in the Health Consultation was that short-term exposure of children to surface soils with the highest concentrations of arsenic poses an immediate and significant threat to human health, constituting an urgent public health hazard. It also contained a conclusion that long-term exposure of children and adults to arsenic in surface soils poses a significant threat to human health, constituting a public health hazard. EPA supported these conclusions in a Determination of Significant Threat memorandum, finding that all residential properties at the Site contain exposure point concentrations that result in calculated risks or hazards to residents that are at or above the threshold for unacceptable risk. Additional action beyond the interim measures was recommended to protect the long-term health of affected residents. Also, in April 2019, the federal Agency for Toxic Substances and Disease Registry (ATSDR) issued a Public Health Advisory recommending that EPA take immediate short- and long-term measures to dissociate persons, especially children, from exposure to arsenic in shallow soils at the Site.

Following the inclusion of the Site on the National Priorities List on November 8, 2019, EPA commenced a focused feasibility study (FFS) to identify and evaluate alternatives to

dissociate the residents from exposure to arsenic-contaminated soils. The final FFS report was completed in March 2020.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

On April 8, 2020, the FFS report along with a Proposed Plan that described the remedial alternatives considered for the Site were made available to the public for comment on EPA's website. The Proposed Plan also identified the preferred remedial alternative and the rationale for the preference. A notice of availability of the above-referenced documents and information pertaining to participating at a public meeting was published in the *Putnam County Press* on April 8, 2020. The public comment period ran from April 8, 2020 to May 8, 2020. On April 22, 2020, because of the social-distancing requirements related to the COVID-19 pandemic, EPA conducted a virtual public meeting via Skype for Business and a conference call-in line to inform local officials and interested citizens about the Superfund process, to present the Proposed Plan for the Site, including a description of the preferred remedy, and to respond to questions and comments from the approximately 85 attendees. Public comments were primarily focused on acquisition and relocation; affected properties; comparable dwellings; remediation timeframe; additional sampling; groundwater concerns; and the historic, cultural, and agricultural significance of properties. Responses to the questions and comments received at the public meeting and provided in writing during the public comment period are included in the Responsiveness Summary (see **Appendix V**).

SCOPE AND ROLE OF THE OPERABLE UNIT

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP), at 40 CFR § 300.5, defines an operable unit (OU) as a discrete action that comprises an incremental step toward comprehensively addressing site problems. Such a discrete portion of a remedial response is intended to eliminate or mitigate a release, threat of a release, or pathway of exposure. The cleanup of a site can be divided into a number of operable units, depending on the complexity of the problems associated with the site.

This Site is being addressed by EPA in two OUs. The first OU (OU1) addresses, as an early action, dissociating the residents from exposure to arsenic-contaminated surface soils. This ROD describes EPA's selected remedy for OU1.

The second OU (OU2) will address the nature and extent of all Site-related contamination in various media (*e.g.,* surface and subsurface soil, groundwater, sediment, *etc.*), as well as ecological considerations.

SUMMARY OF SITE CHARACTERISTICS

To determine the extent of contamination from mining waste and to support an assessment for the appropriateness of performing a removal action at the Site, EPA collected shallow soil samples (from 0 to 2 feet below ground surface) for arsenic in 2017

and 2018 at and around the former mine and the residential properties. As part of this investigation, approximately 800 soil samples were collected at 517 locations and thereafter analyzed for arsenic. Arsenic was detected in all soil samples, with concentrations ranging from 3.2 milligrams per kilogram (mg/kg) to 56,000 mg/kg. **Appendix I, Figure 3** illustrates the surface-soil sampling locations and results.

The mine-related contamination remains uncontrolled at the Site. In addition to baseline contamination associated with the former mine and residential properties, it is likely that mine-related wastes have further spread or migrated to the residential properties as a result of surface-water flow and aerial deposition from wind. In addition, in the development of the properties, there was the potential that mine-related wastes were redistributed within the residential area as a result of regrading activities. See **Appendix I, Figure 4** for the conceptual site model.

CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USES

Land Use

The Site includes undeveloped and residential properties around and downslope from the northern mine shaft.

Groundwater Use

With the exception of the above-described residence where EPA replaced a private well with a cistern for drinking-water deliveries, all the residences in the area use private wells. Because the groundwater underlying the Site is known to contain elevated levels of arsenic, treatment systems were recommended by PCDOH and have been installed on most of the private drinking-water wells within the Site.

SUMMARY OF SITE RISKS

As part of the FFS, EPA conducted a streamlined baseline risk assessment to estimate the current and future effects of the existing arsenic at the Site on human health. A baseline risk assessment is an analysis of the potential adverse human health effects caused by 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. It can provide the basis for taking action and can identify the contaminants and exposure pathways that need to be addressed by the implementation of the remedial action. This section of the ROD 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* – in this step, EPA uses the analytical data collected to identify the contaminants of potential concern at the Site for each medium, with consideration of a number of factors explained below;
- *Exposure Assessment* - in this step, EPA 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* - in this step, EPA determines the types of adverse health effects associated with chemical exposures and the relationship between the magnitude of exposure (dose) and severity of adverse effects (response); and
- *Risk Characterization* - in this step, EPA summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. In the risk characterization, EPA also identifies contamination with concentrations that exceed acceptable levels, defined in the NCP as an excess lifetime cancer risk greater than $1 \times 10^{-6} – 1 \times 10^{-4}$, an excess of lifetime cancer risk greater than 1×10^{-6} (*i.e.*, point of departure) combined with site-specific circumstances, or a Hazard Index greater than 1. Contaminants at these concentrations are considered chemicals of concern (COCs) and are typically those that will require remediation at a site. Also included in this section is a discussion of the uncertainties associated with these risks.

Hazard Identification

In this step, the chemicals of potential concern (COPCs) in each medium are identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations, mobility, persistence, and bioaccumulation. The streamlined risk assessment for OU1 focused on residential area surface soils related to the Site that may pose significant risk to human health. Analytical information that was collected to determine the nature and extent of contamination revealed the presence of arsenic in soils at concentrations of potential concern. In selecting a remedy documented in this ROD, EPA focuses on the dissociation of residents from arsenic-contaminated surface soils on nearby residential area properties that were impacted by the former mine (as listed in **Appendix II, Table 1**). A comprehensive hazard identification of all COPCs will be conducted during the OU2 remedial investigation and feasibility study.

Exposure Assessment

Consistent with Superfund policy and guidance, the human health risk assessment (HHRA) is a baseline assessment, and therefore EPA assumes in that assessment that no remediation or institutional controls would be taken to mitigate or remove hazardous substance releases. 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 conditions at the Site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.

In the HHRA, EPA evaluated potential risks to populations associated with both current and potential future land uses. The land use in the OU1 study area is residential. The HHRA was based on the assumption that the future land use for this area would be consistent with the current use.

Exposure pathways were identified for each potentially exposed population in relation to each potential exposure scenario for exposure to arsenic in surface soil. Exposure pathways assessed in the HHRA are presented in **Appendix II, Table 2** and include exposure of residents to surface soil via ingestion and dermal and inhalation contacts. Adult and child residents were identified as potentially exposed populations. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases this may be the maximum detected concentration. A summary of the exposure point concentrations for arsenic at all residential properties evaluated can be found in **Appendix II, Table 1**. A comprehensive list of the exposure point concentrations for all COPCs will be prepared as part of the OU2 HHRA.

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 as a result of exposure to site chemicals are considered separately. Consistent with current EPA policy, it is assumed that the toxic effects of site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs are typically summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively. The streamlined HHRA for OU1 calculated risks and hazards for arsenic only.

Toxicity data for the HHRA were obtained from the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database Values, or other sources identified as appropriate references for toxicity values consistent with EPA's directive on toxicity values. This information for arsenic is presented in **Appendix II, Table 3** (noncancer toxicity data summary) and **Appendix II, Table 4** (cancer toxicity data summary). Additional toxicity information for arsenic and other COPCs will be included in the OU2 HHRA.

Risk Characterization

In this step, EPA 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.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intakes (reference doses and reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) that are thought to be safe over a lifetime of exposure. 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 typically determined by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population. The streamlined HHRA for OU1 calculated noncancer hazards for arsenic only.

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 typically calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI of greater than 1 indicates that the potential exists for unacceptable 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 that are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1 to evaluate the potential for noncancer health effects on a specific target organ. 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 hazards associated with arsenic for each exposure pathway is contained in **Appendix II, Table 5**.

Appendix II, Table 5 shows that the arsenic HI for noncancer effects for child residents exceeds EPA's hazard threshold of 1 for nine properties, with calculated hazards ranging from 2-300; the HI at the remaining property is equal to 1. For adult residents, the total noncancer HIs exceed EPA's threshold at five properties, with calculated hazards ranging from 2 to 30.

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, 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 unitless probability (1 x 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 x 10^{-4}). An excess lifetime cancer risk of 1 x 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 identifies the range for determining whether a remedial action is necessary as an individual lifetime excess cancer risk of 1 x 10^{-4} to 1 x 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million probability of an excess cancer risk), with 1 x 10^{-6} being the point of departure.

A summary of the estimated cancer risks is presented in **Appendix II, Table 6**. The results indicated that the cancer risks exceeded the acceptable risk range for residential exposure to arsenic in residential area surface soils at six properties, with calculated risks ranging from 2x10^{-4} (twice the acceptable limit) to 1x10^{-2} (ten times the acceptable limit).

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 the following:

- environmental chemistry sampling and analysis;
- environmental parameter measurement;
- fate and transport modeling;
- exposure parameter estimation; and
- 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 COCs, the period over which such exposure would occur, and the models used to estimate the concentrations of the COCs 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 residential populations near the Site and is highly unlikely to underestimate actual risks related to arsenic in surface soils.

Since the streamlined HHRA did not evaluate other COCs or other media, it is likely that the total risks and hazards associated with the Site are underestimated. A comprehensive evaluation including other COPCs and all media will be conducted as part of OU2.

More detailed information concerning uncertainty in the health risks is presented in the human health risk assessment report.

Basis for Taking Action

Based upon the results of the HHRA, supported by the 2019 Health Consultation, the Determination of Significant Threat memorandum, and the Public Health Advisory, EPA has determined that actual or threatened releases of hazardous substances at the Site, if not addressed by the remedial action selected in this ROD, may present a current or potential threat to human health. The response action selected in this ROD is necessary to protect public health, welfare or the environment from actual or threatened releases of hazardous substances, pollutants or contaminants from the Site.

REMEDIAL ACTION OBJECTIVE

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), to-be-considered (TBC) guidance, and site-specific risk-based levels.

The RAO established for the Site is to reduce or eliminate residential exposure to arsenic-contaminated surface soils.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA Section 121(b)(1), 42 U.S.C. § 9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, and contaminants at a site. CERCLA Section 121(d), 42 U.S.C. § 9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA Section 121(d)(4), 42 U.S.C. § 9621(d)(4).

Detailed descriptions of the remedial alternatives to dissociate the residents at the Site from exposure to arsenic-contaminated areas at the site can be found in the FFS report. The FFS report presents three alternatives to dissociate the residents from exposure to the arsenic-contaminated areas. The remedial alternatives are:

Alternative 1: No Action

Capital Cost:	$0
Annual Cost:	$0
Present-Worth Cost:	$0
Implementation Time:	0 months

The Superfund regulations require that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures to dissociate the residents from exposure to arsenic-contaminated areas.

Alternative 2: Inspection and Maintenance of Existing Protective Measures

Capital Cost:	$161,000
Annual Cost:	$330,000
Present-Worth Cost:	$2,641,000
Implementation Time:	6 months

This alternative consists of periodic inspections and maintenance of the existing protective measures, as necessary. The inspection and maintenance program would

ensure the effectiveness of these measures in eliminating exposure pathways in areas where these measures were installed.

Inspection activities would include, among other things, visual observations to assess the integrity of the outdoor and indoor protective measures. For cost-estimating purposes, it was assumed that inspection and maintenance activities would be performed twice per year.

The outdoor protective measures that would be inspected and maintained, as necessary, would include paving, stone pathways, and installed woodchip and mulch covers. If visual inspection were to indicate that there is a breach in the integrity of the woodchip, stone, or pavement covers, repairs of the covers would be performed. This would involve adding woodchips, adding stone, or sealing cracks in pavement. Maintenance would also include replacement of outdoor doormats and boot brushes, if necessary.

The indoor protective measures to be inspected and maintained, as necessary, would include indoor door mats and high-efficiency particulate air vacuums.

This alternative would also include institutional controls (ICs)[1] (*e.g.,* easements) to limit current and future use of the properties, as well as the preparation of a plan related to the inspection and maintenance of the existing protective measures.

It is estimated that it would require six months to implement the ICs and prepare a plan related to the inspection and maintenance of the existing protective measures.

It is assumed that the inspection and maintenance would be performed for 10 years (a conservative estimated of the time necessary to perform an OU2 investigation and select, design, and implement an OU2 remedy).

Alternative 3: Property Acquisition, Permanent Relocation, and Demolition

Capital Cost:	$5,603,000
Periodic Inspections and Maintenance Cost:	$330,000
Present-Worth Cost:	$5,828,000
Implementation Time:	1.5 years

This alternative consists of offers of property acquisition and permanent relocation of the affected residents who accept EPA's offer. Affected property owners would be

[1] ICs are non-engineered actions or requirements, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a remedy.

compensated for the acquired real property, and affected residents would receive relocation assistance. Following permanent relocation, vacated structures would be demolished. Superfund-related permanent relocations and property acquisitions would be conducted under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Real property would be appraised in accordance with federal standards to determine the comparable replacement-housing value, and an offer to purchase would be made to each residential property owner at the Site.

Permanent relocation would include federal financial and logistical support for residents to move out of the OU1 study area permanently. Residents would be assisted in the relocation process, including identifying and moving into replacement residences.

Until the residents from each affected residence are permanently relocated, or until the completion of the OU2 effort (if there are residents that decline to be relocated), periodic inspections and maintenance of the existing protective measures would be performed (see Alternative 2 for details), as necessary, at each occupied residence to ensure the effectiveness of these measures in eliminating exposure pathways in areas where these measures were installed. For cost-estimating purposes, it is presumed that the inspections and maintenance would be performed at each residence every six months for one year.

The residential structures would be demolished following property acquisition and relocation to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures until completion of any OU2 response that may be selected.

Engineering controls (*i.e.,* fencing) would be utilized to prevent trespassing once the structures are vacated. It is anticipated that the fencing would be removed once the footprint of the demolition was restored (*e.g.,* backfilled and seeded).

This alternative would also include ICs (*e.g.,* easements) to limit the current use and to prevent future residential development of the properties, as well as the preparation of a plan related to the inspection and maintenance of the existing protective measures until the residents from each affected residence are permanently relocated or until completion of any OU2 response that may be selected.

It is estimated that it would require one year to acquire the properties, relocate the residents, demolish the structures, implement the ICs, and prepare the plan related to the inspections and maintenance of the existing protective measures.

COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria set forth in the NCP for CERCLA remedies, namely, overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, cost, and state and community acceptance.

The evaluation criteria are described below.

- *Overall protection of human health and the environment* addresses whether a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or ICs.
- *Compliance with ARARs* addresses whether a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provide grounds for invoking a waiver.
- *Long-term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
- *Reduction of toxicity, mobility, or volume through treatment* is the anticipated performance of the treatment technologies, with respect to these parameters, that a remedy may employ.
- *Short-term effectiveness* addresses the period needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the implementation period until cleanup goals are achieved.
- *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular alternative.
- *Cost* includes estimated capital, annual, and net present-worth costs.
- *State acceptance* indicates if, based on its review of the FFS and Proposed Plan, the state concurs with the preferred alternative at the present time.
- *Community acceptance* refers to the public's general response to the alternatives described in the Proposed Plan and the FFS report.

A comparative analysis of these alternatives based upon the evaluation criteria noted above follows.

Overall Protection of Human Health and the Environment

Alternative 1 would not be protective of human health because residents would remain on their properties and the existing protective measures would not be maintained. Alternatives 2 and 3 would be protective of human health because both of the alternatives would rely upon a remedial strategy to prevent residential exposure to contaminated surface soils. Alternative 3 would, however, be more protective of human health than Alternative 2 because the residential dissociation from surface soils would be permanent,

and no maintenance would be required to ensure effectiveness. Additionally, Alternative 2 would have to rely on ICs to some degree to prevent residents from being exposed to contaminated soils where no protective measures are present.

Compliance with ARARs

CERCLA Section 121(d) and the NCP require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal and state requirements, standards, criteria, and limitations (collectively referred to as "ARARs"), unless such ARARs are waived under Section 121(d)(4) of CERCLA. The compliance with ARARs criteria addresses whether a remedy will meet all of the ARARs or provides a basis for invoking a waiver.

The focus of OU1, an early action, is to address the dissociation of residents from the risk posed at the Site. OU2 will evaluate the actual remediation of Site contamination. Consequently, only the criteria relevant to the evaluation of this OU1 action will be addressed in detail. As such, ARARs and reduction of toxicity, mobility, or volume will not be discussed in detail as part of this analysis of alternatives.

Because no action would be taken under Alternative 1, no chemical-, location-, or action-specific ARAR would be attained.

Maintenance activities under Alternative 2 and demolition activities under Alternative 3 would be implemented in accordance with pertinent action-specific ARARs. The Resource Conservation and Recovery Act (RCRA), the Toxic Substances Control Act (TSCA), and the Clean Air Act (CAA) are federal laws that mandate procedures for managing, treating, transporting, storing, and disposing of hazardous wastes and substances, including PCBs, lead-based paint, and asbestos. Alternative 3 could be implemented in accordance with the portions of RCRA, TSCA, and CAA that are applicable or relevant and appropriate to the demolition activities.

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and its implementing regulations are requirements that must be followed regarding Alternative 3's permanent relocation of residents along with the related acquisition of real property, but they are not ARARs as they are not environmental requirements.

Long-Term Effectiveness and Permanence

Alternative 1 would involve no active remedial measures and, therefore, would not be effective in eliminating the potential exposure to contaminants in the surface soil.

Under Alternative 2, inspections and maintenance of the existing protective measures and ICs (*e.g.,* easements), would provide protection until a permanent remedy is selected, designed, and implemented (estimated to be 10 years). While properties would have the potential to be re-contaminated because tailing waste from the area of the former mine operations would not be contained and surface-water flow from the tailing-waste areas

would not be abated, the inspection and maintenance plan could be tailored to address this. Additionally, the ICs under Alternative 2 would limit the full use of the properties. Alternative 3 would provide greater protection in the long-term, as the residents would be permanently relocated from their contaminated properties, thereby more effectively eliminating their exposure to arsenic-contaminated surface soils. Under this alternative, the residential structures would be demolished following property acquisition and relocation of the residents so as to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures.

Reduction in Toxicity, Mobility, or Volume Through Treatment

Reduction of toxicity, mobility, and/or volume through treatment would not occur under any of the alternatives under this OU1 early-action; it is anticipated that this criterion will be addressed in the future as part of OU2.

Short-Term Effectiveness

Because Alternative 1 does not include any physical construction measures in any areas of contamination, this alternative would present the least short-term potential adverse impacts to remediation workers or the community as a result of its implementation.

The maintenance activities under Alternative 2 would pose some risk to remediation workers and nearby residents. This exposure could, however, be mitigated by following appropriate health and safety protocols, which include following a site-specific community air monitoring program (CAMP), exercising sound engineering practices, and by utilizing proper protective equipment. Under Alternative 3, the use of heavy equipment during demolition activities would cause disturbance of the surface soils and the generation of contaminated dust, resulting in the potential for contaminant migration to the environment. There would also be the potential for increased local traffic. The dust-related impacts could be mitigated through the implementation of decontamination measures and dust suppression practices. A traffic control plan could be implemented to reduce the potential for traffic accidents. Workers would encounter arsenic-contaminated surface soils during their work and, potentially, hazardous building materials during abatement. This exposure could, however, be mitigated by following appropriate health and safety protocols, which include following a site-specific CAMP, exercising sound engineering practices, and by utilizing proper protective equipment.

Because no actions would be performed under Alternative 1, there would be no implementation time. Under Alternative 2, it is estimated that it would require six months to implement the ICs and prepare a plan related to the inspection and maintenance of the existing protective measures. Under Alternative 3, it is estimated that it would require one year to acquire the properties, relocate the residents, demolish the structures, implement the ICs, and prepare the plan related to the inspections and maintenance of the existing protective measures.

Implementability

Alternative 1 would be the easiest alternative to implement, as there are no activities to undertake.

Under Alternative 2, periodic inspections and maintenance of the existing protective measures would be easy to implement because they could be a continuation of the inspections and maintenance of the existing protective measures that are currently being conducted. Under this alternative, there could be administrative implementability challenges, as it would require coordination with Putnam County and the property owners to implement the ICs.

Equipment, services, and materials needed for the demolition of the houses under Alternative 3 are readily available, and the actions under this alternative would be administratively feasible. Implementability relative to Alternative 3 would rely on resident cooperation for property acquisition, permanent relocation, and, to the extent necessary, maintenance of existing protective measures. Under this alternative, there could be administrative implementability challenges, as it would require coordination with Putnam County and the property owners to implement the ICs.

Cost

The present-worth cost associated with Alternative 2 is calculated using a discount rate of seven percent and a 10-year time interval. The present-worth cost associated with Alternative 3 is calculated using a discount rate of seven percent and a one-year time interval.

Alternative 3 includes the demolition of the residential structures following property acquisition and relocation of the residents. If the vacated structures are not demolished to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures, security measures would need to be implemented. The estimated 10-year period for security measures for these structures would likely exceed the cost of demolishing the structures.

The estimated capital, annual, and present-worth costs for each of the alternatives are presented below.

Alternative	Capital Cost	Annual Cost[2]	Present-Worth Cost
1	$0	$0	$0
2	$161,000	$330,000	$2,641,000
3	$5,603,000	$330,000	$5,828,000

[2] For Alternative 2, the annual cost presented is an annual cost for a 10-year time interval. For Alternative 3, the annual cost presented is a one-time cost during a one-year time interval.

State Acceptance

NYSDEC concurs with the selected remedy; a letter of concurrence is attached (see **Appendix IV**).

Community Acceptance

Comments received during the public comment period indicate that the public generally supports the selected remedy. These comments are summarized and addressed in the Responsiveness Summary, which is attached as **Appendix V** to this document.

PRINCIPAL THREAT WASTE

In the NCP, an expectation is laid out that EPA will use treatment to address the principal threats posed by a site wherever practicable (40 CFR § 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 the migration of contamination to groundwater, surface water, or air, or act as a source for direct exposure. Principal threat wastes (PTWs) are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained or will present a significant risk to human health or the environment should exposure occur. The decision whether to treat these wastes is made on a site-specific basis through a detailed analysis of alternatives. This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

The mine-related arsenic contamination is a PTW, a source material that is considered to be highly toxic or highly mobile, that generally cannot be reliably contained, or will present a significant risk to human health or the environment should exposure occur. While residential exposure to PTW will be addressed in this OU1 early-action, the evaluation of its nature and extent, the risk it poses, and whether to utilize treatment will be addressed during OU2.

SELECTED REMEDY

Summary of the Rationale for the Selected Remedy

The selected remedy is Alternative 3. While Alternative 3 is more expensive than Alternative 2, EPA considered the balance between the cost difference and the uncertainty of when a decision regarding a final remedy (OU2) may be made and when it would be designed and implemented (estimated to be 10 years). In addition, Alternative 3 is the most protective because the data indicates that the properties may

become re-contaminated as a result of the source not being contained, potentially resulting in additional exposure of residents to this contamination under Alternative 2.

Alternative 3 is believed to provide the greatest protection of human health and the environment, provide the greatest long-term effectiveness, and is the most cost effective. Therefore, it has been determined that Alternative 3 will provide the best balance of tradeoffs among alternatives with respect to the nine evaluating criteria. EPA, with the concurrence of NYSDEC, believes that the selected alternative will be protective of human health and the environment, comply with ARARs, be cost-effective, and utilize permanent solutions to the maximum extent practicable.

Description of the Selected Remedy

Alternative 3, the selected remedy to dissociate the residents from exposure to arsenic-contaminated soils at the Site, includes the following components:

- Offers of acquisition of affected properties at the Site and permanent relocation of those affected residents who accept EPA's offer;
- Following permanent relocation, demolition of vacated structures;
- Utilization of ICs (*e.g.,* easements) to limit current and future use of the properties;
- Until the residents from each affected residence are permanently relocated, or until a final OU2 remedy is implemented, periodic inspections and maintenance of the existing protective measures, as necessary, at any occupied residence to ensure the effectiveness of these measures in eliminating exposure pathways in the areas where these measures were installed.

Engineering controls (*e.g.,* fencing) will be utilized to prevent trespassing once structures are vacated. It is anticipated that the fencing will be removed once the footprint of the demolition was restored (*e.g.,* filled and seeded).

The remedy also includes the preparation of a plan related to the inspection and maintenance of the existing protective measures to the extent they are necessary.

The environmental benefits of the selected remedy may be enhanced by consideration, during the design, of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy and NYSDEC's Green Remediation Policy.[3] This will include consideration of green remediation technologies and practices. An example of this at the Site would be the deconstruction of houses and recycling/reuse of materials to the extent practicable, which would potentially result in maximizing the environmental benefit.

Summary of the Estimated Remedy Costs

[3] See https://www.epa.gov/greenercleanups/epa-region-2-clean-and-green-policy and https://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf.

The estimated capital, annual, and total present-worth costs (using the federal standard 7% discount rate) for the selected remedy are $5,603,000, $330,000, and $5,828,000, respectively. **Tables 7 through 10** provide the basis for the cost estimates for Alternative 3.

It should be noted that these cost estimates are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual project cost. These cost estimates are based on the best available information regarding the anticipated scope of the selected remedy. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedy.

Expected Outcomes of the Selected Remedy

Based upon the results of the HHRA, supported by the Determination of Significant Threat memorandum, the 2019 NYSDOH Health Consultation, and the 2019 ATSDR Public Health Advisory, EPA has determined that actual or threatened releases of hazardous substances at the Site, if not addressed by the selected remedy described in this ROD, may present a current or potential threat to human health.

The results of the risk assessment indicate that the arsenic contamination in the soil poses an excess lifetime cancer risk above the EPA reference cancer risk range and total noncancer hazards above the acceptable threshold level.

Under the selected remedy, it is estimated that it will require 18 months to dissociate the residents from exposure to arsenic-contaminated soils. When the dissociation is completed, EPA will have addressed the April 2019 ATSDR Public Health Advisory recommendation that EPA take immediate short- and long-term measures to dissociate persons, especially children, from exposure to arsenic in shallow soils at the Site. Expected land and groundwater uses at the Site will be evaluated as part of the OU2 effort.

STATUTORY DETERMINATIONS

Under CERCLA Section 121 and the NCP, the lead agency must select remedies that are protective of human health and the environment, comply with ARARs (unless a statutory waiver is justified), are 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 that employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site.

For the reasons discussed below, EPA has determined that the selected remedy meets these statutory requirements.

Protection of Human Health and the Environment

The results of the risk assessment indicate that, if no action is taken, the arsenic contamination in the soil poses an excess lifetime cancer risk above the EPA reference cancer risk range and total noncancer hazards above the acceptable threshold level.

Because the residents will be permanently relocated under the selected remedy, residents' exposure to the arsenic-contaminated soil will be eliminated. The implementation of the selected remedy will not pose unacceptable short-term risks or cross-media impacts. Combined with ICs, the selected remedy will provide protectiveness of human health over both the short- and long-term.

Compliance with ARARs and Other Environmental Criteria

The selected remedy complies with location-specific and action-specific ARARs. There are no chemical-specific ARARs for this early-action OU1 remedy. A complete list of the ARARs, TBCs, and other guidance that concern the selected remedy is presented in Table 11 (location-specific) and Table 12 (action-specific), which can be found in Appendix II.

Cost-Effectiveness

A cost-effective remedy is one in which costs are proportional to its overall effectiveness (see NCP Section 300.430(f)(1)(ii)(D)). Overall effectiveness is based on the evaluations of long-term effectiveness and permanence, reduction in toxicity, mobility, and volume through treatment, and short-term effectiveness. Based on the comparison of overall effectiveness (discussed above) to cost, the selected remedy meets the statutory requirement that Superfund remedies be cost-effective in that, while it is the costliest alternative, it is a reasonable cost in light of being the best alternative in addressing permanence.

Each of the alternatives underwent a detailed cost analysis. In that analysis, capital and annual costs were estimated and used to develop present-worth costs. In the present-worth cost analysis, annual costs were calculated for the estimated life of the remedial alternatives using a 7% discount rate and 10- and 1-year intervals for Alternatives 2 and 3, respectively. The estimated capital, annual, and total present-worth costs for the selected remedy are $5,603,000, $330,000, and $5,828,000, respectively.

While Alternative 3 is more expensive than Alternative 2, EPA also considered the balance between the cost difference and the uncertainty of when a decision regarding a final remedy (OU2) would be made and when it may be designed and implemented (estimated to be 10 years). In addition, the selected remedy is the most protective because the data indicates that the properties may become re-contaminated as a result of the source not being contained.

The selected remedy includes the demolition of the residential structures following successful property acquisition and relocation of the residents. If the vacated structures are not demolished (to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures), security measures will need to be implemented. The estimated 10-year period for security measures for these structures would likely exceed the cost of demolishing the structures.

Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable

While the selected remedy does utilize permanent solutions in terms of permanently relocating residents, this OU1 remedy does not utilize alternative treatment technologies. It is anticipated that this criterion will be addressed as part of OU2.

Preference for Treatment as a Principal Element

The statutory preference for remedies that employ treatment as a principal element is not satisfied under the selected remedy in that contaminated soils are not being addressed in this early-action OU1 remedy. It is anticipated that this criterion will be addressed as part of OU2. Although the selected remedy will not satisfy the statutory preference for treatment as a principal element of the remedy (*i.e.,* reducing the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element through treatment), future actions at the site (*i.e.,* OU2) are expected to do so.

Five-Year Review Requirements

The statutory requirement for a five-year review is not triggered by the implementation of this action.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan, released for public comment on April 8, 2020, identified Alternative 3, property acquisition, permanent relocation, and demolition, as the preferred remedy. Based upon the review of the written and verbal comments submitted during the public comment period, EPA has determined that no significant changes to the remedy, as originally identified in the Proposed Plan, are necessary or appropriate.

APPENDIX I--FIGURES

Figure 1: Site Location

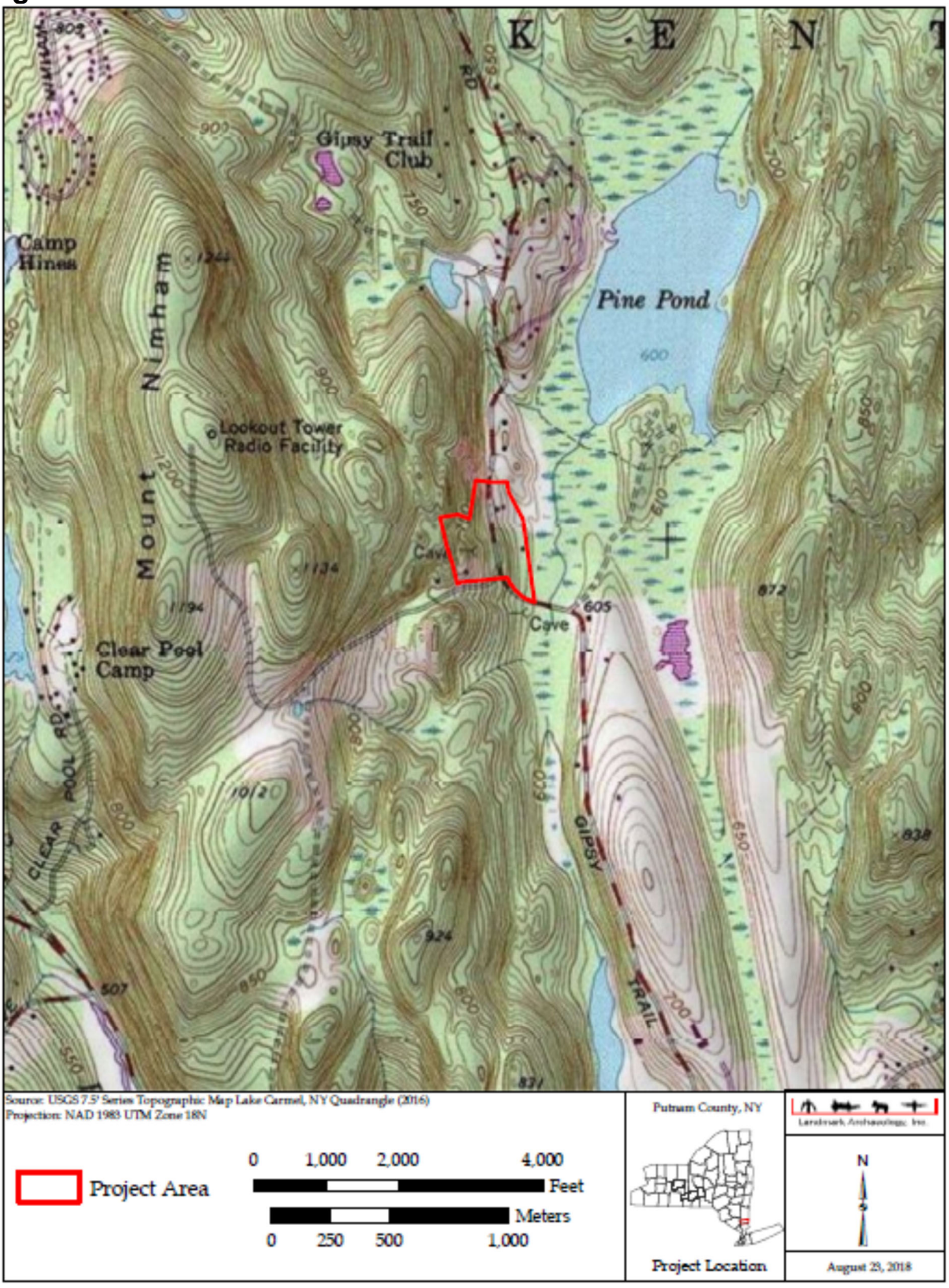


Figure 2: Site Layout

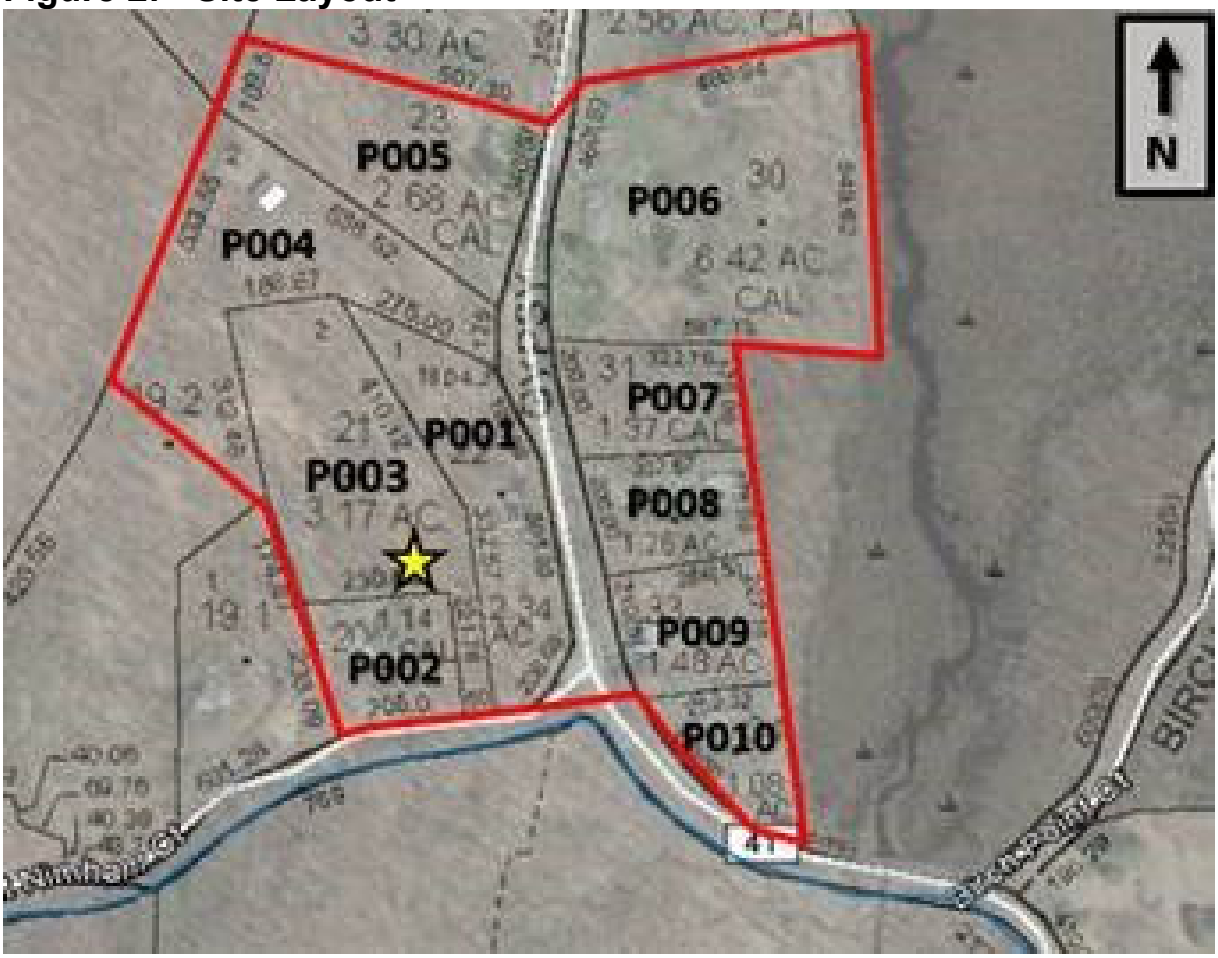
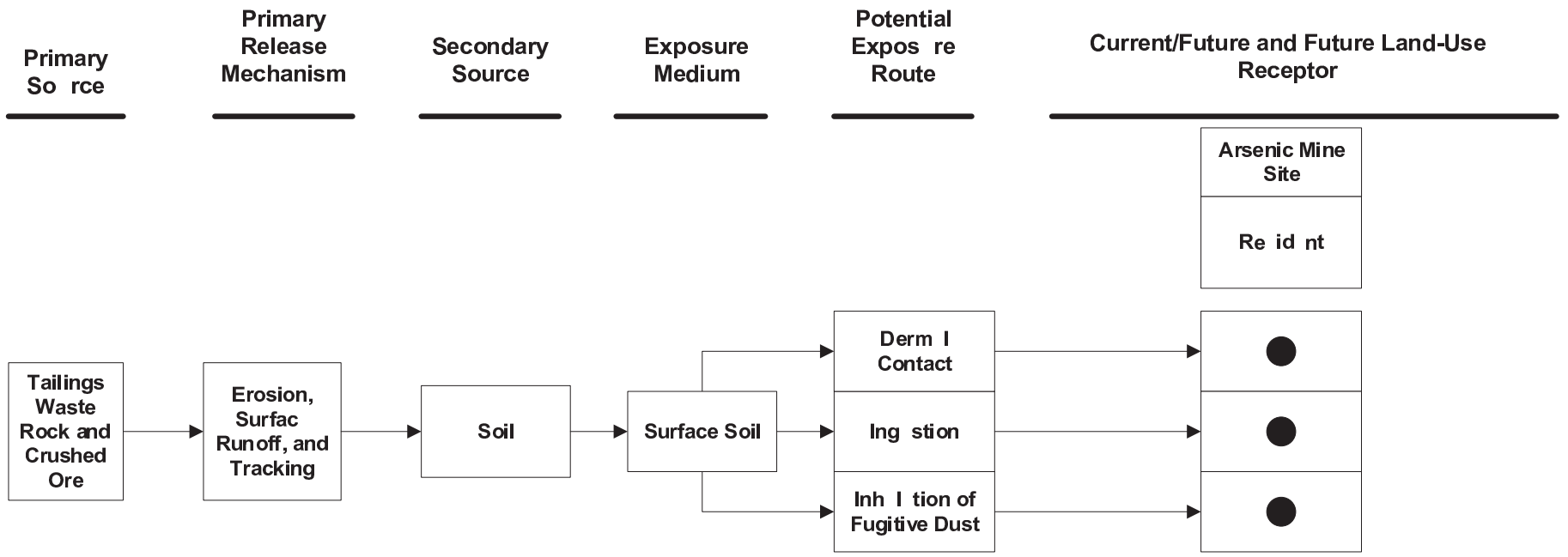


Figure 3: Surface-Soil Sampling Locations and Results

Figure 4: Conceptual Site Model



Legend:

● complete exposure pathway (quantitatively evaluated)

Note:

Resident: Adults and Children (birth to <6 years old)
Current/Future Land-Use Receptors: Residents dwelling at Properties P001, P002, P005, P006, P008, P009, and P010
Future Land-Use Receptors: Hypothetical Residents dwelling at Properties P003, P004, and P007

APPENDIX II—TABLES

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

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Residential area surface soil (0-2 feet)

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
P001	Arsenic	8.5	54,177	mg/kg	66/66	9.092	mg/kg	95% Chebyshev (Mean, Sd) UCL
P002	Arsenic	10	5,394	mg/kg	54/54	852	mg/kg	95% Chebyshev (Mean, Sd) UCL
P003*	Arsenic	8.8	34,250	mg/kg	77/77	6,095	mg/kg	95% Chebyshev (Mean, Sd) UCL
P004*	Arsenic	1.8	3,090	mg/kg	28/28	615	mg/kg	95% Chebyshev (Mean, Sd) UCL
P005	Arsenic	11.8	136	mg/kg	47/47	54.6	mg/kg	95% Adjusted Gamm UCL
P006	Arsenic	8.3	320	mg/kg	68/68	65.4	mg/kg	95% Chebyshev (Mean, Sd) UCL
P007*	Arsenic	11.5	232	mg/kg	40/40	70.1	mg/kg	95% Chebyshev (Mean, Sd) UCL
P008	Arsenic	9.8	96.5	mg/kg	45/45	38.4	mg/kg	95% Adjusted Gamma UCL
P009	Arsenic	7.3	4,072	mg/kg	46/46	549	mg/kg	95% Chebyshev (Mean, Sd) UCL
P010	Arsenic	4.5	582	mg/kg	46/46	115	mg/kg	95% H-UCL

*Undeveloped properties with future potential use scenario only

mg/kg – milligrams per kilogram
UCL – Upper Confidence Limit on the mean

95% Chebyshev (Mean, Sd) UCL – 95% upper confidence limit, Chebyshev statistic (mean, STD)

95% Adjusted Gamma-UCL – 95% upper confidence limit, Adjusted Gamma statistic (mean, STD)

95% H- UCL – 95% upper confidence limit, H statistic (mean, STD)

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

This table presents the chemicals of concern (COCs) and exposure point concentrations (EPCs) for arsenic in residential area surface soil. The table includes the range of concentrations detected, 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 Scenarios

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis
Current/Future	Soil	Surface Soil (0-2')	Residential Area Surface Soil (P001-P010)	Resident	Adult and Child (birth to <6 years)	Ing/Der/Inh	Quantitative

Ing – Ingestion

Der – Dermal

Inh – Inhalation

Summary of Selection of Exposure Pathways

This table describes the exposure pathways that were evaluated for the risk assessment. Exposure media, exposure points, and characteristics of receptor populations are included.

TABLE 3: Noncancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Arsenic	Chronic	3.0E-04	mg/kg-day	1	3.0E-04	mg/kg-day	Skin, Vascular	3	IRIS	9/01/1991

Pathway: Inhalation

Chemical of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfC: Target Organ	Dates:
Arsenic	Chronic	1.5E-05	mg/m^3	Developmental/ Cardiovascular System/Nervous System/Lung/Skin	30	CalEPA	7/1/2014

IRIS: Integrated Risk Information System
mg/m^3: milligrams per cubic meter
CalEPA: California Environmental Protection Agency

Summary of Toxicity Assessment

This table provides noncarcinogenic risk information which is relevant to the contaminants of concern. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference concentrations (RfCs).

TABLE 4: Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Arsenic	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.5E+00	$(mg/kg\text{-}day)^{-1}$	A – Human carcinogen	IRIS	6/1/1995

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Arsenic	4.3E-03	$(\mu g/m^3)^{-1}$	A – Human carcinogen	IRIS	6/1/1995

A: Human Carcinogen
IRIS: Integrated Risk Information System
$\mu g/m^3$: microgram per cubic meter

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern. Toxicity data are provided for both the oral and inhalation routes of exposure.

TABLE 5: Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Current/Future
Receptor Population: Site Resident
Receptor Age: **Adult**

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Residential Area Surface Soil	P001	Arsenic	Skin, Vascular	2E+01	5E+00	4E-01	3E+01
		P002	Arsenic	Skin, Vascular	2E+00	4E-01	4E-02	3E+00
		P003*	Arsenic	Skin, Vascular	1E+01	3E+00	3E-01	2E+01
		P004*	Arsenic	Skin, Vascular	1E+00	3E-01	3E-02	2E+00
		P005	Arsenic	Skin, Vascular	1E-01	3E-02	3E-03	2E-01
		P006	Arsenic	Skin, Vascular	2E-01	3E-02	3E-03	2E-01
		P007*	Arsenic	Skin, Vascular	2E-01	4E-02	3E-03	2E-01
		P008	Arsenic	Skin, Vascular	9E-02	2E-02	2E-03	1E-01
		P009	Arsenic	Skin, Vascular	1E+00	3E-01	3E-02	2E+00
		P010	Arsenic	Skin, Vascular	3E-01	6E-02	5E-03	3E-01

Scenario Timeframe: Current/Future
Receptor Population: Site Resident
Receptor Age: **Child**

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Noncarcinogenic Risk			
					Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Residential Area Surface Soil	P001	Arsenic	Skin, Vascular	2E+02	3E+01	4E-01	3E+02
		P002	Arsenic	Skin, Vascular	2E+01	3E+00	4E-02	2E+01
		P003*	Arsenic	Skin, Vascular	2E+02	2E+01	3E-01	2E+02
		P004*	Arsenic	Skin, Vascular	2E+01	2E+00	3E-02	2E+01
		P005	Arsenic	Skin, Vascular	1E+00	2E-01	3E-03	2E+00
		P006	Arsenic	Skin, Vascular	2E+00	2E-01	3E-03	2E+00
		P007*	Arsenic	Skin, Vascular	2E+00	2E-01	3E-03	2E+00
		P008	Arsenic	Skin, Vascular	1E+00	1E-01	2E-03	1E+00
		P009	Arsenic	Skin, Vascular	1E+01	2E+00	3E-02	2E+01
		P010	Arsenic	Skin, Vascular	3E+00	4E-01	5E-03	3E+00

* Undeveloped non-residential property

Summary of Risk Characterization - Noncarcinogens

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for exposure to arsenic in residential area surface soil. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse noncancer effects.

TABLE 6: Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Site Resident
Receptor Age: Lifetime (Adult/child)

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Dermal	Inhalation	Exposure Routes Total
Soil	Residential Area Surface Soil	P001	Arsenic	1E-02	2E-03	1E-05	1E-02
		P002	Arsenic	1E-03	2E-04	1E-06	1E-03
		P003*	Arsenic	8E-03	1E-03	7E-06	9E-03
		P004*	Arsenic	8E-04	1E-04	7E-07	9E-04
		P005	Arsenic	7E-05	1E-05	6E-08	8E-05
		P006	Arsenic	9E-05	1E-05	7E-08	1E-04
		P007*	Arsenic	9E-05	1E-05	8E-08	1E-04
		P008	Arsenic	5E-05	7E-06	4E-08	6E-05
		P009	Arsenic	7E-04	1E-04	6E-07	8E-04
		P010	Arsenic	2E-04	2E-05	1E-07	2E-04

* Undeveloped non-residential property

Summary of Risk Characterization – Carcinogens

The table presents site-related cancer risks for groundwater exposure. As stated in the National Contingency Plan, the point of departure is 10^{-6} and the acceptable risk range for site-related exposure is 10^{-6} to 10^{-4}. The cancer risk from arsenic exceeds the acceptable risk range at six properties, indicating an unacceptable risk from exposure to surface soil at these residences.

Table 7: Capital Costs -- Relocation

CAPITAL COSTS: (Assumed to be Incurred During Year 0)

DESCRIPTION	WORKSHEET	QTY	UNIT(S)	UNIT COST	TOTAL	NOTES
Institutional Controls	CW3-2C	1	LS	$114,717	$114,717	
Property Boundary Surveys	CW3-2C	1	LS	$57,078	$57,078	Seven residential properties
SUBTOTAL					$171,795	
Contingency (Scope)		15%			$25,769	15% Scope, 0% Bid (Middle of the recommended range in EPA 540-R-00-002).
SUBTOTAL					$197,564	
Project Management		8%			$15,805	Percentage from Exhibit 5-8 in EPA 540-R-00-002 was used.
TOTAL					$213,369	
TOTAL CAPITAL COST					**$213,000**	Total capital cost is rounded to the nearest $1,000.

CAPITAL COSTS: (Assumed to be Incurred During Year 0)

DESCRIPTION	WORKSHEET	QTY	UNIT(S)	UNIT COST	TOTAL	NOTES
Property Acquisition	CW3-1	1	LS	$2,569,433	$2,569,433	Includes acquisition of 7 properties within OU1 study area. Real property appraisal as provided by EPA (Dec/2019).
Permanent Relocation Costs	CW3-3	1	LS	$102,860	$102,860	Seven residential properties
SUBTOTAL					$2,672,293	
Contingency (Scope)		35%			$935,303	35% Scope, 0% Bid (Section 5.4 in EPA 540-R-00-002).
SUBTOTAL					$3,607,596	
Project Management		5%			$180,380	Percentage from Exhibit 5-8 in EPA 540-R-00-002 was used.
TOTAL					$3,787,976	
TOTAL CAPITAL COST					**$3,788,000**	Total capital cost is rounded to the nearest $1,000.

Table 8: Capital Costs -- Demolition

CAPITAL COSTS: (Assumed to be Incurred During Year 1)

DESCRIPTION	WORKSHEET	QTY	UNIT(S)	UNIT COST	TOTAL	NOTES
Demolition of Residences						
Demolition of Residences and Buildings	CW3-4A	7	EA	$40,666	$284,659	Demolition of 7 residential
Utility Disconnect	CW3-4A	7	EA	$5,049	$35,341	All utilities serviced at the property
Dust Suppression	CW3-4A	7	EA	$14,668	$102,677	
Asbestos and Lead Abatement	CW3-4B	1	LS	$168,018	$168,018	Includes asbestos and lead abatement for residential buildings
Disposal of Demolition Wastes - General Debris	CW3-5A	1	LS	$136,267	$136,267	Disposal of demolition debris at C&D Landfill
Disposal of Demolition Wastes - Asbestos and Lead Contaminated Debris						
Asbestos Abatement - Disposal Charges	CW3-5B	14	CY	$535.64	$7,499	Disposal asbestos contaminated debris as hazardous waste
Lead Abatement - Disposal Charges	CW3-5B	21	LS	$888.81	$18,665	Disposal lead contaminated debris as hazardous waste
Transportation of Contaminated Hazardous Waste (20 CY Load)	CW3-5B	3	LS	$2,183	$6,548	
Backfilling of Basement with Gravel, Topsoil and Vegetation Placement						Backfilling exposed basement after demolition of above-ground residential structure
Aggregate (Gravel) Placement	CW3-6	4,760	LCY	$51.83	$246,711	
Hauling Aggregate (Gravel)	CW3-6	4,760	LCY	$6.33	$30,147	
Geotextile Fabric	CW3-6	1,322	SY	$1.77	$2,335	
Topsoil Placement (6")	CW3-6	1,322	SY	$14.31	$18,927	
Seeding	CW3-6	1,322	SY	$0.99	$1,307	
Temporary Fencing (Chain Link, 6' High, Rented)	CW3-6	3,000	LF	$7.21	$21,630	Assumes 3 sets of 1000 LF each
SUBTOTAL					$1,080,731	
Contingency (Scope and Bid)		30%			$324,219	15% Scope, 15% Bid (Middle of the recommended range in EPA 540-R-00-002).
SUBTOTAL					$1,404,950	
Project Management		6%			$84,297	Percentage from Exhibit 5-8 in EPA 540-R-00-002 was used.
Remedial Design		0%			$0	RD cost was excluded per EPA direction.
Construction Management		8%			$112,396	Percentage from Exhibit 5-8 in EPA 540-R-00-002 was used.
TOTAL					$1,601,643	
TOTAL CAPITAL COST					**$1,602,000**	Total capital cost is rounded to the nearest $1,000.

Notes:

Table 9: Periodic Maintenance Costs

PERIODIC COSTS: (Assumed to be Incurred During Year 0)

DESCRIPTION	WORKSHEET	QTY	UNIT(S)	UNIT COST	TOTAL	NOTES
Monitoring Existing Protective Measures	CW3-2B	1	LS	$82,598	$82,598	Assumes quarterly monitoring events
Maintenance of Existing Protective Measures						
Maintenance Events for Existing Protective Measures	CW3-2A	1	LS	$98,110	$98,110	Assumes semiannual maintenance, 1 day per event. Includes pressure washing pavement and entryways
Wood Chip Replacement	CW3-2A	1	LS	$6,183	$6,183	Assumes 100% replacement per year
Stone Replacement	CW3-2A	1	LS	$7,056	$7,056	Assumes 50% replacement per year
Asphalt Pavement Repair	CW3-2A	1	LS	$7,500	$7,500	Assumes 10% replacement per year
Boot Brush and Door Mat Replacement Allowance	CW3-2A	1	LS	$1,648	$1,648	Replaced once per year per residence, 7 residences
HEPA Filter for Indoor Vacuum	CW3-2A	1	LS	$3,502	$3,502	Replaced twice per year per residence, 7 residences
SUBTOTAL					$206,597	
Contingency (Scope and Bid)		30%			$61,979	15% Scope, 15% Bid (Middle of the recommended range in EPA 540-R-00-002).
SUBTOTAL					$268,576	
Project Management		8%			$21,486	Percentage from Exhibit 5-8 in EPA 540-R-00-002 was used.
Technical Support		15%			$40,286	Middle value of the recommended range in EPA 540-R-00-002 was used.
TOTAL					$330,348	
TOTAL PERIODIC COST					**$330,000**	Total cost is rounded to the nearest $1,000.

Table10: Present-Worth Cost Calculation

Year[1]	Capital Costs[2]	Periodic Costs	Total Annual Expenditure[3]	Discount Factor (7.0%)	Present Value Cost[4]
0	$4,001,000	$330,000	$4,331,000	1.0000	$4,331,000
1	$1,602,000	$0	$1,602,000	0.9346	$1,497,229
2	$0	$0	$0	0.8734	$0
3	$0	$0	$0	0.8163	$0
4	$0	$0	$0	0.7629	$0
5	$0	$0	$0	0.7130	$0
6	$0	$0	$0	0.6663	$0
7	$0	$0	$0	0.6227	$0
8	$0	$0	$0	0.5820	$0
9	$0	$0	$0	0.5439	$0
10	$0	$0	$0	0.5083	$0
11	$0	$0	$0	0.4751	$0
12	$0	$0	$0	0.4440	$0
13	$0	$0	$0	0.4150	$0
14	$0	$0	$0	0.3878	$0
15	$0	$0	$0	0.3624	$0
16	$0	$0	$0	0.3387	$0
17	$0	$0	$0	0.3166	$0
18	$0	$0	$0	0.2959	$0
19	$0	$0	$0	0.2765	$0
20	$0	$0	$0	0.2584	$0
21	$0	$0	$0	0.2415	$0
22	$0	$0	$0	0.2257	$0
23	$0	$0	$0	0.2109	$0
24	$0	$0	$0	0.1971	$0
25	$0	$0	$0	0.1842	$0
26	$0	$0	$0	0.1722	$0
27	$0	$0	$0	0.1609	$0
28	$0	$0	$0	0.1504	$0
29	$0	$0	$0	0.1406	$0
TOTALS:	$5,603,000	$330,000	$5,933,000		$5,828,229
TOTAL PRESENT VALUE OF ALTERNATIVE 3[5]					$5,828,000

Table 11: Location-Specific ARARs, TBCs, and Other Guidance		
Regulation/Authority	**Citation**	**Requirement Synopsis**
Clean Water Act (CWA) Section 404	40 CFR Parts 230-231	Under this requirement, no activity that adversely affects a wetland is permitted if a practicable alternative that does not affect wetlands is available. If no other practicable alternative exists, impacts on wetlands must be mitigated.
Endangered Species Act	16 U.S.C. §§ 1531 et seq.; 50 CFR Part 17; 50 CFR Part 402	This statute and its implementing regulations provide that federal activities not jeopardize the continued existence of any threatened or endangered species. 16 U.S.C. 1536(a) of the Endangered Species Act requires consultation with the U.S. Fish and Wildlife Service to identify the possible presence of protected species and mitigate potential impacts on such species. Substantive compliance with the ESA means that the lead agency must identify whether a threatened or endangered species, or its critical habitat, will be affected by a proposed response action. If so, the agency must avoid the action or take appropriate mitigation measures so that the action does not affect the species or its critical habitat. If, at any point, the conclusion is reached that endangered species are not present or will not be affected, no further action is required.
Fish and Wildlife Coordination Act	16 U.S.C. §§ 661-666c; 50 CFR 83; 33 CFR 320-330	This statute and implementing regulations require coordination with federal and state agencies for federally funded projects to ensure that any modification of any stream or other water body affected by any action authorized or funded by the federal agency provides for adequate protection of fish and wildlife resources.
Migratory Bird Treaty Act	16 U.S.C. §§ 703 et seq.; 50 CFR 10.12	This statute and implementing regulations make it unlawful for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to these regulations.

National Historic Preservation Act	16 U.S.C. §§ 470 et seq.; 36 CFR Part 800; 36 CFR Part 65	Remedial actions are required to account for the effects of remedial activities on any historic properties included on or eligible for inclusion on the National Register of Historic Places. Actions must be taken to preserve and recover historical/archeological artifacts found.
New York Fish and Wildlife Standards—Endangered and Threatened Species of Fish and Wildlife	6 NYCRR Part 182	Provides requirements to minimize damage to habitat of an endangered species.
New York State Historic Preservation Act of 1980	9 NYCRR Parts 426-428	State law and regulations requiring the protection of historic, architectural, archeological, and cultural property.
Policy on Floodplains and Wetland Assessments for CERCLA Actions	OSWER Directive 9280.0-12, 1985	Superfund actions must meet the substantive requirements of Executive Order 11988, Executive Order 11990, and 40 CFR part 6, Appendix A. This memorandum discusses situations that require preparation of a floodplains or wetlands assessment, and the factors that should be considered in preparing an assessment, for response actions taken pursuant to Section 104 or 106 of CERCLA. For remedial actions, a floodplain/wetlands assessment must be incorporated into the analysis conducted during the planning of the remedial action.
Statement of Procedures on Floodplain Management and Wetlands Protection	40 CFR Part 6 Appendix A	This Statement of Procedures sets forth Agency policy and guidance for carrying out the provisions of Executive Orders 11988 and 11990. Requires federal agencies to evaluate the potential effects of action proposed in wetlands and floodplains to avoid, to the extent possible, adverse effects. Federal agencies are required to evaluate alternatives to actions in wetlands or floodplains and to avoid or minimize adverse impacts if no practical alternatives exist.

Table 12: Action-Specific ARARs, TBCs, and Other Guidance		
Regulation/Authority	**Citation**	**Requirement Synopsis**
Clean Air Act, Air Cleaning	40 CFR 61.145(c) & (d)	This regulation establishes detailed standards and specifications for demolition and renovation. The regulation provides detailed procedures for controlling asbestos release during demolition of a building containing regulated asbestos containing material.
Clean Air Act, Air Cleaning	40 CFR 61.152	This regulation establishes standards for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations. This regulation provides detailed procedures for processing, handling, and transporting asbestos containing material generated during building demolition and renovation (among other sources).
Clean Air Act, National Emission Standards for Hazardous Air Pollutants for Asbestos	40 CFR Part 61, Subpart M	This regulation establishes emissions standards for asbestos.
Land Disposal Restrictions	40 CFR Part 268	This federal regulation identifies hazardous wastes restricted for land disposal and provides treatment standards for land disposal.
Land Disposal Restrictions	6 NYCRR Part 376	This state regulation identifies hazardous wastes restricted for land disposal and provides treatment standards for land disposal in New York State.
New York Air Quality Standards	6 NYCRR Part 257	These regulations contain standards for air quality for sulfur dioxide, particulates, fluorides, and hydrogen sulfide.
New York Air Resources – General Prohibitions	6 NYCRR Part 211	These regulations contain general prohibitions for air pollution and limits for visible emissions which include opacity standards.

New York Hazardous Waste Management Regulations—Identification and Listing of Hazardous Waste	6 NYCRR Part 371	This regulation identifies solid wastes subject to regulation as hazardous wastes under the ECL. A solid waste is a hazardous waste if it meets the criteria and is not otherwise excluded from regulation as indicated in NYCRR Part 371.
New York Industrial Code – Asbestos	12 NYCRR Part 56	This regulation provides requirements during the removal, encapsulation, enclosure, repair, or the disturbance of friable and non-friable asbestos, or any handling of asbestos material that may result in the release of asbestos fiber.
New York State Department of Environmental Conservation Program Policy on Institutional Controls	NYSDEC DER-33	Technical guidance document that provides guidelines for proper development and recording of institutional controls as part of a site remedial program.
New York State Technical Guidance for Site Investigation and Remediation	NYSDEC DER-10	Technical guidance document that provides guidelines on the acceptable procedures for site investigation and remediation.
New York State Standards and Specifications for Erosion and Sediment Control		Provides minimum standards and specifications of criteria on minimizing erosion and sediment impacts from construction activity involving soil disturbance.
New York State Standards for Universal Waste	6 NYCRR Part 374-3	This regulation provides standards for disposal of universal waste in New York State.

Resource Conservation and Recovery Act, Identification and Listing of Hazardous Wastes	42 U.S.C. § 6921; 40 CFR 261	This regulation identifies solid wastes subject to regulation as hazardous wastes. A solid waste is a hazardous waste if it meets the criteria and is not otherwise excluded from regulation as indicated in 40 CFR 261.3.
Resource Conservation and Recovery Act Standards Applicable to Generators of Hazardous Wastes	42 U.S.C. § 6921; 40 CFR Part 262	This regulation establishes requirements for generators of hazardous wastes.
Toxic Substances Control Act	15 U.S.C. §§ 2601 et seq.; 40 CFR Part 761; 40 CFR Part 745	This statute and implementing regulations provide requirements for the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paint.

ARSENIC MINE SUPERFUND SITE
RECORD OF DECISION

APPENDIX III

ADMINISTRATIVE RECORD INDEX

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

04/08/2020 **REGION ID: 02**

Site Name: ARSENIC MINE
CERCLIS ID: NYD982531469
OUID: 01
SSID: 022Z
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
598757	04/08/2020	ADMINISTRATIVE RECORD INDEX FOR OU1 FOR THE ARSENIC MINE SITE	5	Administrative Record Index		(US ENVIRONMENTAL PROTECTION AGENCY)
606913	Undated	KENT, NEW YORK LOCATION MAP FOR THE ARSENIC MINE SITE	1	Figure/Map/ Drawing		
174832	06/30/1999	MEMORANDUM: INTERIM POLICY ON THE USE OF PERMANENT RELOCATIONS AS PART OF SUPERFUND REMEDIAL ACTIONS. OSWER DIRECTIVE: 9355.0-71P, EPA 540F-98-033, PB98-963305	10	Memorandum		
176273	07/08/1999	FEDERAL REGISTER - EPA NATIONAL SUPERFUND PERMANENT RELOCATION INTERIM POLICY AND NOTICE - VOL. 64, NO. 130	5	Publication		
565426	09/01/2017	US EPA COMMUNITY UPDATE NO. 1 SUMMER/FALL 2017 - EPA BEGINS SOIL INVESTIGATION AT THE ARSENIC MINES SITE LOCATED IN KENT, PUTNAM COUNTY, NEW YORK - THE ARSENIC MINE SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
501339	11/27/2017	PHASE I REMOVAL ASSESSMENT REPORT FOR THE ARSENIC MINES SITE	125	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(WESTON SOLUTIONS)

598776

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

04/08/2020 **REGION ID: 02**

Site Name: ARSENIC MINE
CERCLIS ID: NYD982531469
OUID: 01
SSID: 022Z
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
565425	12/01/2017	US EPA COMMUNITY UPDATE NO. 2 FALL/WINTER 2017 - EPA CONTINUES SOIL INVESTIGATION AT THE ARSENIC MINES SITE LOCATED IN KENT, PUTNAM COUNTY, NEW YORK - THE ARSENIC MINE SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
501343	03/20/2018	PHASE II REMOVAL ASSESSMENT REPORT FOR THE ARSENIC MINES SITE	196	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(WESTON SOLUTIONS)
606909	05/01/2018	NYSDEC FACT SHEET MAY 2018 FOR THE ARSENIC MINE SITE	5	Publication		(NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION)
501349	09/27/2018	PHASE III REMOVAL ASSESSMENT REPORT FOR THE ARSENIC MINES SITE	344	Report	(US ENVIRONMENTAL PROTECTION AGENCY)	(WESTON SOLUTIONS)
606910	04/01/2019	NYSDEC FACT SHEET APRIL 2019 FOR THE ARSENIC MINE SITE	4	Publication		(NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION)
565414	04/27/2019	POLLUTION REPORT NO. 1 RV4 FOR THE ARSENIC MINE SITE	4	Report	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)|LOPEZ,PETER (US ENVIRONMENTAL PROTECTION AGENCY)|MUGDAN,WALTER (US	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)
199492	04/30/2019	EPA Significant Threat Memorandum for Arsenic Mine	106	Memorandum		

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

04/08/2020 **REGION ID: 02**

Site Name: ARSENIC MINE
CERCLIS ID: NYD982531469
OUID: 01
SSID: 022Z
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
565429	04/30/2019	HEALTH CONSULTATION FOR THE EVALUATION OF SHALLOW RESIDENTIAL SOILS FOR THE ARSENIC MINE SITE	46	Report		(NEW YORK STATE DEPARTMENT OF HEALTH)
565430	04/30/2019	PUBLIC HEALTH ADVISORY FOR THE ARSENIC MINE SITE	17	Report		(DEPARTMENT OF HEALTH AND HUMAN SERVICES)
565424	05/01/2019	US EPA COMMUNITY UPDATE NO. 3 - EPA PREPARES FOR INTERIM ACTIONS ATE THE ARSENIC MINES SITE LOCATED IN KENT, PUTNAM COUNTY, NEW YORK - THE ARSENIC MINE SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
565415	05/27/2019	POLLUTION REPORT NO. 2 RV4 FOR THE ARSENIC MINE SITE	4	Report	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)|LOPEZ,PETER (US ENVIRONMENTAL PROTECTION AGENCY)|MUGDAN,WALTER (US ENVIRONMENTAL PROTECTION AGENCY)	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)
565416	06/27/2019	POLLUTION REPORT NO. 3 RV4 FOR THE ARSENIC MINE SITE	4	Report	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)|LOPEZ,PETER (US ENVIRONMENTAL PROTECTION AGENCY)|MUGDAN,WALTER (US ENVIRONMENTAL PROTECTION AGENCY)	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)
500838	07/18/2019	REVISED FINAL PHASE IV REMOVAL ASSESSMENT SAMPLING REPORT FOR THE ARSENIC MINE SITE	146	Report	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)	(WESTON SOLUTIONS INCORPORATED)
541238	09/27/2019	POLLUTION REPORT NO. 4 RV4 FOR THE ARSENIC MINE SITE	4	Report	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)|LOPEZ,PETER (US ENVIRONMENTAL PROTECTION AGENCY)|MUGDAN,WALTER (US ENVIRONMENTAL PROTECTION AGENCY)	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

04/08/2020 **REGION ID: 02**

Site Name: ARSENIC MINE
CERCLIS ID: NYD982531469
OUID: 01
SSID: 022Z
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
606915	10/03/2019	US EPA SUPERFUND PERMANENT AND TEMPORARY RELOCATION FACT SHEET OCTOBER 2019	5	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)
606914	11/08/2019	FEDERAL REGISTER NOTICE OF THE NPL LISTING FOR THE ARSENIC MINE SITE	6	Publication		
541448	11/26/2019	POLLUTION REPORT NO. 5 RV4 FOR THE ARSENIC MINE SITE	4	Report	EVANGELISTA,PAT (US ENVIRONMENTAL PROTECTION AGENCY)|LOPEZ,PETER (US ENVIRONMENTAL PROTECTION AGENCY)|MUGDAN,WALTER,E (US ENVIRONMENTAL PROTECTION AGENCY)	RICHARDS,SANDRA (US ENVIRONMENTAL PROTECTION AGENCY)
606911	12/12/2019	FINAL HUMAN HEALTH RISK ASSESSMENT FOR THE ARSENIC MINE SITE	139	Report	(US ENVIRONMENTAL PROTECTION AGENCY)|GRANGER,MARK (US ENVIRONMENTAL PROTECTION AGENCY)	(CDM SMITH)
607259	02/18/2020	HEADQUARTERS' CONCURRENCE WITH THE NEED TO DEMOLISH VACATED STRUCTURES AS PART OF THE ACTION FOR OU1 FOR THE ARSENIC MINE SITE	2	Email	SINGERMAN,JOEL (US ENVIRONMENTAL PROTECTION AGENCY)	
607251	03/06/2020	ARD'S CONCURRENCE WITH THE ACQUISITION AND RELOCATION OF THE PREFERRED ALTERNATIVE FOR THE ARSENIC MINE SITE	2	Email	GRANGER,MARK (US ENVIRONMENTAL PROTECTION AGENCY)|SINGERMAN,JOEL (U.S. ENVIRONMENTAL PROTCTION AGENCY)	(US ENVIRONMENTAL PROTECTION AGENCY)
606916	03/27/2020	FINAL FOCUSED FEASIBILITY STUDY FOR OU1 FOR THE ARSENIC MINE SITE	171	Report	GRANGER,MARK (US ENVIRONMENTAL PROTECTION AGENCY)	(CDM SMITH)
606918	04/01/2020	US EPA COMMUNITY UPDATE APRIL 2020 FOR THE ARSENIC MINE SITE	2	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)

ADMINISTRATIVE RECORD INDEX OF DOCUMENTS

FINAL

04/08/2020

REGION ID: 02

Site Name: ARSENIC MINE
CERCLIS ID: NYD982531469
OUID: 01
SSID: 022Z
Action:

DocID:	Doc Date:	Title:	Image Count:	Doc Type:	Addressee Name/Organization:	Author Name/Organization:
598759	04/07/2020	NYSDEC CONCURRENCE ON THE PROPOSED PLAN FOR OU1 FOR THE ARSENIC MINE SITE	2	Letter	WILSON,ERIC,J (US ENVIRONMENTAL PROTECTION AGENCY)	RYAN,MICHAEL,J (NY STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION)
598758	04/07/2020	PROPOSED PLAN FOR OU1 FOR THE ARSENIC MINE SITE	8	Publication		(US ENVIRONMENTAL PROTECTION AGENCY)

ARSENIC MINE SUPERFUND SITE
RECORD OF DECISION

APPENDIX IV

STATE LETTER OF CONCURRENCE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Office of the Director
625 Broadway, 12th Floor, Albany, NY 12233-7011
P: (518) 402-9706 I F: (518) 402-9020
www.dec.ny.gov

June 8, 2020

Mr. Pat Evangelista
Division Director
Superfund and Emergency Management Division
USEPA Region II
290 Broadway, 19th Floor
New York, NY 10007-1866

Re: Record of Decision
Arsenic Mine Site Operable Unit 1 Early Action
NYSDEC Site No. 340032
EPA ID# NYD982531469
Town of Kent, Putnam County

Dear Mr. Evangelista:

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the Superfund Record of Decision prepared by the United States Environmental Protection Agency (USEPA) for an Early Action to address Operable Unit (OU) 1 of the Arsenic Mine Superfund Site located in the Town of Kent, Putnam County.

The selected remedy for this OU dissociates residents from exposure to arsenic-contaminated soils at the site. Dissociation will be implemented through offers of acquisition of certain affected properties including permanent relocation of affected residents, demolition of vacated structures, utilization of institutional controls (ICs) to limit current and future use of the properties, and periodic maintenance and inspections of existing protective measures until each affected residence is relocated or until a final remedy is completed.

In addition, engineering controls (ECs) such as fencing will be utilized to eliminate exposure pathways by preventing trespassing until the properties are demolished and restored. A plan will also be prepared to monitor and maintain the protective measures currently in place and those placed prior to the implementation of the final site remedy (OU2).

The NYSDEC acknowledges the OU1 early action is being selected prior to establishing remedial goals for the entire site. The full remedial program including remedial investigation, remedy selection, and remedial action at the site will be conducted as part of OU2.

Accordingly, NYSDEC concurs with the remedy selected by USEPA with the above understanding of the scope of the early action and with assurance from EPA of a consultative role in the development and periodic review of the program. If you have any questions, please contact me at (518) 402-9706.

Sincerely,

Michael J. Ryan, P.E.
Director
Division of Environmental Remediation

ec: D. Garbarini, EPA, Garbarini.doug@epa.gov
M. Granger, EPA, Granger.Mark@epa.gov
G. Heitzman, NYSDEC
J. Brown, NYSDEC
K. Carpenter, NYSDEC
K. Thompson, NYSDEC
M. Schuck, NYSDOH, Maureen.shuck@health.ny.gov
W. Kuehner, NYSDOH, Wendy.Keuhner@health.ny.gov
S. Lawrence, NYSDOH, Stephen.Lawrence@health.ny.gov

ARSENIC MINE SUPERFUND SITE
RECORD OF DECISION

APPENDIX V

RESPONSIVENESS SUMMARY

SUMMARY OF DOCUMENTS

Appendix V-a: April 2020 Proposed Plan

Appendix V-b: Public Notice

Appendix V-c: April 22, 2020 Public Meeting Transcript

Appendix V-d: Letters Received During Comment Period

RESPONSIVENESS SUMMARY
FOR THE
RECORD OF DECISION
ARSENIC MINE SUPERFUND SITE
OPERABLE UNIT 1
KENT, PUTNAM COUNTY, NEW YORK

INTRODUCTION

This Responsiveness Summary provides a summary of citizens' comments and concerns received during the public comment period related to the Arsenic Mine Superfund site (Site) Proposed Plan and provides the U.S. Environmental Protection Agency's (EPA's) responses to those comments and concerns. All comments summarized in this document have been considered in EPA's final decision in the selection of an early action to dissociate residents from exposure to arsenic-contaminated surface soils at the Site.

SUMMARY OF COMMUNITY RELATIONS ACTIVITIES

In March 2020, EPA completed a focused feasibility study (FFS) to identify and evaluate alternatives to dissociate residents from exposure to arsenic-contaminated surface soils. Based upon the results of the FFS, EPA identified a preferred remedy to dissociate the residents from exposure to arsenic-contaminated soils at the Site. EPA's preferred remedy and the basis for that preference were identified in a Proposed Plan.[1] On April 8, 2020, the FFS report and the Proposed Plan were made available to the public for comment on EPA's website, https://www.epa.gov/superfund/arsenic-mine. A notice of availability for the above-referenced documents and information pertaining to participating at a public meeting was published in the *Putnam County Press* on April 8, 2020. The public comment period ran from April 8, 2020 to May 8, 2020. On April 22, 2020, because of the social-distancing requirements related to the COVID-19 pandemic, EPA conducted a virtual public meeting via Skype for Business and a conference line to inform local officials and interested citizens about the Superfund process, present the Proposed Plan for the Site, including the preferred remedy, and respond to questions and comments from the approximately 85 attendees. On the basis of comments received during the public comment period, the public generally supports the selected remedy.

SUMMARY OF COMMENTS AND RESPONSES

Comments were received at the public meeting and in writing. Written comments were received from:

- An anonymous concerned citizen, via a May 4, 2020 letter.

[1] A Proposed Plan describes the remedial alternatives considered for a site and identifies the preferred remedy with the rationale for this preference.

- Matthew Giannetta, Chief, Regulatory & Engineering Programs, Bureau of Water Supply, New York City Department of Environmental Protection (DEP), via a May 5, 2020 letter.

The transcript from the public meeting can be found in **Appendix V-c**.

The written comments submitted during the public comment period can be found in **Appendix V-d**.

A summary of the comments provided at the public meeting and in writing, as well as EPA's responses to them, are provided below.

Affected Properties

Comment #1: A commenter asked how many properties are eligible for acquisition and relocation.

Response #1: Offers of property acquisition and permanent relocation will be made to seven residential properties located in the vicinity of the northern mine (and the former mining operations) and within the boundaries of the Site.

Comment #2: Two commenters asked whether offers of property acquisition will be made for the three vacant properties.

Response #2: Because the objective of this early action is to reduce or eliminate residential exposure to arsenic-contaminated surface soils, offers of property acquisition will not be made for the vacant properties. The ultimate disposition of all of the properties will be addressed in the second phase effort for the Site, as explained below.

Comment #3: A commenter asked for a list of the affected properties.

Response #3: For privacy reasons, EPA will not identify the addresses of the properties. Please consult Figure 2 of the Record of Decision (ROD) for a graphical representation of the property locations.

Acquisition and Relocation

Comment #4: A commenter asked what entity will assist EPA with the property acquisition and relocation effort.

Response #4: The U.S. Army Corp of Engineers assists EPA with property acquisitions and relocations.

Comment #5: A commenter inquired as to what happens if a property owner does not accept a buyout offer.

Response #5: Under this early action, EPA will not require any occupant to relocate. Until the occupants from each affected residence are permanently relocated under this early action, or until the Sitewide remedy is completed, periodic inspections and maintenance of the existing protective measures will be performed, as necessary, at each occupied residence to ensure the effectiveness of these measures in eliminating exposure pathways in areas where these measures were installed.

Comment #6: Three commenters inquired as to the timing of the relocation process.

Response #6: Following the selection of the remedy, EPA will reach out individually to the affected residents to discuss the relocation process. It is anticipated that it will take a year to a year and a half to acquire the properties and relocate the residents.

Comment #7: A commenter inquired whether EPA will pay the market rate value of the house.

Response #7: The government will acquire a comparable replacement dwelling for each residence that is worth at least the fair market value of their original property.

Comment #8: A commenter asked what might slow down the acquisition and relocation process and what the residents can do to move the process along.

Response #8: Factors that could slow down the process are those which may come into play when dealing with typical real-estate transactions and the scheduling of closings. Residents can facilitate moving the process along by collaborating with EPA and other support agencies helping to implement the effort.

Comment #9: A commenter suggested that EPA take into consideration the impact of COVID-19 on the property owners' ability to respond in a timely manner to any potential relocation offers. The commenter also opined that the pandemic will make finding new residences very difficult, if not impossible.

Response #9: EPA recognizes that COVID-19 may affect its ability to promptly acquire the affected properties and provide relocation assistance. EPA will, to the best of its ability under the current circumstances, advance the process as expeditiously as possible while providing residents sufficient time to consider offers.

Additional Compensation

Comment #10: A commenter asked whether residents could be compensated for the time that they continue to reside on their contaminated property until they are relocated.

Response #10: EPA will compensate affected property owners for acquired properties and provide relocation assistance. Additional compensation beyond what is authorized under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (URA), cannot be provided.

Comparable Dwellings

Comment #11: A commenter asked whether comparable residential dwellings will be limited to locations in the immediate area of the current home, or whether residents could relocate to anywhere within the United States.

Response #11: While comparable residential properties are identified as close to the current home as possible, occupants choose the location where they ultimately move and may choose to move out of the state. Under the URA, payment for moving is limited to a distance of 50 miles (occupants would be responsible for mileage exceeding this threshold).

Demolition Timeline

Comment #12: A commenter inquired as to the timeframe for demolishing the houses as they are abandoned.

Response #12: It is unlikely that all of the houses will be vacated at the same time. Rather than demolishing each house as it becomes vacant, for economy of scale, as long as there is not an inordinate amount of time between vacating the structures and their demolition, it is likely that the demolitions would be clustered.

Governmental Support of Remedy

Comment #13: A commenter asked if the town, county, and state support the remedy.

Response #13: EPA worked in partnership with the State in developing the Proposed Plan and the State concurs with the selected remedy. In addition, following the release of the Proposed Plan, EPA discussed the preferred remedy with town and county officials. The town and county officials expressed support for the preferred remedy.

Fencing

Comment #14: A commenter requested that the properties that are acquired by EPA not be fenced. The commenter suggested that signage be used to prevent exposure.

Response #14: Because the protective measures would no longer be maintained once a house is vacated, and because vacant structures are an attractive nuisance, it is anticipated that fencing would be utilized to prevent trespassing once the structures are vacated. It is anticipated that fencing would remain until post-demolition restoration of a given property is completed.

Comment #15: A commenter asked whether EPA would compensate homeowners for installing fences.

Response #15: The full cost of the remedy, including the temporary fencing, will be implemented and borne by EPA.

Labor Practices

Comment #16: A commenter inquired about EPA's policies related to employing union versus nonunion labor. The commenter also asked whether EPA can select local contractors for the demolition work.

Response #16: The federal government is required to pay prevailing union wages and will typically try to employ local union labor and contractors.

Future Actions at Site

Comment #17: Two commenters inquired about future actions and cleanup planned for the Site.

Response #17: Site remediation activities are sometimes segregated into different phases or operable units (OUs) so that remediation of different aspects of a site can proceed separately, resulting in a more expeditious cleanup of the entire site. This Site is being addressed by EPA in two OUs. The first OU (OU1) addresses dissociating the residents from exposure to arsenic-contaminated surface soils. The second OU (OU2) remedial investigation (RI) will investigate the nature and extent of the Site-related contamination in various media (*e.g.,* surface and subsurface soil, groundwater, sediment, *etc.*) and evaluate the risk posed by these contaminants to public health and the environment, and a feasibility study (FS) will identify and evaluate means to address the contamination.

Phase-Two Remediation Timeframe

Comment #18: A commenter inquired as to the timeframe for completing the OU2 remediation.

Response #18: It is anticipated that it will take up to 10 years to perform the OU2 RI/FS and design and implement the remedy that is ultimately selected.

Additional Sampling

Comment #19: A commenter asked if homes on Gypsy Trail Road outside the current study area can be tested.

Response #19: During the OU2 RI/FS, the extent of mine-related waste will be determined by sampling. If the sampling indicates that the extent of mine-related waste is found beyond the study area, then the study area will be expanded accordingly.

Comment #20: Because it may be some time before nearby properties are sampled during the OU2 RI, a commenter asked if they can hire an environmental firm to collect and analyze samples and be compensated.

Response #20: While residents can hire an environmental firm to collect and analyze samples for their properties, EPA will not be able to provide compensation for that sampling.

Please note that EPA believes that all the properties for which the mine tailings posed an immediate threat to public health were sampled and protective measures were put into place for those properties. If, during the OU2 RI, EPA determines that the mine tailings pose an immediate threat to other properties, further protective measures may be necessary.

Treatment of Arsenic-Contaminated Soil

Comment #21: A commenter asked about methods to remediate arsenic-contaminated soil other than removal.

Response #21: The FS for OU2 will likely evaluate technologies to address the arsenic-contaminated soil. Several potentially applicable technologies include stabilization and solidification, by which contaminants are rendered immobile through reactions with additives, such as cement; soil washing, where a wash solution consisting of leaching agents, surfactants, acids, or chelating agents remove the arsenic; and pyrometallurgical

recovery, which entails heating the soil to cause the arsenic to volatilize and then capturing and removing the airborne metals.

Groundwater Concerns

Comment #22: A commenter noted that local home inspectors have indicated that arsenic is a problem in drinking-water wells in this area. The commenter asked how far out the drinking water is being sampled.

Response #22: In the 1980s and 1990s, arsenic was identified by the Putnam County Department of Health in some area drinking-water wells outside the study area. Arsenic in these wells is thought to be naturally-occurring due to the presence of arsenic-containing rock. Levels of arsenic approached or were just over state and federal drinking-water standards. Treatment systems were recommended to reduce exposures. Monitoring of the wells showed that properly-maintained filtration systems were effective in removing arsenic from the drinking water.

Drinking-water sampling was performed quarterly by EPA on the seven residential properties starting in 2019. As part of the more-comprehensive OU2 RI/FS, groundwater samples will be collected to determine the extent of mine-related groundwater contamination. The extent of this sampling will be determined when this effort is scoped out.

Historic, Cultural, and Agricultural Significance of Properties

Comment #23: A commenter suggested that the historic, cultural, and agricultural significance of the properties that encompass the Site be considered, and suggested that the Proposed Plan reflect how these properties support broader community history, agricultural function, and conservation values.

Response #23: The Proposed Plan focusses on dissociating the residents from exposure to arsenic-contaminated soils at the Site. EPA intends to evaluate the historic, cultural, and agricultural significance of the properties that encompass the Site as part of the more-comprehensive OU2 effort.

Concerns About Impacts to New York City's Water-Supply Watershed

Comment #24: Because the Site is located in the West Branch Reservoir drainage basin of New York City's water-supply watershed, in the interest of protecting the drinking water, DEP suggested that the Proposed Plan be revised to provide details related to how the migration of contaminants during the remediation process will be controlled. In addition, DEP suggested that the revised Proposed Plan depict the limits of disturbance, areas to be covered, structures to be demolished, staging areas, amount of soil to be removed,

soil disposal location, and post-demolition Site control measures and provide a schedule for inspection and maintenance of said measures. DEP also requested that it be afforded the opportunity to review a revised Proposed Plan and to monitor remediation activities.

Response #24: Proposed Plans describe the remedial alternatives considered for a site and identify the preferred remedy with the rationale for this preference. The preferred remedy for the Site, which is now EPA's selected remedy, consists of offers of acquisition of certain affected properties, permanent relocation of the affected residents, and demolition of the vacated structures. Therefore, the only construction-related actions that will be performed as part of the selected remedy will be the demolition of the vacated houses. Appropriate control measures will be employed during this work to ensure that the nearby surface water is not impacted.

The noted remedy is an early action. An OU2 RI/FS to determine the extent of the contamination at the Site and to identify and evaluate remedial alternatives to address this contamination will commence shortly. Because of the concerns about potential impacts to the New York City's water-supply watershed that were expressed, DEP will be afforded the opportunity to review the OU2 Proposed Plan for the more comprehensive cleanup effort.

RESPONSIVENESS SUMMARY

APPENDIX V-a

APRIL 2020 PROPOSED PLAN

Arsenic Mine Superfund Site
Putnam County, New York

April 2020

PURPOSE OF THIS DOCUMENT

This document describes the remedial alternatives considered as an early action for the first operable unit (OU1) of the Arsenic Mine Superfund site and identifies the preferred alternative along with the rationale for this preference. This Proposed Plan was developed by the U.S. Environmental Protection Agency (EPA) in consultation with the New York State Department of Environmental Conservation (NYSDEC). EPA is issuing this Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and Sections 300.430(f) and 300.435(c) of the National Oil and Hazardous Substances Pollution Contingency Plan. The nature and extent of the contamination at the site and the remedial alternatives summarized in this Proposed Plan are described in the March 2020 focused feasibility study (FFS) report. EPA and NYSDEC encourage the public to review this document to gain a more comprehensive understanding of the site and the Superfund activities that have been conducted there.

This Proposed Plan is being provided as a supplement to the FFS report to inform the public of EPA's preferred alternative, upon which NYSDEC concurs, and to solicit public comments pertaining to all of the remedial alternatives evaluated, including the preferred alternative. The preferred alternative is to dissociate the residents from exposure to arsenic-contaminated soils and consists of offers of acquisition of certain affected properties and permanent relocation of the related affected residents. Following permanent relocation, vacated structures would be demolished. This alternative would also include institutional controls (ICs)[1] (*e.g.,* easements) to limit current and future use of the properties. Until the residents from each affected residence are permanently relocated, or until a final remedy is completed, monitoring and maintenance of the existing protective measures would continue at each respective residence to ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed.

The alternative described in this Proposed Plan is the preferred alternative for the site. Changes to the preferred alternative, or a change from the preferred alternative to another alternative, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedy will be made after EPA has taken into consideration all public comments. EPA is soliciting public comment on all of the alternatives considered in the Proposed Plan and in the detailed analysis section of the FFS report because EPA and NYSDEC may select a remedy other than the preferred alternative.

[1] ICs are non-engineered actions or requirements, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a remedy.

MARK YOUR CALENDAR

April 8, 2020 – May 8, 2020*: Public comment period related to this Proposed Plan.*

April 22, 2020 at 7:00 P.M.: *Virtual public meeting.*

One may find meeting-participation details using the following link:

https://www.epa.gov/superfund/arsenic-mine

Alternately, one may participate by telephone using the following conference line number:

(315) 565-0493, code number 262234153#

Please register in advance of the virtual meeting by accessing:

https://www.eventbrite.com/e/us-epa-arsenic-mine-proposed-plan-virtual-public-meeting-tickets-101328528356

or emailing Pat Seppi, Community Involvement Coordinator, at:

seppi.pat@epa.gov

or calling her at (646) 369-0068.

Anyone interested in receiving materials for the public meeting in hard copy should either email or call Ms. Seppi with such a request by Friday, April 17.

The Administrative Record (supporting documentation) for the site is available at:

https://www.epa.gov/superfund/arsenic-mine

COMMUNITY ROLE IN SELECTION PROCESS

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting

598776

an effective remedy for each Superfund site. To this end, the FFS report and this Proposed Plan have been made available to the public for a public comment period that begins on April 8, 2020 and concludes on May 8, 2020.

A public meeting will be held via webinar and telephone conference on April 22, 2020 at 7:00 p.m. to present the conclusions of the FFS, to elaborate further on the reasons for recommending the preferred alternative, and to receive public comments.

Written comments on the Proposed Plan should be addressed to:

Mark Granger
Remedial Project Manager
Central New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866

email: granger.mark@epa.gov

Comments received at the public meeting, as well as written comments, will be documented in the Responsiveness Summary Section of the Record of Decision (ROD), the document that formalizes the selection of the remedy.

SCOPE AND ROLE OF ACTION

Site remediation activities are sometimes segregated into different phases, or OUs, so that remediation of different aspects of a site can proceed separately, resulting in a more expeditious cleanup of the entire site. This site is being addressed by EPA in two OUs. The first OU (OU1) addresses dissociating the residents from exposure to arsenic-contaminated surface soils. This Proposed Plan describes EPA's preferred alternative for OU1.

The second OU (OU2) will address the nature and extent of all site-related contamination in various media (*e.g.,* surface and subsurface soil, groundwater, sediment, *etc.*) as well as ecological considerations.

SITE BACKGROUND

Site Description

The Arsenic Mine site is located in Kent, Putnam County, New York and includes an historic mine, previously known as Pine Pond Mine, Silver Mine, and Brown's Serpentine Mine. There are two former entry shafts. The site includes the northern mine shaft, which is located on private property. A second shaft, the southern mine shaft, is located in the adjacent Nimham Mountain Multi-Use Area, a state recreational area. The Arsenic Mine site includes undeveloped and residential properties around and downslope from the northern mine shaft, near the intersection of Gipsy Trail Road and Mt. Nimham Court. See Figure 1.

The site is situated in the Hudson Highlands area, which is a northeast-southwest trending band of igneous and metamorphic rocks that extends from New England through New York. The Hudson Highlands are almost entirely blanketed by a thin layer of glacial till with frequent bedrock outcrops.

The area is sparsely populated and the terrain is highly variable, with steep, forested hillsides. Occupied properties in the area consist of single-family residential homes. Public water is not available in the area; residents rely on private wells for their drinking water.

Site History

Mining operations at the site were conducted intermittently from the mid-1800s through approximately 1918. The mine contains arsenopyrite, a metal ore that was used in ammunition, pesticides, pigments, and other industries. During the mining operations, rocks were crushed on-site to concentrate the ore. The arsenic-contaminated waste materials, which are known as tailings, were disposed of in areas surrounding the mine pits/shafts. Mining operations ceased in 1918 reportedly because of the lack of a satisfactory smelting forge nearby for processing the ore.

While the area has naturally high levels of arsenic in the soil and groundwater, significantly higher levels of arsenic are found on the residential properties as a result of the dispersal of arsenic associated with the mine tailings relative to the northern mine entrance.

In 1987, residents living in a house adjacent to the northern mine entrance were hospitalized as a result of exposure to arsenic from their drinking water well that had been installed through tailings from the mining operations. EPA installed a cistern at that residence for drinking water deliveries as an alternative drinking water supply. During the late 1980s and early 1990s, the Putnam County Department of Health (PCDOH), in conjunction with EPA and the New York State Department of Health (NYSDOH), conducted limited soil sampling on the properties near the northern mine entrance, revealing significant concentrations of arsenic in surface soils. The PCDOH placed a warning sign near the northern mine entrance indicating the presence of elevated arsenic levels in soil. Because of naturally-elevated regional arsenic concentrations in the soil, manmade deposition of arsenic-laden materials related to the past mining operations was not delineated.

In 2016, the owner of the cistern requested EPA's assistance with a repair to the cistern. During the repairs, it was determined that sediments with high concentrations of arsenic were entering the cistern. In 2017 and 2018, EPA collected soil samples on and around the location of previous mining operations. In 2018, EPA also conducted potable water sampling at seven residential properties located in the vicinity of the northern mine and the former

mining operations, residential properties that have since been designated as part of the site. In 2019, EPA initiated quarterly drinking-water assessments.

In April 2019, the EPA Removal Program mobilized to perform interim measures to protect public health and reduce direct contact threats relative to surface soil by providing residents with indoor and outdoor door mats and boot brushes, excavating soil in dog pens and backfilling with woodchips, creating woodchip or stone walkways, covering residential high-use areas with woodchips and paving or adding stone to exposed earthen driveways. High efficiency particulate air vacuums, which contain filters capable of capturing extremely small particles, were provided to each household in an effort to reduce indoor dust.

NYSDOH released a Health Consultation on April 30, 2019, in which it evaluated shallow residential soils at the site. The conclusion in the Health Consultation was that short-term exposure of children to surface soils with the highest concentrations of arsenic poses an immediate and significant threat to human health, constituting an urgent public health hazard. It also contained a conclusion that long-term exposure of children and adults to arsenic in surface soils poses a significant threat to human health, constituting a public health hazard. EPA supported these conclusions in a Determination of Significant Threat memorandum, finding that all residential properties at the site contain exposure point concentrations that result in calculated risks or hazards to residents that are at or above the threshold for unacceptable risk. Additional action beyond the interim measures was recommended to protect the long-term health of affected residents. Also, on April 30, 2019, the Agency for Toxic Substances and Disease Registry issued a Public Health Advisory recommending that EPA take immediate short- and long-term measures to dissociate persons, especially children, from exposure to arsenic in shallow soils at the site.

Following the inclusion of the site on the National Priorities List on November 8, 2019, EPA commenced an FFS to identify and evaluate alternatives to dissociate the residents from exposure to arsenic-contaminated soils.

A final FFS report was completed on March 27, 2020.

RESULTS OF THE FIELD INVESTIGATIONS

To determine the extent of contamination from mining waste and to support a removal assessment at the site, EPA collected surface soil samples in August 2017, December 2017, and June 2018 at and around the mine and the residential properties. As part of this investigation, approximately 800 soil samples were collected and analyzed at 517 locations. Arsenic was detected in all soil samples, with concentrations ranging from 3.2 milligrams per kilogram (mg/kg) to 56,000 mg/kg.

The mine-related contamination remains uncontrolled at the site. In addition to baseline mine-related contamination associated with the mine and residential properties, it is likely that mine-related wastes have further spread or migrated to the residential properties as a result of surface water flow and aerial deposition from wind. In addition, in the development of the properties, there was the potential that mine-related wastes were redistributed within the residential area as a result of regrading activities.

The mine-related arsenic contamination is a principal threat waste (PTW), a source material that is considered to be highly toxic or highly mobile, that generally cannot be reliably contained, or will present a significant risk to human health or the environment should exposure occur.

SUMMARY OF SITE RISKS TO HUMAN HEALTH

Based upon the results of the field investigation, a four-step human health risk assessment (HHRA) process was undertaken to evaluate cancer risks and noncancer health hazards associated with arsenic in site surface soils. Under the HHRA, the current and potential future property conditions were considered presuming the absence of any additional remedial action. The four-step process is comprised of: Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization (see box “What is Risk and How is it Calculated” for more details on the risk assessment process).

The cancer risks and noncancer health hazard estimates in the HHRA and summarized below are based on current and potential future reasonable maximum exposure scenarios (upper bound exposures reasonably expected to occur) and were developed by taking into account various health protective estimates about the frequency and duration of an individual’s exposure to arsenic, as well as its toxicity. The HHRA was performed using only soil concentrations of arsenic and the risk posed from accidental ingestion and dermal contact. The risk scenarios did not include risk from drinking water, vegetable gardens, *etc*. Risk from other media and other contaminants at the site, as well as PTW, will be evaluated under OU2.

The results of the risk assessment indicated that lifetime cancer risks exceed EPA’s acceptable range of $1x10^{-6}$ to $1x10^{-4}$ for the reasonable maximum exposure (RME) scenario at six properties with calculated risks ranging from $2x10^{-4}$ to $1x10^{-2}$. Cancer risks were at the upper bound of the acceptable risk range for two additional properties. Child and adult resident cancer risks are primarily as a result of exposure via incidental ingestion of arsenic-contaminated surface soil and, to a lesser extent, exposure via dermal contact.

The total noncancer hazards are higher for child receptors (age 0-6) than for adults, indicating a greater potential for

noncancer health effects for child residents. The total RME noncancer hazard indices (HIs) for child residents exceed EPA's hazard threshold of 1 for nine properties, with calculated hazards ranging from 2-300; the HI at the remaining property is equal to 1. For adult residents, the total RME noncancer HIs exceed EPA's threshold at five properties, with calculated hazards ranging from 2-30. Noncancer hazards for residents are driven primarily by potential exposure to arsenic via incidental ingestion of soil. Dermal contact with soil also contributed to elevated total HIs, but to a lesser extent than ingestion. Exposure to high concentrations of arsenic can impact several organ systems, including the skin and peripheral vascular system.

In the HHRA, residential exposure to arsenic in surface soils was evaluated. Risk estimates do not account for potential exposure to arsenic in other media (*e.g.,* groundwater, sediment, surface water) or to other contaminants that may be present because of historical mining operations; risk estimates may therefore be underestimated.

Summary

Based upon the results of the HHRA, supported by the 2019 Health Consultation, Determination of Significant Threat memorandum, and Public Health Advisory, EPA has determined that actual or threatened releases of hazardous substances at the site, if not addressed by the preferred alternative or one of the other active measures considered, may present a current or potential threat to human health.

REMEDIAL ACTION OBJECTIVE

Remedial action objectives 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), to-be-considered guidance, and site-specific risk-based levels.

The remedial action objective established for the site is to reduce or eliminate residential exposure to arsenic-contaminated surface soils.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1), mandates that remedial actions must be protective of human health and the environment, cost-effective, comply with ARARS, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions that employ, as a principal element, treatment to permanently and significantly reduce the volume, toxicity, or mobility of the

WHAT IS RISK AND HOW IS IT CALCULATED?

A human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance(s) release(s) at 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 chemicals of potential concern (COPCs) at a 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 in air, water, soil, etc. 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 noncancer 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 noncancer 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 COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 1×10^{-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 1×10^{-4} to 1×10^{-6}, corresponding to a one in ten thousand to a one in a million excess cancer risk. For noncancer health effects, a "hazard index" (HI) is calculated. The key concept for a noncancer HI is that a threshold (measured as an HI of less than or equal to 1) exists below which noncancer health hazards are not expected to occur. The goal of protection is 1×10^{-6} for cancer risk and an HI of 1 for a noncancer health hazard. Chemicals that exceed a 1×10^{-4} cancer risk or an HI of 1 are typically those that will require remedial action at a site and are referred to as contaminants of concern (COCs) in the ROD.

hazardous substances, pollutants, and contaminants at a site. CERCLA §121(d), 42 U.S.C. §9621(d), further specifies that a remedial action must attain a level or standard of control of the hazardous substances, pollutants, and contaminants that at least attains ARARs under federal and state laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4).

Detailed descriptions of the remedial alternatives to dissociate the residents from exposure to arsenic-contaminated areas at the site can be found in the FFS report. The FFS report presents three alternatives to dissociate the residents from exposure to arsenic-contaminated areas. The remedial alternatives are:

Alternative 1: No Action

Capital Cost:	$0
Annual Operation and Maintenance (O&M) Cost:	$0
Present-Worth Cost:	$0
Implementation Time:	0 months

The Superfund regulations require that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures to dissociate the residents from exposure to arsenic-contaminated areas.

Alternative 2: Monitoring and Maintenance of Existing Protective Measures

Capital Cost:	$161,000
Annual O&M Cost:	$330,000
Present-Worth Cost:	$2,641,000
Implementation Time:	6 months

This alternative consists of monitoring and maintenance of the existing protective measures. The monitoring and maintenance program would ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed.

Monitoring activities would include, among other things, performing visual inspections to assess the integrity of the outdoor and indoor protective measures. For cost-estimating purposes it was assumed that monitoring and maintenance activities would be performed twice per year.

The outdoor protective measures to be monitored and maintained include paving, stone pathways, and installed woodchip and mulch covers. If visual inspection indicates there is a breach in the integrity of the woodchip, stone, or pavement covers, repairs of the covers would be completed. This would involve adding woodchips, adding stone, or sealing cracks in pavement. Maintenance would include replacement of outdoor doormats and boot brushes.

The indoor protective measures to be monitored and maintained include indoor door mats and high-efficiency particulate air vacuums.

This alternative would also include ICs (*e.g.,* easements) to limit current and future use of the properties.

It is estimated that it would require six months to implement the ICs and prepare a plan related to the ongoing monitoring and maintenance of the existing protective measures.

It is assumed that the monitoring and maintenance would be performed for 10 years (the estimated time to perform the OU2 investigation and select, design, and implement an OU2 remedy).

Alternative 3: Property Acquisition, Permanent Relocation, Demolition

Capital Cost:	$5,603,000
Annual O&M Cost:	$330,000
Present-Worth Cost:	$5,828,000
Implementation Time:	1.5 years

This alternative consists of offers of property acquisition and permanent relocation. Affected property owners would be compensated for the acquired real property, and affected residents would receive relocation assistance. Following permanent relocation, vacated structures would be demolished. Superfund-related permanent relocations and property acquisitions would be conducted under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Real property would be appraised in accordance with federal standards to determine the comparable replacement-housing value, and an offer to purchase would be made to each residential property owner.

Permanent relocation would include federal financial and logistical support for residents to move out of the OU1 study area permanently. Residents would be assisted in the relocation process, including identifying and moving into replacement residences.

Until the residents from each affected residence are permanently relocated, or until the completion of the OU2 effort (if there are residents that decline to be relocated), monitoring and maintenance of the existing protective

measures (see Alternative 2 for details) would continue at each respective residence to ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed. For cost-estimating purposes, it is presumed that the monitoring and maintenance would be performed at each residence every six months for one year.

The residential structures would be demolished following property acquisition and relocation to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures until completion of the OU2 effort.

Engineering controls (*i.e.,* fencing) would be utilized to prevent trespassing once the structures are vacated.

This alternative would also include ICs (*e.g.,* easements) to limit current use and to prevent future residential use of the properties as well as the preparation of a plan related to the monitoring and maintenance of the existing protective measures until the residents from each affected residence are permanently relocated or until completion of the OU2 effort.

It is estimated that it would require one year to acquire the properties, relocate the residents, and demolish the structures, and an additional six months to implement the ICs.

COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria, namely, overall protection of human health and the environment, compliance with applicable or relevant and appropriate requirements, long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, cost, and state and community acceptance.

The evaluation criteria are described below.

- Overall protection of human health and the environment addresses whether a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or ICs.
- Compliance with ARARs addresses whether a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and requirements or provide grounds for invoking a waiver.
- Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
- Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, that a remedy may employ.
- Short-term effectiveness addresses the period needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the implementation period until cleanup goals are achieved.
- Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular alternative.
- Cost includes estimated capital and O&M costs, and net present-worth costs.
- State acceptance indicates if, based on its review of the FFS and Proposed Plan, the state concurs with the preferred alternative at the present time.
- Community acceptance will be assessed in the ROD and refers to the public's general response to the alternatives described in the Proposed Plan and the FFS report.

A comparative analysis of these alternatives based upon the evaluation criteria noted above follows.

Overall Protection of Human Health and the Environment

Alternative 1 would not be protective of human health because residents would remain on their properties and the existing protective measures would not be maintained. Alternatives 2 and 3 would be protective of human health because both of the alternatives would rely upon a remedial strategy to prevent residential exposure to contaminated surface soils. However, Alternative 3 would be somewhat more protective of human health than Alternative 2 because the residential dissociation from surface soils would be permanent and no maintenance would be required to ensure effectiveness. Additionally, Alternative 2 would rely more on ICs to prevent residents from exposure to contaminated soils where protective measures were not employed than Alternative 3.

Compliance with ARARs

Because no action would be taken under Alternative 1, no chemical-, location-, or action-specific ARAR would be triggered.

Alternative 2's maintenance activities and Alternative 3's demolition activities would be implemented in accordance with pertinent action-specific ARARs. Air Quality Standards would be pertinent to the demolition activities associated with Alternative 3. Permanent relocation and property acquisition to be performed under Alternative 3 would be performed in accordance with the requirements

of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and its implementing regulations.

Long-Term Effectiveness and Permanence

Alternative 1 would involve no active remedial measures and, therefore, would not be effective in eliminating the potential exposure to contaminants in the surface soil.

Alternative 2 would rely on monitoring and maintenance of the existing protective measures to provide protection until a permanent remedy is selected, designed, and implemented, which could take up to 10 years. While a monitoring and maintenance plan would be tailored to address this, in the interim, properties have the potential to be re-contaminated because tailing waste would not be contained. Additionally, Alternative 2 would require ICs (*e.g.,* easements) that would limit the full use of the properties. Alternative 3 would provide protection in the long-term, as the residents would be permanently relocated from their contaminated properties, thereby eliminating any exposure to arsenic-contaminated surface soils. Under this alternative, the residential structures would be demolished following property acquisition and relocation of the residents so as to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures until completion of the OU2 effort.

Reduction in Toxicity, Mobility, or Volume Through Treatment

Reduction of toxicity, mobility, and/or volume through treatment would not occur under any of the alternatives; however, it is anticipated that this criterion will be addressed as part of OU2.

Short-Term Effectiveness

Because Alternative 1 does not include any physical construction measures in any areas of contamination, this alternative would present the least potential adverse impacts to remediation workers or the community as a result of its implementation.

The maintenance and soil sampling activities under Alternative 2 would pose some risk to remediation workers and nearby residents. This exposure could, however, be mitigated by following appropriate health and safety protocols, which include following a site-specific community air monitoring program (CAMP), exercising sound engineering practices, and by utilizing proper protective equipment. Under Alternative 3, the use of heavy equipment during demolition activities would cause disturbance of the surface soils and the generation of contaminated dust, resulting in the potential for contaminant migration to the environment. There would also be the potential for increased local traffic. The dust-related impacts would be mitigated through the implementation of decontamination measures and dust suppression practices. A traffic control plan would be implemented to reduce the potential for traffic accidents. Workers would encounter arsenic-contaminated surface soils during their work and, potentially, hazardous building materials during abatement. This exposure could, however, be mitigated by following appropriate health and safety protocols, which include following a site-specific CAMP, exercising sound engineering practices, and by utilizing proper protective equipment.

Because no actions would be performed under Alternative 1, there would be no implementation time. Under Alternative 2, it is estimated that it would require six months to implement the ICs and prepare a plan related to the monitoring and maintenance of the existing protective measures. Under Alternative 3, it is estimated that it would require one year to prepare a plan related to the monitoring and maintenance of the existing protective measures, relocate the residents and demolish the structures, and six months to implement the ICs.

Implementability

Alternative 1 would be the easiest alternative to implement, as there are no activities to undertake.

Under Alternative 2, the maintenance of the existing protective measures would be easy to implement, because it is a continuation of the maintenance of existing protective measures that is currently being conducted. There would be administrative implementability challenges, as it would require coordination with Putnam County and the property owners to implement the ICs.

Equipment, services, and materials needed for the demolition of the houses under Alternative 3 are readily available, and the actions under this alternative would be administratively feasible. Implementability relative to Alternative 3 would rely on resident cooperation for property acquisition, permanent relocation, and maintenance of existing protective measures.

Cost

The present-worth cost associated with Alternative 2 is calculated using a discount rate of seven percent and a 10-year time interval. The present-worth cost associated with Alternative 3 is calculated using a discount rate of seven percent and a one-year time interval.

Alternative 3 includes the demolition of the residential structures following property acquisition and relocation of the residents. If the vacated structures are not demolished to remove potential exposure and safety hazards associated with the continued existence of unoccupied, unmaintained structures, security measures would need to be implemented. The security measures for these structures for an estimated 10 years would likely be more costly than demolishing the structures.

The estimated capital, O&M, and present-worth costs for each of the alternatives are presented below.

Alternative	Capital	Annual O&M	Total Present Worth
1	$0	$0	$0
2	$161,000	$330,000	$2,641,000
3	$5,603,000	$330,000	$5,828,000

State Acceptance

NYSDEC concurs with the proposed alternative.

Community Acceptance

Community acceptance of the preferred alternative will be addressed in the ROD following review of the public comments received on the Proposed Plan during the public comment period.

PREFERRED ALTERNATIVE

Based upon an evaluation of the various alternatives, EPA, in consultation with NYSDEC, recommends Alternative 3, property acquisition, in which the residents are compensated for the real property that is being offered to be acquired; relocation assistance, in which the residents are assisted in identifying and moving into replacement residences; and demolition of the vacated structures, as the preferred alternative to dissociate the residents from exposure to arsenic-contaminated areas. This alternative would also include ICs (*e.g.,* easements) to limit current and future use of the properties. Until the residents from each affected residence are permanently relocated, or until the completion of the OU2 effort (if there are residents that decline to be relocated), monitoring and maintenance of the existing protective measures would continue at each respective residence to ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed. Engineering controls (*i.e.,* fencing) would be utilized to prevent trespassing once structures are vacated.

Basis for the Remedy Preference

While Alternative 3 is more expensive than Alternative 2, EPA considered the balance between the cost difference and the uncertainty of when a decision regarding a final remedy (OU2) would be made and when it would be designed and implemented (estimated 10 years). In addition, it is the most protective because the data indicates that the properties may become re-contaminated because the source is not contained.

The preferred alternative is believed to provide the greatest protection of human health and the environment, provide the greatest long-term effectiveness, and is cost effective. Therefore, it has been determined that the preferred alternative will provide the best balance of tradeoffs among alternatives with respect to the evaluating criteria. EPA, with the concurrence of NYSDEC, believes that the preferred alternative will be protective of human health and the environment, comply with ARARs, be cost-effective, and utilize permanent solutions to the maximum extent practicable.

The environmental benefits of the preferred alternative may be enhanced by consideration of technologies and practices that are sustainable in accordance with EPA Region 2's Clean and Green Energy Policy and NYSDEC's Green Remediation Policy.[1] This will include consideration of green remediation technologies and practices.

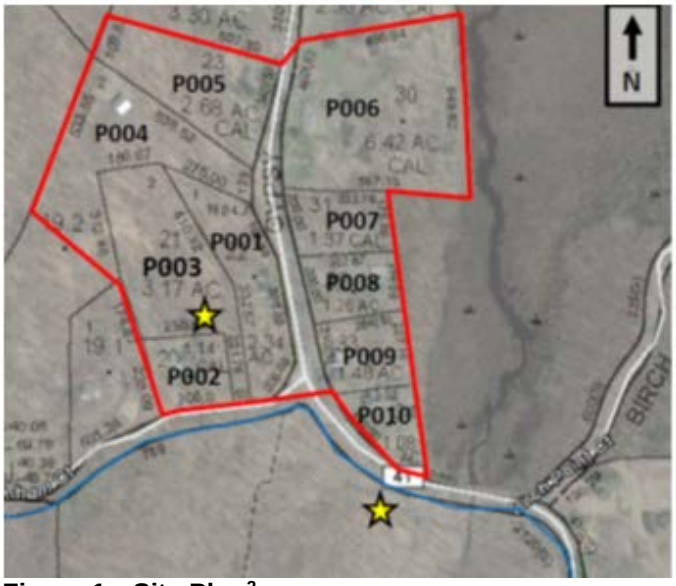


Figure 1—Site Plan[2]

[1] See http://epa.gov/region2/superfund/green_remediation and http://www.dec.ny.gov/docs/remediation_hudson_pdf/der31.pdf.

[2] The stars denote the locations of the mine entry shafts. The southern mine shaft is located in the Nimham Mountain Multi-Use Area, a state recreational area.

RESPONSIVENESS SUMMARY

APPENDIX V-b

PUBLIC NOTICE PUBLISHED IN THE *PUTNAM COUNTY PRESS* ON APRIL 8, 2020

THE ENVIRONMENTAL PROTECTION AGENCY INVITES PUBLIC COMMENT ON THE PROPOSED REMEDY FOR THE ARSENIC MINE SUPERFUND SITE PUTNAM COUNTY, NEW YORK

The U.S. Environmental Protection Agency (EPA) has issued a Proposed Plan identifying its preferred remedy to dissociate the residents from exposure to arsenic-contaminated soil at the Arsenic Mine Superfund site and has opened a **30-day comment period** on the Proposed Plan. The comment period **begins on April 8, 2020 and ends on May 8, 2020.** As part of the public comment period, EPA will hold a virtual public meeting on the Proposed Plan on **April 22, 2020 at 7:00 PM. To participate in the meeting, please visit our website for more information: https://www.epa.gov/superfund/arsenic-mine. To participate by telephone, please call into the conference line:** (315) 565-0493, code number 262234153#. Please register in advance of the meeting on our website or by emailing Pat Seppi, Community Involvement Coordinator, at seppi.pat@epa.gov or calling her at (646) 369-0068.
Anyone interested in receiving materials for the public meeting in hard copy should either email or call Ms. Seppi with such a request by Friday, April 17.

The preferred remedy consists of acquisition of certain affected properties, permanent relocation of the related affected residents, and demolition of the vacated structures. This alternative would also include institutional controls to limit current and future use of the properties. Until the residents from affected properties are permanently relocated, monitoring and maintenance of existing protective measures would continue to ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed.

The Proposed Plan and other site-related documents are available for public review at: https://www.epa.gov/superfund/arsenic-mine. Anyone interested in receiving a hard copy of the Proposed Plan should contact Ms. Seppi.

Verbal comments on the Proposed Plan may be provided during the virtual public meeting. Written comments on the Proposed Plan should be sent (e-mailed or postmarked) no later than May 8, 2020 to: granger.mark@epa.gov or Mark Granger, Remedial Project Manager, Central New York Remediation Section, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, New York 10007-1866.

Michael Bucci (left) and Nick D'Andrea will lead the Putnam County Business Council

Putnam Business Council Appoints New Leaders

By Lisa Kaslyn

The Putnam County Business Council (PCBC), the county's largest business advocacy group, announced today the appointment of three new board members who will help steer the organization and strengthen its leadership and support of local businesses.

The PCBC also unveils a new look and improved form and function with a redesigned logo and website to better serve the business community as an engaged up-to-date resource.

Michael Bucci is an associate vice president with Ameriprise Financial Services. He also served as CEO of the Mahopac-Carmel Chamber of Commerce from 2013 to 2016. Mike and his family have been a mainstay in the business community for decades and his father and brothers continue to operate Bucci's Deli in Mahopac.

Nick D'Andrea is the assistant general manager at Park Ford of Mahopac. "As a new board member of the Putnam County Business Council, I intend to grow our business member base and reinforce the importance of mutual support among our local businesses."

John Kraus is a senior vice president of Tompkins Mahopac Bank. John was, until recently, the senior commercial loan officer of Tompkins Mahopac Bank before being appointed program administrator of Commercial Lender Development for all four Tompkins affiliate banks, and executive director of the bank's Business Development Board.

"As a commercial banker active in Putnam County for the past 29 years, I have significant experience working with business owners across many industries. My purpose is to share and apply my knowledge and understanding of key issues critical to the local business community to promote economic development and business advocacy in Putnam County."

"In addition to bringing new talent to our board, we have been evolving the image and brand of the PCBC for some time now," said Jennifer Maher, chairwoman, PCBC. "Last year, we changed our name from Putnam County Chamber of Commerce to the Putnam County Business Council as a way to better define our role as a resource and advocate for county-based businesses. Now, we have completed our rebranding with a new logo and website that more aptly represents the spirit or our mission."

The new website may be accessed at putnamcountybusinesscouncil.com. Local businesses are encouraged to visit the site for updates on policy, legislation, advocacy, resources, and networking events. The site currently features a COVID-19 Business Prep article, including links to disaster relief options through the SBA. *—Lisa Kaslyn is President of Prosper Communications, Inc., specialists in PR, SEO, and Social Content Marketing.*

Mahopac Pair Accused of Burglary

New York State Police are accusing two Mahopac residents of burglary.

Tiara Frederick, 23, and Giovani Fernandez, 26, were arrested March 27 and charged with first-degree burglary and third-degree criminal mischief, both felonies.

According to NYSP, the two forcibly entered a residence on 13th Street in the Verplanck area of Cortlandt, where they knew the residents.

"A physical altercation ensued between the parties, which resulted in Tiara Frederick suffering a non-life-threatening stab wound," police said. "Frederick was transported to Westchester Medical Center medical treatment."

Frederick and Fernandez were issued appearance tickets and are scheduled to appear in Cortlandt Town Court on May 11.

Looking For Something to Do? Check Out Our Community Events on Page 8

State Police Are Recruiting

The New York State Police have launched a new recruiting effort to attract the best and brightest qualified candidates to join one of the most highly respected law enforcement organizations in the country.

New Trooper entrance examinations are scheduled Oct. 3, 10, 17 and 24 at several locations around the state.

Salaries start at $57,000 (during academy training and the first year) and rise to $81,000 after one year, and $96,000 after five years.

Online applications are now being accepted, and interested candidates have several options to start the application process. To apply, visit joinstatepolice.ny.gov, text JoinNYSP to 518-240-3959, or call 1-866-NYSP-EXAM.

Online applications must be submitted by Sept. 13. Results from the examination will establish an eligibility list that may remain in effect up to four years.

"The strength of our agency is built on the diversity of the men and women who have dedicated their lives to serving their communities and their state" said NYSP Superintendent Keith Corlett. "We are actively seeking qualified, committed and motivated candidates from all walks of life to take the Trooper exam this fall. Candidates will be competing for the chance to join the ranks of the New York State Police and have a rewarding career of public service."

Opportunities within NYSP include training and membership in specialized units, as well as opportunities for advancement through the ranks. Some of the specialized areas of expertise include positions such as crime scene evidence technicians, field training officers, canine handlers, firearms instructors and motor vehicle collision reconstructionist.

Troopers are also eligible for assignments to specialized details and units, including the Aviation Unit, the Dive Team, the Special Operations Response Team, the Community Narcotics Enforcement Team and the Commercial Vehicle Enforcement Unit.

Troopers may also pursue assignments as investigators in the Bureau of Criminal Investigation.

Additional information on becoming a New York State Trooper, including all requirements and benefits, can be found at joinstatepolice.ny.gov.

THE ENVIRONMENTAL PROTECTION AGENCY INVITES PUBLIC COMMENT ON THE PROPOSED REMEDY FOR THE ARSENIC MINE SUPERFUND SITE PUTNAM COUNTY, NEW YORK

The U.S. Environmental Protection Agency (EPA) has issued a Proposed Plan identifying its preferred remedy to dissociate the residents from exposure to arsenic-contaminated soil at the Arsenic Mine Superfund site and has opened a **30-day comment period** on the Proposed Plan. The comment period **begins on April 8, 2020 and ends on May 8, 2020.** As part of the public comment period, EPA will hold a virtual public meeting on the Proposed Plan on **April 22, 2020 at 7:00 PM. To participate in the meeting, please visit our website for more information: https://www.epa.gov/superfund/arsenic-mine. To participate by telephone, please call into the conference line:** (315) 565-0493, code number 262234153#. Please register in advance of the meeting on our website or by emailing Pat Seppi, Community Involvement Coordinator, at seppi.pat@epa.gov or calling her at (646) 369-0068.
Anyone interested in receiving materials for the public meeting in hard copy should either email or call Ms. Seppi with such a request by Friday, April 17.

The preferred remedy consists of acquisition of certain affected properties, permanent relocation of the related affected residents, and demolition of the vacated structures. This alternative would also include institutional controls to limit current and future use of the properties. Until the residents from affected properties are permanently relocated, monitoring and maintenance of existing protective measures would continue to ensure the effectiveness of these measures in eliminating exposure pathways in areas that these measures were installed.

The Proposed Plan and other site-related documents are available for public review at: https://www.epa.gov/superfund/arsenic-mine. Anyone interested in receiving a hard copy of the Proposed Plan should contact Ms. Seppi.

Verbal comments on the Proposed Plan may be provided during the virtual public meeting. Written comments on the Proposed Plan should be sent (e-mailed or postmarked) no later than May 8, 2020 to: granger.mark@epa.gov or Mark Granger, Remedial Project Manager, Central New York Remediation Section, U.S. Environmental Protection Agency, 290 Broadway, 19th Floor, New York, New York 10007-1866.

RESPONSIVENESS SUMMARY

APPENDIX V-c

APRIL 22, 2020 PUBLIC MEETING TRANSCRIPT

----------X

U.S. ENVIRONMENTAL PROTECTION AGENCY

ARSENIC MINE SUPERFUND SITE

PUBLIC MEETING

----------X

WEB/VIDEO CONFERENCE

Kent, New York

Wednesday, April 22, 2020

Reported by: Leonora L. Walker

JOB NO. 293146

Page 2

April 22, 2020
6:45 p.m.

Environmental Protection Agency Arsenic Mine Superfund Site Public Meeting, held via web/video conference, Kent, New York, before Leonora L. Walker, a Notary Public of the State of New York.

Page 3

A P P E A R A N C E S:
Pat Seppi - EPA Community Involvement Coordinator
Joel Singerman - Chief of New York Remediation Section
Mark Granger - EPA Remedial Project Manager
Sandy Richards - EPA On-Scene Coordinator
Abbey States - EPA Risk Assessor
Andrea Leshak - EPA Site Attorney
Shereen Kandil - EPA Community Affairs

ALSO PRESENT:
General Public

Page 4

MS. SEPPI: So as you are probably aware, EPA has recently released a proposed plan for the Arsenic Mine Superfund Site that's located in Kent, New York. So we hope many of you had a chance to read the proposed plan before tonight's meeting.

Next slide.

This is our overall agenda. We'll refer back to this again as we get through the process. Next slide.

So it looks like I'm up for the instruction.

So good evening, and thank you so much for joining our first ever public -- virtual public meeting. This is unchartered territory for us, and we will certainly do our best to make it work, and your patience will be greatly appreciated.

So I'd like to introduce the other EPA presenters who you'll be hearing from tonight.

Firstly, my name is Pat Seppi, and I'm the EPA community involvement coordinator for Arsenic Mine site. We also have Joel Singerman, who's the chief of the New York

Page 5

Remediation Section, and also Mark Granger, who is the EPA remedial project manager.

So the reason we're here tonight is to present EPA's preferred alternative for cleaning up the site. I want to let you know that this is not the final decision. That's why your comments are so important to us. The final decision will be in a document that's called a record of decision, and included in that document there will be a responsive summary which will contain all the comments we receive, as well as our responses.

So our public meetings, virtual or not, are a little more formal than most EPA meetings.

To that end, we have a reporter, Leonora Walker, somewhere out there, who will provide us with a transcript of tonight's proceedings. We'll share that transcript with you. I just wanted to mention now, and we'll repeat this again before we open it up to comments, that she will need your name, she will need you to spell your name, and also give us your

Page 6

affiliation before you give us your comment. And as for comments, May 8th ends the comment period. You can submit comments until then by e-mail or mail to the project manager, Mark Granger. His contact information, if you don't already have it, will be on the last slide of this presentation.

Now, I will strongly suggest that you e-mail additional comments to Mark. Because of Covid-19, our offices are closed, so regular mail could slow down the process of receiving your comments.

So for now, your phones will be muted until the end of the presentation. Once the comment section begins, we'll provide details about how to proceed online or by phone, and how to unmute your line. So let's move to the next slide.

Now, these are our EPA colleagues, who are in attendance tonight. Sandy Richards, who is the EPA on-scene coordinator; Abbey States, who's the EPA risk assessor; Andrea Leshak, our EPA site attorney, and Shareen Kandil from our community relations office.

Page 7

Next.

We also have representatives from our partner agencies, who we work very closely with. That would be the New York State Department of Environmental Conservation, the New York State Department of Health, and the Agency for Toxic Substances and Disease Registry. Next.

So here we are, back to the agenda, and if you see the red that means that I'd like to introduce Joel Singerman, who is going to give you some information about the Superfund process. Joel.

MR. SINGERMAN: Okay. Good evening, everyone. Several well publicized toxic waste disposal disasters in the late 1970s, shocked the nation and highlighted the fact that past waste disposal practices were not safe. In 1980, Congress responded with the creation of the Comprehensive Environmental Response, Compensation and Liability Act, more commonly lumped as Superfund.

The Superfund law provided a federal fund to be used in cleanup of uncontrolled and abandoned hazardous waste sites, and for

Page 8

responding to emergencies involving hazardous substances.

In addition, EPA was empowered to compel those parties that were responsible for these sites to pay for or to conduct the necessary response actions. The work to remediate a site is usually very complex and take places in a number of stages. Once a site is discovered, an inspection further identifies a hazard and contaminates. A determination is then made whether to include the site on Superfund national priorities list, a list of the nation's worse hazardous waste sites.

Sites are placed on the national priorities list primarily on the basis of the scores obtained from the hazard ranking system, which evaluates the threat posed by a site. Only sites on the national priorities list are eligible for remedial work financed by Superfund.

The selection of a remedy for a Superfund site is based on two studies: A remedial investigation and a feasibility study. The purpose of the remedial

Page 9

investigation is to determine the nature and extent of the contamination at and emanating from the site, and the associated threat to public health and the environment.

The purpose of the feasibility study is to identify and evaluate ways to clean up the site. Public participation is a key feature of the Superfund process. The public is invited to participate in decisions that we've made for the site to the community relations program.

Public meetings, usually in person, are held as necessary to keep the public informed about what has happened and what is planned for a site. The public is also given the opportunity to ask questions about the results of the investigations and studies conducted at the site, and then comment on the proposed remedy. After considering public comments on the proposed remedy a record of decision is decided. A record of decision documents why a particular remedy was chosen.

The site then enters the design phase, with a plan associated with the

Page 10

implementation of selected remedy are developed. The remedial action is the actual hands-on work associated with cleaning up the site.

Following the completion of the remedial action, the site is monitored, if necessary. Once the site no longer poses a threat to public health or the environment, it can be deleted from the Superfund national priorities list.

Removal actions may be undertaken at any time to address an immediate threat to public health, welfare, or the environment.

MS. SEPPI: Thank you, Joel. Now, according to our agenda, I'd like to introduce Mark Granger, who will give you some background history and other issues related to this site.

Mark.

MR. GRANGER: Thank you, Pat. Before we get started, I'd like to wish everyone a happy Earth Day. Not only is it Earth Day, it's the 50th anniversary of the first Earth Day in 1970. It was 50 years ago that the mission of protecting public health and the

Page 11

environment was established, a mission that we continue to be guided by to this day.

I also want to say that everything I cover tonight is presented in more detail in EPA's proposed plan.

So Joel just went over the general path of Superfund sites for cleanup. Tonight I will cover specifically how the Arsenic Mine Site proceeds along this path.

So we'll cover site location, history, overview of arsenic characterization in surface soils, cleanup alternatives, and evaluation criteria, and preferable alternatives. So let's get started.

First, I'd like to talk briefly about operable units. Sometimes, not always, EPA will break out aspects of a project into separate pieces called operable units. For example, at a five-acre landfill site I work on, right in the middle, ten feet below ground were 5,000 drums of hazardous substances, all in the same place. The removal of those drums was covered under what we call operable unit one. The subsequent landfill cover, we covered under

Page 12

what we call OU-2. In this case, OU-1 of the Arsenic Mine Site focuses on dissociation of residents from exposure to arsenic and surface soil in the near term. Operable unit two will evaluate all media, subsurface soil, more surface soil, ground water, drinking water, sediments, and ecological considerations from a remedial standpoint in the longer term.

So the site location, the site is located in Putnam County in a mountainous area. The actual mine still exists, and this is what it looks like today. There's -- the site itself, the Arsenic Mine Superfund Site is about 20 acres, includes seven residential and three undeveloped parcels, and it's basically densely wooded with steep slopes.

There is a lot of history of mining in Putnam County, and the Arsenic Mine is part of that history. There was intermittent mining conducted from the mid 1800s through 1918. Various mining companies were extracting the mineral arsenopyrite for further processing and use in a variety of

Page 13

products.

Operations were more or less standard mining procedures, whereby ore was separated from waste rock and soil known as tailings, and the arsenic bearing waste rock and soils were discarded in areas around the mine.

The homes in the project area were constructed from the '50s through the '80s. In 1987, residents living in a house adjacent to the mine were diagnosed with acute arsenic poisoning from their drinking water. Their well had been exalt from tailings from former mining operations. In response, and while they were recovering, in 1988 and '89, EPA installed a cistern at that residence for drinking water deliveries.

While repairing a cistern in 2016, EPA determined that sediments with high concentrations of arsenic were entering it. As we pursued why this would be, this resulted in a broader site investigation in 2017 and 2018. EPA collected numerous soil samples from the undeveloped and residential properties around and down slope from the

Page 14

mine.

Based on the data collected from the ten properties, a health consultation was released by the New York State Department of Health in April 2019, concluded that long-term exposure of children and adults to arsenic in surface soil poses a significant threat to human health.

Also, in April 2019, EPA issued a determination of significant threat memorandum, finding that all residential properties at the site contained exposure point concentrations at or above the threshold for unacceptable risks.

At the same time, the Agency for Toxic Substances and Disease Registry issued a public health advisory recommending that EPA take immediate short and long-term measures to dissociate persons, especially children, from exposure to arsenic in shallow soil at the site.

Based upon the results of EPA's human health risk assessment, and supported by the above-mentioned 2019 reports from DOH and ATSDR, EPA has determined that arsenic

Page 15

concentration in surface soil presents a current and potential future threat to human health. With this, the EPA's removal program proactively initiated the installation of protective measures in 2019 in order to reduce exposure to contaminated soil in high-use areas at the seven residences. These measures were developed in consultation with the residents to ensure that the measures were aligned with property use.

The outdoor protective measures included paving or repairing driveways, creating stone or wood chip walkways, and covering high-use areas with stone or wood chips and excavating soil and dog pens and back filling with wood chips.

The indoor protective measures included providing high-efficiency vacuums containing filters capable of capturing extremely small particles and providing residents with doormats and boot brushes also to reduce indoor dust.

The Arsenic Mine became a Superfund site. That is, it was placed on the

Page 16

national priorities list in November of 2019. With the data collected and evaluated from a public health standpoint, EPA initiated a focus feasibility study to identify and evaluate alternatives to dissociate residents from exposure to arsenic-contaminated soils.

Now, I'd like to move on to an overview of arsenic characterization in surface soils.

As noted earlier, in 2017 and 2018, EPA collected soil samples from undeveloped and residential properties around and down slope from the mine. Surface soils throughout the properties are contaminated with elevated levels of arsenic. Arsenic contamination in surface soil has been detected up to 56,000 parts per million. For context, values above 16 parts per million would warrant further consideration.

This is an illustration of the sampling location from 2017-2018 surface soil sampling efforts. Over 800 samples were collected from more than 500 locations.

The data showed that there are elevated

Page 17

concentrations of arsenic in surface soils throughout seven residential and three undeveloped properties.

So on this figure, the beige color surrounding the mine generally shows the source area. Note the steep slopes and surface water floor relative to the source area.

So now let's look at the cleanup alternatives. EPA considered three alternatives. Alternative one is no action; alternative two is monitoring and maintenance of existing protective measures with institutional controls, and alternative three, the offer of property acquisition with permanent relocation and demolition. With respect to alternative one, the no action alternative is considered in all of EPA's proposed plans as a benchmark of comparison. The no action alternative is exactly that. It assumes that no action whatsoever would be taken.

Interestingly, though, there are times that the no action alternative is selected, although this is rare less than one percent

Page 18

of the time.

So with respect to alternative two, alternative two involves monitoring and maintenance of existing protective measures with institutional controls. With this alternative, the protective measures that were put in place by EPA's removal program would be monitored and maintained. The assumption was made for cost purposes that maintenance and monitoring activities would be scheduled every six months.

Also included are institutional controls. Institutional controls are things like easements or deed restrictions, and are intended mostly to ensure that the protective measures remain in place and intrusive activities are minimized.

I want to pause here and revisit the operable unit content briefly. As noted earlier, and consistent with ATSDR's recommendation of a plan for both short-term and long-term efforts, OU-1 for Arsenic Mine focuses on dissociation of residents from exposure to arsenic in surface soil in the near term.

Page 19

Operable unit two evaluates all, or will evaluate all media, subsurface soil, sediments, et cetera, and ecological considerations from a remedial standpoint in the longer term. It is anticipated that the OU-2 cleanup, which will have remedial investigation as Joel had said, a feasibility study, risk assessment. There will be another proposed plan, another public meeting, another record of decision, and then we'll move on to the solid path forward for cleanup, and we're expecting that to be completed in seven to 10 years.

So for alternative two, monitoring and maintenance is not intended as a permanent remedy, but a remedy to be put in place until the final OU-2 remedy is completed.

So with respect to alternative three then, offers of property acquisition, permanent relocation, and demolition residents would be offered the opportunity for a buyout in which the federal government would purchase a property and provide relocation assistance in finding a new home and moving residents there. Once vacated,

Page 20

the homes would be demolished. The property would subsequently be evaluated and cleaned up as far as operable unit two.

With respect to relative costs, alternative one, and keeping with no action is zero dollars. The total estimated costs for alternative two is $2.6 million, and the total estimated costs for alternative three is $5.8 million.

So taking all this into consideration, let's move to EPA's evaluation criteria and preferred alternative.

EPA has nine criteria which are used to evaluate and compare the alternatives to one another. The nine criteria fall into three categories: Threshold criteria, balancing criteria, and modifying criteria. The nine criteria are overall protection in human health and the environment, compliance with environmental regulations, long-term effectiveness and permanence, reduction of toxicity, mobility or volume through treatment, short-term effectiveness, implementability, costs, and then final criteria, state acceptance, and community

Page 21

acceptance.

Based on an evaluation of the various alternatives, and in the context of the nine criteria, EPA, in consultation with the New York State Department of Environmental Conservation, recommends alternative three: Offers of property acquisition, permanent relocation, and demolition.

In alternative three, residents accepting the offer are compensated through the value of the property that is being acquired. Relocation assistance is provided in which the residents are assisted in identifying and moving into replacement residences, and vacated structures are demolished.

Until residents who accept the offer are permanently relocated, or until the OU-2 remedy is completed, monitoring and maintenance of the existing protective measures will be performed to ensure that they remain effective in eliminating exposure pathways.

EPA has identified alternative three as its preferred alternative because it would

Page 22

dissociate residents from exposure to arsenic-contaminated areas while providing the best balance of tradeoffs among the alternatives with respect to the evaluating criteria.

Alternative three protects human health and the environment, provides the best balance of EPA's criteria, is readily implementable, and cost effective.

This ends my presentation on EPA's preferred alternative. At this time I'll turn the meeting back over to Pat. Thank you, Pat.

MS. SEPPI: Thanks very much, Mark, for that.

Can we go to the next slide? Thank you.

All right. So at this point we're getting very close where we're opening up your phones for comments, but I wanted to turn this portion to Shareen Kandil, who will give you some information about, you know, requesting a message either online or on the phone, and how to unmute your phone.

Shareen.

Page 23

MS. KANDIL: Hi, everyone. Mark, can you go to the next slide, please?

Thank you.

Actually, can we just go to the graphic slide? I think that would be helpful.

Hi, everyone, again. Thanks for joining us this evening. As Pat mentioned this is the questions and comments portion. You may submit questions two ways. So the first is online via the chat, the Skype chat. If you look at the graphic on your screen, there is a green dialogue box that says ask questions, and it's pointing to an icon that has a little bubble. That is where you click and a little chat box will open up, and you can just type in your question there. However, we do ask that when you ask a question, you type your first and last name, your affiliation, and your question or comment. So for instance, I would type "Shareen Kandil, EPA region two. Where is Arsenic Mine located."

So that is the first way that you can ask a question or make a comment.

The other way to participate is by

Page 24

phone. After we read the questions from the chat box, we will turn the phone lines on, and Pat will facilitate the questions categorically and by alphabetical order. Please wait to hear your category: Elected officials, residents, businesses, general public, and then the first letter of your last name, or the first letter of your business name.

For example, Pat will ask "Do any residents with the last names beginning with A through D have any questions?" To unmute your phone lines, press star six. If you're on Skype and would like to ask a question verbally and not through the chat box, you can unmute your Skype line by pressing the microphone icon. So on the graphic, if you're looking, there's a red dialogue box that says mute/unmute your PC mic. There are four little icons. One has a camera, one has a microphone. You would click the microphone to unmute your line. And then the same thing, we would ask that when you're asking questions either by the Skype line or the phone line that you state your

Page 25

name, you spell your name, and this is for our stenographer, court reporter. You say and spell your name, your affiliation, and then state your question or comments, and that is all. I think we can begin with the questions.

Can we go to the next slide.

MS. SEPPI: Yeah, we can go to the next slide.

MS. KANDIL: I read all of that pretty much. I just wanted the graphic up front so that folks can see.

MS. SEPPI: All right. So let's move on. We're back to the graphic. Keep going, one more slide.

Okay. So this is just some more information, some of which I said before. In order to avoid confusion, we tried to come up with a way to respond to questions. So as Shareen mentioned, we're going to be calling out categories. We'll start first with those on the chat line, elected officials, residents, businesses, and then unmute your phone when you're called upon, and then -- again, this is important. Make

Page 26

sure you first state and spell your name and identify your affiliation. We want to make sure that everything is on the record.

Next slide.

A couple comments. Also, as I mentioned early on in the presentation, if you feel you had a missed opportunity to convey a question, a lot of times people will leave a meeting, and then they'll go, oh, you know I should have asked this. So that's certainly possible up until the close of business on May 8th. But as I did mention, send those comments in to Mark. We would certainly prefer e-mail because it would be a lot easier to manage.

Next slide.

Now, this is our website. You'll see the link there. Probably most of you have it if you looked at the proposed plan, but this will have all the documents, you know, related to the site. Eventually it will be up there, including this presentation. So that's a good source of information.

Next slide.

All right. So now I think it's time to

Page 27

open the lines. Shareen, do you want to take a look at the questions that came in the chat room and --

MS. KANDIL: Sure. Absolutely. Thank you.

So for the chat questions, just to clarify, I will not be spelling the names because the names are already spelled there. It's only the phone lines that we need you to spell your names.

So the first question comes in from Eric Luther and Mike Albergo -- I'm sorry if I'm pronouncing their names incorrectly -- from Gypsy Trail Road, homeowners. First of all -- I'm just going to read it as I see the questions or comments.

"First of all, thank you for all the work the EPA has done so far, especially Sandy, Mark and Pat. Questions: When do you expect everyone to be relocated?"

MS. SEPPI: Do you want me to take that, Mark?

MR. GRANGER: You know what, Pat, that would be great. Sure.

MS. SEPPI: You want me to take it? I

Page 28

thought you wanted to take it.

No, that's a very good question. As I said earlier, this is the preferred remedy. It's not the final remedy. If the final remedy does turn out to be the permanent relocation, then we will be reaching out to all the residents so that we can sit down and get their specific details and information so we can provide them everything that they will need to make the determination about permanent relocation. We don't want to go into those details, obviously, over he phone because we would prefer to deal, and we will deal, with individuals separately and in private. But, you know, we're hoping that if we can get the record of decision out within the next couple of months, then after that we should be able to start meeting with you individually to talk about the aspects of permanent relocation.

MR. GRANGER: Yeah, I think part of it was when was everybody going to be moving and I thought --

MS. SEPPI: Yes.

Page 29

MR. GRANGER: I'll say we're looking to -- from the start of the process, which would be when the ROD is signed, probably a year, maybe a year and a half, we would expect those participating in the offer for a buyout to actually be moved at that point. It could be a little sooner, but I think the time frame of a year to a year and a half is pretty close to accurate.

MS. SEPPI: We will certainly try to move that timeline up as much as possible.

MS. KANDIL: So that goes into the next -- sort of into the next question, and it's the same -- coming from the same folks: "What kind of things would slow down or speed up the process just in case those come into play we already know? And what can we do as residents to speed the process along?"

MR. GRANGER: You know what, I think it's a pretty well-warn path. Even from a Superfund perspective, it's kind of rare, but federal acquisition and relocation has a pretty well-warn path. So there are unexpected things that could get complicated, but if I was going to suggest

Page 30

anything in terms of, like, ease in moving forward and keeping things quick, I would guess just everybody work together, and it will go smoothly.

MS. KANDIL: Same folks: "Are the town, county, and state fully on board with the plan?"

MR. GRANGER: We seek state concurrence on all of our Superfund decisions, and my understanding is that everybody is on board. Everybody was communicated with and everybody's thought is built into the equation, so I guess I would be surprised if various levels of government were not on board at this point.

MS. KANDIL: Great. So the next question comes in from Cloide LaPorte, local resident. The first question is: "What happens if property owners don't accept the offers?"

MR. GRANGER: So property owners are -- we built a lot of flexibility in this proposed plan, and that was from Sandy and myself, and Pat, and other team members working together in building of the thoughts

Page 31

from homeowners into the process. So there is the opportunity for someone to decline an offer for buyout, in which case the monitoring and maintenance of the protective measures would remain in place. That's kind of a back stop for us, is to maintain those protective measures and to move the project forward through OU-2.

So OU-2 is projected to be completed in seven to 10 years, and if someone chose to stay they would be choosing to stay for the permanent cleanup at that point.

MS. KANDIL: Okay. Second question also from Cloide: "What sort of remediation is there for arsenic other than removal?"

MR. GRANGER: You know, that's going to be something that's covered under operable unit two. There's a -- you know, I think when you're talking about dirt, you're looking at excavation or some kind of cover, but I am under the -- it is my understanding that there are some remedies that are available for fixing arsenic and soil as well. But all that stuff -- that's not part of the early actions that we're doing with

Page 32

buyouts right now. That will be considered as part of operable unit two.

MS. KANDIL: Okay. I believe, final question from Cloide: "What else can you say about OU-2?"

MR. GRANGER: You know, I want to say that the main thing about OU-2 is what was covered in Joel's talk about the Superfund process that we've already started putting operable unit two on the track and moving it down the path. So it will go through the RFS, where all the media will be sampled, all that data will be collected and evaluated and put through the feasibility study process; similar to what we're doing now, only it will be more thorough. This is kind of a simpler process for operable unit one because it involves one contaminate in one media. Media being surface soil in this case.

Operable unit two will be that same contaminate, but -- and anything else that emerges, which I think is unlikely, but that's speculative. But it will be across a lot of other media, all the other media. So

Page 33

you really can't throw in what you think about OU-2 until you have the benefit of having collected your data.

MR. SINGERMAN: Also -- this is Joel Singerman. I want to add something to that. If you recall that Mark indicated it would take seven to 10 years to remediate under OU-2. Part of that, we expect it will probably take several years to do the investigations of the site. Taking the samples, analyzing, doing a feasibility study, and, you know, as I mentioned, then the design follows, and then it may take several years to do remediation. So that time frame is built into -- that works into that time frame.

MS. KANDIL: All right. So I'll move on to the next question. This comes in from Bill Volckmann, chair of the Town of Kent Conservation Advisory Committee and president of the Kent Conservation Foundation. Bill has two questions. One is, "I want to request that the site which the EPA is proposing to take over from private property holders does not get fenced

Page 34

in, as many times it happens with Superfund sites in other locations. A fence will be obtrusive. It's unnecessary in this location. Proper signage should be more than sufficient to keep unknowing people away from the locations of the tailings and mines.

The second is, "What does this mean by "cleanup," especially in seven to 10 years? This was cleaned up once before. The arsenic is not going anywhere. It is inherent in substrata as a vein and will always be there. What does "cleanup" mean?"

MR. GRANGER: Okay. So, you know, I think that goes back to the answer for the last question, whereby it's speculative to try to figure out what cleanup means without having all the data that one would expect from a remedial investigation and then evaluating that data. So certainly there's a lot of work that needs to be done to get to that point. And I guess I'm happy to engage further discussion on that. At any time, feel free to call me. My direct line is (646) 369-0048, and we can -- the

Page 35

discussion will necessarily be a bit speculative, but I'm interested in your thoughts.

MS. SEPPI: Mark, why don't you also answer Bill's first question about putting a fence around the site.

MR. GRANGER: So you know what? That's good. Thanks, Pat. We don't expect to fence off the site. Although, we do expect for homeowners that are participating in the buyout offer to fence off individual homes until they're demolished, and that's for safety and vandalism and vagrancy, et cetera. So yeah. And then once the house was dropped, we would restore the property with a liner most likely, and then dirt and seed, and then at that point the fence would be removed.

Oh, also there probably could be fences when we get into the actual remedy. So after the next ROD, the operable unit two ROD, whatever work is going to be done, it would probably be temporary fencing. I don't expect there would be permanent fencing, unless the data indicated that

Page 36

that's something that was necessary.

MS. KANDIL: Great. So I'm going to go to the next question. This one comes in from Sylvia Good. "If a home on Gypsy Trail Road was not tested, but it is not next to the area, can it now be tested?"

MR. GRANGER: I'm sorry. Can you repeat the question, Shareen?

MS. KANDIL: Sure. "If a home on Gypsy Trail Road was not tested, but it is not next to the area, can it now be tested?"

MR. GRANGER: We would expect further testing beyond the current boundaries of the site to be addressed as part of operable unit two. So I guess the answer to that would be yes. Over the next few years, we'll be mobilizing for -- sampling all media. And the answer would be at that time we would give that consideration. I'm not exactly sure where the property in question is with respect to the current Superfund site.

MS. KANDIL: Okay. So this next question I don't have a name or affiliation. It just says "Tee," but the question is

Page 37

"Will EPA compensate homeowners for installing fences before demolishing homes?"

MR. GRANGER: I wasn't really thinking that the homeowners would incur any costs relative to fencing. So I guess the answer is that -- yeah, I guess that's the answer. I'm not really thinking that homeowners would be installing fences.

MS. SEPPI: No. There would be no need to compensate them because you would not be paying for the fences.

MR. GRANGER: We'd be providing fences.

MS. SEPPI: Right.

MS. KANDIL: Okay. So those are all the questions that came up on the chat.

MS. SEPPI: Okay.

MS. KANDIL: Whelp, we've got another one. Sorry.

MS. SEPPI: No, go ahead. That's fine.

MS. KANDIL: This is again from Eric Luther and Mike Albergo. "We completely support the EPA's preferred alternative number three, and look forward to getting a move on moving."

That's it. That's the comment.

Page 38

MS. SEPPI: That's the kind of comments we expect and like to have as part of the record.

All right. So now we want to go to the phone lines. So as I said, that Shareen and I both said earlier, you know, in order to avoid confusion, what we're going to do is try to have some kind of order because this could get really tricky. And so what I'd like to do is go around and see if there are any local officials out there who have a statement or a comment.

So if there are any local officials, you know, whose last names begin with, say, A to D, could you, please, unmute your mic.

All right. I don't want to give that too much time, unless somebody is having a problem unmuting, but I hope not.

Any local elected officials from E to J or K to R?

I guess not.

And how about any elected officials whose last names begin with S through Z?

No?

Well, I haven't heard anybody yet. I

Page 39

hope we're not having any kind of a problem.

All right. So let's go on next to any of the residents who have might have a question. Again, let's do the same type of thing alphabetical, last name. Let's say A to D. Any residents?

Okay. How about residents with -- I want to give people enough time, so I'm trying to give them time to do that.

Any residents who haven't sent a messages from E, last names beginning with E to J?

Okay. How about any residents whose last names begin with K to R?

Okay. Wow. No residents.

And how about any residents whose last names begin with S through Z?

I heard something.

CALLER: Hi, this is Maureen Flemming, Town supervisor.

MS. SEPPI: Hi, Maureen, yes. How are you?

MS. FLEMING: Good. Our mic was just unmuted. I wanted to say I think you did a really excellent presentation tonight. I

Page 40

had a couple of questions that were asked by some of the other -- some of the residents actually in the comment period, so I don't have any outstanding questions, but I do appreciate you guys always being available. Not only to me, but to the residents, so thank you for this. It was excellence.

MS. SEPPI: Thank you for that comment, Maureen. And, you know, we look forward to working with you in the future also. You've also been very cooperative with us, and we certainly appreciate that.

MR. GRANGER: Thank you, Maureen.

MS. SEPPI: All right. Any other residents, or general public, or anybody from any businesses that have a question on the phone?

I'm going to go through the alphabet again, but, you know... Let's say anybody whose last name ends with A through J.

No?

How about K through Z? I didn't think we'd get that many calls from phone people because I figured mostly everybody would be on Skype, and they'd be able to see it.

Page 41

So Shareen, do you have any more chat room questions?

MS. KANDIL: I do. Thank you for turning back to the chat. So we've got Bill Volckmann again. "What is the timeline for demolishing homes as they are abandoned?"

That's the first question.

MR. GRANGER: Bill, we're going to have to figure that out. I'm not expecting all of the homeowners who are participating to be on the same track. There's individual complications or individual simplicities as we move forward. Each case is unique, so we're going to have to figure that out. It could be that we'll, like, if we got something from January through July, and we had three homes, we'd get a contractor for those three homes. And then, if it was August through December, we got two more, et cetera, maybe we'd do that. But this is a first for a lot of us. I'm confident that we'll get a clear path forward on that. I don't, at this point, have a specific answer for that.

MS. KANDIL: Bill has a second

Page 42

question, and that is "How long would they be abandoned here in town before they go away?"

MR. GRANGER: I would not expect that they would be languishing for a long period of time. Like I said, and I'm speculating again, a home becomes vacant, and EPA getting a contractor for economy scale, I tell you what, I would never see us waiting for the homeowners to move for a year and a half and letting all the properties sit until then. I think we would -- we would likely be more proactive than that. I would not think more than six months for any individual home. There is an aspect of kind of figuring it out.

MS. SEPPI: And also in the past, when we had permanent relocations and wanted to demolished homes, we want to do that as quickly as possibly just because we don't want the off chance of somebody moving into that home, you know. So that's why we try to get the demolition done as quickly as possible once the homeowner has permanently relocated and it's vacant.

Page 43

MR. GRANGER: As Pat -- I'm sort of learning from Pat as we're going along. I understand that there's a larger problem with vacant homes that are going to be demolished that could actually be empty for long periods of time. Demolished homes are not going to sit around for long periods of time as a house that was vacated and then subject to a cleanup, and then was going to be resold or reoccupied. So I think we're looking in good shape in that regard.

MS. KANDIL: We have another question from Christine Thomas, a resident. "How does one get a list of the ten properties?"

MR. GRANGER: So that's personally identifiable information. So, yeah, you would have to go through other avenues other than the EPA for that.

MS. KANDIL: Okay. There's another question from Sylvia Good. "If your property was not tested, but it's next to the area, can we hire an environmental engineering company, and is that private pay or county pay since you stated you will test other properties, but it will take years?"

Page 44

MR. GRANGER: I'm not sure I understand the whole question, so we might have to repeat it, but at least for the second part, I mean, years is not necessarily open-ended. We're already starting on the process of getting contractors in place. So over the next couple of years we would be -- and I'm not exactly sure where Sylvia's property is, but would expect that sampling goes beyond the current boundaries of the site over the next two or three years. So years, not open-ended. Years, two or three, yes.

In terms of county pay or personal pay, I'm not really -- I'm not understanding what that means.

MR. SINGERMAN: If it means you're proposing to have someone else do work and try to get compensated by EPA, I mean, we would not be able to do that. We will sample it, but we can't compensate you if someone else does the sampling for you, if that's what the intent was.

MS. SEPPI: Sylvia, this Pat. In the meantime, you are certainly free to go out and hire your own environmental contractor

Page 45

if you wanted to have your soil tested, if you didn't want to wait the two or three years. But as Joel and Mark, you know, both mentioned, we would not be able to compensate them for any work they do.

MR. GRANGER: Sylvia, if you can hear me, I'm happy to talk to any contractor that you want in order to get clarification going forward. And I would also say feel free to call me to discuss this further. My direct line is (646) 369-0048.

MS. KANDIL: Okay. We have a few more questions, if you don't mind me moving on?

MS. SEPPI: No, go ahead.

MS. KANDIL: Thank you. This comes in from Eric Luther and Mike Albergo. "Is there any additional compensation for residents who will be essentially stuck on the Superfund site for at least a year?"

MR. GRANGER: Pat, I'm going to toss that your way, Pat.

MS. SEPPI: Not really. I mean, you know, once you agree to be permanently relocated, you know, we would sit down and we would come up with a plan for your

Page 46

relocation assistance and your fair market value, but until the time comes when we actually move you and help you move and help you with your assistance, I'm not aware of any additional compensation that we pay you in the meantime. Actually, if you have mortgage, or if you pay rent, or anything like that, you'd have to keep on doing that until we move you out of your property and into a new one.

MS. KANDIL: Okay. We have another few questions from Tee. "What are your policies of employing union versus non-union labor for demolishing homes doing work?

MR. GRANGER: So I want to say it's not my strong point, so I would need to get more clarification on that, but we do tend to follow standard labor practices for all of the work that we do. We ensure that the contractors we're hiring are adhering to all labor laws. If there was further discussion beyond that, then I would need to look for other resources to get an answer. I welcome the requester getting in touch with me to discuss further.

Page 47

MS. KANDIL: And there's a follow-up question to that, Mark, and it's, "Can EPA select local contractors from the community?"

MR. GRANGER: That's another -- I want to say, and I'm not an expert though -- so I'm saying that right out -- that we look for opportunities to hire locally. Actually, there's a program through Superfund that I want to say works to put local contractors in place. But, again, I need to look into that further to give a definitive answer. And, please, reach out to me and I'll pursue that.

MS. SEPPI: But I can tell you as a general rule, we do try to do that at all sites, you know, hire as many locals as we can. That's very important to us. And even if we have a subcontractor who's working for us, we encourage them to hire locally also.

MS. KANDIL: Okay. Shall I move on?

MS. SEPPI: Yes, go ahead.

MS. KANDIL: All right. So Sylvia, thank you. Eric and Mike say, "Thanks for the answer, Pat. Looking forward to

Page 48

learning more about the appraisal process."

Tee says, "Let's say the agreement between EPA and residents goes smoothly, how long will it take for them to get funds after the agreement is made?"

MR. GRANGER: So I don't -- Well, Pat, I guess I'll leave that to you. I don't think a homeowner gets funds. They get a house paid for; is that right, Pat?

MS. SEPPI: They do. It's not actually a check that's given to a displaced resident. It's relocation assistance in the form, you know, of working with them to find a new property; working with them to pay their moving expenses. So, you know, we work with them along the road to do all of that. So as I said, it's not just a check that they will get.

MS. KANDIL: So far that's it in the chat.

MR. GRANGER: Okay. I'm going to just -- not that we're necessarily done, but I just want to say any person who asked a question that needs more follow-up, please, do reach out to me. And if I can't answer

Page 49

the question, I'll direct you to someone who can, and I guess that's it.

MS. KANDIL: Okay. We do have a follow-up question. I'm sorry.

MR. GRANGER: That's fine.

MS. SEPPI: That's fine.

MS. KANDIL: So Tee also sends in another question. "So EPA pays for relocation of the amount for the market rate value of the house?"

MS. SEPPI: No, there's much more involved in that. But, again, we don't -- can't go into the specifics here on this tonight until we sit down with each individual resident, but it's not just fair market value. It's not just moving expenses. There's other situations involved that we have to figure out and, you know, work with our homeowners on. So it's not just that. Because we understand that just because it's fair market value doesn't necessarily always mean that you can go out and find something that's comparable to what you have for the same amount. So there's other pots of money and relocation

Page 50

assistance that we will work with also.
MR. GRANGER: Yeah, just as a small point of clarification. It wouldn't be less than fair market value.
MS. SEPPI: Oh, no.
MR. GRANGER: It might be slightly more, but it wouldn't be less.
MS. SEPPI: Right.
All right. Anybody else out there? Any more questions, Shareen?
MS. KANDIL: Yeah, we do have another question from the chat.
MS. SEPPI: Okay.
MS. KANDIL: It's from Clayton Livingston. "As a realtor in Putnam County for the last 30 years, I have heard from home inspectors and water labs of the problems of arsenic in the well water in this area. How far out from the site is well water being tested?"
MR. GRANGER: So well water has been tested on the site. So four of the seven residences are in the site boundary, but it's not part of this action necessarily. This action is solely based on the offer of

Page 51

buyouts to the seven homeowners and relocation expenses. So for -- from EPA's standpoint, there hasn't been drinking sampling outside of these residences, yeah. I guess that's the answer to that question.
MS. KANDIL: So Tee has another question. We really do need for the record for you to identify your name, if you can do that, but I will ask the question that Tee just submitted.
"Relocation is only within New York State or immediate area of the current home, or anywhere within the U.S.?"
MR. GRANGER: I guess, Pat, you can -- I know the answer because you told me, but I'll let you have it.
MS. SEPPI: Exactly. We come up with our assistance package, our relocation assistance, and our fair market value, that will be a particular amount of money. If someone chooses to take that and move outside the state, they're certainly welcome to do that, but the amount of money is not going to increase if they're moving someplace else. It changes a little bit the

Page 52

guidelines for moving costs. Again, I don't really want to get into a lot of the relocation information at this point. That will come later on when we meet with the individual residents.
MR. GRANGER: I take that back, Pat. I didn't know the answer to that. I'm glad you answered that.
MS. SEPPI: It's okay.
MS. KANDIL: And just "Thank you for your time and presentation. Very helpful and informative. Thanks. You've been great.
MS. SEPPI: That's always nice to hear. Hang on for a little bit longer.
MS. LESHAK: As a reminder, people on phones are, to unmute, press star six.
CALLER: Can you hear me?
MS. SEPPI: Yes, we hear you.
CALLER: Hello, sorry.
MS. SEPPI: Go ahead.
CALLER: Hi, Pat. This is the Reagan residence.
MS. SEPPI: Oh, hi. You couldn't get on?

Page 53

CALLER: No, we couldn't get on until a few minutes ago because the number that was given to us on the paperwork, it wouldn't let us get on. It just kept saying, like, your person cancelled the meeting, or is postponing it, or something like that. It was some recording. We tried it twice.
MS. SEPPI: I wonder if you had old information. I'm sorry about that, but you're on the line now.
MALE CALLER: We went to the website.
FEMALE CALLER: We went to the website because I got a tablet to use, and I missed I majority of it.
MS. SEPPI: Okay. Well, that's all right because what we're going to do tomorrow is Mark will send you out a copy of the presentation. So I know when you're on the line you're not seeing a whole lot, but he'll send that out to you.
The one thing that I want -- that's important is, you know, we're happy to hear what you have to say tonight, but if you have additional comments, you have until May 8th to send those in to Mark, you know.

Page 54

You may leave tonight, or get off this call and say, oh, gosh, I should have asked them this. So you certainly have plenty of time to do that. And maybe Mark and I can, you know, give you a call tomorrow or the next day just to see if you have any particular questions, too. So why don't you go ahead and ask whatever question you have now.

FEMALE CALLER: I was going to ask if I could have the comments and answers as well as the minutes.

MS. SEPPI: Okay. Well, that's how that works. We have a reporter here tonight -- I guess you didn't hear that part -- who is, you know, taking the whole meeting and will send us a transcript of everything: The questions, the comments, the presentation. Once we have our final decision document, we will send that out to everybody, you know, we'll send it to you by mail, and that will have the transcript. That has all the questions, all the comments, and all EPA's responses. So you'll have that. You'll have all that information for you to take a look at, so

Page 55

that you'll definitely be able to see all of that.

FEMALE CALLER: And that will give me time to comment before May 8th?

MS. SEPPI: No. That won't though because that record of decision will come out after the comment period of May 8th is over. So that's why I thought if we could send you this information tomorrow, at least, you know, the presentation, you won't have all the questions and comments because that's -- we don't even have the transcript yet, but at least maybe, you know, like I said, maybe Mark and I can talk to you, kind of go over that presentation again and answer any of the other questions that crop up that you might have.

Is that okay, Mark, with you?

MR. GRANGER: Yeah, that's okay. I think they're might be some other ways that maybe me and you could talk about, Pat, of getting Maureen the questions and answers.

MS. SEPPI: Okay. That's fine. The quicker we can do it, the better you know.

MR. GRANGER: The transcript is like a

Page 56

legal document that needs to be reviewed by attorneys, et cetera, but I think there might be another format that gets Maureen to the same place before May 8th.

MS. SEPPI: Okay. That would good. So we'll be in touch with you, Maureen.

FEMALE CALLER: Yeah. Thank you very much.

MS. SEPPI: Any other questions?

CALLER: I have a question.

MS. SEPPI: Yes.

CALLER: This is Delilah McGulchen (phonetic), and I was wondering if you've identified a company that will be assisting with the relocation aspect for all of the residents.

MS. SEPPI: Yes. We work with the U.S. Army Corp of Engineers. I've worked with them for 25 years. I know them very well. They're experts in relocation, and we work very closely together to provide the residents all the information that they'll need. So, you know, they will definitely be on board once we start meeting with residents, and determining the relocation

Page 57

assistance and fair market value.

CALLER: Okay, great. Thank you.

MS. SEPPI: You're welcome.

Anything else on the phone? Who is this?

CALLER: This is Mr. Reagan.

MS. SEPPI: Hi, Mr. Reagan.

MR. REAGAN: How are you?

MS. SEPPI: I'm good.

MR. REAGAN: The question I have is once we have a so-called rough draft after meeting here, and when we start going through the buyouts and all, what's pretty much the time frame you think you'd have everything completely wrapped up? I'm talking all the homes and everything, the whole area.

MS. SEPPI: Yeah, that's a really question. You know, it depends. If we reach out to residents, and they say, yes, we're interested in the permanent relocation, as soon as we're able, after the record of decision is signed, that's our final document, we will start meeting with residents along with the Army Corp of

Page 58

Engineers. So we don't wait until we have answers from everybody. We'll start working with people once they express their interest to us. You know, in the long-term, it could take a while. I mean, sometimes people, you know, are "I want to be relocated. I'm ready to get out of here tomorrow." You know, those usually move along very quickly.

Again, we have to have this final decision document before we can reach out and start talking to you about that.

There are some cases that relocation takes a year. There are some that it takes much less, so that's kind of up in the air.

MR. REAGAN: So we're talking about a dozen -- is it a dozen homes?

MS. SEPPI: It's seven properties -- it's ten properties. Three are undeveloped and seven are residences.

MR. REAGAN: Okay. So we're talking about seven buyouts, and --

MS. SEPPI: Possibly, yes.

MR. REAGAN: All right. So maybe what? Like, maybe three years total?

FEMALE CALLER: She can't give you an

Page 59

answer.

MS. SEPPI: I know it's not going to be that long, Mr. Reagan, not at all. But, you know, if you should decide after meeting with us that you want to accept our offer, we'll work with you and the Army Corp of Engineers, and move it along very quickly. If you decide that you're not interested in relocation, then, you know, we can't force anybody to move out. I mean, we would never do that. It will take some time, but I don't think if someone's interested in moving fairly quickly, then it will take, you know, a year and a half, or anything like that.

MR. REAGAN: All right.

MS. SEPPI: I tried to give you more information now, but that's pretty much all we can say, you know, at this point.

MR. REAGAN: No, no. I understand. I don't want you saying anything premature.

MS. SEPPI: Okay. Thank you.

MR. REAGAN: That was it. That's all I had.

MS. SEPPI: Okay. Thanks.

Page 60

MR. REAGAN: Thank you very much.

MS. SEPPI: Oh, you're welcome. Thank you for calling in. I'm sorry you had to wait such a long time.

MR. REAGAN: The number that we had originally on the printed thing was a different number. That's all.

MS. SEPPI: Well, I'm so glad you have it now. Mark will be talking to you shortly.

Okay. Shareen, did I see another question?

MS. KANDIL: I have two more questions.

MS. SEPPI: Okay.

MS. KANDIL: So Bradley Schwartz, will there be buyout offers for the three vacant properties?

MR. GRANGER: That's not part of this action. The three vacant properties they're going to be considered as part of OU-2. It's possible, but it depends on how the data comes out.

MS. KANDIL: Okay. Ann Campbell asked a similar question.

MS. SEPPI: Same question?

Page 61

MS. KANDIL: Yes, same question.

MR. GRANGER: So basically the three vacant properties would be considered as part of OU-2 for the permanent remedy. The focus of the early action preferred remedy at this point is on the seven residences inside the boundary of the site.

MS. SEPPI: That's the remedy, is to dissociate and permanently relocate the residents. So as Mark said, they'll be looking at the other properties later on in this whole process.

Any other questions?

MS. KANDIL: That came in from the chat.

MS. SEPPI: Okay. Anybody else on the phone that wants to unmute and ask a question?

CALLER: Yes. Hi, good evening. This is Shawn Rogan, the director of environmental health for the Putnam County Health Department.

MS. SEPPI: Yes.

MR. ROGAN: I want to commend Mark, Pat, and your whole crew. I think from day

Page 62

one this has been a process that has been transparent with lots of input. I appreciate Mark reaching out many weeks ago to go over the plan. Even going back and thanking the Town of Kent for hosting meetings to the public a while back, I guess, over a year ago.

MS. SEPPI: That's right.

MR. ROGAN: The entire process has just been fantastic, and we're fully supportive of your plan.

MS. SEPPI: Oh, that's so nice. Thank you, Shawn. We're happy to hear that. You know, hopefully, as we move forward, everything will work just as smoothly, and we'll keep you involved and everything as we do move forward. So, again, we appreciate that, especially local officials, our local elected officials. That's very important that we have you on board with us, so thank you again.

MR. ROGAN: Well, I think it also speaks volumes that held these meetings in lieu of the current Coronavirus pandemic. You went outside your comfort zone.

Page 63

MS. SEPPI: I have to tell you, we were really scared about tonight because we had no idea what to expect. But I think, you know, so far it's gone well. What we didn't want to do is wait until we were, you know, back in the office have this meeting. That didn't seem fair to the residents who are the object of this, you know, potential permanent relocation. So thank you for that, and, you know, I think the meeting on a whole went pretty well, at least from this end, yeah.

Mark, do you want to add anything?

MR. GRANGER: No. Shawn, thank you so much. It's been a pleasure working with you. I'm looking forward to working with you more.

MR. ROGAN: Thank you.

MS. SEPPI: Thanks, Shawn.

MS. KANDIL: Just a couple more comments for the record. Eric and Mike say, yes, the EPA has been very transparent and it's much appreciated.

MS. SEPPI: Thank you, Mike and Eric. We definitely appreciate that.

Page 64

MR. GRANGER: Thanks guys.

MS. SEPPI: Anything else, Shareen?

MS. KANDIL: Nothing came up yet.

MS. SEPPI: Well, I mean, you know, I hate to close down if there's any more questions or comments out there, but if aren't any other comments --

CALLER: I have a comment.

MS. SEPPI: Okay. Who's this?

CALLER: This is Robert Emory (phonetic). I'm a resident owner. I'd like to thank EPA for their hard work, and a special shout out to Sandy who has been above and beyond keeping us informed, and Mark, too, in the later months keeping us involved and throughout this whole process.

MS. SEPPI: Thank you, Robert. Yeah, we know that Sandy is a real treasure to have at EPA.

Sandy, do you have anything you want to say back to Robert?

MS. RICHARDS: Thanks, Bob.

MS. SEPPI: That was Sandy.

MR. GRANGER: I'll also say thanks, Bob, and acknowledge that everything that

Page 65

we're building with respect to operable unit one and operable unit two is built on the work that Sandy laid down that strong foundation.

MS. SEPPI: Yes, she did.

MR. EMORY: Mark, you picked up the ball when she -- well, she's still pushing it, too, but you're doing a good job, picking it up and following through on everything else.

MS. SEPPI: Yeah, Mark relies on Sandy because of her, you know, interest in the beginning of this because they work in two different programs. Even though they work in EPA, you know, we always try to work closely between the programs to keep things on an even keel and move forward, so we appreciate that also.

MR. EMORY: Okay. Thank you.

MS. SEPPI: You're welcome.

MS. KANDIL: Bradley Schwartz says, it was -- it is a pleasure to see our government working so well.

Eric and Mike say, yay, Sandy.

MS. SEPPI: Yay, Sandy. I'd go for

Page 66

that one, too, yes.

All right. Well, looks like we've come to the end of the road here as far as our meeting is concerned. So if there isn't anything else -- oh, let's just go to the next slide.

MR. GRANGER: Wait. I got one more thing.

MS. SEPPI: Oh, do you? Okay.

MR. GRANGER: So if the audience would indulge me just for one moment. My career at EPA happens to have started on Earth Day in 1990. So this is my 30th anniversary as an EPA employee. I want to say that the people I work for are great, and the people I work with are great, and unfortunately for both of those groups, I'm not going to go anywhere for along time. You're stuck with me.

MS. SEPPI: Hey, me, too I've been here 30 years so I can understand that.

Let's go to the next slide because that has your contact information, I think.

MR. GRANGER: I have the "thank you" slide.

Page 67

MS. SEPPI: Oh, yeah. Okay. I think we thanked everybody and we appreciate everybody that came. Just in case you want to send more comments to Mark by e-mail, which we said is a suggested way to do it, there's his information right there, his e-mail. And my e-mail is there also if you have anything that you'd like to send to me, and, you know, we'll be happy to get back to you just as soon as possible.

So is that it from your end, Shareen?

MS. KANDIL: We have, happy anniversary, Mark from Eric and Mike. From Kimberly Junkin, congratulations. Thank you for your dedication.

MS. SEPPI: Very nice.

MR. GRANGER: Thanks, everybody.

MS. SEPPI: A nice way to end up a meeting with compliments. We do appreciate that.

All right. So if there isn't anything else, I guess we can close this meeting down, and, you know, if we have your e-mail addresses and more information becomes available, we'll certainly be sending it out to everybody who's on our list. If you're not on our list and would like to get on it, just send an e-mail to me and I'll be sure to add you for future information.

Page 68

Thank you very much, everybody, and good night.

(Whereupon the meeting concluded at 8:15 p.m.)

--oo0oo--

Page 69

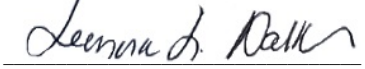
C E R T I F I C A T E

STATE OF NEW YORK
COUNTY OF NASSAU

I, Leonora L Walker, a Notary Public, the officer before whom the foregoing meeting was taken, do hereby certify that the foregoing transcript is a true and correct record of the testimony given; that said testimony was taken by me stenographically and thereafter reduced to typewriting under my supervision; that reading and signing was not requested; and that I am neither counsel for or related to, nor employed by any of the parties to this case and have no interest, financial or otherwise, in its outcome.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my notarial seal this 5th day of May 2020.

My commission expires May 17, 2020.



NOTARY PUBLIC IN AND FOR THE
STATE OF NEW YORK
Notary Registration No. 01WA6109670

S

RESPONSIVENESS SUMMARY

APPENDIX V-d

LETTERS RECEIVED DURING COMMENT PERIOD

May 4, 2020

VIA FEDERAL EXPRESS
Mark Granger
Remedial Project Manager
Central New York Remediation Section
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, NY 1007-1866

Re: Arsenic Mine Superfund Site – Putnam County

Dear Mr. Granger:

I write regarding the Arsenic Mine Superfund Site in Putnam County, New York. I have reviewed the Environmental Protection Agency's ("EPA") Proposed Plan and the Selected Remedy for Operating Unit 1 of disassociating residents from arsenic contaminated surface soils ("Proposed Plan"). I greatly appreciate EPA's efforts to prepare the Proposed Plan. I do however have two comments/concerns that EPA should consider before it finalizes its Proposed Plan.

First, EPA necessarily began formulating this plan before February 2020, before the scope of the current health crisis became known. Accordingly, it is appropriate for EPA to take into account the impact of COVID-19 on the proposed timeline for property owners to respond to any potential relocation offers. In particular, the current crisis has made finding new residences very difficult, if not impossible, particularly in New York State. Accordingly, EPA should toll the deadline for property owners to respond to relocation offers until the end of the crisis.

Second, Proposed Plan fails to take into account the historic, cultural and agricultural significance of the properties included in the Arsenic Mine Superfund Site. The Proposed Plan should respect and reflect how these properties, individually and aggregated, support broader community history, agricultural function and conservation values.

Thank you for your consideration.

Very truly yours,

/s/ Concerned Citizen
Concerned Citizen

Firm:50509072v1

NYC Environmental Protection

Vincent Sapienza P.E.
Commissioner

Paul V. Rush, P.E.
Deputy Commissioner
Bureau of Water Supply
prush@dep.nyc.gov

465 Columbus Avenue
Valhalla, NY 10595

T: (845) 340-7800
F: (845) 334-7175

May 5, 2020

Mark Granger, Remedial Project Manager
U.S. Environmental Protection Agency Region II
290 Broadway, 19th Floor
New York, NY 10007-1866

Re: **Arsenic Mine EPA Superfund Site**
Town of Kent; Putnam County, NY
Tax Map #: 32.-1-22
DEP Log #: 2019-WB-0678-OT.1

Dear Mr. Granger:

The New York City Department of Environmental Protection (DEP) is in receipt of the April 8, 2020 News Release from the U.S Environmental Protection Agency (EPA) regarding the Proposed Plan to Protect Residents at the Arsenic Mine Superfund Site in Kent, New York.

As you may know, the New York City Water Supply is a surface water resource that provides high quality drinking water to almost half the population of New York State, residing within and outside of New York City. The project site is located in the West Branch Reservoir drainage basin of the City's Water Supply watershed. West Branch Reservoir is part of the unfiltered Catskill-Delaware supply and is located within the 60-day travel time to water supply intakes. As such, DEP has invested heavily in various water quality protection initiatives in the West Branch basin.

Upon review of the News Release, Pollution/Situation Report and proposed plan, DEP has some concerns with implementation of the plan and offers the following comments:

1. DEP suggests that the proposed plan include greater detail on the means and methods of controlling migration of the contaminant during the remediation process. In particular, a revised plan should depict the limits of disturbance, areas to covered, structures to be demolished, staging areas, the amount of soil to be removed, soils disposal location/destination, and post- demolition site control measures. The plan should also include a schedule for inspection and maintenance of said measures.

2. The revised plan should be circulated for the review of DEP and other interested agencies.

3. DEP requests that we be notified one week prior to the start of remediation activities so that Agency staff may monitor the activity.

DEP submits these comments in accordance with the public comment period and appreciates the opportunity to review and provide feedback. You may reach the undersigned at (914) 749-5301 with any questions or if you prefer to discuss the matter further.

Sincerely,

Cynthia Gracin for

Matthew Giannetta, CPSWQ
Chief, Regulatory & Engineering Programs
NYCDEP, Bureau of Water Supply

X: Peter Lopez, USEPA
Patrick Palmer, NYSDOH
Thomas Snow, NYSDEC
Joseph Paravati, Putnam County HD
Maureen Fleming, Town of Kent
David Warne, DEP